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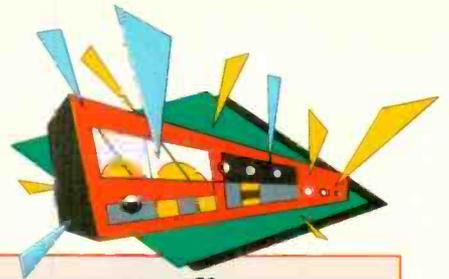
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# Stereo Review



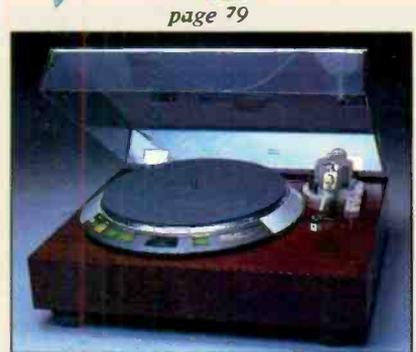
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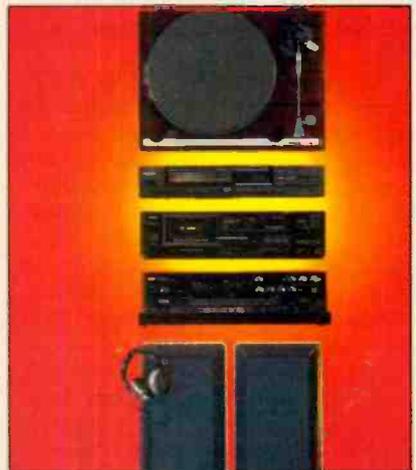


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Cover: top to bottom: Thorens TD 320 turntable (see page 50), Hitachi DA-501 CD player (see page 43), Teac V 750 cassette deck, Sansui S-XV1000 audio/video receiver, ADS L880 speakers, Sennheiser HD 540 headphones.

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COVER: DESIGN BY SUE LLEWELLYN, PHOTO ROBERTO BROSAN

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by William Livingstone



## Simplicity

**T**O my mind one of the most burdensome aspects of setting up a component stereo system is the installation of the phono cartridge. My eyes have required reading glasses since I was in my teens, and I have large, made-in-America hands, so I'm not very good at jobs that require patient manipulation of tiny screws and tools.

For me the introduction of the P-mount cartridge which simplified installation was a welcome boon. I suspect, however, that there are audiophiles who feel that if you don't go through the difficult initiation rite of installing the cartridge, aligning it properly, and adjusting the stylus pressure, you don't deserve decent sound. Those people have the manual dexterity to install cartridges, and they seem not especially pleased that the job has been made easier for the lazy or clumsy.

There have been some other efforts toward making the advantages of component stereo more accessible over the years. Some were small, such as the use of clip connectors instead of screws for speaker cables, and others were larger, such as the development of the receiver, which combines the amplifier, preamplifier, and tuner and thus reduces the number of decisions a buyer has to make.

There are many reasons for the popularity of the tape cassette, which now sells on about a par with

the LP record. One of the principal reasons is the ease with which a cassette can be played. You just insert it in a slot, press a button or two, and out comes music. It has made music available to a larger number of people, and I'm all for that.

A young friend of mine who works for a record company told me last year that along with her Black Max tennis racquet her favorite new acquisition was a CD player. When I asked why, she said, "I was never much good at dealing with complicated equipment. Rather than take out the fluid to clean a record every time I played it and clean the stylus, I found I wasn't listening to records much any more.

"But with even an inexpensive CD player, I can handle this new technology as well as anybody, and I play CD's all the time. I'm crazy about this machine. And seriously, if it's got me listening to Wagner and loving it, you know this technology has a lot going for it."

This technology does indeed have a lot going for it. I've been caroling on about the sonic virtues of the CD system so long now that I'm developing listening fatigue at the sound of my own voice. But I was slow to realize that another very important virtue of the system is its ease of installation and operation. I shall be most curious to observe what this does to the overall market for audio equipment in this country.

I've been a little embarrassed that stereo equipment is found in two-thirds of all Japanese households, but in only one-third of homes in the United States. And how did the British get such a head start on us in video?

When I was growing up, the United States was considered the most advanced country in the development of new technology and in the enjoyment of its results. I don't pretend to understand all the things that happened to the American public that caused us to fall behind. But when American musicians lead the world, it bothers me that in terms of ownership of stereo equipment we are a somewhat underdeveloped country. If the outward simplicity of the CD system will put stereo in more American homes, I'll vote for that. □

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# If you can't afford it, spare yourself the heartache of listening to it.

We are all aware that money aside, it is an easy matter to upscale our quality of life, but difficult to lower it. In this regard, ignorance is bliss and strict abstinence is sometimes better than a taste of something finer that we can't have. So it is with Concord high-fidelity, high performance car audio. One listen, one taste, will significantly alter your demands for mobile high-fidelity.

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A few of the features found in the HPL 540 shown here are: Dolby B and C noise reduction systems, tuner/tape switch, tape search, and the smooth convenience of full logic tape controls. The ergonomic design insures easy operation of all functions.

One listen to all of this and you will be exhilarated, and if you've read this far you are no longer blissfully unaware. Your taste has been improved. If you can afford it, you already *deserve*, and probably *demand* the best in design, engineering and of course—uncompromising performance.



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## Don't Tax My Tape

Right on! for William Livingstone's December editorial on the ridiculous effort to place a totally unwarranted tax on audio and video recording tape. It will not and can never work. The real heart of the matter is that records and tapes are priced too high. If the industry wants people to purchase their products, then they will have to make the prices manageable on most people's incomes. The incentive to rent video tapes and rerecord them is the extortionary prices of the tapes.

The people who propose this tax have absolutely no notion of how in heaven they are going to distribute this fund of money that they will be collecting on the backs of American consumers. There is, in fact, no way of fairly and decently cutting up this proposed pie. It's just a bloody ripoff of the public.

BRIAN P. DUMAS  
Easton, CT

What gall! Recording stars are some of the most overpaid professionals alive, and now they want recompense because we listeners wish to share their

work with a friend or to extend the life of our LP's. This is outrageous! Sure, some artists produce good music, but it's not *that* valuable. I can do without, and so can many others. The recording industry shall feel our rage if *any* tax is passed.

JOHN P. SINEK  
Fullerton, CA

William Livingstone's anti-tape-tax logic is as spurious as that of the music business in its attempt to stonewall record ratings. I don't believe in siding with musicians or audiophiles. I believe in siding with right things. Paying people for their creations is a *right thing*.

BOB HALLIGAN, JR.  
Southport, CT

## "Authentic" Handel

Regarding Chris Albertson's December video review of "An Authentic *Messiah*": I am getting tired of the annual release of yet another "authentic" recording of *Messiah*. They would be more aptly labeled "anemic"! The question should not be how the original per-

formances actually sounded, but how Handel would have *wanted* them to sound. Handel used small choruses and orchestras because that's all that was available to him. Handel would have enthusiastically supported the gargantuan performances of the Victorian era. He was every bit the modern showman. We can almost hear him sigh when he calls his singers and choirs simply "adequate."

JOHN FILOSI  
Houston, PA

*We agree to the extent of giving a "Record of the Year" Award to a modern-style Philips recording. See page 61.*

## Top Turntables

As a devout reader of STEREO REVIEW, I have been perplexed lately by the raging digital vs. analog controversy. Should I purchase a CD player and risk ostracism by the polyvinyl-chloride elite, or should I maintain my analog collection with ever-increasing amounts of "groove detergent" to ward off sonic arteriosclerosis? Then I came across Julian Hirsch's outstanding "3 Top Turn-

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# Stereo Review

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But many of the YCD-1000's excellent road manners were learned at home.

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You'll also find a newly developed and much more compact version of our home CD's 3-beam laser pickup. For even greater tracking stability.

And the same double-resolution 88.2 kHz (instead of the standard 44.1 kHz) digital filter for improved high-frequency imaging and clarity.

Plus many of the features that make our home CD players so convenient. Like Music Scan, Continuous Repeat, Music Search, and an easily seen black-on-red LCD display.

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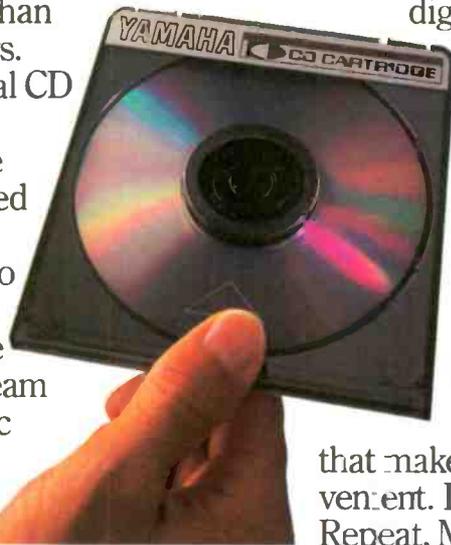
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tables" article in December, where I learned about \$2,000+ record players that skip in the vicinity of heartbeats, "Electrolux" platters to suck down records that are all "warped to some degree," and carnivorous dust covers with a taste for audiophile fingers.

No decision has been easier. My new CD player is surveying its domain, while I am busy converting my "stacks of wax" into beautiful rainbow gems in jewel boxes. Salvation at last . . .

BRYAN QUATTLEBAUM  
Bethesda, MD

Physicist David W. Fletcher's contribution to the design of the Sota turntables was insufficiently described in Julian Hirsch's noteworthy turntable comparison in December. For the record, Fletcher was the full and equal co-designer of both the Sota Sapphire and Star Sapphire turntables, providing the theory to balance Rodney Herman's engineering. Fletcher was solely responsible for the design of the Premier MMT tonearm and the Talisman B cartridge.

ROBERT S. BECKER  
President, Sota Industries  
Berkeley, CA

## Cassette Deck Options

The December issue was great! I enjoyed the article on cassette decks by Fred Petras but have some information to add. He said that only the Nakamichi Dragon features true dual-capstan drive with autoreverse. This is not true. The Akai GX-R88 and GX-R99 have dual capstans, with both pinch-rollers engaged at all times, and autoreverse. And you can buy at least three of these machines for the price of a Dragon!

PAUL R. GOEMANS  
Madison, WI

*We regret the oversight, particularly since the Akai GX-R99 was reviewed in these pages in October 1984. It is still available, but the GX-88 has been discontinued.*

## Your Second VCR

In December's "Video Basics," Chris Albertson says that "it makes sense to stay with the same format (VHS or Beta)" as your present machine when buying a second VCR. I plan to do just the opposite, so that instead of being

stuck in one "camp" I will have the capability to utilize either format. Albertson's recommendation makes sense only in the framework of consolidating or editing a collection of tapes.

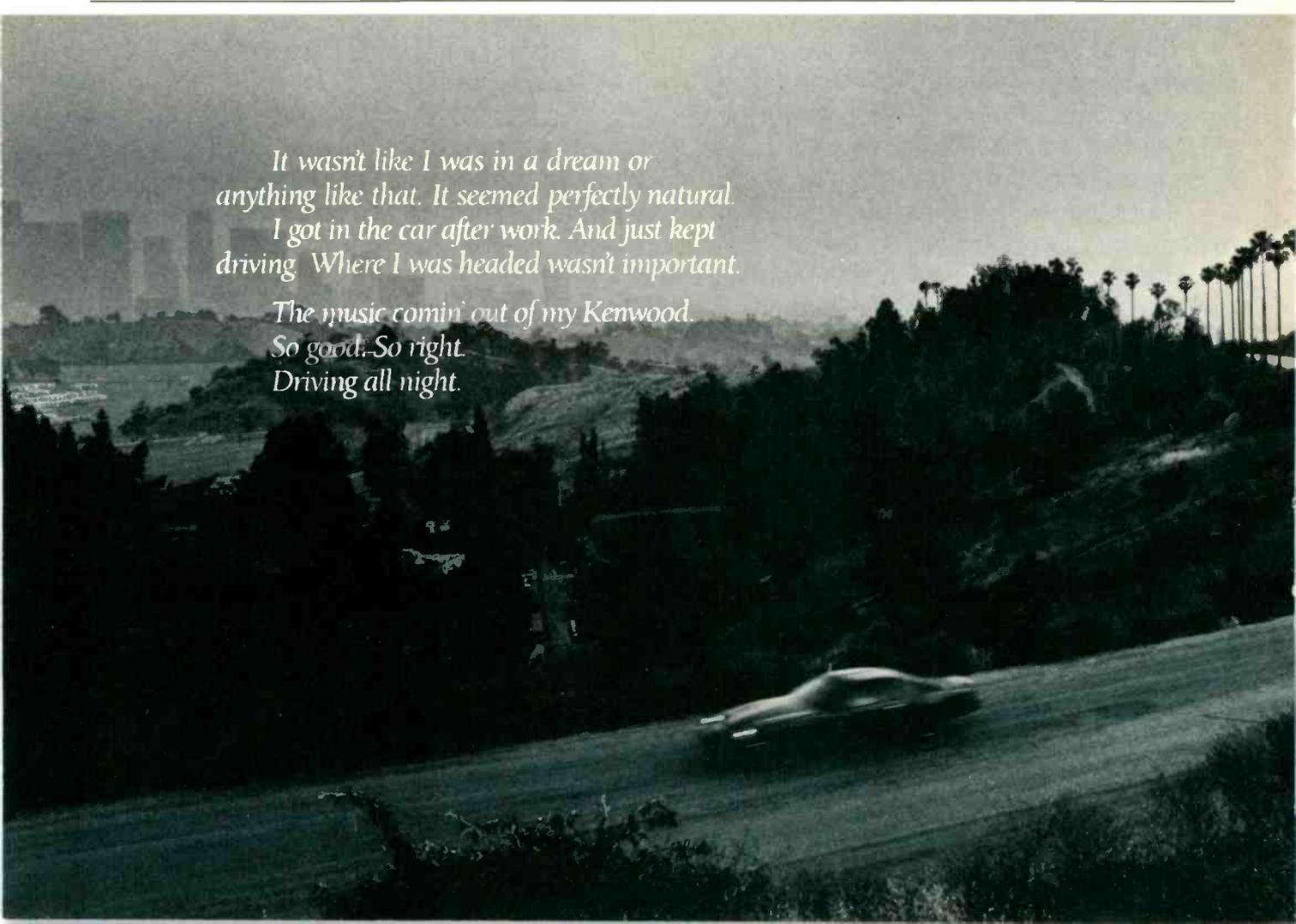
KEVIN FLETCHER TWEEDY  
Carnelian Bay, CA

## Crenshaw's Cover

Just one quick comment in reference to Steve Simels's fine review of Marshall Crenshaw's new album, "Downtown." While praising Crenshaw's songwriting, Simels says that ". . . just the title conceit of *I'm Sorry (But So Is Brenda Lee)* suggests more wit than will ever manifest itself on, say, an album by Mötley Crüe." The credit for that title, and the song, should go to Ben Vaughn of the Ben Vaughn Combo. To hear the song given the treatment it really deserves, follow Marshall's lead and try to catch the Ben Vaughn Combo in clubs in New York or Philadelphia.

MIKE COHEN  
Brooklyn, NY

*Steve Simels replies: You're right, I goofed. Apologies to Ben Vaughn.*



*It wasn't like I was in a dream or  
anything like that. It seemed perfectly natural.  
I got in the car after work. And just kept  
driving. Where I was headed wasn't important.*

*The music comin' out of my Kenwood.  
So good. So right.  
Driving all night.*

## Grateful for Ads

After reading the most extensive record-review section I've seen in STEREO REVIEW since the format change, I must voice my support for the editorial policies of William Livingstone. If more record reviews means having cigarette, vodka, and car ads, let's have them. And if DAK advertisements allow room for reviews like those in the November issue of Cock Robin and the Style Council, I will no longer be offended.

VINCE FISHER  
Columbia, MO

## Dubbing Oldies

Ian G. Masters's article "New Life for Old Records" in November was an excellent review of solutions to a problem that many readers have faced. I can offer just a few additional suggestions.

Old mono records cannot be played satisfactorily with modern small, elliptical stereo styli, but the problem is that in the early Sixties mono records were not marked as such while stereo records were labeled "stereo," and by the late

Sixties stereo records were unmarked and mono records labeled. Furthermore, many original mono 45's were reissued as stereo, either by reprocessing or simply remastering with a stereo cutter.

To identify mono records, carefully examine the grooves with a magnifying glass. If the groove itself wiggles from side to side, it is mono; if the groove edges are perfectly smooth with "stripping" within the groove, it is stereo. Mono records should be played with a mono cartridge or an accessory round mono stylus. Doing so will significantly reduce noise and distortion.

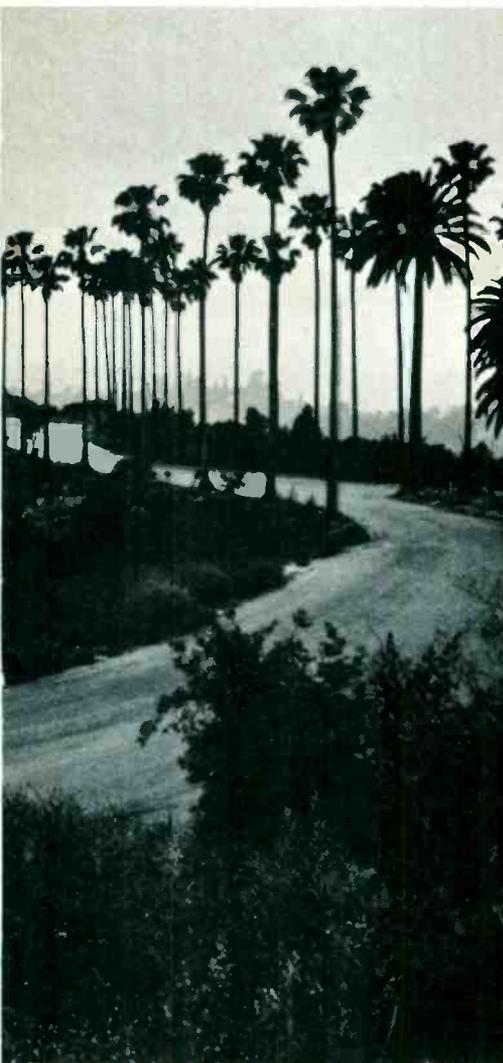
Mr. Masters mentions the SAE click-and-pop suppressor, which works very well when properly used. But it is dependent on receiving a stereo signal to detect the opposite phase relationships of a scratch on the two channels. If the signals are bridged together at the cartridge, as Mr. Masters suggests for noise-reduction purposes, the SAE unit will not work. It is necessary to bridge the channels at the suppressor's output instead.

FRANK E. BLOCK, JR.  
Vero Beach, FL

## RAY CHARLES POSTER

A limited-edition, full-color poster version of Al Hirschfeld's drawing of Ray Charles on page 55 is available, while the supply lasts, to STEREO REVIEW readers for just \$4 (check or money order payable to Stereo Review) to cover postage and handling. Commemorating our 1986 Mabel Mercer Award to Charles, the poster can be ordered from Awards Poster, Stereo Review, One Park Avenue, New York, NY 10016.

Stereo Review  
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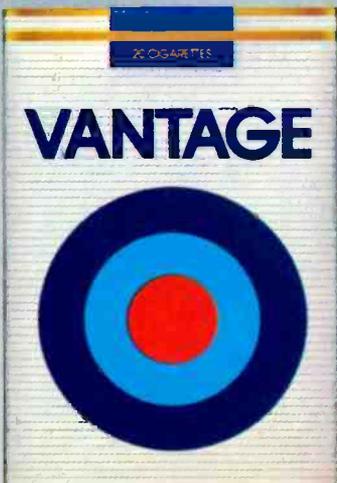


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## NEW PRODUCTS



### KLH

The six-sided, "diamond-backed" enclosure of KLH's two-way Model 862 speaker enables it to be placed in the corners of a room, at the junction of a wall and the ceiling or floor, or anywhere on a wall as well as on a free-standing pedestal mount. Placement at a room boundary is said to enhance bass response through acoustic coupling with the room surfaces, and the angled back cancels internal rear reflections from the two drivers, a 6-inch polypropylene woofer and a Ferrofluid-cooled soft-dome tweeter. Crossover frequency is 2,500 Hz. Finish is simulated-black-ash vinyl veneer with a black cloth grille. The speakers measure 14 x 9 x 9 inches. Price: \$238 per pair. KLH Division of Kyocera International, Dept. SR, 7 Powder Horn Dr., Warren, NJ 07060-0227.

Circle 120 on reader service card

### Shure

Shure's remote-controlled D-5000 Compact Disc player can be programmed to play up to fifteen tracks, with direct access to any of ninety-nine tracks. It has two fast-scan speeds with the program audible. An entire disc, a sequence of tracks, or a defined phrase can be set to repeat. The D-5000 uses analog and digital filtering, a 16-bit processor, and double oversampling. Price: \$499. Shure Brothers, Dept. SR, 222 Hartrey Ave., Evanston, IL 60202-3696.

Circle 121 on reader service card



### JVC

JVC's R-X370VB remote-controlled, digital-synthesis receiver has inputs for three video sources, a turntable, a Compact Disc player, an auxiliary audio source, and an audio tape deck. A loop circuit is also provided for a graphic equalizer. The quartz-PLL tuner features presets for ten FM and ten AM stations. Watching a video signal from one source while listening to the audio from another is also possible. An Acoustic Expander creates simulated stereo sound from mono sources. The wireless remote control selects and controls up to nine audio/video sources connected to the receiver. Rated output is 50 watts per channel rms with no more than 0.15 percent total harmonic distortion. Price: \$350. JVC Company of America, Dept. SR, 41 Slater Dr., Elmwood Park, NJ 07407.

Circle 122 on reader service card



### Proton

Proton's Models 313 (shown) and 312 bi-amplified speaker systems are magnetically shielded so that they can be used near video monitors without picture interference. Each speaker has a 4½-inch acoustic-suspension woofer, a 1¾-inch tweeter, and a 4½-inch passive radiator. The woofer is powered by a 20-watt amplifier and electronically crosses over to the Ferrofluid-cooled tweeter driven by its own 5-watt amplifier. The amplifiers are rated for less than 0.03 percent total harmonic distortion, and system frequency response is 60 to 20,000 Hz ± 3 dB. There are controls for input levels and tweeter levels. The Model 312 is designed to match the Proton 600M monitor, and the Model 313 matches the Model 602 monitor. Price: \$300 per pair for both models. Proton Corporation, Dept. SR, 737 W. Artesia Blvd., Compton, CA 90220.

Circle 123 on reader service card



## NEW PRODUCTS



### Kenwood

Kenwood's KSR-1000 stereo satellite receiver is used with an outdoor dish antenna to tune in television broadcasts from orbiting satellites. Stereo mode data for Satcom, Comstar, Telstar, Westar, and other satellites are already programmed into the memory, and twelve new satellite selections can be added. A wireless remote control duplicates the operating functions of the receiver. Stereo broadcast decoding is automatic. The KSR-1000 features Dolby noise reduction, built-in r.f. modulator for Channel 3 or 4, and a scan key for reviewing channels in quick succession. Price: \$1,170. Kenwood Electronics, Dept. SR, 1315 E. Watsoncenter Rd., Carson, CA 90745.

Circle 124 on reader service card

### Mitsubishi

The Mitsubishi DT-156 is a dual-transport, autoreverse cassette "changer" that holds up to seven audio cassettes. It features quick access to any selection on either side of any cassette, and it can be programmed to play a sequence of up to nine selections from any location. Both transport sections can record, and they can be synchronized for simultaneous recording or used for normal- or double-speed dubbing. Other features include music search, repeat in manual or programmed modes, blank skip, auto tape-type selection, and last-program memory. The DT-156 is part of Mitsubishi's E-156 rack system, but it can be purchased separately. Price: \$330. Mitsubishi Electric Sales America, Inc., Dept. SR, 5757 Plaza Dr., P.O. Box 6007, Cypress, CA 90630-0007.

Circle 125 on reader service card



### Radio Shack

The Archer Video Remote Control Extender from Radio Shack extends the range of a hand-held infrared remote-control unit, making it possible to operate remotely controlled VCR's and other video devices from different rooms. The system uses the same coaxial cable that carries the TV signal to the television set. A variety of different remote-control units can be used with the extender. Price: \$49.95. Tandy Corporation/Radio Shack, Dept. SR, 1800 One Tandy Center, Fort Worth, TX 76102.

Circle 126 on reader service card



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**WOULD YOU BUY  
CHEAP PERFUME FOR  
YOUR GIRLFRIEND?**



**Matthew Polk's Extraordinary New SDA SRS**



SDA SRS  
\$1395.00

Digital Disc Ready

Matthew Polk's extraordinary new SDA SRS won the 1985 Audio Video Grand Prix Speaker of the Year Award.

# "The Genius of Matthew Polk Creates the Ultimate Loudspeaker for You"

*"Spectacular...it is quite an experience"*

*Stereo Review Magazine*

F

or the last four years, Matthew Polk has been driven by an all consuming passion: to develop the ultimate SDA loudspeaker which fully realized the sonic potential of his revolutionary SDA TRUE STEREO technology.\* Thousands of man hours and hundreds of thousands of dollars have been spent in his single-minded pursuit of this goal. The extraordinary result of his quest is now available in handcrafted limited quantities, for those discerning listeners who seek the absolute state-of-the-art in musical and sonic reproduction.

## **The Joy of Owning the Ultimate**

The SDA Signature Reference System is Matthew Polk's own dream speaker. You too can share and experience his dream. He is so proud of the SRS that each one bears his signature, engraved on a solid brass name plaque. The joy of owning an ultimate loudspeaker knows no bounds. Music lovers who are privileged to own a pair of SRSs will share Matthew Polk's pride every time they sit down and enjoy the unparalleled experience of listening to their favorite music through these extraordinary loudspeakers, or when they demonstrate them to their admiring friends.

## **The SDA Signature Reference System: A Significant Advance in Loudspeaker Technology and Sonic Performance**

The SDA-SRS is the extraordinary flagship model of Polk's critically acclaimed SDA Series which is comprised of the SDA-1, SDA-2, SDA-CRS and the new SDA-SRS. This remarkable sounding, 3rd generation SDA speaker combines, for the first time, the latest refinements in Polk's exclusive and patented TRUE STEREO technology with time-compensated, phase-coherent multiple driver vertical line-source topology. The result is a high efficiency system of awesome and seemingly limitless dynamic range and bass capability which reproduces music with a precise, lifelike, three dimensional soundstage which is unequalled.

Each 63½" × 21" × 13" cabinet contains 8 Polk 6½" trilaminar-polymer drivers, a planar 15" sub-bass radiator, 4 Polk 1" Silver Coil polyamide dome tweeters and an incredibly complex and sophisticated Isophase Crossover System. One of the unique features of the crossover is the progressive variation of the high frequency high-pass circuitry which maintains virtual point source operation resulting in wide horizontal and vertical dispersion. Power handling is nominally rated at 1000 watts per channel, although the high efficiency of the system allows superb performance to be realized with even the most moderately powered receiver. Bass performance, in a word, breathtaking. The use of 8 small

## **The SDA SRS Matthew Polk's Own Dream Speaker Can Now Be Yours**

**"At the CES (Consumer Electronics Show) among the crop of new and often innovative speaker systems, probably the most impressive was the Polk SDA Signature Reference System, which shook the walls of the Americana Congress Hotel."**

*Stereo Review Magazine*

## **An Extraordinary Combination of Features and Benefits**

**Exclusive, Patented SDA TRUE STEREO Technology** for unequalled three-dimensional imaging and a huge, lifelike soundstage.

**Effective Bass Radiating Area Equivalent to a 40' Woofer** for breathtakingly full, deep, tight, more well controlled bass and sub-bass response.

**Multiple Driver Line-Source Topology** for ideally focused wave propagation which minimizes floor and ceiling reflections combined with greater clarity, lower distortion, higher power handling and increased dynamic range.

**Phase-Coherent, Time-Compensated Driver Alignment** for better focus, lower coloration and a smoother, more coherent midrange.

**Progressive Point-Source Tweeter Array** for greater vertical high frequency dispersion, achieved by eliminating multiple tweeter high frequency cancellations.

**Bi-Wire/Bi-Amp Capability** for greater clarity, greater dynamic range and lower I.M. distortion.

**Monocoque Cabinet Construction** eliminates extraneous cabinet resonances and colorations.

active drivers coupled to the large 15" sub-bass radiator results in extraordinarily tight, quick and three dimensional mid and upper bass combined with low and sub-bass capabilities which are staggering (clean output at 25Hz exceeds 100db!) An elaborate monocoque cabinet and bracing system is employed resulting in a remarkably rigid cabinet which virtually eliminates coloration due to panel resonances. Separate inputs for high and low frequency sections of the system allows bi-wire or bi-amp operation without the need for a separate electronic crossover. The speakers are beautifully finished, for an elegant loudspeaker which looks as good as it sounds.

## **The Exquisite Pleasure of Listening to the SDA Signature Reference System**

Awesome is the word most often heard to describe the sound. The extraordinarily lifelike three-dimensional imaging surrounds the listener in 360° panorama of sonic splendor. The awe inspiring bass performance and dynamic range will astound you. The high definition clarity of the SRS allows you to hear every detail of the original musical performance; while the exceptionally smooth, natural, low distortion reproduction encourages you to totally indulge and immerse yourself in your favorite recordings for hours on end.

## **"Exceptional performance no matter how you look at it"**

*Stereo Review Magazine*

Julian Hirsch of Stereo Review summed it up well in his rave review: "The Signature Reference System, Polk's no-compromise flagship loudspeaker offers new refinements on the Stereo Dimensional Array design...The composite frequency response was exceptional...The SDA system works...The effect can be quite spectacular...We heard the sound to our sides, a full 90 degrees away from the speakers...As good as the SDA feature is, we were even more impressed by the overall quality of the Polk SDA-SRS...The sound is superbly balanced and totally effortless. Exceptional low bass. We have never measured a low bass distortion level as low as that of the SDA-SRS...It is quite an experience! Furthermore, with the SDA-SRS, it is not necessary to play the music loud to enjoy the tactile qualities of deep bass... Exceptional performance no matter how you look at it". Words alone can not express the experience of listening to this ultimate loudspeaker system. You simply must hear them for yourself.

\*U.S. Pat. No. 4,489,432. Other patents pending U.S. & Foreign.

CIRCLE NO. 37 ON READER SERVICE CARD

For Dealer Nearest You Call TOLL-FREE 800-633-2252 Ext. 883

# Polk's Revolutionary TRUE STEREO SDAs

Digital Disc Ready



SDA 2  
\$625.00 ea.

SDA SRS  
\$1395.00 ea.

SDA CRS  
\$395.00 ea.

SDA 1A  
\$875.00 ea.

Polk's revolutionary TRUE STEREO SDA Loudspeakers fully realize the astonishingly lifelike three-dimensional imaging capabilities of stereophonic reproduction.

# "All Polk's Revolutionary TRUE STEREO SDAs Always Sound Better Than Conventional Speakers"

*"Literally a new dimension in sound"*

*Stereo Review Magazine*

**The result is always better than would be achieved by conventional speakers."**

*Stereo Review Magazine*

Polk's critically acclaimed, Audio Video Grand Prix Award winning SDA technology is the most important fundamental advance in loudspeaker technology since stereo itself. Listeners are amazed when they hear the huge, lifelike, three-dimensional sonic image produced by Polk's SDA speakers. The nation's top audio experts agree that Polk SDA loudspeakers always sound better than conventional loudspeakers. Stereo Review said, "Spectacular... the result is always better than would be achieved by conventional speakers." High Fidelity said, "Astounding... We have yet to hear any stereo program that doesn't benefit." Now the dramatic audible benefits of Polk's exclusive TRUE STEREO SDA technology are available in 4 uniquely superb loudspeaker systems, the SDA-1A, SDA-2, SDA CRS and the incredible new SDA SRS.

**"They truly represent a breakthrough"**

*Rolling Stone Magazine*

Without exaggeration, the design principals embodied in the SDAs make them the world's first true stereo speakers. When the big switch was made from mono to stereo, the basic concept of speaker design was never modified to take into account the fundamental difference between a mono and stereo signal.

What is the difference between a mono and stereo speaker? It's quite simple. The fundamental and basic concept of mono is that you have one signal (and speaker) meant to be heard by both ears at once. However, the fundamental and basic concept of stereo is that a much more lifelike three-dimensional sound is achieved by having 2 different signals, each played back through a separate speaker and each meant to be heard by only one ear apiece (L or R). So quite simply, a mono loudspeaker is designed to be heard by two ears at once while true stereo loudspeakers should each be heard by only one ear apiece (like headphones). The revolutionary Polk SDAs are the first TRUE STEREO speakers engineered to accomplish this and fully realize the astonishingly lifelike three-dimensional imaging capabilities of stereophonic sound.

## **How Polk SDAs Achieve True Stereo**

Although a lot of effort is devoted to maintaining full stereo separation in your hi fi, much is lost when you use conventional, (non-SDA) speakers. When each ear hears both speakers and signals, as occurs when you use conventional (Mono) speakers to listen in stereo, full stereo separation is lost. The undesirable signal reaching each ear from the "wrong" speaker is a form of acoustic distortion called interaural crosstalk, which confuses your hearing.

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## **The SDA Signature Reference System (SRS) - \$1395.00 ea.**

*1985 Audio Video Speaker of the Year*

The finest speaker that Polk manufactures. This limited production flagship model combines patented SDA TRUE STEREO technology with phase-coherent focused line-source multiple driver topology to achieve new levels of state-of-the-art imaging, detail, coherence, dynamic range and bass reproduction. High Fidelity said the SRS is "impressive and worthy of Matt Polk's signature."

## **The SDA 1A - \$875.00 ea.**

*1982 Audio Video speaker of the Year*

A beautifully styled, full size floor-standing system combining Polk's state-of-the-art components with exclusive TRUE STEREO technology for extraordinarily lifelike sound. It has tremendous dynamic range, high efficiency and awesome bass performance. While efficient enough to be driven by a small receiver, it will handle 500 watts per channel. High Fidelity said "the Polk SDA 1 Loudspeaker provides startling evidence of the audio industry's essential creative vitality."

## **The SDA 2 - \$625.00 ea.**

*1983 Audio Video Speaker of the Year*

Similar in construction and performance to the SDA 1A, but scaled down in size and price. It represents extraordinary value for the dollar. High Fidelity said listening to the SDA 2 is "an amazing experience."

## **The SDA Compact Reference System (CRS) - \$395.00 ea.**

*1984 Audio Video Speaker of the Year*

The world's best sounding bookshelf loudspeaker. It combines the exceptionally lifelike sonic performance of Polk's exclusive SDA technology with a handsome enclosure of modest proportions. It can be easily and unobtrusively located in any room. A built in rear mounted 10" sub-woofer allows the CRS to achieve remarkably dynamic bass performance. They can be placed right against the back wall, on a stand or on a shelf without compromising the ability of these amazing compact speakers to project a huge sonic image throughout your room. Stereo Review Magazine said the CRS is "an impressive achievement."

The Polk SDA systems eliminate interaural crosstalk distortion and maintain full, True Stereo separation, by incorporating two completely separate sets of drivers (stereo and dimensional) into each speaker cabinet. The stereo drivers radiate the normal stereo signal, while the dimensional drivers radiate a difference signal. It is this difference signal that acoustically and effectively cancels the interaural crosstalk distortion and thereby restores the stereo separation and imaging lost when you listen to normal "mono" speakers. The sonic benefits are remarkable.

**"Breathtaking... a new world of hi-fi listening"**

*Stereo Buyers Guide*

**"Mindboggling...astounding...flabbergasting"**

*High Fidelity Magazine*

Words alone cannot fully describe how much more lifelike SDA TRUE STEREO reproduction is. Reviewers, critical listeners and novices alike are usually overwhelmed by the magnitude of the sonic improvement achieved by Polk's Stereo/Dimensional technology. You will hear a huge sound stage which extends not only beyond the speakers, but beyond the walls of your listening room itself. The lifelike ambience revealed by the SDAs makes it sound as though you have been transported to the acoustic environment of the original sonic event. Every instrument, vocalist and sound becomes tangible, distinct, alive and firmly placed in its own natural spatial position. You will hear instruments, ambience and subtle musical nuances (normally masked by conventional speakers), revealed for your enjoyment by the SDAs. This benefit is accurately described by Julian Hirsch in Stereo Review, "...the sense of discovery experienced when playing an old favorite stereo record and hearing, quite literally, a new dimension in the sound is a most attractive bonus..." Records, CD's, tapes, video and FM all benefit equally as dramatically.

**"You owe it to yourself to audition them"**

*High Fidelity Magazine*

SDAs allow you to experience the spine tingling excitement, majesty and pleasure of live music in your own home. You must hear the remarkable sonic benefits of SDA technology for yourself. You too will agree with Stereo Review's dramatic conclusion: "the result is always better than would be achieved by conventional speakers... it does indeed add a new dimension to reproduced sound."

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# Polk's Remarkable Monitors

Digital Disc Ready



Monitor RTA 12C  
\$479.95 ea.

Monitor 10B  
\$329.95 ea.

Monitor 5jr.  
\$129.95 ea.

Monitor 4A  
\$84.95 ea.

Monitor 5B  
\$189.95 ea.

Monitor 7C  
\$249.95 ea.

Polk's remarkable Monitors offer state-of-the-art technology and performance usually found only in systems which sell for many times their modest cost.

# "Polk's Remarkable Monitors Deliver Incredible Sound/Affordable Price"

*"Vastly superior to the competition"*

*Musician Magazine*

P

olk Audio was founded in 1972 by three Johns Hopkins University graduates who were audiophiles with a common dream.

## **Polk's Dream of Super Sound for Everyone**

They believed that it was possible to design and manufacture loudspeakers of uncompromising quality which performed as well as the most expensive and exotic loudspeakers available, but in a price range which would make them affordable to virtually every music lover. The original Monitor 7 was the first product of their efforts and it was so successful that when it was shown at the Consumer Electronics Show, dealers and experts alike could not believe its superb performance and affordable price. Audiogram Magazine said, "when we heard the Polk speakers at the CES Show we were so impressed we could not believe the prices." The entire Polk Monitor Series was designed in this tradition of incredible, state-of-the-art sound and affordable prices. In large part due to the quality and value of the Monitors, Polk Audio has developed from its humble beginnings in a garage, to become one of the world's premier loudspeaker manufacturers.

Polk Audio has worked hard over the ensuing years to maintain the Monitor Series' preeminent position as the standard for quality and value in the audio industry. The Monitors have been continually improved and refined as a result of Polk's never ending search for better sound quality. There have been literally thousands of improvements made to the Monitors and the result is that today, as in the past, the Polk Monitors are absolutely the best sounding loudspeakers for the money available on the market. Musician Magazine said, "If you're shopping for stereo, our advice is not to buy speakers until you've heard the Polks." You owe it to yourself!

**"At their price, they're simply a steal"**

*Audiogram Magazine*

A new generation of Polk Monitors is now available which incorporate the same high definition silver coil dome tweeter and Optimized Flux Density drivers developed for the SDAs. Polk Monitor Series loudspeakers have always had a well deserved reputation for offering state-of-the-art performance and technology usually found only in systems which sell for many times their modest cost. In fact, many knowledgeable listeners consider that outside of the SDAs, the Polk Monitors are the finest imaging conventional speakers in the world, regardless of price. They have been compared in performance with loudspeakers which sell for up to \$10,000 a pair and are absolutely the best sounding loudspeakers for the money available on the market. Now they sound even better than ever.

For Dealer Nearest You Call TOLL-FREE 800-633-2252 Ext. 883

**The RTA 12C - \$479.95 ea.** is the finest conventional (non SDA) speaker system that Polk manufactures. Its extremely high power handling (500 watts) and efficiency (92 db 1 meter 1 watt) result in remarkable dynamic range from large or small amplifiers. It utilizes phase-coherent open air driver mounting in a mirror imaged, fullsize floor-standing configuration for superior sonic imaging and clarity. In addition to receiving many rave reviews, the RTA 12C has won the AudioVideo Grand Prix Speaker of the Year Award.

**The Monitor 10B - \$329.95 ea.** is considered one of the world's best sounding loudspeakers and in the words of Audiogram Magazine, "At the price they are simply a steal." The 10B offers sonic performance almost equal to the 12 at a lower cost in a more compact enclosure. Like the 12, the 10 utilizes dual Polk trilaminate-polymer bass midrange drivers coupled to a built-in subwoofer for outstanding bass response and dynamic range.

**The Monitor 7C - \$249.95 ea.** is basically a smaller, less expensive version of the Monitor 10. It can be either shelf or stand mounted with excellent results. How good? Audio Alternative Magazine said, "It is Amazing."

**The Monitor 5B - \$189.95 ea.** similar in design and performance to the Monitor 7, however, it utilizes an 8" subwoofer (rather than 10") and is more compact.

**The Monitor 5jr - \$129.95 ea.** has been called the best sounding speaker of its price in the world (regardless of size). It achieves lifelike three dimensional musical imaging which 10 years ago was not available in any bookshelf speaker at any price!

**The Monitor 4A - \$84.95 ea.** shares many of the same high technology components and the rewarding musical performance of the more expensive Polks. Audio Critic Lawrence Johnson called it, "an all around star of great magnitude." The 4A's uniquely affordable price means that no matter how small your budget, you can afford the incredible sound of Polk!

**"Absolutely first rate...superior sound at a moderate price."**

*Stereo Review Magazine*

All the Polk Monitors regardless of price offer consistently superb construction and sonic and performance. They achieve open boxless, three dimensional imaging surpassed only by the SDAs. The Monitors' silky smooth frequency response assures natural, non fatiguing, easy to listen to sound; while their instantaneous transient response results in music that is crisply reproduced with lifelike clarity and detail. In addition dynamic bass performance, ultra wide dispersion, high efficiency and high power handling are all much appreciated hallmarks of Monitor Series performance.

The consistently superb performance of the Polk Monitors is in large part due to the fact that they all utilize very similar components and design features. However, more importantly, it is the elegant integration of concepts and components which results in the superior sonic performance and value which sets the Monitor Series apart. Audiogram magazine said, "How does Polk do it? We think it is mostly execution. They hear very well and they care." Audiogram is absolutely right. At Polk we take the same care with each and every product we build, whether it is our most or least expensive. We lavish the same lengthy amount of critical listening and tuning on every single Polk speaker because we know that having a limited budget does not necessarily indicate that you have a limited ability to appreciate true musical quality.

**"Our advice is not to buy speakers until you've heard the Polks."**

*Musician Magazine*

**You can afford the incredible sound of Polk**

There are six Polk Monitor Series loudspeakers. As you move up the Monitor Series the speakers get larger and more efficient, handle higher power, have greater dynamic range, better bass response. They are designed so that a smaller Polk played in a small room will sound nearly identical to a larger Polk in a large room. And, of course, a larger Polk in a smaller room will play that much louder and have even more bass. There is a Polk Monitor which is perfect to fulfill your sonic dreams, at a price you can afford.

**Polk Audio** 1915 Annapolis Road, Baltimore, Md. 21230  
In Canada: Distributed by Evolution Technology, Toronto.

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"For nearest Polk dealer see page 205."



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## AUDIO Q. AND A.

by Larry Klein



### Amplifier Bridging

**Q** A recent article in *STEREO REVIEW* stated that bridging to mono can't be done with just any stereo amplifier; the two channels must be properly balanced to work in a true push-pull fashion. I recently came across a bridging adaptor, called an AutoBridge, made by Soundcraftsmen that is designed to be connected between a preamplifier and two stereo power amplifiers. Each stereo power amplifier is said to be converted into a mono amplifier with approximately double its stereo 4-ohm power rating. Will this adaptor work with conventional amplifiers without degrading their performance?

LEIGH A. WAX  
Gainesville, FL

**A** Several conditions must be met to connect a stereo power amplifier to work successfully as a higher-power mono amplifier:

1. The two channels of the amplifier to be bridged must be reasonably similar in gain, phase, and frequency response. This requirement is easily met by any well-designed stereo amplifier.

2. The same right- or left-channel signals must be fed to both channels of the bridged amplifier, but the signals must have a 180-degree phase difference between them, usually provided by an internal or external phase-inversion stage in one channel. The Soundcraftsmen AutoBridge performs this task. Soundcraftsmen also has three new preamplifiers that provide such in-

verted outputs. There are also some stereo power amplifiers designed so that in normal operation their channels are in opposite phase, thus reducing the drain on the power supply during high-level bass signals. Since the phase inversion in one channel is already built in, such amplifiers can be easily converted to a bridged mode by using a Y-connector to feed the same signal to both input channels and then connecting the speaker between the plus terminal of the non-inverted channel and the negative terminal of the inverted channel.

3. There must be a common ground between the speaker outputs of the two channels. This requirement is *not* always met, since some stereo amplifiers already have each channel bridged internally, and they operate without a common speaker ground point. As far as I know, such amplifiers are *not* suitable for external bridging.

4. When an amplifier is bridged for mono, the power it provides to an 8-ohm speaker is approximately double its 4-ohm rating. Soundcraftsmen cautions that when a 4-ohm speaker is driven by a bridged amplifier, each channel is driving the equivalent of a 2-ohm load. Be aware that the performance of any amplifier—bridged or otherwise—with such low-impedance loads is very much dependent on the amplifier's output-current capability and stability.

The bottom line: Some caution is necessary in choosing the amplifiers to be bridged—and the speakers to be driven—but once the proper choices are made, Soundcraftsmen's \$89 AB-1 provides in one compact accessory both the connections and the phase inversion required to facilitate the task.

### Laser Life

**Q** I have a question about CD players that no one seems to know the answer to. I'm aware that, unlike the situation with a phono stylus, there is no physical contact with the record to wear out a laser beam. But since the laser is emitting photons, I assume it will wear out eventually. What is the life expectancy of the lasers in CD players?

FRANCIS SHANNON  
Daytona Beach, FL

**A** Since Sony is one of the largest manufacturers of the semiconductor lasers used in CD players, I asked the company's U.S. promotion manager, Marc Finer, who told me that the average life expectancy of the lasers used in CD players exceeds 5,000 hours. Considering the expected average daily use of the player, that's the equivalent of a life span of eight to ten years, which would seem to make it likely that the mechanical parts in a CD player will wear out before the laser itself does.





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**brings you a better  
monitor experience here.**

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Even if you don't run a mainframe computer installation, it's comforting to know that NEC puts much of our computer monitor technology into TV Receiver/Monitors for the home.

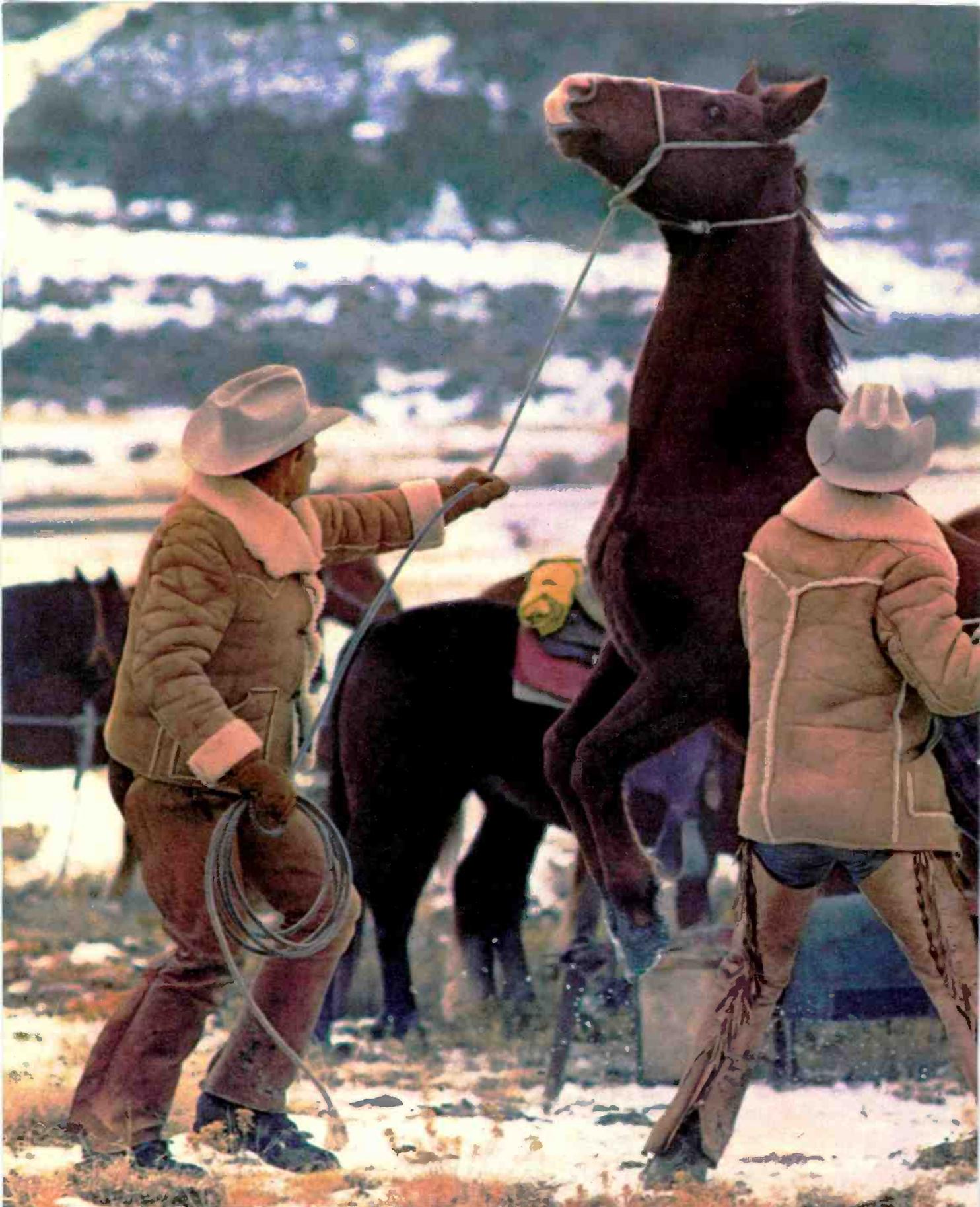
Consider the NEC CT-2610A. It uses a full square 26" picture tube for an undistorted image, and a comb filter for picture resolution that's ever better than TV broadcasting itself. The CT-2610A receives stereo TV, tunes in 142 channels, and gives you enough inputs and outputs to start your own TV network.

You see, building highly acclaimed computer monitors is not enough for NEC. We feel obligated to take the world's most advanced technology one step further. Into your home.

**NEC**

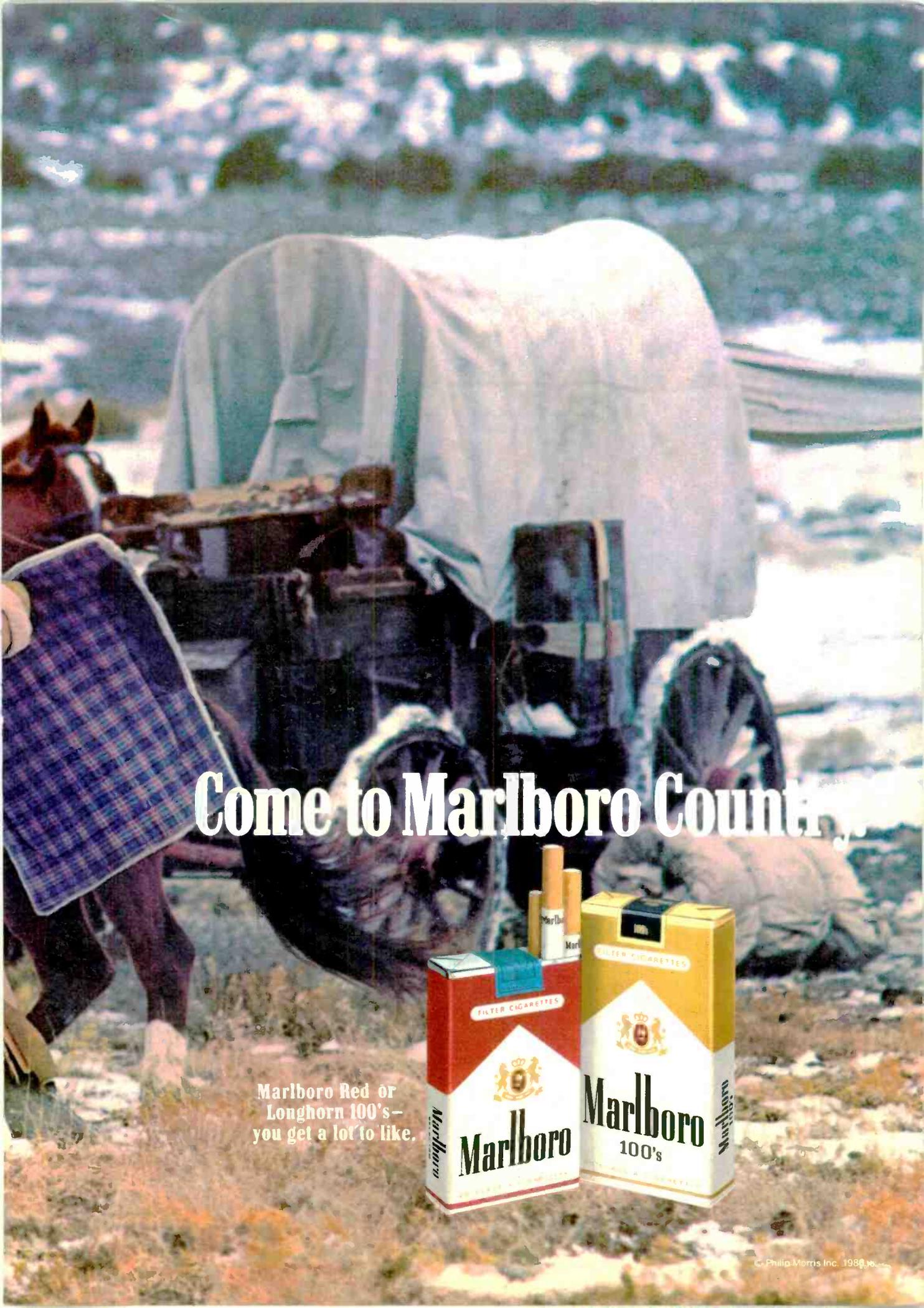
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16 mg "tar," 1.0 mg nicotine  
av. per cigarette, FTC Report Feb '85

A vintage scene featuring a horse-drawn wagon with a white tarp covering its load. A person's hand is visible on the left, holding a purple and blue plaid blanket. The background shows a field with trees under a bright sky.

# Come to Marlboro Country.

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by Julian Hirsch



## Technical Terminology from dB to DIN-B

**T**O many of our nontechnical readers, much of the technical terminology used in this column and our test reports is little more than alphabet soup. The use of technical terms is unavoidable when writing on technical matters, but I do not have the space to define or explain them each time I use them. Occasionally, however, I do take the opportunity to discuss technical terms in this column, and I will try to clarify some of the more troublesome ones here.

### Decibel

Probably no single term in electronics or acoustics is as misunderstood as *decibel*, abbreviated *dB*. The term *bel*, derived from the name of Alexander Graham Bell, was originally created for use in the telephone industry to specify the ratio of two power levels. It is usually more convenient to work with a smaller unit, the decibel, which is one-tenth of a bel.

Briefly, a power ratio of 2 to 1 (2:1) is equivalent to 3 dB, a ratio of

10:1 is 10 dB, a ratio of 100:1 is 20 dB, a ratio of 1,000:1 is 30 dB, and so on. The convenience of the logarithmic decibel notation can be appreciated when you realize that a power ratio of 100,000,000:1 can be expressed as 80 dB.

Many people become confused because the decibel notation is often used to express *voltage* ratios, and the impression has grown that a "voltage decibel" (sometimes abbreviated "dBV") is different from a "power decibel." In fact, they express the same relationship, since with a constant impedance the power is proportional to the square of the voltage. Therefore, the decibel figure expressing the ratio of two given voltages is numerically twice the value for the ratio of their corresponding power levels.

Another source of confusion is the common practice of using decibel notation without specifying the reference level for 0 dB or connecting it in any obvious way to a power measurement. This can make it seem as if decibel figures are absolute values rather than a ratio. In audio, for example, we may specify a sound-pressure level (SPL) as, say, 80 dB, which we have already said corresponds to a power ratio of 100,000,000:1. But what does that outlandish figure really mean?

Sound pressure is analogous to voltage, and 80 dB represents a voltage ratio of 10,000:1. In acoustics, the conventional reference level for 0 dB is 0.0002 dynes per square centimeter, which means that an SPL of 80 dB represents a pressure of 2 dynes per square centimeter ( $10,000 \times 0.0002$ ). While probably only an acoustician or a physicist can easily conceptualize such a measurement, the rest of us soon learn that 80 dB is a moderately loud sound level for listening to music. What it is important to grasp is that a 90-dB level sounds *twice as loud* and represents *ten times as much acoustic power*.

The same principles apply in un-

derstanding the "dBf" ratings for FM tuner sensitivity. In this case, the "f" abbreviates *femtowatt*, since the 0-dB reference level in such measurements is a power level at the receiver's antenna terminals of 1 femtowatt, or  $10^{-15}$  watts. This almost unimaginably low power level is well below the theoretical capability of an FM broadcast receiver.

Instead of measuring tuner performance relative to the voltage (in microvolts) supplied by the antenna, we now use decibels referred to 1 femtowatt. The prime advantage of this notation is that it represents a true signal power level, which is what the receiver actually responds to regardless of its input impedance. A voltage level of, say, 2 microvolts at the 300-ohm antenna input of a typical home tuner or receiver is equivalent to 1 microvolt at its 75-ohm input. Since impedance is often not specified in product advertisements, confusion is avoided in this case by referring instead to a power level of 11.2 dBf, an expression that is more manageable, if not more understandable, than the equivalent  $1.32 \times 10^{-14}$  watts.

### Weighting

Amplifier noise levels are sometimes measured with what we call a *CCIR/ARM* weighting characteristic. CCIR is the French abbreviation for the International Radio Consultative Committee, which developed a standard weighting curve for noise measurement. Weighting is merely a frequency-response contouring to achieve a desired end result. When you use your tone controls to produce a more pleasing sound, you are weighting your system's frequency response.

The CCIR curve attenuates frequencies at a rate of 6 dB per octave below 9,000 Hz and at 36 dB per octave above that frequency. The curve is intended to produce measurements of low-level noise that correlate well with its subjective audibility, and it is commonly used in ratings of Dolby noise-reduction systems. The *ARM* part of the term (which is sometimes dropped) refers to the use of a conventional average-responding meter instead of one that responds to peaks or on an rms (root-mean-square) basis.

Our test reports, and many manu-

### Tested This Month

Yamaha R-8 Receiver  
Hitachi DA-501 CD Player  
Energy ES-M-3 Speaker  
Thorens TD 320 Turntable

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facturers' specifications, often refer to *DIN* ratings. The letters stand for Deutsche Industrie Normenausschuss, a West German standards organization. There are many thousands of DIN standards in various fields, and they are used throughout Europe and in many other parts of the world. In hi-fi, one of the more common DIN ratings is *DIN-B*, a weighting curve used for turntable rumble measurements. The *DIN-B* curve attenuates the response at 12 dB per octave above and below 315 Hz, and the measured rumble is expressed (in decibels) relative to a 0-dB recorded velocity of 10 cm/s at 1,000 Hz.

We also rate turntable rumble using the *ARLL* (Audible Rumble Loudness Level) weighting curve, which was developed by CBS Laboratories some years ago. The *ARLL* curve attenuates the rumble at 6 dB per octave below 500 Hz and is referred to a 5-cm/s lateral velocity

(3.54 cm/s in each channel). The combination of different low-frequency weighting and a lower reference level makes *ARLL* rumble figures much higher (that is, numerically smaller) than those based on *DIN-B* weighting.

Noise measurements, especially in the United States, are frequently weighted using the *ANSI* (American National Standards Institute) *A* curve, which attenuates response below 500 Hz at 6 dB per octave, is flat between 500 and 10,000 Hz, and rolls off above 10,000 Hz at 6 dB per octave. Wow-and-flutter measurements are usually weighted to allow for the differences in audibility of different flutter rates. The ear is most sensitive to frequency modulation (which is what flutter is) at rates around 4 Hz, so the current *DIN* and *CCIR* standards give the greatest emphasis to that frequency range. They also measure peak-to-peak flutter, whereas the *JIS* (Japan

Institute of Standards) standard calls for rms-based readings with a heavily damped, slowly responding meter that ignores the peaks. Many American hi-fi measurements, including most of those we make, are based on standards adopted by the *EIA* (Electronics Industry Association) in the U.S.

There are many differences in detail among the various standards, and each has its advantages and disadvantages. The purpose of all of them is to produce measurements that correlate well with human perception of what is being measured, but all of them give different results. Keep in mind that a measurement specification that does not identify the relevant test standard is no specification at all.

If I have passed over terms or abbreviations you find obscure or confusing, please write and let me know about them. I will deal with other queries in future columns. □

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PHOTOS BY DAVID KELLEY

## YAMAHA R-8 AM/FM RECEIVER

*Julian Hirsch, Hirsch-Houck Laboratories*

**Y**AMAHA "Natural Sound" stereo receivers combine many of the attractive features of the company's previous models, such as an independent recording-output selector and a separate, continuously variable loudness control, with a new low-impedance output circuit and high dynamic-power capability. The power-amplifier section can drive very low-impedance loudspeakers or multiple sets of speakers, difficult loads that are incompatible with many receivers.

The Natural Sound series consists of three models, and the R-8 is in the middle of the line in terms of features, power rating, and price. Although it is not labeled an "audio/video receiver," it can switch signals from either of two video sources to a monitor while channeling audio signals through its own control circuits and amplifiers.

The Yamaha R-8 is a relatively large component, measuring 17½

inches wide, 16⅞ inches deep, and 6 inches high and weighing 24 pounds, 3 ounces. It carries an audio power rating of 85 watts per channel into 8-ohm loads from 20 to 20,000 Hz with no more than 0.015 percent total harmonic distortion. The exterior is finished in black, and the output-transistor heat sinks are fully enclosed by the cabinet.

In normal operation, the only visible controls on the R-8 are the large, concentric volume and loudness-control knobs and a number of light-pressure pushbuttons of different sizes for tuning functions, input selection, power on/off, and audio muting. The display window at the upper left of the panel contains a large, red station-frequency readout and several status displays. One light shows when the auto tuning mode is selected.

Another display shows the status of the Computer Servo Lock (CSL) two-stage, digital-synthesis FM tun-

ing system. A servo tuning circuit is automatically engaged when a strong, noise-free signal is tuned in. If the signal becomes weak or noisy, the CSL microprocessor transfers control to a PLL (phase-locked-loop) tuning circuit. According to Yamaha, the PLL system provides a higher tuning resolution—0.01 MHz instead of the usual 0.1 MHz—so that the user can fine-tune weak or noisy FM signals.

The ten-segment signal-quality display shows the overall quality of a received signal, including its signal-to-noise ratio as well as its strength. The FM tuner section's AUTO DX tuning mode automatically switches it to a narrow i.f. bandwidth for high selectivity when noise or interference degrades the signal, returning to a wider i.f. bandwidth whenever the signal strength and clarity are adequate. The receiver can also be switched manually to the LOCAL or DX modes.

Each of the eight tuner memories can be assigned to two different frequencies, either AM or FM, giving a total of sixteen presets. Most other tuner-related functions are controlled or selected by small push-buttons or bars to the right of the presets. Larger buttons select the audio input source, and there are

## FEATURES

Automatic receiving mode optimizes FM tuner bandwidth and channel separation for best reception; distant (DX) or local modes also selectable manually. Memories for sixteen stations in any combination of AM and FM frequencies.

Connections and switching for two pairs of speakers, two audio tape decks, and two VCR's, including dubbing functions. Pushbutton listening source selection for phono, CD, video, tape 1, and tape 2.

Variable loudness compensation. Video and audio outputs to video monitor/receiver.

Simulated-stereo circuit for TV or other mono sources.

Dynamic Noise Canceller (DNC) for hiss reduction from any source.

Muting button drops level 20 dB. Front-panel door conceals stereo headphone jack, speaker switches, tone controls (bass, midrange, and treble), tone-bypass switch, balance knob, DNC and simulated-stereo switches, stereo/mono mode switch, recording-output selector, and MM/MC phono-input switch.

Rear apron contains audio and video input and output jacks, input/output jacks for an external signal processor (normally joined by removable jumpers), stereo/mono switches for two video sources, connectors for an AM loop antenna and a 300- or 75-ohm FM antenna, insulated speaker binding posts, and two a.c. outlets (one switched).

two more buttons for channeling video signals to a monitor. Small red lights above most of the buttons show their status. The video switching circuits allow dubbing from VIDEO 1 to VIDEO 2 independently of the settings of the receiver's other controls. A number of secondary or less frequently used controls, including the balance and three-way tone-control knobs, are located behind a hinged door across the lower part of the front panel.

One of the hidden controls is for the Dynamic Noise Canceller (DNC), which is a signal-controlled low-pass filter that senses the upper frequency limit of the program content and filters out noise above that frequency. It does not require an encoded signal source and can be used with any of the receiver's inputs. Another signal-modification feature is a simulated-stereo circuit that adds a sense of breadth to mono programs.

The R-8 can also be controlled by a hand-held wireless remote transmitter, the RS-9, which operates virtually all the basic functions of the receiver. Price: \$599. Yamaha Electronics Corp., USA, Dept. SR, 6660 Orangethorpe Ave., Buena Park, CA 90620.

### Lab Tests

The exterior of the Yamaha R-8 did not become uncomfortably warm at any time in our tests, even

directly above the internal heat sinks. The 1,000-Hz audio output, with both channels driving 8-ohm loads, clipped at 109 watts per channel. Moreover, the current-output capability of the R-8's amplifiers was demonstrated by its clipping output of 148 watts per channel into loads of 4 or 2 ohms.

At most power outputs and frequencies, the distortion of the R-8 was between 0.003 and 0.005 percent into 8-ohm loads, and the maximum distortion (at rated power) was 0.0135 percent at 20,000 Hz. At 1,000 Hz the distortion characteristics were very similar for all three load impedances, with readings of 0.02 to 0.035 percent at 1 watt, reflecting the greater contribution of system noise (inaudible) at lower power outputs, and a linear decrease to minimum levels of 0.003 to 0.007 percent (higher at the reduced impedances) in the 30- to 70-watt range. As is to be expected, the distortion rose as the clipping level was approached. The R-8's ability to deliver from 110 to 150 watts per channel to almost any load impedance is no mean achievement for a receiver, however. This capability was underscored by our dynamic-power measurements, in which it delivered short-term power outputs ranging from 150 watts to nearly 250 watts.

The amplifier section was stable with reactive simulated-speaker

loads. Its noise levels were low, with readings in the -80- to -84-dB range, relative to a 1-watt output, for the high-level and moving-magnet phono inputs and -75 dB for the moving-coil phono input. Unlike most amplifiers, even the R-8's high-level CD input could be overloaded, but only by an input of at least 4.2 volts. Such an input level is unlikely ever to be provided by any high-level source, and it will certainly never occur if the input is used with a CD player since the CD format dictates a maximum possible output of 2 volts.

The characteristics of the bass, midrange, and treble tone controls were good, with a moderate but completely adequate range. Yamaha's loudness-compensation system, which has been among the best in the field for many years, uses a separate loudness control that adjusts the volume over a limited range (40 dB in the R-8) and has somewhat more exaggerated bass and treble boost characteristics than most other loudness circuits. As a result, it gives a different sound quality than conventional single-control loudness-compensation systems, whose compensation at low volume settings is necessarily more limited in order to produce listenable sound at higher levels. The Yamaha system maintains a pleasing frequency balance in the program down to the lowest audible levels. At very low, background-level settings, the 20-Hz response was boosted by more than 20 dB relative to the 1,000-Hz level, and the highest octave, from 10,000 to 20,000 Hz, was boosted by about 7 dB, yet the sound did not seem particularly unbalanced.

Testing the FM tuner section of the Yamaha R-8 was equivalent to testing two separate tuners since we had to repeat almost all measurements for the DX and LOCAL modes. A number of key parameters were much the same in both modes, however. Although the sensitivity measurements were not particularly outstanding, they were close to the manufacturer's ratings. More important, the tuner's noise level was quite low, better than -80 dB in mono and -75 dB in stereo.

Since the DX mode reduces the i.f. bandwidth and blends the channels

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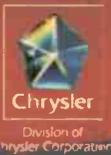
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## LABORATORY MEASUREMENTS

- **FM Tuner Section** (local mode unless specified otherwise)  
**Usable sensitivity** (mono): 16.3 dBf (3.6  $\mu$ V)  
**50-dB quieting sensitivity**: mono, 18 dBf (4.4  $\mu$ V); stereo, 38.7 dBf (47.7  $\mu$ V)  
**Signal-to-noise ratio at 65 dBf**: mono, 81 dB; stereo, 75.5 dB (80 dB at 85 dBf)  
**THD + noise at 65 dBf**: mono, 0.04% (DX mode, 0.52%); stereo, 0.41% (DX, 5.6%)  
**Capture ratio at 65 dBf**: local, 0.8 dB; DX, 1.2 dB  
**AM rejection at 65 dBf**: local, 72 dB; DX, 70 dB  
**Alternate-channel selectivity**: local, 32 dB; DX, 86 dB  
**Adjacent-channel selectivity**: local, 4 dB; DX, 8 dB  
**Stereo threshold**: 28 to 30 dBf (13.8 to 17.4  $\mu$ V)  
**19-kHz leakage**: -46 dB  
**Hum**: less than -85 dB  
**Stereo channel separation**: at 100 Hz, 44.5 dB local, 24.5 dB DX; at 1,000 Hz, 52 dB local, 28 dB DX; at 10,000 Hz, 48 dB local, 4.3 dB DX  
**FM frequency response**: 30 to 15,000 Hz  $\pm$  1 dB local; -6.5 dB at 15,000 Hz (DX)  
**AM frequency response**: -6 dB at 55 and 3,000 Hz
- **Audio Amplifier**  
**1,000-Hz output power at clipping**: 104 watts into 8 ohms; 148 watts into 4 ohms; 148 watts into 2 ohms  
**Clipping headroom** (relative to rated output): 1.08 dB (8 ohms)  
**Dynamic power output**: 156 watts into 8 ohms; 253 watts into 4 ohms; 189 watts into 2 ohms  
**Dynamic headroom**: 2.64 dB (8 ohms)  
**Harmonic distortion** (THD + noise at 1,000 Hz into 8 ohms): 1 watt, 0.019%; 10 watts, 0.0062%; 85 watts, 0.0029%  
**Maximum distortion** (from 20 to 20,000 Hz into 8 ohms): 0.0135% at 85 watts  
**Slew factor**: greater than 25  
**Sensitivity** (1-watt output into 8 ohms): MM phono, 0.28 mV; MC phono, 0.02 mV; CD, 18.5 mV  
**Phono-input overload** (MM): 105 to 275 mV  
**A-weighted noise** (referred to a 1-watt output): MM phono, -80.5 dB; MC phono, -75 dB; CD, -84 dB  
**Phono-input impedance** (MM): 47,000 ohms and 200 picofarads  
**RIAA phono-equalization error**: +0.5, -0 dB from 20 to 20,000 Hz  
**Tone-control range**: +7.5, -8.5 dB at 100 Hz;  $\pm$ 12.5 dB at 1,000 Hz; +10.5, -9.5 dB at 10,000 Hz

at frequencies above a few kilohertz, the channel separation and distortion were degraded considerably in that mode. In exchange, the selectivity was dramatically improved. The stereo distortion in the DX mode was very high—several percent—at signal levels of 65 dBf or more. Our image-rejection readings were also rather disappointing, 37 to 40 dB depending on the mode, but again, they were essentially as rated. Capture ratio and AM rejection were good in either mode.

The Dynamic Noise Canceller reduced hiss by about 7 dB with CCIR/ARM weighting. While this is not far from the 10-dB reduction afforded by the Dolby B system, we rarely found that the DNC produced an audible improvement in FM reception, probably because the FM noise levels were already so low. The Stereo Simulator did spread mono programs across the

front of the room, often with a more dramatic effect than real stereo. The results would hardly satisfy a critical audiophile but might be a worthwhile enhancement for a mono TV program. The circuit introduced deep, 25- to 30-dB response notches at 150 and 4,500 Hz in one channel and at 1,000 Hz in the other channel, with a 90-degree phase shift between the channels at almost all frequencies in the audio range.

### Comments

The Yamaha R-8 is an exceptionally flexible and easily operated receiver. It handles with the smoothness we have come to expect from Yamaha, and it provided no unwelcome surprises. Although the receiver has a formidable complement of controls, it presents a totally unthreatening appearance in its usual operating condition with the panel door closed.

Despite a few undistinguished measurements, the FM tuner section proved to be among the quietest we have used in a receiver. It also had unusually high *subjective* sensitivity, pulling in an exceptionally large number of listenable stereo signals with full quieting. It was interesting to find that this receiver, the only digital-synthesis model we have seen with the ability to correct for synthesizer frequency errors, had the smallest tuning error we have encountered in some time—less than 10 kHz! The fine-tuning system worked very well, however, and in difficult locations it might give the user the ability to detune slightly to one side of a station frequency to reduce interference from a strong adjacent-channel signal.

We also observed that the signal-quality display conveys more information than the mere strength of a signal. Although noisy signals were few and far between when we used the R-8, we noticed unmistakable flickering of the display's highest-level lights on stations that have strong multipath effects at our location, while stations relatively free of multipath distortion presented a stable, nonflickering display. This feature could provide valuable assistance in optimizing FM reception if the receiver is used with a rotatable antenna.

The remote control was a great convenience as well, thanks to its complete control of the receiver and to the legibility of the R-8's display indications, which we could make out even from across the room. Incidentally, we were intrigued to find that the remote's volume adjustment operates mechanically: pressing the up or down volume button on the remote control causes the receiver's volume knob to turn, driven by an internal motor. The motor has a slip clutch that allows the knob to be held or moved by hand even while the remote control is being operated, and it could not be heard under any conditions.

In sum, the Yamaha R-8 is an easy-to-use, handsome, and very practical stereo receiver even if you don't need its video control features. Its performance in all important respects is excellent, and the price is right.

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NAD 1130



NAD 1155

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The **NAD 1130** is the ideal preamp for discriminating audiophiles on a budget. Besides the features listed above, the 1130 includes a high-gain headphone output that provides full-range sound with most headphones.

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The **NAD 3130** integrated amplifier offers similarly fine sound quality with simpler controls than the 3155, and an astonishingly low price. It consists of the 1130 preamplifier plus a 30 W/ch version of the 2155 power amp. Its unexpectedly powerful musicality makes it the "best buy" amplifier today for cost-conscious audiophiles.

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NAD 4130

## AM/FM STEREO TUNERS, RECEIVERS.

In direct comparisons, today's NAD tuners pull in more listenable stations, delivering clearer sound, lower noise, less interference, and better stereo imaging than the competition. This is due in part to NAD's manufacturing budget, which is concentrated on superior circuitry instead of elaborate front panels and displays. Every NAD tuner circuit includes:

- Low-noise dual-gate MOSFET FM tuning, providing excellent sensitivity and freedom from strong-signal overload.
- Three ultra-linear ceramic I.F. filters whose response is carefully tailored for the best combination of selectivity and separation.
- A 50 dB stereo quieting sensitivity of only 32 dBf (22 $\mu$ V), nearly twice as sensitive as other tuners.
- A full 80 dB stereo S/N ratio for strong signals.
- A low capture ratio and high AM rejection to suppress multi-path interference.
- Convenient high-precision digital tuning with 5 FM and 5 AM pre-sets.
- An innovative NAD circuit which removes noise from weak stereo signals without impairing stereo localization.



NAD 7140



NAD 7130

CIRCLE NO. 31 ON READER SERVICE CARD

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NAD 7155

The **NAD 4130** stereo tuner includes all of these features at a budget price, making it an extraordinary value.

The **NAD 4155** tuner features a multi-stage FM tuning circuit with extra filtering to provide increased immunity to interference under adverse reception conditions (near airports, for instance). Its AM section has exceptionally low noise and wide bandwidth, providing better AM sound than you may have thought was possible.

**CONVENIENCE, ECONOMY, AND PERFORMANCE.** Combining an AM/FM stereo tuner with an integrated amplifier on a single chassis saves cost and simplifies installation.

But at NAD it does *not* mean sacrificing sound quality, since NAD receivers contain the same circuitry as NAD's separate tuners and amps. Every NAD receiver contains all of the preamp, power amp, and tuner features listed above.

So whether you opt for the convenience and economy of a receiver or the flexibility of separates, you are assured of superior performance and value.

The **NAD 7155** receiver contains the 3155 integrated amplifier and 4155 tuner, including in one convenient package all of the sensitivity, power (55 W/ch), control flexibility, and transparent sound quality of the separates. The 7155 can be bridged with the 2155 power amp, making it the world's most powerful receiver.

The **NAD 7140**, rated at 40 W/ch, and the **7130**, rated at 30 W/ch, offer similar sound quality with simpler controls and a lower price. The 7130 consists of the 3130 integrated amplifier and 4130 tuner, making it the best performance/price value in stereo today. The 7140 has the same easy-to-use controls as the 7130, and offers one-third more power, bridging capabilities and an AM/FM stereo tuner circuit with enhanced sensitivity and rejection of interference.



NAD 4155



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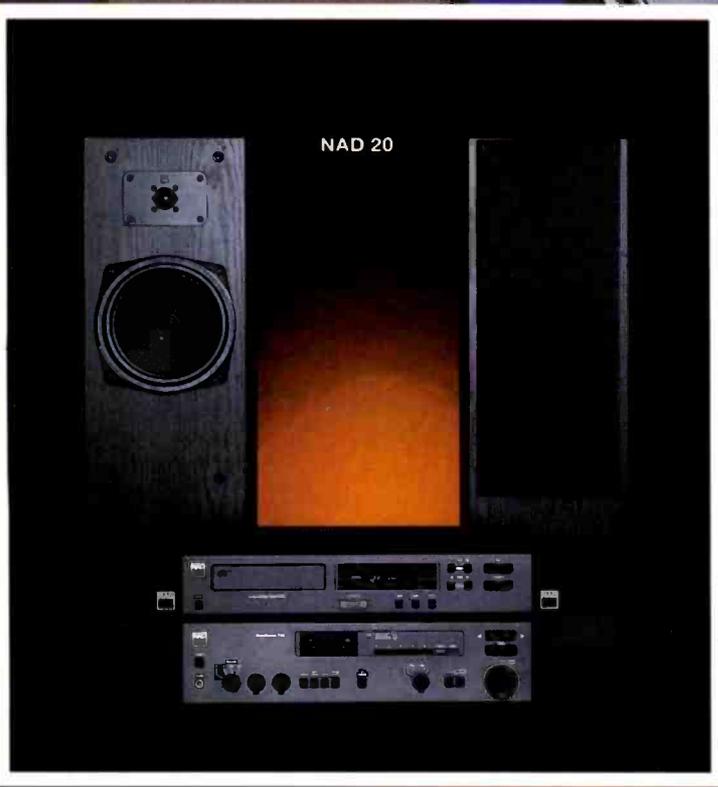
# LOUDSPEAKERS, COMPACT DISC PLAYERS, TAPE DECKS.

NAD takes the same approach to loudspeaker design as to electronics – concentrating the manufacturing budget on the components and circuits that influence sonic performance, while avoiding cosmetic elaboration and frills. In loudspeakers this means combining woofers and tweeters of exceptional quality with a simple crossover network in a cost-effective cabinet. The two-way **NAD 20** and three-way **NAD 30** use these ingredients:

- Slim-profile column design, providing enough internal volume for authoritative bass performance while occupying less than one square foot of floor space.
- 4-ohm impedance to extract maximum dynamic power from NAD amplifiers.
- Precision-made West German drivers with powerful magnets and ultra-low moving mass, yielding a very high ratio of force to mass for quick acceleration and precise control.
- Bass response designed to complement the Bass EQ curve in NAD amplifiers, for a composite response that goes substantially deeper than competing systems.
- Cabinet fully finished on its five visible sides, while the input terminals are on a recessed bottom panel so that no unsightly wires dangle from the back of the speaker.

The digital Compact Disc offers the convenience of an LP record, the small size of an audio cassette, and performance far better than either. Compact Discs have vividly clear sound with powerful bass, crisp highs, and virtually no noise. They don't suffer from resonances, flutter, ticks and pops, or inner-groove distortion, and they don't wear out with repeated play.

NAD's Compact Disc Players are push-button convenient; cueing of selections is automatic, quick and precise.



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NAD 6155

To these advantages, the **NAD 5355** adds three virtues of its own:

- Precise tracking and powerful error-correction circuits to ensure flawless playback of discs that may be dirty, scratched, slightly warped, or defective.
- Wireless infrared remote control for maximum convenience.
- Logical controls that are functional, flexible and much less confusing than those on other CD players.
- Both passive and active output filtering for smooth sound without transient distortion.

*Most of the cost of an NAD tape deck is inside, where you can't see it—in the precision and consistently low flutter of the transport mechanism, in a low-noise playback pre-amplifier and high-headroom recording circuit, premium-quality ICs for precise Dolby Noise Reduction tracking, and superior heads with long life and wide dynamic range.*

The **NAD 6130** is unique: a no-frills budget deck that has the low flutter, high reliability, accurate frequency response, quiet electronics, and

wide dynamic range normally found only in high-priced recorders. The 6130 includes Dolby B-type Noise-Reduction\* (for optimum compatibility with pre-recorded tapes and with car or portable players), plus Dolby C-type NR for maximum quieting.

The **NAD 6155** adds these state-of-the-art features:

- A costly "amorphous" head that is remarkably saturation-free even at recording levels above 0 dB.
- Play Trim, a new circuit developed by NAD and Dolby that restores true brilliance and clarity to recordings that sound dull because of tape saturation or differences in head azimuth and equalization.
- Dolby HX Pro Headroom Extension, which dramatically improves high-frequency headroom by compensating for the over-biasing effect of high frequencies.
- Equalized peak-reading LED meters that correctly register the recorded signal level at all frequencies, making it easier for you to set optimum recording levels.

\*Registered Trademark, Dolby Laboratories.

Industrial design of most NAD equipment:  
REINHOLD WEISS DESIGN/CHICAGO

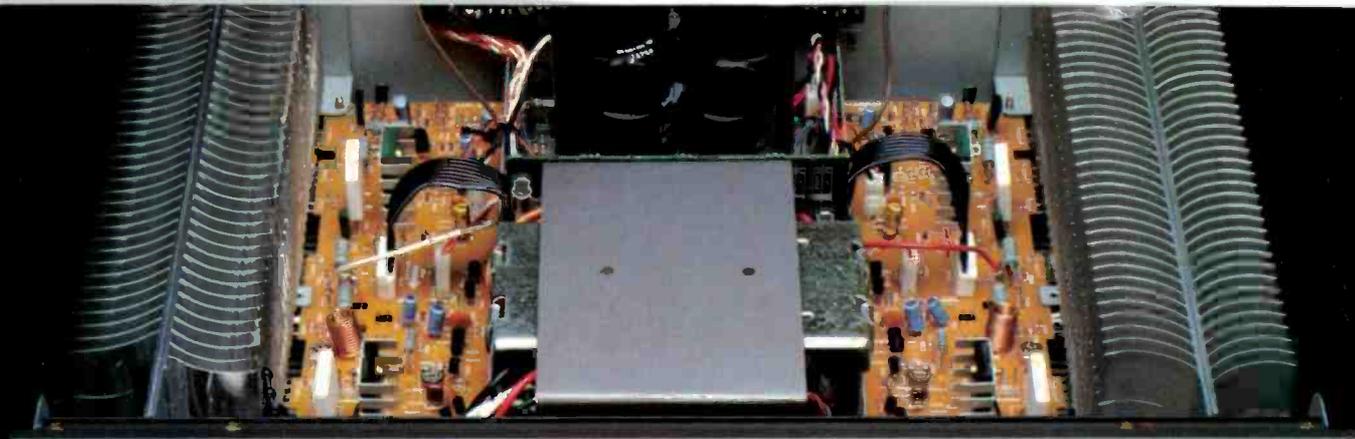


NAD 6130



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Stereo Power Amplifier 2200

UNCLIPPED  
PROTECTION  
BUILT CLIPPED

The **NAD 2200** is one of the most powerful amplifiers on the market today, setting new standards for musically useful dynamic headroom. The 2200 has the same size, weight, heat dissipation, continuous-power rating, and the same price as an ordi-

nary 100 w/ channel stereo amplifier. But when playing music it routinely delivers 400 to 800 watts/channel of dynamic power in stereo, or up to 1600 watts in bridged (mono) mode. The key to the 2200's operation is a "smart" power supply

that automatically adjusts its capacity according to the dynamic variation of the musical signal. For audiophiles who can use and appreciate its capability, the Model 2200 is unquestionably the "best buy" power amplifier ever manufactured.



## AN UNCOMMON COMPANY.

**NAD**

We don't just try to make products with imposing specifications. Our engineers step outside of the laboratory to study actual listening environments and the effects of interaction between components in a complete audio system. No compromises whatsoever are made in the design areas which directly affect performance in real-use conditions. The circuits and features of every NAD component are designed for maximum efficiency and effectiveness, to offer

the best possible sound quality regardless of power rating or price.

NAD's organization is as unconventional as its product philosophy. NAD dealers and distributors from over 30 countries participate in planning sessions at local and international conferences. Working closely with NAD engineers and consultants, they develop the new products and concepts that make NAD components so unique. By eliminating many expenses generally associated with large audio manufacturing companies, NAD has been successful in greatly increasing the value of its products. Unlike most companies that spend over 40% of their product budget on overhead and advertising, NAD spends less than 10% on these elements. The principal portion of the NAD

budget is devoted to research, engineering and manufacturing.

From all over the world, NAD has invited the leading experts in each aspect of audio technology to participate in creating an NAD product. We believe it is this combination of an uncommon company with an uncommon philosophy which results in products that have become "classics" in their own time.

To see and hear any of the products shown in this catalog, and for more detailed literature and specifications on NAD's unique line of home entertainment components, we suggest that you visit your local NAD dealer.

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DAVID KELLEY

## HITACHI DA-501 COMPACT DISC PLAYER

*Julian Hirsch, Hirsch-Houck Laboratories*

**D**ESPITE the disarmingly simple appearance and modest dimensions of Hitachi's DA-501 Compact Disc player, it has a full complement of operating features. Track-search buttons skip back to the beginning of the current track or forward to the next one, and repeating these operations enables a user to access any track in a very short time. The track controls are supplemented by fast-scan buttons that move the laser pickup at high speed in either direction, with the program audible at reduced volume. The fast-scan buttons can also be used to access indexed portions of individual tracks.

The DA-501 can be programmed to play up to fifteen tracks in any sequence. Like most other CD players, it also has a REPEAT button, which can be used to repeat the entire disc or a programmed track sequence. In addition, the DA-501's repeat button can be used to program any segment or phrase for repetition.

When a disc is first loaded, the display window shows the total number of tracks. The SHIFT button

toggles the display between the track total and the total playing time of the disc. During play, the display shows the current track and index number (the latter reads 01 if the record is not indexed), and the SHIFT button switches it to show the elapsed time, in minutes and seconds, of the current track.

The DA-501 is furnished with a wireless remote control that duplicates all the front-panel controls except the power switch and the headphone-volume adjustment. In addition, the remote has a keypad, numbered from 0 to 9, that provides direct access to any numbered track up to 99.

The Hitachi DA-501 weighs 9½ pounds and measures 17¼ inches wide, 10¾ inches deep, and 3¼ inches high. The case and panel are finished in black with clearly legible white and silver markings. Price: \$499. Hitachi Sales Corp. of America, Dept. SR, 401 W. Artesia Blvd., Compton, CA 90220.

### *Lab Tests*

With the audio outputs terminated in 10,000 ohms and 1,000 picofarads, the output level of the

Hitachi DA-501 from the 1,000-Hz, 0-dB level tones on our test discs was 2.17 volts (identical for both channels). The frequency response was flat from 20 to about 1,500 Hz, falling off very slightly from there to 10,000 Hz before rising to nearly its original level from 16,000 to 18,000 Hz. The high-frequency responses of the two channels differed very slightly (a maximum of about 0.3 dB), but the worst-case overall re-

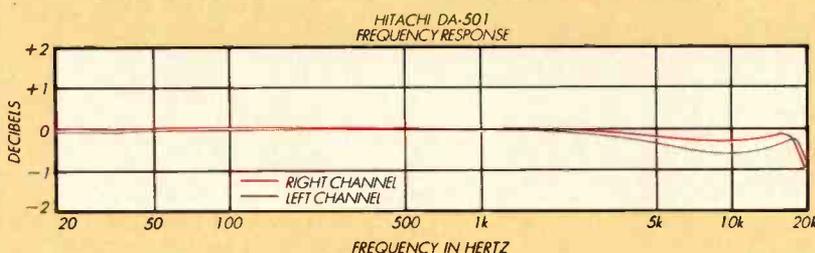
*The laser tracking mechanism of the Hitachi DA-501 responded very rapidly to the track-skip and scan controls. Only 1.5 seconds were required to move from Track 1 to Track 15 of the test disc.*

sponse from 20 to 20,000 Hz was +0, -0.9 dB referred to the 1,000-Hz level.

The pattern of overshoot and ripple on a square-wave test signal indicated that the DA-501 uses analog low-pass filtering in its audio outputs. The phase shift between channels rose from about 4 degrees at 1,000 Hz to 90 degrees at 20,000 Hz, which is characteristic of the 11-microsecond interchannel time dif-

## FEATURES

- Front-loading player with motor-driven disc drawer
- Track selection by successive operations of skip buttons
- Programmed play of up to fifteen tracks in any sequence
- High-speed manual scan with program audible; during play, scan buttons provide access to indexed passages
- Repeat button can replay entire disc, programmed sequence of tracks, or user-defined passage
- Fluorescent display shows track and index number or elapsed playing time of current track
- During operation, symbols in display window show status of pause/play switch
- Front-panel headphone jack with volume-control knob
- Wireless remote control provides direct track access through numbered keypad and duplicates all front-panel control functions except power and headphone volume



## LABORATORY MEASUREMENTS

**Maximum output level:** 2.17 volts  
**Total harmonic distortion at 1,000 Hz:** 0.0032% referred to 0 dB; 0.0075% referred to -20 dB  
**Signal-to-noise ratio (A-weighted):** 96 dB  
**Channel separation:** 88.5 dB at 1,000 Hz; 61 dB at 20,000 Hz  
**Frequency response:** +0, -0.9 dB from 20 to 20,000 Hz

**Cueing time:** 1.5 seconds  
**Cueing accuracy:** A  
**Impact resistance:** sides, C; top, D  
**Defect tracking:** information layer, tracks 900-micrometer defects; surface layer, tracks 600-micrometer black dots; simulated fingerprint, pass

ference that results from multiplexing (switching) a single digital-to-analog (D/A) converter between the channels.

The DA-501 had almost unmeasurable noise and distortion levels, as is typical of normally functioning Compact Disc players. Stereo channel separation was 95 dB at 100 Hz, falling to 72.5 dB at 10,000 Hz and 61 dB at 20,000 Hz. The largest (900-micrometer) calibrated information-layer defects on the Philips TS4A test CD were played without difficulty, but the largest black surface-layer dots (800 micrometers) caused the player to stutter and hang up. The next-largest dots (600 micrometers) and the simulated fingerprint were played without audible difficulty.

The laser tracking mechanism of the Hitachi DA-501 responded very

rapidly to the track-skip and scan controls. Only 1.5 seconds were required to move from Track 1 to Track 15 of the Philips TS4 disc (most players take 4 to 5 seconds). The difficult transition from Track 17 to Track 18, which have no silent interval between them, was executed perfectly, with no clipping of the first syllable of the vocal on Track 18.

The DA-501 proved to be quite sensitive to physical impact. When we tapped the top of the cabinet while a disc was playing, the laser almost always skipped to another part of the disc or play ceased. It was less sensitive to side impact, and a second product sample proved to be slightly less touchy altogether. We were able to give the unit a passing grade in this respect, however, because it functioned per-

fectly in normal use when it was not subject to such impact.

## Comments

In respect to ease of operation, flexibility, and sound quality, the Hitachi DA-501 leaves little to be desired. The design makes effective use of multifunction controls and displays. Especially handy is the assignment of phrase-repeat operation to the REPEAT button instead of the

*In respect to ease of operation, flexibility, and sound quality, the Hitachi DA-501 leaves little to be desired. The design makes effective use of multifunction controls and displays.*

more common practice of using two separate buttons to define the beginning and end of a phrase. The pick-up's slewing speed is exceptional, surpassed by only one other CD player we have tested. The volume with 200-ohm headphones was fairly high, but regular headphone listeners will probably prefer to use more sensitive or lower-impedance phones with the DA-501.

The calibrated disc defects of the Philips TS4A challenged many early CD players, but most current models are relatively immune to such error-tracking problems. Even so, the inability of the DA-501 to correct for the maximum-size defect on one portion of this test disc should not be given undue weight; its error correction is still far superior to that of almost all first-generation CD players.

In our view, this player's weakest point is its sensitivity to tapping by the fingertips. This should not present a problem in most normal installations, however, and any mis-tracking that results from bumping or brushing against the player will not, of course, damage either the player or the disc. In all other respects the DA-501 is a very satisfactory and easy-to-use Compact Disc player.

**Circle 141 on reader service card**

**"Great and important"**

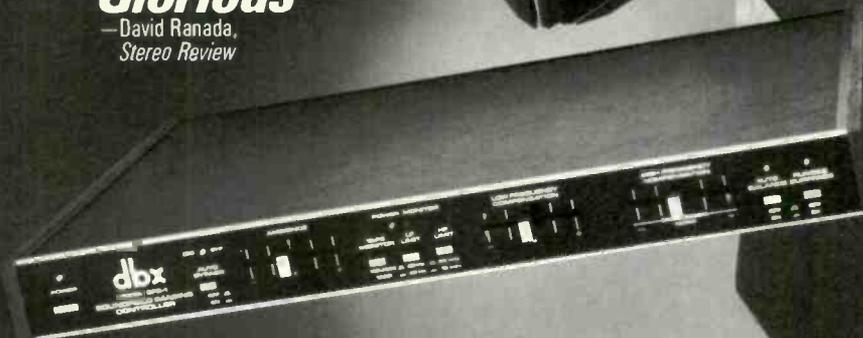
—Julian Hirsch,  
*Stereo Review*

**"Tour de force"**

—Hans Fantel,  
*New York Times*

**"Glorious"**

—David Ranada,  
*Stereo Review*



**"Breakthrough"**

—Peter Mitchell,  
*Boston Phoenix*

ONE revolutionary speaker technology—and the unique musical experience it evokes—has inspired unprecedented critical acclaim.

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stereo image throughout the listening area?" asked Julian Hirsch. "The answer is yes, definitely."

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## ENERGY ESM-3 LOUDSPEAKER SYSTEM

*Julian Hirsch, Hirsch-Houck Laboratories*

**T**HE Energy System Monitor Three (ESM-3) is manufactured in Canada by Energy Loudspeakers of Markham, Ontario. It is a compact and inexpensive two-way system with an 8-inch-diameter woofer, operating in a ported cabinet, that crosses over with 12-dB-per-octave slopes to a Ferrofluid-cooled, 3/4-inch dome tweeter at about 2,000 Hz. Sensitivity is rated as an 86.5-dB sound-pressure level (SPL) at 1 meter with a 1-watt input, and the speakers are recommended for use with amplifiers rated from 12 to 80 watts per channel.

The cabinet, which measures about 20 inches high, 10 inches wide, and 9 inches deep, is finished in walnut-grain vinyl and has a snap-on black grille cloth. Each speaker unit weighs about 20 pounds. The insulated connection clips on the rear accept the stripped

ends of speaker wires. There are no external level adjustments. The speakers are packaged and sold in matched, mirror-image pairs for \$250 per pair. Energy Division of Audio Products International, Dept. SR, 135 Torbay Rd., Markham, Ontario L3R 1G7.

### *Lab Tests*

In our preliminary listening, we had the speakers placed against a wall about 25 inches from the floor. They sounded somewhat bass heavy, with an emphasis in the 100-Hz region, but otherwise quite satisfactory. Placing them on stands of the same height but about 30 inches away from the wall made a considerable improvement in the sound, however, and we made our room-response measurements with that placement. The manufacturer recommends a free-standing installation for best results, although a

bookshelf placement is also said to be satisfactory.

The room response of the ESM-3's, measured with a 0.3-octave warble on a sweeping sine-wave signal, was very smooth and flat from 1,000 to nearly 20,000 Hz. There was a slightly elevated response from 1,000 Hz down to the 70- to 80-Hz range, which is strongly affected by room boundaries, but you would not necessarily get the same results in other rooms.

Close-miked response measurements at the woofer cone and port, corrected for their relative sizes, explained much that we had heard and measured. The maximum bass output occurred at 100 Hz, and the response sloped downward at 6 dB per octave above and below that frequency. The bass response leveled off around 500 Hz and was fairly uniform from there to nearly 2,000 Hz, where it dropped rapidly for the crossover to the tweeter.

The most reasonable splice we could make between the bass curve and the room-response curve produced a composite response curve that varied less than  $\pm 2$  dB from 450 to 18,000 Hz. The bass response rose substantially, however, to about 10 dB above the average middle/high-frequency level, at 100 Hz. While the exact match between the bass and higher-frequency response measurements is certainly open to interpretation, it was clear that the speaker's "true" response (however

*The ESM-3's quasi-anechoic frequency response varied only  $\pm$  dB from 180 to 18,000 Hz, one of the smoothest responses we have encountered from a speaker.*

it might be defined) would have to show a broad, fairly sizable peak in the 80- to 100-Hz range to agree with what we heard.

Quasi-anechoic FFT response measurements made with our IQS signal-analysis system confirmed the room measurements. At a 1-meter distance along the speaker's central axis, the response varied only  $\pm 1.5$  dB from 180 to 18,000

An ordinary ball-point, pencil or phone will do just as well, in fact. But first let's talk about what needs to be fixed.

### A marriage made in hell.

The sad truth of the matter is that your amp and speakers were never made for each other. No matter how hard manufacturers have tried to match them, their differences have remained irreconcilable.

As in all bad marriages, it's a communication problem. They just don't talk to one another. The amp cannot anticipate requirements of the speaker, nor can the speaker tell the amp what it needs. The result is phase and amplitude distortion not measurable in the indi-

*"For my own personal system, it was the answer to problems that I had been trying to solve with a graphic equalizer. The system has never sounded so good!" - Jim Thomas, MIX Magazine*

And your system will produce sound much closer to true "live" sound than you've ever heard from it or any other system before. Which means you'll be able to increase your enjoyment of everything you listen to through your stereo system—your albums, cassettes, videos, television, radio and even your compact discs—all as they

humble or magnificent. Every application is an improvement. In short, it makes any speaker sound better.

The BBE 2002 also has the virtue of being able to fit into any audio system. It measures only 16" x 7½" x 3". And all you need to make it work is to plug it into a regular wall socket, and plug it into your standard tape loop. Then sit back and get comfortable, because from now on, you're going to be using your system a lot more. And enjoying it more.

### What price glory?

\$250.

We believe in the BBE 2002 so strongly that we're

# How an ordinary fountain pen can fix your sound system.

vidual components. So whether you're listening to Mozart or Twisted Sister, something is always lost in the translation.

What your amp and speakers need to live in harmony is something that understands them.

### Not just another black box.

Though the BBE™ 2002 may make some pretty familiar promises, it goes about fulfilling them in a very different way.

Everyone wants their sound as close to "live" as possible. At Barcus Berry Electronics, Inc. we're no different. We consider ourselves very knowledgeable in the area of live sound since we've been making the world's most popular musical instrument transducer microphones for the past 20 years.

But over the past 10 years, we've also been perfecting a brand new technology that will finally let you get as close to true "live" sound as man-made components will allow.

So, ten years and 42 patent claims applied for and granted later, we've come up with something close to a miracle. We call it the BBE 2002.

The BBE 2002 has a "brain" that knows how speakers work. It continually compares the original sound program or signal

were really meant to be heard

But be forewarned. It's an extraordinary sensation at first, because you're hearing your sound system deliver better sound than you've ever heard before. It's the best thing this side of live. It's as if



you always listened to your speakers with old army blankets over them and suddenly took them off. And it'll spoil you for anything less.

### Even engineers and producers need BBE.

The BBE 2002 employs the same circuit utilized in our professional model which is being used in recording studios, radio stations, movie theatres and concert halls throughout the world. This professional model has exceeded the expectations of the most demanding engineers, producers and performers.

What the BBE 2002 represents is the solution to the amp/speaker interface problem. Try as they might with the most advanced acoustic technologies, component manufacturers have never been able to make all their equipment work together efficiently.

And the BBE 2002 works wonders with any system you connect it to, however

giving you

an iron-clad 30-day, your \$250 back, no questions asked, guarantee. And we'll even give you a full year's warranty on all parts and labor.

### The phone is mightier than the pen.

There are several ways you can fix your sound system. You can call us toll free at 1-800-453-5700. In Utah, 1-800-662-2500. We've got those famous operators standing by 7 days a week, 24 hours a day. Or you can fill out our coupon with the

*"I can't imagine working on another album without BBE."*

- Steve Levine, producer of Culture Club, The Beach Boys, and 1984 BPI Producer of the Year.

writing instrument of your choice and order your BBE 2002. Credit cards, money orders, bank checks, certified checks and wire transfers will be processed immediately. Personal checks require 18 days to clear. And, if you're in a particular hurry and order by credit card, you can get your BBE rushed to you via Federal Express for a small additional charge.

You can also write or call us for a free brochure and cassette tape so you can not only read about but hear the BBE 2002.



But that will only delay the inevitable. Sooner or later, you're going to have your own BBE 2002. Be the first on your block. You always have been. Haven't you?

*"Everything we heard from it sounded good, and it had no discernable flaws. Not too many products we test can justify the same conclusion."*

- Julian Hirsch, Stereo Review

with the likely output at the speakers—all the while anticipating the myriad problems caused by the inherent imperfections of the speaker/amp interface.

### A true musical genius.

The BBE 2002 is not only smart, it's fast. It corrects the signal, as needed, more than 50,000 times a second.

The results are dramatic to say the least. Some say they're revolutionary. The highs have greater clarity. There's a remarkable increase in presence. Separation is extraordinary. Harshness is diminished so you'll experience less "ear fatigue."

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SR-2

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Hz, which is unquestionably one of the smoothest responses we have yet encountered from a speaker. The output fell off smoothly above 15,000 Hz to about -6 dB at 23,000 Hz. The response 45 degrees off axis was within about 3 dB of the axial response over almost the full audio range, with little additional divergence from 10,000 to 20,000 Hz. Obviously, the dispersion of the ESM-3 speakers is on a par with

*With a single-cycle burst of a 1,000-Hz sine wave, the ESM-3 did not distort up to a power input of 1,360 watts. At 10,000 Hz, there was no distortion until the amplifier clipped at an astonishing 2,130 watts.*

their response flatness. The phase shift was highly linear with frequency, yielding a group-delay variation of only 0.2 millisecond overall from 1,000 to about 21,000 Hz.

The sensitivity of the ESM-3 was typical of small vented enclosures, with a measured sound-pressure level (SPL) of 88 dB at 1 meter from the grille when the speaker was driven with 2.83 volts of random noise in an octave band centered at 1,000 Hz. The bass distortion was measured separately for the driven cone and the port using a constant drive level of 3.56 volts, which corresponded to a midrange SPL of 90 dB. Since the acoustic crossover between the port and the woofer cone took place at about 60 Hz, we plotted the distortion in their respective frequency ranges, making a smooth transition between them. The result was a reasonable distortion level of 1.5 to 2.5 percent from 60 to 100 Hz, increasing to about 8 percent at 50 Hz.

The speaker's impedance reached its minimum of 4 ohms at 45 and 150 Hz, with a maximum of 15 to 17 ohms at 20 and 77 Hz and 12 ohms at 1,400 Hz. Over much of the audio range the impedance was at least 6 ohms, but the drop to 4 ohms in the bass region calls for a 4-ohm rating. The ESM-3 had excellent

peak power-handling ability. With a single-cycle burst of a 1,000-Hz sine wave, followed by 128 cycles of silence, the acoustic-output waveform of the system did not distort visibly or audibly up to a power input of 1,360 watts (into its 10-ohm impedance at that frequency), at which point the driving amplifier clipped. The tweeter performance at 10,000 Hz was equally good; there was no speaker distortion before the amplifier clipped at an astonishing 2,130 watts (into 6 ohms). Only at 100 Hz did we manage to reach the speaker's limits: with 900 watts into its 4.5-ohm impedance we heard a loud "rapping" sound indicating that the cone or voice coil was reaching the limits of its excursion.

Although this power-handling performance is certainly impressive, it must be noted that the 100- and 1,000-Hz inputs were both handled by the 8-inch-cone woofer. The woofer's limits are set by its maximum possible physical excursion, and they can be reached only at lower frequencies. Moreover, we have found that even small dome tweeters are able to absorb huge power

inputs for a fraction of a millisecond at a time, though a sustained input of even a few watts can burn out their light voice coils.

## Comments

Clearly, the Energy ESM-3 has some unusual properties, notably its smooth midrange and high-frequency response, excellent dispersion and group delay, and exceptional short-term power-handling ability. On the other side of the ledger is the tendency toward bass-heaviness that we noticed on first hearing the speakers. The ESM-3 certainly benefits from pedestal mounting, although its bass output is not unpleasant when the speaker is placed against a wall.

In any event, the price of these speakers probably more than compensates for any shortcomings. You cannot expect speakers costing only \$250 a pair to have the qualities of others priced many times higher. The Energy ESM-3 is definitely an excellent value, although, like any speaker, it should be heard before purchase.

*Circle 142 on reader service card*



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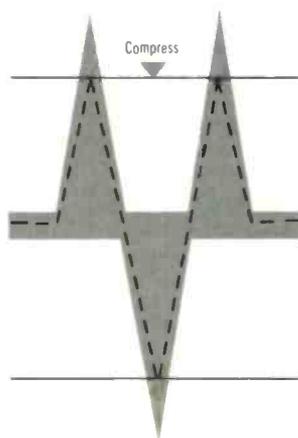
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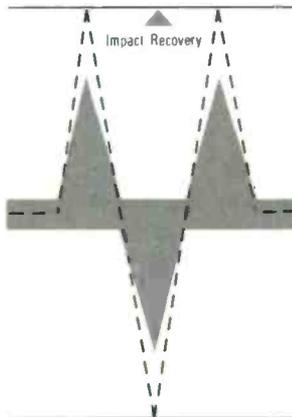
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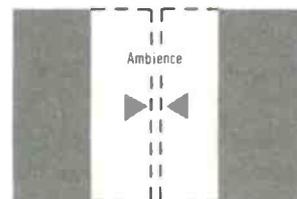
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## THORENS TD 320 TURNTABLE

*Julian Hirsch,  
Hirsch-Houck Laboratories*

**T**HE Thorens TD 320 two-speed turntable has a 6.8-pound cast zinc-alloy platter, with a heavy rubber mat, that is belt-driven by a sixteen-pole synchronous motor. The motor is powered and regulated by electronic circuits that receive power from an external supply, which plugs into a wall outlet. Power supplies are available from Thorens for most of the a.c.-line voltages used around the world, so the TD 320 can be operated almost anywhere without need of internal modification.

The platter and tonearm are rigidly coupled, and the combined system is suspended from the wood base on compliant springs. The base rests directly on its supporting surface, since all the necessary isolation for the turntable is provided by its internal suspension system. The tonearm resembles those used on other Thorens turntables, with a slim, tubular arm wand plugging

into a socket near the pivot system. The Thorens arm design has the installation flexibility of an arm with the usual plug-in headshell, although in this case the entire arm is plugged in, but the effective mass is reduced considerably—it is rated as only 7.5 grams—because the plug, socket, and locking ring are close to the pivots instead of near the cartridge.

The arm is balanced by an adjustable weight, and downward tracking force is provided by a spring. Anti-skating compensation is applied through a frictionless magnetic system that is adjusted on a calibrated scale by a knob emerging from the pivot structure.

The TD 320 is essentially a manually operated record player. Its only automatic feature is end-of-play shut-off and arm lift, triggered by a frictionless optical system below the motorboard. The speed-selector knob switches the frequency of the internal oscillator that controls the motor so as to rotate the platter at either 33 $\frac{1}{3}$  or 45 rpm; there are no user-operated speed adjustments. A button next to the speed knob is pressed to start the motor. A similar knob on the right side of the player operates the arm-lift mechanism, which raises or lowers the pickup under damped control. The knob will not latch in the playing position unless the motor is running.

The Thorens TD 320's base is fin-

ished in mahogany. Its clear plastic dust cover remains open when raised. With the cover down, the turntable measures 17 $\frac{3}{8}$  inches wide, 13 $\frac{3}{4}$  inches deep, and 6 $\frac{3}{4}$  inches high. It weighs 24 pounds. Price: \$500.

### *Lab Tests*

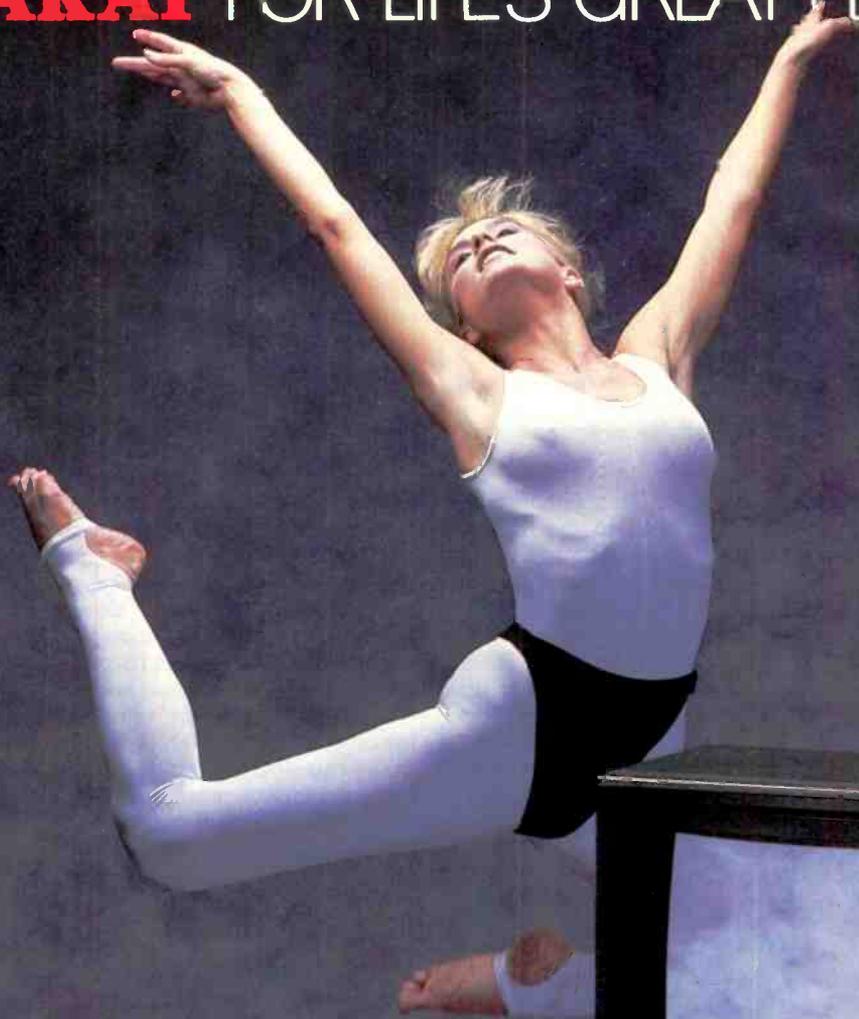
The Thorens TD 320 is designed to be used with cartridges weighing up to 8.5 grams, a requirement that most, but not all, good cartridges meet. An auxiliary counterweight is available for use with heavier cartridges. We installed a 6.6-gram Shure V-15 Type V-MR cartridge

*The plug-in tonearm has the installation flexibility of an arm with the usual plug-in headshell, but the effective mass is reduced considerably.*

for our tests and found it to be perfectly compatible with the Thorens tonearm.

Although the turntable's instruction manual referred to a cartridge-installation fixture, none was provided with our test unit. We installed the cartridge with the aid of a stylus protractor to insure low tracking error. The arm's measured effective mass, without the car-

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tridge, was 7.4 grams, almost exactly as rated. Its resonance with the compliance of the cartridge was in the range of 8 or 9 Hz (it was very broad, and the frequency could not be determined with greater accuracy). As might be expected from the arm's low mass and nearly ideal resonance characteristics, it tracked warped records superbly. There was not even a momentary wow when it traversed a warp that would have thrown a more massive arm completely off the record surface.

The calibration of the tracking-

*The tracking error of the TD 320 was essentially zero over most of the record surface, and the isolation was among the best we have measured on a turntable.*

force dial was exact, within the 0.05-gram resolution of our force gauge. The tracking error was essentially zero over most of the record surface, reaching an insignificant maximum of 0.33 degree per inch at a 6-inch radius. The calibration of the antiskating dial was correct, although the antiskating torque caused the arm to drift outward during cued descent, repeating a few seconds of the record.

The turntable was 0.5 percent slow at both speeds. Rumble was -71 dB with DIN weighting, close to the rated -72 dB, and was -59 dB with ARLL weighting and -39 dB unweighted. Flutter was very low:  $\pm 0.06$  percent DIN-weighted peak, 0.045 percent JIS-weighted rms. The capacitance to ground of the tonearm and signal-cable wiring was 120 picofarads (rated 100 picofarads).

The very compliant arm/platter suspension allowed the system to rock considerably when the base was jarred or shaken, but the arm rarely skipped grooves or gave any audible sign of the large motions it was making until the jarring was extreme. Such behavior indicates very good isolation from vibration conducted from the supporting surface, and this proved to be the case. The major transmission modes

## FEATURES

- Two-speed, belt-drive turntable
- Sixteen-pole synchronous motor
- Electronic drive system powered from external d.c. supply
- Automatic arm-lift and motor shut-off at end of record
- Low-mass tonearm with minimum friction

were at 13 and 25 Hz, with much lower-level responses in the 60- to 80-Hz region. Overall, the isolation of the TD 320 was among the best we have measured on a turntable.

## Comments

Obviously, we found little to criticize in the design and performance of the Thorens TD 320. Rarely, if ever, have we encountered another record player whose measured performance on our test bench was so close to the manufacturer's claims for it. In addition, we found the TD 320 easy to use and pleasingly lack-

ing in fussiness. Those people who hear distinctive turntable "sounds" will have to listen for themselves. The only sonic characteristic we could discern was a truly minimum hum level, since no a.c. voltages enter or come near to the record player.

The overall design of the TD 320 is unusually well coordinated. It does not require any extraordinary precautions in its setup and installation, and it should be capable of delivering its best performance with almost any cartridge that might reasonably be installed in its arm. The Thorens TD 320 may well represent the optimum turntable design in terms of value for the money. It is hardly inexpensive, yet its performance, both measured and subjective, is substantially better than that of lower-priced turntables—and in many cases better than that of much more expensive models. To us, that sounds like an ideal combination of qualities. You can pay more, but can you get more?

**Circle 143 on reader service card**



"... In the box you'll find some black and red wires with shiny ends. Now look on the back of your receiver and you'll see a bunch of holes and funny doo-hickies. Take one of the red wire gadgets and stick the shiny end of it into the thingumajig marked 'A.' Next, stick the other end into the watchamacallit above the thing that looks like a tiny porthole. Then . . ."

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WHERE GREAT ENTERTAINMENT BEGINS.

# RAY CHARLES

BY CHRIS  
ALBERTSON

THE MABEL MERCER AWARD GOES THIS YEAR TO AN ARTIST WHO GAVE NEW MEANING TO "SOUL." BY TAKING A LITTLE OF THE CHURCH ONTO THE DANCE FLOOR AND WORKING HIS PERSONAL MAGIC RAY CHARLES CAME UP WITH "A NEW AND EXCITING HYBRID, A JOYOUS, STOMPY MEETING OF HEAVEN AND HELL."

(DRAWING OF RAY CHARLES © 1985 BY AL HIRSCHFELD, COURTESY OF MARGO FEIDEN GALLERIES.)



HIRSCHFELD

THE country had danced its last Charleston and the Roaring Twenties had retreated into history when Ray Charles opened his eyes in Albany, Georgia, and uttered his first, no doubt soulful cry. The date was September 23, 1930, and the country was stumbling into the Great Depression. The economic decline made little or no difference to a family that already lived in abject poverty. And the family into which Ray Charles was born did.

The life of Ray Charles Robinson (he dropped his last name to avoid being confused with boxer "Sugar" Ray Robinson) is an American success story, a rags-to-riches tale that moves along a familiar show-business path. But it is not so much Charles's climb from the bottom rung of the economic ladder that is so impressive as it is the enormous impact of his artistry on several genres of music. As the mere turn of a TV or radio dial often demonstrates, it doesn't take much today to reap the rewards of fame and fortune. But Ray Charles belongs to that rare breed of artists whose creativity comes from deep within themselves, whose emotions are not fabricated, whose music reflects true joys and sorrows. Louis Armstrong, Edith Piaf, Bessie Smith, Carlos Gardel, and Billie Holiday were such artists, people who touched their audiences with their personal magnetism and the sincerity of their artistic expression. They had what we might call "soul," a term to which Charles gave new

meaning when he emerged on the national music scene in the Fifties.

Blinded by a form of glaucoma at age seven and orphaned eight years later, Charles had a childhood of tragic events and dispiriting circumstances even beyond his being born poor and black in a country where economic status and skin color are often used to measure human worth. But this is also a country where even the most disadvantaged can achieve the stuff that dreams are made of, and if ever there was living proof of that, Ray Charles is it. Credit goes not only to his considerable musical talent but also to his stamina and his enviable, positive attitude towards life. As one writer recently observed, his delivery is so comforting that he makes even bad times sound good.

The memories of the early years—the slow-growing blindness, witnessing his younger brother's accidental drowning, and the loss of his parents, five years apart—certainly must linger on, but, having successfully completed the obstacle course of his childhood, Charles has breezed across that finish line and many others. The suffering that fate inflicted on him in his youth certainly surfaces in his music from time to time, but bitterness—if indeed there is any—is kept under wraps.

"People should never be bitter," Charles told a reporter for London's *Melody Maker*, "because that accomplishes nothing. Instead, they should learn to fight for themselves and go out into the world." That formula has obviously worked for

Charles, whose mother once told him, "You are blind, not stupid. You lost your sight, not your mind."

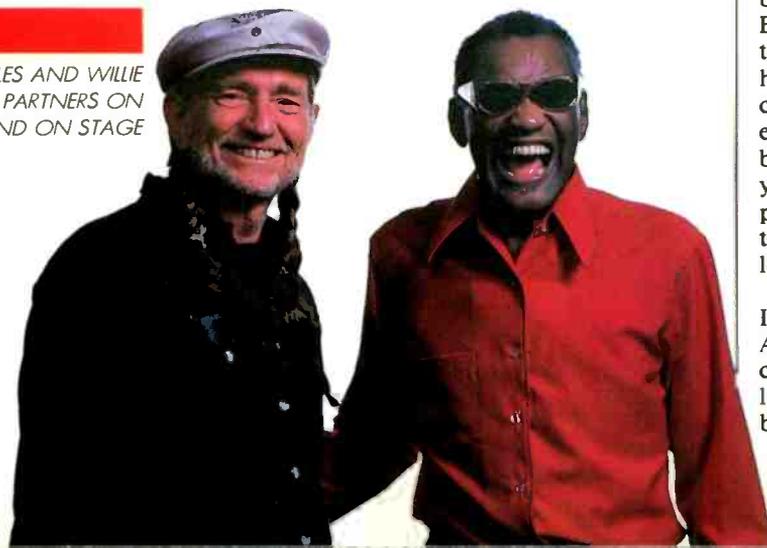
Having a keen ear for music, Charles easily learned to play the piano and saxophone at St. Augustine's School for the Deaf and Blind in Orlando, Florida. He left the school at age fifteen with enough skill on these instruments to land jobs with various dance bands that toured Florida and Georgia. Resourceful and doggedly determined, he even managed to wangle a membership card from the musicians' union by adding a few years to his age and saved up enough money to make a substantial move geographically. He picked Seattle because, as he told Whitney Balliett in a *New Yorker* profile, it was "a nice-sized city the furthest from where I was." Chicago or New York would have been logical stops for a blues-oriented performer seeking a career in music, but those cities scared Charles.

IN Seattle, he formed a group called the Maxim Trio and started to make a name for himself with a style that bore deliberate similarity to those of Nat King Cole and Charles Brown. Cole's trio and Brown's Three Blazers were doing rather well at the time, so emulating them was an easy way to make money. But there was a limit to how long Charles could go on sacrificing his artistic integrity. Soon the real Ray Charles had to emerge.

Recordings made in 1949 show Charles's gospel-tinged, mellow blues style in its formative stages. Even then his voice had the plaintive quality that has since become his trademark, a gentle urgency that can wring the emotions dry. It is easy to understand why Ray Charles began to attract the attention of youthful fans as well as such veteran performers as Lil Armstrong, one-time pianist of Louis Armstrong's legendary Hot Five.

"I think it was at the Apollo, [that I first heard Charles]," said Ms. Armstrong in a 1961 interview. "I can't be sure. I know it was very early, I mean he wasn't known at all, but what a voice! He was singing

CHARLES AND WILLIE NELSON, PARTNERS ON DISCS AND ON STAGE



# RAY CHARLES



DAVID REDFERN/RETNA LTD.

RAY CHARLES COULD HAVE RETIRED LONG AGO BUT CHOOSES TO TOUR NINE MONTHS OF THE YEAR, FLYING FROM ONE DATE TO ANOTHER ON ONE OF HIS TWO PLANES.

some slow blues, and it was like a spiritual I used to hear when I was going to Fisk [University], but it had something else, and it took me a while to figure out what it was. Now I'm not saying that the Fisk Jubilee Singers didn't have soul, but Ray Charles had kind of stirred up the soul a little bit—every word tore you up and made you get goose bumps.”

More and more people were sharing that feeling. Throughout 1949 and well into the following year, Charles recorded for Swingtime, a small Los Angeles-based label, first with the trio, then with small bands that included such jazz players as Teddy Buckner, Jack McVea, Marshall Royal, Oscar Moore, and Stanley Turrentine. During that period he also toured extensively with blues singer/guitarist Lowell Ful-

son, another Swingtime artist, and he was beginning to experiment with an engaging mixture of modern black Pentecostal church music and romping, earthy rhythm-and-blues.

When this combination of sacred and secular sounds eventually came to be known as “soul” music, a new expression was added to the American language. We had soul brothers and sisters with whom we ate soul food and listened to soul jazz on soul labels (the old “race” records in new dress), and many of us even climbed aboard TV's *Soul Train* once a week to watch some soul dancing.

In the early Fifties, Charles caught the ear of the people at Atlantic Records, a jazz label that was also gravitating towards rhythm-and-blues. His eclectic style was perfect

for the label since it seemed to fit in somewhere between the two idioms. For two years Atlantic released Ray Charles recordings without notable success, but then something happened. Suddenly everything that Charles had been cooking up came to a boil.

Late in 1954 Charles called Atlantic and asked Ahmet Ertegun and Jerry Wexler to come and hear his band in Atlanta. “Except for Ray and the band, the place [the Peacock nightclub] was empty,” Wexler recalled four years later, “and as soon as we walked in Ray counted off, and they hit into *I've Got a Woman*, and that was it.” Indeed it was. Before returning to New York, Ertegun and Wexler had recorded *Woman* and three other songs in a borrowed radio studio, and Ray Charles had his first real hit.



RCA RECORDS



CLEO LAINE AND RAY CHARLES (ABOVE) WERE FEATURED IN THE TITLE ROLES OF RCA RECORDS' MID-SEVENTIES RECORDING OF *PORGY AND BESS* AT A TIME WHEN CHARLES WAS OTHERWISE RECORDING FOR ABC-PARAMOUNT AND TOURING EXTENSIVELY WITH HIS ORCHESTRA AND THE RAELETS (RIGHT). IN RECENT YEARS HE HAS BEEN FREQUENTLY SPOTLIGHTED AT FESTIVALS BOTH HERE AND ABROAD (FAR RIGHT).

*I've Got A Woman*, a sixteen-bar tune with unmistakable gospel chord progressions, represented the Ray Charles soul recipe in its most basic form, and it led to a string of hits that caught the imagination of an unusually broad spectrum of music fans. Even more followers came into the fold as Charles expanded the formula to include back-up singers—the Raelets—and strings. Other black artists were on the same track, but they steered toward black audiences. Charles seemed to set course for the whole world, even gaining the respect of the white jazz crowd on campuses at a time when it was “in” to show disdain for commercial success.

**N** AT KING COLE had made a successful cross-over, but as the commercial music world embraced him, his “defection” was considered traitorous by jazz purists. Charles, on the other hand, straddled a number of fences: he impressed jazz fans with his incisive piano and alto-saxophone playing on recordings with Milt Jackson, Kenny Burrell, and Bobby Brookmeyer, he hit the middle of the road with irresistible silken ballads neatly wrapped in prayer cloth, and he whipped youthful fans into frenzies with the infectious rhythms of his good-time soul sounds.

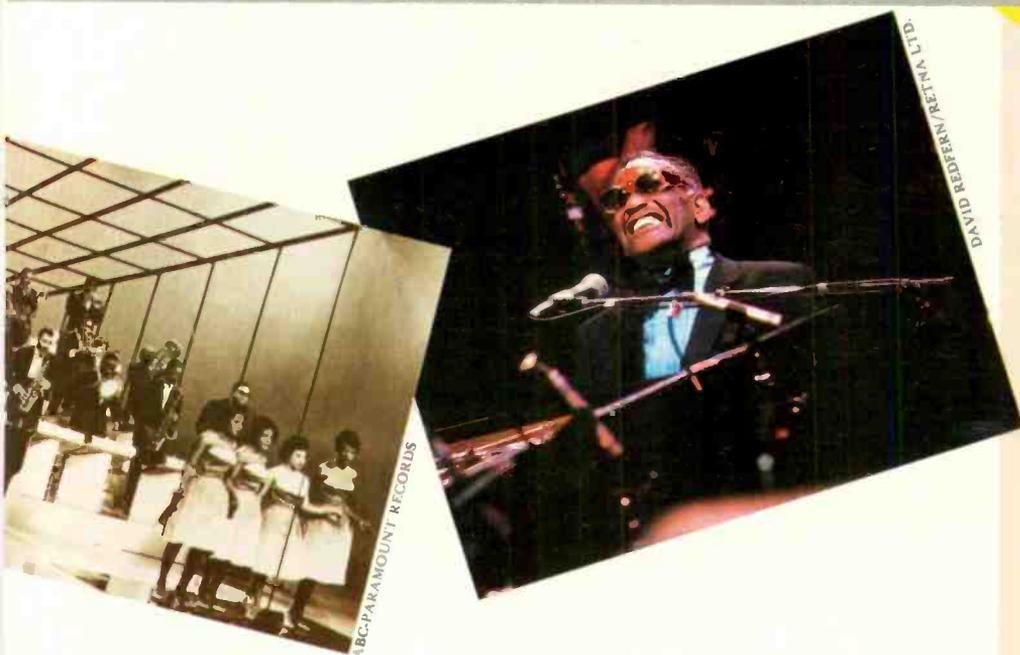
Of course, Charles did not single-

handedly invent soul music, nor was he the first to bring a little of the church onto the dance floor. But when he took the barrel-house and boogie-woogie styles of players like Piano Red (Rufus Perryman) and Cripple Clarence Lofton, threw in some gospel progressions, sprinkled the steamy stew with rhythmic tambourine tinkles, accented it with shouts, and served it with a spicy garnish of back-up vocals, the result was a new and exciting hybrid, a joyous, stompy meeting of heaven and hell.

As Henry Pleasants observed in his book *The Great American Popular Singers* (Simon & Schuster, 1974), Charles “released it [soul singing], as an idiom, from the confines of storefront Holiness and Sanctified churches, introduced it to a wider secular public, both black and white, and prepared the way for the subsequent secular success of many singers reared in gospel, among them Ruth Brown, Sam Cooke, Aretha Franklin, Wilson Pickett, Lou Rawls and Dionne Warwick.” Charles also opened the door for such pianists as Les McCann, Ray Bryant, and Ramsey Lewis, who boogied to the bank with the Ray Charles blend, and he certainly influenced the sound of such popular small bands as the Jazztette, the Jazz Crusaders, and groups led by Cannonball Adderley and Horace Silver in the Sixties.

Charles stayed under contract to Atlantic until 1959. The relationship had been a mutually beneficial one, culminating in the release of an extraordinary single, *What'd I Say?*, and “The Genius of Ray Charles,” a best-selling album that virtually tore the doors to middle-of-the-road success off their hinges. The next move was to accept an offer from the ABC Paramount label, which soon yielded one of Charles’s most memorable ballad performances, *Georgia on My Mind*. But there was more to come, more hits and more pioneering.

In 1962, Charles broke new ground by recording an album of country-and-western songs, including *Born to Lose* and *I Can't Stop Loving You*, in a decidedly black style. Cries of “commercial sell-out” were heard from critics and fans who felt betrayed by the messiah of soul, but Charles emerged with his integrity intact. The album was enormously successful, and it proved, in a most eloquent way, the folly of placing music into strictly defined categories. The idea of a black man singing country songs seemed offbeat at the time, but, quiet as it was kept, there were black cowboys, too. To Charles, it was a perfectly logical blend of idioms. He had enjoyed listening to the Grand Old Opry radio shows in his younger days, and he had even performed country music—and learned to yo-



ABC-PARAMOUNT RECORDS

DAVID REPEREN/RETNA LTD.

del—while working with the Florida Playboys, a white hillbilly group.

“When I heard him sing those country songs, all I could think of was how foolish we are to think that certain songs belong only to certain people,” said Alberta Hunter, who herself was a bit of a musical chameleon. “I mean, he puts so much feeling into them that you can’t help but like them, and the words fit everybody.” The success of Charles’s country soul broadened his audience and helped to weaken racial barriers, clearing a path for such singers as Charley Pride, who has often acknowledged the debt.

There are those who maintain that if Charles were to sing the Salt Lake City Yellow Pages the message would lose none of the urgency with which he imbues his performances. Not so, he says, citing *The Star Spangled Banner*, *Nature Boy*, and *Stardust* as examples of songs he can’t get any feeling for.

When Charles first came along in the mid-Fifties, his organic, no-nonsense sounds offered welcome relief from the bland, predictable pop fare of Eddie Fisher and the Crew Cuts. As the decade ended, even the Platters, the Fleetwoods, and Chubby Checker failed to approach the shattering intensity of *What’d I Say?* By the end of the Sixties, Ray Charles had come to symbolize raw, driving black pop music. We were hearing

wonderful things from Wilson Pickett, Solomon Burke, the Motown gang, and Aretha Franklin, to mention a few, but Charles remained the uncontested king of soul.

**R**AY CHARLES has also experienced setbacks in his adult life, bouts with narcotics among them, but his story continues to be a triumphant one.

Now a wealthy man, he could have retired a long time ago, but the show goes on—Raelets, big band, and all. He tours for nine months out of the year, flying in one of his two airplanes and working out of a Los Angeles building he owns. He also continues to record—now for Columbia, where his most recent release was a Christmas album, his first—and his television appearances in the Eighties have ranged from his own special to a guest shot on the *Knight Rider* series, light-hearted contributions to *Saturday Night Live*, and commercials for Pioneer LaserDisc players.

Firmly established as a class act, Ray Charles still has a youthful as well as an adult following, though mainly middle of the road. The screams of adulation that once regularly greeted his ears now belong to another generation, to Prince, Sting, Bruce Springsteen, and Michael Jackson. But if you ask them who’s the real boss, don’t be surprised if they answer, Ray Charles. □

## RAY CHARLES

### DISCOGRAPHY

Most of Ray Charles’s early albums have been deleted, but many of them have been repackaged and rereleased in recent years. And he continues to make superb new ones. The following are a few of Charles’s currently available recordings we can heartily recommend:

**Ain’t It So.** ATLANTIC SD-19251. “What passionate singing is all about” (February 1980).

**The Best of Ray Charles.** ATLANTIC SD-1543.

**Brother Ray’s at It Again!** ATLANTIC SD-19281. “Exquisite” (February 1981).

**Do I Ever Cross Your Mind.** COLUMBIA FC 38990. “Superb: a fine addition to an already impressive array” (September 1984).

**Friendship.** COLUMBIA FC 39415. “An irresistible record” (Best of the Month, November 1984).

**The Genius of Ray Charles.** ATLANTIC SD-1312.

**The Great Ray Charles.** ATLANTIC SD-1259.

**Ray Charles Live.** ATLANTIC SD2-503 two discs.

**Ray Charles, Volumes One and Two.** ARCHIVE OF FOLK AND JAZZ MUSIC 244E and 292E two discs.

**An Evening with Ray Charles.** OPTICAL PROGRAMMING ASSOCIATES OPA-74-612. Video laser disc recorded by the Canadian Broadcasting Corporation in 1981.



ATLANTIC RECORDS

STEREO



REVIEW'S

# RECORD OF THE YEAR AWARDS

FOR 1986

**T**HE twelve record albums shown to the right are the ones our editors and critics have chosen as the best of 1985 in terms of music, performance, and sound. It's gratifying to see that several of these recordings introduce new artists (Suzanne Vega, Sade, Katrina and the Waves) and that others represent the work of seasoned musicians in unaccustomed roles (Charles Dutoit and Maurizio Pollini as conductors of opera). The music encompassed by these award winners ranges from the stateliness of the Baroque (Handel) to the avant-garde rock of today (Talking Heads).

Again we are recognizing the increasing importance of the Compact Disc by giving a special CD award—this year to a milestone recording of the past that, like many others in 1985, was digitally remastered for re-release in the new configuration.

On the following page we list twenty-five recordings chosen for honorable mention and six award-winning music videos.

Ray Charles, the King of Soul, is this year's recipient of the Mabel Mercer Award for outstanding contributions to the quality of American musical life. Portrayed by Al Hirschfeld on page 55, Charles is the subject of an article by Contributing Editor Chris Albertson.

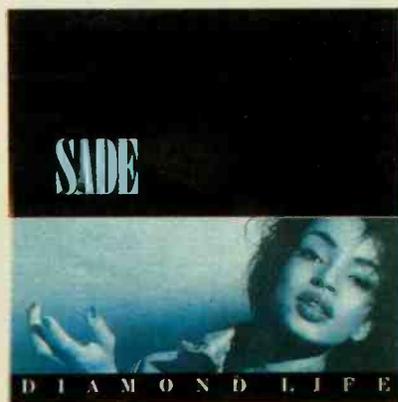
In 1975, *STEREO REVIEW* presented its first lifetime achievement award to the distinguished cabaret singer Mabel Mercer (1900-1984). Subsequent recipients were Jascha Heifetz, Arthur Fiedler, Richard Rodgers, Beverly Sills, Earl Hines, Aaron Copland, Benny Goodman, and Eugene Ormandy. In 1984 the award was renamed for Mabel Mercer when it was presented to Frank Sinatra. Last year's recipient was the violinist Isaac Stern.

—Christie Barter

## SPECIAL CD AWARD



**PUCCHINI: Tosca** (Maria Callas, Giuseppe di Stefano, Tito Gobbi; Chorus and Orchestra of La Scala, Victor de Sabata conducting). ANGEL. A classic from the early Fifties, digitally remastered and issued on Compact Disc.



**S**ADE:

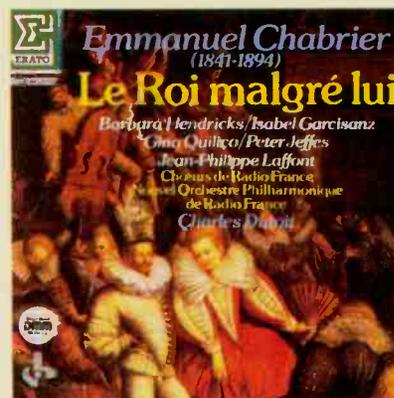
*Diamond Life*. PORTRAIT/CBS. "Sophisticated pop from a woman who's as classy as a Rolls Royce."



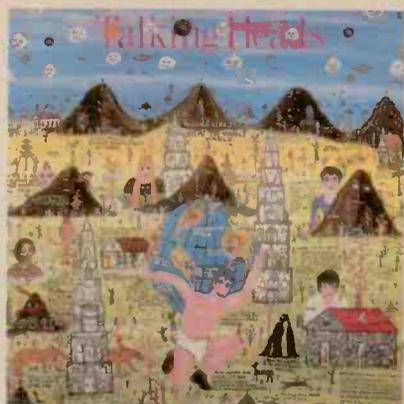
**MOZART**  
SYMPHONY NO. 40 IN G MINOR  
SYMPHONY NO. 41 IN C ("JUPITER")  
JEFFREY TATE  
The English Chamber Orchestra

**M**

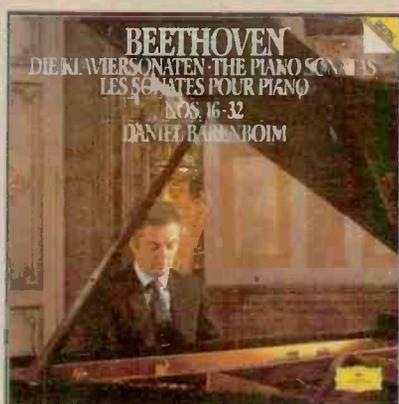
**MOZART:**  
*Symphonies Nos. 40 and 41* (English Chamber Orchestra, Jeffrey Tate conducting). ANGEL. "Fabulous performances of nobility and charm."



**C****HABRIER: Le Roi malgré lui** (Barbara Hendricks, Gino Quilico; New Philharmonic Orchestra of Radio France, Charles Dutoit conducting). ERATO/RCA. "Sung and played with uncommon feeling."



**TALKING HEADS:**  
*Little Creatures.*  
SIRE/WARNER BROS. "Quirky, hyperactive, avant-garde rock."



**BEEHOVEN:**  
*Piano Sonatas (complete)*  
(Daniel Barenboim). DEUTSCHE GRAMMOPHON. "Offers a lifetime of pleasure, intellectual stimulation and spiritual nourishment."

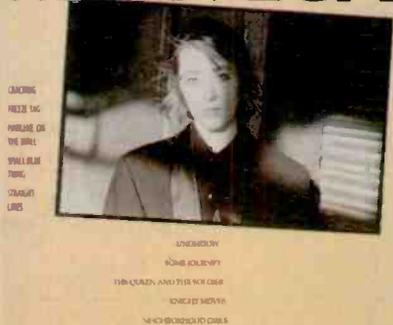


**KATRINA AND THE WAVES.**  
*Prototypical Garage-Band Rock*  
CAPITOL. "Prototypical garage-band rock in a medley of styles from Motown to Mersey to Tex-Mex."



**MISHIMA**  
(Philip Glass)  
(Kronos Quartet; orchestra, Michael Riesman conducting). NONESUCH. Original-soundtrack recording.

## SUZANNE VEGA



**SUZANNE VEGA.**  
A&M. "A spectacular debut by a younger, cooler Joni Mitchell for the Eighties."



**ARETHA FRANKLIN:**  
*Who's Zoomin' Who?*  
ARISTA. "Brings Franklin's artistry into the present; full of great moments."



**HANDEL:** *Messiah*  
(Margaret Price, Hanna Schwarz, Stuart Burrows, Simon Estes; Bavarian Radio Chorus and Orchestra, Sir Colin Davis conducting). PHILIPS. "Lyric, tonally rich, and gripping."



**ROSSINI:** *La donna del lago*  
(Katia Ricciarelli, Lucia Valentini Terrani, Dano Raffanti, Samuel Ramey; Chamber Orchestra of Europe, Maurizio Pollini conducting). CBS. "A recording that emanates a feeling of musical joy."



**BARTÓK:** *The Miraculous Mandarin; Music for Strings, Percussion and Celesta*  
(Detroit Symphony Orchestra, Antal Dorati conducting). LONDON. "Possibly the most stunning recording of an orchestra ever."

# HONORABLE MENTIONS



**BACH:** *Keyboard Partitas* (András Schiff). LONDON.

**BERNSTEIN:** *West Side Story* (Kiri Te Kanawa, Marilyn Horne, José Carreras, Tatiana Troyanos, others; Leonard Bernstein cond.). DEUTSCHE GRAMMOPHON.

**PHIL COLLINS:** *No Jacket Required*. ATLANTIC.

**MARSHALL CRENSHAW:** *Downtown*. WARNER BROS.

**DVOŘÁK:** *Symphony No. 9* (Berlin Philharmonic, Klaus Tennstedt cond.). ANGEL.

**BOB DYLAN:** *Empire Burlesque*. COLUMBIA.

**ELGAR:** *Violin Concerto* (Nigel Kennedy; London Philharmonic, Vernon Handley cond.). ANGEL.

**FAURÉ:** *Requiem; Cantique de Jean Racine* (Ashton, Varcoe, Cambridge Singers; City of London Sinfonia, John Rutter cond.). COLLEGIUM.

**FRANKIE GOES TO HOLLYWOOD:** *Welcome to the Pleasure Dome*. ISLAND.

**HANDEL:** *Ballet Music* (English Baroque Soloists, John Eliot Gardiner cond.). ERATO/RCA.

**EMMYLOU HARRIS:** *The Ballad of Sally Rose*. WARNER BROS.

**WHITNEY HOUSTON.** ARISTA.

**LOS LOBOS:** *How Will the Wolf Survive?* SLASH/WARNER BROS.

**REBA McENTIRE:** *Have I Got a Deal for You*. MCA.

**MOZART:** *Divertimento in E-Flat Major, K. 563* (Gidon Kremer, Kim Kashkashian, Yo-Yo Ma). CBS.

**MOZART:** *The Magic Flute* (Price, Serra, Schreier, Moll, others; Rundfunkchor Leipzig; Staatskapelle Dresden, Sir Colin Davis cond.). PHILIPS.

**MUSSORGSKY:** *Boris Godounov* (Alexander Vedernikov, others; USSR TV and Radio Large Orchestra and Chorus, Vladimir Fedoseyev cond.). PHILIPS.

**RAVEL:** *The Complete Songs* (Lott, Mesplé, Norman, Berganza, Van Dam,

Bacquier; Dalton Baldwin; Orchestre du Capitole de Toulouse, Michel Plasson cond.). ANGEL.

**R.E.M.:** *Fables of the Reconstruction/Reconstruction of the Fables*. I.R.S.

**SCHOENBERG:** *Die Jakobsleiter* (Mesplé, Wenkel, Bowen, Partridge, others; BBC Singers; BBC Symphony Orchestra, Pierre Boulez cond.). CBS.

**SHOSTAKOVICH:** *Piano Concerto No. 1; Chamber Symphony in C Minor* (Dmitri Shostakovich, James Thompson; I Musici de Montréal, Maxim Shostakovich and Yuli Turovsky cond.). CHANDOS.

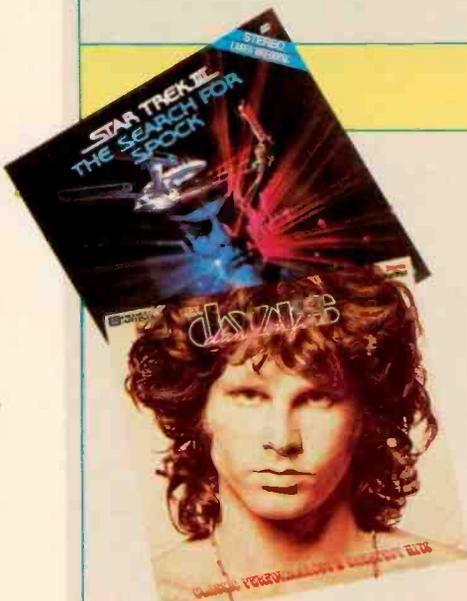
**STING:** *The Dream of the Blue Turtles*. A&M.

**THE STYLE COUNCIL:** *Internationalists*. GEFLEN.

**TEARS FOR FEARS:** *Songs from the Big Chair*. MERCURY.

**VIVALDI:** *The Four Seasons* (John Holloway; Taverner Players, Andrew Parrott cond.). DENON.

# VIDEO AWARDS

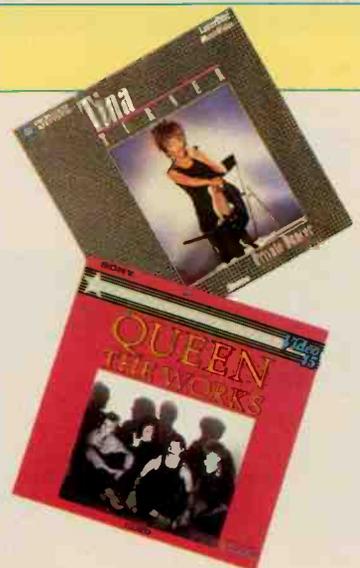


**THE DOORS:** *Dance on Fire*. MCA and PIONEER ARTISTS. "One of the slickest archival rock packages yet."

**STAR TREK III:** *THE SEARCH FOR SPOCK*. PARAMOUNT. "The whole thing is space opera at its most rousing."

**BIZET:** *Carmen* (Julia Migenes-Johnson, Placido Domingo; Lorin Maazel cond.). RCA/COLUMBIA. "Migenes-Johnson is a wild, sexy, kittenish Carmen who ultimately turns tiger."

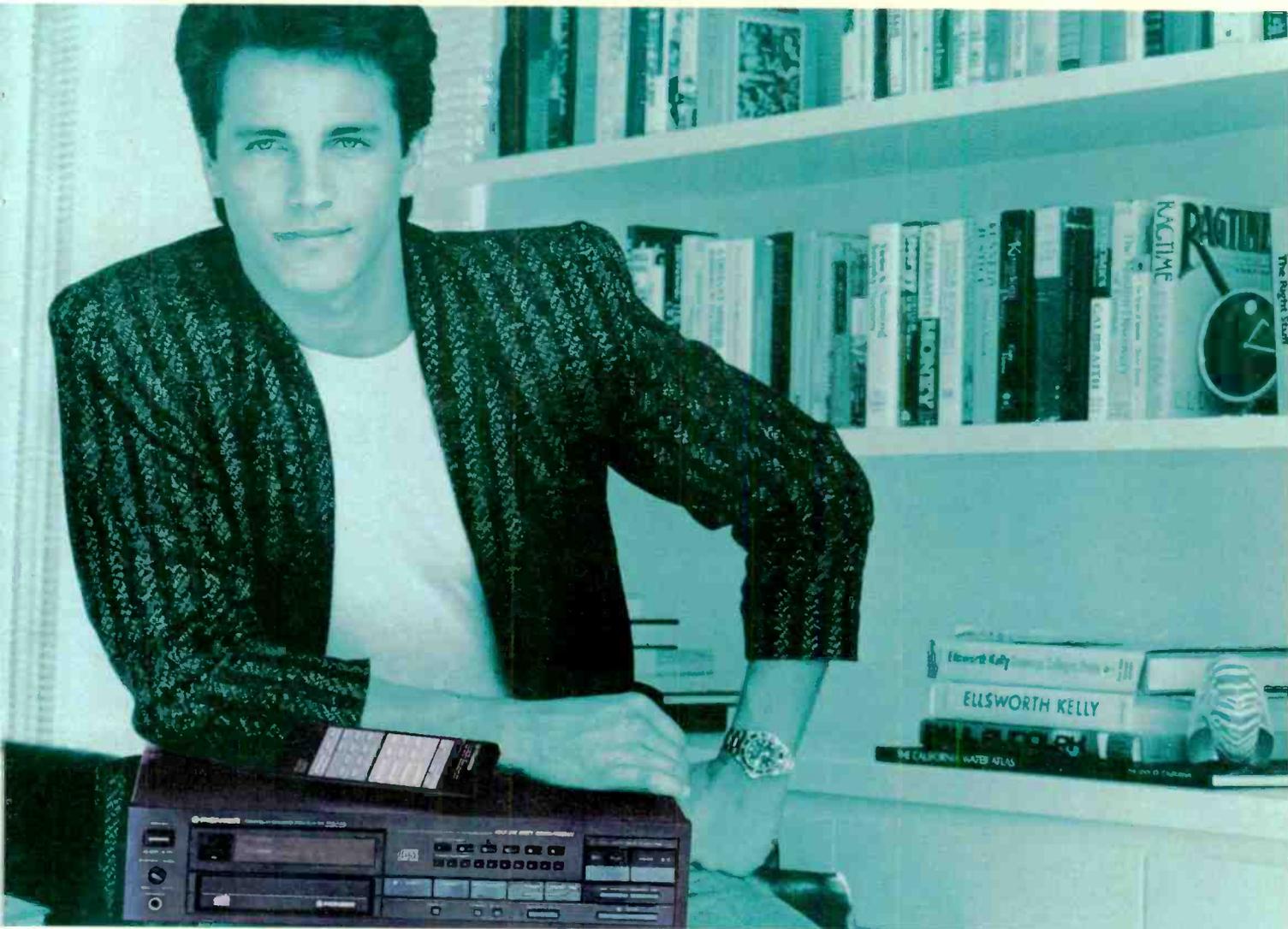
**HANDEL:** *Messiah* (Judith Nelson, Emma Kirkby, Carolyn Watkinson, Paul Elliott, David Thomas; Christopher Hogwood cond.). THORN/EMI. "A splendid performance."



**TINA TURNER:** *Private Dancer*. SONY and PIONEER ARTISTS. "One of the truly great performers."

**QUEEN:** *The Works*. SONY. "A real audio-visual wallow."

A CD PLAYER THAT'LL PLAY SIX DISCS?  
I SAID I'D TAKE IT BEFORE THE SALESMAN  
EVEN OPENED HIS MOUTH.



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Imagine a car audio system that could deliver music as rich and full as the live concert you just attended. Music that surrounds you with solid basses, crystal clear highs and subtle overtones. A high fidelity audio system that delivers concert hall realism to you and all your passengers.

Ford and JBL have taken this music lover's dream and turned it into a reality. They have combined their efforts and resources to develop a remarkable high fidelity audio system exclusively for Lincoln Continental —

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JBL, the recognized leader in professional loudspeaker design, has been delivering breathtaking sound in concert halls, theaters and movie houses for over forty years. In fact, today, over 70% of the world's top recording studios use JBL loudspeakers.

Ford expertise in electronics and audio engineering speaks for itself with over 50 years of audio design. In addition, Ford maintains one of the most technically advanced audio



# new Ford JBL Audio System.

The 1986 Lincoln Continental is shown at the Los Angeles Music Center, both equipped with JBL loudspeakers

development and test facilities in the world.

Together, they have provided for Lincoln Continental, the Ford JBL audio system which features:

- 12 speakers strategically located throughout the car that have been adjusted and equalized to the surrounding acoustics.
- 140 watts of total system power\* that has been designed with extremely low distortion for comfortable listening even at high volume for long periods of time.

\*Supplied by 4 amplifiers, each 35 watts per channel into 4 ohms at 1 KHz with less than .07% total harmonic distortion.

- Advanced audio features including full electronic tuning, Automatic Music Search, Dolby® B and DNR® noise reduction systems and automatic tape equalization.

Dolby is a registered trademark of Dolby Laboratories Licensing Corporation.

DNR is a registered trademark of National Semiconductor Corporation.

- Plus a low frequency control computer for continuous loudness compensation and reduced distortion.

All in all, an amazing audio system. But it's still almost impossible to imagine how good it really sounds until you hear it for yourself.



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Hear the difference? The clarity? The transparency? Nakamichi electronics *sound* better because they're *designed* better. Unlike ordinary power amplifiers that rely on "feedback" to lower distortion, the PA-7 STASIS circuit generates negligible distortion *without* using global feedback. The ST-7's Schotz NR system helps it reach out farther and pull in distant stations cleanly and quietly.

And, by eliminating unnecessary circuitry and controls, the CA-5 ensures you the ultimate in sonic purity.

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# 1986 EQUIPMENT BUYING GUIDE

BY WILLIAM BURTON WITH RICHARD KRUEGER AND WENDY SCHAUB

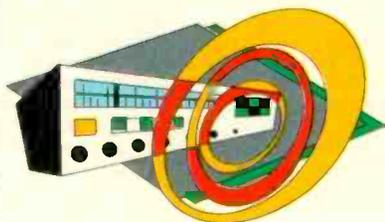
**F**OR the first time *STEREO REVIEW* is presenting a comprehensive guide to equipment in the pages of the magazine. Our focus here is on major audio components for the home, and we hope this new service will be useful to our readers in providing background material for study before you actually go shopping.

All of this information was supplied to us by the various manufacturers. While every effort was made to assure that suggested retail prices listed here were correct as of press time, the fluctuating value of the dollar and other economic factors cause frequent changes, and dealers are free to sell a component at whatever price they wish.

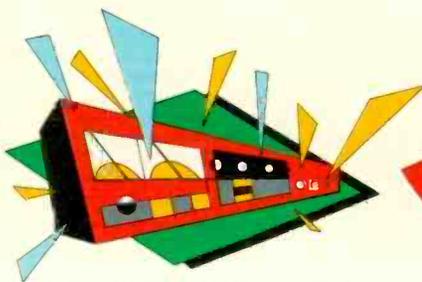
This is a selective guide. In choosing the products to include we concentrated on units we thought would be of interest to readers of this magazine. We also considered each company's distribution and the availability of its products to significant numbers of you across the country. The fact that a product is not included should not be interpreted as a reflection on its quality.

Future issues of *STEREO REVIEW* will contain specialized guides to certain products not included here, such as signal processors, headphones, portable stereo, and accessories. Look for a guide to blank tape next month.

A directory of the manufacturers and their addresses is on page 166.



Receivers, page 68



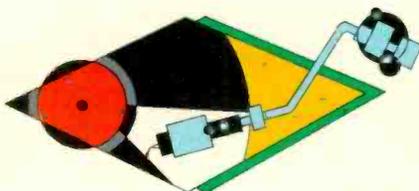
Amplifiers, page 79



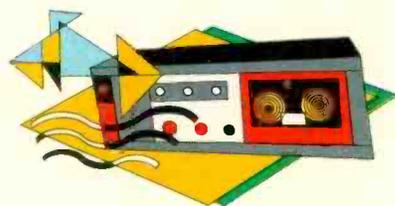
Tuners, page 99



Turntables, page 106



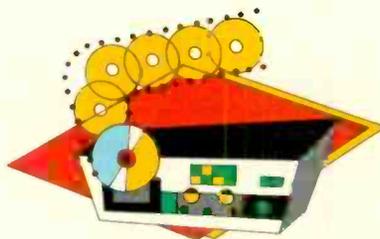
Cartridges & Tonearms, page 113



Cassette Decks, page 123

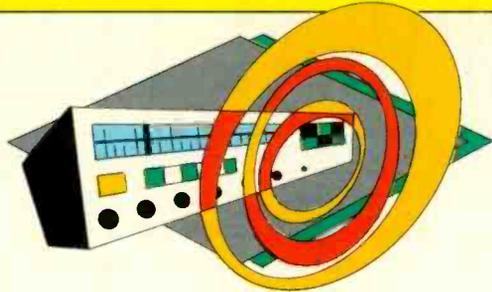


Speakers, page 133



Compact Disc Players, page 155

# RECEIVERS



## ADS

### Atelier R1 35-Watt Receiver

Stereo receiver with 5 AM/FM station presets, manual flywheel tuning and amplifier clipping indicators. Features connections for 2 tape decks and 2 sets of speakers; LED digital display. FM usable sens mono 1.0  $\mu$ V (11.2 dBf); 50-dB quieting sens mono 1.8  $\mu$ V (16.5 dBf), stereo 21  $\mu$ V (37.7 dBf); THD mono <0.15%, stereo <0.25%; S/N mono >70 dB, stereo >67 dB; ch sep >40 dB at 1,000 Hz; capture ratio 1.8 dB; FR 15-14,000 Hz  $\pm$  0.5, -1 dB. Amp section: 35 W/ch continuous average power output into 8 ohms from 20-20,000 Hz with 0.1% THD; 40 W/ch into 4 ohm load FR tape, 10-75,000 Hz  $\pm$  0, -1.5 dB, phono conforms to RIAA EQ  $\pm$  0.5 dB from 40-20,000 Hz; input sens tape 50 mV into 200k ohms, phono 400  $\mu$ V at 1,000 Hz into 47k ohms; S/N tape >83 dB, phono >73 dB; 17.52" W x 2.76" H x 14.84" D; 17.4 lbs ..... \$500

## AKAI

### AA-V401 Stereo Receiver

Computer-controlled AM/FM-stereo receiver with direct access volume control and comprehensive fluorescent display. Inputs for MM phono, MC phono, tape, aux, CD player, video sound source. Amp section: 80 continuous average W/ch from 20-20,000 Hz with no more than 0.05% THD into 8 ohms; FR 5-70,000 Hz  $\pm$  0.5 dB. FM section: alternate-ch sel 60 dB; 50-dB quieting sens mono (16.2 dBf), stereo (37.2 dBf); max S/N, A-wtd, mono 75 dB, stereo 65 dB; THD mono 0.1%, stereo 0.3%; sep 45 dB at 1,000 Hz; capture ratio 1.5 dB. AM section: sens 300  $\mu$ V. 17.3" W x 4.3" H x 13.6" D; 21.8 lbs ..... \$400

### AA-V301 Stereo Receiver

Computer-controlled AM/FM-stereo receiver with direct access volume control and comprehensive fluorescent display. Inputs for MM phono, tape, aux, CD player, video sound source. Amp section: 60 continuous average W/ch from 20-20,000 Hz with no more than 0.05% THD into 8 ohms; FR 5-70,000 Hz  $\pm$  0.5 dB. FM section: alternate-ch sel 60 dB; 50-dB quieting sens mono 16.2 dBf, stereo 37.2 dBf; max S/N, A-wtd, mono 75 dB, stereo 65 dB; THD mono 0.1%, stereo 0.3%; sep 45 dB at 1,000 Hz; capture ratio 1.5 dB. AM section: sens 300  $\mu$ V. 17.3" W x 4.3" H x 13.6" D; 18.5 lbs ..... \$330

### AA-V201 Stereo Receiver

Computer-controlled AM/FM-stereo receiver with direct access volume and comprehensive fluorescent display. Inputs for MM phono, tape, aux, CD player, video sound source. Amp section: 40 continuous average W/ch from 20-20,000 Hz with no more than 0.1% THD into 8 ohms; FR 5-60,000 Hz  $\pm$  0.5 dB. FM section: alternate-ch sel 60 dB; 50-dB quieting sens mono 16.2 dBf, stereo 37.2 dBf; max S/N, A-wtd, mono 75 dB, stereo 65 dB; THD mono 0.1%, stereo 0.3%; sep 45 dB at 1,000 Hz; capture ratio

1.5 dB. AM section: sens 300  $\mu$ V. 17.3" W x 3.1" H x 12.5" D; 13.6 lbs ..... \$230

### AA-A1 Audio/Video Stereo Receiver

Inputs for MM phono, tape, aux, CD player, video sound source. Amp section: 35 continuous average W/ch from 20-20,000 Hz with no more than 0.3% THD into 8 ohms; FR 10-40,000 Hz  $\pm$  0.5 dB. FM section: alternate-ch sel 60 dB; 50-dB quieting sens mono 19.2 dBf, stereo 40.2 dBf; max S/N, A-wtd, mono 70 dB, stereo 62 dB; THD mono 0.2%, stereo 0.4%; sep 42 dB at 1,000 Hz; capture ratio 2.0 dB. AM section: sens 300  $\mu$ V. 17.3" W x 3.1" H x 10.4" D; 10.6 lbs ..... \$170

## BANG & OLUFSEN

### Beomaster 8000 FM-Stereo Receiver

Remote-controlled FM-stereo receiver with 9 FM station presets. Remote station selection, phono, tape 1, tape 2, tape dub to Beocord 8004 stereo cassette deck, volume control, active filters, bass, treble, loudness controls. Features adjustable tape 1, tape 2, phono levels; tape/line-monitoring facilities for 3-head decks. Output power 150 W RMS into 4 ohms with 2 dB headroom, 100 W RMS into 8 ohms with 1 dB headroom at 0.05% THD and 0.1% IMD; amp S/N >75 dB phono; ch sep >55 dB; FM stereo usable sens 15 dBf (1.5  $\mu$ V) into 75 ohms; FM S/N >76/>72 dB mono/stereo at 65 dBf; sep >40 dB, 100-10,000 Hz ..... \$1,599

### Beomaster 5000 Stereo Receiver

AM/FM receiver designed for multi-speaker installations. When used with Master Control Links and remote speakers, it can provide music throughout a home by remote control. Features auto volume adjustment to protect against overload; frequency-synthesized tuner; auto and manual tuning; 9 presets; Auto Station Lock. Amp section: output power 55 W/ch into 8 ohms from 20-20,000 Hz; HD <0.02% DIN/IEC; THD <0.09% IHF; dynamic headroom 1 dB into 8 ohms, 2 dB into 4 ohms; IMD <0.15% IHF; FR 20-20,000 Hz  $\pm$  1.5 dB phono and tape; S/N >74 dB phono A-wtd. FM section: usable sens 17 dBf (2  $\mu$ V) 75 ohms stereo; 50-dB quieting sens 42 dBf (35  $\mu$ V) 75 ohms stereo; FR 20-15,000 Hz  $\pm$  1.5 dB; distortion at 65 dBf 0.35% stereo; capture ratio 1.8 dB. 16 $\frac{1}{2}$ " x 3" x 13"; 18 lb 11 oz ..... \$1,399

### Beomaster 6000 FM Receiver

Low-profile FM-stereo receiver with full-feature remote control. Features 7 buttons for 1-touch selection of volume, up and down volume scan buttons, hidden slide preset volume control; illuminated scale that displays volume settings; digital display FM-stereo tuner with auto, manual, mono tuning modes; slide balance, bass, treble controls; FM tuning display doubles as clock display; loudness switch. Output power 75 W/ch into 8 ohms, 20-20,000 Hz at <0.08% THD; dynamic headroom 0.7 dB; IMD <0.05%; FR 20-20,000 Hz  $\pm$  1.5 dB; damping factor >60; input sens/imp 0.22 mV/47k ohms

phono, 22 mV/200k ohms tape, 500 mV/15-475 kohms line; S/N A-weighted >75 dB phono, >78 dB tape; sep >50 dB; output level/imp 530/1 kohms tape, 500 mV/1 kohms line, 14 V/200 ohms headphones. FM section: mono/stereo usable sens <15 dBf (1.5  $\mu$ V); S/N mono/stereo >75/>72 dB at 65 dBf; sep >40 dB, 100-10,000 Hz; FR 20-15,000 Hz  $\pm$  1 dB; distortion mono/stereo <0.2%/<0.18%; capture ratio 1.8; adjacent/alternate-ch sel >6/>65 dB; spurious/image/i-f response ratio >110/>86/>120 dB; AM suppression/subcarrier rejection >63/>72 dB; 20 $\frac{3}{8}$ " W x 15" D x 6" H; 32 lb ..... \$899

### Beomaster 3000 Receiver

Remote-control LED receiver that functions as center of Beosystem 3000, with microcomputer to control other components via master control link. Features touch-sensitive controls; electronic volume control; volume memory; mute; 5 presets for FM; random tuning; tape 1/tape 2 selector. Continuous power 25 W/ch into 8 ohms; IHF THD 0.1% 20-20,000 Hz; IHF IMD 0.1%; FR phono 10-20,000 Hz  $\pm$  1.5 dB, tape 20-20,000 Hz  $\pm$  1.5 dB; input sens/imp, phono 0.35 mV/150 kohms, tape 40 mV/150 kohms; overload level, phono 50 mV, tape 3 V; S/N phono 80 dB A-wtd; sep 40 dB; output tape 500 mV/1 kohm, headphones max 12 V/220 ohms; bass control at 40 Hz  $\pm$  10 dB; treble control at 12,500 Hz  $\pm$  10 dB; FM tuner section range 87.5-108 MHz; FM antenna imp 75 and 240 ohms; usable sens mono 15 dBf (1.5  $\mu$ V) 75 ohms; usable sens stereo 21 dBf (3  $\mu$ V) 75 ohms; S/N mono 74 dB, stereo 70 dB; FM FR 20-20,000 Hz  $\pm$  1.7 dB; distortion (65 dBf) mono 0.3%, (65 dBf) stereo 0.35%; IMD mono 0.05%, stereo 0.25%; capture ratio 1.7 dB; adjacent ch sel 5 dB; alternate ch sel 60 dB; spurious response 84 dB; image response ratio 64 dB; IF response ratio 11 dB; AM suppression 55 dB; sep 40 dB; 24 $\frac{3}{8}$ " W x 2 $\frac{3}{4}$ " x 9 $\frac{1}{8}$ " ..... \$599

## CARVER

### 2000 200-Watt Receiver

Stereo receiver incorporating magnetic field amp, sonic holography and special FM NR. Features AM stereo; MC cartridge preamp; remote control. Inputs for MM phono, MC phono, tape, aux, extra aux, CD player, video sound source. Amp section: 200 continuous average W/ch from 20-20,000 Hz with no more than 0.15% THD into 8 ohms; dynamic headroom 0.2 dB; IHF IMD 0.05%; FR 20-20,000 Hz  $\pm$  0 dB. FM section: alternate-ch sel 58 dB; adjacent-ch sel 40 dB; 50-dB quieting sens mono 3.1  $\mu$ V, stereo 5  $\mu$ V; max S/N, A-wtd, stereo 82 dB; THD mono 0.15%, stereo 0.2%; sep 40 dB at 1,000 Hz; capture ratio 1.0 dB. AM section: sens 250  $\mu$ V ..... \$1,499

### The Receiver

AM/FM-stereo receiver designed for noise-free stereo FM and adequate power for CDs. Features PLL fully digital-synthesized AM/FM stereo tuner section; magnetic field power amp;

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# RECEIVERS

asymmetrical charge-coupled FM detector; phono input; video/digital audio input; aux input; 2 tape inputs; 6 station presets; mono switch; bass, midrange, and treble controls; balance control; switches for tone defeat, speaker selection, tape monitoring, tape dubbing, FM muting, AM noise filter, loudness contour. 130 W/ch into 8 ohms from 20-20,000; THD at rated power 0.05%; IMD 0.1% SMPTE; FR 20-20,000  $\pm$  0.5 dB; noise >100 dB. FM section (stereo, 75 ohms, with charge-coupled detector engaged): usable sens 16.3 dBf (1.78  $\mu$ V); 50-dB quieting sens 23.5 dBf (4.0  $\mu$ V); S/N 82 dB at 85 dBf. 17 $\frac{3}{8}$ " W x 15 $\frac{3}{4}$ " H x 5 $\frac{1}{4}$ " D ..... \$749

## 900 90-Watt Receiver

Stereo receiver incorporating magnetic field amp and special FM NR. Inputs for MM phono, tape, aux, extra aux, CD player, video sound source. Amp section: 90 continuous average W/ch from 20-20,000 Hz with no more than 0.05% THD into 8 ohms; dynamic headroom 0.2 dB; IHF IMD 0.05%; FR 20-20,000 Hz  $\pm$  0 dB. FM section: alternate-ch sel 58 dB; adjacent-ch sel 40 dB; 50-dB quieting sens mono 3.1  $\mu$ V, stereo 5  $\mu$ V; max S/N, A-wtd, stereo 82 dB; THD mono 0.15%, stereo 0.2%; sep 40 dB at 1,000 Hz; capture ratio 1.0 dB. AM section: sens 25  $\mu$ V ..... \$599

## DENON

### DRA-755 Stereo Receiver

Features video and audio inputs for VCR and VDP; video output to monitor TV; pre/main separation; super searcher tuning system; equalizer amp with MC input; nonswitching class A circuitry; variable loudness; 16-station memory random presets; auto/manual scan tuning. Amp section: 75 continuous average W/ch from 20-20,000 Hz with no more than 0.01% THD into 8 ohms; IMD <0.005%; S/N high level 95 dB, MM 90 dB, MC 74 dB. Tuner section: sens 0.8  $\mu$ V (9.3 dBf); 50 dB S/N mono 1.6  $\mu$ V (15.3 dBf), stereo 23  $\mu$ V (38.5 dBf). Video section: FR 5 Hz-6 MHz  $\pm$  0, -3 dB; input output imp/sens 75 ohms ..... \$550

### DRA-555 Stereo Receiver

Features video and audio inputs for VCR and VDP; video output to monitor TV; pre/main separation; equalizer amp with MC input; nonswitching class A circuitry; variable loudness; 16-station memory random presets; auto/manual scan tuning. Amp section: 55 continuous average W/ch from 20-20,000 Hz with no more than 0.015% THD into 8 ohms; IMD <0.025%; S/N high level 95 dB, MM 86 dB, MC 68 dB. Tuner section: sens 0.8  $\mu$ V (9.3 dBf); S/N mono 1.8  $\mu$ V (16.4 dBf), stereo 23  $\mu$ V (38.5 dBf). Video section: FR 5 Hz-6 MHz  $\pm$  0, -3 dB; input output imp/sens 75 ohm ..... \$420

### DRA-355 Stereo Receiver

Features video and audio inputs for VCR and VDP; video output to monitor TV; equalizer amp; nonswitching class A circuitry; variable loudness; 10-station memory presets; auto/manual scan tuning. Amp section: 41 continuous average W/ch from 20-20,000 Hz with no more than 0.05% THD into 8 ohms; IMD <0.03%; S/N high level 95 dB, MM 80 dB. Tuner section: sens 0.8  $\mu$ V (9.3 dBf); 50 dB S/N mono 1.8  $\mu$ V (16.4 dBf), stereo 23  $\mu$ V (38.5 dBf). Video section FR 5 Hz-6 MHz; input output imp/sens 75 ohm ..... \$280

## FISHER

### TA-150 AM/FM Receiver

AM/FM-stereo tuner-amp with 2-band parametric equalizer. Inputs for MM phono, tape, aux, CD player, video sound source. Features

quartz PLL digital tuner; 16 station presets; auto scan. 150 continuous average W/ch; 37.4 lbs ..... \$600

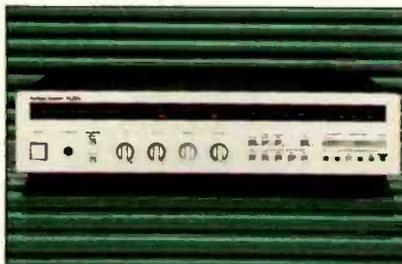
### TA-102 AM/FM Receiver

AM/FM-stereo receiver with 16 station presets. Features twin LED power-level meters; digital tuner. Inputs for MM phono, tape, aux, CD player. 100 continuous average W/ch; 24.5 lbs ..... \$400

## HARMAN KARDON

### HK690i AM/FM Stereo Receiver

AM/FM-stereo receiver with digital synthesized quartz-locked tuner. Features DC digital frequency display; 8 AM/8 FM presets; 5-LED signal-strength meter; sample-and-hold MPX decoder; dual RIAA EQ circuitry; bass and treble turnover tone controls; MC head amp; tone defeat; infrasonic and high-cut filters; 2 tape monitors with 2-way dub; loudness; muting; up/down scan tuning. Output power 60 W/ch continuous into 8 ohms, 20-20,000 Hz with 0.06% THD; high instantaneous current capability 45 amps; FR 0.2-150,000 Hz  $\pm$  0, -3 dB; slew rate 200V/ $\mu$ sec; S/N phono MM/MC/AUX 80/78/80 dB; phono overload MM/MC 220/12 mV; FM sens 1.9  $\mu$ V mono; 50-dB quieting sens mono/stereo 3.2  $\mu$ V/35  $\mu$ V; FR 30-15,000 Hz  $\pm$  1, -2 dB; capture ratio 1.0 dB; alternate ch sel 70 dB; sep 55 dB at 1 kHz; 17 $\frac{1}{8}$ " W x 5 $\frac{1}{8}$ " H x 16" D ..... \$700



Harman Kardon HK395i

### HK495i AM/FM Receiver

AM/FM-stereo receiver with digital synthesized quartz-locked tuner. Features reactive load and high instantaneous current capability, low negative feedback; ultrawide bandwidth. Inputs for MM phono, tape, CD player. Amp section: 45 continuous average W/ch from 20-20,000 Hz with no more than 0.09% THD into 8 ohms; FR 5-150,000 Hz  $\pm$  3 dB. FM section: alternate-ch sel 65 dB; 50-dB quieting sens mono 1.65  $\mu$ V (15.6 dBf), max S/N, A-wtd stereo 75 dB; THD mono 0.08%, stereo 0.12%; sep 50 dB at 1,000 Hz; capture ratio 1.2 dB. AM section: sens 15  $\mu$ V. 17 $\frac{1}{8}$ " W x 4" H x 14 $\frac{1}{2}$ " D; 15.4 lbs. .... \$435

### HK395i AM/FM Receiver

AM/FM-stereo receiver with digital synthesized quartz-locked tuner. Features reactive load and high instantaneous current capability, low negative feedback. Inputs for MM phono, 2 tape monitors, CD player. Amp section: 30 continuous average W/ch from 20-20,000 Hz with no more than 0.09% THD into 8 ohms; FR 5-150,000. FM section: alternate-ch sel 65 dB; 50-dB quieting sens mono 1.65  $\mu$ V (15.6 dBf), max S/N, A-wtd, stereo 75 dB; THD mono 0.08%, stereo 0.12%; sep 50 dB at 1,000 Hz; capture ratio 1.2 dB. AM section: sens 15  $\mu$ V. 17 $\frac{1}{8}$ " W x 4" H x 14 $\frac{1}{2}$ " D; 13.9 lbs ..... \$335

### HK385i AM/FM Receiver

AM/FM-stereo receiver with reactive load and high instantaneous current capability. Features

ultrawide bandwidth; low negative feedback; discrete circuitry. Inputs for MM phono, tape, CD player. Amp section: 30 continuous average W/ch from 20-20,000 Hz with no more than 0.09% THD into 8 ohms; FR 5-150,000 Hz  $\pm$  3 dB. FM section: alternate-ch sel 60 dB; 50-dB quieting sens mono 1.9  $\mu$ V (16.8 dBf), max S/N, A-wtd, stereo 74 dB; THD mono 0.08%, stereo 0.12%; sep 45 dB at 1,000 Hz; capture ratio 1.5 dB. AM section: sens 15  $\mu$ V. 17 $\frac{1}{8}$ " W x 4" H x 14 $\frac{1}{2}$ " D; 13.9 lbs ..... \$235

## HITACHI

### HTA-70F AM/FM Receiver

Digital synthesized receiver with large FL display. Features 7-band graphic equalizer; 7-band spectrum analyzer. Inputs for MM phono, tape, CD player. Amp section: 70 continuous average W/ch from 20-20,000 Hz with no more than 0.03% THD into 8 ohms; IHF IMD 0.03%; FR 10-40,000 Hz  $\pm$  2 dB. FM section: alternate-ch sel 53 dB; 50-dB quieting sens mono 20.2 dBf, stereo 38.2 dBf; max S/N, A-wtd, mono 74 dB, stereo 70 dB; THD mono 0.15%, stereo 0.25%; sep 40 dB at 1,000 Hz. AM section: sens 18  $\mu$ V. 17 $\frac{1}{8}$ " W x 4 $\frac{3}{8}$ " H x 13 $\frac{3}{8}$ " D; 8 lbs ..... \$540

### HTA-55HF AM/FM Receiver

AM/FM-stereo receiver with 5-band graphic equalizer; digital synthesized tuning. Inputs for MM phono, tape, CD player. Amp section: 55 continuous average W/ch from 20-20,000 Hz with no more than 0.05% THD into 8 ohms; IHF IMD 0.05%; FR 10-40,000 Hz  $\pm$  2 dB. FM section: alternate-ch sel 53 dB; 50-dB quieting sens mono 20.2 dBf, stereo 38.2 dBf; max S/N, A-wtd, mono 74 dB, stereo 70 dB; THD mono 0.15%, stereo 0.25%; sep 40 dB at 1,000 Hz. AM section: sens 18  $\mu$ V. 17 $\frac{1}{8}$ " W x 4" H x 13 $\frac{3}{8}$ " D; 7 lbs ..... \$400

### HTA-35F AM/FM Receiver

Digital receiver with 8 AM/8 FM station presets and feather-touch controls. Inputs for MM phono, tape, aux/CD. Amp section: 35 continuous average W/ch from 20-20,000 Hz with no more than 0.05% THD into 8 ohms; IHF IMD 0.05%; FR 10-40,000 Hz  $\pm$  2 dB. FM section: alternate-ch sel 53 dB; adjacent-ch sel 53 dB; 50-dB quieting sens mono 20.2 dBf, stereo 38.2 dBf; max S/N, A-wtd, mono 74 dB, stereo 70 dB; THD mono 0.3%, stereo 0.5%. 17 $\frac{1}{8}$ " W x 4 $\frac{3}{8}$ " H x 11 $\frac{3}{8}$ " D; 12 lbs ..... \$250

### HTA-25F AM/FM Receiver

Digital receiver with 6 AM/6 FM station presets and feather-touch controls. Inputs for MM phono, tape, aux/CD. Amp section: 25 continuous average W/ch from 20-20,000 Hz with no more than 0.5% THD into 8 ohms; IHF IMD 0.15%; FR 10-40,000 Hz  $\pm$  2 dB. FM section: alternate-ch sel 53 dB; adjacent-ch sel 53 dB; 50-dB quieting sens, mono 20.2 dBf, stereo 38.2 dBf; max S/N, A-wtd, mono 74 dB, stereo 70 dB; THD, mono 0.3%, stereo 0.4%. 17 $\frac{1}{8}$ " W x 4 $\frac{3}{8}$ " H x 11 $\frac{3}{8}$ " D; 11 lbs ..... \$200

### HTA-2 Stereo Receiver

AM/FM stereo tuner with power amp in a single chassis. Features vector tuning system; AM loop antenna with built-in circuit; 2-speaker-pair capability; light-touch push-button function switching; loudness switch; tape monitor; FM mute switch. RMS rated output power, both chs driven, 40-20,000 Hz into 8 ohms; FR 10-40,000 Hz  $\pm$  2 dB; THD at rated output <0.1%; IMD 0.05%; input sens at 25 W output 1,000 Hz, phono 2.5 mV/47k ohms, tape, CD/video/aux 150 mV/35k ohms; S/N IHF, phono 70 dB; tape, CD/video/aux 95 dB. FM section: usable sens mono 13.2 dBf; 50 dB

# RECEIVERS

quieting sens mono 18.2 dBf 4.5  $\mu$ V; S/N at 65 dBf mono 76 dB IHF, stereo 70 dB IHF; FR 30-12,000 Hz  $\pm$  2 dB; capture ratio 1.5 dB; stereo sep 40 dB at 1,000 Hz; 17 $\frac{1}{8}$ " W x 3 $\frac{3}{4}$ " H x 11 $\frac{1}{2}$ " D; 11 lb, 14 oz ..... \$160

## JENSEN

### AVS-1500 Audio/Video Receiver

AM/FM stereo receiver and video tuner with microprocessor switcher to integrate turntable, tape deck, VCR, videodisc player, video game, and computer functions. Features wireless remote control; frequency-synthesized PLL audio tuning; digital frequency synthesized video tuning; audio signal processor; cable ready for up to 133 channels; DNR; simulcast capability. Tone controls: bass  $\pm$  10 dB at 100 Hz; treble  $\pm$  10 dB at 10,000 Hz; loudness +7 dB at 100 Hz, +4 dB at 10,000 Hz, +7 dB at 20,000 Hz. Remote control uses 2 AAA batteries. FM tuner section: sens 12.8 dBf (1.2  $\mu$ V) at 75 ohms; 50-dB quieting mono 19.2 dBf (2.5  $\mu$ V); 50-dB quieting stereo 40.8 dBf (30  $\mu$ V); S/N 82 dB mono, 74 dB stereo; THD at 1,000 Hz 0.08% mono, 0.15% stereo; sel 75 dB at 400,000 Hz; sep 45 dB at 1,000 Hz; AM suppression 60 dB. AM tuner section: sens 250  $\mu$ V/m with ferrite antenna; S/N 50 dB. Amp section: 50 W/ch continuous RMS into 8 ohms; THD and IMD <0.05; damping factor 40. Audio FR: phono RIAA  $\pm$  0.5 dB; tape, video 1, video 2 20-20,000 Hz  $\pm$  1 dB. Audio S/N: MM phono 86 dB 2.5 mV input; tape, video 1, video 2 90 dB. Video tuner section: RF sens VHF, UHF 22 dB  $\mu$ V at -30 dB S/N; luminance picture level 1.0 V peak to peak (video output); video FR at -6 dB 0.1-4.0 MHz at video output, 0.1-3.5 MHz RF modulator (ch 3 or 4); audio FR 65-15,000 Hz +0/-3 dB. Antenna (RF) inputs: VHF 75 ohm unbalanced; CATV 75 ohms unbalanced; UHF 300 ohm balanced; aux 75 ohms unbalanced. 27 lbs. .... \$990

## JVC

### R-X500B Receiver

Computer-controlled Dynamic Super A receiver with remote control. Features computer-controlled SEA graphic equalizer with five programmable presets. Inputs for MM phono; MC phono; tape; aux; CD. 100 continuous average W/ch from 20-20,000 Hz with <0.007% THD into 8 ohms; IHF IMD 0.007%; FR 20-20,000 Hz  $\pm$  0.5 dB; alternate-ch sel 75 dB; 50-dB quieting sens mono 14.8 dBf; 50-dB quieting sens stereo 38.3 dBf; max S/N mono 82 dB, stereo 73 dB, both A-wid; 50-dB quieting sens mono 14.8 dBf; 50-dB quieting sens stereo 38.3 dBf; max S/N A-wid mono 82 dB, stereo 73 dB; THD mono 0.08%, stereo 0.1; sep 50 dB at 1,000 Hz; capture ratio 1.5 dB; 20.5 lbs; 17 $\frac{1}{8}$ " W x 4 $\frac{3}{8}$ " H x 14 $\frac{1}{16}$ " D ..... \$650

### R-X400B Receiver

Computer-controlled dynamic Super A receiver with graphic equalizer. Features LCD; information 5 programmable equalizer presets; 15 FM/AM presets. Inputs for MM phono; tape; aux; CD. 70 average W/ch from 20-20,000 Hz with <0.007% THD into 8 ohms; IHF IMD 0.007%; FR 20,000 Hz  $\pm$  0.5 dB; alternate-ch sel 75 dB; 50-dB quieting sens mono, 14.8 dBf; 50-dB quieting stereo, 38.3 dBf; max S/N, A-wid, mono 82 dB, 73 dB; THD, mono 0.08%, stereo 0.1%; sep 50 dB at 1,000 Hz; capture ratio 1.5 dB; 14.6 lbs; 17 $\frac{1}{8}$ " W x 4 $\frac{3}{8}$ " H x 14 $\frac{1}{16}$ " D ..... \$500

### RX370VB Video-Ready Receiver

Remote-control digital synthesizer AM/FM-stereo receiver. Features direct call system; sound selector; acoustic expander; presets for 10 AM and 10 FM stations. Inputs for MM phono,

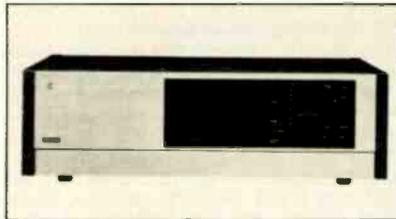
tape, AUX (video), AUX (audio), CD player, VTR, TV. Amp section: 50 continuous average W/ch from 40-20,000 Hz with <0.15% THD into 8 ohms; FR 20-20,000 Hz  $\pm$  1 dB. FM section: alternate-ch sel 60 dB; 50-dB quieting sens mono 1.5  $\mu$ V/75 ohms (14.8 dBf), stereo 23.5  $\mu$ V/75 ohms (38.3 dBf); max S/N, A-wid, mono 82 dB, stereo 73 dB; THD mono 0.08%, stereo 0.15%; sep 45 dB at 1,000 Hz; capture ratio 1.5 dB. AM section: sens 250  $\mu$ V/m (loop antenna). 17 $\frac{3}{16}$ " W x 4 $\frac{3}{8}$ " H x 13 $\frac{3}{8}$ " D; 14.4 lbs ..... \$350

### RX330VB Video-Ready Receiver

Computer-controlled digital synthesizer AM/FM-stereo receiver. Features Gm driver; SEA graphic EQ; sound selector; acoustic expander; presets for 15 FM and 15 AM stations. Inputs for MM phono, tape, video-1, video-2, CD player/AV, VCR. Amp section: 55 continuous average W/ch from 20-20,000 Hz with no more than 0.03% THD into 8 ohms; IHF IMD 0.03%; FR 5-50,000 Hz +0, -1 dB. FM section: alternate-ch sel 60 dB; 50-dB quieting sens mono 1.5  $\mu$ V/75 ohms (14.8 dBf), stereo 22.5  $\mu$ V/75 ohms (38.3 dBf); max S/N, A-wid, mono 82 dB, stereo 73 dB; THD mono 0.08%, stereo 0.15%; sep 45 dB at 1,000 Hz; capture ratio 1.5 dB. AM section: sens 250  $\mu$ V/m (loop antenna) 17 $\frac{3}{16}$ " W x 4 $\frac{3}{8}$ " H x 13 $\frac{3}{8}$ " D; 15.5 lbs ..... \$330

### RX-220 Digital Synthesizer AM/FM Receiver

Features 5-band SEA stereo graphic EQ; acoustic expander; presets for 8 AM and 8 FM stations; source indicator; 2-pairs speaker switch. Inputs for MM phono, tape, CD player/aux, video sound. Amp section: 40 continuous average W/ch from 40-20,000 Hz with no more than 0.5% THD into 8 ohms; FR 20-20,000 Hz  $\pm$  1 dB. FM section: alternate-ch sel 60 dB; 50-dB quieting sens mono 1.8  $\mu$ V/75 ohms (16.3 dBf), stereo 22.5  $\mu$ V/75 ohms (38.3 dBf); max S/N, A-wid, mono 80 dB, stereo 73 dB; THD mono 0.15%, stereo 0.3%; sep 40 dB at 1,000 Hz; capture ratio 1.5 dB. AM section: sens 350  $\mu$ V/m (loop antenna). 17 $\frac{3}{16}$ " W x 3 $\frac{3}{8}$ " H x 10 $\frac{1}{2}$ " D; 9.5 lbs ..... \$240



Kyocera R-661

### RX-110 Digital Synthesizer AM/FM Receiver

Features presets for 8 AM and 8 FM stations; auto loudness; source indicators; 2-pairs speaker switch. Inputs for MM phono, tape, CD player, video sound. Amp section: 25 continuous average W/ch from 40-20,000 Hz with no more than 0.5% THD into 8 ohms; FR 20-20,000 Hz  $\pm$  1 dB. FM section: alternate-ch sel 60 dB; 50-dB quieting sens mono 1.8  $\mu$ V/75 ohms (16.3 dBf), stereo 22.5  $\mu$ V/75 ohms (38.3 dBf); max S/N, A-wid, mono 80 dB, stereo 73 dB; THD mono 0.15%, stereo 0.3%; sep 40 dB at 1,000 Hz; capture ratio 1.5 dB. AM section: sens 350  $\mu$ V/m (loop antenna). 17 $\frac{3}{16}$ " W x 3 $\frac{3}{8}$ " H x 10 $\frac{1}{2}$ " D; 8.4 lbs ..... \$175

## KENWOOD

### KVRA 90R(B) Video Stereo Receiver

AM/FM-stereo receiver with full-function wireless remote control. Features 10-key direct-access tuning; 20 random presets with preset scan;

7-band electronic graphic equalizer with 5 memory presets; 2 video inputs with synthetic stereo sound; spectrum analyzer; 2 tape monitors. Inputs for tape, CD player, video sound source. Amp section: 70 continuous average W/ch from 20-20,000 Hz with no more than 0.007% THD into 8 ohms. FM section: 50-dB quieting sens mono 2.8  $\mu$ V (14.2 dBf), stereo 38  $\mu$ V (36.8 dBf); THD mono 0.07%, stereo 0.1%. AM section: sens 400  $\mu$ V. 16 $\frac{1}{16}$ " W x 5 $\frac{1}{8}$ " H x 12 $\frac{3}{8}$ " D; 19.8 lbs ..... \$490

### KVRA 70R(B) Computerized A/V Receiver

AM/FM-stereo receiver with full-function wireless remote control. Features peak power level indicator; 10-key direct-access tuning; 20 random presets with preset scan; 7-band electronic graphic equalizer with 5 memory presets; 2 video inputs w/synthetic stereo sound. Inputs for tape, CD player, video sound source. Amp section: 55 continuous average W/ch from 20-20,000 Hz with no more than 0.008% THD into 8 ohms. FM section: 50-dB quieting sens mono 2.8  $\mu$ V (14.2 dBf), stereo 38  $\mu$ V (36.8 dBf); THD mono 0.07%, stereo 0.1%. 16 $\frac{1}{16}$ " W x 5 $\frac{1}{8}$ " H x 12 $\frac{3}{8}$ " D; 18.5 lbs ..... \$400

### KR-A70 (B) Computerized Stereo Receiver

AM/FM-stereo receiver with 10-key direct-access tuning. Features 20 random presets with preset scan; automatic seek tuning; 7-band electronic equalizer with 5 memory presets. Amp section: 55 continuous average W/ch from 20-20,000 Hz with no more than 0.008% THD into 8 ohms. FM section: 50-dB quieting sens mono 2.8  $\mu$ V (14.2 dBf), stereo 38  $\mu$ V (36.8 dBf); THD mono 0.07%, stereo 0.1%. 16 $\frac{1}{16}$ " W x 5 $\frac{1}{8}$ " H x 12 $\frac{3}{8}$ " D; 18.1 lbs ..... \$320

### KR-A20 (B) AM/FM Receiver

AM/FM-stereo receiver with 5-band graphic equalizer. Features quartz-synthesized digital tuner; 16 random presets; two-speaker-system capability; auto tuning. Amp section: 40 continuous average W/ch. FM section: 50-dB quieting sens mono 4.0  $\mu$ V (17.2 dBf), stereo 40  $\mu$ V (37.2 dBf); THD mono 0.2%, stereo 0.3%. 16 $\frac{1}{16}$ " W x 4 $\frac{3}{8}$ " H x 9 $\frac{1}{8}$ " D; 12.1 lbs ..... \$230

### KR-A 10(B) AM/FM Receiver

AM/FM-stereo receiver with quartz-synthesized digital tuner. Features 8 random presets; auto tuning; loudness control; connection for 2 speaker system. Inputs for CD player. Amp section: 30 continuous average W/ch from 20-20,000 Hz with no more than 0.5% THD into 8 ohms. FM section: 50-dB quieting sens mono 4.0  $\mu$ V (17.2 dBf), stereo 40  $\mu$ V (37.2 dBf); THD mono 0.2%, stereo 0.3%. 16 $\frac{1}{16}$ " W x 4 $\frac{3}{8}$ " H x 9 $\frac{1}{8}$ " D; 11.7 lbs ..... \$185

## KYOCERA

### R-861 Tuner/Amplifier

Features 100 W/ch (continuous RMS, both channels driven into 8 ohms, 20-20,000 Hz, with no more than 0.02% THD); 3-band parametric EQ for exacting tonal adjustment; switchable MM/MC phono preamp; preamp out/main amp in jacks; subsonic filter; quartz frequency synthesis tuning with high-speed 2,500 Hz comparator for low noise; switchable IF bandwidth; defeatable bass/treble controls; Dolby FM de-emphasis switch; 7 AM and 7 FM preset stations; high blend feature. FM S/N 80 dB stereo, 82 dB mono; slew rate 50 V/ $\mu$ sec; rise time 1.0  $\mu$ sec; S/N (IHF-A) phono MC 88 dB, phono MM 86 dB, high-level inputs 100 dB ..... \$975

### R-661 Tuner/Amplifier

Features 70 W/ch (continuous RMS, both channels driven into 8 ohms, from 20-20,000 Hz,

# RECEIVERS

with no more than 0.02% THD); defeatable bass and treble controls for exacting tonal adjustment; switchable MM/MC phono preamp; preamp out/main amp in jacks; subsonic filter; quartz frequency synthesis tuning with high-speed 2,500 Hz comparator for low noise; switchable IF bandwidth; 7 AM and 7 FM presets; high blend feature. FM S/N 80 dB stereo, 80 dB mono; slew rate 50 V/μsec; rise time 1.0 μsec; S/N (IHF-A) phono MC 64 dB, phono MM 82 dB, high-level inputs 100 dB. . . . \$570

## R-461 Tuner/Amplifier

Inputs for MM phono, MC phono, tape, tape 2, AUX, extra AUX, CD player. Amp section: 50 continuous average W/ch from 20-20,000 Hz with no more than 0.02% THD into 8 ohms; dynamic headroom 2.1 dB; IHF IMD 0.02%; FR 30-15,000 Hz ± 1 dB. FM section: alternate-ch sel 55 dB; 50-dB quieting sens mono 17 μV (50 dBf), stereo 37.2 μV (50 dBf); max S/N, A-wtd, mono 77 dB, stereo 72 dB; THD mono 0.08%, stereo 0.12%; sep 48 dB at 1,000 Hz; capture ratio 1.2 dB. AM section: sens 300 μV. 18 1/8" W x 4" H x 12 1/8" D; 18.5 lbs. . . . \$550

## LUXMAN

### R-406 AM/FM Receiver

Digital synthesized AM/FM-stereo receiver. Amp section: 60 continuous average W/ch from 20-20,000 Hz with no more than 0.05% THD into 8 ohms; FR 10-50,000 Hz -1 dB. FM section: THD stereo 0.05%; sep 49 dB at 1,000 Hz. 17 1/16" W x 4 3/8" H x 12" D; 18.7 lbs. . . . \$570

### R-404 AM/FM Receiver

Digital synthesized AM/FM-stereo receiver. Amp section: 55 continuous average W/ch from 20-20,000 Hz with no more than 0.05% THD into 8 ohms; FR 10-45,000 Hz -1 dB. FM section: THD stereo 0.05%; sep 45 dB at 1,000 Hz. 17 1/16" W x 4 3/16" H x 12" D; 17.7 lbs. . . . \$400

### R-405 AM/FM Receiver

Digital synthesized AM/FM-stereo receiver. Amp section: 55 continuous average W/ch from 20-20,000 Hz with no more than 0.05% THD into 8 ohms; FR 10-45,000 Hz -1 dB. FM section: THD stereo 0.05%; sep 45 dB at 1,000 Hz. 17 1/16" W x 4 3/16" H x 12" D; 17.7 lbs. . . . \$400

## MARANTZ

### TA 150 Remote-Control Receiver

Receiver with 16-preset digital tuning; 5-band graphic equalizer; electronic volume; power meter. Inputs for MM phono, tape, CD player. Amp section: 150 continuous average W/ch 20-20,000 Hz with no more than 0.05% THD into 8 ohms; FR 10-35,000 Hz ± 1 dB. FM section: alternate-ch sel 50 dB; 50-dB quieting sens, mono 15 dBf, stereo 37 dBf; max S/N, A-wtd, mono 76 dB, stereo 68 dB; THD mono 0.15%, stereo 0.3%; sep 42 dB at 1,000 Hz; capture ratio 1 dB. 16 1/2" W x 7 1/4" H x 13" D; 34 lbs. . . . \$650

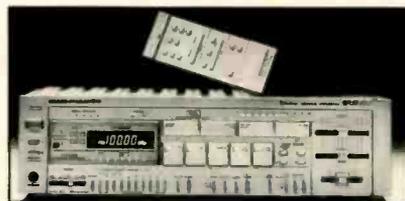
### TA 110 Remote-Control Receiver

Receiver with 16-preset digital tuning; 5-band graphic equalizer; electronic volume; power meters. Inputs for MM phono, tape, CD player. Amp section: 110 continuous average W/ch 20-20,000 Hz with no more than 0.05% THD into 8 ohms; 50-dB quieting sens, mono 16 dBf, stereo 38 dBf; other specs similar to TA 150's (above). 16 1/2" W x 7 1/4" H x 13" D; 30 lbs \$570

### SR 940 FM Stereo and AM Stereo Receiver

AM/FM receiver with digital tuning capable of receiving Motorola AM stereo broadcasts with built-in decoder. Features wireless remote control, clock/timer. Inputs for MM phono, tape, AUX, extra AUX. Amp section: 100 continuous average W/ch 20-20,000 Hz with no more than

0.01% THD into 8 ohms; IHF IMD 0.01%. FM section: alternate-ch sel 65 dB; 50-dB quieting sens, mono 13.1 dBf, stereo 35 dBf; max S/N, A-wtd, mono 72 dB, stereo 65 dB; THD, mono 0.1%, stereo 0.2%; capture ratio 0.9 dB. AM section: sens 20 μV. 16 1/2" W x 4 3/8" H x 16 1/4" D; 8.7 lbs. . . . \$570



Marantz SR 840

### SR 840 70-Watt Stereo Receiver

AM/FM receiver with digital-synthesis tuning, clock/timer. Capable of receiving Motorola AM stereo broadcasts with optional AMS 40 adapter. Inputs for MM phono, tape, AUX, extra AUX. Amp section: 70 continuous average W/ch 20-20,000 Hz with no more than 0.02% THD into 8 ohms; IHF IMD 0.02%. FM section: alternate-ch sel 65 dB; 50-dB quieting sens, mono 13.1 dBf, stereo 35 dBf; max S/N, A-wtd, mono 72 dB, stereo 65 dB; THD, mono 0.1%, stereo 0.2%; capture ratio 0.9 dB. AM section: sens 20 μV. 16 1/2" W x 4 3/8" H x 16 1/4" D; 26 1/2 lbs \$470

### SR 640 45-Watt Stereo Receiver

AM/FM receiver with digital synthesis tuning. Capable of receiving Motorola AM stereo broadcasts with optional AMS 40 adapter. Inputs for MM phono, tape, AUX, extra AUX. Amp section: 45 continuous average W/ch 20-20,000 Hz with no more than 0.02% THD into 8 ohms; IHF IMD 0.02%. FM section: alternate-ch sel 60 dB; 50-dB quieting sens, mono 14.4 dBf, stereo 36 dBf; max S/N, A-wtd, mono 70 dB, stereo 62 dB; THD, mono 0.1%, stereo 0.2%; capture ratio 1.2 dB. AM section: sens 20 μV. 16 1/2" W x 4 1/2" H x 12 7/8" D; 18.3 lbs. . . . \$300

### SR 250 25-Watt Stereo Receiver

Receiver with 16-preset digital tuning. Inputs for MM phono, tape, CD player, video sound source. Amp section: 25 continuous average W/ch 20-20,000 Hz with no more than 0.25% THD into 8 ohms; FR 20-20,000 Hz ± 1 dB. FM section: alternate-ch sel 45 dB; 50-dB quieting sens, mono 16.8 dBf, stereo 39.2 dBf; max S/N, A-wtd, mono 70 dB, stereo 62 dB; THD mono 0.35%, stereo 0.6%; sep 40 dB at 1,000 Hz; capture ratio 1.5 dB. 16 1/2" W x 3 1/16" H x 11 1/8" D; 13.2 lbs. . . . \$190

## McINTOSH

### MAC 4200 Receiver

AM/FM stereo receiver with digital display, FET input switching, and LED input indicators. Features low-imp transistor; electronically controlled trimming of precision-stepped volume control; 5-program equalizer; auto AC power control; front-panel tape recorder jacks. 100 W/ch min sine wave continuous average power output with both channels operating into 4 ohms, 20-20,000 Hz with <0.05% THD; THD 0.05%; IMD 0.05%; FR 20-20,000 Hz +0, -0.5 dB at rated power; sens 2.5 μV (13 dBf) IHF min; capture ratio 1.8 dB; 56 lbs. . . . \$2,890

## MITSUBISHI

### DA-R56 AM/FM Receiver

AM/FM-stereo receiver with AM stereo circuitry. Features 5-band graphic equalizer; 4 video

inputs; 3 video outputs; video sharpness control and video amp to eliminate signal attenuation from multiple video connections; built-in NR. Inputs for MM phono, tape, AUX, CD player, VCR 1, VCR 2, TV, VDP. Amp section: 70 continuous average W/ch from 20-20,000 Hz with no more than 0.015% THD into 8 ohms; FR 20-20,000 Hz ± 0.2 dB. FM section: 50-dB quieting sens mono 3.6 μV (16.4 dBf), stereo 41 μV (37.3 dBf); max S/N, A-wtd, mono 82 dB, stereo 75 dB; THD mono 0.2%, stereo 0.3%; sep 40 dB at 1,000 Hz; capture ratio 1.5 dB. AM section: FR 50-7,000 Hz ± 3 dB; sens 300 μV. 16 3/8" W x 5 1/16" H x 17 1/16" D; 21 lbs, 12 oz. . . . \$450

**DA-R46.** Same as DA-R56 except 50 W/ch and no AM stereo circuitry. . . . \$390

## NAD

### 7155 Digital AM/FM Receiver

Digital AM/FM building-block receiver with Dyn Sep circuitry and high current, bridgeable amp, pre-out/amp-in, Soft Clipping™, imp matching, Bass EQ, 40 amp peak current, Dynamic sep circuit. Inputs for MM phono; MC phono; tape 2; aux; CD. 55 continuous average W/ch from 20-20,000 Hz <0.02% THD; dynamic headroom 3 dB; IHF IMD 0.03%; FR 20-20,000 Hz ± 0.05 dB. Alternate-ch sel 70 dB; adjacent-ch sel 8 dB; 50-dB quieting sens, mono, 2.5 (13.2 dBf); 50-dB quieting sens, stereo, 22 μV (32 dBf); max S/N, A-wtd, mono 82 dB, stereo 80 dB; THD, mono 0.09%, stereo 0.09%; sep 50 dB at 1,000 Hz; capture ratio <1.5 dB; sens 300 μV. . . . \$598

### 7140 Digital AM/FM Receiver

High-current high-headroom digital AM/FM building-block bridgeable receiver. Features pre-out/amp-in, Soft Clipping™, speaker imp matching, 34 amp peak current, Dynamic sep circuit. Inputs for MM phono, MC phono, tape, aux, CD. 40 continuous average W/ch from 20-20,000 Hz with <0.02% THD into 8 ohms; dynamic headroom 3 dB; IMD 0.03; FR 20-20,000 Hz ± 0.05 dB; alternate-ch sel 70 dB; adjacent-ch sel 8 dB; 50-dB quieting sens, mono, 2.5 (13.2 dBf); 50-dB quieting sens, stereo, 22 μV (32 dBf); max S/N, A-wtd, mono 82 dB, stereo 80 dB; sens 300 μV. . . . \$478

### 7138 Digital AM/FM Receiver

AM/FM receiver with inputs for MM phono; MC phono; aux, tape. Amp section: 30 continuous average W/ch from 20-20,000 Hz with no more than 0.03% THD into 8 ohms; dynamic headroom +3 dB; IHF IMD 0.03%. FM section: alternate-ch sel 70 dB; 50-dB quieting sens mono 2.8 μV (14.2 dBf), stereo 28 μV (34.2 dBf); max S/N, A-wtd, mono 82 dB, stereo 75 dB; THD mono 0.09%, stereo 0.09%; sep 50 dB at 1,000 Hz; capture ratio 1.5 dB. AM section: sens 300 μV. 42 cm W x 10.8 H x 38 D; 17 lbs, 9 oz. . . . \$348

### 7125 Digital AM/FM Receiver

Digitally tuned receiver with Dyn Sep circuit. Features presets for 5 stations; center-tune indicator; loudness compensation and bass EQ switches; mono button. Amp section: continuous average power output 25 W at 8 ohms min RMS power per channel 20-20,000 Hz both chs driven with no more than rated distortion 20-20,000 Hz THD <0.05%; THD <0.05% 20-20,000 Hz from 250 mW to rated output; TIM <0.02% with 15,000 Hz sine wave +3.18 Hz square wave at rated output. Tuner section: IHF usable sens 1.9 μV (10.8 dBf); 50-dB quieting mono 3.0 μV (14.8 dBf); 50-dB quieting stereo 30 μV (34.8 dBf); S/N 65 dB A-wtd, mono/stereo 80/75 dB; FR 30-15,000 Hz; 3.25" H x 16.5" W x 11.25" D. . . . \$248

# "For me, learning about electronics is the first step to where I want to go in life."

SP4 Rich Parsons, HAWK Missiles

"When I was a little kid, I dreamed about being an astronaut. Or working with space-age technology. Now the Army's preparing me for a future, in high technology. All I have to do is go for it."

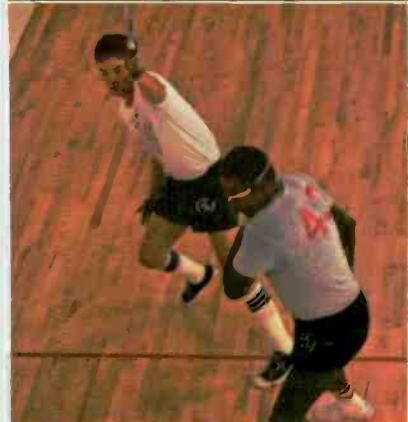
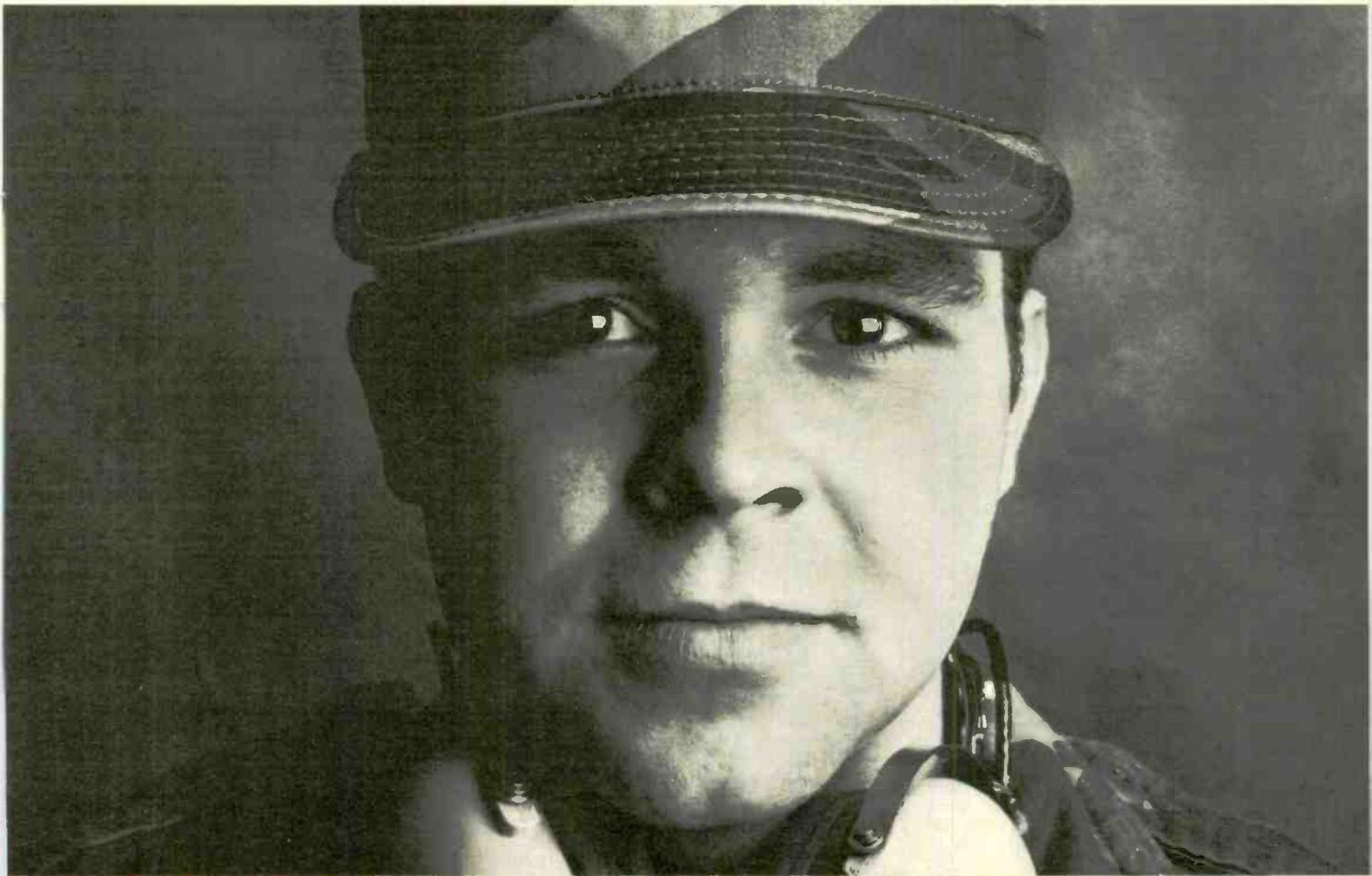
"I work on the HAWK high-power radar. Talk about complicated. It's like a puzzle made of circuit boards. It takes a really experienced technician to figure it out, fit the puzzle together and make it work. Since I'm the supervisor, I need to know it. Inside and out."

"Right now, I feel I'm standing tall on the mountain. With my electronics experience — real, hands-on experience — my future can go in a lot of different directions. All of them point up."

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# RECEIVERS

## NIKKO

### NR-850 AM/FM Receiver

AM/FM-stereo receiver with fully infrared remote and VCR audio dubbing. Inputs for MM phono, tape, AUX, CD player, video sound source. Amp section: 65 continuous average W/ch from 20-20,000 Hz with no more than 0.03% THD into 8 ohms; IHF IMD 0.03%; FR 20-20,000 Hz  $\pm$  0 dB. FM section: alternate-ch sel 60 dB; adjacent-ch sel 60 dB; 50-dB quieting sens mono 3.2  $\mu$ V, stereo 2  $\mu$ V; max S/N, A-wtd, mono 75 dB, stereo 65 dB; THD mono 0.1%, stereo 0.2%; sep 45 dB at 1,000 Hz. AM section: sens 50  $\mu$ V (50 dBf). 17 $\frac{1}{8}$ " W x 3 $\frac{3}{4}$ " H x 12 $\frac{1}{8}$ " D; 20.5 lbs. \$600

### NR-1000 AM/FM Receiver

Stereophonic digital receiver with digital synthesized tuning. Inputs for MM phono, MC phono, tape, tape 2, AUX, CD player. Amp section: 65 continuous average W/ch from 20-20,000 Hz with no more than 0.03% THD into 8 ohms; IHF IMD 0.03%; FR 20-20,000 Hz  $\pm$  1 dB. FM section: alternate-ch sel 60 dB; 50-dB quieting sens mono 3  $\mu$ V (14.7 dBf), stereo 3.5  $\mu$ V (15.5 dBf); max S/N, A-wtd, mono 70 dB, stereo 60 dB; THD mono 0.1%, stereo 0.2%; sep 50 dB at 1,000 Hz; capture ratio 1.5 dB. AM section: sens 350  $\mu$ V. 17 $\frac{1}{4}$ " W x 4 $\frac{1}{4}$ " H x 13 $\frac{1}{2}$ " D; 22.4 lbs. \$480

### NR-750 Digital Receiver

AM/FM-stereo receiver with display for preset channel (1-7). Inputs for MM phono, tape, AUX, CD player. Amp section: 48 continuous average W/ch from 20-20,000 Hz with no more than 0.4% THD into 8 ohms; dynamic headroom 40 dB; IHF IMD 0.4%; FR 20-20,000 Hz  $\pm$  0 dB. FM section: alternate-ch sel 60 dB; 50-dB quieting sens mono (14 dBf), stereo 20 dBf; max S/N, A-wtd, mono 75 dB, stereo 65 dB; THD mono 0.1%, stereo 0.2%; sep 45 dB at 1,000 Hz; capture ratio 1.5 dB. AM section: sens 350  $\mu$ V. 17 $\frac{1}{4}$ " W x 3 $\frac{3}{4}$ " H x 12" D; 16.5 lbs. \$380

### NR-650 AM/FM Receiver

Inputs for MM phono, tape, AUX, CD player. Amp section: 38 continuous average W/ch from 20-20,000 Hz with no more than 0.05% THD into 8 ohms; IHF IMD 0.05%; FR 20-20,000 Hz  $\pm$  0 dB. FM section: alternate-ch sel 60 dB; 50-dB quieting sens mono 3.2  $\mu$ V; max S/N, A-wtd, mono 65 dB, stereo 55 dB; THD mono 0.1%, stereo 0.2%; sep 45 dB at 1,000 Hz; capture ratio 80 dB. AM section: sens 50 dBf. 17 $\frac{1}{8}$ " W x 3 $\frac{3}{4}$ " H x 12 $\frac{1}{8}$ " D; 13.7 lbs. \$290

### NR-350 AM/FM Receiver

Inputs for MM phono, tape, AUX, CD player. Amp section: 32 continuous average W/ch from 20-20,000 Hz with no more than 0.08% THD into 8 ohms; IHF IMD 0.08%; FR 20-20,000 Hz  $\pm$  0 dB. FM section: alternate-ch sel 50 dB; 50-dB quieting sens mono 32  $\mu$ V; THD mono 0.1%, stereo 0.2%; sep 45 dB at 1,000 Hz. AM section: sens 35 dBf. 17 $\frac{1}{8}$ " W x 3 $\frac{3}{4}$ " H x 12 $\frac{1}{2}$ " D; 12.8 lbs. \$200

## ONKYO

### Integra TX-85 80-Watt Receiver

Quartz-synthesizer tuner/amplifier with dbx NR encoding and decoding. Features dynamic expander bass expansion restoration system; direct tone control; auto precision reception; 16-station memory; logic input selector. Inputs for MM phono, MC phono, tape, AUX, CD, video sound source, tuner. 80 continuous average W/ch 20-20,000 Hz with no more than 0.03% THD into 8 ohms; FR 20-20,000 Hz. Black

finish ..... \$620  
Integra TX-65. Similar to TX-85 except 60 W/ch ..... \$485  
Integra TX-65B. As TX-65 with black finish ..... \$485

### TX-RV47 Audio/Video Control Receiver

Computer-controlled AM/FM receiver. Features 16-station memory (8 AM, 8 FM); 5 audio inputs; 4 video inputs; stereo synthesizer for mono audio sources (TV, VCR); matrix surround with 4 speakers; full-function wireless remote control; direct tone controls; stereo image expander; dynamic bass enhancer. Inputs for MM phono, tape, aux, extra aux, CD player, video sound source, Hi-Fi VCR, videodisc, aux video/audio. Amp section: 55 continuous average W/ch from 20-20,000 Hz with no more than 0.04% THD into 8 ohms. FM section: alternate-ch sel 55 dB; adjacent-ch sel 50 dB; 50-dB quieting sens mono 4  $\mu$ V (17.2 dBf), stereo 40  $\mu$ V (37.2 dBf); max S/N, A-wtd, mono 72 dB, stereo 67 dB; THD mono 0.15%, stereo 0.25%; sep 40 dB at 1,000 Hz; AM section: sens 30  $\mu$ V. 17 $\frac{1}{8}$ " W x 4 $\frac{1}{2}$ " H x 13 $\frac{1}{2}$ " D; 20 lbs; black finish only. \$500

### TX-37 55-Watt Receiver

Computer-controlled quartz-synthesized tuner amp. Features delta power supply; dynamic bass enhancer; stereo image expander; random 16-station tuner memory; direct tone, passive EQ tone controls; 4-mode APR system. Inputs for MM phono, tape, CD player, video sound source. Amp section: 55 continuous average W/ch from 20-20,000 Hz with no more than 0.04% THD into 8 ohms. FM section: alternate-ch sel 55 dB; adjacent-ch sel 50 dB; 50-dB quieting sens mono 4  $\mu$ V (17.2 dBf), stereo 40  $\mu$ V (37.2 dBf); max S/N, A-wtd, mono 72 dB, stereo 67 dB; THD mono 0.15%, stereo 0.25%; sep 40 dB at 1,000 Hz; capture ratio 1.5 dB. AM section: sens 30  $\mu$ V. 17 $\frac{1}{8}$ " W x 4 $\frac{1}{16}$ " H x 13 $\frac{1}{2}$ " D; 19 lbs. \$350  
TX-37B. Same as above in black ..... \$350

### TX-27 40-Watt Receiver

Computer-controlled tuner amplifier. Features Automatic Precision Reception tuning; delta power supply; dynamic bass expander; 16-station random memory; direct tone, passive EQ tone controls. Inputs for MM phono, tape, CD player, video sound source. Amp section: 40 continuous average W/ch from 20-20,000 Hz with no more than 0.08% THD into 8 ohms. FM section: alternate-ch sel 55 dB; adjacent-ch sel 50 dB; 50-dB quieting sens mono 40  $\mu$ V (17.2 dBf), stereo 40  $\mu$ V (37.2 dBf); max S/N, A-wtd, mono 71 dB, stereo 66 dB; THD mono 0.15%, stereo 0.3%; sep 40 dB at 1,000 Hz; capture ratio 1.5 dB. AM section: sens 30  $\mu$ V. 17 $\frac{1}{8}$ " W x 4 $\frac{1}{16}$ " H x 13 $\frac{1}{2}$ " D; 17.5 lbs. \$265  
TX-27B. Same as above in black ..... \$265

### TX-17 25-Watt Receiver

Quartz-synthesized tuner amp. Features 12-station memory; direct passive tone controls; loudness control; battery-free memory backup; manual or auto tuning; A & B speaker switching; all-metal chassis and cabinet. Inputs for MM phono, tape, CD player. Amp section: 25 continuous average W/ch from 20-20,000 Hz with no more than 0.3% THD into 8 ohms. FM section: alternate-ch sel 55 dB; adjacent-ch sel 50 dB; 50-dB quieting sens mono 45  $\mu$ V (18.2 dBf), stereo 45  $\mu$ V (38.2 dBf); max S/N, A-wtd, mono 70 dB, stereo 65 dB; THD mono 0.15%, stereo 0.3%; sep 40 dB at 1,000 Hz; capture ratio 1.5 dB. AM section: sens 30  $\mu$ V. 17 $\frac{1}{8}$ " W x 3 $\frac{3}{8}$ " H x 12 $\frac{1}{2}$ " D; 13 lbs. \$200  
TX-17B. Same as above in black ..... \$200

## PARASOUND

### DR65 AM/FM Receiver

Features quartz synthesizer tuning; full-function wireless remote control; electronic input switching and volume control; 6 AM/FM memory presets; T-10 discrete output transistors; discrete phono preamp; separate phono output selector; subsonic filter; preamp output jacks; auto/manual tuning; variable loudness control; 5 LED tuning meters. Inputs for MM phono, tape, tape 2, CD, video sound source. Amp Section: 65 continuous W/ch from 20-20,000 Hz with less than 0.04% THD into 8 ohms; dynamic headroom 2 dB; IHF IMD 0.015%; FR 20-40,000 Hz  $\pm$  1 dB. FM section: alternate-ch sel 68 dB; adjacent-ch sel 8.5 dB; 50-dB quieting sens mono 15.3 dbf, stereo 39.2 dbf; max S/N, A-wtd mono 80 dB, stereo 77 dB; THD mono 0.1%, stereo 0.2%; sep-44 dB at 1,000 Hz; cature ratio 1.6 dB. AM Section: FR 30-3500 Hz; sens 175  $\mu$ V. 17 $\frac{1}{4}$ " W x 3 $\frac{1}{3}$ " H x 11 $\frac{1}{2}$ " D; 23 lbs. \$450

### DR40 AM/FM Receiver

AM/FM receiver with quartz-synthesizer tuning. Features variable loudness contour, infra-sonic filter, discrete output transistors, 5 presets, detented controls, relay protection with 2-color LEDs, 5-LED signal-strength meter, separate preamp output jacks. Inputs for MM phono, tape, CD, video sound source. Amp section: 40 continuous average W/ch 20-20,000 Hz with no more than 0.04% THD into 8 ohms; dynamic headroom 2 dB; IHF IMD 0.03%; FR 20-40,000 Hz  $\pm$  1 dB. FM section: alternate-ch sel 68 dB; adjacent-ch sel 8.5 dB; 50-dB quieting sens, mono 15.3 dbf, stereo 38.1 dbf; max S/N, A-wtd, mono 80 dB, stereo 77 dB; THD, mono 0.1%, stereo 0.2%; sep 44 dB at 1,000 Hz; capture ratio 1.6 dB. AM section: FR 30-3,500 Hz; sens 175  $\mu$ V; 17 $\frac{1}{4}$ " W x 3 $\frac{1}{4}$ " H x 11" D; 19 lbs. \$300

### DR25 AM/FM Receiver

AM/FM receiver with digital frequency read-out. Inputs for MM phono, tape, CD, video sound source. Amp section: 25 continuous average W/ch 20-20,000 Hz with no more than 0.04% THD into 8 ohms; dynamic headroom 2 dB; IHF IMD 0.03%; FR 20-40,000 Hz  $\pm$  1 dB. FM section: alternate-ch sel 66 dB; adjacent-ch sel 8 dB; 50-dB quieting sens, mono 15.8 dbf, stereo 39.2 dbf; max S/N, A-wtd, mono 80 dB, stereo 77 dB; THD, mono 0.15%, stereo 0.25%; sep 42 dB at 1,000 Hz; capture ratio 1.6 dB. AM section: FR 30-3,500 Hz; sens 175  $\mu$ V; 17 $\frac{1}{2}$ " W x 3 $\frac{1}{4}$ " H x 11" D; 16 lbs. \$200

## PIONEER

### SX-V900 AM/FM Receiver

AM/FM-stereo receiver with audio/video inputs. Features quartz-synthesized tuning; DDD; 10 AM/FM presets; computer control with memory; DNR (dynamic noise reduction). Inputs for 2 VCRs; video disc player. Amp section: 12 continuous average W/ch from 20-20,000 Hz with less than 0.005% THD into 8 ohms; IHF IMD 0.005%; FR 20-20,000 Hz  $\pm$  0.3 dB. FM section: alternate-ch sel 85 dB; 50-dB quieting sens mono 1.8  $\mu$ V (16.2 dbf), stereo 21  $\mu$ V (37.7 dbf); max S/N, A-wtd, mono 88 dB, stereo 82 dB; THD mono 0.02%, stereo 0.04%; sep 60 dB at 1,000 Hz. AM section: sens 10  $\mu$ V. 5 $\frac{1}{16}$ " W x 16 $\frac{1}{16}$ " H x 17 $\frac{1}{16}$ " D; 33 lbs, 1 oz. \$770

### SX-V500 AM/FM Receiver

Audio/video quartz-synthesizer nonswitching receiver. Features A/V recording selection system; video ready; DNR (dynamic noise reduction). Inputs for 2 video VCR's, video disc player. Amp section: 80 continuous average W/ch

# RECEIVERS

from 20-20,000 Hz with no more than 0.005% THD into 8 ohms; IHF IMD 0.005%; FR 20-20,000 Hz  $\pm 0.3$  dB. FM section: alternate-ch sel 65 dB; 50-dB quieting sens mono 1.6  $\mu$ V (15.7 dBf), stereo 19.5  $\mu$ V (37 dBf); max S/N, A-wtd, mono 80 dB, stereo 75 dB; THD mono 0.1%, stereo 0.15%; sep 50 dB at 1,000 Hz. AM section: sens 10  $\mu$ V. 4 $\frac{3}{4}$ " W x 16 $\frac{1}{16}$ " H x 11 $\frac{1}{16}$ " D; 18 lbs, 5 oz ..... \$460

## SX-V400 AM/FM Receiver

Audio/video quartz-PLL synthesizer nonswitching receiver. Features noise filter and video ready. Amp section: 60 continuous average W/ch from 20-20,000 Hz with no more than 0.005% THD into 8 ohms; IHF IMD 0.005%; FR 20-20,000 Hz  $\pm 0.3$  dB. FM section: alternate-ch sel 65 dB; 50-dB quieting sens mono 1.6  $\mu$ V (15.7 dBf), stereo 19.5  $\mu$ V (37 dBf); max S/N, A-wtd, mono 80 dB, stereo 75 dB; THD mono 0.1%, stereo 0.15%; sep 50 dB at 1,000 Hz. AM section: sens 10  $\mu$ V. 16 $\frac{1}{16}$ " W x 4 $\frac{3}{4}$ " H x 11 $\frac{1}{16}$ " D ..... \$330

## SX-V300(BK) AM/FM Receiver

Audio/video quartz-PLL synthesizer receiver with 2 video inputs; 8 AM/FM presets; simulated stereo; noise filter. Amp section: 45 continuous average W/ch from 20-20,000 Hz with no more than 0.08% THD into 8 ohms; IHF IMD 0.08%; FR 20-20,000 Hz  $\pm 0.5$  dB. FM section: alternate-ch sel 65 dB; 50-dB quieting sens mono 1.6  $\mu$ V (15.7 dBf), stereo 19.5  $\mu$ V (37 dBf); max S/N, A-wtd, mono 80 dB, stereo 75 dB; THD mono 0.4%, stereo 0.4%; sep 40 dB at 1,000 Hz. AM section: sens 10  $\mu$ V. 16 $\frac{1}{16}$ " W x 3 $\frac{7}{8}$ " H x 8 $\frac{1}{8}$ " D; 11 lbs, 7 oz ..... \$250

## SX-V200(BK) AM/FM Receiver

AM/FM-stereo receiver with 2 video inputs; quartz-PLL synthesizer tuning; 8 AM/FM presets; simulated stereo. Amp section: 30 continuous average W/ch from 20-20,000 Hz with no more than 0.3% THD into 8 ohms; IHF IMD 0.3%; FR 20-20,000 Hz  $\pm 0.5$  dB. FM section: alternate-ch sel 65 dB; 50-dB quieting sens mono 1.6  $\mu$ V (15.7 dBf), stereo 19.5  $\mu$ V (37 dBf); max S/N, A-wtd, mono 80 dB, stereo 75 dB; THD mono 0.4%, stereo 0.4%; sep 40 dB at 1,000 Hz. AM section: sens 10  $\mu$ V. 16 $\frac{1}{16}$ " W x 3 $\frac{7}{8}$ " H x 8 $\frac{1}{8}$ " D; 11 lbs, 7 oz ..... \$210

## SX-313(BK) AM/FM Receiver

AM/FM-stereo receiver with FET FM front end; PLL stereo demodulator; speaker A/B switches; bass, treble, and loudness controls. Amp section: 45 continuous average W/ch from 20-20,000 Hz with no more than 0.3% THD into 8 ohms; IHF IMD 0.3%; FR 20-20,000 Hz  $\pm 0.5$  dB. FM section: alternate-ch sel 50 dB; 50-dB quieting sens mono 1.6  $\mu$ V (15.3 dBf), stereo 21  $\mu$ V (37.6 dBf); max S/N, A-wtd, mono 75 dB, stereo 70 dB; THD mono 0.3%, stereo 0.6%; sep 0.3 dB at 1,000 Hz. AM section: sens 10  $\mu$ V. 16 $\frac{1}{16}$ " W x 3 $\frac{7}{8}$ " H x 8 $\frac{1}{8}$ " D; 11 lbs ..... \$175

## PROTON

### D940 Receiver

AM/FM receiver with Dynamic Power on Demand (DPD) circuitry and Schotz NR. Features high dynamic power capabilities (rating 8/4/2 ohms to 160/280/380 W/ch); 4-gang FM front end; 2-gang AM front end; selectable phono section for MM and MC phono; speaker EQ; separate low noise MC amp; active volume control; built-in infrasonic filter. Inputs for MM, MC phono; phono 2; tape; aux; extra aux; CD; video sound source. AMP section: 40 continuous average W/ch from 20-20,000 Hz with less than 0.02% THD into 8 ohms; dynamic headroom 6 dB; IHF IMD 0.008%; FR 20-20,000 Hz

$\pm 0.2$  dB. FM section: Alternate-ch sel 55 dB; adjacent-ch sel 90 dB; 50-dB quieting sens., mono 15.3 dBf, stereo, 33.2 dBf; max S/N A-wtd, mono 75 dB, stereo 70 dB; THD mono 0.05%, stereo 0.2%; sep 45 dB at 1,000 Hz; capture ratio 1.5 dB. AM Section: sens 300 mV. 16 $\frac{1}{2}$ " W x 4" H x 10 $\frac{1}{8}$ " D; 20 lbs ..... \$450

## 930 Receiver

Digitally synthesized stereo receiver. Features Schotz PLL detector. Inputs for MM phono, tape, aux. video sound source. 30 continuous average W/ch from 20-20,000 Hz with <0.02% THD into 8 ohms; dynamic headroom 3 dB; IHF IMD 0.015%; FR 17-35,000 Hz  $\pm 1$  dB. FM section: 50-dB quieting sens, stereo, 2.8  $\mu$ V; max S/N, A-wtd, stereo 70 dB; THD stereo 0.2%; sep 50 dB at 1,000 Hz; capture ratio 1.5 dB. AM section: sens 300  $\mu$ V/m. 20 lbs; 16 $\frac{1}{2}$ " W x 3 $\frac{3}{4}$ " H x 9 $\frac{1}{4}$ " D ..... \$360

## QUASAR

### CJ8494 AM/FM Receiver

Audio/video receiver with remote control. Features AM/FM/139-channel CATV tuners; 3 video inputs (VCR, video disc; VCR 2); dual RF antenna jacks; simulcast reception capability; MTS decoder jack; switched AC outlet controls monitor; unified remote control operates Quasar VCR's. Inputs for MM phono, tape, CD player, video sound source. Amp section: 45 continuous average W/ch from 20-20,000 Hz with no more than 0.03% THD into 8 ohms; dynamic headroom 1.2 dB; FR 5-70,000 Hz -3 dB. FM section: alternate-ch sel 65 dB; adjacent-ch sel 65 dB; 50-dB quieting sens mono 3.5  $\mu$ V (16.1 dBf), stereo 45  $\mu$ V (38.3 dBf); max S/N, A-wtd, mono 77 dB, stereo 71 dB; THD mono 0.15%, stereo 0.3%; sep 40 dB at 1,000 Hz; capture ratio 1 dB. AM section: sens 20  $\mu$ V. 16 $\frac{1}{16}$ " W x 3 $\frac{1}{2}$ " H x 13 $\frac{1}{8}$ " D; 18.3 lbs. \$700



Proton D940

## RCA

### MSR 150 Dimensia Receiver

AM/FM-stereo receiver. Features remote control which can control up to 13 audio/video devices. Inputs for tape, aux, CD player, audio/video sound source. Amp section: 50 continuous average W/ch from 20-20,000 Hz with no more than 0.05% THD into 8 ohms; IHF IMD 0.08%; FR 20-20,000 Hz  $\pm 0.8$  dB. FM section: alternate-ch sel 45 dB; 50-dB quieting sens mono 21 dBf, stereo 38 dBf; max S/N, A-wtd, mono 75 dB, stereo 69 dB; THD mono 0.13%, stereo 0.15%; sep 40 dB at 1,000 Hz; capture ratio 1 dB. AM section: sens 25  $\mu$ V. 17 $\frac{1}{8}$ " W x 4 $\frac{1}{2}$ " H x 13 $\frac{3}{8}$ " D; 16.5 lbs ..... \$350

## REALISTIC

### STA 2500 100-Watt Stereo Receiver

Digitally synthesized AM/FM stereo receiver with 12 presets. 100 W/ch into 8 ohms from 20-20,000 Hz; THD 0.2%; MM S/N 84 dB; MM overload 160 mV ..... \$500

### STA-2270 65-Watt Receiver

AM/FM-stereo receiver with stereo expander.

Features search mode; digital display; 12 station memory; feather-touch control tuning; FM muting. 11-step bass, treble, and midrange controls; LED stereo expander/FM Stereo/memory indicators ..... \$400

### STA-870 65-Watt AM/FM Receiver

AM/FM receiver with IMX stereo expander designed to enlarge sound images. Inputs for tape and phono. Features 11-part LED power output meter; 5-part signal-strength meter; noise-cancelling circuit; loudness; headphone jack. Metal case. 65 W/ch min RMS into 8 ohms from 20-20,000 Hz, with no >0.08% THD; S/N 78 dB; 4 $\frac{3}{4}$ " x 18 $\frac{1}{2}$ " x 10 $\frac{1}{8}$ " ..... \$360

### STA-780 45-Watt Receiver

AM/FM-stereo receiver with presets for 6 AM and 6 FM stations. Features digital frequency display, station search; LED function indicators; sliding tone controls. 45 W/ch min RMS into 8 ohms from 20-20,000 Hz with no >0.08% THD; FR 15-25,000 Hz  $\pm 1$  dB. \$350

### STA 114 Stereo Receiver

AM/FM receiver with 12 presets. 30 W/ch into 8 ohms from 20-20,000 Hz; THD 0.2%; MM S/N 84 dB; MM overload 155 mV ..... \$300

### STA-115 24-Watt Stereo Receiver

Stereo receiver with FM stereo indicators and Auto Magic tuning. Features 11-step bass, treble and volume controls; high filter; stereo/mono switch; tape monitor; A/B speaker pairs; aux input; 30 Hz "Cut" button to cut distortion, conserve power; 5-level LED signal-strength meter. 24 W/ch min RMS into 8 ohms 20-20,000 Hz at 0.03% THD; S/N 85 dB phono, 88 dB aux; phono overload 120 mV; FM tuner sens IHF 1.9  $\mu$ V 10.8 dBf; capture ratio 12 dB; S/N 74 dB; sel 60 dB; image rejection 65 dB; 4" H x 16 $\frac{1}{2}$ " W x 8 $\frac{1}{4}$ " D ..... \$200

### STA-450 14-Watt Stereo Receiver

Receiver with Auto Magic fine tuning, A/B speaker switching, separate bass, treble and balance controls, LED FM-stereo indicator, stereo/mono switch. Features brushed-aluminum front panel; 5-LED signal-strength meter; tape monitor; edge-lit power-on button. 14 W/ch min RMS into 8 ohms 20-20,000 Hz at 0.3% THD; FR 15-25,000 Hz  $\pm 1$  dB; S/N 81 dB phono, 85 dB aux; phono overload 120 mV; FM tuner sens IHF 2.7  $\mu$ V 13.7 dBf; capture ratio 2.0 dB; S/N 78 dB; sel 60 dB; image rejection 50 dB; 5 $\frac{1}{16}$ " H x 16 $\frac{1}{16}$ " W x 7 $\frac{1}{8}$ " D ..... \$160

## REVOX

### B285 AM/FM Receiver

AM/FM-stereo receiver with two microprocessors for control of input sensitivities, output levels, operating functions. Features alphanumeric multi-mode LC display; 29 AM or FM presets; level and reception mode (mono/stereo, blend) separately programmable for each preset station; programmable volume limit; -20 dB button; subsonic filter; loudness contour; programmable output levels for A and B speaker pairs; comprehensive speaker protection circuits; serial data bus for external control devices; wireless infrared remote control (transmitter optional). Inputs for tape, CD player, tape 2. Amp section: 70 continuous average W/ch 20-20,000 Hz with no more than 0.03% THD into 8 ohms; dynamic headroom 2.5 dB; FR 20-20,000 Hz  $\pm 0.3$  dB. FM section: alternate-ch sel 96 dB; adjacent-ch sel 16 dB; 50-dB quieting sens, mono 1.6  $\mu$ V (15.2 dBf), stereo 19  $\mu$ V (36.8 dBf); max S/N, A-wtd, mono 84 dB, stereo 80 dB; THD mono 0.15%, stereo 0.3%;

# RECEIVERS

sep 43 dB at 1,000 Hz; capture ratio 2 dB. AM section: FR 120-3,000 Hz  $\pm$  6 dB; sens 36 $\mu$ V. 17 $\frac{3}{4}$ " W x 6" H x 13 $\frac{1}{16}$ " D; 33 lbs ..... \$1,600  
**B286 Tuner Amplifier.** Similar to B285 but without power amp stage ..... \$1,400

## ROTEL

### RX850 AM/FM Receiver

AM/FM-stereo receiver with quartz synthesizer tuning and 8 AM/8 FM station presets. Inputs for phono, tape, CD player, video sound source. Amp section: 30 continuous average W/ch 20-20,000 Hz into 8 ohms with no more than 0.05% THD; IHF IMD 0.05%; FR (phono) 20-15,000 Hz  $\pm$  0.3 dB; FR (tape, CD, video) 10-45,000 Hz  $\pm$  0.5, -3 dB. FM section: alternate-ch sel 60 dB; 50-dB quieting sens, mono 4  $\mu$ V (17.2 dBf), stereo 60  $\mu$ V (40.7 dBf); S/N, mono 82 dB, stereo 77 dB; THD, mono 0.15%, stereo 0.4%; sep 43 dB at 1,000 Hz; capture ratio 1.5 dB. AM section: sens 250  $\mu$ V/m. 17" W x 3 $\frac{3}{8}$ " H x 15" D; 15.1 lbs ..... \$299

### RX830 AM/FM Receiver

AM/FM-stereo receiver with LED dial pointer. Inputs for phono, tape, CD player, video sound source. Amp section: 20 continuous average W/ch from 20-20,000 Hz THD into 8 ohms with no more than 0.08%; IHF IMD 0.08%; FR (phono) 20-15,000 Hz  $\pm$  0.3 dB, FR (tape, CD, video) 10-38,000 Hz  $\pm$  1, -3 dB. FM section: alternate-ch sel 65 dB; 50-dB quieting sens, mono 4  $\mu$ V (17.2 dBf), stereo 60  $\mu$ V (40.7 dBf); S/N, mono 70 dB, stereo 65 dB; THD, mono 0.3%, stereo 0.5%; sep 38 dB at 1,000 Hz; capture ratio 2.0 dB. AM section: sens 300  $\mu$ V/m. 17" W x 3 $\frac{3}{8}$ " H x 13" D; 12.7 lbs ..... \$199

## SAE

### R-102 Stereo Receiver

AM/FM stereo receiver utilizes an on-board computer to eliminate dependency between front-panel layout and audio circuits. 50 W/ch at 0.025%. All controls grouped by function. Features alphanumeric and digital readouts for input functions, tone, volume, balance settings, station frequency and tuner memories; 3 digital tone memories; tuner memory scan; phono power amp; high-current power amp. .... \$499

## SANSUI

### S-X1130 AM/FM Stereo Receiver

AM/FM receiver with video sound and picture-processing circuits. Features X-balanced amp technology; 16 station presets with preset scan; selectable FM IF wide/narrow bandwidth. Inputs for MM phono, MC phono, tape, tape 2, aux, video sound source. Amp section: 130 continuous average W/ch 20-20,000 Hz with no more than 0.005% THD into 8 ohms; FR 5-200,000 Hz  $\pm$  0, -3 dB. FM section: 50-dB quieting sens, mono 1.8  $\mu$ V (10.3 dBf); 21 $\frac{1}{2}$ " W x 10" H x 19 $\frac{1}{2}$ " D; black finish; 40 lbs . . \$950  
**X1100.** Similar to S-X1130 with fewer video-processing circuits ..... \$800

### S-XV1000 Audio/Video Receiver

Audio/video receiver with video signal processing controls; connections for 3 VCRs; remote control; 16 random station presets; sub-harmonic synthesizer for bass enhancement; fader control; color balance. Inputs MM phono, phono 2, tape, aux, CD, video sound source. Amp section: 80 continuous average W/ch 20-20,000 Hz with less than 0.01% THD into 8 ohms; FR 10-100,000 Hz  $\pm$  3/-3 dB. FM section: max S/N ratio, A-weighted, mono 76 dB. 16 $\frac{1}{16}$ " W x 5 $\frac{1}{4}$ " H x 16 $\frac{1}{16}$ " D; 20.3 lbs . . \$599

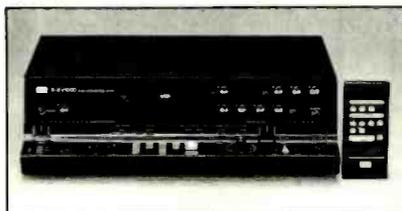
### S-X1070 AM/FM Receiver

AM stereo/FM stereo receiver with input for

personal stereo. Features 12 station presets with preset scan; auto station search; 5-band equalizer; LED power display. Inputs for MM phono, tape, tape 2, video sound source. Automatically receives all AM stereo broadcasts. Amp section: 55 continuous average W/ch 20-20,000 Hz with no more than 0.02% THD into 8 ohms; FR 5-200,000 Hz  $\pm$  0, -3 dB. 21" W x 8 $\frac{1}{2}$ " H x 15 $\frac{1}{4}$ " D ..... \$400

**S-X1050.** Similar to S-X1070 without AM stereo feature; 35 W/ch; silver ..... \$300

**S-X1030.** Similar to S-X1050 except 25 W/ch ..... \$250



Sansui S-XV1000

## SCOTT

### 388RS Digital Computerized Receiver

AM/FM-stereo receiver with quartz-PLL synthesizer tuner. Features 14 presets; digital information display center; signal strength; center tuning indicators; dual fluorescent peak-hold power meters; auto/manual tuning; illuminated 5-band graphic EQ with tone defeat; subsonic and high filters; FM muting. Inputs for phono, tape, CD player, video sound source. Amp section: 85 continuous average W/ch from 20-20,000 Hz with no more than 0.03% THD into 8 ohms; IHF IMD 0.03%; FR 20-20,000 Hz  $\pm$  0.5 dB. FM section: alternate-ch sens 70 dB; 50-dB quieting sens mono 9.8 dBf; max S/N, A-wtd, mono 80 dB, stereo 75 dB; sep 50 dB at 1,000 Hz; capture ratio 1 dB. 17" W x 4 $\frac{1}{2}$ " H x 12 $\frac{1}{2}$ " D ..... \$550

**366RS Digital Computerized Receiver.** Same as 388RS except 65 continuous W/ch and DC power amplifier ..... \$450

**355RS Digital Computerized Receiver.** Same as 388RS except 45 continuous W/ch; LED power meters; tape monitor; loudness contour; DC power amplifier; electronic protection; subsonic filter only; 2-speaker switching; 5-band graphic EQ without tone defeat ..... \$350

## SHARP

### SA-X35 AM/FM Receiver

AM/FM-stereo receiver with quartz digital synthesized tuner and 5-band graphic equalizer. Features auto scan tuning; loudness switch; A, B, A+B speaker selector; 6 AM/6 FM presets. Inputs for MM phono, tape, CD player. Amp section: 35 continuous average W/ch 20-20,000 Hz with no more than 0.5% THD into 8 ohms; IHF IMD 0.15%; FR 15-35,000 Hz  $\pm$  3 dB. FM section: adjacent-ch sel 56 dB; max S/N, A-wtd, mono 73 dB, stereo 68 dB; THD mono 0.15%, stereo 0.3%; sep 32 dB at 1,000 Hz; AM section: sens 400  $\mu$ V. Black or silver. 17" W x 3 $\frac{1}{16}$ " H x 10 $\frac{1}{2}$ " D; 10 lbs ..... \$200

## SHERWOOD

### S-2680 CP AM/FM Digital Receiver

Digitally synthesized receiver with 8 AM and 8 FM presets. Power output 70 W/ch min RMS 20-20,000 Hz with <0.05% THD at 8 ohms; IMD 0.05% at 70 W SMPTE; S/N phono (15 mV input) 92 dB, aux 100 dB; FR with built-in LPF 5-40,000 Hz; input sens for rated output 2.5 mV phono, 150 mV aux; usable sens 1.7  $\mu$ V (9.8 dBf); sens mono 2.8 $\mu$ V (14.1 dBf), stereo 38 $\mu$ V (36.5 dBf); S/N mono 80 dB, stereo 75 dB;

capture ratio 1.2 dB; FM FR 20-15,000 Hz  $\pm$  1 dB; 17 $\frac{3}{8}$ " H x 4 $\frac{3}{8}$ " H x 13 $\frac{3}{4}$ " D ..... \$480

### S-2660 CP AM/FM Digital Receiver

Digitally synthesized receiver with 8 AM and 8 FM presets. Power output 50 W/ch min RMS from 20-20,000 Hz with <0.05% THD at 8 ohms; IMD 0.05% at 50 W SMPTE; S/N (5 mV input) 92 dB phono; 100 dB aux; aux FR with built-in LPF 5-40,000 Hz. FM section: usable sens 1.8  $\mu$ V (10.3 dBf); 50 dB quieting sens mono 3.2  $\mu$ V (15.3 dBf), stereo 38  $\mu$ V (36.5 dBf) S/N stereo 75 dB; capture ratio 1.2 dB; FR at 20-15,000 Hz  $\pm$  1 dB; 17 $\frac{3}{8}$ " W x 4 $\frac{3}{8}$ " H x 13 $\frac{3}{4}$ " D ..... \$380

### S-2640 CP AM/FM Digital Receiver

Digitally synthesized receiver with 6 AM and 6 FM presets. Power output 45 W/ch min RMS from 40-20,000 Hz with 0.5% THD into 8 ohms; IMD at 35 W SMPTE 0.05%; S/N phono (5 mV input) 88 dB, aux 100 dB; aux FR with built-in LPF 5-40,000 Hz. FM section: usable sens 1.9  $\mu$ V (10.8 dBf); 50 dB quieting sens; mono 3.5  $\mu$ V (15.8 dBf) stereo 50  $\mu$ V (39.2 dBf); S/N stereo 72 dB; capture ratio 1.5 dB; FR at 20-15,000 Hz  $\pm$  1 dB; 17 $\frac{3}{8}$ " W x 3 $\frac{3}{4}$ " H x 11 $\frac{1}{16}$ " D \$280

### S-2620 CP AM/FM Stereo Receiver

Digitally synthesized receiver with 10 presets; power output 20 W/ch min RMS from 40-20,000 Hz with 0.5% THD into 8 ohms; IMD at 20 W SMPTE 0.05%; S/N phono (5 mV input) 88 dB; aux FR with built-in LPF 5-40,000 Hz; usable sens 1.9 $\mu$ V (10.8 dBf); S/N stereo 72 dB; capture ratio 1.5 dB; FR 30-50,000 Hz  $\pm$  1 dB; 17 $\frac{3}{8}$ " W x 3 $\frac{3}{4}$ " H x 11 $\frac{1}{16}$ " D ..... \$180

### S-2610 CP AM/FM Receiver

AM/FM stereo receiver with back-lit slide-rule tuning dial. Features loudness, switching for 2 pairs of speakers; separate tape monitor and aux input; MOSFET PLL tuner with mute button. Inputs for MM phono, tape, aux. Amp section: 20 continuous average W/ch 20-20,000 Hz with no more than 0.08% THD into 8 ohms; FR 20-20,000 Hz. FM section: alternate-ch sel 65 dB; 50-dB quieting sens, mono 3.0  $\mu$ V, stereo 40  $\mu$ V; max S/N, A-wtd, mono 80 dB, stereo 75 dB; THD, mono 0.15%, stereo 0.15%; sep 50 dB at 1,000 Hz; capture ratio 1.5 dB. AM section: sens 300  $\mu$ V ..... \$150



Sony STR-AV760/RM-S760

## SONY

### STR-AV760 Stereo Receiver

Stereo receiver with audio/video computer control center and Audio Signal Processor for feather-touch control of volume in 1-dB steps and bass and treble in 2-dB steps. Features direct-access/quartz synthesis tuning; auto sweep tuning and 10-station preset scanning with auto tuning level; station card insert marks preset stations; fluorescent display; speaker switches for A/B/A&B/off and 4/8 ohm; switchable 20 dB audio muting; Direct Comparator for quiet FM reception; legato linear amp for cleaner switching and crossover; memory backup system; remote control optional. Amp section: 80 W/ch from 20-20,000 Hz into 8 ohms with 0.006% THD; IMD 0.006%. S/Ns A-wtd phono

# "Frighteningly close to perfect"



# ADS



OPTIONAL RC1  
REMOTE CONTROL UNIT

The Atelier CD3 Compact Disc player is the newest example of the ADS philosophy:

Never rush to market with a "me too" product.

Take the time and trouble to design an original.

We did.

We used 16-bit digital to analog converters for each channel and two-times oversampling to insure exceptional accuracy, low distortion, and outstanding signal-to-noise ratios.

We developed digital/analog filtering that not only eliminates sampling and conversion noise but allows less than 2 degrees of phase shift from 20-20kHz.

We designed an advanced error correction system with a unique variable correction window. This system focuses only on the data in error and eliminates unnecessary large-scale correction of the music signal.

The resulting sound of the CD3 is smooth and clear, free from the shrillness often associated with less advanced CD players. Frequency response, as *Digital Audio* described it, is "frighteningly close to perfect."

Of course, the CD3 shares the rational, uncluttered design of other Atelier components. Front panel controls are simple and logical. More complex functions, such as indexing, time and track display, toggling and 30 selection programming are hidden on a push-to-release pivoting panel.

An optional remote control unit, the RC1, is available for the CD3. It has the capability to control all future Atelier components.

The CD3 is now at your local ADS dealer. Listen to one, touch one, see how close to perfect a CD player can be.

For more information or the location of your nearest ADS dealer, call 800-824-7888 (in CA 800-852-7777) or write to ADS, 418 Progress Way, Wilmington, MA 01887.

## The new ADS CD3.



# RECEIVERS

1.87 dB, phono 2.84 dB, tape/aux/video 1 and 2 105 dB. FRs: phono RIAA standard curve  $\pm 0.5$  dB, tape/aux/video input dub (1&2) 5 Hz-100 kHz  $+0.5, -0.1$  dB. Input sens phono 1/phono 2/tape and aux/video 1 and 2, 2.5 mV/0.25 mV/150 mV/150 mV. Tuner section: FM usable sens 11.2 dBf (2.0  $\mu$ V) mono; 50-dB quieting sens 38.3 dBf (45  $\mu$ V) stereo, 17.3 dBf (4.0  $\mu$ V) mono; S/N 82 dB mono, 76 dB stereo; FR 30-15,000 Hz  $+0.5, -1.5$  dB; stereo sep 45 dB at 1 kHz. 17" W x 4 1/4" D x 14 1/4" H; 14 lbs, 6 oz. \$500

**STR-AU560.** Similar to STR-VX760 except no phono 2 input. Amp section 50 W/ch from 20-20,000 Hz into 8 ohms with 0.008% THD; IMD 0.008%; S/Ns A-wtd phono 81 dB, tape/aux/video 1&2/video dub (1&2) 100 dB; 17" W x 4" D x 14 1/4" H; 17 lbs, 11 oz. \$400

**STR-AU460.** Similar to STR-AU560 without Audio Signal Processor, auto level or remote option. Amp section: 40 W/ch; S/N (A-wtd) phono 1 77 dB, tape/aux/video 1 and 2 100 dB; FRs: tape/aux/video/video dub (1&2) 10-70,000 Hz -1 dB; S/N 80 dB mono, 75 dB stereo; overall FR 30-15,000 Hz  $+0.5, -2$  dB; 17" W x 4 1/4" D x 12 1/4" H; 13 lbs, 11 oz. \$300

**STR-AU360.** Similar to STR-AU460 without VCR audio dubbing. Amp section: 30 W/ch from 20-20,000 Hz into 8 ohms with 0.03% THD; IMD 0.03%; S/N ratios (A-weighted) phono 74 dB, tape/aux/video 1 and 2 96 dB; S/N ratios 80 dB mono, 75 dB stereo; 17" W x 4 1/4" D x 12 1/4" H; 12 lbs, 13 oz. \$240

**STR-AU260.** Similar to STR-AU360 with 8-station presets and no audio/video control center, memory scan, or Direct Comparator. Amp section: 20 W/ch from 20-20,000 Hz into 8 ohms with 0.08% THD; IMD 0.08%; S/N ratios (A-weighted) phono 72 dB, tape/aux 94 dB; frequency responses; phono RIAA standard curve  $\pm .5$  dB, tape/aux 10-50,000 Hz -3 dB. phono/tape and aux, 2.5 mV/150 mV. Tuner section: S/N 75 dB mono, 70 dB stereo; 17" W x 4 1/4" D x 12 1/4" H; 12 lbs, 5 oz. \$180

## TECHNICS

### SA-560 AM/FM Receiver

Quartz synthesizer TV/FM/AM stereo receiver. Inputs for MM phono, tape x 3, AUX/CD, video sound source. Amp section: 70 continuous average W/ch from 20-20,000 Hz with no more than 0.007% THD into 8 ohms; FR 5-100,000 Hz -3 dB. FM section: 50-dB quieting sens mono 3.5  $\mu$ V (16.1 dBf), stereo 45  $\mu$ V (38.3 dBf); max S/N, A-wtd, mono 78 dB, stereo 72 dB; THD mono 0.08%, stereo 0.15%; sep 40 dB at 1,000 Hz; capture ratio 1.0 dB. AM section: sens 20  $\mu$ V. 16 1/16" W x 4 1/16" H x 11 1/16" D; 17.4 lbs. \$550

### SA-460 AM/FM Receiver

AM/FM-stereo receiver. Inputs for MM phono, tape x 2, AUX/CD, video sound source. Amp section: 50 continuous average W/ch from 20-20,000 Hz with no more than 0.007% THD into 8 ohms; FR 5-70,000 Hz -3 dB. FM section: 50-dB quieting sens mono 3.5  $\mu$ V (16.1 dBf), stereo 45  $\mu$ V (38.3 dBf); max S/N, A-wtd, mono 78 dB, stereo 72 dB; THD mono 0.08%, stereo 0.15%; sep 40 dB at 1,000 Hz; capture ratio 1.0 dB. AM section: Sens 20  $\mu$ V. 16 1/16" W x 3 1/16" H x 11 1/16" D; 14.5 lbs. \$320

### SA-360 AM/FM Receiver

Quartz synthesizer TV/FM/AM stereo receiver. Inputs for MM phono, tape x 2, AUX/CD, video sound source. Amp section: 40 continuous average W/ch from 20-20,000 Hz with no more than 0.05% THD into 8 ohms; FR 5-70,000 Hz -3 dB. FM section: 50-dB quieting sens mono 3.5

$\mu$ V (16.1 dBf), stereo 45  $\mu$ V (38.3 dBf); max S/N, A-wtd, mono 78 dB, stereo 72 dB; THD mono 0.15%, stereo 0.3%; sep 40 dB at 1,000 Hz; capture ratio 1.0 dB. AM section: Sens 20  $\mu$ V. 16 1/16" W x 3 1/16" H x 11 1/16" D; 11.9 lbs. \$220

### SA-150 Receiver

Quartz synthesizer digital receiver. Features soft contact selectors for sources and station presets, 14-station preset memory. Inputs for MM phono, tape, aux, CD. Amp section: 25 continuous average W/ch from 40-20,000 Hz with  $<0.5\%$  THD into 8 ohms; dynamic headroom 1.2 dB; IHF IMD 0.5%; FR 5-70,000 Hz  $+0, -3$  dB. FM section: Alternate-ch sel 65 dB; 50-dB quieting sens, mono 3.5  $\mu$ V (16.1 dBf); 50-dB quieting sens, stereo, 45  $\mu$ V (38.3 dBf); max S/N, A-wtd, mono 77 dB, stereo 71 dB; THD, mono 0.15%, stereo 0.3%; sep 40 dB at 1,000 Hz; capture ratio 1 dB. AM section: sens 20  $\mu$ V. 9.3 lbs; 16 1/16" W x 3 1/16" H x 9 1/16" D. \$180

### SA-120 Receiver

FM/AM stereo receiver with electronic protection CD tuning. Inputs for MM phono, tape, aux, CD. Amplifier section: 35 continuous average W/ch from 40-20,000 Hz with  $<0.5\%$  THD into 8 ohms; dynamic headroom 1 dB; IHF IMD 0.5%; FR 5-70,000 Hz  $+0, -3$  dB. FM section: Alternate-ch sel 60 dB; 50-dB quieting sens mono  $\mu$ V (16.1 dBf); 50-dB quieting sens stereo,  $\mu$ V (38.3 dBf); max S/N, A-wtd, mono 76 dB, stereo 70 dB; THD, mono 0.15%, stereo 0.3%; sep 40 dB at 1,000 Hz; capture ratio 1.0 dB. AM section: sens 20  $\mu$ V. 10.8 lbs; 16 1/16" W x 3 1/16" H x 9 1/16" D. \$160



Ultrix R100

## ULTRIX

### R100 AM/FM Stereo Receiver

100-W receiver with digital synthesizer tuner, electronically controlled preamp, accommodates audio and video sound sources. Features dbx encoder and decoder; matrix stereo enhancer circuit (to convert TV and VCR signals to stereo-like sound); discrete output stage; low-noise, wide-dynamic-range circuit to accept MC and MM cartridges; switchable subsonic filter; DNR; stepped electronic attenuators and equalizers; fluorescent power display; auto scan; wireless remote control; 20-station storage; functional status display in graphic or digital format. 100 W/ch into 8 ohms 20-20,000 Hz  $<0.009\%$  THD; 420 mm W x 137 H x 330 D. \$550

### R70 Receiver

AM/FM stereo receiver with phase-lock-loop digital tuner and a TV/VCR matrix stereo synthesizer circuit. Features remote control; 20 station presets; slide-type bass and treble control; 40-segment fluorescent power display; fluorescent volume and balance display; electronic speaker protection; multiple speaker selection; CD input; auto scan; subsonic filter; loudness switch; two-way tape dubbing; MC preamp. 70 W/ch into 8 ohms with  $<0.03\%$  THD; 420 mm W x 137 H x 330 D. \$450

**R55 Receiver.** Similar to R70 except 14-station presets; no electronic balance control; no fluo-

rescent indicators for balance control. 55 W/ch with  $<0.03\%$  THD; 420 mm W x 127 H x 270 D. \$300

**R35 Receiver.** Similar to R55 except combined CD/aux input; no remote control no electronic speaker protection circuit; no MC preamp. 35 W/ch; 420 mm W x 127 H x 270 D. \$190

**R25 Receiver.** Similar to R35 except no PLL digital quartz synthesized tuner; no two-tape dubbing; no electronic volume control; no subsonic filter; no power or volume level indicator; 420 mm W x 117 H x 220 D. \$140

## VECTOR RESEARCH

### VRX-9100 Receiver

Features high-current 8-output transistor section, synthesized tuner convertible with optional VA-1450 bridging amp. Inputs for MM phono; MC phono; tape; CD; video sound source. 90 continuous average W/ch 20-20,000 Hz with dynamic headroom of 2.5 dB; IHF IMD 0.08%; 2.5 lbs. 17" W x 4 1/2" H x 14" D. \$450

### VRX-7100 Receiver

High-current 8-output transistor section synthesized tuner. Inputs for MM phono; MC phono; tape; aux; CD; video sound source. 60 continuous average W/ch 20-20,000 Hz with  $<0.08\%$  THD into 4 ohms; dynamic headroom 2.5 dB; 23 lbs. 17" W x 4 1/2" H x 14" D. \$350

### VRX-3500 Receiver

Features discrete output amp section; synthesized tuner. Inputs for MM phono; tape; aux; CD; video sound source. 40 continuous average W/ch from 20-20,000 Hz with less than 0.08% THD into 4 ohms; dynamic headroom 2.5 dB; IHF IMD 0.08%; 20 lbs. 17" W x 3" H x 12" D. \$250

### VR-2200 Receiver

Features discrete output amp section; analog tuning. Inputs for MM phono; tape; CD; video sound source; 25 continuous average W/ch from 20-20,000 Hz with  $<0.08\%$  THD into 8 ohms; dynamic headroom 2 dB; IHF IMD 0.08%; 17 lbs. 17" W x 3" H x 12" D. \$170

## YAMAHA

### R-9 AM/FM Receiver

AM/FM-stereo receiver with 5-digit fine tuning and video switching capability. Features continuously variable loudness control ( $-40$  dB); zero distortion rule; auto Class A power; low-imp drive capability; computer servo-lock tuning system; 16-station random preset tuning; rec out selector; A, B, C speaker selection; DNC; simulated stereo; accessory output loop; 15-function infrared remote control. Inputs for MC phono, MM phono, tape, AUX, CD player, video sound source. Amp section: 125 continuous average W/ch 20-20,000 Hz with no more than 0.015% THD into 8 ohms; dynamic headroom 1.58 dB; IHF IMD 0.01%; FR 20-20,000 Hz  $+0, -3$  dB. FM section: alternate-ch sel 85 dB; 50-dB quieting sens, mono 1.5  $\mu$ V (14.8 dBf), stereo 20  $\mu$ V (37.3 dBf); max S/N, A-wtd, mono 85 dB, stereo 81 dB; THD, mono 0.05%, stereo 0.07%; sep 50 dB at 1,000 Hz; capture ratio 1.2 dB. 17 1/2" W x 6" H x 16 1/2" D; 26 lbs, 6 oz. \$799

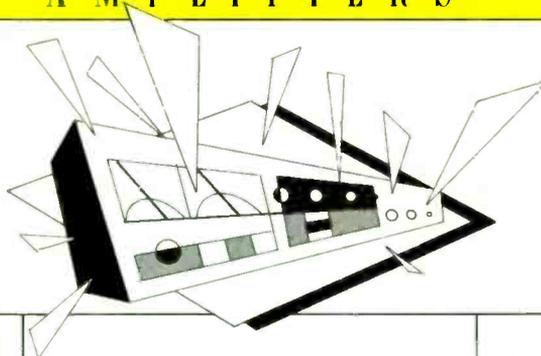
**R-8.** Similar to the R-9 except 85 W/ch; no auto Class A; A + B speaker selection. \$599

**R-7.** Similar to R-8 except 65 W/ch; no digital fine tuning, video switching, DNC, or simulated stereo. 13-function remote control. \$469

**R-5.** Similar to R-7 except 50 W/ch; bass extension circuitry; no rec out selector or remote control. \$299

**R-3.** Similar to R-5 except 35 W/ch; 8 AM/8 FM preset selection tuning, no computer servo lock tuning. \$229

# AMPLIFIERS



## POWER AMPLIFIERS

### ACOUSTAT

#### Trans-Nova Twin-200 Power Amplifier

Full FET amp designed to obtain >1,000 damping factor in audio band with no first-order distortion in output stage. Features Complement Feedback circuit to eliminate negative-feedback problems. Output power 200 W/ch into 8 ohms at 0.02% THD; full-power FR 15-500,000 Hz +0, -3 dB; slew rate 175 V/μsec; 42 lb ..... \$1,195

120. Smaller version of TNT 200. 120 W/ch into 8 ohms at 0.02% THD; slew rate 160 V/μs; 28 lbs ..... \$745

### ADCOM

#### GFA-555 Power Amplifier

High-current amp able to drive 1-ohm loads with no current limiting and low feedback. Bridgeable for mono operation. 200 W/ch into 8 ohms; 350 W/ch into 4 ohms with <0.09% THD and <0.05% IMD; constant damping factor >100 20-20,000 Hz ..... \$599

#### GFA-2 Power Amplifier

Stereo power amp with dual-FET input stage, direct-coupled design, separate power supplies for each ch. Features short-circuit and high-temperature protection; auto reset on all protection circuits with LED indicator; peak LEDs for output power indication; dual outputs (4/ch) to allow use of low-imp speakers. Output power 100 W/ch into 8 ohms, 20-20,000 Hz, 0.02% THD. Supplied with rack handles. 19" W x 13 1/8" D x 5 1/4" H ..... \$375

### APT

#### A1 Power Amplifier

Power amp with imp-adjust indicator, signal indicators, overload indicators, output protection, overload protection. Features 100 continuous average W/ch from 20-20,000 Hz with no more than 0.03% THD into 8 ohms; FR 10-30,000 Hz ±0.25 dB; S/N 110 dB; dynamic headroom 3 dB; slew factor >10; IMD 0.006%; crosstalk between channels <70 dB at 1,000 Hz; dynamic range >103 dB; 16.9" W x 3.1" H x 10.2" D; 22 lbs ..... \$680

### BRYSTON

#### 4B Power Amplifier

Fully complementary class-AB power amp with bridging switch, 1,500-sq-in. Features heat-sink area; regulated power supplies to all voltage gain stages; ch sep back to line cord; red LED clipping indicator. Output power 200 W/ch, 800 W bridged into 8 ohms, 20-20,000 Hz at 0.01% THD; IMD 0.01%, 10 mW-200 W; noise -100 dB; slew rate 60 V/μsec; power bandwidth 1-100,000 Hz; damping factor 500 at 20 Hz, 8 ohms; input sens/imp 1.25 V/50k ohms; 19" W x 13 1/2" D x 5 1/4" H ..... \$1,500

3B. Similar to 4B except 100 W/ch, 400 W bridged; input sens/imp 1 V/50k ohms; has 500-sq-in. heat-sink area; 9" D ..... \$975

2B. Similar to 3B except 50 W/ch, 200 W bridged; input sens/imp 0.75 V/50k ohms; has 250-sq-in. heat-sink area; 19" W x 10" D x 3 1/2" H ..... \$550

### CARVER

#### M-1.5t Power Amplifier

Basic Magnetic Field stereo power amp with LED dual peak-responding power displays, infrasonic and ultrasonic filters. Output power 350 W/ch into 8 ohms at no more than 0.5% THD; dynamic headroom/ch 600 W at 4 and 8 ohms; noise >-100 dB A-wtd; IMD 0.5%; bandwidth DC-250,000 Hz +0/-3 dB at 1 W; input imp 150 kohms; 19" W x 10 1/2" D x 3 1/2" H; 16 lbs ..... \$799

#### M-500t Power Amplifier

Stereo power amp with super-efficient Magnetic Field circuitry in slim-line cabinet. Features peak-responding power meters; cool operation; no bulky power transformer, heat sinks, or electrolytic capacitors; anodized brushed aluminum in dark pewter finish. Output power 250 W/ch into 8 ohms, 20-20,000 Hz at 0.15%/0.15% THD/IM distortion; FR 1-250,000 Hz ±0.25 dB; S/N 100 dB A-wtd; slew rate 40 V/μsec; 6 1/4" W x 6 1/4" H x 6 1/4" D ..... \$449

#### M-400t Power Amplifier

Stereo power amp with Magnetic Field Circuitry that eliminates oversize heat sinks, power transformers, electrolytic capacitors. Features dual vertical LED peak-level display with VU-meter ballistics; dark pewter finish. Output power 200 W/ch into 8 ohms, 20-20,000 Hz at 0.5%/0.5% THD/IMD; FR 1-250,000 Hz ±0.25 dB; S/N 100 dB A-wtd; slew rate 40 V/μsec; 6 1/4" W x 6 1/4" H x 6 1/4" D ..... \$449

#### M-200t Power Amplifier

Magnetic Field power amp produces 120 W/ch (min continuous power into 8 ohms, 20-20,000 Hz with <0.05% THD). Dark pewter finish; LEDs indicate power and use of speaker-protection circuitry. Noise >100 dB down (IHF A-wtd); IMD 0.15% max SMPTE; transient IMD <0.001%; frequency bandwidth 3-10 dB from 1-80,000 Hz at 1 W; 17.3" W x 9" D x 2.55" H; 10.25 lbs ..... \$375

### COUNTERPOINT

#### SA-12 Power Amplifier

Hybrid power amp with tube front end and MOSFET output stage. Features no overall loop feedback; warm-up and shut-off automatic speaker muting. 85 continuous average W/ch from 20-20,000 Hz with no more than 1% THD into 8 ohms; FR 5-100,000 Hz ±0.2 dB; S/N 92 dB; dynamic headroom 2 dB; channel-to-ch sep >85 dB from 100-10,000 Hz; 19" W x 4.5" H x 12.5" D ..... \$995

### CROWN

#### SA-2 Power Amplifier

Features dual-LED input/output comparator display indicators; stereo/mono switch; remote mute; 4 on-board computers that analyze demand, immediate history of amp, load for max output power; 2-speed fan. Output power 220 W/ch continuous into 8 ohms, 20-20,000 Hz at 0.05% THD, 0.01% IMD; FR 0-80,000 Hz +0/-1.5 dB; S/N 110 dB A-wtd; 19" W x 14 1/4" D x 7" H ..... \$1,999

#### Power Line Two Amplifier

Features detented level controls; mono/stereo switch; Dynamic Analyzing Display, including IOC™ all-distortion, signal-present indicators; 3 bands reported for each ch; Multi-Mode circuit that uses 3-stage output design to eliminate distortion. Output power 50 W/ch into 8 ohms, 20-20,000 Hz, at no more than 0.04% THD; 1 1/4" front panel ..... \$625

Power Line Three. Similar to Power Line Two except 90 W/ch. Features frequency-analyzing display that provides information about spectral balance of amp output signal ..... \$995

Power Line Four. Similar to Power Line Three except 165 W/ch ..... \$1,495

### DENON

#### POA-3000Z Power Amplifier

Features dual super non-NFB circuitry; 4 large-capacity high-speed power transistors; floating-load circuitry; self diagnostic display; DAD direct input terminals. 250 continuous average W/ch from 20-20,000 Hz with no more than 0.008% THD into 8 ohms; FR 1-300,000 Hz +0, -3 dB; S/N 123 dB A-wtd; dynamic power 315 W + 315 W (8 ohms), 585 W + 585 W (4 ohms), 900 W + 900 W (2 ohms); slew rate ±500 V/μsec; IMD 0.0015% ..... \$2,000

#### POA-1500II Power Amplifier

Features direct A non-NFB; power meters; amp status indicators; A/B speaker switching; side panels standard. FR 1-300,000 Hz ±3 dB; THD .002%; S/N 123 dB; IMD 0.0015%; 150 continuous average W/ch from 20-20,000 Hz with no more than 0.005% THD into 8 ohms; dynamic headroom 2.3 dB; slew rate ±400 V/μsec \$695



Carver M-500t

### HAFLER

#### DH-500 Power Amplifier

Stereo power amp designed to deliver >255 W/ch with <0.025% distortion into 8 ohms; >400 W into 4 ohms (can be bridged, using op-

# RECOG

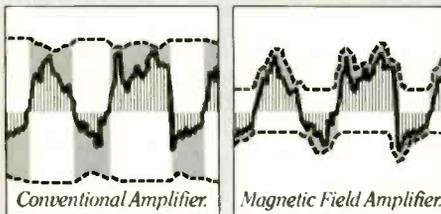
## Why the Carver M-500t Magnetic Field Power Amplifier has helped begin an industry trend and how it has stayed ahead of its inspired imitators.



Twice in the last decade, Bob Carver has taught the high fidelity industry how to make amplifiers that give you better performance and value. Both times his bold lead has attracted followers. Still, as evidenced by the current release of the M-500t, Carver sets standards yet unequalled in the audio community.

With its astonishingly high voltage/high output current and exclusive operation features, it is a prime example of why Carver remains the designer to emulate:

- Continuous FTC sine-wave output conservatively rated at 250 watts per channel.
- Produces 600 to 1000 watts per channel of dynamic power for music (depending on impedance).
- Bridging mode delivers 700 watts continuous sine-wave output at 8 ohms.
- High current Magnetic Field power supply provides peak currents up to  $\pm 100$  amps for precise control of voice-coil motion.
- Designed to handle unintended 1 ohm speaker loads without shutting down.
- Equipped with infinite resolution VU meters.



Solid line: audio output signal.  
Broken line: power supply voltage.  
Shaded area: wasted power.  
Vertical lines: power to speakers.

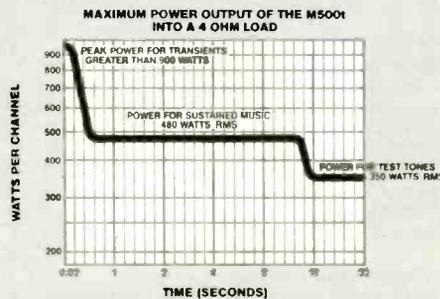
### POWER EXPRESSED BY THE DEMANDS OF MUSIC.

The Carver M-500t Power Amplifier responds to musical transients with better than 600 watts per channel of instantaneous peak power through 8 ohm speakers. Well over 900 watts per channel into 4 ohm speakers.

And yet its Federal Trade Commission Continuous Average Power Rating is 250 watts per channel into 8 ohms.

The gulf between the two power ratings represents Bob Carver's insistence that amplifier design should fit the problem at hand. That problem is reproducing music with stunning impact, not simply satisfying a sine-wave test which doesn't even include speakers or sound sources. Hence the seeming gulf between the two ratings.

Bob reasoned that since music is composed of three basic types of power waveforms, those types of waveforms are what an amplifier should be designed to satisfy.



The Carver M-500t delivers massive power at three important output levels.

First there are instantaneous peak transients—the sudden smash of cymbals, drums, or the individual leading edge attack of each musical note. While these waveforms last less than 1/100 of a second, they form the keen edge of musical reality which must be present if you are to realize high fidelity. Though momentary, they also demand a tremendous amount of amplifier power.

Directly following instantaneous transients are combinant musical crests of demand that come from multiple instruments and their harmonics. These long term power demands may last up to several seconds but usually come and go in less than a second. And yet they can tax anything but an exceptionally powerful amplifier.

The third type of power demand is represented by the average power contained in the music, and is approximately one third to one half of the FTC continuous power rating.

At extremely high output current levels, the Carver M-500t not only delivers over 700 watts of instantaneous peak power for instantaneous transients, but can deliver over 600 watts

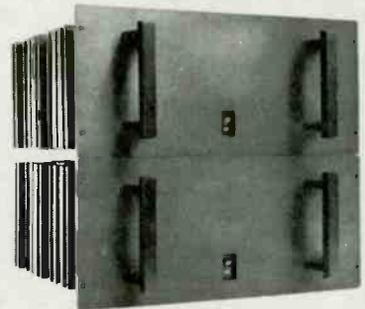
RMS of long term power for demands lasting up to several seconds. The M-500t provides more power, more current and more voltage than any comparably priced amplifier ever offered.

### THE MAGNETIC FIELD AMPLIFIER VS. CONVENTION.

Audiophiles, critics and ultimately other manufacturers have each accepted the wisdom of Bob Carver's fresh approach to delivering power in musical terms. Yet only Carver has so elegantly translated theory into practice.

Rather than increase cost, size and heat output with huge storage circuits, Magnetic Field Amplification delivers instantaneous high peak and longterm power from a small but powerful Magnetic Field Coil. The result is an amplifier capable of simultaneous high current and high voltage that can do sonic justice to the dynamics of Compact Discs and audiophile records in a compact, cool-running design. An amplifier costing considerably less than the ultra-esoteric models which figured significantly into the genesis of its circuitry. For a reprint of the full story of its development as well as a catalog of Carver high fidelity audio components please call or write to us.

Figure 1



This \$7000 pair of esoteric amplifiers figure significantly into the heritage of the M-500 "t" version circuitry.

Figure 1 above shows a \$7,000 pair of ultra-esoteric mono amplifiers. No expense was spared on their admittedly magnificent but still conventional design and construction.

Figure 2 shows the massive toroid output transformers contained in these prestigious audiophile designs. At 10% regulation, their output current is  $\pm 50$  amperes.

All conventional amplifiers are condemned to using this type of design.

# DEFINITION.

Figure 2 also shows the patented Magnetic Field Coil employed in the Carver M-500t. Its output current is  $\pm 100$  amps at 10% regulation!!!!

Figure 2



Over 40 pounds of toroid coils put out half the current of a single six pound, four ounce Magnetic Field Coil.

## DISTINGUISHING FEATURES OF THE CARVER M-500t.

Power is mandatory for dynamic impact and musical realism. And yet power requires control and finesse. While the Carver M-500t isn't the only amplifier to deliver adequate output, it is one of the few that tempers force with protection circuits beneficial to both the amplifier and your loudspeaker system.

◆ These include DC offset, short circuit power interrupt as well as two special computer-controlled speaker monitor circuits which protect against excessive high frequency tweeter input and an overall thermal overload.

◆ The Carver M-500t continuously displays power output through dual, lighted infinite resolution VU-balistic meters. Meters which can react to musical transients as brief as 1 millisecond.

◆ The M-500t is quiet. Inside and out. Its circuitry has the best signal-to-noise ratio of any production amplifier. Better than  $-120$ dB. And, in spite of its massive output capability, the M-500t does not require a noisy fan to dissipate heat. Thanks to the cool running Magnetic Field Amplifier circuitry.

◆ No other amplifier in the M-500t's price or power ranges is capable of handling problematic speaker loads as low as 1 ohm. Whether required by certain brands of speakers, or inadvertently derived by pairing too many low impedance speakers at one set of output terminals, all conventional amplifiers simply shut down or blow their fuses when faced with this condition.

◆ In stereo use, both channels of the M-500t can actually borrow from each other during unequal output demands. In addition, Carver amplifiers have pioneered phase inversion circuitry which takes advantage of the in-phase (mono) characteristics of bass to essentially double available power supply current at low frequencies.

◆ Finally, the Carver M-500t can be used in a bridged mode as a 700 watt RMS per channel mono amplifier without any switching or modification.

## MUSIC IS THE FINAL PROOF.

Were you to buy a power amplifier solely on features and performance specifications, painstaking comparison would inevitably lead you to the Carver M-500t.

But we are sure that your final judgment will be based on musicality. It is here that the M-500t again distinguishes itself.

Bob Carver has carefully designed the M-500t to have a completely neutral signal path that is utterly transparent in sonic character. The result is more than just musical accuracy. It means a total lack of listener fatigue caused by subtle colorations sometimes exhibited by conventional amplifier designs, regardless of their power rating.

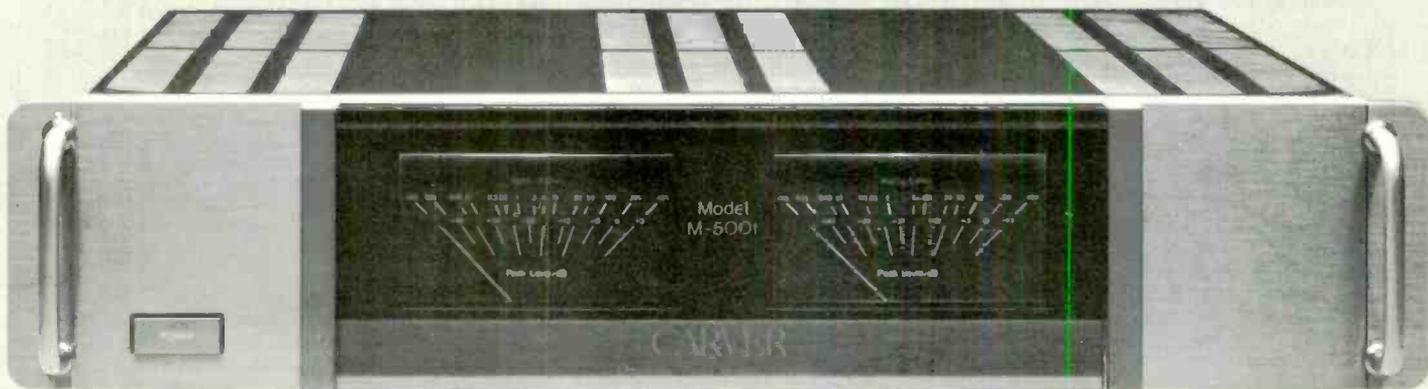
It means a veil is lifted between you and your musical source as the most detailed nuances are revealed with realism, believability and delivered with stunning impact.

## VISIT YOUR CARVER DEALER FOR A SURPRISING AUDITION.

We invite you to audition the Carver M-500t soon. Against any and all competition. Including those who are only now embracing the principles which Bob Carver has refined over the last several years.

We doubt that you will be surprised when the M-500t lives up to the claims made in this advertisement. What will surprise you is just how affordable this much power, musicality and accuracy can be.

**SPECIFICATIONS:** Power, 251 watts per channel into 8 ohms 20Hz to 20kHz, both channels driven with no more than 0.15% THD. Instantaneous Peak Power, 1000 watts into 2 ohms, 950 watts into 4 ohms, 600 watts into 8 ohms. Longterm RMS Power for Music, 500 into 2 ohms, 450 into 4 ohms, 300 into 8 ohms, 1000 watts bridged mono into 4 ohms, 900 watts bridged mono into 8 ohms. Bridged Mono RMS Continuous Power, 700 watts continuous into 8 ohms. Noise  $-120$ dB IHF Weighted. Frequency Response,  $\pm 0-3$ dB 1Hz-100kHz. Slew Factor, 200. Weight, 25 lb. Finish, light brushed anthracite, baked enamel, black anodized.



# CARVER

POWERFUL

MUSICAL

ACCURATE

# AMPLIFIERS

tional bridging kit, to deliver >800 W into 8 ohms). Employs MOSFETs on compact enclosed multispeed fan-cooled heat sink. Fuses and relay protect speakers against turn-on thumps or DC shifts; self-protective capability of the MOSFETs eliminates need for amp protection. Factory assembled ..... \$850  
Kit ..... \$675

## DH 220 Power Amplifier

Direct-coupled bridgeable MOSFET power amp stable into any load. 115 continuous average W/ch from 20-20,000 Hz with no more than 0.02% THD into 8 ohms; typical THD at 115 W into 8 ohms 0.0015% at 1,000 Hz; FR 6-60,000 Hz -0.5 dB; S/N 100 dB; dynamic headroom 2 dB; slew rate 50 V/ $\mu$ sec; IMD <0.005%; damping factor 300 to 1,000 Hz into 8 ohms; 16" W x 5 1/2" H x 10 1/2" D; 26 lbs. Assembled ..... \$500  
Kit ..... \$400

## DH 120 Power Amplifier

Stereo power amp stable with L and R level controls, stereo/mono switch, AUX speaker outputs which feed a matrix signal for ambience effects. 62 continuous average W/ch from 20-20,000 Hz with no more than 0.006% THD into 8 ohms; FR 10-35,000 Hz  $\pm$  1 dB; S/N 105 dB; damping factor 219 to 1,000 Hz; sep 102 dB at 1,000 Hz; 15 1/2" W x 3 1/4" H x 8 1/2" D; approx 15 lbs. Tentative price, assembled ..... \$320  
Tentative price, kit ..... \$260



Hafler DH 220

## HARMAN KARDON

### HK870 Power Amplifier

Stereo DC power amp with discrete components in audio circuitry. Features toroidal power supplies; 4 dual-polarity power supplies. Power output 100 W/ch continuous into 8 ohms, 20-20,000 Hz at 0.06% THD; high instantaneous current capability 60 amps; power bandwidth <10-80,000 Hz; FR 0.1-180,000 Hz (1 W) +0/-3 dB; slew rate 160 V/ $\mu$ sec; negative feedback 12 dB; input sens/imp main input 1.0 V/22,000 ohms; S/N (A-wtd, main input) 98 dB; damping factor 120 ..... \$525

## HEATH

### AA-1800 Power Amplifier

Power amp with typical dynamic headroom of 3 dB. Features 250 continuous average W/ch 20-20,000 Hz with no >0.025% THD into 8 ohms. FR 0.8-220,000 Hz  $\pm$  3 dB; S/N 130 dB; dynamic headroom 3 dB; IMD 0.03%; 19" W x 7 1/8" H x 17 1/4" D; 75 lbs ..... \$650

## HITACHI

### HMA 8500 MK II Power Amplifier

Power amp with MOSFETs. Features 100 continuous average W/ch from 20-20,000 Hz with no more than 0.005% THD into 8 ohms; IMD 0.005%; 17 1/8" W x 6 1/2" H x 12 1/8" D ..... \$650

## JVC

### ML10 Power Amplifier

Power cascade super-A power amplifier. 160 continuous average W/ch from 20-20,000 Hz with no more than 0.002% THD into 8 ohms; FR DC-300,000 Hz +0, -3 dB; S/N 120 dB; IMD 0.002%; damping factor 200 (1,000 Hz 8

ohms). 18 1/8" W x 8" H x 16 1/8" D; 61.6 lbs ..... \$2,100

## KENWOOD

### Basic M2A Power Amplifier

High-speed power amp with super DLD; two speaker system selection; separate level controls for right and left channels; fluorescent peak-hold power meters; LED power indicator. 220 continuous average W/ch from 20-20,000 Hz with no more than 0.004% THD into 8 ohms; FR 20-20,000 Hz. 38 lbs ..... \$600

### Basic M1A High-Speed Power Amplifier

Power amp with super DLD; sigma drive type B; two speaker system selection; LED power indicator; headphone jack. 105 continuous average W/ch from 20-20,000 Hz with no more than 0.005% THD into 8 ohms; 23 lbs ..... \$330

## KYOCERA

### B-910 Power Amplifier

Class AB power amp with triple push-pull high-frequency power stages, ceramic base/chassis. Features DC configuration, large cutless core power transformer, large honeycomb heatsinks; direct and subsonic inputs. 150 continuous average W/ch 20-20,000 Hz with no >0.02% THD into 8 ohms. FR DC-300,000 Hz -3 dB at 1 W; S/N 115 dB; damping factor 80 (50 Hz); 200 W/ch into 4 ohms with 0.03% THD; power bandwidth 10-50,000 Hz; input sens 2.0 V (30 kohm); 17" W x 8 1/4" H x 15 1/4" D; 59.5 lbs ..... \$2,000

## LUXMAN

### M-05 Power Amplifier

Duo-Beta/S Class A power amp. 105 continuous average W/ch from 20-20,000 Hz with no more than 0.025% THD into 8 ohms; FR 10-100,000 Hz -0.5 dB; S/N 120 dB; 18 1/8" W x 8 1/4" H x 17 1/4" D; 88.4 lbs ..... \$2,800

### M-02 Power Amplifier

Duo-Beta/S power amp. 140 continuous average W/ch from 20-20,000 Hz with no more than 0.025% THD into 8 ohms; FR 10-100,000 Hz -1 dB; S/N 120 dB; 17 1/8" W x 5 1/8" H x 13 1/8" D; 31.9 lbs ..... \$700

## MARK LEVINSON

### ML-9 Power Amplifier

Stereo power amp rated at 100 W/ch at 8 ohms, 20-20,000 Hz, <0.2% THD and 200 W/ch at 4 ohms <0.4% THD. All circuitry is discrete and Class-A operation is maintained throughout all voltage gain and driver stages, with Class AB2 operation in output stage. Power supply is comprised of a 1.2 KVA toroidal power transformer, a 30-ampere bridge rectifier and 2 36,000 $\mu$ F filter capacitors, and is capable of storing 230 joules of energy. Two 520  $\mu$ F capacitors provide decoupling and additional filtering for all voltage gain stages. Features gold-plated binding posts for output connections; Camac input connectors and selectable damping factor. Eight 200-W, 15-ampere power transistors together with massive power supply enable ML-9, when pulsed, to develop 58 V peak, at peak currents up to 29 amperes (1,682 W peak) per ch. Hand-brushed black anodized front plate; 8 1/4" H x 19" W x 13 1/8" D; 56 lbs ..... \$3,050

### ML-11 Power Amplifier

Stereo power amp rated at 50 W/ch at 8 ohms, 20-20,000 Hz, <0.5% THD and 100 W/ch at 4 ohms <0.6% THD. 140 W at 8 ohms when bridged. All circuitry is discrete and Class-A operation is maintained throughout all voltage gain and driver stages, with Class AB2 opera-

tion in output stage. Power supply consists of a 320 VA toroidal power transformer, two 12-ampere bridge rectifiers, and four 10,000 $\mu$ F filter capacitors, providing separate rectification and 20 joules of energy storage for each ch. Six 200 W, 15 ampere power transistors per ch enable ML-11, when pulsed, to develop 25 volts peak, at peak currents up to 12.5 amperes (312.5 W peak) per ch. Optional externally programmable voltage-limiting circuit makes it possible to reduce voltage output of ML-11, offering protection for speakers that have reduced power-handling capability. Features gold-plated binding posts for output connections and Camac input connectors; hand-brushed black anodized front plate. 8 1/8" H x 19" W x 12" D; 25 lbs ..... \$1,860

## MCINTOSH

### MC 2250 Power Amplifier

Power amp with interleaved multifilar-wound autotransformer and Sentry Monitoring circuit to monitor output signal and prevent overload of the output transistors. Features Power Guard circuit to eliminate amp clipping due to overdrive. Front panel is anodized gold; chassis is chrome and black. 250 W/ch min continuous average power output, both ch operating into 1-, 2-, 4-, or 8-ohm load imp; THD 0.02%; IM 0.02%; FR (at 1-W output) 20-20,000 Hz +0, -0.25 dB; noise and hum 95 dB; 16" W x 6 1/2" H x 14 1/2" D; 80 lbs ..... \$2,495

### MC 2150 Power Amplifier

Power amp with Sentry Monitoring circuit and Power Guard. Front panel is anodized gold; chassis is chrome and black. 150 W/ch min continuous average power output, both chs operating into 1-, 2-, 4-, or 8-ohm load imp; THD 0.02%; IM 0.02%; FR (at 1-W output) 10-100,000 Hz +0.25, -1 dB; noise and hum 95 dB below rated output; 16" W x 5 1/2" H x 14 1/2" D; 58 lbs ..... \$1,925

### MC 502 Power Amplifier

Basic stereo power amp with each channel consisting of an input preamp, a power-amp section, three separate protecting control circuits, and a phase inverter integral with the left channel. Anodized gold and black. Min sine-wave continuous average power output from 20-20,000 Hz, both chs operating, 75 W/ch into 2.7- to 4-ohm loads; 50 W/ch into 8-ohm loads; 0.02% max harmonic distortion from 250 mW to rated power per ch from 20-20,000 Hz, with both chs operating; FR (at 1-W output) 20-20,000 Hz +0, -0.25 dB, 10-100,000 Hz +0, -3.0 dB; 16" W x 3 3/8" H x 14 1/2" D; 27 lbs ..... \$1,200

### MC 752 Power Amplifier

Direct-coupled stereo power amplifier designed to operate with speakers having nominal impedance of 4 to 8 ohms. Features Power Guard; waveform comparator; Sentry Monitor; thermal shut-down; turn-on delay. FR 20-20,000 Hz  $\pm$  0.25 dB with 0.02% max THD ..... \$895

## MISSION

### 777 Power Amplifier

Perfectly symmetrical DC-coupled Class A (except for output devices which operate in Class AB mode) amp utilizing two identical mono amps. All active components are discrete. Casting works as giant heat sink. Totally modular in construction, features instrument-type line connector; cast-aluminum amp case; very high local feedback loops; output fuse incorporated in feedback loop. Output power 100 W/ch into 8 ohms, 175 W/ch into 4 ohms continuous with both chs driven from 20-20,000 Hz; slew rate

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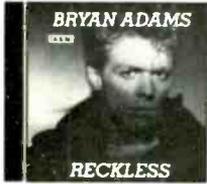
CHOOSE STATE-OF-ART SOUND  
IN THE LATEST CD RELEASES.



339051



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331264



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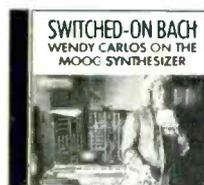
318089



321851



330902



171504



323261



336669



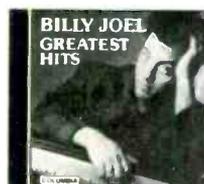
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324397



336396-396390 (2 CDs)



339044

331967. Foreigner—Agent Provocateur. Top 10 album. #1 hit: *I Want to Know What Love Is*, etc. (Atlantic)  
281493. Stravinsky: Rite of Spring. Mehta, New York Philharmonic. (Columbia)  
322008. Linda Ronstadt & The Nelson Riddle Orch.—*What's New, I've Got a Crush On You*; etc. (Asylum)  
310086. Wagner: Overtures. *Flying Dutchman*; etc. Maazel, Philharmonia Orch. (Columbia)

328773. Beethoven: Symphony No. 9 (Choral). Maazel, Cleveland Orchestra. (Digital-CBS Masterworks)  
321380. Barbra Streisand's Greatest Hits, Vol. II. *The Way We Were*, etc. (Columbia)  
302570. Mussorgsky: Pictures At An Exhibition; Ravel: *La Valse*. Mehta, New York Phil. (Columbia)  
326553. Placido Domingo—*Great Love Scenes*. Scotti, others. (CBS Masterworks)

322024. Huey Lewis & The News—Sports. Includes: *I Want A New Drug*; *Bad Is Bad*; *Heart & Soul*, etc. (Chrysalis)  
317081. Bach: Goldberg Variations. Glenn Gould. (Digital-CBS Masterworks)  
313734. Willie Nelson—*Always On My Mind*; *Last Thing I Needed First Thing This Morning*, etc. (Columbia)  
339101. Holst—*The Planets*. Maazel, Orchestre de France. (Digital-CBS Masterworks)

273409. Beethoven: Piano Sonatas. Vladimir Horowitz plays: *Appassionata*; *Moonlight*; *Pathetique*. (Columbia)  
320499. The Police—*Synchronicity*. Winner of three Grammy Awards! (A&M)  
324516. Cyndi Lauper—*She's So Unusual*. #1 hit: *Girls Just Want to Have Fun*; etc. (Portrait)  
335695. Fascinating Rhythm. Jean-Pierre Rampal plays the music of Gershwin. (CBS)

335562. Prince And The New Power Generation—*Love & Money*. #1 album includes: *Raspberry Beret*; others. (Paisley Park)  
314443. Neil Diamond's 12 Greatest Hits, Vol. 2. *If You Don't Bring Me Flowers* (with B. Streisand); etc. (Columbia)  
314997-394999. Stevie Wonder's Original Music—*You Are The Sunshine Of My Life*; others. (Counts as 2—Tama)

328740. Mozart: Piano Concerto No. 26 (Coronation); Rondos. Murray Perahia and English Chamber Orchestra. (Digital-CBS Masterworks)  
219477. Simon & Garfunkel's Greatest Hits. *El Condor Pasa*; *Bridge Over Troubled Water*; etc. (Columbia)



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# AMPLIFIERS

180 Vm; rise time 0.32  $\mu$ sec; negative feedback <14 dB; THD <0.2% DC-40,000 Hz; TIM immeasurable; S/N >100 dB ..... \$1,400

## NAD

**2200 (The Power Tracker) Power Amplifier**  
Stereo/mono power amp. Features high voltage, high current design; bridgeable; new Soft Clipping circuit; audible clipping indicator on front panel. 100 continuous average W/ch from 20-20,000 Hz with no more than 0.03% THD into 8 ohms; FR 3-80,000 Hz +0, -3 dB; S/N >91 dynamic headroom +6 dB; slew rate >35 V/ $\mu$ sec; IMD <0.03%; 16.5" W x 4.8" H x 14.5" D; 27.6 lbs ..... \$448

## 2155 Power Amplifier

Stereo/mono power amplifier with Soft Clipping circuitry. Features speaker-matching imp switch, bridging capability for mono operation. 40 amp current capability; 55 continuous average W/ch 20-20,000 Hz with >0.02% THD; dynamic headroom 3 dB; slew rate 20 V/ $\mu$ sec ..... \$298

## NAKAMICHI

### PA-7 Stasis Power Amplifier

Power amp utilizes Stasis topology. Features 700-W toroidal power transformer; 33,000 microFarad x 4 filter capacitors; dual rectifiers; 16 transistors per ch. 200 continuous average W/ch from 20-20,000 Hz with no >0.1% THD into 8 ohms; FR 7-150,000 Hz +0, -3 dB; S/N >120 dB; dynamic headroom 1.7 dB; IMD <0.1%; output current capability 14 amps continuous (50 amps peak); dynamic output power 300 W/ch into 8 ohms; power bandwidth 5-50,000 Hz (8 ohms, 100 W, 0.1% THD); 17 $\frac{1}{8}$ " W x 7 $\frac{1}{8}$ " H x 16 $\frac{1}{16}$ " D; 59 lbs, 8 oz ..... \$1,595

**PA-5.** Similar to above but 100 W/ch. .... \$995

## NIKKO

### Alpha 650 Power Amplifier

DC stereo power amp with BTL operation for 650 W mono. 300 continuous average W/ch from 20-20,000 Hz with no more than 0.008% THD into 8 ohms; FR 0-100,000 Hz +0, -1 dB; S/N 115 dB; 19" W x 17 $\frac{1}{4}$ " H x 18 $\frac{1}{2}$ " D; 60.5 lbs ..... \$2,000

### Alpha 450 Power Amplifier

DC stereo power amp. 220 continuous average W/ch from 20-20,000 Hz; FR 5-100,000 Hz +0, -0.5 dB; S/N 120 dB; dynamic headroom 150 dB damping; IMD 0.008%; 19" W x 7 $\frac{1}{4}$ " H x 18 $\frac{1}{8}$ " D; 47.3 lbs ..... \$1,000

### Alpha 230 Power Amplifier

DC stereo power amp. 120 continuous average W/ch from 20-20,000 Hz with no more than 0.008% THD into 8 ohms; FR 5-100,000 Hz +0, -0.5 dB; S/N 115 dB; dynamic headroom 70 dB damping; IMD 0.008%; 19" W x 5 $\frac{1}{2}$ " H x 13 $\frac{1}{2}$ " D; 29.7 lbs ..... \$549

### Alpha 130 Power Amplifier

DC stereo power amp with peak level indicator. 100 continuous average W/ch from 20-20,000 Hz with no more than 0.003% THD into 8 ohms; FR 5-100,000 Hz +0, -0.5 dB; S/N 115 dB; IMD 0.003%; 19" W x 5 $\frac{1}{2}$ " H x 13 $\frac{1}{2}$ " D; 28.6 lbs ..... \$400

## ONKYO

### M-5060R 130-Watt Power Amplifier

2 independent mono amps on same chassis. Features dual Super Servo, linear-switching circuitry; 2 large power transformers; peak-hold 2-color power meters; stable protection circuitry with IC voltage, current-sensing device; 2-speaker switching; separate left/right gain con-

trols. Output power 130 W/ch continuous into 8 ohms, 20-20,000 Hz at 0.005% THD ..... \$800

### M-5030 100-Watt Power Amplifier

Dynamic Super Servo power amp. Features Delta power supply; linear switching; large peak-reading power meters; 100 W/ch, min RMS, into 8 ohms both chs driven from 20-20,000 Hz with no > 0.005% THD ..... \$600

## PARASOUND

### PA260 Power Amplifier

Compact stereo power amp with switchable BTL operation for 150 W in mono at less than 0.06% THD. Features switching for two pairs of speakers; headphone jack; relay protection with LED indicators; oversized toroidal transformer; input gain control. 60 continuous average W/ch from 20-20,000 Hz with no more than 0.02% THD into 8 ohms; FR 10-85,000 Hz  $\pm$ 1 dB; S/N 100 dB; dynamic headroom 2 dB; slew rate 95 V/ $\mu$ sec; IMD 0.01%; 8-sec delay for relay operation; 17 $\frac{1}{4}$ " W x 2 $\frac{1}{4}$ " H x 8 $\frac{1}{2}$ " D; ..... \$220



Nakamichi PA-7 Stasis

## PERREAUX

### 2150B Power Amplifier

Rated power 200 W/ch continuous, both chs driven into 8 ohms from 20-20,000 Hz at no >0.009% THD from 0.25 W to rated power; 400 W/ch continuous into 4 ohms; bridged power >600 W continuous 20-20,000 Hz into 8 ohms; amp saturation 700 W or greater per ch into 8 ohms; voltage swing 164 volts peak to peak per ch; max current out 10 amperes continuous per ch, fuse limited; rise time typically <1  $\mu$ sec; bandwidth 10-3,000,000 Hz -0.1 dB at 1 W; phase response -1 at 20 Hz, -1 at 20,000 Hz; hum and noise 100 dB below rated output 20-20,000 Hz unwt'd; damping factor >500 10-10,000 Hz; input sens 1.5 V RMS for rated output at 1,000 Hz; input imp 10,000 ohms; 48 cm W x 18.5 H x 40 D (19" W x 7 $\frac{1}{2}$ " H x 15" D), plus 4.5 cm (1 $\frac{1}{2}$ ") for front handles; 22 kg (48 lbs) net, 23.5 kg (52 lbs) shipping ..... \$1,550

**PMF 1150B.** Specs same as PMF 2150B except rated power 100 W/ch continuous, both chs driven into 8 ohms from 20-20,000 Hz; 200 W/ch continuous into 4 ohms; THD and IMD 0.009%; bridged power >300 W continuous 20-20,000 Hz into 8 ohms; amp saturation 350 W/ch or greater into 8 ohms; voltage swing 120 V peak to peak per ch; max current output 7.5 amperes continuous per ch, fuse limited; input imp 47,000 ohms; 48.3 cm W x 13.3 H x 35.6 D (19" W x 5 $\frac{1}{2}$ " H x 15" D); 15 kg (33 lbs) net, 16.3 kg (36 lbs) shipping ..... \$1,150

## QUAD

### Quad 405-2 Power Amplifier

Voltage-power current controlled amp with feed-forward current error-correction dumping output circuitry. Load-sensitive time-dependent current limiter protection circuit; DC offset voltage confined to negligible values even under gross overload; fixed high-pass filter; clamp circuit interrupts output to speaker in case of component failure. Available in anthracite grey. Output power 100 W continuous sine wave into 8 ohms, 100-1,000 Hz at 0.01% THD, FR -1

dB at 20 Hz, -0.5 dB at 20,000 Hz; slew rate 0.1 V/ $\mu$ sec; hum and noise -96 dB A-wtd; 4.5" H x 13.4" W x 7.7" D; 20 lbs ..... \$650

## REVOX

### B740 Power Amplifier

Basic stereo power amp with peak power meters. Features fully complementary push-pull circuitry at every stage, low negative feedback; full electronic protection without relays; 3-dB stepped input level controls; front-panel headphone jacks, carrying handles; RCA and XLR input connectors; switchable infrasonic filter. Output power 100 W/ch into 8 ohms, 20-20,000 Hz at 0.1% THD; FR 20-20,000 Hz +0, -0.75 dB; sens 1 V for rated output; 17" W x 14" D x 6" H ..... \$1,600

## ROTEL

### RB880 Stereo Power Amplifier

Power amp with 100 continuous average W/ch from 20-20,000 Hz into 8 ohms with no more than 0.03% THD; FR 15-120,000 Hz +0, -1 dB; S/N 116 dB; IMD 0.03%; 16 $\frac{3}{16}$ " W x 3 $\frac{3}{16}$ " H x 12 $\frac{3}{8}$ " D; 20.6 lbs ..... \$875

### RB870 Stereo Power Amplifier

Power amp with two power transformers and separate power supplies. 60 continuous average W/ch from 20-20,000 into 8 ohms with no more than 0.03% THD; FR 15-120,000 Hz +0, -1 dB; S/N 116 dB; IMD 0.05%; 16 $\frac{3}{16}$ " W x 3 $\frac{3}{16}$ " H x 12 $\frac{3}{8}$ " D; 20.6 lbs ..... \$375

## SAE

### A1001 Power Amplifier

Stereo power amp with 500 W/ch continuous output power into 8 ohms from 20-20,000 Hz at 0.25% THD and IMD, 750 W into 4 ohms at 0.025% THD. Features high-current capability, full complementary balanced circuitry. FR 20-20,000 Hz; S/N 115 dB; input sens 2.5 V; 19" W x 17 $\frac{1}{4}$ " D x 8 $\frac{3}{4}$ " H; 75 lbs ..... \$1,550

### A201 Power Amplifier

Stereo power amp with 100 w/ch continuous output power into 8 ohms from 20-20,000 Hz at 0.025% THD and IMD. Fully complementary circuits; natural damping; bridgeable to 375 W mono; high-pass filter inputs; LED power meters; turbo-flow heat sinking. FR 20-20,000 Hz; S/N 100 dB; dynamic headroom 1.2 dB; slew rate 20 amps m/sec; 19" W x 12 $\frac{1}{2}$ " D x 3 $\frac{1}{2}$ " H; 28 lbs ..... \$650

### A502 Power Amplifier

Power amp with automatic bridging circuit. 200 continuous average W/ch from 20-20,000 Hz with no more than 0.025% THD into 8 ohms; 600 W mono operation. Features dual speaker system switching; peak and average LED power display. Rack mountable. FR 20-20,000 Hz  $\pm$ 0 dB; S/N 110 dB; dynamic headroom 1.2 dB; IMD 0.025%; 19" W x 5.25" H x 14" D; 36 lbs ..... \$649

### A202 Power Amplifier

Power amp with 100 W/ch and balanced, discrete outputs. Features dual speaker switching; peak and average level LED power display. Rack mountable. 100 continuous average W/ch from 20-20,000 Hz with no more than 0.025% THD into 8 ohms; FR 20-20,000 Hz  $\pm$ 0 dB; S/N 110 dB; dynamic headroom 1.2 dB; IMD 0.025%; 19" W x 3.5" H x 14" D; 27 lbs ..... \$449

## SANSUI

### B-2301 Power Amplifier

DC power amp with X-balanced technology. Features fluorescent peak power display with

# AMPLIFIERS

switchable peak/hold functions; balanced ch-connector inputs. 300 continuous average W/ch from 20-20,000 Hz with no more than 0.003% THD into 8 ohms; FR 0-300,000 Hz +0, -3 dB; slew rate 300 V/ $\mu$ sec ..... \$2,600

## B-2101 Power Amplifier

DC power amp with X-balanced technology. Features fluorescent peak power display with switchable peak/hold functions. Handles 2 pairs speakers with front-panel switching. 200 continuous average W/ch from 20-20,000 Hz with no more than 0.0025% THD into 8 ohms; FR 0-300,000 Hz +0, -3 dB; S/N 124 dB; slew rate 400 V/ $\mu$ sec; 17" W x 6 $\frac{1}{2}$ " H x 15" D ..... \$800

## SHERWOOD

### S-6040 CP Power Amplifier

Basic power amp individually tested and certified. Features full push-pull MOSFET DC circuitry with complementary symmetry JFET input stage; cascode driver stage; second-order low-pass filter; complete relay protection; fuses in feedback circuit; min current limiting. Output power 100 W/ch into 8 ohms, 20-20,000 Hz at 0.03% THD and IMD; clipping dynamic headroom 0.88/1.67 dB at 8 ohms; damping factor 90; FR DC-40,000 Hz with low-pass filter; S/N 100 dB; input sens 900 mV; 17 $\frac{3}{8}$ " W x 15 $\frac{1}{2}$ " D x 4 $\frac{3}{8}$ " H; 30 lb ..... \$350

## SOUNDCRAFTSMEN

### PM1600 Power Amplifier

MOSFET stereo power amp. Features Phase Control Regulation power supply; 600 W/ch continuous rms into 4 ohms; 750 W/ch continuous rms into 2 ohms; over 1,000 W/ch short term continuous power into 2 ohms; 375 continuous average W/ch from 20-20,000 Hz with no more than 0.05% THD into 8 ohms; FR 20-20,000 Hz  $\pm$ 0.1 dB; S/N 105 dB; slew rate 50 V/ $\mu$ sec; IMD 0.05%; rack mount; 19" W x 5 $\frac{1}{4}$ " H x 17" D; 60 lbs ..... \$1,399

### A5002 Power Amplifier

Power amp with class-H Vari-Proportional circuitry and Autobuffer for continuous operation into 2 ohms. Features auto crowbar protection circuit for output protection without current limiting; 20 LED/ch 0-1,000 W  $\pm$ 3 dB (4 ohms) meters; front-panel switching for 2 pairs of speakers; true clipping indicators; input level controls. Output power 250 W/ch into 8 ohms, 375 W into 4 ohms continuous rms, 20-20,000 Hz at <0.09% THD; S/N >105 dB; slew rate >50 V/ $\mu$ sec; TIM <0.02%; dynamic headroom >2 dB ..... \$899

A5001. Same as A5002 except no LED meters and no input level controls ..... \$749



Soundcraftsmen PCR800

### A2502 Power Amplifier

MOSFET stereo power amp with 20-LED 0-500 W (4 ohms) power meters. Features switching for 2 pairs of speakers; input level controls; true clipping indicators; brushed aluminum with charcoal finish rack-mount front panel. Output 125 W/ch into 8 ohms, 190 W/ch into 4 ohms, continuous rms, 20-20,000 Hz at <0.05% THD; S/N >105 dB; damping factor 200 ..... \$649

## PCR800 Power Amplifier

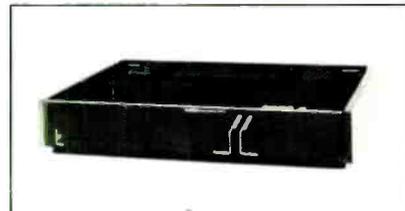
Phase Control Regulation MOSFET stereo power amp. 205 W/ch continuous rms; 20-20,000 Hz into 2 ohms, 4 ohms, 8 ohms; THD 0.05%; TIM unmeasurable; S/N >105 dB; 18 lbs; 5" W x 8 $\frac{1}{4}$ " H x 12" D ..... \$449

## TANDBERG

### TPA 3006 A Power Amplifier

Stereo power amp with toroidal power transformer; high current MOSFET output design. Features selected all-metal film resistors; polypropylene capacitors; zero negative feedback. Continuous average power output 150 W/ch from 20-20,000 Hz with no more than 0.02% THD into 8 ohms; FR 1-150,000 Hz +0, -3 dB; S/N 118 dB A-wtd at 150 W; slew rate 500 V/ $\mu$ sec; IMD 0.02%; 17 $\frac{1}{8}$ " W x 3 $\frac{1}{4}$ " H x 13 $\frac{3}{4}$ " D; 25 lbs. Rosewood side panels optional \$995

er meter covers -30 to +3 dB. Power supply 1,800 W toroidal transformer, 120,000  $\mu$ F capacitance. Rated power 500 W rms into 8 ohms of resistive or reactive imp 20-20,000 Hz at no more than 0.1% THD; bandwidth -3 dB points, 7 Hz and 100,000 Hz; slew rate 160V/ $\mu$ sec; input imp 75,000 ohms; output imp 0.1 ohm; output current capability 20 amperes continuous, 50 amperes peak; 19" W x 9 $\frac{1}{2}$ " H x 17 $\frac{1}{2}$ " D; 79 lbs ..... \$3,500



Tandberg TPA 3006 A

## TECHNICS

### SE-A3MK2 Stereo DC Power Amplifier

Power amp with computer-drive Class A circuitry. Features linear feedback circuitry; Class A synchro bias; concentrated power block; extra-large transformers and capacitors for stable power supply; 4-stage Darlington output circuitry; auto-load imp detector; computer protection circuitry; large, fast peak power meters; extra 2 Hz low-cut input terminals; main/remote/main and remote/off pushbutton speaker selectors on front panel; thick aluminum cabinet. Output power 300 W/ch into 8 ohms; THD 0.002%; IMD 0.002%; FR DC-200,000 Hz -3 dB; input sens/imp 55 mV/4-16 ohms main or remote, 8-16 ohms main and remote; S/N 100 dB; damping factor 200 8 ohms, 100 4 ohms; 16" W x 8" H x 19" D; 86 lb ..... \$2,200

### SE-A5MK2 Power Amplifier

DC power amp with computer drive to neutralize transient crossover distortion and linear feedback. Features parallel 3-stage Darlington output. Features power-linear circuit compensates for speaker imp variation, power-output meters. 150 continuous average W/ch from 20-20,000 Hz with >0.002% THD into 8 ohms; FR DC-150,000 Hz +0, -3 dB; S/N 102 dB IHF A, 121 dB IHF '60; dynamic headroom 1.5 dB (852) -3.6 dB, 4 ohms; IMD 0.002% 8 ohms; TIM immeasurable; LF damping factor 100; power bandwidth both chs driven 5-100,000 Hz -3 dB, THD 0.01%; 16" W x 7" H x 16" D; 40.6 lbs ..... \$800

## THRESHOLD

### Model S/1000 Series II Stasis Amplifier

Single ch, noninverting complementary-symmetry power amp with N-ch JFETs in front-end signal path and proprietary Stasis output stage. This is a binary topology in which a pure Class A voltage amp connected directly to the loud-speaker load determines signal integrity while operating in conjunction with a high-amperage current mirror also connected directly to the load. No feedback stage is used. Front-end gain stages biased for Class A operation at all signal levels and are subject to primary and secondary levels of cascode shielding. Output stage employs 40 ultra-wide-bandwidth power transistors each rated at 200 V, 20 amperes. No fusing is imposed between output and load. Input and output connectors have gold-plated contact surfaces. Circuit boards are military grade glass-epoxy, and all internal connections are hand soldered. Modular structural design of ch assemblies allows replacement in minutes. Operation is allowed into any load as permitted by power-supply fuses and thermal-protection circuitry. Large illuminated front-panel peak pow-

Model S/500 Series II Stasis. As model S/1000 Series II above except dual-channel, no meters, lower power. Output transistor complement 20 200-V 20-ampere devices per channel; power supply 1,000-W toroidal transformer. 250 W/ch 20-20,000 Hz with both channels driven in 8 ohms of resistive or reactive imp at no more than 0.1% distortion. FR down 3 dB at 7 and 100,000 Hz; slew rate 50 V/ $\mu$ sec; output current capability 16 amperes/ch continuous, 40 amperes/ch peak ..... \$3,200

Model S/300 Series II Stasis. As model S/500 Series II except rated power 150 W/ch into 8 ohms, both chs driven 20-20,000 Hz at 0.1% THD; output transistor complement fourteen 200-V, 20-ampere devices/ch; power supply 700-W toroidal transformer, 60,000  $\mu$ F capacitance; output current capability 12 amperes/ch continuous, 30 amperes/ch peak; 19" W x 9 $\frac{1}{2}$ " H x 13" D; 56 lbs ..... \$2,200

Model S/150 Series II Stasis. As model S/300 Series II above except rated power 90 W/ch rms into 8 ohms, both chs driven 20-20,000 Hz at 0.1% THD; output transistor complement eight 200-V, 20-ampere devices/ch; power supply 400-W toroidal transformer, 30,000  $\mu$ F capacitance; max output current 8 amperes/ch continuous, 20 amperes/ch peak; 19" W x 9 $\frac{1}{2}$ " H x 17 $\frac{1}{2}$ " D 44 lbs ..... \$1,450

## VECTOR RESEARCH

### VA-1450 Power Amplifier

Features high-current, 8-output transistors, dual transformers; used in bridging mode with VA-1400 or VRX-9100 to convert to 200 W/ch. 100 continuous average W/ch 20-20,000 Hz <0.08% THD into 4 ohms; dynamic headroom 2.5 dB; IHF IMD 0.08%; FR 10-40,000 Hz  $\pm$ 1 dB; 21 lbs. 17" W x 3" H x 12" D ..... \$280

## VSP

### Trans Mos Power Amplifier

Stereo power amp with 150 W/ch continuous power into 8 ohms, 20-20,000 Hz <0.05% THD. Features output stage transconductance mode of operation; low noise design; DC, MOSFETs for accurate wideband response and low distortion; optimally balanced output stage for instant power-on without thump; controlled amp behavior under input overload with no power supply stick; over 1,100 sq. inches of heat-sink area; exceptional stability into all loads; switch for more efficient operation at low imps; switchable 18 dB/octave active infrasonic filter; zero group delay distortion high-frequency filter; switch for mono operation; modular construction with plug-in boards; 5 $\frac{1}{2}$ " optional

# AMPLIFIERS

rack mount available; slew rate >70 V/sec; output current instantaneous 44 amps peak to peak; damping factor >200 20-20,000 Hz; input sens 1.7 V RMS for 150 W output into 8 ohms; input imp 130 kohm resistive 20-20,000 Hz; 5" W x 15" D x 14" H; 40 lbs, assembled. \$1,072  
**Gold Edition.** Similar to Trans Mos except 200 W/ch power output; gold-plated input connectors; heavy-duty hand-soldered wiring; hand-matched MOSFETs; 19" rack mount. \$1,500



Yamaha M-80

## YAMAHA

### M-80 Power Amplifier

Stereo power amp with zero distortion rule circuitry; A, B, C speaker switching; 20-segment peak LED meters. Features 250 continuous average W/ch from 20-20,000 Hz with no more than 0.003% THD into 8 ohms; FR 20-20,000 Hz +0, -1 dB; S/N 127 dB; dynamic headroom 2.3 dB; IMD 0.003%; 17 1/8" W x 6 1/2" H x 16 3/4" D; 50 lbs. \$950

**M-60.** Stereo power amp with many features of M-80. 160 continuous average W/ch from 20-20,000 Hz with no more than 0.003% THD into 8 ohms; dynamic headroom 1.5 dB. \$650

**M-40.** Stereo power amp with many features of M-60. 120 continuous average W/ch from 20-20,000 Hz with no more than 0.003% THD into 8 ohms; dynamic headroom 1.3 dB. \$400

## PREAMPLIFIERS

## ACOUSTAT

### Trans-Nova Preamplifier

Full FET preamplifier with single phono gain stage for all types of low- or high-output phono cartridges and RIAA network that is neither passive nor active. Features 4 high-level inputs; 2 tape monitors with dubbing in both directions; output switching; passive high filter and loudness compensation; headphone output; convenience outlets. FR 3-750,000 Hz  $\pm$  3 dB; 10 lb. \$695

## ADCOM

### GFP-1A Preamplifier

Features two separate phono-input circuits; inputs for CD player and wide-range VCR audio; signal-processor loop; switchable phono-input capacitance; CX noise reduction; THD <0.007% 20-20,000 Hz unwt'd; IMD SMPTE <0.0012%; max output level 10 V 20-20,000 Hz; tape output level 150 mV; input sens/imp phono 1: 2.5 mV/47k ohms 0.5 mV/100 ohms phono 2: 2.5 mV/47k ohms tuner, tape: 150 mV/100k ohms; phono input-capacitance 85 pF overload at 1,000 Hz: 290 mV; S/N 15 mV input, IHF load -85 dB phono 1, 2.5 V output: >100 dB DAD/video tuner, tape; loudness: +3.5 dB/100 Hz; +2.5 dB/10,000 Hz; FR 20-20,000 Hz  $\pm$  0.25 dB; crosstalk: 100 Hz, 80 dB; 1,000 Hz, 75 dB; 10,000 Hz, 60 dB; 19" W x 3" H x 12 1/2" D; shipping weight 16 lbs. \$375

## APT

### HP Preamplifier

Multiple control stereo preamp. Features Tape 1 to 2 or Tape 2 to 1 dubbing, absolute output mute image control, variable phono imp, 18 dB infrasonic filter. Inputs for MM phono, MC phono, tape, tape 2, aux, phono 1, phono 2, CD player, tuner, external processor. FR 20-20,000 Hz  $\pm$  0.5 dB; max output 7 V RMS (+17 dBV) max undistorted; THD 0.006% at 2.0 V RMS (+6.0 dBV); IMD 0.006% IHF; MM phono sens 1.25 mV for 0.5-V output at 1,000 Hz; MM phono input overload level 100+ mV RMS at 1,000 Hz; sens for line-level inputs 80 mV RMS for 0.5 V RMS output; 16.9" W x 3.1" H x 8.2" D; 10 lbs. \$648

### P205 Preamplifier

Phono-only preamp with single-ended input, balanced output (100 to 600 ohm load). Features switchable cartridge termination 50-450  $\mu$ F (in 50 pF increments); 33  $\mu$ , 47, 100, 1,000 kohms; Defeatable 18-dB infrasonic filter (for evaluation purposes); L + R output level (with switchable filter type). Switchable 8-Hz pop/scratch filter. Phono noise less than 76.8 dB re 5 mV input at 1,000 Hz, weighted with cartridge connected (-78 theoretical limit), RFI immune. Tamper-proof controls; 4-year warranty. FR 30-18,000 Hz  $\pm$  0.2 dB; max output +26 dBV max undistorted; THD 0.06%; IMD 0.06% IHF; MM phono sens 1.25 mV for 0.5-V output at 1,000 Hz; MM phono input overload level 125 mV; 19" W x 3.46" H x 8.2" D; 9 lbs. \$425

### P2 Preamplifier

Slimmed-down version of the APT Holman preamplifier. Inputs for MM phono, MC phono, tape, aux, phono 1, phono 2, CD player, tuner. FR 20-20,000 Hz  $\pm$  0.5 dB; max output 7 V RMS undistorted; THD 0.006%; IMD 0.006% IHF; MM phono sens 1.25 mV RMS for 0.5-V RMS output at 1,000 Hz; MM phono input overload level >100 mV at 1,000 Hz; sens for line-level inputs 80 mV RMS for 0.5 V RMS output; 16.9" W x 2.2" H x 8.2" D; 9 lbs. \$417

## BRYSTON

### 1 B Preamplifier

Low-level, low-noise preamp designed for maximum musical accuracy. Features open-loop linearity circuit; noise-free, voltage-stabilized power supplies; defeatable 6 dB/octave at 30 Hz rumble filter; phono 1 and 2, tape 1 and 2, CD, tuner selector; stereo/mono switch; balance, volume controls. Gain 50 dB phono, 20 dB line; noise -80 dB at 5 mV input, 1 kHz unwt'd; distortion 0.005%, 20-20,000 Hz through phono stage at 5 V output. \$875

**1 B-MC.** Similar to 1 B preamp with inputs for MC, MM phono, tape 2; CD; tuner. \$1,300

### .5B Preamplifier

Basic preamp with inputs for MM phono, tape, CD player, tuner. FR 20-20,000 Hz  $\pm$  0.1 dB; max output 4 V; THD 0.005%; IMD 0.005% IHF; 19" W x 1.75" H x 9" D; 9 lbs. \$600

## CANTON

### EC-P1 Preamplifier

Preamp for direct drive of active speakers and subwoofers. Features tape dubbing and recording independent of program output; phono input with EQ; separate output for Canton active speakers. Inputs for MM phono, MC phono, tape, tape 2, aux, CD player, tuner. FR 7-2 MHz; max output 12 V; THD 0.002%; MM phono sens 2 mV for 0.5 V output at 1,000 Hz. 17.1" W x 2.76" H x 9.45" D; 4 kg. \$1,500

## CARVER

### C-4000 Sonic Holography Preamplifier

Preamp includes Sonic Hologram Generator designed to recreate 3-dimensional sound field present during original recording and to locate musical instruments precisely in space. Features MC preamp; 3-channel time-delay system with 40 W combined amplifier, user-selectable 35/50-m/sec initial delay with variable echo density; third-generation Auto Correlator noise-reduction system, Peak Unlimiter; separate left and right bass and treble controls with turnover frequency switches, tone defeat; cartridge matching; 2-way tape dubbing, monitoring; external signal processor input; infrasonic filter. FR  $\pm$  0.25 dB 20-20,000 Hz phono RIAA, 5-200,000 Hz -1 dB high level; input sens 0.85 mV phono, 50 mV high level; phono overload 150 mV at 1 kHz; phono gain 35 dB; NR 20 dB (20-200 Hz), 10 dB (2,000-20,000 Hz); Sonic Hologram™ image resolution 5° horizontally, 20° vertically; Peak Unlimiter total dynamic-range recovery 6 dB; time delay 50 msec max; distortion 0.2%; bandwidth 20-10,000 Hz, feedforward to 19 kHz. 19" W x 8" D x 6 1/4" H. \$1,099

### C-1 Sonic Holography Preamplifier

Features Sonic Hologram Generator dimensional sound imager; separate left and right bass and treble tone controls, tone defeat; MC phono input; 18 dB/octave infrasonic filter; tape/source monitor with 2-way tape-dubbing; provision for external processor. FR  $\pm$  0.25 dB extended curve phono RIAA, 5-200,000 Hz high level; THD 0.05%; phono overload 150 mV at 1 kHz, 1,500 mV at 20 kHz; image resolution 5° horizontal, 20° vertical. \$549

### C-2 MM/MC Preamplifier

Preamp features switchable phono input for MM or MC cartridges; infrasonic filter (18 dB/octave below 20 Hz); bass and treble controls; tone control bypass; 2 tape inputs; provision for 2-way dubbing; AUX input; external processor loop; mode switch; rear-panel jack for high-level gain (choice of 15 or 25 dB); anodized aluminum front panel finished in dark pewter. FR -3 dB at 3 Hz and 80 kHz (infrasonic filter out); noise 77 dB MC, 83 dB MM; THD 0.05%; output imp 600 ohms; TIM immeasurable; 17.3" W x 9" D x 2.55" H. \$375

## COUNTERPOINT

### SA-3 Preamplifier

Preamp with inputs for MM phono, MC phono, tape, tape 2, aux, CD player, tuner. FR 2.5-30,000 Hz  $\pm$  0.1 dB; max output 70 V; THD 0.18%; IMD 0.18% IHF; MM phono sens 2.5 mV for 0.5-V output at 1,000 Hz; MM phono input overload level 800 mV; 19" W x 2 1/32" H x 17 1/32" D; 18 lbs. \$995

### SA-7 Preamplifier

Preamp with inputs for MM phono, MC phono, tape, CD player, tuner. FR 2-30,000 Hz  $\pm$  0.1 dB; max output 30 V; THD 0.25%; IMD 0.3% IHF; MM phono sens 0.8 mV for 0.5-V output at 1,000 Hz; MM phono input overload level 500 mV; 19" W x 2.23" H x 7.1" D. \$595

### SA-6 Preamplifier

Preamp with inputs for MC phono. FR 1-30,000 Hz; max output 30 V; THD 0.06%; IMD 0.07% IHF; 19" W x 2 1/32" H x 7 3/4" D; 10 lbs. \$450

## CROWN

### Straight-Line Two Preamplifier

Straight-wire-signal-path preamp with auto muting. Features tuner, phono, AUX 1, AUX 2,

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Money For Nothing, Walk Of Life, One World, others.  
Warner Bros. DIGITAL 114734

**Brahms, 21 Hungarian Dances**  
Vienna Philharmonic Orchestra/  
Abbado. DG DIGITAL 115408

**Pointer Sisters: Contact** • Dare Me, Bodies And Souls, Hey You, Pound Pound Pound, more. RCA 124611

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**Rachmaninov, Symphonic Dances; Vocalise; more** • Berlin Philharmonic; Maaazel. DG DIGITAL 115113

**Bach, Brandenburg Concertos Nos. 1-3** • The English Concert/Pinnock. Archiv DIGITAL 115541

**John Cougar Mellencamp: Scarecrow** • Lonely Ol' Night, Small Town, Rain On The Scarecrow, more. Riva 144512

**Dave Grusin & Lee Ritenour: Harlequin** • Title song, Early A.M. Attitude, San Ysidro, etc. GRP DIGITAL 154203

**Vivaldi, The Four Seasons**  
Standage, violin. English Concert/  
Pinnock. Archiv DIGITAL 115356

**Hall & Oates: Live At The Apollo**  
Apollo Medley, Everytime You Go Away, I Can't Go For That, etc. RCA 140625

**Eurythmics: Be Yourself Tonight**  
Would I Lie To You?, Sisters Are Doin' It For Themselves, etc. RCA 153394

**James Galway & Henry Mancini: In The Pink** • *The Pink Panther*, more. RCA DIGITAL 151758

**ZZ Top: Afterburner** • Sleeping Bag, Can't Stop Rockin', etc. Warner Bros. 164042

**Pavarotti: Mamma** • Title song, *Vieni sui mari*, more. Henry Mancini products. London DIGITAL 115310

**Prince: Around The World In A Day** • Paisley Park, Raspberry Beret, America, Pop Life, etc. Warner Bros. 124370

**Richard Strauss, An Alpine Symphony** • Berlin Philharmonic Orchestra/Karajan. DG DIGITAL 105528

**Sting: The Dream Of The Blue Turtles** • If You Love Somebody Set Them Free, Fortress Around Your Heart, others. A&M 150266

**Dvofak, Symphony No. 9 (New World)** • Chicago Symphony Orchestra/Solti. London DIGITAL 115168

**Kenny Rogers: The Heart Of The Matter** • Morning Desire, People In Love, title song, others. RCA 153995



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# A M P L I F I E R S

tape 1, tape 2, processor signal/source selector; 6 outputs, including headphone monitor; detented level, loudness, 10-dB boost/cut detented bass and treble, tape-copy, tape-monitor, balance, mode, low-frequency filter, phono-level controls; rumble, signal-present, overload, tone-activated indicators; 1 3/4" H front panel ..... \$595

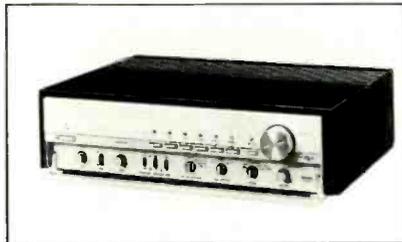
## DENON

### PRA-2000Z Preamplifier

Inputs for 2 MC phonos, 1 MM phono, tape, tape 2, AUX, tuner, CD. Equalizer Amplifier: input sens/imp phono-1 MC 0.1 mV/40 ohms, phono-2 MC 0.12 mV/100 ohms, phono-3 MM 2.5 mV/47 kohms; max input level phono-1 MC 20 mV (1,000 Hz), phono-2 MC 24 mV (1,000 Hz), phono-3 MM 500 mV (1,000 Hz); THD phono-1 <0.001% 1,000 Hz 20 V output, phono 2&3 <0.0015% 20-20,000 Hz 3 V; S/N A-wtd phono-1 MC 80 dB at 0.25 mV input, phono-2 MC 75 dB at 0.25 mV input, phono-3 MM 90 dB at 2.5 mV input; sep 20 Hz-1,000 Hz 80 dB, 20,000 Hz 70 Hz. Flat Amplifier: input sens/imp 150 mV/47 kohms; THD <0.0015% (20-20,000 Hz, 4 V output); FR 1-300,000 Hz +0, -3 dB; S/N A-wtd 105 dB; sep 20 Hz 100 dB, 1,000 Hz 75 dB, 20,000 Hz 65 dB. \$1,300

### PRA-1000 II Preamplifier

Black Class A non-NFB preamp with bass/treble/center tone defeat. Features separate rec out; tape monitor for 2 decks; side panels standard. Inputs for MM phono, MC phono, tape, tape 2, AUX, phono 2, CD player, tuner. FR 2-300,000 Hz  $\pm 3$  dB; max output 20 V; THD 0.001%; MM phono sens 2.5 mV for 0.5 V output at 1,000 Hz; MM phono input overload level 320 mV; sens for line-level inputs 150 mV ..... \$495



Denon PRA-2000Z

## HAFLER

### DH-110 Discrete Preamplifier

Preamplifier operates all discrete devices (no integrated circuits in signal path) in full complimentary symmetry format. Controls: volume, balance, bass, treble, input selector, phono selector, monitor selector, mono/stereo, filter, external processor loop, tone control engage. Features rack-mounting capability; single active circuit board; step-action volume control; switchable high-pass filter; integral muting circuit; 2 pairs of audio outputs; low-imp power supply; full power bandwidth to 200,000 Hz; 2 phono, tuner, AUX, 2 tape deck, EPL inputs; 2 tape (buffered), 2 line, EPL outputs; headphone jack. THD <0.0006% at 1,000 Hz, 3 V RMS; FR 20-20,000 Hz +0-0.25 dB; S/N weighted 87 dB; rated output 3 V RMS, 4-210,000 Hz; THD <0.001% 20-20,000 Hz; 17" W x 3" H x 8 1/2" D; 10 lbs. Assembled ..... \$440  
Kit ..... \$360

### DH-100 Preamplifier

"No frills" preamp with Super Accurate RIAA EQ utilizing 1%-tolerance components; low-imp

power supply; delay circuit; sufficient line output. Inputs for MM phono, tape, AUX, tuner. Features volume, balance, treble, bass, tape monitor, power controls; 2 switched outlets. FR 20-20,000 Hz  $\pm 0.25$  dB; max output 8 V; THD <0.005%; IMD below residual noise of current test instruments; MM phono sens 12 mV for 0.5-V output at 1,000 Hz; MM phono input overload level 180 mV, 13 1/2" W x 3" H x 10" D; 7 lbs. Assembled ..... \$225  
Kit ..... \$175

## HARMAN/KARDON

### HK825 Preamplifier

Stereo preamp with dual-RIAA EQ circuitry; low-noise ETs in low-level and high-level input stages; MC head amp; capacitance trim; switchable bass and treble turnover frequencies; tone defeat; 2-deck tape monitor; 2-way tape dubbing; loudness; subsonic and high-cut filters; AUX, DAD, tuner, and phono input selectors. Input sens/imp: phono MM 22 mV/47k ohms/135 pF, phono MC 150  $\mu$ V/100 ohms, AUX, tape 135 mV/25 ohms; phono overload 200 mV MM/12 mV MC, FR (AUX, 1.0 V) 0.1-180,000 Hz +0, -3 dB; RIAA accuracy +0.2 dB; S/N phono MM-83 dB, phono MC -80 dB, AUX, tape 92 dB; slew rate 120 V/ $\mu$ sec; THD (AUX 1 V) 0.05%; turnover frequencies 100 Hz/400 Hz, 2 kHz/6 kHz. 17 1/16" W x 4" H x 14 1/2" D ..... \$425

## HITACHI

### HCA 8500 MkII Preamplifier

Preamp with inputs for MM phono, MC phono, tape, tape 2, AUX, CD player, tuner. FR 20-20,000 Hz  $\pm 2$  dB; max output 1 V; THD 0.005%; IMD 0.005%; MM phono sens 2.5 mV for 0.5-V output at 1,000 Hz; 17 1/8" W x 3 3/4" H x 11 1/2" D; 10 lbs; 4.5 kg ..... \$370

## JVC

### PL10 Precision Control Preamplifier

Features Gm processor; ultra-high sensibility head amp. Inputs for MM phono, MC phono, tape, tape 2, AUX, phono 2, tuner. THD 0.002%; MM phono sens 2.5 mV for 0.15 V output (rec out) at 1,000 Hz; MM phono input overload level 300 mV; sens for line-level inputs 150 mV. 18 1/8" W x 5 1/16" H x 16 1/16" D; 26.4 lbs. \$1,650

## KENWOOD

### Basic C2 Stereo Control Amplifier

Preamp with 2-step MM and 3-step MC inputs. Features independent Compact Disc and tape 2 inputs with bidirectional dubbing; low-distortion tone control circuit with bass/treble turnover switch (bass turnover 200/400 Hz, treble 3,000/6,000 Hz, both 12 dB/octave); subsonic filter; headphone jack with level control; mode switch for stereo/mono. FR 1-300,000 Hz  $\pm 0.3$  dB aux, 20-20,000 Hz MM/MC; THD 0.002% aux, 0.002% MM/MC; input sens MM 2.5 mV, MC 0.2 mV, aux 150 mV; S/N aux 110 dB; MM 87 dB; 17 1/16" W x 2 1/16" H x 11 1/16" D. \$295

### Basic C1 Control Amplifier

Hi-speed basic control amplifier. Features MM or MC phono cartridge selection; low phono S/N ratios; continuously variable loudness control; two tape monitors; dubbing tape A to B; infrasonic filter; Compact Disc player input. 12 lbs ..... \$225

## KYOCERA

### C-910 Preamplifier

Control preamp with input and output level controls. Features complete DC configuration, cutless core power transformer, single stage push-pull amplification. Inputs for MM phono,

MC phono, tape, tape 2, AUX, phono 2, CD player, tuner/aux 2. FR DC-400,000 Hz  $\pm 3$  dB; max outputs 2 V at rated inputs; THD 0.003%; MM phono sens 2.2 mV for 0.5 V output at 1,000 Hz; MM phono input overload level 300 mV; sens for line-level inputs 125 mV; 17" W x 5 3/4" H x 13" D; 22 lbs ..... \$1,200

## LUXMAN

### C-05 Preamplifier

Duo-Beta/S class A preamp. Inputs for MM phono, MC phono, tape, tape 2, AUX, phono 2, CD player, tuner. FR 2-100,000 Hz -0.5 dB; max output 18 V; THD 0.005%; 18 1/8" W x 5 1/4" H x 17 1/16" D; 24.3 lbs ..... \$1,800

### C-02 Preamplifier

Duo-Beta/S preamp. Inputs for MM phono, MC phono, tape, tape 2, AUX, CD player, tuner. FR 10-100,000 Hz -1 dB; max output 18 V/100 ohms; THD 0.005%, 0.007% MC; 17 1/16" W x 3 1/16" H x 12 1/32" D; 15.4 lbs ..... \$500



Mark Levinson ML-7 with PLS-154

## MARK LEVINSON

### ML-7 Preamplifier

Versatile stereo preamp offering connection capability for 5 line-level sources, monitor facilities for 2 tape decks, and several plug-in phono systems to accommodate virtually any cartridge. Utilizes L-series open-frame plug-in modules. All audio circuitry is completely discrete and operates in Class-A mode. Fitted with two L1 line amps and two (L2, L3 or L3A) phono modules. PLS-154 power supply maintains load regulation of 0.05% and has a wideband noise output of 18  $\mu$ V. An external 5-pin self-locking connector parallels. Features Camac phono inputs for cartridge loading; switch selects either 10 or 20 dB of line gain. L1 provides up to 26 dB of gain, with typical distortion specs of 0.003% THD and 0.002% IMD, and typical S/N of 100 dB unwt'd below a 2 V reference. The L2 phono module offers selectable gain of 38 or 44 dB. L3 and L3A modules offer 67 and 55 dB of gain respectively; <0.008% THD and 0.005% IMD for all three phono modules. Hand-brushed black anodized finish. ML-7: 2 1/4" H x 19" W x 10 1/4" D; PLS-154: 4 3/8" H x 4" W x 10 3/8" D; 14 lbs. With L2 ..... \$4,595  
With L3 or L3A ..... \$5,165

### ML-10A Preamplifier

Stereo preamp incorporating a simplified version of the L-series circuitry in a single circuit board configuration. All audio circuitry is completely discrete and operates in Class A. Connection capability for 2 line-level sources, monitor facilities for 1 tape machine, and universal phono section that will accept virtually any cartridge. Features Camac input and output connectors. Line section provides up to 22 dB of gain with typical distortion of 0.004% THD and 0.004% IMD and typical S/N of 95 dB unwt'd below a 2 V reference. Phono section offers selectable gain of 42, 53 or 63 dB. Six internal switches and gold-plated loading sockets allow infinite cartridge-loading capability. Typical distortion for phono circuit are 0.014% THD and

# AMPLIFIERS

0.005% IMD and S/N typically -72 dB. Features internal power supply with a high-speed push-pull regulator; biased for Class-A operation; capable of maintaining load regulation of 0.05% and has a wideband noise output of 23 V; switch selects either 7 or 17 dB of line gain. Hand-brushed black anodized finish. 2 1/4" H x 19" W x 10 1/8" D; 8 lbs. .... \$2,960

## MCINTOSH

### C 33 Preamplifier

Stereo preamp with dual preamp system. Features low-noise electronic input-switching system; two 7-source input-selector switches for 3 tape decks, 2 turntables, 1 tuner, and 1 aux; record-monitor switch; 5-band program equalizer; high- and low-frequency filters; compander; front-panel tape-recorder jacks. FR 20-20,000 Hz +0, -0.5 dB; THD 0.01%; A-wtd phono S/N, 90 dB below 10-mV input (84 dB IHF); high-level S/N, 100 dB below rated output (86 dB IHF); compander ratios from 1:2 compression to 2:1 expansion; 16" W x 5 1/16" H x 13" D; 26 lbs. .... \$2,450

### C 30 Preamplifier

Preamplifier with five separate tone-shaping controls to adjust two-octave band segments. Features variable loudness controls; precision step attenuator; headphone loudness; thermally isolated solid-aluminum knobs. THD 0.007% from 20-20,000 Hz at 2.5-V rated output; phono sensitivity, 2 mV for 2.5-V rated output (0.4 mV IHF); A-wtd phono S/N, 90 dB below 10-mV input (84 dB IHF); 18 lbs. .... \$1,649

### C 504 Preamplifier

Stereo preamp with 1% metal-film resistors and 5% poly-film capacitors; equalizer amp; output/headphone amp; input selector switching; triple-shielded power supply. FR 20-20,000 Hz +0, -0.5 dB; distortion 0.02%; S/N for tuner, tape 1 and 2, aux, -100 dB (IHF A-wtd); equalizer center frequencies 30, 750, and 10,000 Hz, boost and cut  $\pm 12$  dB; 16" W x 3 3/8" H x 14 1/2" D; 14 lbs. .... \$1,090

## MISSION

### Model 776 Preamplifier

Stereo preamp with power derived from rechargeable, sealed heavy-duty batteries that eliminate line-induced hum, provide very low imp, excellent interchannel power supply rejection. Designed around 2 identical channels consisting of phono and line sections. Input sens 2 mV phono, 100 mV line for 1 V RMS output; phono overload 150 mV at 1 kHz; output level nominal/max 1 V rms/10 V peak; input imp 47k ohms/150 pF; output imp 250 ohms/4.7  $\mu$ F; S/N phono/line 80/95 dB; THD/IMD/TIM <0.05%/<0.05%/0; FR 20-20,000 Hz  $\pm 0.2$  dB phono, -0.1 dB line .... \$999

## NAD

### 1155 Preamplifier

Stereo preamp with high-resolution phono preamp. Features bass EQ circuit; overload-proof line-level circuits; buffered tape outputs; second high-current output stage. Inputs for MM phono, MC phono, tape, tape 2, CD player, tuner. FR 20-20,000 Hz  $\pm 0.3$  dB; max output 6 V into 1,000 Hz load; THD <0.02%; IMD <0.02% IHF; MM phono sens 1.2 mV for 0.5-V output at 1,000 Hz; MM phono input overload level 200 mV @ 1,000 Hz, sens for line-level inputs 80 mV for 0.5 V out; 16.5" W x 3" H x 10.7" D; 91 lbs, 2 oz .... \$298

### 1130 Preamplifier

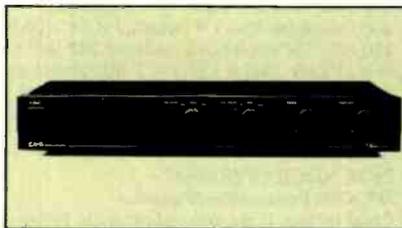
Stereo preamp with discrete transistor phono

preamp and bass EQ circuit. Inputs for MM phono, MC phono, tape, aux, CD player, video. FR 20-20,000 Hz  $\pm 0.5$  dB; max output 8 V; THD 0.04%; IMD 0.04% IHF; MM phono sens 0.45 mV for 1 W output at 1,000 Hz; MM phono input overload level 170 mV at 1,000 Hz, sens for line-level inputs 26 mV for 1 W out .... \$178

## NAKAMICHI

### CA-5 Control Amplifier

Control amp with min controls. Features 2 power outputs (2 amps); 2 tape inputs; hand-selected components. Inputs for MM phono, MC phono, tape, tape 2, aux, CD player, tuner. FR 1.5-100,000 Hz +0, -3 dB; max output 16 V; THD <0.002%; MM phono sens 0.6 mV for 0.5-V output at 1,000 Hz; MM phono input overload level 170 mV, sens for line-level inputs 50 mV; 17 1/8" W x 2 1/2" H x 11 1/4" D; 8 lbs, 3 oz. .... \$650



Nakamichi CA-5

## NIKKO

### B-5011 Preamplifier

Stereo preamp with dual input selectors for mix-down balancing. Inputs for MM phono, MC phono, tape, tape 2, aux, CD player. FR 20-20,000 Hz; THD 0.006%; IMD 0.004% IHF; MM phono sens 2.5 mV for 0.5-V output at 1,000 Hz; sens for line-level inputs 150 mV; 11 lbs. .... \$470

### B-30 Preamplifier

Inputs for MM phono, MC phono, tape, tape 2, aux. FR 10-20,000 Hz +0, -1 dB; max output 1 V; THD 0.004%; IMD 0.004%; MM phono sens 2.5 mV for 0.5-V output at 1,000 Hz; MM phono input overload level 200 mV, sens for line-level inputs 150 mV; 19" W x 2.8" H x 10.1" D; 8.4 lbs. .... \$320

## ONKYO

### P-3060R MM/MC Preamplifier

Stereo preamp with dual Super-Servo, variable-gain equalizers for use with MM and MC phono cartridges. Features direct bus-bar feeder power supply for transient, dynamic distortion elimination; all passive tone controls. FR 0.8-17,000 Hz  $\pm 0.2$  dB; THD high-level/MM/MC 0.003%/0.004%/0.018%; S/N MM/MC 82/76 dB .... \$550

### P-3030 MM/MC Preamplifier

Preamp with Super Servo; MM and MC compatible, switchable-gain MC input; switchable-imp MM input; 78-RPM record EQ; infrasonic filter; all-passive-element tone controls; headphone amp; CD/aux input; 2 tape monitors. THD 0.003% high level, 0.004% MM, 0.006% MC and 78; S/N MM 82 dB, MC 76 dB. .... \$380

## PARASOUND

### PR200 Preamplifier

Full-featured preamp with discrete phono circuitry, variable loudness contour, bass EQ circuit, signal relay to mute turn-on transients, High Voltage Rails for high CD overload capa-

bility. Inputs for MM phono, tape, tape 2, CD player/video, tuner. FR 10-100,000 Hz  $\pm 1$  dB; max output 12.5 V; THD 0.01%; IMD 0.01% IHF; MM phono sens 2 mV for 0.5-V output at 1,000 Hz; sens for line-level inputs 150 mV; 17 1/4" W x 2 1/4" H x 8 1/2" D; 8 lbs. .... \$200

## PERREAUX

### Perreux SM-2 Preamplifier

Preamp with two-stage passive RIAA phono EQ. Features switchable gain for MM cartridges. Gain required for MM cartridges is provided by switching gain reduction into the initial stage. Individually tested 0.300-V bipolar transistors. FR 20-50,000 Hz  $\pm 0.25$  dB; input sens/imp: 250  $\mu$ V RMS at 1,000 Hz/50k ohms, 100 pF; 2 mV RMS at 1,000 Hz/50k ohms, 100 pF others; 110 mV RMS/25k ohms. Input overload: MM 120 mV RMS at 1,000 Hz; MM 1.2 V RMS at 1,000 Hz; all others 50 V. Rated output 1.4 V RMS into 10k ohms or higher; max output 27 V RMS into 10k ohms or higher; main output source imp 470 ohms; tape-output level/source imp 110 mV/2k ohms; min recommended load 10k ohms; THD and IMD: phono input 0.005%, 20-20,000 Hz at rated sens rising to 0.01% at 0.9-V input at 1,000 Hz; all others <0.0009%, 20-20,000 Hz at rated sens rising to 0.008% at 26 V output at 1,000 Hz into 10k ohms or higher. <0.008% at 100 kHz at rated output into 10k ohms. S/N MM 86 dB re rated input A-wtd; MC 72 dB re rated input A-wtd; MM 108 dB A-wtd. Output stage phase accuracy  $\pm 1$  degree, 20-20,000 Hz; sep 70 dB, 20-20,000 kHz, all inputs. 47.5 cm W x 33.1 H x 5.3; 12 lb. .... \$1,299

### Perreux-SA2 Preamplifier

Pure Class A preamp with precision controls. FR 20-50,000 Hz  $\pm 0.25$  dB. Input sens/input imp MC 180  $\mu$ V RMS at 1,000 Hz/50k ohms, 100 pF; MM 0.85 mV RMS at 1,000 Hz/50k ohms, 100 pF; others 110 mV RMS/25k ohms. Input overload MC 50 mV RMS at 1 kHz; MM 500 mV RMS at 1,000 Hz. Rated output 1.4 V RMS into 10k ohms or higher; max output 25 V RMS into 10k ohms or higher; main output source imp 1,000 ohms; tape-output level/source imp 110 mV/2k ohms. THD and IMD: phono input 0.005% 20-20,000 Hz at rated sens rising to 0.01% at 0.9-V input at 1,000 Hz; all others <0.009% 20-20,000 Hz at rated sens rising to 0.08% at 15-V output at 1,000 Hz into 10k ohms or higher; <0.08% at 100 kHz at rated output into 10k ohms. Noise (inputs loaded) MC -66 dB re rated input A-wtd; MM -86 dB re rated input A-wtd; RIAA accuracy  $\pm 0.25$  dB; 68 dB, 20-20,000 Hz, all inputs; output stage phase accuracy  $\pm 2$  degrees 20-20,000 Hz; 47.5 x 5.3 cm; 12 lbs. .... \$850



Parasound PR200 (bottom) and PA260 amp

## QUAD

### Quad 44 Control Unit

Preamp/control system with lift/step bass control to boost low-frequency output of small

# AMPLIFIERS

speakers, attenuate bass output when operating as filter to give 5-dB drop at 2 frequencies;  $\pm 2$ -dB tilt control that shifts tonal balance; variable filter slope control at 5, 7, 10 kHz; all tone controls have defeat positions; balance/mono switch; radio, aux, disc, tape 1, tape 2 input selectors with optional microphone or MC phono inputs available. Input sens/imp 1 mV at 35 mV in/47k ohms phono, 100 mV at 5 V in/39k ohms tape, 1M ohm radio and aux; FR  $\pm 0.5$  dB 30-20,000 Hz phono RIAA, 30-20,000 Hz  $+0/-1$  dB high-level; distortion 0.02%; residual noise  $-104$  dB A-wtd; 321 mm W x 207 D x 103 H ..... \$795

## Quad 34 Control Unit

Preamp control unit with tilt control; bass control; inputs for disc, tape, radio, aux; 3 push-button filters; bass lift and step. Distortion worst case, any input 0.5%. Residual noise A-weighting, volume control at minimum  $-105$  dB. FR  $\pm 0.3$  dB any input except phono; FR phono RIAA  $\pm 0.5$  dB ..... \$595



SAE P101

## ROTEL

### RC870 Stereo Preamplifier

Preamp with inputs for MM phono, MC phono, tape, tape 2, CD player, tuner. FR 40-100,000 Hz  $\pm 0.2$  dB; THD (CD, tuner) 0.004%; IMD (CD, tuner) 0.004% IHF; MM phono input overload level 150 mV, 19" W x 2 $\frac{9}{16}$ " H x 12 $\frac{1}{16}$ " D; 11.4 lbs ..... \$299

## SAE

### X1P X-Series Preamplifier

Computer direct-line fully discrete preamp. Features separate power supply, loading for MM and MC phono inputs, rack mountable. Inputs for MM phono, MC phono, tape, aux. FR 20-20,000 Hz  $\pm 0.1$  dB; max output 17 V; THD 0.01%; IMD 0.01%; MM phono sens 0.07 mV for 0.5 V output at 1,000 Hz; 19" W x 1.75" H x 12.5" D; 14 lbs ..... \$1,200

### P101 Preamplifier

Computer direct-line preamp. Features dual digital volume and balance controls, loading for MM phono input, front panel phase controls, two main inputs; main one is in phase and main two is out of phase (which makes amp bridging possible), rack mountable. Inputs for MM phono, MC phono, tape, aux, video. FR 20-20,000 Hz; max output 11 V; THD 0.008%; IMD 0.008%; 19" W x 3.5" H x 12.5" D; 20 lbs \$650

### P102 Preamplifier

Computer direct-line preamp with 3 digital tone memories, electronic volume and balance controls. Features sequential audio muting to provide cross-fade between input sources; alphanumeric displays of all functions. Inputs for MM phono, MC phono, tape, tape 2, aux, phono 2, CD player, tuner, external processor. FR 20-20,000 Hz  $\pm 0.5$  dB; max output 7.5 V; THD 0.025%; IMD 0.025% IHF; MM phono sens 160 mV for 0.5-V output at 1,000 Hz; MM phono input overload level 240 mV, 19" W x 3.5" H x 14" D; 17 lbs ..... \$399

## SANSUI

### C-2301 Preamplifier

Preamp with balanced and unbalanced 75-ohm imp outputs. Inputs for MM phono, MC phono, tape, tape 2, phono, CD player, tuner. FR 5-300,000 Hz  $\pm 0.2$  dB; MM phono sens 2 mV for 0.5-V output at 1,000 Hz; sens for line-level inputs 150 mV/47,000 ..... \$2,400  
C-2101. Similar to C-2301, with built-in parametric equalizer. THD  $<0.0015\%$ . 17" W x 4 $\frac{1}{2}$ " H x 11 $\frac{3}{4}$ " D ..... \$700

## SHERWOOD

### S-6020 CP Preamplifier

Individually tested, certified stereo preamp with FET differential input. Features FET differential tone-control amp; push-pull output; 2 tape monitors; 2-way tape dub; output for 2 main amps; feather-touch up/down volume control with 10-segment LED level indicator; relay audio-mute circuit. Output 10 V maximum; THD and IMD 0.005% at 1 V output; FR DC-100,000 Hz; S/N 100 dB; phono overload 250 mV at 1 kHz; RIAA phono EQ  $\pm 0.5$  dB; power consumption 14 W; 17 $\frac{1}{8}$ " W x 15 $\frac{1}{2}$ " D x 2 $\frac{3}{16}$ " H; 11 lb ..... \$250

## SOUNDCRAFTSMEN

### DX 4200 Preamplifier/Equalizer

Combination preamp/equalizer with digital audio and video audio inputs. Features in/out balancing to 0.1 dB; phono preamp has variable cartridge loading (50-800 pF, 100/47,000 ohm) adjustable  $\pm 20$  dB gain MC variable reluctance or MM cartridge inputs; 3-way tape dubbing; 2 external signal-processor loops; conventional line outputs plus separate autobridge line outputs for auto mono bridging of most amps; EQ S/N 114 dB; passive-coil filters with 15 dB boost or cut for each octave; differential/comparator circuitry for true 0.1 dB unity-gain EQ balancing; 19" rack-mount front panel; includes frequency spectrum analyzer test record and instant reset Computone charts; 5 $\frac{1}{4}$ " W x 19" H x 11" D ..... \$699

### DX 4100 Preamplifier/Equalizer

Combination preamp/equalizer with built-in conventional line outputs plus separate bridging line outputs for auto mono bridging of most amps. Features external signal-processor loop; 2 phono inputs; 2 tape inputs with 3-way dubbing; phono S/N 97 dB, THD 0.01%; 12 dB EQ boost and cut for each octave; differential/comparator circuitry for 0.1 dB unity gain; 19" rack mount front panel; includes frequency spectrum analyzer test record and instant reset Computone charts ..... \$549

DX 4000. Same as DX 4100 without graphic equalizer but with 2 external signal-processor loops; 3 $\frac{1}{2}$ " W x 19" H x 11" D ..... \$399

## TANDBERG

### TCA-3008 A Control Preamplifier

High-current control amp with MC input designed as complete preamp stage employing 11 discrete semi-conductor devices in each channel. Features MM phono input with capacitance, resistance adjustments; bass, treble controls with tone defeat; digital disc input capable of handling  $>20$  V. Audio circuitry includes selected all-metal film resistors, polypropylene capacitors, minimum negative feedback; 2 Butterworth infrasonic filters; mono, loudness switches; 2 deck tape monitors with 2-way dub; headphone amp with separate volume control. Rosewood side panels optional ..... \$895

## TECHNICS

### SU-A Mk 2 Stereo DC Control Amplifier

Preamp with built-in amorphous step-up transformer for extended linear response. Features full matching phono equalizer for all types of cartridges; all class A with ICL ultra-low-noise FET input; low output imp allows remote power amp placement; shelving tone controls for EQ; presettable CD/aux/video input selector; 4-ganged master volume control; infrasonic and high filter switches; loudness switch; separate rec selector with 2-way dubbing; 2 tape monitors. THD  $<0.006\%$  MM, 0.01% MC, 0.006% line; FR 20-100,000 Hz  $\pm 0.2$  dB phono, DC-100,000 Hz  $+0$  dB line; S/N A-wtd 77 dB MM, 76 dB MC, 100 dB line; input imp 47 kilohms 1, 2, MM, 30/470 MC, 47 kilohms line; output imp 600 ohms tape 1, rec out, 2 ohms pre out; max output voltage 8 V; input sens 0.26/0.64 mV 1 MM, 20/65  $\mu$ V MC, 0.64 mV 2 MM, 38 mV line; 16 $\frac{1}{16}$ " W x 3 $\frac{1}{16}$ " H x 14 $\frac{1}{16}$ " D; 17.6 lbs ..... \$1,100

### SU-A6 Mk 2 Preamplifier

DC control preamp with shelving tone controls, selectable turnover frequencies, 8 audio/video inputs, infrasonic filter, audio muting. Inputs for MM phono, MC phono, tape 3, tape 2, aux 2, phono 2, CD player, tuner, computer, VCR, digital-audio recorder, TV. FR 20-20,000 Hz  $+0/-0.1$  dB; max output 8 V; THD 0.002%; MM phono sens 0.63 mV for 0.5-V output at 1,000 Hz; MM phono input overload level 150 mV, sens for line-level inputs 36 mV; 16 $\frac{1}{16}$ " W x 3 $\frac{1}{16}$ " H x 14 $\frac{1}{16}$ " D ..... \$600

### SU-A8 Stereo DC Control Amplifier

Straight DC preamp with complete class-A circuitry. Features full control flexibility; convenient program selectors; MC and MM inputs; tape mode selector; dubbing selector; control status indicators. THD  $<0.003\%$  MM, 0.01% MC, 0.002% line; FR RIAA standard curve  $+0.2$  dB MM, RIAA standard curve  $\pm 0.5$  dB MC phono, DC-20,000 Hz  $+0.2$  dB line; S/N A-wtd 79 dB MM, 75 dB MC, 100 dB line; output imp 2 ohms, rec out 600 ohms; input sens 1.25 mV MM, 85  $\mu$ V MC, 75 mV line; 16 $\frac{1}{16}$ " H x 2 $\frac{3}{16}$ " W x 14 $\frac{1}{16}$ " D; 7.6 lbs ..... \$350



Tandberg TCA-3008 A

## THRESHOLD

### Model FET Two Series II Preamplifier

Dual-ch noninverting FET transistor preamp with gain stages consisting of an N-ch J-FET input pair followed by a P-ch MOSFET—all maintained in Class A operation. Accepts all MC and MM cartridges and has 3 line-level inputs and 1 tape deck. Power supply uses large magnetically shielded toroidal transformer with current capacity 10 times that needed, followed by 46,000  $\mu$ F capacitance plus separate  $-$  and  $+$  rail monolithic solid-state regulators for each ch so gain devices are not subject to interchannel supply-modulation effects. FR 3 dB down at 5 and 100,000 Hz; distortion 0.01% at 3 V preamp out into 10,000 ohms; slew rate 25 V/ $\mu$ sec; overload point 14 V preamp output peak; output imp 470 ohms ..... \$1,290

# AMPLIFIERS

## VSP

### Straightwire II Preamplifier

Stereo preamp with computer-controlled front end for automatic muting and DC offset sensing. Features 8-bit Z80 microprocessor; sensitivity input selectivity with computer-controlled LED feedback; modular construction, board-swap serviceability; DC servo phono and amp stage; isolated, shielded power supply; high-resolution phase accuracy; dual tape monitoring with tape-to-tape copying; RIAA open-loop contoured active EQ. Inputs for MM and MC phono. Phono preamp section: max output 22 V RMS 20-20,000 Hz, phono preamp THD <.01% at rated output. High-level amp section: max output 9 V RMS 20-20,000 Hz, amp THD <.01% at rated output, high-level amp; FR 1-20,000 Hz, -3 dB amp ..... \$995



Yamaha C-80

## YAMAHA

### C-80 Stereo Preamplifier

Stereo preamp with 2-band parametric equalizer and Zero Distortion Rule circuitry. Features continuously variable loudness control (-40 dB); inverting preamp outputs; all sections pure Class A. Inputs for MM phono, MC phono, tape, tape 2, AUX, phono 2, CD player, tuner. FR 20-20,000 Hz +0, -0.2 dB; max output 8.5 V; THD 0.001%; IMD 0.002% IHF; MM phono sens 2.5 mV for 0.5-V output at 1,000 Hz; MM phono input overload level 500 mV, sens for line-level inputs 150 mV; 17 1/8" W x 3 3/4" H x 14 1/16" D; 15 lbs ..... \$750  
**C-60.** Similar to C-80 with continuously variable tone control frequencies instead of equalizer ..... \$500  
**C-40.** Similar to C-60 with extended rolloff equalizer. Max output 11 V; MM phono input overload level 170 mV ..... \$350

## INTEGRATED AMPLIFIERS

## ADS

### Atelier A2 Amplifier

Stereo integrated amp with separate input selectors for recording and listening. Features two tape monitor loops; two separate phono preamps, one for MM cartridges and one for MCs; preamp output and main amp input jacks; fast-response linear LED displays; clipping indicators; power output into 4-ohm load 100 W/ch, THD <0.08%, into 8-ohm load 80 W/ch, THD <0.05%, 2-ohm load 70 W/ch, THD <0.2%; FR tuner, video, tape 5-90,000 Hz +0, -1.5 dB, phono conforms to RIAA EQ  $\pm 0.5$  dB 50-20,000 Hz; S/N tuner, video, tape >80 dBa, phono MM >80 dBa, phono MC >60 dBa; IMD <0.05% with 4-ohm loads; 17.52" W x 2.76" H x 14.84" D; 20 lbs ..... \$580

## AKAI

### AMA-90 Integrated Amplifier

Deluxe audio/video-ready integrated amp with non-negative feedback (open loop), record selector, and bi-directional dubbing. Inputs for MM phono; MC phono; tape; tape 2; AUX; CD player; video disc; VTR. FR 10-80,000 Hz  $\pm 0.5$  dB; THD 0.5%; S/N 95 dB; MM phono sens 2 mV for 0.5 V output at 1,000 Hz; sens for line-level inputs 150 mV; 130 continuous average W/ch from 20-20,000 Hz with no more than 0.5% THD into 8 ohms; 27.6 lbs; 17.3" W x 4.3" H x 16.1" D ..... \$500

### AMA-70 Integrated Amplifier

Deluxe audio/video-ready integrated amp with non-negative feedback (open loop), record selector and, bi-directional dubbing. Inputs for MM phono; MC phono; tape; tape 2; AUX; CD player; videodisc; VTR. FR 10-80,000 Hz  $\pm 0.5$  dB; THD 0.5%; S/N 95 dB; MM phono sens 2 mV for 0.5 V output at 1,000 Hz; sens for line-level inputs 150 mV; 100 continuous average W/ch from 20-20,000 Hz with no more than 0.5% THD into 8 ohms; 25.4 lbs; 17.3" W x 4.3" H x 16.1" D ..... \$400

### AMA-401 Integrated Amplifier

Audio/video-ready stereo integrated amp. Inputs for MM phono; tape; AUX; CD player. FR 10-30,000 Hz  $\pm 0.5$  dB; THD 0.05%; S/N 95 dB; MM phono sens 2 mV for 0.5 V output at 1,000 Hz; sens for line-level inputs 150 mV; 80 continuous average W/ch from 20-20,000 Hz with no more than 0.05% THD into 8 ohms; 15 lbs; 17.3" W x 3.9" H x 10.5" D ..... \$400

## DENON

### PMA-777 Integrated Amplifier

Features dual super non-NFB circuit high current; high dynamic headroom; video/CD input; MC phono input. 100 continuous average W/ch from 20-20,000 Hz with no more than 0.02% THD into 8 ohms; FR 1-250,000 Hz  $\pm 3$  dB; S/N 88 dB; dynamic headroom 3.1 dB; slew rate  $\pm 250$  V/ $\mu$ sec; IMD 0.002%. Side panels standard ..... \$620

### PMA-757 Integrated Amplifier

Features dual super non-NFB circuit high current; high dynamic headroom; video/CD input; MC phono input; dual speaker output terminals; quick shut-off protector. 80 continuous average W/ch from 20-20,000 Hz with no more than 0.005% THD into 8 ohms; FR 1-200,000 Hz  $\pm 3$  dB; S/N 87 dB; dynamic headroom 3 dB; slew rate  $\pm 200$  V/ $\mu$ sec; IMD 0.003% ..... \$450



Denon PMA-737

## FISHER

### CA550 Integrated Amplifier

Stereo integrated amplifier with 9-LED power-level meters. Features class-A-II dc power amplifier; pushbutton function selectors with LED indicators; bass, treble controls; loudness, infrasonic filter and high-filter switches. Output power 70 W/ch rms into 8 ohms, 20-20,000 Hz at 0.009% THD and IM distortion; damping factor >50; preamp frequency response 20-20,000 Hz  $\pm 0.5$  dB; input sens/imp 250  $\mu$ V/22 ohms MC, 2.5 mV/50k ohms MM, 150 mV/50k ohms tape monitors, tuner, AUX; phono over-

load MC/MM 6/180 mV; subsonic-filter response 12 dB/octave below 10 Hz; hum and noise MC/MM/tape monitor, tuner, AUX 65/75/100 dB; preamp output 1000 mV/1.5k ohms; power consumption 320 W; 17 1/2" W x 14 1/2" D x 4 1/8" H; 20 lbs ..... \$450

## HARMAN KARDON

### PM665 Integrated Amplifier

Stereo integrated amp with reactive load and high instantaneous current capability. Features low negative feedback; turnover tone controls; bass contour (phase-corrected loudness contour); 2-speaker switching. Inputs for MM phono; MC phono; tuner; tape; tape 2; AUX; phono 2; CD player; main amp; tuner. FR 0.2-150,000 Hz  $\pm 3$  dB; S/N 100 dB-AUX/CD inputs; MM phono sens 1.1 mV for 0.5 V output at 1,000 Hz; sens for line-level inputs 67.5 mV; 100 continuous average W/ch from 20-20,000 Hz with no more than 0.08% THD into 8 ohms; slew rate 180 V/ $\mu$ sec; rise time: 1.8  $\mu$ V. 33 lbs; 17 3/8" W x 5 1/4" H x 15 3/4" D ..... \$625  
**PM655 Integrated Amplifier.** Similar to PM665 except 60 W/ch; no inputs for aux or phono 2. Weight: 22 lbs, 5 oz ..... \$425

## JVC

### A-X900B Integrated Amplifier

Dynamic super-A stereo integrated amp designed specifically for digital programs with Gm driver for amp-speaker interface that shuts out counter-electromotive force and makes speaker imp variations insignificant. Inputs for MM phono; MM phono; tape; tape 2; AUX; phono 2; CD player; tape 3; tuner. FR 3-100,000 Hz +0, -3 dB (8 ohms); THD 0.003%; S/N 85/83 dB MM, 69/75 dB MC, 109/91 dB tuner/AUX/DAD/tape; IMD 0.001%; MM phono sens 2.5 mV for 0.5 V output at 1,000 Hz; 120 W/ch continuous average 20-20,000 Hz with 0.003% THD into 8 ohms; dynamic range 100 dB; 17" W x 5 7/8" H x 16" D ..... \$550

### A-X500VB Integrated Amplifier

Dynamic Super-A stereo digital video-ready integrated amp. Gm selector and Gm driver features 7-band computer-controlled graphic equalizer with 5 memory presets. Inputs for MM phono; MC phono; tape; tape 2; AUX; phono 2; CD player; 3 video inputs. FR 3-100,000 Hz +0, -3 dB (8 ohms); THD 0.007%; S/N 85/83 dB MM, 65/75 dB MC, 100/77 dB tuner, aux, DAD, tape; IMD 0.005%; MM phono sens 2.5 mV for 0.5 V output at 1,000 Hz; 100 W/ch av 20 to 20,000 Hz with 0.007% THD into 8 ohms. Video specs: signal input 1.5 V p-p; output signal level 1 V p-p at 1 V p-p input; imp 75 ohms unbalanced; synchronization negative. 27.6 lbs; 17 1/8" W x 4 3/8" H x 15" D ..... \$500

## KENWOOD

### KA-94(B) Stereo Integrated Amplifier

Spectrum series amp with selectable two range LED power monitor; independent CD, video, AUX inputs; two tape channels; phono rec selector for alternative listening while dubbing; subsonic filter; two speaker systems operation. 125 continuous average W/ch from 20-20,000 Hz with less than 0.05% THD into 8 ohms; FR 10-100,000 Hz +0, -3 dB; S/N 79 dB; 16 1/2" W x 4 3/32" H x 11 1/32" D ..... \$335

### KA-74(B) Stereo Integrated Amplifier

Spectrum series amp with selectable two-range LED power monitor; independent CD, video, AUX inputs; two tape channels; phono rec selector for alternative listening while dubbing; two speaker systems operation; subsonic filter. 75 continuous average W/ch from 20-20,000 Hz

# LIGHT YEARS CLOSER TO REALITY.

## SONIC HOLOGRAPHY TRANSFORMS EXCITING NEW PROGRAM SOURCES AS WELL AS FAMILIAR OLD ONES INTO TRULY LIFELIKE EXPERIENCES.

When Bob Carver set out to redefine the stereo listening experience through Sonic Holography, he was really rebelling against the limitations of the stereo phonograph record. At the time his remarkable invention first started astounding audio critics and music lovers, vinyl discs were the musical standard.

If Sonic Holography can breathe life into even your oldest records, imagine what it will do for CD's, VHS Hi-Fi and other exciting new stereo sources.

Now there are at least five major audio/video breakthroughs which further expand Sonic Holography's potential to bring more excitement and realism into your life.

These innovations include the Compact Audio Disc, noise-free stereo FM, AM Stereo, Stereo television broadcasts and stereo Hi-Fi video formats.

Each provides the Sonic Hologram Generator in selected Carver preamplifiers and receivers with a chance to redefine the width, breadth and depth of the traditional stereo sound field — while using your existing speakers.

## WHAT SONIC HOLOGRAPHY DOES.

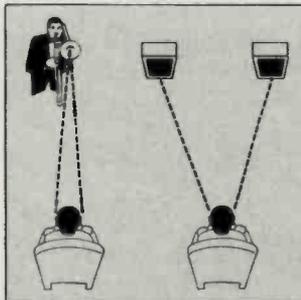
Watch a 13" black and white TV. Now see a movie in 70 millimeter.

Listen to your favorite musicians on a transistor radio. Now sit three rows back from the stage at a live concert.

These are not exaggerations of how much more dimensional and realistic Sonic Holography is than conventional stereo. The most experienced and knowledgeable experts in the audio industry have concurred. Julian Hirsch wrote in *Stereo Review*. "The effect strains credibility—had I not experienced it, I probably would not believe it." *High Fidelity* magazine noted that "...it seems to open a curtain and reveal a deployment of musical forces extending behind, between and beyond the speakers." According to Larry Klein of *Stereo Review*, "It brings the listener substantially closer to that elusive sonic illusion of being in the presence of a live performance."

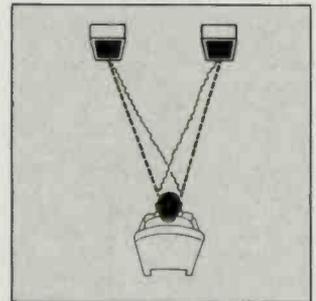
## HOW SONIC HOLOGRAPHY WORKS.

When a musician plays a note, the sound occurrence arrives separately at your left and right ears. Your brain analyzes the difference in these sound arrivals and tells you exactly where the sound is.

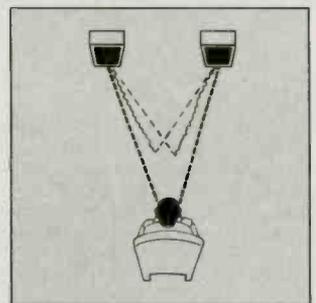


Conventional stereo tries to duplicate this process by using two speakers to send a different version of the same sound occurrence to each ear. In theory, this should "trick" your

brain's psychoacoustic center into placing the musician on a limited sound stage between your speakers. If — and only if — each speaker can be only heard by one ear.



The problem is, these different versions of the same sound also cross in the middle of your listening room, so left and right ears get both left and right sound arrivals a split second apart. Stereo imaging and separation are reduced because both speakers are heard by both ears, confusing your spatial perception.



The Sonic Hologram Generator in the Carver 4000t, C-9, C-1 and Carver Receiver 2000

solve this muddling of sound arrivals by actually creating another "sound." This special impulse cancels the objectionable second sound arrival, leaving only the original sound from each loudspeaker.

The result is a vast sound field extending not only wider than your speakers, but higher than your speakers as well. Sounds will occasionally even seem to come from behind you! It is as if a dense fog has lifted and you suddenly find yourself in the midst of the musical experience. Or, as the Senior Editor of a major electronics magazine put it, "When the lights were turned out, we could almost have sworn we were in the presence of a live orchestra."

### CARVER CD AND TUNER INNOVATIONS EXTEND THE POSSIBILITIES.

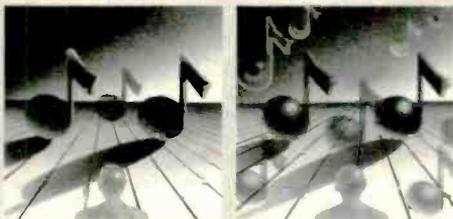
Any stereo source can be transformed from monochromatic flatness into vibrant three-dimensional reality with Sonic Holography.

Compact discs afford vastly increased dynamics, frequency response and freedom from background noise. Yet their potential is trapped in the 2-dimensionality of conventional stereo. Sonic Holography can surround you with the drama and impact of digital. (And the Carver Compact Disc Player with Digital Time Lens sound correction circuitry can enhance your listening experience even further).

Thanks to the Carver Asymmetrical Charge-Coupled FM Stereo Detector, FM stereo broadcasts can be received with vastly increased fidelity. Hiss and interference-free, any signal, from chamber music to live rock concerts,

can take on an astonishing presence and dimension through Sonic Holography.

The new Carver TX-11a AM/FM tuner delivers AM stereo broadcasts with the same dynamics and fidelity as FM. A perfect source for the Sonic Hologram Generator. Think of it: AM can actually become a three-dimensional phenomenon through Carver Technology!



### SONIC HOLOGRAPHY PUTS YOU INSIDE THE VIDEO EXPERIENCE.

More and more people are discovering what theaters discovered some time ago: Audio makes a huge contribution to the realism of video. Still, it has taken the incredible, near-digital quality of VHS and Beta Hi-Fi to make the marriage of audio and video truly rewarding. Now even rental movies fairly explode with wide frequency range, dynamic impact and conventional stereo imaging.

Add the steady emergence of stereo TV broadcasts by all three major networks of prime time programming and special broadcasts, and you have fertile ground for the added realism that only Sonic Holography can deliver.

Unlike so-called "surround sound" a Sonic Hologram Generator puts you into the middle of any stereo soundtrack, (stereo, Hi-Fi stereo, broadcast stereo or even simulcasts). It psychoacoustically expands the visual experience with life-like sound that envelops you in the action.

Once you've heard Sonic Holography with a good video tape or LaserDisc, you'll never go back to mere stereo again.

### ENHANCE YOUR SPACIAL AWARENESS WITH FOUR CARVER COMPONENTS.

The patented Carver Sonic Hologram generator circuit is available on two preamplifiers, our largest receiver and as an add-on component. Each can transcend the limits of your listening (and viewing) room. Each can add the breathtaking, spine-tingling excitement that comes from being transported directly into the midst of the musical experience.

Before you purchase any component, consider just how much more Carver can enrich your audio and video enjoyment. And then visit your nearest Carver dealer soon.



*The Carver Sonic Holography quartet. Pictured from left to right is the 4000 Preamplifier, the C-9 sonic Hologram Generator, the Receiver 2000 with remote control and the C-1 Preamplifier.*

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# AMPLIFIERS

with less than 0.09% THD into 8 ohms; FR 10-100,000 Hz +0dB, -3dB S/N 79 dB; 16<sup>1</sup>/<sub>32</sub>" W x 4<sup>9</sup>/<sub>32</sub>" H x 11<sup>1</sup>/<sub>32</sub>" D ..... \$245

## KYOCERA

### A 910 200-W Integrated Amplifier

Integrated amp with ceramic base/chassis and cutless core power transformer. Features DC configuration with DC servo control, fine ceramic linear modularized phono stages. Inputs for MM phono, MC phono, tape, tape 2, aux, phono 2, CD player, tuner, video. FR 10-100,000 Hz  $\pm$  1.5 dB; max output 0.25 V at rated sens; S/N 110 dB; MM phono sens 2.2 mV for 0.5 V output at 1,000 Hz; sens for line-level inputs 250 mV; 150 continuous average W/ch from 20-20,000 Hz with no >0.02% THD into 8 ohms; dynamic headroom 0.58 dB; slew rate 120 V/ $\mu$ s; 200 W/ch into 4 ohms with 0.03% THD; damping factor 150 (1 kHz); S/N 78 dB. 17" W x 5<sup>1</sup>/<sub>4</sub>" H x 16<sup>1</sup>/<sub>2</sub>" D ..... \$1,500

### A-710 100-W Integrated Amplifier

Integrated amp with ceramic base/chassis and triple push-pull power stages. Features single-stage high-gain circuit for improved open-loop FR, MOSFET drivers. Inputs for MM phono, MC phono, tape, tape 2, aux, phono 2, CD player, tuner, video. FR 10-100,000 Hz  $\pm$  1.5 dB at 1 W into 8 ohms; max output 0.2 V at rated sens; S/N 100 dB; MM phono sens 2.2 mV for 0.5 V output at 1,000 Hz; sens for line-level inputs 200 mV; 100 continuous average W/ch from 20-20,000 Hz with no >0.02% THD into 8 ohms; dynamic headroom 0.7 dB ..... \$800



Kyocera A-910

## LUXMAN

### L-430 Integrated Amplifier

Duo-Beta DC integrated amp with 100 W/ch. Inputs for MM phono; MC phono; tuner; tape; tape 2; aux. FR 10-100,000 Hz -1 dB; THD 0.018%; S/N 90 dB MM phono, 67 dB MC, 110 dB Aux; 17<sup>1</sup>/<sub>16</sub>" W x 5<sup>1</sup>/<sub>4</sub>" H x 16<sup>1</sup>/<sub>4</sub>" D... \$500

### L-400 Duo-Beta Integrated Amplifier

Integrated amp features Duo-Beta circuitry; discrete power amp stage; MC imp selector; high, low, and infrasonic filters; connections for two pairs of speakers. 55 W/ch min continuous power into 8 ohms from 20-20,000 Hz <0.02% THD; FR 10-100,000 Hz -1 dB; S/N MM phono >117 dB ..... \$300

## MARANTZ

### PM 74 100-Watt Integrated Amplifier

Inputs for MM phono; MC phono; tuner; tape; tape 2; CD player. S/N 102 dB; MM phono sens 2.5 mV for 0.5 V output at 1,000 Hz; sens for line-level inputs 150 mV; 100 continuous average W/ch from 20-20,000 Hz with no more than 0.01% THD into 8 ohms; 26.5 lbs; 16<sup>1</sup>/<sub>8</sub>" W x 4<sup>3</sup>/<sub>8</sub>" H x 13<sup>1</sup>/<sub>8</sub>" D ..... \$420

### PM551 Integrated Amplifier

Audio/video integrated amp with 5-band graphic equalizer; Bus System remote control; sound-injection mixing; spatial stereo effect; electronic volume control with presets. Inputs for MM phono; tuner; tape; tape 2; CD player. FR 10-50,000 Hz  $\pm$  1 dB; S/N 98 dB; MM phono sens

2.5 mV for 0.5 V output at 1,000 Hz; sens for line-level inputs 150 mV; 100 continuous average W/ch from 20-20,000 Hz with no more than 0.04% THD into 8 ohms; 23 lbs; 16<sup>1</sup>/<sub>2</sub>" W x 4<sup>3</sup>/<sub>8</sub>" H x 13" D ..... \$400

## MISSION ELECTRONICS

### Cyrus II Integrated Amplifier

Integrated amp with optional external power supply to effectively double power output. Inputs for MM phono; MC phono; tape; aux; CD player. 50 continuous average W/ch from 20-20,000 Hz with no >0.004% THD into 8 ohms; 60 amperes peak-to-peak swings; FR 20-20,000 Hz  $\pm$  0.2 dB; THD 0.004%; S/N 83 dB; IMD 0.005%; MM phono sens 0.31 mV for 1-W output; sens for line-level inputs 50 mV for 1-W output; dynamic headroom 1.4 dB; slew rate 150 V/ $\mu$ sec (input filter bypassed); 11 lbs; 8<sup>1</sup>/<sub>2</sub>" W x 3" H x 13<sup>1</sup>/<sub>2</sub>" D ..... \$599

### Cyrus I Integrated Amplifier

Integrated amp with inputs for MM phono; MC phono; tape; aux; CD player. 25 continuous average W/ch from 20-20,000 Hz with no >0.004% THD into 8 ohms; 42 amperes peak-to-peak swings; FR 20-20,000 Hz  $\pm$  0.2 dB; THD 0.004%; S/N 83 dB; IMD 0.005%; MM phono sens 0.4 mV for 1-W output; sens for line-level inputs 60 mV for 1-W output; dynamic headroom 1.4 dB; slew rate 150 V/ $\mu$ sec (input filter bypassed); 8<sup>1</sup>/<sub>2</sub>" W x 3" H x 13<sup>1</sup>/<sub>2</sub>" D ..... \$399

## NAD

### 3155 Integrated Amplifier

55 W/ch integrated amp with high current and high dynamic headroom. Features bass EQ, Soft Clipping; speaker-imp matching; capacitance loading; low-level switch. Inputs for MM phono; MC phono; tape; tape 2; CD player. FR 19-20,000 Hz  $\pm$  0.2 dB; THD 0.03%; S/N 78 dB; IMD 0.03%; MM phono sens 0.2 mV for 0.5-V output at 1,000 Hz; sens for line-level inputs 175 mV; 55 continuous average W/ch 20-20,000 Hz with dynamic headroom of 3 dB; slew rate 20 V/ $\mu$ sec; 40 amp current capability; 20 lbs, 8 oz; 16.5" W x 4.25" H x 15" D ..... \$398

### 3130 Integrated Amplifier

30 W/ch integrated amp with high current and high dynamic headroom. Features Soft Clipping; speaker impedance matching switch; 5-way binding posts. Inputs for MM phono; MC phono; tuner; tape; aux; CD player; video. THD 0.03%; IMD <0.03%; dynamic headroom +3 dB; slew rate 15 V/ $\mu$ sec ..... \$198

## NAIAD

### F-20 Hifidelivision Integrated Amplifier

Audio/video integrated amplifier with volume, bass, treble, balance controls; enhance circuit for simulated stereo; NR circuit; nondefeatable loudness compensation; headphone jack. Two sets of video and audio inputs for VCR's, video-disc players, or video tuners, plus jacks for audio tape deck, stereo aux, mono aux. MPX connection for stereo/SAP decoder. Black. 20 W/ch; 5 lbs; 10" W x 3<sup>1</sup>/<sub>4</sub>" H x 7<sup>1</sup>/<sub>2</sub>" D ... \$200

## NAIM BY AUDIOPHILE SYSTEMS

### NAIT Integrated Amplifier

Naim Audio Integrated Thing with MM phono, tape, tuner, inputs. Phono input sens 2.5 mV; 11" D x 8" W x 3" H ..... \$395

## NEC

### A-11 Integrated Amplifier

Features low imp drive stability parallel push-pull output stage; DC High Gm FET input for

all stages; DC servo from input to output; low imp Reserve II power supply with 3 independent multi-tapped toroidal transformers; independent discrete shunt parallel regulation for preamp and main driver stage; power amp level controls for CD direct input; pre/main connections; subsonic filter; tape copy functions. Inputs for tuner; tape; tape 2; aux; CD player. FR 5-300,000 Hz; S/N 90 dB phono, 110 dB line level; MM sens 2.5 mV at 1,000 Hz; line level sens 150 mV; 70 continuous W/ch at 8 ohms, 140 W/ch at 4 ohms 20-20,000 Hz with no more than 0.003% THD; dynamic power 75 W/ch at 8 ohms; 150 W/ch at 4 ohms, 300 W/ch at 2 ohms (4 times rated power); peak current 85.8 amps; damping factor 140 at 1,000 Hz; slew rate 120 V/sec. 48.4 lbs; 16<sup>1</sup>/<sub>16</sub>" W x 5<sup>7</sup>/<sub>8</sub>" H x 16<sup>1</sup>/<sub>16</sub>" D ..... \$799

### A-10 MKII Integrated Amplifier

Features low imp drive stability parallel push-pull output stage; DC High Gm FET input stages for phono and main amp and DC servo voltage amp and power amp sections; low imp Reserve II power supply with independent multi-tapped transformers per ch; independent discrete shunt parallel regulation for preamp and main amp driver stage; vibration-free construction technology; power amp level controls for CD direct input; pre/main connections; low noise MC/MM phono EQ with built-in subsonic filter; recording output selector; tape copy functions. Inputs for MM phono; MC phono; tuner; tape; tape 2; aux; extra aux; CD player. FR 5-300,000 Hz; S/N 90 dB MM phono, 73 dB MC phono, 110 dB line level; MM sens 2.5 mV at 1,000 Hz; line level sens 150 mV; 60 continuous W/ch at 8 ohms, 120 continuous W/ch at 4 ohms 20-20,000 Hz with no more than 0.006% THD; dynamic power 70 W/ch at 8 ohms, 140 W/ch at 4 ohms, 280 W/ch at 2 ohms (4 times rated power); peak current 76.8 amps; damping factor 140 at 1,000 Hz; slew rate 120 V/sec. 53 lbs; 16<sup>1</sup>/<sub>16</sub>" W x 5<sup>7</sup>/<sub>8</sub>" H x 16<sup>1</sup>/<sub>16</sub>" D ..... \$599

### A-7 Integrated Amplifier

Features low imp drive stability parallel push-pull output stage; DC High Gm FET input stages for phono and main amp and DC servo voltage amp and power amp sections; low imp Reserve II power supply with multi-tapped transformer and 33,600 UFD capacitor storage; independent discrete shunt parallel regulation for preamp and main amp driver stage; low noise MC/MM phono EQ with built-in subsonic filter; recording output selector; tape copy functions. Inputs for MM phono; MC phono; tuner; tape; tape 2; aux; extra aux; CD player. FR 5-300,000 Hz; S/N 90 dB MM phono, 73 dB MC phono, 110 dB line level; MM sens 2.5 mV at 1,000 Hz; line level sens 150 mV; 50 continuous W/ch at 8 ohms, 100 W/ch at 4 ohms 20-20,000 Hz with no more than 0.006% THD; dynamic power 60 W/ch at 8 ohms, 120 W/ch at 4 ohms, 240 W/ch at 2 ohms (4 times rated power); peak current 69.5 amps; damping factor 120 at 1,000 Hz; slew rate 110 v/sec. 26.4 lbs; 16<sup>1</sup>/<sub>16</sub>" W x 5<sup>7</sup>/<sub>8</sub>" H x 14<sup>1</sup>/<sub>16</sub>" D ..... \$349



NEC A-7

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CHAIRMAN OF THE BOARD  
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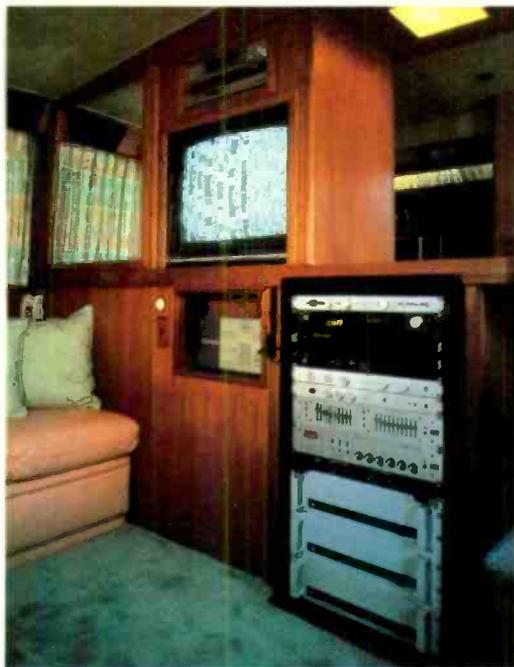
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# AMPLIFIERS

## NIKKO

### NA-2000 Integrated Stereo Amplifier

Rack mountable integrated amp with stereo enhancement mode selector. Inputs for MM phono; MC phono; tape; tape 2; AUX. FR 20-20,000 Hz  $\pm 0$  dB; THD 0.01%; S/N 105 dB; IMD 0.01%; MM phono sens 2.5 mV for 0.5 V output at 1,000 Hz; sens for line-level inputs 150 mV; 85 continuous average W/ch from 20-20,000 Hz with no more than 0.01% THD into 8 ohms; dynamic headroom 40 dB; 22 lbs; 17 $\frac{1}{2}$ " W x 4 $\frac{3}{8}$ " H x 14 $\frac{1}{16}$ " D ..... \$330

## ONKYO

### A-8019 100-Watt Integrated Amplifier

Features delta power supply; MM/MC/78 RPM phono selector; rec selector; dual subsonic filters. Inputs for MM phono; MC phono; tuner; tape; tape 2; AUX; phono 2; CD player. FR 2-50,000 Hz  $\pm 1$  dB; THD 0.012%; S/N 84 dB; IMD 0.005%; MM phono sens 2.5 mV for 0.5 V output at 1,000 Hz; sens for line-level inputs 150 mV; 100 continuous average W/ch from 20-20,000 Hz with no more than 0.012% THD into 8 ohms; dynamic power 8 ohms 140 W/ch, 4 ohms 215 W/ch, 2 ohms 310 W/ch. 26 lbs; 17 $\frac{1}{8}$ " W x 5 $\frac{1}{8}$ " H x 15 $\frac{1}{16}$ " D; black finish ..... \$495

### A-8067 80-Watt Integrated Amplifier

Features real-phase power supply, dual record selectors; direct tone controls; delta power supply; MC head amp. Inputs for MM phono; MC phono; tape; tape 2; AUX; CD player. FR 2-50,000 Hz  $\pm 1$  dB; THD 0.015%; S/N 84 dB; IMD 0.005%; MM phono sens 2.5 mV for 0.5 V output at 1,000 Hz; sens for line-level inputs 150 mV; 80 continuous average W/ch from 20-20,000 Hz with no more than 0.015% THD into 8 ohms; dynamic power 135 W/ch into 8 ohms, 205 W/ch into 4 ohms, 295 W/ch into 2 ohms; 17 $\frac{1}{8}$ " W x 5 $\frac{1}{8}$ " H x 15 $\frac{1}{8}$ " D; black finish ..... \$400

### A-8057 80-Watt Integrated Amplifier

Features real phase power supply; dual record selectors; direct tone controls; delta power; MC head amp. Inputs for MM phono; MC phono; tape; tape 2; AUX; CD player. FR 2-50,000 Hz  $\pm 1$  dB; THD 0.015%; S/N 84 dB; IMD 0.005%; MM phono sens 2.5 mV for 0.5 V output at 1,000 Hz; sens for line-level inputs 150 mV; 80 continuous average W/ch from 20-20,000 Hz with no more than 0.015% THD into 8 ohms; dynamic power 135 W/ch into 8 ohms, 205 W/ch into 4 ohms, 295 W/ch into 2 ohms; 26 lbs; 17 $\frac{1}{8}$ " W x 5 $\frac{1}{8}$ " H x 15 $\frac{1}{8}$ " D; black ..... \$300



Onkyo A-8067

## PARASOUND

### CA250 Integrated Amplifier

Features electronic volume control; detented variable loudness control; separate record output selector; 10-transistor discrete phono preamp; relay protection; discrete output transistor; 3-color LED power metering; 2-way tape dubbing; separate output selector; A/B speaker switching. Inputs for MM phono; tuner; tape; tape 2; CD player/video. FR 20-40,000 Hz  $\pm 1$

dB; THD <0.03%; S/N 88 dB; IMD 0.015%; MM phono sens 2 mV for 0.5 V output at 1,000 Hz; sens for line-level inputs 500 mV; 50 continuous average W/ch from 20-20,000 Hz with no more than 0.03% THD into 8 ohms; dynamic headroom 2 dB; slew rate 55 V/ $\mu$ sec; 16 lbs; 17 $\frac{1}{4}$ " W x 3 $\frac{1}{2}$ " H x 11" D ..... \$270

## PIONEER

### A88X(BK) Integrated Amplifier

Non-switching type II integrated amp with 3-transformer multi-power supply; MC phono input; 2 tape monitors. FR 20-20,000 Hz  $\pm 0.2$  dB; THD 0.003%; IMD 0.003%; MM phono sens 2.5 mV for 0.5 V output at 1,000 Hz; sens for line-level inputs 150 mV; 120 continuous average W/ch from 20-20,000 Hz with no more than 120% THD into 8 ohms; 39 lbs, 11 oz; 18" W x 6 $\frac{1}{8}$ " H x 16 $\frac{1}{16}$ " D ..... \$700

### SA-900D Integrated Amplifier

Integrated amp with 120 continuous average W/ch from 20-20,000 Hz with no more than 0.003% THD into 8 ohms; twin mono construction; low-imp drive capability; nonswitching type II amp. FR 10-100,000 Hz  $\pm 0$ , -3 dB; S/N 110 dB; IMD 0.003%; phono overload (MM) 1,000 Hz, 250 mV at 0.003% dist; phono EQ 20-20,000 Hz  $\pm 0.2$  dB; subsonic EQ 15 Hz 6 dB/oct; 18" W x 6 $\frac{1}{8}$ " H x 16 $\frac{1}{16}$ " D; 39 lbs, 11 oz ..... \$600

### A77X Integrated Amplifier

Non-switching type II integrated amp. Features 3 transformer multi-power supply; subsonic filter; MC phono input; 2 tape monitors. FR 20-20,000 Hz  $\pm 0.2$  dB; THD 0.003%; IMD 0.003%; MM phono sens 2.5 mV for 0.5 V output at 1,000 Hz; sens for line-level inputs 150 mV; 100 continuous average W/ch from 20-20,000 Hz with no more than 0.003% THD into 8 ohms; 33 lbs, 12 oz; 18" W x 6 $\frac{1}{8}$ " H x 16 $\frac{1}{16}$ " D ..... \$500

### SA-960 Integrated Amplifier

Non-switching type II integrated amp with 5 inputs and LED input indicators. FR 20-20,000 Hz  $\pm 0.3$  dB; THD 0.08%; IMD 0.08%; MM phono sens 2.5 mV for 0.5 V output at 1,000 Hz; sens for line-level inputs 150 mV; 70 continuous average W/ch from 20-20,000 Hz with no more than 0.08% THD into 8 ohms; 14 lbs, 9 oz; 16 $\frac{1}{8}$ " W x 3 $\frac{1}{8}$ " H x 10 $\frac{3}{4}$ " D ..... \$330

### SA-V1160 Integrated Amplifier

Non-switching circuit type II integrated amp with dynamic expander; 2 video inputs. FR 20-20,000 Hz  $\pm 0.3$  dB; THD 0.05%; IMD 0.05%; MM phono sens 2.5 mV for 0.5 V output at 1,000 Hz; sens for line-level inputs 150 mV; 100 continuous average W/ch from 20-20,000 Hz with no more than 0.05% THD into 8 ohms; 17 lbs, 10 oz; 16 $\frac{1}{8}$ " W x 3 $\frac{1}{8}$ " H x 12 $\frac{1}{16}$ " D ..... \$330

## PROTON

### D540 Integrated Amplifier

High-current, high-dynamic power amplifier with Dynamic Power On Demand (DPD). Features phono section with MC and MM phono selections; active volume control; Anti-Clipping circuit. 40 continuous W/ch from 20-20,000 Hz; FR 20-20,000 Hz  $\pm 0.2$  dB; S/N 85 dB (unweighted). 105 dB (A-wtd); dynamic headroom 6 dB; dynamic power rating: IHF 20 ms at 8 ohms is 160 W, 4 ohms 280 W, 2 ohms 380 W; 100 ms duration 8 ohms is 150 W, 4 ohms 220 W, 2 ohms 230 W; 200 ms 8 ohms is 150 W, 4 ohms 190 W, 2 ohms 200 W. 16" W x 3" H x 12" D; 19.14 lbs ..... \$350



Pioneer SA-V1160

## ROCA

### MSA-200 Dimensia Integrated Amplifier

100-W integrated amp with on-screen volume graphics and mute. Inputs for MM phono; tape; AUX; CD player. Features automatic input selection; subsonic filter; 4 AC outlets; A/B speaker switch; bridging preamp/power amp; loudness compensation; a bus system which allows for 13 audio/video devices to be hooked up and operated with one remote control. FR 20-20,000 Hz; THD <0.05%; S/N <75 dB phono, 78 dB others; IMD 0.08%; MM phono sens 0.276 mV for 1 W at speaker term across 8 ohms; sens for line-level inputs 16 mV; 100 continuous average W/ch from 20-20,000 Hz with no more than 0.05% THD into 8 ohms; 17 $\frac{1}{2}$ " W x 4 $\frac{3}{8}$ " H x 14 $\frac{1}{2}$ " D; 19 lbs, 13 oz ..... \$390

### MSA-100 Dimensia Integrated Amplifier

50-W integrated amp with on-screen volume graphics and mute. Inputs for MM phono; tape; AUX; CD player. Features automatic input selection; subsonic filter; 3 AC outlets; fluorescent power meter; A/B speaker switch; loudness compensation; a bus system which allows for 13 audio/video devices to be hooked up and operated with one remote control. FR 20-20,000 Hz; THD <0.05%; S/N <75 dB phono, 78 others; IMD <0.09%; MM phono sens 0.35 mV at 47 ohms for 1 W across 8 ohms at speaker term; sens for line-level inputs 21 mV; 50 continuous average W/ch from 20-20,000 Hz with no more than 0.05% THD into 8 ohms; 17 $\frac{1}{8}$ " W x 3 $\frac{1}{4}$ " H x 11 $\frac{1}{8}$ " D; 12.6 lbs ..... \$300

## REVOX

### B251 Integrated Amplifier

Microprocessor-controlled integrated amp with switched power supply; liquid cooling by heat pipe; input sensitivities programmable into nonvolatile memory. Features infrared remote control; rise time of 2  $\mu$ sec with 4-ohm load; cable capacitance selector (150/300/450 pF). Inputs for MM phono; MC phono; tuner; tape; tape 2; AUX; phono 2; CD player; external equalizer. 120 continuous average W/ch 20-20,000 Hz with no >0.01% THD into 8 ohms; FR 20-20,000 Hz  $\pm 0$ , -0.2 dB; THD 0.01% at nominal output and at 50 mW; S/N 96 dB at nominal output, 80 dB at 50 mW; MM phono sens 1.6-23 mV for 0.5-V output at 1,000 Hz; sens for line-level inputs 160 mV to 2.3 V; dynamic headroom 3 dB; slew rate 100 V/ $\mu$ sec; 18 lbs; 17 $\frac{1}{4}$ " W x 6" H x 13 $\frac{1}{16}$ " D ..... \$1,500

**B252.** Similar to B251 except without power amp stage ..... \$1,200

## ROTEL

### RA870 Integrated Amplifier

Integrated amp with individual power transformers for each channel. Inputs for MM phono; MC phono; tuner; tape; tape 2; CD player. FR 20-20,000 Hz  $\pm 0.2$  dB; THD 0.03%; S/N 80 dB phono, 102 dB CD, tuner, tape; IMD 0.05%;

# AMPLIFIERS

60 continuous average W/ch from 20-20,000 Hz with no more than 0.03% THD into 8 ohms; 21.5 lbs; 17" W x 3<sup>11</sup>/<sub>16</sub>" H x 12<sup>7</sup>/<sub>16</sub>" D . . . \$475  
**RA840BX.** Similar to RA870 except 40 W/ch; S/N 78 dB phono, 95 dB CD, tuner, tape \$350

## SAE

### A14 Integrated Amplifier

140 W/ch integrated amp with on-board parametric equalizer. Features MC and MM phono inputs, 2 tape inputs with 2-way tape dubbing, external processor input, 2 AUX inputs, 2-band parametric equalizer with MM phono, MC phono, tape, aux, tuner. FR 10-60,000 Hz; THD 0.05%; sens for line-level inputs 7.2 mV; 140 continuous av W/ch from 20-20,000 Hz with no >0.05% THD into 8 ohms; 32 lbs; 18.25" W x 5.25" H x 13.8" D . . . \$799

### I102 Integrated Amplifier

60 W/ch computer direct-line integrated amp. Features MC and MM phono inputs, 2 tape inputs with 2-way tape dubbing, external processor loop, dual digital volume and balance controls, sequential audio muting between sources, digital tone section with memory, rack mountable; 26 lbs . . . \$499

## SANSUI

### AU-G90X Integrated Amplifier

Stereo integrated amp with X-balanced technology. Features built-in step-up imp-matching transformer for MC cartridges; tone controls with switch-selectable turnover frequencies; 8- or 4-ohm output imp. Inputs for MM phono; MC phono; tuner; tape; tape 2; AUX; phono 2; CD player; tuner. 130 continuous average W/ch from 10-20,000 Hz with no more than 0.003% THD into 8 ohms; S/N 110 dB; MM phono sens 2.5 mV for 0.5 V output at 1,000 Hz; slew rate 400 V/ $\mu$ sec; 18<sup>1</sup>/<sub>2</sub>" W x 10" H x 19<sup>3</sup>/<sub>4</sub>" D; black finish . . . \$799

**AU-G-99X.** Similar to AU-G-90X except no phono 2 input; THD 0.004%; 160 W/ch into 8 ohms; S/N ratio 115 dB . . . \$899

**AU-G-77X.** Similar to AU-G-99X except 110 W/ch into 8 ohms; slew rate 300 V/ $\mu$ sec . . . \$499

**AU-G-55X.** Similar to AU-G-77X except slew rate 160 V/ $\mu$ sec . . . \$369

**AU-G-33X.** Similar to AU-G-55X except 45 W/ch into 8 ohms . . . \$299

## SCOTT

### 495SA Integrated Amplifier

Features IC logic controls; 5-band graphic EQ with tone defeat; 2-color peak-hold power meters; subsonic and high filters; 2-speaker switching; loudness contour; DC power amplifier. Inputs for MM phono; tape; tape 2; AUX; phono 2; CD player; TV. FR 20-20,000 Hz  $\pm$  0.5 dB; S/N 82 dB; IMD 0.03%; MM phono sens 2.5 mV for 0.5 V output at 1,000 Hz; 120 continuous average W/ch from 20-20,000 Hz with no more than 0.03% THD into 8 ohms . . . \$450

### 485SA Integrated Amplifier

Features IC logic controls; 5-band graphic EQ with tone defeat; 2-color peak-hold power meters; subsonic filter; 2-speaker switching; loudness contour; DC power amplifier. Inputs for MM phono; tape; tape 2; AUX; phono 2; CD player; TV. FR 20-20,000 Hz  $\pm$  0.5 dB; S/N 82 dB; IMD 0.03%; MM phono sens 2.5 mV for 0.5 V output at 1,000 Hz; 90 continuous average W/ch from 20-20,000 Hz with no more than 0.03% THD into 8 ohms . . . \$389

### 455SA Integrated Amplifier

Features 5-band graphic EQ; loudness contour; subsonic filter; 2-speaker switching; 2 LED pow-

er meters. Inputs for tape; aux; phono; CD player; TV. FR 20-20,000 Hz  $\pm$  0.5 dB; S/N 82 dB; IMD 0.03%; MM phono sens 2.5 mV for 0.5 V output at 1,000 Hz; 65 continuous average W/ch from 20-20,000 Hz with no more than 0.03% THD into 8 ohms . . . \$280

## SONY

### TA-F555 ES Integrated Amplifier

Audio Current Transfer design. Features MC cartridge imp loading; MM cartridge switch; record-out selector. Inputs for MM phono; MC phono; tape; tape 2; AUX; CD player. FR 5-300,000 Hz  $\pm$  3 dB; THD 0.004%; S/N 100 dB; MM phono sens 2.5 mV for 0.5 V output at 1,000 Hz; sens for line-level inputs 150 mV; 100 continuous average W/ch from 20-20,000 Hz with no more than 0.004% THD into 8 ohms; dynamic headroom 1.8 dB; slew rate 250 V/ $\mu$ ; 32 lbs; 17" W x 5<sup>1</sup>/<sub>2</sub>" H x 15" D . . . \$640

### TA-F444 ES Integrated Amplifier

Audio Current Transfer design. Features MC cartridge loading, record-out selector. Inputs for MM phono; MC phono; tape; tape 2; AUX; CD player. FR 5-300,000 Hz  $\pm$  3 dB; THD 0.004%; S/N 100 dB; MM phono sens 2.5 mV for 0.5 V output at 1,000 Hz; sens for line-level inputs 150 mV; 80 continuous average W/ch from 20-20,000 Hz; dynamic headroom 1.8 dB; slew rate 200 V/ $\mu$ ; 17" W x 5<sup>1</sup>/<sub>2</sub>" H x 15" D . . . \$490



Sansui AU-G99X

## TANDBERG

### TIA 3012A Integrated Amplifier

Features high-current MOSFET output, passive calibrated tone controls utilizing metal film resistors (1% tolerance), no electrolytic or ceramic capacitors from phono input to speaker output. Thermic servo loop to detect DC offset on the output. Minimized Miller Effect; minimal negative feedback and no current or voltage limiting on output stages. 100 W/ch RMS into 8 ohms < 0.02% THD. Rosewood side panels optional. May be combined with Tandberg tuner and a pair of rosewood side panels to create a receiver . . . \$995

## TECHNICS

### SU-V10X Integrated Amplifier

Integrated amp with separate record and input selector; A/V terminals. Inputs for MM phono; MC phono; tuner; tape; tape 2; AUX; phono 2; CD player; DA tape; VTR; TV; tuner. FR 5-150,000 Hz  $\pm$  3 dB; THD 0.003%; S/N 78 dB; IMD 0.007%; MM phono sens 150 mV for 0.5 V output at 1,000 Hz; 120 continuous average W/ch from 20-20,000 Hz with no more than 0.003% THD into 8 ohms; 29.8 lbs; 16<sup>1</sup>/<sub>16</sub>" W x 5<sup>2</sup>/<sub>32</sub>" H x 15<sup>1</sup>/<sub>32</sub>" D . . . \$600

### SU-V7X Integrated Amplifier

Integrated amp with separate record and input selector; A/V terminals. Inputs for MM phono; MC phono; tuner; tape; tape 2; AUX; phono 2; CD player DA tape; VTR; TV; tuner. FR 5-130,000 Hz  $\pm$  3 dB; max output 150 MV; THD 0.003%; S/N 77 dB; IMD 0.007%; MM phono

sens 150 mV for 0.5 V output at 1,000 Hz; 100 continuous average W/ch from 20-20,000 Hz with no more than 0.003% THD into 8 ohms; 24.3 lbs; 16<sup>1</sup>/<sub>16</sub>" W x 5<sup>2</sup>/<sub>32</sub>" H x 15<sup>1</sup>/<sub>32</sub>" D . . . \$460

### SU-V6X Integrated Amplifier

Computer-drive new Class A stereo amp. Features power linear circuit, linear feedback, microcomputer-controlled protection, electronic input/sec selectors, subsonic filters. Inputs for MM phono, MC phono, tape, tape 2, AUX, CD player, video audio. FR 0.7-140,000 Hz  $\pm$  0/-3 dB; 20-20,000 Hz  $\pm$  0/-0.2 dB; S/N 82 dB; THD 0.001%; S/N 82 dB; IMD 0.007%; MM phono sens 0.25 mV for 0.5 V output at 1,000 Hz; sens for line-level inputs 15 mV; 100 continuous average W/ch from 20-20,000 Hz with no >0.003% THD into 8 ohms; 24.2 lbs; 16<sup>1</sup>/<sub>16</sub>" W x 5<sup>1</sup>/<sub>16</sub>" H x 14<sup>1</sup>/<sub>16</sub>" D . . . \$390

### SU-V4X Integrated Amplifier

Computer drive new Class A stereo amp. Features power linear circuit, linear feedback, micro-computer-controlled protection, electronic input/rec selectors, subsonic filter, EQ jacks. Inputs for MM phono, MC phono, tape, tape 2, AUX, CD player, tuner. FR 5-14,000 Hz  $\pm$  0/-3, 20-20,000 Hz  $\pm$  0/-0.2 dB; THD 0.001%; S/N 82 dB; IMD 0.004%; MM phono sens 0.3 mV for 0.5 V output at 1,000 Hz; sens for line-level inputs 19 mV; 65 continuous average W/ch from 20-20,000 Hz with no >0.004% THD into 8 ohms; 15.6 lbs; 16<sup>1</sup>/<sub>16</sub>" W x 3<sup>3</sup>/<sub>16</sub>" H x 11<sup>1</sup>/<sub>16</sub>" D . . . \$300

## VECTOR RESEARCH

### VA-1400 Integrated Amplifier

100 W/ch high-current integrated amp with eight output transistors. 200 W/ch with optional VA-1450 bridging amp. Inputs for MM phono; MC phono; tape; CD; video sound source; 100 continuous average W/ch 20-20,000 Hz with <0.08% THD into 4 ohms; dynamic headroom 2.5 dB; IHF IMD 0.08%. FR 10-40,000 Hz  $\pm$  1 dB; 20 lbs. 17" W x 3" H x 12" D . . . \$300

## YAMAHA

### A-1000 Integrated Amplifier

Integrated amp with auto Class A/class AB power switching with power levels of up to 10 W handled in pure class A mode. Features extended-rolloff equalizer; large capacity chemical capacitors; Zero Distortion Rule system; direct switch; direct-coupled servo power stages with dual-differential FET input circuitry; black anodized finish. 120 W/ch min RMS output power into 8 ohms at 1,000 Hz with 0.005% THD; THD aux/DAD/tape/tuner 0.002%; FR 20-20,000 Hz; S/N 89 dB aux/DAD/tape/tuner; 17<sup>1</sup>/<sub>8</sub>" W x 3<sup>3</sup>/<sub>4</sub>" H x 16<sup>1</sup>/<sub>4</sub>" D; 28 lbs, 10 oz \$590  
**A-700.** Similar to A-1000 except 100 W/ch min RMS output power into 8 ohms 20-20,000 Hz with no more than 0.005% THD; FR 20-20,000 Hz  $\pm$  0/-0.5 dB . . . \$450

### A-520 Integrated Amplifier

Integrated amp with continuously variable loudness control (-40 dB). Features zero distortion rule circuitry; low imp drive capability; rec out selector; subsonic filter. Inputs for MM phono or MC phono; tuner; tape; tape 2; AUX; CD player. FR 20-20,000 Hz  $\pm$  0, -5 dB; THD 0.007%; S/N 100 dB; IMD 0.01%; MM phono sens 2.5 mV for 0.5 V output at 1,000 Hz; sens for line-level inputs 150 mV; 75 continuous average W/ch from 20-20,000 Hz with no more than 0.01% THD into 8 ohms; dynamic power 8/4/2 ohms: 97/169/160 W. 16 lbs, 8 oz; 17<sup>1</sup>/<sub>8</sub>" W x 5<sup>1</sup>/<sub>4</sub>" H x 13<sup>1</sup>/<sub>4</sub>" D . . . \$300

HARMAN KARDON HIGH INSTANTANEOUS CURRENT CAPABILITY

## POWER ON COMMAND

*When you listen to your audio system, the power your loudspeakers demand constantly fluctuates with the music\*, requiring huge current surges from your amplifier.*

*Since most receivers and amplifiers are built to merely meet FTC power rating requirements, they simply don't have the current, and ultimately the power, to respond.*

*Just as the martial arts master is able and prepared to respond instantly with the climactic power needed...so is Harman Kardon. From the least expensive to the most sophisticated, every Harman Kardon receiver and amplifier is equipped with High instantaneous Current Capability (HCC) to provide the power you hear as loud, clear, distortion-free music.*

*In the world of uncompromising quality, you can depend on the demanding master of high fidelity...Harman Kardon.*

*\*A low frequency transient, such as the beat of a kick drum, can make a nominally rated 8 Ohm speaker instantaneously demand up to 6 times as much current as the amplifier's FTC power rating would suggest.*

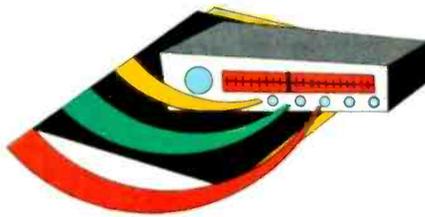
*Shown on the right is the new hk495i receiver featuring power of 45 Watts per channel with <.09% THD (RMS, per channel, both channels driven into 8 Ohms, 20Hz-20kHz), 95 Watts Dynamic Power into 4 Ohms, 115 Watts Dynamic Power into 2 Ohms. The hk495i has 18 amps of HCC, 25dB of Negative Feedback, Ultrawideband Frequency Response of 0.5Hz to 150kHz, Digital Synthesized Quartz-Locked Tuning with 16 memory presets.*



# harman / kardon

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A Harman International Company

# TUNERS



## ADCOM

### GFT-1A AM/FM Stereo Tuner

AM/FM-stereo tuner with quartz-referenced, digitally synthesized tuning, auto up/down scan and instant-recall preset tuning, LED digital frequency display. Features 8 AM/8 FM station presets; 5-LED signal-strength display; recording calibration tone (400 Hz at 50% FM modulation); high-blend mono/mute switches; tuning accuracy 0.00025%; FM usable sens 2  $\mu$ V; S/N 80 dB mono, 75 dB stereo; THD 0.08% mono, 0.10% stereo at 1 kHz, 100% modulation; alternate-ch sel 70 dB; FM-stereo sep 55 dB at 1 kHz; 19" W x 11 1/2" D x 3" H ..... \$375

### GFT-2 Tuner

Digitally-synthesized quartz-referenced tuner with fluorescent digital frequency display. Features auto scan tuning; 7 FM and 7 AM presets; 5-segment LED signal-strength indicator. 50-dB quieting sens 38.5 dBf stereo; FR 30-15,000 Hz  $\pm$  2 dB; THD at 1,000 Hz 0.09% mono, 0.18% stereo; S/N 75 dB mono, 70 dB stereo; alternate ch sel 70 dB; capture ratio 1.2 dB; sep 50 dB at 1,000 Hz ..... \$250

## ADS

### Atelier T2 Tuner

AM/FM digital synthesizer tuner with 16 station presets and auto FM search tuning. Features flywheel manual tuning; fine-tuning control; switchable muting; high-blend control; LED frequency display; center tuning plus signal-strength displays; AC outlets. FM usable sens mono 1.0  $\mu$ V (11.0 dBf) stereo 5.5  $\mu$ V (26.1 dBf); stereo 50-dB quieting sens 15  $\mu$ V (34.8 dBf); THD mono <0.15%, stereo <0.20%; S/N mono >70dB, stereo >65dB; FR 10-14,500Hz, +0, -1 dB; ch sep >38dB at 1,000 Hz; capture ratio <2.5dB; AM quieting sens <5  $\mu$ V for 6 dB S/N; image rejection >55 dB; S/N with 1,000 Hz, 5 mV signal >44 dB; 17.52" W x 2.76" H x 14.84" D; 13.2 lbs ..... \$379

## AKAI

### ATA-301 Quartz Digital AM/FM Tuner

Features 16 random presets and preset scanning. FM section: IHF sens mono 11.2 dBf; FM usable sens mono 11.2 dBf; 50-dB quieting sens mono 16.2 dBf; 50-dB quieting sens stereo 37.2 dBf; THD stereo 0.3%, mono 0.1%; S/N stereo 65 dB, mono 75 dB; FR 35-15,000 Hz  $\pm$  0.5 dB; capture ratio 1.5 dB; sep 45 dB at 1,000 Hz; AM suppression 60 dB. AM section: sens 300  $\mu$  with built-in antenna. 17.3" W x 2.1" H x 10.8" D; 6.4 lbs ..... \$160

## CARVER

### TX-11 FM-Stereo Tuner

Digital quartz-synthesized FM stereo tuner with Asymmetrical Charge Coupled FM Detector circuit that virtually eliminates distortion from multipath distant-station interference while retaining full separation. Incorporates Bob Carver's latest circuit refinements. Features digital tuning; 16 programmable station presets;

auto/manual station scanning; wide/narrow bandwidth selector for increased performance in cities. Supplied with antenna. Two-year factory parts and labor warranty. Usable sens 1  $\mu$ V mono, 3.1  $\mu$ V stereo with CCD; 50-dB quieting sens 3.1  $\mu$ V stereo with CCD; S/N 85 dB in stereo; FR 20-15,000 Hz  $\pm$  1 dB; alternate-ch sel 110 dB; capture ratio 1.0 dB; AM suppression 65 dB; image, i-f, spurious-response ratio 110 dB; output level/imp 700 mV/600 ohms; power consumption 15 W; 17 1/2" W x 12 1/2" D x 3 1/2" H; 11.25 lb ..... \$599

### TX-2 AM/FM Tuner

AM/FM stereo tuner with Asymmetrical Charge Coupled FM Detector. FM section: FM usable sens mono 1.8  $\mu$ V, stereo 4.5  $\mu$ V; 50-dB quieting sens stereo 5  $\mu$ V; THD stereo 0.4% at 1,000 Hz; S/N 70 dB stereo; FR 20-15,000 Hz  $\pm$  1.5 dB; capture ratio 1.5; sep 43 dB at 1,000 Hz; AM suppression 60 dB; alternate-ch rejection 58 dB; adjacent-ch rejection 28 dB. AM section: FR 20-2,000 Hz  $\pm$  1 dB; sens 250  $\mu$ V with built-in antenna, 20  $\mu$ V with external antenna; 17 1/2" W x 2 1/2" H x 9 1/2" D ..... \$375

## CROWN

### FM Three Tuner

AM/FM tuner with Schotz noise reduction. Features 6 AM and 6 FM memory presets; multipath indicator; channel scanning; digital detector; dual quartz system to improve S/N; toroidal transformer to reduce hum and noise; calibrated signal-strength indicator. FM section: 50-dB quieting sens mono 2.8  $\mu$ V (14.2 dBf), stereo 18  $\mu$ V (30.3 dBf); THD stereo 0.05% at 1,000 Hz; S/N 75 dB stereo, 80 dB mono; FR 30-15,000 Hz  $\pm$  0.5 dB; capture ratio 1.5 dB; sep 60 dB at 1,000 Hz; AM suppression 80 dB; alternate-ch rejection 75 dB. AM section: FR 40-2,000 Hz  $\pm$  3 dB; sens 300  $\mu$ V with built-in antenna; 19" W x 1 1/4" H x 11 1/2" D; 8 lbs ..... \$795



Crown FM Three

## DENON

### TU-767 Stereo Tuner

AM/FM stereo tuner with Super Searcher System designed to eliminate interference from intermodulation. Features 16 station presets; cable-ready; rec calibration; side panel standard. FM section: FM usable sens mono 0.9  $\mu$ V (10.2 dBf), stereo 0.9  $\mu$ V (10.2 dBf); 50-dB quieting sens mono 1.5  $\mu$ V (14.2 dBf), stereo 15.8  $\mu$ V (35.2 dBf); THD stereo 0.04%, mono 0.03% at 1,000 Hz; S/N 82 dB stereo, 88 dB mono; FR 20-15,000 Hz  $\pm$  1.5 dB; capture ratio 1 dB; sep 57 dB at 1,000 Hz; AM suppression 65 dB; alter-

nate-ch rejection 100 dB. AM section: sens 18  $\mu$ V with built-in antenna ..... \$325

### TU-747 Digitally Synthesized Tuner

Cable-ready AM/FM-stereo tuner with 16 station presets. FM section: FM usable sens mono 0.9  $\mu$ V (10.2 dBf), stereo 0.9  $\mu$ V (10.2 dBf); 50-dB quieting sens mono 1.5  $\mu$ V (14.2 dBf), stereo 15.8  $\mu$ V (35.2 dBf); THD stereo 0.1%, mono 0.08% at 1,000 Hz; S/N 80 dB stereo, 84 dB mono; FR 20-15,000 Hz  $\pm$  1.5 dB; capture ratio 1 dB; sep 50 dB at 1,000 Hz; AM suppression 60 dB; alternate-ch rejection 85 dB. AM section: sens 18  $\mu$ V with built-in antenna ..... \$250

### TU-720 Stereo Tuner

Analog AM/FM-stereo tuner with high sensitivity FET front end, servo lock, and rec calibration. FM section: IHF sens mono 1.7  $\mu$ V (15.6 dBf), stereo 15  $\mu$ V (34.7 dBf); FM usable sens mono 0.85  $\mu$ V (9.8 dBf); 50-dB quieting sens mono 1.7  $\mu$ V (15.6 dBf), stereo 15  $\mu$ V (34.7 dBf); THD stereo 0.06%, mono 0.04% at 1,000 Hz; S/N 84 dB stereo, 86 dB mono; FR 20-15,000 Hz  $\pm$  1.5 dB; capture ratio 1 dB; sep 55 dB at 1,000 Hz; AM suppression 55 dB; alternate-ch rejection 95 dB. AM section: sens 15  $\mu$ V with built-in antenna ..... \$200

## HAFLER

### DH-330 Tuner

Tuner provides exact station selection with a quartz-controlled, digitally synthesized tuning system. Features multipath distortion and noise-sensing circuit; 5-station memory; Autosearch; digital readout; nonvolatile memory; 3 dual-gate MOSFETs; triple-tuned RF stage volume control and separate output on front panel for taping or headphones; kit is comprised of 4 fully assembled, tested, and aligned circuit boards which plug together. Usable sens 11.3 dBf; 50-dB quieting sens mono 17.2 dBf, stereo 37.2 dBf; dist. at 1,000 Hz, 100% modulation mono .15%, stereo 0.18%; capture ratio 1.5 dB; alternate ch sel 70 dB; sep 45 dB at 1,000 Hz; 35 dB at 10,000 Hz; S/N, mono, 72 dB, stereo, 68 dB. Kit ..... \$385  
Assembled ..... \$460

## HARMAN KARDON

### TU-915 AM/FM Stereo Tuner

Digitally synthesized quartz-locked tuner with seek/manual tuning. Features 8 AM/8 FM station presets; flywheel stabilized tuning knob; sample-and-hold MPX decoding; high blend control; variable output level; variable muting level; usable sens 0.95  $\mu$ V; 50-dB quieting sens mono 1.8  $\mu$ V, stereo 20  $\mu$ V; THD stereo 0.08%, mono 0.05%; S/N 74 dB stereo, 82 dB mono; capture ratio 1.0 dB; alternate-ch sel 70 dB; 17 3/8" W x 2 1/16" H x 14 3/8" D ..... \$345

### TU-910 AM/FM Stereo Tuner

AM/FM tuner with analog tuning. Features servo-lock tuning; sample-and-hold MPX decoding; low-group-delay IF section; high-capacity

# THE SILENT TREATMENT.

## WHY BOB CARVER'S MINIATURE RADIO STATION LEFT THE AUDIO PRESS SPEECHLESS AND HOW IT LED TO THE MOST COMPLETE STEREO TUNER EVER OFFERED.

The new Carver TX-11a Stereo AM-FM Tuner is a technical tour-de-force which further distances Bob Carver's unique products from traditional electronic components — and which can vastly enhance your musical enjoyment.

## TWO TECHNOLOGICAL INNOVATIONS.

The performance of the legendary TX-11 Asymmetrical Charge Coupled FM Stereo Detector Tuner is increased by the addition of Ultra High Frequency Wide Band AM Stereo circuitry. With the new TX-11a, AM stereo sounds as good as FM.

Yes, contrary to popular belief, most AM stereo stations have frequency response (20Hz-15kHz), separation (35dB) and signal-to-noise ratios (70dB) audibly indistinguishable from FM stations of equal strength. It's just that **only** Carver offers the technology to appreciate this hidden performance.

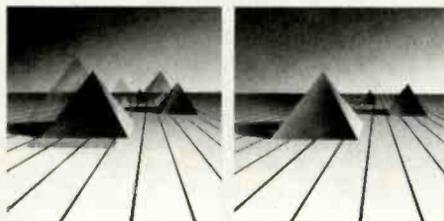
As for FM stereo, the TX-11a virtually eliminates multipath and distant station noise while providing fully-separated stereo reception with space, depth and ambience!

Bob Carver's Asymmetrical Charge Coupled FM Stereo Detector removes (without affecting stereo imaging, frequency response or dynamic range) the hiss, clicks, pops, "picket fencing" and the myriad other unpredictable noises which all too often disturb FM listening.

(Still interested in the story of the miniature radio station and how it impressed hard-to-impress audio critics? Read on. We'll get to it

after we explain why the quartz-synthesized TX-11a Stereo AM-FM Tuner will impress you in your own listening environment).

## A CLEANER, WIDER FM WINDOW ON THE WORLD.



Because of the TX-11a's Charge-Coupling and Leading Edge Detection technology, ownership may very well change your listening habits. Right now, you probably confine your FM listening to those stations which are strong and relatively interference-free, avoiding weak stations and those filled with distortion. Your options are therefore limited. The TX-11a can significantly expand your choices by recovering stations previously buried in hiss or prone to sudden tantrums of noise.

**Ovation Magazine** observed that the circuit, "... may well mean the difference between marginal reception of the station signals you've been yearning to hear and truly noise-free reception of those same signals, permitting you to enjoy the music and forget about noise and distortion."

In **Audio Magazine**, Len Feldman said "The significance of its design can only be fully appreciated by setting up the unit, tuning to the weakest, most unacceptable stereo signals you can find, then pushing those two magic buttons."

"Separation was still there; only the background noise had been diminished, and with it, much of the sibilance and hissy edginess so characteristic of multi-path interference."

## WHY THE ASYMMETRICAL CHARGE-COUPLED FM STEREO DETECTOR GIVES NOISE THE SILENT TREATMENT.

Thirty years ago, the FCC turned clear mono FM into a substandard stereo medium (with fifteen times poorer signal-to-noise ratio) by approving a broadcast system that is extraordinarily prone to multipath and distant-station-noise.

This system separates stereo into two different bands. Unfortunately, the bands aren't pure Left and Right. Instead, one band is comprised of those parts of a stereo signal that are common to both channels, (L+R, or mono). The other signal, far more fragile and prone to interference, is the difference between the left and right signal (L-R). It bounces off buildings, hills and other objects, and wreaks havoc when



# CARVER

POWERFUL

Carver Corporation  
P.O. Box 1237 Lynnwood, WA 98046

recombined with the strong mono signal.

Bob Carver's Charge-Coupling circuit takes advantage of the fact that almost all noise and distortion is exactly 180 degrees out of phase with the signal it's part of. The TX-11a Stereo AM-FM Tuner cancels these "dirty mirror" images before they can reach your ears. That eliminates up to 85% of the potential noise found in distant or noisy stations.

But Bob wasn't satisfied and knew you wouldn't be either. So another circuit, the Leading Edge Detector, goes a step further by taking advantage of a little-appreciated FM phenomenon: Just 5% of the L-R signal actually contributes to the stereo experience. The rest simply gets in the way of skyscrapers and mountains.

The Carver leading Edge Detector operates only on this critical 5% of the L-R signal, filtering out noise and restoring just that part of the signal needed by our ears and brain to construct stereo imaging.

Blended back into the mono (L+R) signal matrix, a net reduction of 93% — or better than 20dB of noise reduction — is achieved. All ambient and localizing information is recovered. Only hiss and distortion are left behind. Or, as **High Fidelity Magazine** put it, "...clean, noise-free sound out of weak or multi-path-ridden signals that would have you lunging for the mono switch on any other tuner."



### THE LITTLEST AM RADIO STATION.

Before we describe the remarkable attributes of the TX-11a, we owe you the story that proves just how far performance can be extended when a component comes from Carver.

At a recent press conference, Bob Carver unveiled a small antenna connected to a very low powered AM stereo broadcast transmitter (C-QUAM format). Dubbed "Station CRVR," it sat next to a Carver Compact Disc Player and the same TX-11a that's on your dealer's shelves right now.

Bob Carver routed the Compact Disc's signal to the antenna for reception by the TX-11a, and also directly to a preamplifier.

In front of America's top stereo writers, Bob switched back and forth between the transmitted signal (as received by the TX-11a) and the direct CD signal. All listeners had difficulty distinguishing between the outputs of the CD player and the TX-11a Stereo AM-FM Tuner!

Most could tell no difference at all!

### HOW AM STEREO GETS THE SILENT TREATMENT WITH THE TX-11a.

- \* *Unique de-emphasis curve*
- \* *Whistle Stop cancelling circuit*
- \* *Pilot Signal cancelling circuit*
- \* *Ultra-low noise balanced station detector*
- \* *Very wide band, minimum phase intermediate frequency amplifiers.*

Think of it. Compact Disc frequency response and freedom from noise with AM stereo and the TX-11a. Only Carver could pull it off. But then only Carver could do the same for FM, too.

### HUMAN-ENGINEERED FEATURES AND CONVENIENCE.

Many tuners with far less exclusive circuitry than the TX-11a have far more complicated exteriors. Bob Carver wanted to make tuning stations easy, not impress you with flashing lights or complex programming.

So thirteen presets, wide/narrow band selectors, automatic/manual scanning and the buttons which activate the remarkable Charge-Coupled circuits (Multipath and Noise Reduction) are all tastefully inset into the burnished anthracite metal face. Full instrumentation including digital station frequency readout, 6-step 10dB-interval signal strength LED's and other monitor functions is recessed behind a panel, visible but not garish.

The result is performance without theatricality. Access without complication.

A tuner **High Fidelity Magazine** called, "By far the best tuner we have tested..."

### CLEAR THE AIR BY VISITING YOUR NEAREST CARVER DEALER.

Ask to hear the most expensive tuner they sell. (It won't be the Carver TX-11a). Now tune a multi-path-ravaged, hiss-filled FM station. Tune the same station on the TX-11a Stereo AM-FM Tuner and press the Multipath and Noise Reduction buttons. You'll see why no other FM tuner can approach it. And why no other AM stereo tuner this good exists anywhere!



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# TUNERS

regulated power supply; variable output level. Usable sens 0.95  $\mu$ V; 50-dB quieting sens mono 1.8  $\mu$ V, stereo 20  $\mu$ V; THD stereo 0.1%, mono 0.06%; S/N 74 dB stereo, 82 dB mono; capture ratio 1.0 dB; alternate-ch sel 70 dB; 17 $\frac{1}{16}$ " W x 2 $\frac{1}{16}$ " H x 14 $\frac{3}{8}$ " D ..... \$215

## TU-905 AM/FM Stereo Tuner

Analog AM/FM stereo tuner. Features high-inertia flywheel, all-metal chassis; high-capacity regulated power supply. FM section: FM usable sens mono 0.95  $\mu$ V (10.8 dBf), 50-dB quieting sens mono 1.9  $\mu$ V; THD stereo .15%, mono .09%; S/N 71 dB stereo, 77 dB mono; capture ratio 1.3 dB; sep 65 dB at 1,000 Hz; alternate-ch rejection 50 dB. AM section: sens 9  $\mu$ V with external antenna; 17 $\frac{3}{8}$ " W x 2 $\frac{1}{16}$ " H x 14 $\frac{3}{8}$ " D; 10 lbs ..... \$175

## HITACHI

### FT-5500 Tuner

AM/FM stereo tuner with Field Condition Compute System reception. Features IF wide/high selectivity switching and RF normal/high selectivity mode in front end; brightener MPX circuit; 10-station random-access presets; high-gain AM loop antenna circuit; FET RF amp; 4-element ladder ceramic filters; FM rec level check switch; memory backup power supply; FM auto sweep tuning; 9 kHz/10 kHz channel spacing selector; FM section: usable sens IHF, RF normal mode mono 10.8 dBf 1.0  $\mu$ V, 75 ohms; quieting sens 50 dB mono (19.2 dBf), stereo 38.2 dBf; S/N at 65 dBf, mono 85 dB, stereo 78 dB; THD IF wide mode 1,000 Hz mono 0.04%, stereo 0.06%; FR 20-15,000 Hz  $\pm$  0.5 dB; capture ratio wide 1.0 dB; AM suppression ratio 65 dB; stereo sep 60 dB; AM section sens IHF, loop antenna 12  $\mu$ V, 250  $\mu$ V/m; sel 1,000 Hz  $\pm$  10 kHz 50 dB; S/N 54 dB; image rejection ratio 1,000 Hz 50 dB; 17 $\frac{1}{8}$ " W x 2 $\frac{3}{8}$ " H x 12 $\frac{1}{16}$ " D; 8 lb 13 oz ..... \$350

## JVC

### T-X900B Tuner

Computer-controlled digital synthesizer tuner. Features auto memory and program memory for unattended recording; dB reference signal-strength indicator. IHF sens mono 88 dBf; IHF sens stereo 82 dBf; FM usable sens stereo 10.8  $\mu$ V; 50-dB quieting sens mono 1.8  $\mu$ V (16.3 dBf); 50-dB quieting sens stereo 22  $\mu$ V (38.1 dBf); THD stereo 0.06%; mono 0.04% at 1,000 Hz; S/N stereo 82 dB, mono 88 dB; FR 30-15,000 Hz  $\pm$  0.3, -1.0 dB; capture ratio 1.0 dB; sep 60 dB at 1,000 Hz; AM suppression 65 dB; alternate-ch rejection 30 dB wide; 80 dB narrow; sens 300  $\mu$ V with external antenna; 8.4 lbs; 17 $\frac{1}{8}$ " W x 3" H x 11 $\frac{3}{4}$ " D ..... \$350

### T-X300B Tuner

Multi-programmable digital synthesizer tuner; can be programmed to turn receiver on and off up to 16 times. Features 8 AM/8 FM presets with one touch recall. IHF sens mono 82 dBf; IHF sens stereo 78 dBf; FM usable sens stereo 10.8 dBf; 50-dB quieting sens mono 1.8  $\mu$ V (16.3 dBf); 50-dB quieting sens stereo 22  $\mu$ V (38.1 dBf); THD stereo 0.08%, mono 0.08% at 1,000 Hz; S/N stereo 82 dB, mono 78 dB; FR 30-15,000 Hz  $\pm$  0.3, -3.0 dB; capture ratio 1.0 dB; sep 50 dB at 1,000 Hz; AM suppression 60 dB; alternate-ch rejection 30 dB wide, 80 dB narrow; sens 300  $\mu$ V with external antenna; 7.1 lbs; 17 $\frac{1}{8}$ " W x 3" H x 11 $\frac{1}{16}$ " D ..... \$270

## KENWOOD

### Basic Series KT 880(B) Tuner

AM/FM quartz PLL synthesizer tuner. Features new direct linear loop detector (DLLD); system

for low distortion and S/N performance; 12 stations random preset for AM/FM; electronic fluorescent frequency readout; automatic FM tuning system; 2 stations pre-programming for absentee recording, high sensitivity. FM section: FM usable sens mono 0.95  $\mu$ V (10.8 dBf), 50-dB quieting sens mono 1.80  $\mu$ V (16.2 dBf), stereo 24.0  $\mu$ V (38.8 dBf); THD stereo 0.02%, mono 0.018% at 1,000 Hz; S/N 76 dB stereo, 88 dB mono at 65 dBf; FR 20-15,000 Hz  $\pm$  0.2 dB, -1.0dB; capture ratio 1.0 dB; sep 68 dB at 1,000 Hz; AM suppression 70 dB; alternate-ch selectivity 65 dB. Spurious rejection ratio 100 dB; IF rejection ratio 100 dB. 17 $\frac{1}{16}$ " W x 2 $\frac{1}{2}$ " H x 12 $\frac{1}{2}$ " D; 7.3 lbs ..... \$235

### KT-74(B)

AM/FM quartz synthesizer tuner. Features 10-key direct-access tuning; digital frequency counter; total 10 presets for AM/FM; digital clock, two-speed station tuning; automatic fine tuning and station seek. FM section: FM usable sens stereo 0.95  $\mu$ V (10.8 dBf); 50-dB quieting sens mono 3.0  $\mu$ V (14.5 dBf); THD stereo 0.3%, mono 0.1% at 100 Hz; S/N 70 dB stereo, 77 dB mono at 65 dBf; FR 30-15,000 Hz  $\pm$  0.5 dB, -2.5 dB; capture ratio 1.5 dB; AM suppression 65 dB. AM section: sens 400  $\mu$ V with built-in antenna, 10  $\mu$ V with external; 16 $\frac{1}{32}$ " W x 2 $\frac{21}{32}$ " H x 10 $\frac{7}{8}$ " D; 6.4 lbs ..... \$200

### KT-54(B) Tuner

AM/FM quartz synthesizer tuner. Features 14 station random memory; digital frequency counter; LED signal strength indicator. FM section: FM usable sens stereo 0.95  $\mu$ V (10.8 dBf); 50-dB quieting sens mono 3.0  $\mu$ V (14 dBf); THD stereo 0.3%, mono 0.2% at 100 Hz; S/N 70 dB stereo, 76 dB mono at 65 dBf; FR 30-15,000 Hz  $\pm$  0.5 dB, -2.5 dB; capture ratio 2.0 dB; AM suppression 55 dB; alternate-ch rejection 50 dB. AM section: sens 20  $\mu$ V with built-in antenna; 16 $\frac{1}{32}$ " W x 2 $\frac{21}{32}$ " H x 10 $\frac{7}{8}$ " D; 6.4 lbs ..... \$160

## KYOCERA

### T-910 Tuner

Digital PLL quartz synthesized AM/FM stereo tuner. Features Dynamic Noise Reduction; 16 station presets; nonferrous ceramic base/chassis; 2 FM antennas; computer programmed narrow/wideband IF selection. FM section: FM usable sens 1.7  $\mu$ V (9.8 dBf); 50-dB quieting sens mono 3.0  $\mu$ V (35 dBf); THD 0.07%, mono 0.06% at 1,000 Hz; S/N stereo 76 dB, mono 88 dB; capture ratio 1.0 dB; sep 58 dB at 1,000 Hz; AM suppression 1.0 dB; alternate-ch rejection 85 dB narrow, 40 dB normal. AM section: sens 350  $\mu$ V with built-in antenna, 20  $\mu$ V with external antenna; 26.5 lbs ..... \$590

## LUXMAN

### T-407 Digital Tuner

MTS stereo AM/FM/TV tuner with dbx. 17 $\frac{1}{16}$ " W x 4" H x 12 $\frac{1}{32}$ " D; 10.1 lbs ..... \$600

### T-02 Digital Tuner

PLL frequency synthesized AM/FM stereo tuner. FM section: FM usable sensitivity stereo 1.8  $\mu$ V; THD stereo 0.06%, mono 0.05% at 1,000 Hz; S/N 77 dB stereo, 81 dB mono; FR 20-15,000 Hz  $\pm$  0.5 dB; sep 55 dB at 1,000 Hz; 17 $\frac{1}{16}$ " W x 3 $\frac{1}{16}$ " H x 13 $\frac{1}{16}$ " D; 10.6 lbs ..... \$400

### T-240 Digital Tuner

PLL frequency synthesized AM/FM stereo tuner. FM section: FM usable sens stereo 1.8  $\mu$ V (10.3 dBf); THD stereo 0.1% at 1,000 Hz; S/N 74 dB stereo, 76 dB mono; FR 30-15,000 Hz  $\pm$  0.5 dB; sep 50 dB at 1,000 Hz; 17 $\frac{1}{16}$ " W x 3" H x 9 $\frac{9}{16}$ " D; 6.6 lbs ..... \$200

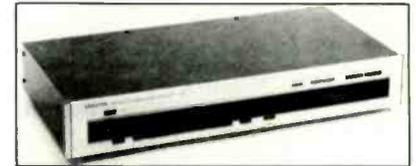
## MARANTZ

### ST 74 Stereo Tuner

AM/FM tuner. FM section: IHF sens 10.3 dBf; 50-dB quieting sens mono 13.2 dBf; THD stereo 0.3%, mono 0.2% at 1 Hz; S/N 72 dB stereo, 80 dB mono; FR 30-15,000 Hz  $\pm$  0.5 dB; capture ratio 1 dB; sep 48 dB at 1,000 Hz; AM suppression 65 dB; alternate-ch rejection 70 dB. 16 $\frac{3}{8}$ " W x 2 $\frac{7}{8}$ " H x 11 $\frac{3}{8}$ " D; 7.3 lbs ..... \$260

### ST 551 Stereo Tuner

AM/FM tuner. FM section: IHF sens mono 10.8 dBf; 50-dB quieting sens mono 15 dBf; stereo 37 dBf; THD stereo 0.3%, mono 0.15% at 1 Hz; S/N 70 dB stereo, 76 dB mono; FR 30-15,000 Hz  $\pm$  0.5 dB; capture ratio 1 dB; sep 60 dB at 1,000 Hz; AM suppression 60 dB. 16 $\frac{1}{2}$ " W x 3 $\frac{3}{8}$ " H x 7 $\frac{7}{8}$ " D; 5 lbs ..... \$220



Luxman T-240

## McINTOSH

### MR 80 Digital Tuner

AM/FM stereo tuner with 4 differential amps; 3-position de-emphasis switch; 19 and 38,000 Hz filters; headphone amp touch sensor; preset scan; control logic; lock circuit; scan circuit. Sens 14.7 dBf, 3  $\mu$ V for 50 dB of quieting; S/N 75 dB; harmonic distortion 0.2%; IM 0.15%; FR mono and stereo 20-15,000 Hz  $\pm$  1 dB; capture ratio 1.5 dB; 16" W x 5 $\frac{1}{16}$ " H x 13" D; 28 lbs ..... \$2,499

## MISSION ELECTRONICS

### Cyrus Digital Tuner

Quartz-locked digital synthesized tuner AM/FM tuner to match the Cyrus amplifier. Features 19 FM presets; 9 AM presets; automatic scanning with automatic FM mute. FM section: FM usable sens mono 0.85  $\mu$ V (26 dBf), stereo 19  $\mu$ V (46 dBf); THD stereo 0.42%, mono 0.17% at 1,000 Hz; S/N 73 dB stereo, 76 dB mono; FR 20-15,000 Hz  $\pm$  1 dB; capture ratio 73 dB; sep 45 dB at 1,000 Hz; AM suppression 47 dB; pilot tone rejection 42 dB; image frequency rejection 57 dB; cross modulation suppression 36 dB; output 1 V. AM section: FR 20-15,000 Hz  $\pm$  1 dB; sens 140  $\mu$ V with built-in antenna; 8 $\frac{1}{2}$ " W x 3" H x 13 $\frac{1}{2}$ " D; 1.9 kg \$299

## NAD

### 4155 Tuner

Digitally synthesized AM/FM stereo tuner featuring dynamic sep circuit. Contains 5 AM/FM presets; search scan; mute; output level control. FM section: mono 1.7  $\mu$ V (9.8 dBf); sens stereo 2.5  $\mu$ V (13.2 dBf); 50-dB quieting sens mono 2.5  $\mu$ V (93.2 dBf); 50-dB quieting sens stereo 22  $\mu$ V (32 dBf); THD stereo 0.09%, mono 0.09% at 1,000 Hz; S/N stereo 75 dB, mono 82 dB. FR 30-15,000 Hz  $\pm$  0.5 dB; capture ratio  $<$  1.5 dB; sep 50 dB at 1,000 Hz; AM suppression  $>$  65 dB; alternate-ch rejection 70 dB; adjacent-ch rejection 8 dB. AM section: sens 30  $\mu$ V with built-in antenna; 8 lb 10 oz; 16.5" W x 3" H x 11" D ..... \$348

### 4130 AM/FM-Stereo Tuner

Digitally synthesized AM/FM-stereo tuner with NAD's new dynamic blend circuit. Features. FM usable sens 1.8  $\mu$ V mono; 50-dB quieting sens mono 14.2 dBf, stereo 34.2 dBf; S/N

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# TUNERS

mono/stereo 82/75 dB; FR 30-15,000 Hz  $\pm$  0.5 dB; THD mono/stereo 0.9%/0.9% @ 1,000 Hz; capture ratio <1.5 dB; alt-ch rejection 70 dB; sep 50 dB ..... \$198

## NAKAMICHI

### ST-7 AM/FM Tuner

Tuner with Schotz noise reduction. Features signal/multipath meter; 16 station presets; output level controls (R + L independent). FM section: IHF sens mono 1.7  $\mu$ V (10 dBf), stereo 3.9  $\mu$ V (17 dBf); FM usable sens mono 1.7  $\mu$ V (10 dBf), stereo 3.9  $\mu$ V (17 dBf); 50-dB quieting sens mono 2.7  $\mu$ V (14 dBf), stereo 14  $\mu$ V (28 dBf); THD stereo 0.08%, mono 0.06% at 1,000 Hz; S/N 76 dB stereo, 80 dB mono; FR 20-15,000 Hz  $\pm$  1 dB; capture ratio 1.9 dB; sep 55 dB at 1,000 Hz; AM suppression better than 60 dB; alternate-ch rejection better than 60 dB. 17 $\frac{1}{8}$ " W x 2 $\frac{1}{2}$ " H x 11 $\frac{3}{8}$ " D; 10 lbs, 6 oz. \$595

## NEC

### T-6 Digital Tuner

AM/FM PLL digital synthesizer tuner with 14 presets, scan and mono/stereo switching, and memory backup. FM section: 50-dB quieting sens mono 3.4  $\mu$ V (15.9 dBf), stereo 38  $\mu$ V (36.8 dBf); THD stereo 0.08%, mono 0.06% at 1,000 Hz; S/N 78 dB stereo, 83 dB mono; FR 30-15,000 Hz  $\pm$  0.3/-0.8 dB; capture ratio 1.0 dB; sep 55 dB at 1,000 Hz; AM suppression 55 dB; alternate-ch rejection 80 dB; adjacent-ch rejection 100 dB. AM section: FR 100-3,000 Hz  $\pm$  3 dB; sens 300  $\mu$ V with built-in antenna; S/N 52 dB; sel 40 dB. 16 $\frac{3}{32}$ " W x 1 $\frac{1}{2}$ " H x 12 $\frac{3}{16}$ " D; 8.6 lbs ..... \$229

## NIKKO

### GAMMA-30 AM/FM Stereo Tuner

Frequency synthesized tuner with 4-digit fluorescent display; 7 AM/7 FM presets; pilot cancel IC; IF linear phase ceramic filters for improved group-delay characteristics; front panel adjustable muting threshold; illuminated preset buttons; switchable high-blend filter; stereo/mono switch; auto/manual tuning switch; AM loop antenna; usable sens 11.2 dBf; 50-dB quieting sens mono 14 dBf; S/N stereo 67 dB, mono 70 dB; THD stereo 0.20%, mono 0.15%; stereo sep at 1,000 Hz 45 dB; output level 550 mV; AM S/N 50 dB; rack mountable; matte black finish; 19" W x 11.8" H x 2.8" D ..... \$425

## ONKYO

### T-9090 Integra FM Tuner

Quartz digitally synthesized FM stereo tuner with computer-controlled Auto Precision Reception system. Features wide/narrow/super narrow sel; FM feedback system; 20-station memory; auto scan; preset scan; touch lock function selectors; multi-function display \$600 CW-30R. Wood side panels for use with T-9090 tuner ..... \$90

### T-4077 Integra AM/FM Tuner

Computer-controlled quartz-synthesized AM/FM tuner. Features Automatic Precision Reception; 20-station random memory; APR override; preset station scan. Usable sens mono 8.1 dBf, stereo 17.24 dBf; 50-dB quieting sens mono 16 dBf, stereo 36 dBf. Black only ..... \$350

### T-4057 MOSFET Integra Tuner

Computer-controlled quartz-synthesized AM/FM tuner. Features 3-mode APR; 20-station random memory; high-blend override; MOSFET RF amp; multi-phase lock loop. FM section: FM usable sens mono 1.9  $\mu$ V (10.8 dBf), stereo 4.0  $\mu$ V (17.2 dBf); 50-dB quieting sens mono 3.5  $\mu$ V (16.1 dBf), stereo 35  $\mu$ V (36.1 dBf); THD stereo 0.2%, mono 0.1%; S/N 68 dB

stereo, 75 dB mono; FR 30-15,000 Hz  $\pm$  1.5 dB; capture ratio 1.3 dB; sep 40 dB at 1,000 Hz; AM section: sens 25  $\mu$ V with built-in antenna; 17 $\frac{1}{8}$ " W x 3" H x 14 $\frac{3}{8}$ " D; 9 lbs; black only ..... \$240



Onkyo T-9090 Integra

## PARASOUND

### ST220 AM/FM Tuner

Quartz-synthesizer AM/FM tuner with phase-lock-loop tuning. Features 6 AM, 6 FM presets; auto or manual tuning; 4-LED signal-strength indicator. FM section: IHF sens mono 10.8 dBf; 50-dB quieting sens mono 16.1 dBf, stereo 37.7 dBf; THD stereo 0.15%, mono 0.1% at 1,000 Hz; S/N 76 dB stereo, 82 dB mono; FR 30-15,000 Hz  $\pm$  0.5 dB; capture ratio 1.4 dB; sep 48 dB at 1,000 Hz; AM suppression 65 dB; alternate-ch rejection 66 dB; adjacent-ch rejection 8 dB. AM section: FR 30-3,500 Hz  $\pm$  0.5 dB; sens 175  $\mu$ V with built-in antenna; 17 $\frac{1}{4}$ " W x 2 $\frac{3}{4}$ " H x 11" D; 10 lbs ..... \$220

## PIONEER

### FT-V70 Stereo AM/FM/TV Tuner

Stereo TV, AM/FM digital synthesizer tuner. Features stereo/SAP TV sound reception, 36 station presets; ch 2-83 tuner. FM section: usable sens mono 1 mV (11.2 dBf); 50-dB quieting sens mono 2 mV (17.3 dBf), stereo 22.2 mV (38.2 dBf); THD stereo 0.2%; S/N stereo 75 dB, mono 80 dB; FR 87.5-108 MHz; capture ratio 1 dB; sep 40 dB at 1,000 Hz; alternate-channel rejection 65 dB. AM section: sens 300 mV with built-in antenna. TV section: S/N 65 dB; sep 35 dB (main). 16 $\frac{9}{16}$ " W x 2 $\frac{3}{8}$ " H x 12 $\frac{1}{2}$ " D; 9 lbs, 11 oz ..... \$350

### TX-V1160 Digital AM/FM/TV Tuner

Quartz-PLL synthesizer AM/FM/TV tuner. Features Multi-channel TV Sound Decoder; 24 FM/AM random presets; 12 TV random presets; FM/AM/TV simulcast reception; optional wireless remote (CU-760). FM section: FM usable sens mono 1  $\mu$ V (11.2 dBf); 50-dB quieting sens mono 2  $\mu$ V (17.3 dBf), stereo 22.2  $\mu$ V (38.2



Proton 440

dBf); FR 30-15,000 Hz  $\pm$  0.5, -0.7 dB; capture ratio 1.0 dB; AM section: sens 300  $\mu$ V with built-in antenna; 16 $\frac{1}{16}$ " W x 2 $\frac{3}{8}$ " H x 12 $\frac{1}{2}$ " D; 9 lbs, 11 oz ..... \$330

### F99X Digital AM/FM Tuner

Digital Direct Decoder AM/FM tuner. Features Quartz-PLL synthesizer tuning; 16 random presets; station search; LED signal-strength meter. FM section: FM usable sens mono 0.95  $\mu$ V (10.8 dBf); 50-dB quieting sens mono 1.2  $\mu$ V (12.8 dBf), stereo 15  $\mu$ V (34.8 dBf); S/N 87 dB stereo, 94 dB mono; FR 20-15,000 Hz  $\pm$  0.2, -0.8 dB; capture ratio 0.8 dB. AM section: sens 150  $\mu$ V with built-in antenna; 18" W x 2 $\frac{1}{2}$ " H x 12 $\frac{1}{16}$ " D; 9 lbs, 15 oz ..... \$325

## F77 Digital AM/FM Tuner

Digital Direct Decoder AM/FM tuner. Features linear front end; random 16 FM/AM presets; improved AM sound. FM section: FM usable sens mono 0.95  $\mu$ V (10.8 dBf); 50-dB quieting sens mono 1.4  $\mu$ V (14.2 dBf), stereo 17  $\mu$ V (35.9 dBf); FR 20-15,000 Hz  $\pm$  0.4, -0.1 dB; capture ratio 1.0 dB. AM section: sens 150  $\mu$ V with built-in antenna; 16 $\frac{1}{16}$ " W x 2 $\frac{3}{8}$ " H x 8 $\frac{1}{16}$ " D; 5 lbs, 2 oz ..... \$225

## PROTON

### 440 Digital Tuner

Schotz-Design AM/FM tuner with Schotz Noise Reduction. Features digital station readout; 12 station presets; memory backup holds station settings for 2 weeks when unplugged; adjustable rear panel output level. FM section: FM usable sens mono 1.8  $\mu$ V (10.3 dBf); 50-dB quieting sens mono (15.3 dBf), stereo (33.2 dBf); THD stereo 0.2%, mono 0.05% at 1,000 Hz; S/N 70 dB stereo, 75 dB mono; FR 20-20,000 Hz  $\pm$  0.2 dB; capture ratio 1.5 dB; sep 45 dB at 1,000 Hz; AM suppression 60 dB; alternate-ch rejection 55 dB; adjacent-ch rejection 90 dB. AM section: sens 300  $\mu$ V with built-in antenna; 16 $\frac{1}{2}$ " W x 2 $\frac{1}{2}$ " H x 9 $\frac{3}{4}$ " D; 15 lbs ..... \$270

## RCA

### MAT-110 Dimensia AM/FM Tuner

Features on-screen prompts of channel frequency and preset number. FM Section: IHF sens mono 11.2 dBf; 50-dB quieting sens mono 19.2 dBf, stereo 38.2 dBf; THD stereo 0.15%, mono 0.1% at 1,000 Hz; S/N stereo 73 dB, mono 78 dB at 80 dBf input; FR 30-15,000 Hz  $\pm$  0.5 dB; capture ratio 1 dB; sep 45 dB at 1,000 Hz; AM suppression 50 dB; alt-ch rejection 45 dB. AM Section: sens 18 mV with built-in antenna. 17 $\frac{1}{8}$ " W x 2 $\frac{3}{8}$ " H x 9" D ..... \$250

## REVOX

### B261 Tuner

Microcomputer-controlled tuner with programming feature covering ID and frequency of 20 pretuned stations, including preferred mode of reception for each station. Features 20 station selector buttons; infrared remote control; two separate muting threshold buttons; high-blend button; auto station scanning; LCD display indicates stations and frequency alphanumerically; sens 0.5  $\mu$ V on 75 ohms for 26-dB S/N with 40-Hz deviation; usable sens mono 2  $\mu$ V, stereo 20  $\mu$ V on 75 ohms for a S/N ratio of 46 dB with 40,000 Hz deviation; capture ratio 0.8 dB for a S/N ratio of 30 dB at 40,000 Hz deviation and an input of 1 mV on 75 ohms; sel 80 dB tuned-in signal 100  $\mu$ V on 75 ohms; interfering signal 100 mV on 75 ohms modulated to a deviation of 40,000 Hz. FR 30-15,000 Hz  $\pm$  1 dB measured with 40,000 Hz deviation and 1 mV input on 75 ohms; harmonic distortion 0.07% at 1,000 Hz and 40,000 Hz deviation mono and stereo L-R mV input on 75 ohms; S/N 75 dB, 30 Hz 15,000 Hz linear referred to deviation of 75,000 Hz with an input of 1 mV on 75 ohms; stereo sep 100 Hz 10,000 Hz, 40 dB 1,000 Hz, 43 dB referred to deviation of 40,000 Hz and an input of 1 mV on 75 ohms; 17 $\frac{1}{4}$ " W x 6" H x 13 $\frac{1}{16}$ " D; 18/ lbs ..... \$1,500

## ROTEL

### RT850 AM/FM Tuner

Quartz synthesizer AM/FM stereo tuner with microprocessor circuitry. Features 6 AM/6 FM presets. manual and autoscans tuning. FM section: usable sens mono 2  $\mu$ V (11.2 dBf), 50-dB quieting sens mono 3  $\mu$ V (14.6 dBf), stereo 40  $\mu$ V (37.2 dBf); THD stereo 0.2%, mono 0.08% at 1,000 Hz; S/N 73 dB stereo, 75 dB mono; FR 30-15,000 Hz  $\pm$  0, -2 dB; capture ratio 1.0 dB;

# TUNERS

sep 48 dB at 1,000 Hz; AM suppression 58 dB; AM section: sens 300  $\mu$ V/m; S/N 50 dB; 17" W x 2" H x 11" D; 8.5 lbs ..... \$299

## SAE

### T101 AM/FM Stereo Tuner

AM/FM computer direct-line digital tuner. Features 16 station presets (8 AM/8 FM), auto and manual tuning, signal strength, multipath, and level indicators, IF narrow, high blend, and memory scan. FM section: IHF sens mono 1.8  $\mu$ V (10.3 dBf); IHF sens stereo 3.9  $\mu$ V (17 dBf); 50-dB quieting sens mono 2.75  $\mu$ V (14 dBf); 50-dB quieting sens stereo 32  $\mu$ V (35.3 dBf); THD stereo 0.08%, mono 0.05% at 1,000 Hz; S/N stereo -70 dB, mono -75 dB. FR 30-18,000 Hz  $\pm$  1, -2 dB; capture ratio 1.2 dB; sep 55 dB at 1,000 Hz; AM suppression -60 dB; alternate-ch rejection -100 dB narrow; adjacent-ch rejection -15 dB narrow; 20 lbs; 19" W x 3.5" H x 12.5" D ..... \$650

### T102 AM/FM Stereo Tuner

AM/FM computer direct-line digital tuner with 16 station presets; auto and manual tuning; IF narrow; high blend. FM section: IHF sens mono 2  $\mu$ V; stereo 4.1  $\mu$ V; 50-dB quieting sens mono 2.9  $\mu$ V, stereo 34  $\mu$ V; THD stereo 0.08%, mono 0.05% at 1,000 Hz; S/N -70 dB stereo, -70 dB mono; FR 30-18,000 Hz  $\pm$  1, -2 dB; capture ratio 1.2 dB; sep 55 dB at 1,000 Hz; AM suppression -60 dB; alternate-ch rejection -100 dB narrow; adjacent-ch rejection -15 dB narrow. 19" W x 3.5" H x 12.5" D ..... \$349

## SANSUI

### TU-D99X AM/FM Stereo Tuner

AM/FM tuner with superlinear digital decoder. Features 5-gang tuner capacity; 8 AM/8 FM presets with scan; IF bandwidth selector; local/distant switch; built-in tone generator for record level adjustments. THD stereo 0.015%, FR 20-15,000 Hz; 16 $\frac{1}{2}$ " W x 2 $\frac{1}{4}$ " H x 12 $\frac{1}{2}$ " D; 9 lbs ..... \$349

TU-D99AMX. Same as TU-D99X with automatic AM stereo reception ..... \$389

### TU-D55X AM/FM Stereo Tuner

AM/FM tuner with quartz-PLL synthesized tuning. Features auto and manual tuning; 8 AM/8 FM presets with scan; last-one memory; memory back-up. FM section FR 20-15,000 Hz. 16 $\frac{1}{2}$ " W x 2 $\frac{1}{4}$ " H x 10 $\frac{1}{4}$ " D ..... \$279

TU-D33X. Similar to TU-D55X with 6 AM/6 FM presets ..... \$189

## SCOTT

### 595T Computerized Digital AM/FM Tuner

Features 14 calculator-styled preset stations; tuning control center; quartz-PLL frequency-synthesis tuning; digital information display for readout, signal strength, center tuning, memory and preset station identification; auto/manual tuning; hi-blend filter; FM muting. FM section: IHF FM usable sens mono (10.8 dBf); 50-dB quieting sens mono (15 dBf), stereo (35 dBf); THD stereo 0.1%, mono 0.15% at 1,000 Hz; S/N 80 dB stereo, 75 dB mono; FR 30-15,000 Hz  $\pm$  0.5 dB; capture ratio 1.5 dB; sep 47 dB at 1,000 Hz. AM section: sens 400  $\mu$ V with built-in antenna; 17" W x 2 $\frac{1}{4}$ " H x 10 $\frac{1}{2}$ " D; 8 lbs ..... \$200

## SHERWOOD

### S-6010 CP AM/FM Stereo Tuner

Digitally synthesized AM/FM-stereo tuner with dual-gate MOSFET Varactor-diode front end. Features 3 pairs matched linear-phase ceramic IF filters; fluorescent digital frequency display; 8 AM/8 FM station presets with battery memory

backup. FM usable sens 1.8  $\mu$ V (10.3 dBf); 50-dB quieting sens mono/stereo 3.2  $\mu$ V (15.3 dBf)/35  $\mu$ V (36.1 dBf); capture ratio 1.0 dB; alternate-ch sel 80 dB; S/N mono/stereo 80/75 dB; FR 20-15,000 Hz  $\pm$  0.5 dB; 17 $\frac{1}{4}$ " W x 15 $\frac{1}{2}$ " D x 2 $\frac{1}{2}$ " H; 10 lb ..... \$250

## SONY

### ST-S55ES Tuner

FM stereo tuner with quartz synthesis. Features diversity A/B reception; programmed station presets. FM section: FM usable sens mono 1.8  $\mu$ V (10.3 dBf); 50-dB quieting sens mono 3.5  $\mu$ V (16.1 dBf); 50-dB quieting sens stereo 43  $\mu$ V (37.9 dBf); S/N, stereo 86 dB; mono 90 dB; FR 30-15,000 Hz  $\pm$  0.5 dB; capture ratio 1 dB; sep 60 dB at 1,000 Hz; AM suppression 65 dB; alternate-ch rejection 90 dB; adjacent-ch rejection 80 dB; 16 lbs; 17" W x 4 $\frac{1}{4}$ " H x 12 $\frac{3}{4}$ " D ..... \$450

### ST-S44ES Tuner

Direct-capacitor PLL stage, programmed system preset. FM section: FM usable sens mono 1.8  $\mu$ V (10.3 dBf); 50-dB quieting sens mono 3.5  $\mu$ V (16.1 dBf); 50-dB quieting sens stereo 43  $\mu$ V (37.9 dBf); THD stereo 0.08%, mono 0.06%, at 1,000 Hz; S/N stereo 90 dB, mono 92 dB; FR 30-15,000 Hz  $\pm$  0.5 dB; capture ratio 1 dB. AM section: sens 200  $\mu$ V with built-in antenna, 100  $\mu$ V with external antenna; 12 lbs. 17" W x 4 $\frac{1}{4}$ " H x 12" D ..... \$340

## SOUNDCRAFTSMEN

### T6200 AM/FM Stereo Digital Tuner

Digital quartz-PLL tuner with 16 station presets, 5-digit station readout, auto-scan tuning and active high blend filter. 19" rack-mount front panel. IHF sens 1.6  $\mu$ V; S/N 75 dB; distortion 0.08%; 2 $\frac{1}{2}$ " H x 19" W x 12" D ..... \$299

## TANDBERG

### TPT 3001A Programmable FM Tuner

Features computer-type-logic servo tuning system; 8-ganged varactor tuning diodes in front end. dual-gate MOSFETs in R-F and mixer stages; 8-station memory preset with touch-button recall and LED program readout; wide/normal/narrow IF bandwidth selector; autorange signal-strength with x 1,000 meter range LED, center tuning/preset frequency meters. Audio circuitry includes selected all-metal film resistors, polypropylene capacitors, and min negative feedback; mono, ANC, servo, mute switches with LEDs; 3-circuit muting; output level control; S/N 90 dB; narrow sel 125 dB. Rosewood side panels optional ..... \$1,495

### TPT 3011A Programmable FM Tuner

Computerized FM-stereo tuner with 8 programmable station presets, automatic servo tuning released by touch sensor in tuning knob. Audio circuitry includes selected all-metal film resistors, polypropylene capacitors, and min negative feedback. Features 5-ganged electronic tuning circuits; 12-bit microprocessor pretuning, memory system. FM sens for 50 dB quieting mono/stereo 14.8 dBf (1.5  $\mu$ V)/37.3 dBf (20  $\mu$ V); S/N at 65 dBf mono/stereo 78/75 dB; distortion at 50 dB quieting mono/stereo 0.3%/0.3%; capture ratio 0.9 dB; alternate-ch sel >100 dB; spurious-response >70 dB; AM-suppression ratio >70 dB; 43.5 cm W x 35 cm D x 8.3 cm H. Rosewood side panels optional ..... \$795

## TECHNICS

### ST-S8 AM/FM Digital Tuner

Quartz-synthesizer DC tuner with 25-kHz reference frequency and narrow IF bandwidth. Features AM/FM 16 station random-access memory; multi-function digital readout; back-up

memory system; switchless wing antenna terminal. FM usable sens 10.8 dBf (0.95  $\mu$ V); 50-dB quieting sens mono/stereo 16.3 dBf (1.8  $\mu$ V)/37.2 dBf (20 V); S/N mono/stereo 80/74 dB; THD mono/stereo 0.04%/0.06%; alternate-ch sel 55 dB; AM sens 250  $\mu$ V/m; 16 $\frac{1}{16}$ " W x 15 $\frac{1}{32}$ " D x 2 $\frac{3}{32}$ " H; 9 lb ..... \$500

### ST-G7 Tuner

Quartz-synthesizer AM/FM stereo DC tuner. Triple-quartz control (front end IF and MPX) for 120 dB 1-F strip, quartz-controlled double PLL DC peak sample and hold MPX, digital linear detector using 1-shot multivibrator and mirror-loaded current stabilizer for wide dynamic range, auto IF bandwidth, 16 presets, in/out computer interface. THD stereo 0.03%, mono 0.02%; S/N stereo 94 dB, FR 4-18,000 Hz  $\pm$  0.2; -0.5 dB, capture ratio 1.0 dB, AM suppression 70 dB, sens 20  $\mu$ V; 9 lbs., 16 $\frac{1}{16}$ " W x 3 $\frac{1}{16}$ " H x 14 $\frac{1}{32}$ " D ..... \$400

### ST-G6T Stereo Tuner

AM/FM quartz-synthesizer tuner. FM section: IHF sens mono 1.2  $\mu$ V (12.8 dBf); THD stereo 0.03%, mono 0.02%; S/N 73 dB stereo, 80 dB mono; FR 4-18,000 Hz  $\pm$  0.5/-1.5 dB; sep 55 dB at 1,000 Hz. 16 $\frac{1}{16}$ " W x 2 $\frac{1}{2}$ " H x 9 $\frac{1}{2}$ " D; 5.1 lbs ..... \$270

## VECTOR RESEARCH

### VU-1500 Tuner

Quartz PLL synthesized tuner. FM section: alternate-ch sel 60 dB; 50-dB quieting sens mono 3  $\mu$ V (10 dBf); 50-dB quieting sens stereo 40  $\mu$ V (37 dBf); max S/N A-wtd, mono 75 dB, stereo 73 dB; THD mono 0.08%; stereo 0.2%. 8 lbs; 17" W x 3" H x 12" D ..... \$180

## YAMAHA

### T-80 AM/FM Tuner

Digital computer servo-lock AM/FM tuner. Features fine tuning using 5th digit in 0.01 MHz steps; 10 station presets; rec cal oscillator. FM section: FM usable sens mono 0.9  $\mu$ V (10.3 dBf); 50-dB quieting sens mono 1.6  $\mu$ V (15.3 dBf), stereo 20  $\mu$ V (37.2 dBf); THD stereo 0.03%, mono 0.03% at 1,000 Hz; S/N 86 dB stereo, 94 dB mono; FR 20-15,000 Hz  $\pm$  2, -0.5 dB; capture ratio 1.2 dB; sep 65 dB at 1,000 Hz; AM suppression 70 dB; alternate-ch rejection 85 dB. AM section: sens 10  $\mu$ V with built-in antenna; 17 $\frac{1}{8}$ " W x 3 $\frac{3}{8}$ " H x 14" D; 11 lbs ..... \$395

### T-1000 AM/FM Tuner

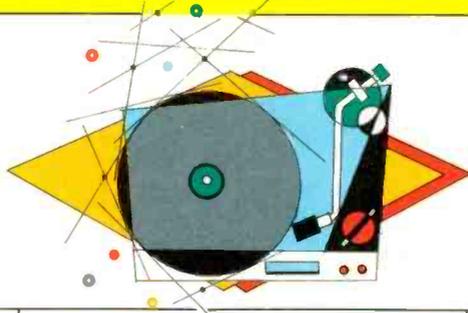
Computer servo-lock tuning system. Features zero IM mixer; servo-gain control; auto DX; programming of up to 10 AM or FM stations; direct-coupled CMOS DC NFB multiplex demodulator; push-button auto search/manual mono tuning; digital station frequency display; interchangeable station indicator cards; IHF S/N mono/stereo of 92/85 dB; 50-dB quieting sens 40  $\mu$ V (37.2 dBf) stereo; spurious response ratio 110 dB ..... \$320

T-700. Similar to T-1000 except S/N IHF mono/stereo of 89/84 dB; 50-dB quieting sens 40  $\mu$ V (37.2 dBf) stereo; spurious response ratio 70 dB ..... \$280

### T-520 AM/FM Tuner

Tuner with digital PLL tuning and 8 AM/8 FM presets. FM section: usable sens mono 0.8 microvolts (9.3 dBf); 50-dB quieting sens mono 1.55  $\mu$ V (15.1 dBf), stereo 21  $\mu$ V (37.7 dBf); THD stereo 0.2%, mono 0.1% at 1,000 Hz; S/N 76 dB stereo, 81 dB mono; FR 30-13,000 Hz  $\pm$  0.5 dB; capture ratio 1.5 dB; sep 40 dB at 1,000 Hz; AM suppression 55 dB; alternate-ch rejection 85 dB. AM section: sens 10  $\mu$ V with built-in antenna. 17 $\frac{1}{8}$ " W x 2 $\frac{1}{8}$ " H x 11" D; 6 lbs, 10 oz ..... \$220

# TURNTABLES



## ACOUSTIC RESEARCH

### Research Series, ETL-1 Manual Turntable

Manual belt-drive turntable with electronic speed control and 3-point dual-spring suspension system factory tuned with removable lead weights. Features adjustable isolation feet; sapphire main bearing; 33 $\frac{1}{3}$  and 45 RPM; 8 $\frac{1}{2}$ -lb platter. W&F 0.03% WRMS; rumble -81 dB; 20 $\frac{7}{16}$ " W x 7 $\frac{1}{2}$ " H x 17 $\frac{1}{2}$ " D (dustcover down); 29 lbs. Black lacquer ..... \$850  
Natural cherry ..... \$700

### Connoisseur Series, ES-1 Manual Turntable

Manual belt-drive turntable with 24-pole synchronous motor. Features 33 $\frac{1}{3}$  and 45 RPM speeds. W&F 0.04% WRMS; rumble -78 dB; effective tonearm mass without cartridge 14.5 g; effective tonearm length 229 mm; max tracking error 2.6°. 18 $\frac{3}{16}$ " W x 7" H x 15 $\frac{1}{4}$ " D (dustcover down); 18 lbs. Brazilian rosewood, with tonearm ..... \$625  
Brazilian rosewood, without tonearm ..... \$500  
Natural cherry, with tonearm ..... \$475  
Natural cherry, without tonearm ..... \$350

### AR Series, EB-101 Manual Turntable

Manual belt-drive pivoted-arm turntable with fully isolated 3-point suspension. Arm and platter on subchassis formed by pressed-steel T-bar spring-suspended and damped at 3 points. 33 $\frac{1}{3}$  and 45 RPM. Features 12-pole synchronous motor (500 RPM at 50 Hz, 600 RPM at 60 Hz); 3.9-lb platter; detachable carbon-fibre headshell with clamping screw on arm; base finished in oiled walnut veneer. W&F 0.05% DIN; rumble -72 dB DIN; effective tonearm mass without cartridge 12 g; cartridge weight range 3-9 g; effective tonearm length 229 mm; overhang 16 mm; vertical and horizontal friction <100 mg; 18 $\frac{3}{16}$ " W x 7" H x 15 $\frac{1}{4}$ " D (dustcover down); 13 $\frac{1}{2}$  lbs ..... \$400

## ADC

### LT 60 Linear-Tracking Turntable

Fully automatic belt-drive turntable. Features P-Mount compatible; 33 $\frac{1}{3}$  and 45 RPM; soft-touch electronic controls; illuminated electronic strobe with pitch control; anti-feedback suspension. 15.5 lbs ..... \$140

### LT 34 Fully Automatic Turntable

Compact linear-tracking turntable. Features P-Mount compatible; 33 $\frac{1}{3}$  and 45 RPM; belt-drive; 2 DC servo-controlled motors; anti-feedback suspension. 9.5 lbs ..... \$100

## ADS

### Atelier P4 Turntable

Fully automatic turntable with quartz-crystal-controlled direct drive. Features PLL; quartz lock; pivoted arm; platter motor; ultra-low-mass tonearm; 33 $\frac{1}{3}$  and 45 RPM; variable speed control with strobe; holds platter and tonearm on a subchassis that floats on 4 tuned mounts. W&F  $\pm$ 0.025% WRMS; rumble -75 dB DIN B, 53 dB DIN A; S/N effective tonearm length 8 $\frac{1}{16}$ ";

max tracking error 2.2°; 17.5" W x 4.53" H x 14.25" D (dustcover down); 11 lbs ..... \$499

### Atelier P2 Turntable

Direct-drive semiautomatic turntable. Features frequency-generator servo-controlled motor; isolated ultra-low-mass tonearm; integrated cartridge or universal mounting shell; operating controls outside dustcover; silicone-damped cueing mechanism; switchable indexing. W&F <0.05% DIN/0.03% WRMS; rumble >48 dB DIN-A/70 dB DIN-B; platter is die-cast aluminum with mass concentrated at perimeter, platter diameter 300 mm (11.81"); platter weight 1.1 kg (2 lb, 7 oz); maximum vertical tracking error 2.2°; vertical tracking force adjustment range 0 to 2 grams; anti-skating adjustable to the tracking force range for elliptical and spherical styli; 17.52" W x 4.53" H x 14.25" D; 11 lbs ... \$399

## AKAI

### AP-A50 Automatic Turntable

Fully automatic linear-tracking turntable with direct drive. Features quartz-lock; P-mount compatible; 33 $\frac{1}{3}$  and 45 RPM; zero rear clearance dustcover; front-panel controls. W&F 0.045% WRMS; rumble -70 dB; effective tonearm length 6.5". 17.3" W x 4.2" H x 15.6" D (dustcover down); 12.8 lbs ..... \$170

### APA-201 Semiautomatic Turntable

Features direct drive; pivoted arm; P-mount compatible; 33 $\frac{1}{3}$  and 45 RPM; zero rear clearance dustcover; front-panel controls. W&F 0.045% WRMS; rumble -70 dB; effective tonearm length 8.66". 17.3" W x 3.9" H x 13.7" D (dustcover down); 7.7 lbs ..... \$135

## BANG & OLUFSEN

### Beogram 8002 Linear-Tracking Turntable

Tangential-drive 33 $\frac{1}{3}$ -, 45-RPM turntable with patented light/shutter tangential-tracking tonearm. Features low-mass tonearm, patented leaf-spring/pendulum suspension system. W&F  $\pm$  0.02% DIN; rumble >75 dB DIN; speed deviation <0.003% ..... \$699

### Beogram 2000 Turntable

The turntable of the Beosystem 2000 with electronically controlled drive system. Features automatic anti-skating; ultra-ridged stainless steel tonearm and integrated cartridge; patented three-point suspension system; data link system to allow connection in Beosystem; W&F  $\leq$   $\pm$ 0.035% WRMS; rumble DIN weighted >75 dB; 16 $\frac{1}{2}$ " W x 3" x 2 $\frac{1}{2}$ " D; 3.2 lbs ... \$280

### Beogram RX Turntable

Turntable with electronically controlled drive system; automatic anti-skating; pendulum suspension; 1-touch music. W&F  $\leq$   $\pm$  0.45% WRMS; rumble DIN weighted >62 dB; speed deviation <0.1% ..... \$199

### Beogram 5005 Linear-Tracking Turntable

Belt-drive turntable. Designed to be incorporat-

ed into Beosystem 5000 stereo component system with full remote control via a master control panel. Features 33 $\frac{1}{3}$  and 45 RPM; optimum pivot point tonearm suspension for immunity to internal and external vibrations. W&F 0.03% WRMS; rumble -80 dB; S/N 55 dB A-weighted; effective tonearm length 12 mm; max tracking error  $\pm$ 0.05°; 16 $\frac{1}{2}$ " W x 3" H x 12 $\frac{1}{4}$ " D (dustcover down); 11.7 lbs ..... \$399

**Beogram 3000.** Similar to Beogram 5005 except designed to be incorporated into the Beosystem 3000 with full remote control via terminal 3000 ..... \$380

**Beogram TX-2.** Similar to Beogram 5005 except designed to fit into any stereo component hi-fi system ..... \$240

## DENON

### DP-80 Direct-Drive Turntable

Features quartz 3-stage split platter; AC direct-drive motor; 33 $\frac{1}{3}$  and 45 RPM; TR-80 step-



Denon DP-62L

down transformer. W&F 0.008% WRMS; S/N 80 dB A-wtd ..... \$895

### DP-72L Direct-Drive Turntable

Features high-torque AC direct-drive motor; interchangeable dynamic servo-tracer tonearm; high-gloss wood base. W&F 0.008% WRMS; S/N 82 dB A-wtd ..... \$695

### DP-62L Direct-Drive Turntable

Pivoted interchangeable low/medium-mass dynamic servo-tracer tonearm; quartz-lock; 33 $\frac{1}{3}$  and 45 RPM; heavy wood base ..... \$595

### DP-75 Direct-Drive Turntable

Features split-platter AC direct-drive motor; quartz-lock; 33 $\frac{1}{3}$  and 45 RPM. W&F 0.008% WRMS; S/N 80 dB A-wtd ..... \$550

### DP-61F Direct-Drive Turntable

Fully automatic AC direct-drive turntable. Features dynamic servo tracer tonearm; pivoted arm; quartz-lock; 33 $\frac{1}{3}$  and 45 RPM; high-gloss wood base. W&F 0.008% WRMS; S/N 82 dB A-wtd ..... \$500

# TURNTABLES

## DP-45F Automatic Turntable

Features direct drive; pivoted arm; quartz-lock; 33 $\frac{1}{3}$  and 45 RPM; locate function; high-gloss wood base. W&F 0.012% WRMS; S/N 78 dB A-wtd ..... \$350

## DP-37F Automatic Turntable

Features dynamic servo tracer tonearm; direct drive; pivoted arm; quartz-lock; high-gloss wood base. W&F 0.012% WRMS; S/N 78 dB A-wtd ..... \$300

## DP-30II Semiautomatic Turntable

Features AC direct drive; pivoted low-mass straight tonearm; 33 $\frac{1}{3}$  and 45 RPM; variable speed control; strobe; high-density compound base. W&F 0.015% WRMS; S/N 78 dB A-wtd ..... \$275

## DP-35FB Automatic Turntable

Pivoted dynamic servo-tracer tonearm; flat-twin direct-drive motor; quartz-lock; 33 $\frac{1}{3}$  and 45 RPM; high-density compound base. W&F 0.012% WRMS; S/N 78 dB A-wtd ..... \$250

## DUAL by ORTOFON

### CS5000 Manual Turntable

Belt-drive turntable with three-point floating turntable/tonearm suspension system. Features acoustic mat; Optimum Pivot System tonearm design; three-speed electronic control. \$300 With ULM 66E phono cartridge ..... \$425

### CS630Q Direct-Drive Turntable

Single-play fully automatic turntable with electronic pitch control. Features digital speed display; damping mat; shock absorber chassis; ULM tonearm; front panel controls ..... \$250 With ULM 66E phono cartridge ..... \$375

### CS620Q Fully Automatic Turntable

Quartz-controlled direct-drive single play turntable with damping mat, shock absorber chassis, ULM tonearm and front panel controls ..... \$200 With ULM 65E phono cartridge ..... \$270

### CS505-2 Belt-Drive Turntable

Semiautomatic turntable with acoustic mat. Features floating-chassis design; vario-pitch; ULM tonearm ..... \$200 With ULM 65E phono cartridge ..... \$270

### CS616Q Direct-Drive Turntable

Single-play semiautomatic turntable with quartz-controlled direct drive system. Features damping mat; shock-absorber chassis; ULM tonearm; front-panel controls ..... \$180 With ULM 65E phono cartridge ..... \$250

## FISHER

### MT-750CDB Linear-Tracking Turntable

Programmable fully automatic quartz turntable. Features PLL; P-Mount compatible; 9 song programmable. 440 mm W; 14 lbs ..... \$230

### MT-730CD Linear-Tracking Turntable

Fully automatic turntable. Features DC servo motor; hinged dustcover. 440 mm W; 11 lbs ..... \$180

### MT36CD Semiautomatic Belt-Drive Turntable

Belt-drive turntable with DC servomotor and precision straight low-mass tonearm. Features auto return and shutoff; reject control; viscous damped cueing; adjustable anti-skate control; magnetic stereo cartridge. W&F 0.04% WRMS; rumble -55 dB DIN-B; 15.75" W x 4.25" H x 13.75" D; 9 lbs ..... \$120

## HARMAN KARDON

### T65C Semiautomatic Turntable

Semiautomatic belt-drive turntable with auto-lift tonearm and AC sine-wave driven motor. Features 33 $\frac{1}{3}$  and 45 RPM speeds;  $\pm$ 3% speed pitch control; 3-point floating suspension with counterweighted subchassis; 3.3 lb. platter; highly absorbent platter mat; disc stabilizer; removable ultra-low capacitance cables with gold-plated plugs. W&F 0.025% WRMS; rumble -70 dB DIN-B; effective tonearm mass without cartridge 9.5 g ..... \$495  
**T55C.** Similar to T65C except with 2.2 lb. platter; W&F 0.035%; rumble -68 dB DIN-B; effective arm mass without cartridge 8 g ..... \$365



Harman Kardon T30C

### T35C Semiautomatic Turntable

Semiautomatic belt-drive turntable with auto-lift tonearm. Features 33 $\frac{1}{3}$  and 45 RPM speeds; straight low-mass tonearm; spring isolated foam-damped feet; 2.2 lb platter;  $\pm$ 3% speed pitch control; removable low-capacitance cables; highly absorbent platter mat. W&F 0.04% WRMS; rumble -68 dB DIN B; effective tonearm mass without cartridge 8 g ..... \$245  
**T30C.** Similar to T35 with 1.1 lb. platter; W&F 0.05%; rumble -65 dB DIN-B ..... \$195

## HITACHI

### HT-L303 Linear-Tracking Turntable

Two-speed belt-drive fully automatic turntable with program repeat. Features low-mass linear-tracking tonearm; microcomputer control; auto setting of record speed and size; auto control of tonearm movements both in/out and up/down; auto return and shutoff; auto cut; precise manual control; DC servo motor; plug-in connector cartridge; speed indicator; repeat indicator; smoked dustcover. S/N 70 dB DIN-B; W&F 0.045% WRMS; tracking error  $\pm$ 2"; 17 $\frac{1}{8}$ " W x 3 $\frac{1}{4}$ " H x 12 $\frac{3}{8}$ " D; 8 lb 13 oz ..... \$180

### HT-202 Automatic Turntable

Two-speed, direct-drive, semiautomatic turntable with straight-line, gimbal-suspension tonearm with hi-tech damping. Features unitorque motor; plug-in connector cartridge; automatic controls; oil-damped tonearm lifter; anti-skating device; S/N 78 dB DIN-B; W&F 0.025% WRMS; tracking error 2"; 17 $\frac{1}{8}$ " W x 14 $\frac{3}{8}$ " H x 4 $\frac{1}{16}$ " D; 11 lb ..... \$130

## JVC

### QL-A75 Quartz-Locked Turntable

Features double-servo quartz control; dynamic Q damping system for tonearm; tapered, low-mass straight tonearm; gimbal support; replaceable arm shaft; Chuck'N'Lock head connector;

high-torque coreless DC servo motor and heavy platter. Mirror-finished multi-layer solid cabinet. W&F 0.018% WRMS; S/N 80 dB; 19 $\frac{1}{2}$ " W x 8 $\frac{1}{4}$ " H x 16 $\frac{1}{2}$ " D (dustcover down); 30.8 lbs ..... \$650

### QL-Y66F Fully Automatic Turntable

Electro-servo fully automatic quartz turntable with direct drive. Features 33 $\frac{1}{3}$  and 45 RPM; variable speed control; S-shaped tonearm. W&F 0.015% WRMS; S/N 80 dB A-wtd; effective tonearm mass without cartridge 11.5 g; effective tonearm length 254 mm; max tracking error -1"; 19 $\frac{1}{2}$ " W x 7 $\frac{3}{8}$ " H x 15 $\frac{1}{16}$ " D (dustcover down); 27.1 lbs ..... \$470

### QLL20B Quartz-Locked Turntable

Quartz-locked fully automatic linear-tracking turntable. Features quartz motor with double servo control; optical system maintains arm tangent to groove; W&F 0.025%; plug-in cartridge connectors; fully automated operation; manual switch; pulse count tonearm cueing system; S/N 78 dB; 17 $\frac{1}{8}$ " W x 3 $\frac{3}{16}$ " H x 14 $\frac{3}{16}$ " D (dustcover down); 11.2 lbs ..... \$240

### LL10B Linear-Tracking P-Mount Turntable

Fully automatic, zero-tracking error turntable; 4 inches high. Features computer-supervised control; P-Mount design; independent suspension; DC servo motor. W&F 0.045% WRMS; S/N 70 dB; 17 $\frac{1}{8}$ " W x 3 $\frac{3}{16}$ " H x 14 $\frac{1}{16}$ " D (dustcover down); 10.8 lbs ..... \$190

### QLFX5B Automatic Turntable

Quartz-locked turntable with direct-drive. Features pivoted arm; P-mount compatible; 33 $\frac{1}{3}$  and 45 RPM; strobe; cog-free coreless DC FG servo motor; auto repeat; independent suspension system. W&F 0.025% WRMS; S/N 78 dB A-wtd; effective tonearm length 220 mm; max tracking error +3" 35'. 17 $\frac{7}{16}$ " W x 4 $\frac{3}{16}$ " H x 14 $\frac{1}{16}$ " D (dustcover down); 10.8 lbs ..... \$150

## KENWOOD

### KD770D Direct-Drive Turntable

Quartz direct-drive turntable. Features PLL; quartz locked; P-Mount compatible; 33 $\frac{1}{3}$  and 45 RPM; auto lift-up mechanism; high-torque coreless DC motor with ultra-rigid herringbone shaft, rigid straight tonearm; cueing system. W&F less than 0.02% WRMS; rumble -80 dB; effective tonearm length 245 mm; max tracking error +1.8, -1.0"; 19 $\frac{1}{16}$ " W x 6 $\frac{3}{8}$ " H x 16 $\frac{3}{32}$ " D (dustcover down); 25.7 lbs ..... \$410

### KD-74F(B) Linear-Tracking Turntable

Automatic direct-drive turntable. Features 7-track random program memory; auto disc size selector; repeated speed indicators; synchronized capability; cartridge included. 15 lbs ..... \$245

### KD-64F(B) Linear-Tracking Turntable

Automatic direct-drive turntable. Features synchronized record capability; P-mount compatibility. 15 lbs ..... \$205

## KYOCERA

### PL-910 Manual Turntable

Armless belt-drive turntable with ceramic platter and base. Features 33 $\frac{1}{3}$  and 45 RPM; variable speed control with strobe; cutless core power transformer, dual suspension, heavy-duty DC servo brushless motor, 11-lb platter assembly; W&F 0.025% WRMS; S/N 78 dB DIN-B; accepts 9-10" tonearms. 18" W x 7 $\frac{1}{8}$ " H x 15 $\frac{1}{4}$ " D; 44 lbs ..... \$2,000

### PL-701 Automatic Turntable

Fully automatic turntable with 3.3-lb platter

# TURNTABLES

and microcomputer electronic sensing tonearm. Features belt drive; pivoted arm; 33 $\frac{1}{3}$  and 45 RPM; variable speed control; strobe. Supplied with stabilizer (0.7 lb); straight aluminum tonearm, dual suspension. W&F 0.03% WRMS; S/N 70 dB DIN-B; effective tonearm length 8.5 inches (0.6" overhang); max tracking error  $\pm 2^\circ$ ; 18 $\frac{1}{8}$ " W x 6" H x 15 $\frac{3}{8}$ " D; 19.6 lbs ..... \$450

## PL-601 Semiautomatic Turntable

Features front panel controls; belt drive; dual suspension; pivoted arm; 33 $\frac{1}{3}$  and 45 RPM; variable speed control with strobe; wood base with adjustable feet; nonfriction electronic sensing; straight aluminum tonearm. W&F 0.035% WRMS; S/N 68 dB DIN-B; effective tonearm length 8.5" (0.6" overhang); max tracking error  $\pm 2^\circ$ ; 18 $\frac{1}{8}$ " W x 6" H x 15 $\frac{3}{8}$ " D; 17.4 lbs ..... \$350

## LINN SONDEK BY AUDIOPHILE SYSTEMS

### LP12 Manual Single-Play Turntable

Belt-drive 33 $\frac{1}{3}$ -RPM turntable with manual tonearm. Features 24-pole synchronous motor; 12" zinc-aluminum alloy die-cast platter with felt mat; single-point oil-bath bearing; hardened tool-steel spindle; adjustable 3-point spring-suspension subchassis; heavy-gauge stainless-steel base plate; solid hardwood base; optional 45-RPM adapter available. W&F 0.04% WRMS; rumble -60 dB unwt; speed accuracy  $\pm 0.04\%$ ; 17 $\frac{1}{2}$ " W x 14" D x 5 $\frac{1}{2}$ " H ..... \$795

## LUXMAN

### P-406 Automatic turntable

Belt-drive tangential-tracking turntable. Features PLL; P-Mount compatible; 33 $\frac{1}{3}$  and 45 RPM. W&F 0.04% WRMS; rumble -70 dB; 16 $\frac{3}{8}$ " W x 4 $\frac{1}{2}$ " H x 14 $\frac{1}{16}$ " D (dustcover down); 11.61 lbs ..... \$270

### P-405 Belt-Drive Turntable

Fully automatic turntable. Features PLL; 33 $\frac{1}{3}$  and 45 RPM; variable speed control with strobe; anti-skate control. W&F 0.06% WRMS; rumble -69 dB; 16 $\frac{3}{8}$ " W x 4 $\frac{1}{16}$ " H x 14 $\frac{1}{16}$ " D (dustcover down); 11.77 lbs ..... \$200

## MARANTZ

### TT 451 Linear-Tracking Turntable

Automatic linear-tracking turntable. Features auto speed and size selector; P-Mount compatible; 33 $\frac{1}{3}$  and 45 RPM. W&F 0.05% WRMS; rumble -70 dB; 16 $\frac{3}{8}$ " W x 3 $\frac{3}{4}$ " H x 13 $\frac{1}{16}$ " D (dustcover down); 9.5 lbs ..... \$200

### TT 251 Direct-Drive Turntable

Semiautomatic direct-drive turntable. Features P-Mount compatible; 33 $\frac{1}{3}$  and 45 RPM. W&F 0.07% WRMS; rumble -68 dB; 16 $\frac{3}{8}$ " W x 3 $\frac{1}{16}$ " H x 13 $\frac{1}{4}$ " D (dustcover down); 9.3 lbs ..... \$140



Micro Seiki RX-1500

## MICRO SEIKI

### SX-555FVW Manual Turntable

Belt-drive turntable with patented quadruplex isolation feet and vacuum hold down. Features rosewood cabinet; 17 lb air-bearing bronze and aluminum duplex platter; 33 $\frac{1}{3}$  and 45 RPM; variable speed control. W&F 0.025% WRMS; S/N 78 dB A-wtd. 21 $\frac{1}{2}$ " W x 7 $\frac{1}{2}$ " H x 17 $\frac{1}{2}$ " D (dustcover down); 47 lbs ..... \$1,495

### BL-99V Manual Turntable

Belt-drive turntable with light force vacuum hold down. Features walnut finished cabinet; 33 $\frac{1}{3}$  and 45 RPM; variable speed control; 7 lb aluminum platter; 4 lb tonearm base drilled to individual specifications. W&F 0.025% WRMS; S/N 78 dB A-wtd. 21 $\frac{1}{2}$ " W x 7 $\frac{1}{2}$ " H x 17 $\frac{1}{2}$ " D (dustcover down); 35 lbs ..... \$995

### RX-1500 Basic Turntable

Belt-drive non-resonant zinc alloy turntable with ability to mount 2 tonearms simultaneously. Features 33 $\frac{1}{3}$  and 45 RPM; variable speed control; aluminum platter. W&F 0.025% WRMS; S/N 78 dB A-wtd. 19" W x 6" H x 13" D; 40 lbs ..... \$795

## MISSION ELECTRONICS

### 775 SM Manual Turntable

Manual 33 $\frac{1}{3}$ - and 45-RPM belt-drive turntable with 24-pole synchronous motor. Features die-cast aluminum platter with lead-lined circumference, medium-density fiberboard base with lead infill to minimize resonances and eradicate mechanical hum; sorbothane gasket motor isolation; sorbothane feet for turntable isolation; universal baseplate that accepts wide range of tonearms. W&F 0.05% DIN; rumble -80 dB DIN-B wtd; speed accuracy and variation 0.1% ..... \$999

### 775 HCT Belt-Drive Turntable

24-pole synchronous-motor belt-drive turntable with Mission 774LC tonearm. Features 33 $\frac{1}{3}$  and 45 RPM; constrained-layer damped M.D.F. plinth; high moment of inertia constrained layer damped platter; absolute speed accuracy  $\pm 0.3\%$ ; speed variation 0.1%; W&F DIN 0.05%; rumble (DIN-B) bearing <80 dB, motor <75 dB, 430 mm W x 145 H x 343 D; 12 kg ..... \$799

### 775 LCT Belt-Drive Turntable

12-pole synchronous belt-drive turntable with 774LC tonearm. Features pivoted arm; 33 $\frac{1}{3}$  and 45 RPM; constrained-layer damped M.D.F. base; W&F 0.1% WRMS; rumble -75 dB; effective tonearm mass without cartridge 7 g; effective tonearm length 228 mm; 430 mm W x 135 H x 330 D; 6 kg ..... \$399

## MITSUBISHI

### LT-46 Linear-Tracking Turntable

Direct-drive logic-controlled fully automatic turntable. Features 33 $\frac{1}{3}$  and 45 RPM. W&F 0.035% WRMS; S/N 72 dB A-weighted; 16 $\frac{3}{8}$ " W x 4 $\frac{1}{2}$ " H x 14 $\frac{1}{16}$ " D (dustcover down); 12 $\frac{1}{4}$  lbs ..... \$170

## NAD

### 5120 Semiautomatic Belt-Drive Turntable

Semiautomatic belt-drive turntable designed to provide exceptionally vibration-free environment for the record, plus floppy tonearm that serves as a stable, nonresonant carrier for the phono cartridge, allowing for precise control of tonearm/cartridge resonance. 33 $\frac{1}{3}$  and 45 RPM. Features floating subchassis; AC synchronous motor; thin disc platter with thick rubber mat; floppy tonearm; replaceable tonearm assembly;

dynamic vibration absorber. W&F 0.04% WRMS; rumble -70 dB; effective tonearm length 8 $\frac{1}{16}$ "; effective tonearm mass without cartridge 7.9 g; max tracking error  $\pm 0.4^\circ$ /inch; 16 $\frac{1}{2}$ " W x 4 $\frac{1}{8}$ " H x 14" D; 11 lbs ..... \$198

### 5125 Semiautomatic Turntable

Belt-drive pivoted-arm turntable with subchassis suspension. Features 33 $\frac{1}{3}$  and 45 RPM; variable speed control with strobe; non-resonant base (mineral-filled resin polymer). W&F 0.07% DIN; rumble -70 dB DIN B; tonearm mass without cartridge 10.5 g; effective tonearm length 220 mm; max tracking error <0.7°/cm; 16.5" W x 4.5" H x 15" D (dustcover down); 8.8 lbs ..... \$128

## NAKAMICHI

### Dragon-CT Turntable

Dual-suspension direct-drive turntable that eliminates eccentricity wow with Absolute Center Search System to compensate for off-center record holes. Features "Cog-Free" Super Linear Torque motor; high-strength rigid visco-damped straight tonearm; decoupled counterweight; auto return and ultra-smooth cueing; quartz PLL DC brushless slotless coreless motor; cut switch; indicators for center search in progress, not achieved, and achieved; pitch control range  $\pm 6\%$ ; 33 $\frac{1}{3}$  and 45 RPM. Turntable specs: Main platter (aluminum) 1.4 kg; center search platter (glass) 550 g; start-up within 1 revolution; speed deviation unmeasurable; speed drift unmeasurable; W&F 0.008% (wtd rms, fg direct), 0.03% (wtd rms, after center search); S/N >78 dB (DIN B). Tonearm specs: total length 305 mm; effective length 237 mm; effective mass 14 g without cartridge; VTF adjustment range 0-3 g; allowable cartridge weight 4-11 g; cartridge offset angle 21° 30'; stylus overhang 15 mm; max tracking error +2.5° to -1°. 21 $\frac{1}{2}$ " W x 9 $\frac{1}{16}$ " H x 16 $\frac{1}{16}$ " D ..... \$1,740

## NIKKO

### NP-750 Direct-Drive Turntable

Features linear tracking; 33 $\frac{1}{3}$  and 45 RPM. W&F 0.05% WRMS; rumble -70 dB; effective tonearm length 130 mm; max tracking error 0.01°; 416 mm W x 94 mm H x 346 mm D (dustcover down); 4.5 Kg ..... \$230

## ONKYO

### CP-1057FB Integra Automatic Turntable

Computer-controlled quartz PLL direct-drive turntable. Features pivoted arm; quartz-locked; strobe; 33 $\frac{1}{3}$  and 45 RPM; triple-stage isolation; floating subchassis on 3-point suspension; gimbal support tonearm bearings; computer-controlled tonearm functions; separate motor for tonearm; 2-speed search; straight low-mass tonearm; Polysorb™ vibration absorbing compound for record mat and cabinet feet; gold laquered platter; gold anodized tonearm; optoelectronic record end detector; optional remote control. W&F 0.023% WRMS; rumble -80 dB; effective tonearm length 226 mm; max tracking error +3°, -1°; 17 $\frac{1}{16}$ " W x 6 $\frac{1}{4}$ " H x 16 $\frac{1}{8}$ " D; 20 lbs; black finish only ..... \$310

### CP-1046F Automatic Turntable

Computer-controlled direct-drive pivoted-arm turntable. Features PLL; quartz-locked; 33 $\frac{1}{3}$  and 45 RPM speeds; 2-color quartz lock indicator; triple-stage isolation system with floating subchassis; 3-point subchassis suspension; computer-controlled motor-assisted tonearm; optoelectronic record end detector; straight low mass tonearm; gimbal precision tonearm bearings; 2 speed search; optional remote control. W&F 0.025% WRMS; rumble -75 dB; effective

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# TURNTABLES

tonearm length 224 mm; max tracking error +3°, -1.5°; 16½" W x 5½" H x 14¾" D (dustcover down); 13 lbs ..... \$210  
**CP-1046FB.** Same as above in black ..... \$210

**PL-25B Automatic Linear-Tracking Turntable**  
 Direct-drive linear-tracking turntable with coreless, brushless, slotless motor. Features search; repeat; front-panel-mounted controls; 33½ and 45 RPM; P-Mount compatible. W&F 0.27% WRMS; rumble -72 dB; tracking error ±0.1°; 16½" W x 5" H x 15½" D (dustcover down); 12 lbs ..... \$210



Onkyo CP-1057FB

**CP-1036A Semiautomatic Turntable**  
 Semiautomatic direct-drive pivoted-arm turntable. Features PLL; quartz-locked; 33½ and 45 RPM; triple-stage isolation with floating subchassis; front panel controls; straight-line low-mass tonearm; gimbal support precision tonearm bearings; smoked dustcover. W&F 0.025% WRMS; rumble -70 dB; effective tonearm length 224mm; max tracking error +3°, -1.5°; 16½" W x 5½" H x 14¾" D (dustcover down); 12 lbs ..... \$160  
**CP-1036AB.** Same as above except in black ..... \$160

## PANASONIC

**SL-N15 Linear-Tracking Turntable**  
 Fully automatic turntable with built-in phono equalizer. Features DC servo; belt-drive; P-mount compatible; 33½ and 45 RPM; gimbal suspension tonearm. W&F 0.045% WRMS; rumble -70 dB; effective tonearm length 4½"; max tracking error within ±0.1°; 12½" W x 3½" H x 12½" D (dustcover down); 7.1 lbs ..... \$170

## SL-N5 Automatic Turntable

Automatic turntable with built-in phono equalizer. Features DC servo; belt-drive; P-mount compatible; 33½ and 45 RPM; gimbal suspension; oil-damped cueing. W&F 0.045% WRMS; rumble -70 dB; effective tonearm length 7½"; max tracking error ±0.1°; 12½" W x 3½" H x 12½" D; 5.1 lbs ..... \$130

## PARASOUND

**LTD900 Automatic P-Mount Turntable**  
 Automatic direct-drive linear-tracking turntable with microprocessor control and 3 separate motors. Compatible with P-Mount cartridges. Features noncogging drive motor, auto size/speed setting with manual override; repeat; soft-touch controls; 33½ and 45 RPM speeds; variable speed control with strobe. W&F 0.02% WRMS; rumble -70 dB; effective tonearm mass without cartridge 8 g; max tracking error 0.1°; 16½" W x 3¾" H x 13½" D (dustcover down); 12 lbs ..... \$200

**TTD-820 Direct-Drive Turntable**  
 Semiautomatic turntable with front-mounted controls. Features P-mount compatible; 33½ and 45 RPM; variable speed control; strobe; tuned suspension; non-cogging motor; diecast platter; decoupled counterweight. W&F 0.03% WRMS; rumble -70 dB; effective tonearm mass without cartridge 14 g; effective tonearm length 222 mm. 16½" W x 4¾" H x 14¾" D (dustcover down); 12 lbs ..... \$160

## PIONEER ELECTRONICS

**PL-L90 Automatic Linear-Tracking Turntable**  
 Front-loading direct-drive turntable. Features 33½ and 45 RPM; programmable linear tracking; W&F 0.025% WRMS; effective tonearm length 8½"; S/N 78 dB A-weighted. 16½" W x 4¾" H x 14¾" D (dustcover down); 10 lbs, 6 oz ..... \$300

## PL-3F Fully Automatic Turntable

Direct-drive turntable. Features PLL; 33½ and 45 RPM. W&F 0.025% WRMS; effective tonearm length 9¾"; S/N 80 dB A-weighted; 18½" W x 6¾" H x 16½" D (dustcover down); 19 lbs ..... \$300

## PL-V70 Programmable Turntable

Automatic front-loading programmable turntable. Features servo belt-drive; linear-tracking; 33½ and 45 RPM; random program playback. W&F less than 0.05% WRMS; rumble 70 dB; S/N >70 dB A-weighted; 16½" W x 4¾" H x 13¾" D (dustcover down); 16.5 lbs ..... \$250

## PL-L70 Automatic Direct-Drive Turntable

Programmable linear-tracking turntable. Features PLL; 33½ and 45 RPM. W&F 0.025%; effective tonearm length 3¾". 16½" W x 4¾" H x 14¾" D (dustcover down); 11 lbs ..... \$240

## PL-L50/PL-L55 Linear-Tracking Turntable

Fully automatic direct-drive turntable. Features 33½ and 45 RPM. W&F 0.025% WRMS; effective tonearm length 3¾"; S/N 80 dB A-weighted. 16½" W x 4¾" H x 14¾" D (dustcover down); 10 lbs, 9 oz ..... \$175

## PL-L30/PL-L33 Linear-Tracking Turntable

Fully automatic belt-drive turntable. Features 33½ and 45 RPM. W&F 0.045% WRMS; effective tonearm length 3¾"; S/N 72 dB A-weighted. 19½" W x 4¾" H x 14¾" D (dustcover down); 9 lbs, 15 oz ..... \$150

## PL-960 Quartz-PLL fully Automatic Turntable

Direct-drive turntable. Features PLL; 33½ and 45 RPM. W&F 0.025% WRMS; effective tonearm length 8½"; S/N 78 dB A-weighted. 16½" W x 4¾" H x 14¾" D (dustcover down); 10 lbs, 6 oz ..... \$140

## QUASAR

### CL7014XE Turntable

Fully automatic belt-drive turntable with auto disc size selector. Features switchable line and phone output; aluminum die-cast platter; P-Mount magnetic cartridge included. .... \$80-\$90

## RCA

### MTT-135 Dimensia Programmable Turntable

Automatic front-load turntable with direct drive. Features linear-tracking; quartz-lock; P-mount compatible; 33½ and 45 RPM; remote control; on-screen prompts. W&F 0.035% WRMS; S/N 70 dB din B; effective tonearm length 95 mm; max tracking error 0.35°; 12½" W x 4¾" H x 14¾" D (dustcover down); approx 11 lbs ..... \$400

### MTT-130 Dimensia Automatic Turntable

Linear-tracking turntable with direct drive. Features P-mount compatible; 33½ and 45 RPM; automatic phono size and speed selector. Works with Dimensia 256 function remote control. W&F 0.035% WRMS; S/N 72 dB DIN B; effective tonearm length 3¾"; 12½" W x 3¾" H x 12½" D (dustcover down); 10 lbs ..... \$250

### MTT-131 Digital Command Turntable

Automatic turntable with direct drive. Features linear-tracking; P-mount compatible; 33½ and 45 RPM; automatic phono size and speed selector. Works with Dimensia 256 function remote control. W&F 0.35% WRMS; S/N 72 dB din B; effective tonearm length 3¾"; 12½" W x 3¾" H x 12½" D; 10 lbs; approx ..... \$200

## REALISTIC

### LAB-2100 Linear-Tracking Turntable

Direct-drive turntable with built-in microprocessor. Features logic-controlled tonearm for absolute zero tracking error; 2-speed bidirectional search pushbuttons to control tonearm; countersunk neon stroboscope with accurate pitch control; front controls; LED indicators for disc size, speed, repeat and power on; low-profile styling; Realistic/Audio-Technica dual-magnet cartridge. Rumble -75 dB; W&F <0.025%; 4½" W x 13¾" H x 15" D ..... \$160

### LAB-1600 Linear-Tracking Turntable

Fully automatic turntable with self-powered front-loading drawer, and touch-sensitive control panel. Rumble -65 dB; W&F <0.05% WRMS; 33½ and 45 RPM; 4" x 13½" x 13¾". Includes 45-RPM adaptor and Realistic/Audio-Technica dual-magnet cartridge ..... \$160

### LAB-430 Direct-Drive P-Mount Turntable

Direct-drive turntable with pivoting tonearm and anti-skating adjustment. Compatible with P-Mount cartridges. W&F 0.05%; rumble -70 dB; 15" x 13¾" x 5½" ..... \$130

## REVOX

### B791 Tangential Tracking Turntable

Tangential-tracking direct-drive automatic turntable with quartz-accurate variable-speed control. Features front-panel controls; 5-digit LED display of nominal speed (33½ or 45 RPM), exact deviation percentage when vari-speed is activated; exclusive Linatrack® linear-tracking system; 8-pole Hall Effect direct-drive motor with separate 200-pole tachogenerator; precision die-cast chassis; P-mount adapter. Vari-speed control range ±9.9% in 0.1% steps; suspension resonance 3 Hz; tonearm/cartridge resonance 11 Hz ..... \$725

### B795 Tangential Tracking Turntable

Quartz-controlled direct-drive 33½- and 45-RPM turntable with tangential-tracking arm; quartz-regulated Hall commutated DC motor with permanent magnet; platter start-up time <1 sec; speed accuracy ±0.01%. 1.5" tonearm mounted in overhead Hall tracking trolley with opto-electronic LED sensing, servo guidance system; auto lift/return/shut off; servo-electronic, DC motor arm follow-up; cartridge output electronically muted except when stylus in groove; pneumatically damped cartridge lowering; P-mount adapter. Front-panel controls operable with dustcover down; 4-digit quartz LED readout; automatically activated run-out switch. W&F 0.05% DIN wtd, 0.1% DIN unwtd; rumble -68 dB A-wtd; includes cartridge; 17½" W x 15" D x 5½" H ..... \$579

# TURNABLES

## ROTEL

### RP850 Turntable

Belt-drive pivoted-arm turntable. Features 33 $\frac{1}{3}$  and 45 RPM; 4-pole hysteresis synchronous motor. W&F 0.03% WRMS; max tracking error +2.35 to -1.3"; S/N 70 dB (DIN-B); 17" W x 5 $\frac{1}{16}$ " H x 12 $\frac{3}{4}$ " D ..... \$375

RP830. Similar to RP850 except S/N 65 dB (DIN-B) ..... \$250

## SANSUI

### P-L95R Auto-Reverse Turntable

Automatic direct-drive turntable with auto-reverse. Features linear tracking; quartz-lock; 33 $\frac{1}{3}$  and 45 RPM; front-loading powered drawer; auto side and speed selector; programmable repeat; sampling of each track; plays both sides without turnover. W&F 0.08% WRMS; S/N 72 dB A-weighted; 17 $\frac{1}{8}$ " W x 5 $\frac{1}{8}$ " H x 14" D; 18.1 lbs ..... \$500

### XR-Q7 Automatic Single-Play Turntable

Fully automatic direct-drive turntable with vibration-cancelling exclusive Silent Synchrotor System. Features linear-drive motor; quartz servo system; straight Dyna Optimum Balanced tonearm, separately motor operated; microprocessor automation via front-panel soft-touch buttons. W&F <math>\pm 0.009\% WRMS; rumble >-80 dB DIN B weighted; speed deviation <0.002% ..... \$499

XR-99. Similar to XR-Q7 except W&F 0.012% WRMS. Complete with MC cartridge on black finish base ..... \$399

### P-L75 Linear-Tracking Turntable

Features 8-selection random programming; linear-tracking tonearm; FG-servo direct drive; speed-lock indicator; phono cartridge; Compu Edit for use with some Sansui amplifiers/receivers for one-touch operation. W&F 0.028% WRMS; rumble -72 dB DIN-B. Black or silver ..... \$340

### P-L55 Linear-Tracking Turntable

Automatically adjusts for record size. Features FG-servo direct drive; speed-lock indicator; Compu Selector System; linear-tracking tonearm; plug-in cartridge connector. W&F 0.028% WRMS; rumble -72 dB DIN-B. Black or silver ..... \$210

P-L45. Similar to P-L55 without repeat play ..... \$180

P-L35. Similar to P-L55 without auto size selector ..... \$160

## SANYO

### UTQ3 Quartz-Lock Turntable

Semiautomatic turntable with PLL direct-drive system. P-Mount compatible; quartz DC brushless servo motor. W&F 0.03% WRMS; rumble -70 dB (DIN B); effective tonearm length 8 $\frac{1}{16}$ "; max tracking error  $\pm 1.5$ "; 16 $\frac{1}{2}$ " W x 5" H x 14 $\frac{1}{4}$ " D (dustcover down); 10 lbs ..... \$120

### UTB3 Belt-Drive Turntable

Semiautomatic turntable with auto return mechanism. Features P-Mount compatible; variable speed control with strobe; DC servo motor. W&F 0.05% WRMS; rumble -70 dB (DIN B); effective tonearm length 8 $\frac{1}{16}$ "; max tracking error  $\pm 1.5$ "; 16 $\frac{1}{2}$ " W x 5" H x 14 $\frac{1}{4}$ " D (dustcover down); 9 lbs, 4 oz ..... \$120

## SCOTT

### PS100 Microcomputer-Controlled Turntable

Automatic turntable with linear tracking. Features automatic direct-drive; P-mount compatible; variable speed control; repeat; cueing. W&F 0.06% WRMS; S/N 65 dB A-wtd ..... \$220

### PS69Q Semiautomatic Turntable

Features quartz lock; direct drive; PLL; P-mount compatible. W&F 0.045% WRMS; S/N 55 dB A-wtd ..... \$150

## SHARP

### RP-119 Automatic Turntable

Linear-tracking turntable. Features two sided play; auto-reverse; two tonearms and cartridges; belt-drive; 33 $\frac{1}{3}$  and 45 RPM; auto program music selector for random access of up to 7 selections per side; auto program search system; front loading. W&F 0.06% wrms; rumble 65 dB; 13" W x 4" H x 13" D (dustcover down); 13.2 lbs ..... \$250

## SHERWOOD

### ST-910B Linear-Tracking Automatic Turntable

Fully automatic turntable. Features repeat function; front-mounted controls; pushbutton cueing; auto start; auto return; auto cut; removable headshell; accepts standard mount cartridges; quartz locked; 33 $\frac{1}{3}$  and 45 RPM. W&F 0.04% WRMS; rumble 65 dB; effective tonearm length 165 mm; max tracking error 0"; 17 $\frac{1}{16}$ " W x 4 $\frac{3}{16}$ " H x 16" D (dustcover down); 16 lbs ..... \$200

### ST-891B Semiautomatic Manual Turntable

Direct-drive turntable. Features automatic return; auto reject (cut); auto cueing; auto shut-off power supply; P-Mount compatible; 33 $\frac{1}{3}$  and 45 RPM; variable speed control with strobe. W&F 0.04% WRMS; rumble 65 dB; S/N less than 63 dB A-wtd; effective tonearm length 215 mm; max tracking error 2.6"; 17 $\frac{1}{16}$ " W x 5 $\frac{1}{8}$ " H x 15" D (dustcover down); 11 lbs ..... \$130



Sherwood ST-891B

## SONY

### PS-X555ES Turntable

Linear-tracking, fully automatic turntable with biotracer tonearm. Features direct-drive, PLL, quartz-lock; 33 $\frac{1}{3}$  and 45 RPM; height adjustable, gel-filled feet; universal headshell. W&F 0.025%; S/N 75 dB A-wtd; effective tonearm length 3"; max tracking error  $\pm 0.05$ "; 17" W x 3 $\frac{1}{8}$ " H x 15" D; 27 lbs ..... \$420

### PS-FL9 Direct-Drive Turntable

Front-loading programmable linear-tracking turntable. Features PLL, quartz-lock, P-Mount compatible, 33 $\frac{1}{3}$  and 45 RPM; programmable random music sensor/automatic music sensor; MC capability; stackable top. W&F 0.03%; S/N 75 dB A-wtd; effective tonearm length 3 inches; max tracking error +0.01, -0.1"; 17" W x 3 $\frac{1}{8}$ " H x 15 $\frac{1}{8}$ " D; 16 lbs, 13 oz ..... \$300

### PS-FL7 Automatic Turntable

Front-loading linear-tracking automatic turntable. Features direct drive, PLL, quartz lock, P-

mount compatible; 33 $\frac{1}{3}$  and 45 RPM; r/c capability; stackable top. W&F 0.03%; S/N 75 dB A-wtd; effective tonearm length 3 inches; max tracking error  $\pm 0.1$ "; 17" W x 3 $\frac{1}{8}$ " H x 15 $\frac{1}{8}$ " D; 16 lbs, 9 oz ..... \$250

### PS-LX510B Automatic Turntable

Fully automatic linear-tracking turntable. Features direct drive, PLL, quartz-lock, P-mount compatible, 33 $\frac{1}{3}$  and 45 RPM; gel-filled feet; r/c capable. W&F 0.035%; S/N 75 dB A-wtd; effective tonearm length 3 inches; max tracking error  $\pm 0.1$ "; 17" W x 3 $\frac{1}{8}$ " H x 14 $\frac{3}{8}$ " D; 11 lbs, 1 oz ..... \$200

## SOTA INDUSTRIES

### SOTA Sapphire Turntable

Manual 2-speed belt-drive turntable with variable speed control and strobe. Heavyweight (22 lb) sub-assembly for maximum isolation; exclusive inverted bearing with sapphire disc; single piece (11 lb) platter, rim drive. W&F 0.02% WRMS; rumble -84.5 dB; 20 $\frac{1}{2}$ " W x 7 $\frac{1}{2}$ " H x 16 $\frac{1}{4}$ " D; 44 lb; oak finish ..... \$895

African rosewood ..... \$995

STAR Sapphire. As above with vacuum hold-down system: low-level pressure, continuous through play, adjustable vacuum. All-wood top and speed control panel; heavy-duty dustcover, oak finish ..... \$1,450

African rosewood ..... \$1,600

## TECHNICS

### SL-QL1 Linear-Tracking Turntable

Quartz direct-drive 33 $\frac{1}{3}$ - and 45-RPM turntable. Features fully automatic operation; plug-in MM cartridge; manual override; tonearm position scale with LED indicator. W&F 0.012% WRMS; rumble -78 dB DIN-B; cartridge output 2.5 mV at 1,000 Hz, 5 cm/sec; FR 20-35,000 Hz  $\pm 3$  dB; sep >22 dB at 1,000 Hz; effective moving mass 0.29 mg; 16 $\frac{1}{16}$ " W x 13 $\frac{3}{16}$ " D x 3 $\frac{1}{2}$ " H; 16.3 lb ..... \$470

### SL-M3 Automatic Turntable

Direct-drive fully automatic 33 $\frac{1}{3}$  and 45 RPM turntable. Features quartz lock; PLL; P-mount compatible; variable speed control; strobe. W&F 0.008% WRMS; rumble -82 dB; effective tonearm length 238 mm; max tracking error within  $\pm 0.05\%$ ; 20 $\frac{3}{16}$ " W x 8 $\frac{1}{16}$ " H x 16 $\frac{3}{16}$ " D (dustcover down); 33.1 lbs ..... \$450

### SL-1200MKII Disco Turntable

Quartz-controlled, direct-drive disco-type 33 $\frac{1}{3}$  and 45-RPM manual turntable with tonearm. Features  $\pm 8\%$  quartz-locked pitch control; quick startup/braking; pop-up stylus illuminator; gimbal-suspended tonearm with height adjustment; brushless DC motor; aluminum die-cast cabinet; antiresonant viscoelastic main base. W&F 0.025% ..... \$400

### SL-M2 Manual Turntable

Quartz-locked direct-drive manual turntable. P-Mount compatible, 33 $\frac{1}{3}$  and 45 RPM, variable speed control with optical sensor for end of record pickup. W&F 0.008% WRMS; rumble -82 dB; effective tonearm length 230 mm; max tracking error +2.32"; 17.8" W x 6.7" H x 16.2" D; 26.5 lb ..... \$400

### SL-MA1 Automatic Turntable

Direct-drive turntable. Features PLL; quartz lock; P-mount compatible; 33 $\frac{1}{3}$  and 45 RPM. W&F 0.012% WRMS; rumble -80 dB; effective tonearm length 230 mm; max tracking error +0 $\frac{32}{100}$ " at inner groove of record and +2 $\frac{32}{100}$ " at outer groove of record; 17 $\frac{7}{16}$ " W x 6 $\frac{1}{16}$ " H x 16 $\frac{1}{16}$ " D (dustcover down); 19.8 lbs ..... \$350

# TURNTABLES

## SL-J3 Programmable Turntable

Programmable automatic linear-tracking quartz-locked turntable. Features direct drive, P-Mount compatible, 33 $\frac{1}{3}$  and 45 RPM, programming with skip search. W&F 0.012% WRMS; rumble -80 dB; effective tonearm mass with cartridge 9 g; effective tonearm length 4 $\frac{1}{8}$ " ; max tracking error  $\pm 0.1^\circ$ ; 12 $\frac{1}{2}$ " W x 3 $\frac{1}{2}$ " H x 12 $\frac{1}{2}$ " D; 11 lbs ..... \$260

## SL-B500 Multi-Disc Turntable

Direct-drive multi-disc turntable. Features changer, pivoted arm, P-Mount compatible, 33 $\frac{1}{3}$  and 45 RPM, variable speed control with strobe. W&F 0.025% WRMS; rumble -75 dB; 16 $\frac{1}{16}$ " W x 7 $\frac{1}{4}$ " H x 14 $\frac{2}{32}$ " D; 19 lbs ... \$250

## SL-L3 Automatic Turntable

Direct-drive, fully automatic turntable. Features PLL; quartz-lock; P-mount compatible; 33 $\frac{1}{3}$  and 45 RPM. W&F 0.012% WRMS; rumble -78 dB; effective tonearm length 105 mm; max tracking error within  $\pm 0.1^\circ$ ; 16 $\frac{1}{16}$ " W x 3 $\frac{1}{2}$ " H x 13 $\frac{2}{32}$ " D (dustcover down); 11.5 lbs . \$230

## SL-QX300 Automatic Single-Play Turntable

Fully automatic quartz-phase-locked direct-drive 33 $\frac{1}{3}$  and 45-RPM turntable with straight low-mass tonearm with plug-in connector. Features ultra-low-speed brushless DC motor; 12 $\frac{9}{32}$ " die-cast aluminum platter; soft-touch front-panel controls; disc-size detector; single-row strobe; ultra-slim design.  $\pm 6\%$  variable pitch control. W&F 0.025% WRMS; rumble -78 dB DIN-B; 16 $\frac{1}{16}$ " W x 14 $\frac{1}{4}$ " D x 4 $\frac{1}{16}$ " H; 13.2 lb ..... \$220

SL-QX200. Semiautomatic version of SL-Q30; lacks disc-size detector. 13.4 lb ..... \$200

## SL-D500 Automatic Turntable

Automatic belt-drive multi-disc FG servo turntable. Features changer, pivoted arm, P-Mount compatible, 33 $\frac{1}{3}$  and 45 RPM, variable speed control with strobe. W&F 0.045% WRMS; rumble -70 dB; 16 $\frac{1}{16}$ " W x 7 $\frac{1}{4}$ " H x 14 $\frac{2}{32}$ " D; 13 lbs ..... \$205

## SL-L2 Automatic Turntable

Direct-drive, fully automatic turntable. Features PLL; quartz-lock; P-Mount compatible; 33 $\frac{1}{3}$  and 45 RPM. W&F 0.012% WRMS; rumble -78 dB; effective tonearm length 105 mm; max tracking error within  $\pm 0.1^\circ$ ; 16 $\frac{1}{16}$ " W x 3 $\frac{1}{2}$ " H x 13 $\frac{2}{32}$ " D; 10.8 lbs ..... \$200

## SL-J2 Linear-Tracking Turntable

Direct-drive linear-tracking automatic turntable. Features P-Mount compatible, 33 $\frac{1}{3}$  and 45 RPM, music select/skip search ability with LED display. W&F 0.012% WRMS; rumble -78 dB; effective tonearm mass with cartridge 9 g; effective tonearm length 4 $\frac{1}{8}$ " ; max tracking error  $\pm 0.1^\circ$ ; 12 $\frac{1}{2}$ " W x 3 $\frac{1}{2}$ " H x 12 $\frac{1}{2}$ " D; 11 lbs ..... \$200

## SL-J1 Linear-Tracking Turntable

Automatic belt-drive DC servo turntable. Features P-Mount compatible, 33 $\frac{1}{3}$  and 45 RPM, skip-search ability. W&F 0.045% WRMS; rumble -70 dB; effective tonearm mass with cartridge 9 g; effective tonearm length 4 $\frac{1}{8}$ " ; max tracking error  $\pm 0.1^\circ$ ; 12 $\frac{1}{2}$ " W x 3 $\frac{1}{2}$ " H x 12 $\frac{1}{2}$ " D; 10 lbs ..... \$160

## SL-L1 Automatic Turntable

Direct-drive turntable. Features linear-tracking; P-Mount compatible; 33 $\frac{1}{3}$  and 45 RPM. W&F 0.012% WRMS; rumble -78 dB; effective tonearm length 105 mm; max tracking error within  $\pm 0.1^\circ$ ; 16 $\frac{1}{16}$ " W x 3 $\frac{1}{2}$ " H x 13 $\frac{2}{32}$ " D; 10.6 lbs ..... \$160

## SL-QD3 Automatic Turntable

Direct-drive turntable. Features PLL; quartz-lock; P-Mount compatible; strobe; 33 $\frac{1}{3}$  and 45 RPM. W&F 0.025% WRMS; rumble -78 dB; effective tonearm length 230 mm; max tracking error  $+0^\circ 32'$  at inner groove of record and  $+2^\circ 32'$  at outer groove of record; 16 $\frac{1}{16}$ " W x 3 $\frac{1}{16}$ " H x 14 $\frac{1}{4}$ " D; 9.9 lbs ..... \$140

## SL-QD2 Semiautomatic Turntable

Direct-drive, semiautomatic turntable. Features PLL; quartz-lock; P-Mount compatible; strobe; 33 $\frac{1}{3}$  and 45 RPM. W&F 0.025% WRMS; rumble -78 dB; effective tonearm length 230 mm; max tracking error  $+0^\circ 32'$  at inner groove of record and  $+2^\circ 32'$  at outer groove of record; 16 $\frac{1}{16}$ " W x 3 $\frac{1}{16}$ " H x 14 $\frac{1}{4}$ " D; 9.9 lbs ... \$130

## Turntables Without Tonearms

### SP-10MK3 Direct-Drive Turntable

Quartz synthesizer direct-drive 33 $\frac{1}{3}$ -, 45-RPM, 78-RPM turntable without tonearm. Features high torque for full speed in 30° of rotation; electronic and mechanical braking for speed change in 0.3 second; ultra-high precision integral rotor-platter quartz direct-drive motor; quartz synthesizer pitch control (0.1% steps to  $\pm 9.9\%$  all speeds); separate power supply, remote-control unit. RC unit features numeric LED speed, pitch displays; soft-touch switches (start/stop duplicated on turntable). W&F 0.015% WRMS  $\pm 0.001\%$ ; 14 $\frac{1}{32}$ " W x 14 $\frac{1}{32}$ " D x 4 $\frac{1}{16}$ " H; 40 lb turntable; 16 $\frac{1}{32}$ " D x 6 $\frac{1}{32}$ " W x 3 $\frac{2}{32}$ " H, 13.2 lb power supply/control unit ..... \$1,700

SH-10B5. Optional turntable base ..... \$800

### SP-10M2A Direct-Drive Turntable

Quartz synthesizer direct-drive 33 $\frac{1}{3}$ -, 45- 78-RPM turntable without tonearm. Features high torque to bring up to full speed in 25° of rotation; electronic and mechanical braking for speed change in 0.3 second; separate power supply, remote-control unit. W&F 0.025% WRMS  $\pm 0.035\%$ ; rumble -70 dB DIN-B; speed drift within  $\pm 0.002\%$ ; 14 $\frac{3}{64}$ " W x 14 $\frac{3}{64}$ " D x 4 $\frac{1}{64}$ " H, 20.9 lb ..... \$1,100

SH-10B3. Optional turntable base ..... \$520

### SP-15 Direct-Drive Turntable

Quartz-synthesized direct-drive 33 $\frac{1}{3}$ -, 45-, 78-RPM turntable without tonearm. Features full speed in 0.4 second (40° of rotation); brake to full stop in 0.4 second (40° of rotation) at 33 $\frac{1}{3}$ -rpm;  $\pm 9.9\%$  quartz-locked pitch control. W&F 0.025% WRMS; rumble 56 dB DIN-A, 78 dB DIN-B ..... \$700

SP-25. Similar to SP-15 except no 78-RPM speed.  $\pm 6\%$  pitch control ..... \$400

## THORENS

*All Thorens turntables are belt-driven, single-play units having straight tubular tonearms for lower effective mass; gimbal suspension; antiskate control; 9" effective tonearm length; tracking error <0.18"/cm (0.46"/in.).*

### TD-126III C Semiautomatic Turntable

Turntable with automatic tonearm lift, motor shutoff. Features 33 $\frac{1}{3}$ -, 45-, 78-RPM speeds; electronic speed selection;  $\pm 6\%$  pitch control; stroboscope; electronic velocity sensor that actuates arm lift; frictionless magnetic antiskating. W&F <0.035%; rumble -72 dB wtd, -51 dB unwt; 19 $\frac{1}{8}$ " W x 15 $\frac{1}{2}$ " D x 6 $\frac{1}{16}$ " H ..... \$800

TD-126III B. Same as TD-126C MKIII but without tonearm ..... \$645

### TD 320 Semiautomatic Turntable

Belt-drive 33 $\frac{1}{3}$  and 45 RPM turntable with 16-

pole synchronous motor. Features twin solid-core chassis and three-point leaf spring suspension; low mass Iso-Track tonearm with detachable tonearm tube and friction-free velocity sensing auto shut-off triggering system. W&F 0.35%, rumble -52 dB unwt, -72 dB wtd; 17 $\frac{3}{8}$ " W x 13 $\frac{3}{8}$ " D x 6 $\frac{3}{4}$ " H ..... \$500

TD321 Armless Turntable. Same as TD320 but without tonearm ..... \$395

### TD 318 Semiautomatic Turntable

Belt-drive 33 $\frac{1}{3}$  and 45 RPM turntable with 16-pole synchronous motor. Features floating subchassis suspension system; 9" low-mass, low-friction tonearm; friction-free velocity sensing auto shut-off triggering. W&F 0.04%; rumble -50 dB unwt, -706 dB unwt; gloss black; 6" H x 17" W x 14" D ..... \$350

### TD 166 MK II Manual Turntable

Belt-drive 33 $\frac{1}{3}$  and 45 RPM turntable with 16-pole synchronous motor. Features suspension isolated sub-chassis; low mass, low friction tonearm with detachable tonearm tube. W&F 0.05%; rumble -50 dB unwt, -70 dB wtd; 17" W x 14" D x 6" H ..... \$220

## VECTOR RESEARCH

### VT-280 Turntable

Automatic belt-drive, linear-tracking turntable. P-Mount compatible. 33 $\frac{1}{3}$  and 45 rpm. W&F 0.07% ..... \$170

### VT-240 Turntable

Automatic belt-drive turntable. Features pivoted arm, P-Mount compatible, 33 $\frac{1}{3}$  and 45 RPM, variable speed control, strobe, floating sub-chassis, gold-plated phono plugs. W&F 0.07% ..... \$150

## YAMAHA

### PF-1000 Semiautomatic Turntable

Semiautomatic belt-drive pivoted-arm turntable with dynamic balance twin-pipe tonearm; walnut veneer cabinet. Features two-piece platter; 33 $\frac{1}{3}$  and 45 RPM speeds; variable speed control  $\pm 6\%$ . W&F 0.023% wrms; rumble 80 dB; effective tonearm length 8 $\frac{3}{4}$ " ; 18 $\frac{1}{8}$ " W x 6 $\frac{1}{8}$ " H x 14 $\frac{1}{4}$ " D (dustcover down); 30 lbs ..... \$650

PF-800. Similar except with black vinyl finish, particle-board cabinet. .... \$495

### PF-50 Automatic Turntable

Direct-drive turntable with three-point floating suspension and knife-edge dynamic-balance tonearm. Features P-Mount compatible; 33 $\frac{1}{3}$  and 45 RPM; resonance-absorbing turntable mat; disc clamp/EP adapter; overhang adjustment gauge. W&F 0.15% wrms; S/N 78 dB A-weighted; effective tonearm mass without cartridge 11 g; effective tonearm length 8 $\frac{3}{4}$ " . 17 $\frac{1}{8}$ " W x 4 $\frac{3}{8}$ " H x 14" D (dustcover down); 9 lbs, 14 oz ..... \$195

PF-30. Similar to PF-50 except belt-drive \$145

PF-20. Similar to PF-30 except semi-automatic, standard EP adapter ..... \$125

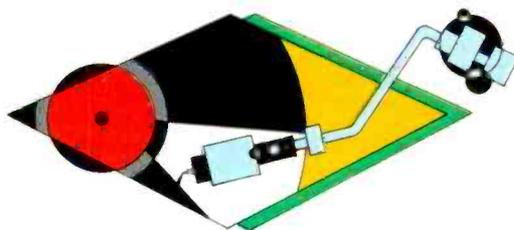
### P-520 Automatic Turntable

Automatic direct-drive pivoted-arm turntable with optimum-mass tonearm and disc clamp. Features 33 $\frac{1}{3}$  and 45 RPM speeds; P-Mount compatible; variable speed control with strobe. W&F 0.015% wrms; rumble -78 dB; effective tonearm mass without cartridge 11 g; effective tonearm length 8 $\frac{3}{4}$ " ; 17 $\frac{1}{8}$ " W x 4 $\frac{3}{8}$ " H x 14 $\frac{1}{8}$ " D (dustcover down); 13 lbs ..... \$189

P-320. Similar to P-520 except with belt drive ..... \$149

P-220. Similar to P-520 except semiautomatic with belt drive ..... \$129

# CARTRIDGES & TONEARMS



## ACCUPHASE BY MADRIGAL

### AC-2 Moving-Coil Phono Cartridge

MC cartridge with high-stiffness, light-mass tubular sapphire cantilever. Features damped damper; rare-earth samarium-cobalt magnet; permalloy core; large-diameter coil wire; die-cast aluminum alloy hard housing. FR 20-60,000 Hz; ch sep at 1 kHz 30 dB; output 0.18 mV at 1 kHz, 5 cm/sec; balance at 1 kHz 0.5 dB; tracking force 1.0-3.0 g ..... \$475

### AC-3 Moving-Coil Phono Cartridge

MC cartridge with tubular boron and beryllium rod cantilever. Features microtrack stylus, rare-earth samarium-cobalt magnet, die-cast aluminum alloy hard housing. Output 0.2 mV at 5 cm/sec; FR 20-20,000 Hz  $\pm 1$  dB; sep 30 dB at 1,000 Hz; tracking force range 1.5-2.0 g; cartridge weight 7.5 g ..... \$375

## ADC

### TRX 3 Phono Cartridge

Induced-magnet cartridge with line-contact nude rectangular diamond stylus; precision die-cast metal body; ultra-rigid beryllium cantilever; screw-down lock stylus system mount. FR 20-26,000 Hz  $\pm 1$  dB; recommended tracking force 1.2 g  $\pm 0.2$  g; output voltage 3 mV (5 cm/sec at 1 kHz); ch balance within 0.5 dB (1 kHz); ch sep  $> 30$  dB (1 kHz); compliance 40  $\times 10^{-6}$  cm/dyne static; imp 3.9 ohms (1 kHz); DC resistance 650 ohms; load resistance 47k ohms; load capacitance 275 pf; weight 8 g; stylus tip nude PH line contact; 0.12  $\times$  0.06  $\times$  0.05 (Vital III) ..... \$300

### TRX 1 Phono Cartridge

Induced-magnet cartridge with line-contact nude diamond stylus; precision die-cast metal body; screw down lock stylus system mount; titanium beryllium cantilever; FR 20-24,000 Hz  $\pm 1$  dB; recommended tracking force 1.2 g  $\pm 0.2$  g; output voltage 3 mV (5 cm/sec at 1 kHz); ch balance within 1 dB (1 kHz); ch sep  $> 30$  dB (1 kHz); compliance 40  $\times 10^{-6}$  cm/dyne static; imp 3.9 ohms (1 kHz); DC resistance 650 ohms; load resistance 47k ohms; load capacitance 275 pf; weight 8 g; stylus tip nude PH line contact 0.3  $\times$  0.22  $\times$  0.5 (Vital I) ..... \$225

### PSX-40 Phono Cartridge

Induced-magnet cartridge with P-Mount adapter so that cartridge is useable for both conventional and P-Mount tonearms. Features 0.2  $\times$  0.7 mil nude diamond stylus, tapered titanium tube cantilever. FR 20-24,000 Hz; tracking force 1/4  $\pm 2$  g; output voltage 3.5 mV (5 cm/sec at 1 kHz); ch balance within 1.5 dB (1 kHz); ch sep  $> 28$  dB (1 kHz); compliance 35  $\times 10^{-6}$  cm/dyne static; imp 3.2 ohms (1 kHz); DC resistance 275 pf; weight 5.9 g (7.2 g with adapter) ..... \$135

### PSX-30 Phono Cartridge

Induced-magnet cartridge with P-Mount adapter so that cartridge is useable in both conventional and P-Mount tonearms. Features 0.3  $\times$  0.7 mil nude diamond stylus; aluminum tapered

cantilever. FR 20-22,000 Hz; tracking force 1/  $\pm 0.2$  g; output voltage 3.5 mV (5 cm/sec at 1 kHz); ch balance within 1.5 dB (1 kHz); ch sep  $> 26$  dB (1 kHz); compliance 35  $\times 10^{-6}$  cm/dyne static; imp 3.2 ohms (1 kHz); DC resistance 610 ohms; load resistance 47k ohms; load capacitance 275 pf; weight 5.9 g (7.2 g with adapter) ..... \$110

## ADCOM

### SXC-van den Hul MC Phono Cartridge

High-output MC cartridge with tubular sapphire cantilever and van den Hul stylus. Features 3.5-micron contact radius; vertical groove extended to 85 microns; aluminum cantilever; crosscoil armature. Output 2.3 mV at 5 cm/sec; FR 20-20,000 Hz  $+3$ ,  $-0$  dB; tracking force 1.8 g; square-wave rise time 7 msec; ch sep 20 dB 200-20,000 Hz; 4.7g ..... \$450

### XC-MRII Moving-Coil Phono Cartridge

High-output cartridge with nude-mounted square-shank stylus. Features thin-walled aluminum cantilever; crosscoil armature. Output 2.3 mV at 5 cm/sec; FR 20-20,000 Hz  $\pm 1$  dB; ch sep 28 dB at 1 kHz; tracking force 1.8 g; effective tip mass 0.35 mg; 0.15 mil  $\times$  3.0 mil scanning radius; weight 4.7 g ..... \$325

### XC-LTII Moving-Coil Phono Cartridge

High-output MC cartridge with Line-Trace stylus, thin-wall aluminum cantilever, crosscoil armature. Output 2.3 mV at 5 cm/sec; FR 20-20,000 Hz  $\pm 1$  dB; ch sep 28 dB at 1 kHz; tracking force 1.8 g; effective tip mass 0.35 mg; weight 4.7 g ..... \$260

### HC-vdH II Moving-Coil Phono Cartridge

High-output MC stereo phono cartridge with van den Hul stylus. Features thin-wall aluminum cantilever; crosscoil armature. Output 2.3 mV at 5 cm/sec; FR 20-15,000 Hz  $+1.5/-1$  dB, 20-20,000 Hz  $+2.5/-1$  dB; ch balance within 1.5 dB; tracking force 2 g; effective tip mass 0.35 mg; 4.7g ..... \$220

HC-E II. Similar to HC-VdH II except with elliptical stylus. .... \$140

## AKG ACOUSTICS

### Super Nova P8ES Phono Cartridge

Moving-iron cartridge with patented transversal suspension system with the new van den Hul II replaceable diamond. Features FR/crosstalk curve; carbon-fiber stylus brush; screwdriver. Output 2.8 mV at 3.54 cm/sec; FR 10-28,000 Hz  $\pm 1$  dB; sep 30 dB at 1,000 Hz; tracking force range 1-1.5 g; cartridge weight 3.5 g ..... \$450

### P-25MD Phono Cartridge

Variable-reluctance induced-magnet cartridge with patented diamond-technology transverse-suspension system, cylindrical/magnet design. Features FR/crosstalk curve; carbon-fiber stylus brush; screwdriver; antiresonance compound. Output 2.7 mV at 3.54 cm/sec rms; FR 10-28,000 Hz; sep  $\pm 1$  dB; tracking-force range

0.75-1.25 g; diamond "Analog-Six" stylus mass 0.015 mg; 3.5 g ..... \$250

### P-15MD Phono Cartridge

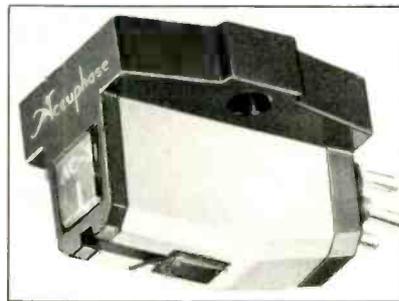
Variable-reluctance induced-magnet cartridge with patented diamond-technology transverse-suspension system, cylindrical magnet. Features FR/crosstalk curve; carbon-fiber stylus brush; screwdriver; antiresonance compound. Output 3.4 mV rms at 3.54 cm/sec; FR 10-23,000 Hz; sep  $\pm 1.5$  dB; tracking force 1.0-1.5 g; elliptical diamond stylus; weight 3.5 g ..... \$165

### P10ED Studio Phono Cartridge

Designed for broadcast and disco; built-in stylus guard prevents damage during use. Output 5.8 mV at 3.54 cm/sec; FR 20-20,000 Hz  $\pm 2$  dB; sep 25 dB at 1,000 Hz; tracking force range 2.5-4.5 g; cartridge weight 3.5 g ..... \$120

### P-10ED Phono Cartridge

Variable-reluctance induced-magnet cartridge with patented transverse suspension, cylindrical magnet. Features carbon-fiber stylus brush; screwdriver; antiresonance compound. Output 5.8 mV rms at 3.54 cm/sec; FR 20-20,000 Hz; sep  $\pm 2$  dB; tracking force 1.25-2.0 g; elliptical diamond stylus; stylus mass 0.25 mg; 3.5 g \$115



Accuphase AC-3

## ASTATIC

### Moving Flux MF-100MR Phono Cartridge

MM phono cartridge with a Micro Ridge stylus (user replaceable), tapered cantilever; single-point pivot system, and gold-plated terminals. Output 3.5 mV at 5 cm/sec; FR 10-20,000 Hz  $\pm 1$  dB; sep 25 dB at 1,000 Hz; tracking-force range 1-1.5 g; cartridge weight 5.5 g; compliance of 50  $\times 10^{-6}$  cm/dyne ..... \$320

### Moving Flux MF 100 Phono Cartridge

Features output 3.5 mV at 5 cm/sec; FR 10-20,000 Hz  $\pm 1$  dB; sep 25 dB at 1 kHz; tracking-force range 0.75-1.25 g; Shibata-type parabolic stylus and compliance of 50  $\times 10^{-6}$  cm/dyne ..... \$290

### Moving Flux MF 200 Phono Cartridge

Features output 4.2 mV at 5 cm/sec; FR 10-20,000  $\pm 2$  dB; sep 23 dB at 1 kHz; tracking-force range 1.5-2 g; Shibata-type parabolic stylus and compliance of 45  $\times 10^{-6}$  cm/dyne ..... \$160

# CARTRIDGES & TONEARMS

## Moving Flux MF 300 Phono Cartridge

Features output 4.2 mV at 5 cm/sec; FR 10-20,000 Hz  $\pm 2.5$  dB; sep 20 dB at 1 kHz; tracking-force range 1.5-2.0 g; elliptical diamond stylus; compliance  $35 \times 10^{-6}$  cm/dyne ..... \$100

## Moving Flux MF 400 Phono Cartridge

Features output 3.5 mV at 5 cm/sec; FR 10-18,000 Hz  $\pm 3$  dB; sep 20 dB at 1 kHz; tracking-force range 1.5-2.5 g; spherical diamond stylus, compliance  $35 \times 10^{-6}$  cm/dyne ..... \$80

## AUDIO-TECHNICA

### Dual Moving-MicroCoil Series

#### AT35E Phono Cartridge

Cartridge with user-replaceable Moving MicroCoil stylus assembly. Features low-mass design; 0.2 x 0.7-mil nude-mounted BiRadial square-shank diamond stylus. Output 0.4 mV at 5 cm/sec; FR 15-50,000 Hz; ch balance/sep 0.5/30 dB at 1 kHz; tracking force 1.2-1.8 g \$275

#### AT31E Phono Cartridge

Cartridge with user-replaceable Moving MicroCoil stylus assembly. Features square-shank 0.2 x 0.7-mil BiRadial diamond stylus. Output 0.4 mV at 5 cm/sec; FR 15-50,000 Hz; ch balance/sep 1/29 dB at 1 kHz; tracking force 1.21-1.8 g ..... \$185

#### AT 312EP Phono Cartridge

Universal-mount MC cartridge with user-replaceable stylus. Dual Moving MicroCoil. output 0.4 mV at 5 cm/sec; FR 15-25,000 Hz; sep 30 dB at 1 kHz; tracking-force range 1-1.5 g; cartridge weight 6 g. Comes with 1/2" mounting adapter ..... \$160

#### AT30E Phono Cartridge

Dual Moving MicroCoil model with user replaceable stylus assembly and 0.3 x 0.7 mil BiRadial stylus. Features thin-wall tube cantilever. Output 0.3 mV at 5 cm/sec; FR 15-25,000 Hz; sep 25/15 dB at 1,000 Hz; tracking-force range 1.4-2 g; cartridge weight 5 g. Recommended load imp 10-20 ohms ..... \$140

#### AT30HE Phono Cartridge

Stereo cartridge with user-replaceable Moving MicroCoil stylus assembly. High output eliminates need for transformer; 0.3 x 0.7-mil nude-mounted diamond stylus. Output 2 mV; FR 15-30,000 Hz; sep 29 dB at 1 kHz; tracking-force 1.4-1.8 g ..... \$140

### Vector-Aligned Series

#### AT160ML Phono Cartridge

Para-toroidal-coil MM cartridge with MicroLine stylus mounted on gold-plated beryllium cantilever. Output 5 mV at 5 cm/sec. FR 5-35,000 Hz; sep 31 dB at 1 kHz; tracking-force range 0.8-1.8 g; 8.1 g ..... \$275

#### AT155LC Vector-Aligned Phono Cartridge

Output 5.0 mV at 5 cm/sec at 1 kHz; FR 5-35,000 Hz with class I tolerance; ch balance/sep 0.5/31 dB at 1 kHz; tracking force 0.8-1.6 g; nude-mounted square-shank linear-contact stylus; beryllium cantilever; Vector-Aligned dual magnet; para-toroidal coil ..... \$240

#### AT140ML Vector-Aligned Phono Cartridge

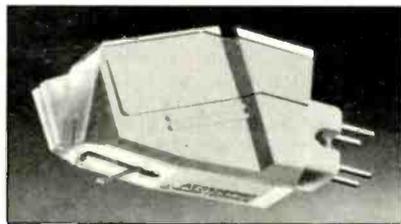
Output 5.0 mV at 5 cm/sec; FR 5-32,000 Hz with class II tolerance; ch balance/sep 0.75/30 dB at 1 kHz; tracking force 0.8-1.8 g; nude-mounted square-shank MicroLine stylus; Vector-Aligned dual magnet; para-toroidal coil ..... \$185

#### AT130E Vector-Aligned Phono Cartridge

Para-toroidal coil construction; output 5.0 mV at 5 cm/sec; FR 10-30,000 Hz with class II tolerance; ch balance/sep .75/30 dB at 1 kHz; 0.2 x 0.7 mil nude biradial stylus; Vector-Aligned dual magnet ..... \$125

#### AT125LC Vector-Aligned Phono Cartridge

Para-toroidal coil construction; output 5.0 mV at 5 cm/sec; FR 15-28,000 Hz with class II tolerance; ch balance/sep 1/29 dB at 1 kHz; linear-contact titanium-bonded stylus; Vector-Aligned dual magnet; para-toroidal coil ..... \$135



Audio-Technica AT312EP

### P-Mount Series

#### AT152MLP Phono Cartridge

Direct-plug-in cartridge for P-mount turntables. Features extremely stiff but lightweight beryllium cantilever and nude-mounted square-shank MicroLine diamond stylus ..... \$240

#### AT132EP Phono Cartridge

Direct plug-in cartridge for P-mount turntables. Features Vector-Aligned dual-magnet system with tapered alloy cantilever; 0.2 x 0.7-mil nude-mounted BiRadial diamond stylus ..... \$150

#### AT221EP Phono Cartridge

Universal-mount MM cartridge with square-shank 0.2 x 0.7 mil BiRadial stylus; output 5 mV at 5 cm/sec. FR 10-28,000 Hz; sep 31 dB at 1 kHz; tracking-force range 1-1.5 g; cartridge weight 6 g; comes with 1/2" mounting adapter ..... \$135

#### AT231LP Phono Cartridge

Universal-mount MM cartridge with linear-contact stylus. Output 3.5 mV at 5 cm/sec. FR 10-30,000 Hz; sep 31 dB at 1 kHz; tracking-force range 1-1.5 g; cartridge weight 6 g; comes with 1/2" mounting adapter ..... \$130

#### AT216EP Phono Cartridge

Universal-mount MM cartridge with 0.3 x 0.7 mil BiRadial stylus; output 5 mV at 5 cm/sec. FR 15-27,000 Hz; sep 29 dB at 1 kHz; tracking-force range 1-1.5 g; cartridge weight 6 g; comes with 1/2" mounting adapter ..... \$100

#### AT211EP Phono Cartridge

Universal-mount MM cartridge with 0.4 x 0.7 mil BiRadial stylus; output 5 mV at 5 cm/sec. FR 15-25,000 Hz; sep 29 at 1 kHz; tracking-force range 1-1.5 g; cartridge weight 6 g; comes with 1/2" mounting adapter ..... \$75

#### AT201EP Phono Cartridge

Universal-mount MM cartridge with 0.4 x 0.7 mil BiRadial stylus; output 5 mV at 5 cm/sec. FR 20-25,000 Hz; sep 26 dB at 1 kHz; tracking-force range 1-1.5 g; cartridge weight 6 g; comes with 1/2" mounting adapter ..... \$65

#### AT201P Phono Cartridge

Universal-mount MM cartridge with 0.6 mil UniRadial stylus; output mV 5 cm/sec. FR 20-22,000 Hz; sep 26 dB at 1 kHz; tracking-force range 1-1.5 g; cartridge weight 6 g; comes with 1/2" mounting adapter ..... \$55

### Tonearm

#### AT1010 Tonearm

Features low-frequency resonance damping; silver wire used for all arm leads including AT-MS headshell; gold-plated contacts; lateral balance adjustment for tracking warped records, stylus pressure 0-2.5 g ..... \$375

### AZDEN

#### GM-PSL Phono Cartridge

P-mount MC cartridge with nude line-contact stylus and boron cantilever. Output 0.2 mV at 5 cm/sec; FR 10-60,000 Hz; sep 30 dB at 1,000 Hz; tracking force range 1-1.5 g; cartridge weight 5.9 g ..... \$250

#### YM-P50VL Phono Cartridge

MM cartridge with Vital nude line-contact stylus and tapered aluminum cantilever. Output 4 mV at 5 cm/sec; FR 10-24,000 Hz; sep 30 dB at 1,000 Hz; tracking force range 1-1.5 g; cartridge weight 5.9 g ..... \$150

#### GM-1E Phono Cartridge

MC cartridge. Output 2 mV at 5 cm/sec; FR 10-22,000 Hz; sep 28 dB at 1,000 Hz; tracking force range 1.5-2.5 g; cartridge weight 2.7 g ... \$125

#### YM-10VE Phono Cartridge

MM cartridge with 0.3 x 0.7 mil Vital elliptical stylus. Output 4.5 mV at 5 cm/sec; FR 10-24,000 Hz; sep 26 dB at 1,000 Hz; tracking force range 1.5-2.5 g; cartridge weight 4.5 g; ch bal 1.5 dB at 1,000 Hz ..... \$90

#### YM-10E Phono Cartridge

MM cartridge with 0.3 x 0.7 mil STD elliptical stylus. Output 4.5 mV at 5 cm/sec; FR 10-22,000 Hz; sep 24 dB at 1,000 Hz; tracking force range 1.5-2.5 g; cartridge weight 4.5 g ..... \$70

### BANG & OLUFSEN

#### MMC Series Phono Cartridges

All MMC cartridges feature armature mounted perpendicularly to the cantilever; crystal sapphire cantilever; multi-radial diamond; four high-output, low-imp coils wound on cores of very low permeability aligned in perfect symmetry with the magnet.

MMC-1. Diamond contact line 0.1 x 0.1 mm sq.; stylus bonding nude; cantilever sapphire tube; recommended tracking force 10 mN/1 g; FR 20-20,000 Hz  $\pm 1$  dB; 1.6 g ..... \$445

MMC-2. Diamond contact line 0.12 x 0.12 mm sq.; stylus bonding nude; cantilever sapphire tube; recommended tracking force 10 mN/1 g; FR 20-20,000 Hz  $\pm 1.5$  dB; 1.6 g ..... \$290

MMC-3. Diamond elliptical 0.15 x 0.15 mm sq.; stylus bonding nude; cantilever tapered aluminum tube; recommended tracking force 10 mN/1 g; FR 20-20,000 Hz  $\pm 2$  dB; 1.6 g ..... \$180

MMC-4. Diamond elliptical 0.20 mm round; stylus bonding titanium; cantilever tapered aluminum tube; recommended tracking force 12 mN/1.2 g; FR 20-20,000 Hz  $\pm 2.5$  dB; 1.6 g ..... \$105

### DENON

#### DL-1000 MC Phono Cartridge

Output 0.12 mV at 50 mm/sec; FR 20-110,000 Hz; sep 30 dB at 1,000 Hz; tracking-force range 0.8-0.1 g; cartridge weight 6 g ..... \$859

#### DL-305 MC Phono Cartridge

Features twin radius; boron cantilever. Output 0.2 mV at 50 mm/sec; FR 20-75,000 Hz; sep 28 dB at 1,000 Hz; tracking-force range 1.2-0.2 g; cartridge weight 5.8 g ..... \$559

# CARTRIDGES & TONEARMS

## DL-304 MC Phono Cartridge

Features boron cantilever; high compliance \$395

## DL-302 MC Phono Cartridge

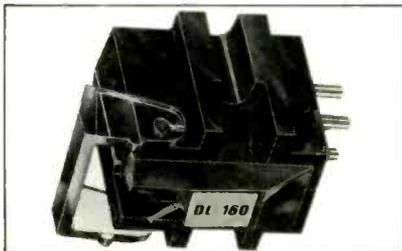
Features high output; detail charm and depth; boron cantilever. Output 0.25 mV at 50 mm/sec; FR 28-70,000 Hz; sep 28 dB at 1,000 Hz; tracking-force range 1.4-0.2 g; cartridge weight 6 g ..... \$260

## DL-301 MC Phono Cartridge

Output 0.3 mV at 50 mm/sec; FR 20-60,000 Hz; sep 28 dB at 1,000 Hz; tracking-force range 1.4-0.2 g; cartridge weight 4.7 g ..... \$159

## DL-160 MC Phono Cartridge

Output 1.6 mV at 50 mm/sec; FR 20-50,000 Hz; sep 28 dB at 1,000 Hz; tracking-force range 1.6-0.3 g; cartridge weight 4.8 g ..... \$115



Denon DL-160

## DYNAVECTOR

### Karat 17 Diamond Super (17DS) Cartridge

MC cartridge with a 1.7 mm length tapered solid diamond cantilever and Micro Reach stylus. Output 0.2 mV at 1,000 Hz, 5 cm/sec; FR 20-90,000 Hz; tracking force 1.8 g; weight 5.3 g \$700

### DV 17D2MR Moving-Coil Phono Cartridge

Standard 1/2" mount MC cartridge with solid diamond cantilever (1.7 mm long) and Micro Reach line-contact stylus. Output 0.2 mV at 5 cm/sec; FR 20-30,000 Hz  $\pm$  1 dB; tracking force range 1.8-2 g; cartridge weight 5.3 g ..... \$480

### DV 23RSMR Moving-Coil Phono Cartridge

Standard 1/2" mount MC cartridge with tapered ruby cantilever (2.3 mm long) and Micro Reach super-line-contact stylus. Output 0.2 mV at 5 cm/sec; FR 20-30,000 Hz  $\pm$  1 dB; tracking force range 1.5-1.8 g; cartridge weight 5.3 g ..... \$350

### Karat 23 Ruby (23R) Cartridge

MC stereo phono cartridge with 2.3 mm ruby cantilever. Output 0.2mV at 1 kHz, 5 cm/sec; FR 20-50,000 Hz; tracking force 1.5 g; 5.3 g \$310

### DV-20B Type 2 Moving-Coil Cartridge

High-output MC phono cartridge, with cantilever and elliptical stylus straight solid beryllium. Output 3.6 mV at 1 kHz, 5 cm/sec; FR 20-40,000 Hz; tracking force 1.8 g; 5.3 g ..... \$298

### DV-20A Type 2 Moving-Coil Cartridge

High-output MC cartridge with tapered aluminum cantilever and elliptical stylus. Output 3.6 mV at 1 kHz, 5 cm/sec; FR 20-40,000 Hz; tracking force 1.8 g; 5.3 g ..... \$240

### Karat 19A Moving-Coil Cartridge

MC cartridge with 1.9 mm long tapered solid aluminum cantilever and very small armature. Output 0.25 mV at 1 kHz, 5 cm/sec; FR 20-70,000 Hz; tracking force 1.8 g; 5.3 g ..... \$230

### DV-50A Moving-Coil Cartridge

Low-output MC cartridge with nude elliptical diamond stylus, straight aluminum cantilever.

Output 0.2 mV at 1 kHz, 5 cm/sec; FR 20-50,000 Hz; tracking force 1.5 g; 4.5 g ..... \$198

## DV 10X4 High-Output MC Phono Cartridge

Standard 1/2" mount MC cartridge with no need for step-up device. Very small nude elliptical stylus with straight tube cantilever. Output 2.5 mV at 5 cm/sec; FR 20-25,000 Hz  $\pm$  2 dB; tracking force range 1.7 g; cartridge weight 4.5 g ..... \$160

## Tonearm

### DV-501 Tonearm

Biaxis tonearm with eddy current damping. Overall length 309 mm; effective length 241 mm; offset angle 21.5°; lateral tracking error 0-2.2°; overhang 15 mm; height adjustable from 36-76 mm ..... \$600

## EMPIRE

### Standard-Mount Moving-Magnet Cartridges

**400D/111 Gold.** .25 x 2.5 nude paraligner diamond stylus. Features gold plated tapered boron cantilever; inertial damping system; flip-down guard. Standard 1/2" cartridge with black mounting block covering a gold can ..... \$250  
**2000E/111.** .2 x 2.5 nude elliptical diamond stylus. Features low mass tapered cantilever; flip-down guard. Standard 1/2" cartridge with a gold mount covering a gold can ..... \$165  
**200/E.** STD 1/2" cartridge with black mount covering a silver or black can. Features .2 x .7 mil nude elliptical diamond stylus with a low mass tapered cantilever; flip-down guard ..... \$100  
**350DE.** Standard 1/2" mount cartridge with black mounting block covering a silver can. Features .4 x .7 Diasa elliptical diamond stylus; flip-down stylus guard ..... \$100

### P-Mount MM Cartridges

**580LT.** Standard P-mount cartridge with black housing covering a silver or black can. Features square nude fine line elliptical diamond stylus with tapered cantilever; inertial damping system; flip-down guard ..... \$175  
**480LT.** Standard P-mount cartridge with black housing covering a silver or black can. Features .2 x .7 nude elliptical diamond stylus with a low mass thin cantilever; inertial damping system; flip-down guard ..... \$170  
**875LT.** Standard P-mount cartridge with black housing covering a black or silver can. Features .2 x .7 nude Bi-Radial elliptical diamond; flip-down guard ..... \$160  
**390LT.** Standard P-mount cartridge with grey body covering a gold plated can. Features .2 x .7 Diasa elliptical diamond stylus with tapered aluminum cantilever; inertial damping system; flip-down guard ..... \$145

### FET Series MC cartridges

**MC1000.** Features a Van den Hul stylus tip and silver-wire wound coils. Handcrafted in Switzerland ..... \$595  
**MC-5M.** Features replaceable stylus assembly ..... \$200

## EPOCH BY STANTON

### Epoch II Series Model HZ9S Cartridge

MM cartridge has output of 0.8 mV. FR 10-25,000 Hz, individually calibrated to 20,000 Hz; sep 35 dB at 1,000 Hz, 22 dB at 10,000 Hz; tracking-force 3/4-1 1/2 g; cartridge weight 4 g. With Stereohedron II stylus ..... \$250

### LZ9S Phono Cartridge

Includes Stereohedron II stylus. Output 0.04 mV; FR 10-50,000 Hz, individually calibrated to 20,000 Hz; sep 35 dB at 1,000 Hz, 22 dB at

10,000 Hz; tracking force 3/4-1 1/2; 3.8 g ..... \$250

## HZ8S Phono Cartridge

Includes Stereohedron II stylus. Output 0.8 mV; FR 10-20,000 Hz; sep 35 dB at 1,000 Hz, 22 dB at 10,000 Hz; tracking force 3/4-1 1/2; 4 g ..... \$190

## LZ8 Phono Cartridge

Includes Stereohedron II stylus. Output 0.04 mV; FR 10-20,000 Hz; sep 35 dB at 1,000 Hz, 22 dB at 10,000 Hz; tracking force 3/4-1 1/2; 3.8 g ..... \$190

## HZ7S Phono Cartridge

Output 0.8 mV; FR 10-20,000 Hz; sep 30 dB at 1,000 Hz, 15 dB at 10,000 Hz; tracking force 3/4-1 1/2; 4 g ..... \$120

## GRADO LABORATORIES

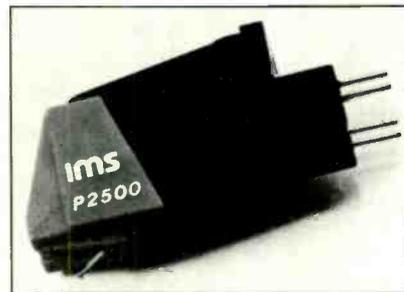
All Grado stereo phono cartridges come with diamond styli. Input load 47,000 ohms, inductance 30 mH; DC resistance 780 ohms; weight 4.5 g. Both the Super Fluxbridget and Fluxbridget series are available in P-Mount versions.

### Super Fluxbridget Series

Output 5 mV at 3.54 cm velocity (45°); FR 10-60,000 Hz; average ch sep 25 dB, 10-30,000 Hz.  
**M2+** ..... \$265  
**M+** ..... \$110  
**MF-1+** ..... \$90

### Fluxbridget Series

Output 5 mV at 3.54 cm velocity (45°); FR 10-50,000 Hz; average ch sep 20 dB, 10-30,000 Hz.  
**MCE-1** ..... \$48  
**MTE+1** ..... \$18



Induced Magnet Systems P2500

## INDUCED MAGNET SYSTEMS

### MC5 Phono Cartridge

MC high-output cartridge with very low effective mass cantilever assembly. Output 2.7 mV at 3.54 cm/s; FR 16-25,000 Hz +1.7 dB/-0.5 dB; sep 22 dB at 1,000 Hz; tracking-force range 1.7-2.3 g, optimum 2 g; cartridge weight 3.7 g ..... \$150

### P2500 Phono Cartridge

Induced-magnet P-mount with samarium cobalt magnet. Features gold-plated terminals; amorphous permalloy core; low-mass cantilever. Output 3.8 mV at 5 cm/s; FR 24 dB at 1,000 Hz; tracking-force range 1-1.5 g, optimum 1.25 g; 5.9 g ..... \$110

### P2000 Phono Cartridge

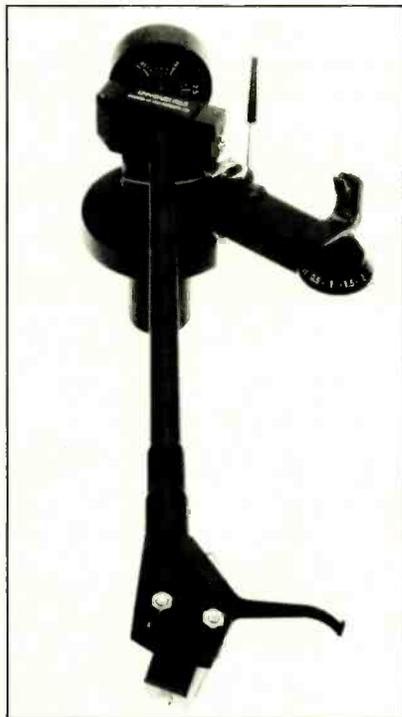
P-Mount induced-magnet cartridge with samarium cobalt magnet. Features gold-plated terminal posts; special low-mass cantilever. Output 3.8 mV at 5 cm/s; FR 20-22,000 Hz  $\pm$  1.8 dB; sep 24 dB at 1,000 Hz; tracking force range 1-1.5 g; optimum tracking force 1.25 g; cartridge weight 5.9 g ..... \$70

# CARTRIDGES & TONEARMS

## JVC

### Z-45EP Phono Cartridge

MM cartridge. Output 2.5 mV; FR 10-30,000 Hz; sep 25 dB at 1,000 Hz; cartridge weight 5.9 g ..... \$70



Linn Basik Plus

## LINN BY AUDIOPHILE SYSTEMS

### Karma Moving-Coil Cartridge

Low output cartridge with elliptical stylus. Body milled from solid aluminum. FR 20-20,000 Hz  $\pm 1$  dB; sep 30 dB at 1,000 Hz; tracking force 1.5-1.7 grams; cartridge weight 5.7 grams; channel balance within 1 dB at 1,000 Hz; tracking angle 20° ..... \$725

### Asak DC2100K Moving-Coil Cartridge

MC cartridge with 0.2 x 0.8-mil modified elliptical stylus. FR 10-50,000 Hz  $\pm 3$  dB; sep 27 dB; output 0.2 mV; imp 3.5 ohms; compliance 12 x 10<sup>-6</sup> cm/dyne; tracking angle 20°; tracking force 1.5-1.9 g. 6 g ..... \$325

**Trak.** MC cartridge with 0.2 x 0.8 mil modified elliptical stylus. Technical measurements same as for Asak ..... \$185

**Basik Moving-Magnet Cartridge** ..... \$75

### Tonearms

#### Ittok LV-II Tonearm

Tonearm with 11½" overall length, 9" stylus-pivot distance, damped cueing mechanism. Features radial ball bearings. Effective mass 12 g; total cable capacitance 100 pF; cartridge weight range 3-12 g. .... \$520

#### Basik Plus Tonearm

Straight statically balanced tonearm with fixed aluminum headshell and decoupled counterweight. Tracking-force range 0-3 grams calibrated to 0.1 gram; effective mass 11 grams; stylus overhang 18 mm; overall length 284 mm; effective length 230 mm. Includes Basik cartridge ..... \$160

**Basik LVX.** Same as Basik Plus except detachable headshell. Includes Basik cartridge ..... \$160

## MISSION ELECTRONICS

### The Rose Cartridge

Low-output MC cartridge with 0.3 x 0.7-mm nude block elliptical stylus. Output 0.2 mV at 1 kHz, 5 cm/sec; sep 20 dB at 1 kHz; balance  $\pm 0.5$  dB, 20-20,000 Hz; tracking force 2.0 g \$599  
**773 HC.** Similar to The Rose except has 0.6 x 0.8 mm stylus; 2 mV output. Specs same as for The Rose ..... \$399  
**773 LC.** Similar to The Rose except has 0.6 x 0.8-mm stylus. Specs same ..... \$199

### Tonearm

#### The Mechanic Tonearm

Tonearm with direct-coupled rigid two-plane symmetric and concentric bearings; fixed 23° 45' offset angle (adjustable); effective length 228 mm; pivot-spindle 210 mm; overhang 18 mm; effective mass 16 g; friction (horizontal or vertical) <14 g ..... \$1,200

## MONSTER CABLE

### Alpha-2 Cartridge

MC cartridge with hollow tube sapphire cantilever and micro-ridge stylus. Also available in high-output design which needs no step-up amplification ..... \$650

### Alpha-1 Cartridge

MC cartridge with hollow boron cantilever and micro-ridge stylus ..... \$475

## NAGATRON

### 200 Series Phono Cartridges

*Samarium-cobalt alloy magnet structure; universal mount; FR 10-25,000 Hz; balance/sep 1.0/25 dB at 1 kHz; output 4.0 mV at 50 mm/sec; 1 kHz; recommended load 30k-100k ohms, 50k ohms nominal; dynamic compliance 8 x 10<sup>-6</sup> cm/dyne at 1 kHz; static compliance 20 x 10<sup>-6</sup> cm/dyne.*

**220CE.** 0.3 x 0.7 mil shaped elliptical nude diamond stylus with tapered carbon-fiber cantilever; effective mass 0.60 mg ..... \$150

**210E.** 0.3 x 0.7 mil elliptical nude diamond stylus with aluminum UT-58 cantilever; effective mass 0.65 mg ..... \$110

### 100 Series Phono Cartridges

*Stereo induced-magnet cartridges with super-permalloy shield; FR 20-20,000 Hz; effective mass 0.85 mg; balance/sep 1.5/24 dB at 1,000 Hz; output 4.0 mV at 50 mm/sec (1 kHz); recommended load 30k-100k ohms, 50k ohms nominal; dynamic compliance >8 x 10 cm/dyne at 1 kHz; static compliance 20 x 10 cm/dyne; aluminum cantilever.*

**1951E.** 0.3 x 0.7 mil elliptical diamond stylus; integral headshell ..... \$75

**185E.** 0.3 x 0.7 mil elliptical diamond stylus; universal mount ..... \$65

## ORTOFON

### Moving Coil Cartridges

**MC-20 Super.** MC cartridge with extruded aluminum body. Features Van den Hul stylus; carbon fiber support system. Output 0.25 mV at 1,000 cm/sec; FR 10-65,000 Hz; sep >25 dB at 1,000 Hz; tracking force range 1.5-1.9 g; cartridge weight 9 g ..... \$350

**MCP-100 Super.** MC in P-mount format. Output 0.26 mV at 1,000 cm/sec; FR 20-20,000 Hz; sep 25 dB at 1,000 Hz; tracking force min 1.25 g; cartridge weight 6 g ..... \$250

**MC10 Super.** MC stereo phono cartridge with elliptical nude stylus. Vertical tracking angle 20°, output 0.09 mV at 1 kHz, 5 cm/sec; balance 1.5 dB at 1 kHz; FR 20-20,000 Hz  $\pm 1$  dB; tracking force 1.5 g; FIM distortion <1%; 7 g. \$150

## Optimum Mass Cartridges

**OM-40.** Variable magnet shunt cartridge with individually calibrated Van den Hul stylus. Output 3.5 mV at 1,000 cm/sec; FR 20-29,000 Hz; sep 25-1,000 dB at 1,000 Hz; tracking force range 1-1.5 g; cartridge weight 5 or 2.5 g. \$300

**OM-30.** Low-mass Variable Magnetic Shunt phono cartridge. Features cartridge body of neryl plastic for rigidity and low weight; copper coils; mu-metal container for electrical system; nude fine line diamond stylus; tracking force 1.25 g; FR 20-27,000 Hz; output voltage at 1,000 Hz (5 cm/sec) 3.5 mV; wt 2.5 grams; ch sep at 1,000 Hz -25 dB ..... \$225

**OMP-30.** P-Mount version of OM-30 cartridge; 6 gms ..... \$225

**OM-20.** Similar to OM-30 except for a more rectangular nude elliptical diamond stylus; designed for medium-weight tonearms; FR 20-22,000 Hz; output voltage at 1,000 Hz (5 cm/sec) 4 mV ..... \$175

**OMP-20.** P-Mount version of OM-20 cartridge; 6 gm ..... \$175

**OM-10.** Similar to OM-20 except for a heavier stylus tip; designed for use with heavier tonearms; tracking force 1.5 gram; FR 20-22,000 Hz; output voltage at 1,000 Hz (5 cm/sec) 4 mV; ch sep at 1,000 Hz 22 dB ..... \$95

**OMP-10.** P-Mount version of OM-10 cartridge; 6 gm ..... \$95

### Pro Series

**Concorde Pro.** Integrated elliptical cartridge. FR 20-20,000 Hz; output 5 mV at 1 kHz at 5 cm/sec; sep/balance at 1 kHz 20/2 dB; dynamic compliance horizontal/vertical 8/8  $\mu$ m/mN; FIM distortion 1.8%; load resistance 47k ohms; 16 g ..... \$95

### VMS Series Phono Cartridges

**VMS 30 MkII.** Variable Magnetic Shunt cartridge with axially oriented fine-line diamond stylus. Output 5 mV at 1 kHz, 5 cm/sec; equivalent stylus tip mass 0.45 mg; sep 27 dB at 1 kHz; tracking force 1.0-1.6 g; vertical tracking angle 20°; 5 g ..... \$185

**VMS 20 E MkII.** Similar to VMS 30 MkII except has elliptical diamond stylus. Equivalent tip mass 0.5 mg; sep 25 dB; tracking force 0.8-1.2 g ..... \$155

**VMS 10 E MkII.** Similar to VMS 20 E MkII except equivalent tip mass 0.65 mg; tracking force 1.7-2.3 g ..... \$130

**VMS 5 E MkII.** Similar to VMS 10 E MkII except equivalent tip mass 0.8 mg; output 6 mV; tracking force 1.5-3.0 g ..... \$80

### Orthophase Moving-Coil Prestige Series

**MC 2000.** MC cartridge with low mass (0.27 mg) moving system; wide-range damping and hard aluminum conical cantilever. Features symmetrical contact line diamond; aluminum armature for a mass reduction of 66% in relation to traditional armature designs to prevent magnetic noise; samarium cobalt magnet; pure silver coils. Output voltage at 1,000 Hz, 5 cm/sec 0.050mV; ch sep at 1,000 Hz >25 dB; FR 5-90,000 Hz; tracking ability at 315 Hz at recommended tracking force >100 $\mu$ m; weight of unit 11 g ..... \$1,000

**SPU-Gold.** MC cartridge with gold plated contacts including coils and cantilever. Output 0.2 mV at 1,000 cm/sec; FR 20-20,000 Hz  $\pm 1.5$  dB; sep 25 dB at 1,000 Hz; tracking force range 3-5 g; cartridge weight 3.2 g ..... \$850

**MC-200u.** MC cartridge with boron cantilever. Output 0.09 mV at 1,000 cm/sec; FR 20-25,000 Hz +3, -1 dB; sep >25 dB at 1,000 Hz; tracking force range 1.2-1.8 g; cartridge weight 5.3 g ..... \$375

# CARTRIDGES & TONEARMS

**MC-100u.** Low mass MC cartridge with wide range damping system. Features nude elliptical diamond. Output 0.09 mV at 1,000 cm/sec; FR 20-20,000 Hz +3, -1 dB; sep 25 dB at 1,000 Hz; tracking force range 1.2-1.8 g; cartridge weight 5.3 g ..... \$250

## TMC200 Plug-In Phono Cartridge

MC cartridge with wide-range damping, pure boron cantilever. Output 0.9 mV at 1 kHz, 5 cm/sec; FR 20-35,000 Hz  $\pm$  2 dB; balance <1.5 dB; sep 18 dB at 15 kHz; dynamic compliance 13/13  $\mu$  vertical, lateral; load imp >10 ohm; tracking force 1.25 g; equivalent stylus tip mass 0.5 mg; 6 g ..... \$350

## VMS P-Mount Series

**TM20H.** Variable Magnetic Shunt cartridge with fine-line diamond stylus. Output 3.5 mV at 1 kHz, 5 cm/sec; FR 20-20,000 Hz; balance/sep 1.5/25 dB; compliance 40  $\mu$ m/mN static vertical, 3  $\mu$ m/mN dynamic lateral; load 47k ohms/200 pF; tracking force 1.25 g; equivalent stylus tip mass 0.45 mg; 6 g ..... \$115

**TM14.** Stereo cartridge with elliptical diamond stylus. FR 20-20,000 Hz; output 4.5 mV; sep/balance 25/1.5 dB at 1 kHz; equivalent stylus tip mass 0.5 mg; recommended load 47k ohms/200 pF; tracking force 1.25 g ..... \$75

## Tonearm/Cartridge Combination

### Ortofon/SME 30 H Cartridge/Arm

Coupling of Ortofon's Concorde 30 low-mass cartridge/headshell with SME's Series III, IIS low-mass tonearms; uses solid nude fine-line diamond stylus and specially-hardened aluminum alloy cantilever in S-shaped arm. Output 3 mV at 5 cm/sec, 1 kHz; FR 20-20,000 Hz; balance/sep 1.5/25 dB at 1 kHz; dynamic compliance 35 @ m/mN; tracking force range 0.8-1.2 g; tonearm resonant frequency 13 Hz; 10.5 g ..... \$149

## PARASOUND

### PMC-88 MC Phono Cartridge

High output MC P-mount phono cartridge with 0.4 x 1.7 mil elliptical stylus and hinged stylus guard. Output 3.8 mV at 3.54 cm/sec; FR 18-26,000 Hz  $\pm$  0.6 dB; sep 30 dB at 1,000 Hz; cartridge weight 5.9 g; rise time <6  $\mu$ sec ..... \$150

## PICKERING

### XLZ/7500S Phono Cartridge

Cartridge with nude Stereohedron diamond stylus tip. Sens 0.06 mV/cm/sec  $\pm$  2 dB; FR 10-50,000 Hz; sep 35 dB; tracking force 0.5-1.5 g; includes Dustamatic brush; replacement stylus D7500 ..... \$250

**XSV/4000.** Similar to XSV/5000 except FR 10-36,000 Hz; tracking force 1 g; replacement stylus D5000 ..... \$200

### XSV/5000 Phono Cartridge

Cartridge with nude Stereohedron diamond stylus tip. Output 3.8 mV; FR 10-50,000 Hz; tracking force 1/2 to 1 1/2 g; sep 35 dB; includes Dustamatic brush. Replacement stylus D5000 ..... \$220

### XSV/3000 Phono Cartridge

Output 5 mV at 5.5 cm/sec; FR 10-30,000 Hz; Stereohedron stylus tip; tracking force 3/4 to 1 1/2 g; sep 35 dB; features Dustamatic brush; replacement stylus D3000 ..... \$180

### XV-15/1200 Phono Cartridge

Output 4.4 mV at 5.5 cm/sec; FR 10-30,000 Hz; 0.2 x 0.7-mil elliptical stylus; tracking force 3/4 to 1 1/4 g; sep 35 dB; features Dustamatic brush; re-

placement stylus D1200 ..... \$150

### XV-15/757S Stereohedron Cartridge

Output 4.4 mV; tracking force 3/4-1 1/2 g; FR 10-25,000 Hz; replacement stylus D757S ..... \$125

### XV-15/625E Phono Cartridge

Output 4.4 mV at 5.5 cm/sec; FR 10-25,000 Hz; 0.3 x 0.7-mil elliptical stylus; tracking force 3/4 to 1 1/2 g; sep 35 dB; features Dustamatic brush; replacement stylus ..... \$100

### XV-15/750E Phono Cartridge

Output 4.4 mV at 5.5 cm/sec; FR 10-25,000 Hz; 0.3 x 0.7-mil elliptical stylus; tracking force 3/4 to 1 1/2 g; ch sep 35 dB; features Dustamatic brush; replacement stylus D750 ..... \$80

## P-Mount Cartridges

**TLZ/7500S.** High-performance low-imp cartridge with 4-coil, high-energy samarium cobalt magnet ..... \$250

**XSP/4004.** Stereohedron stylus. Output 3.8 mV; tracking 3/4-1 1/2 g; FR 10-36,000 Hz ..... \$200

**XSP/3003.** Stereohedron series P-Mount cartridge with output 3.3 mV. FR 10-30,000 Hz; tracking force 3/4 to 1 1/2 g,  $\pm$  1/4 g ..... \$180

**TL-4S.** 4-coil induced magnet. Stereohedron stylus, output 4.4 mV, tracking force 3/4-1 1/2 g. FR 10-25,000 Hz ..... \$150

**TL-3S.** Stereohedron stylus. Output 4.4 mV; tracking force 3/4-1 1/2 g; FR 10-25,000 Hz ..... \$125

**TL-2S.** Stereohedron stylus. Output 4.4 mV; tracking force 3/4-1 1/2 g; FR 10-22,000 Hz ..... \$100

**TL-2E.** Elliptical stylus. Output 4.4 mV; tracking force 3/4-1 1/2 g; FR 10-22,000 Hz ..... \$85

**TL-1.** Std P-Mount, 2-coil moving magnet. Tracking force 3/4-1 1/2 g. Elliptical stylus, FR 10-20,000 Hz, output 4.4 mV. .... \$75

**TL625DJ.** P-Mount cartridge. FR 20-20,000 Hz, output 0.8 mV, tracking force 3 1/2-4 g. Replacement stylus DJL ..... \$75

## SHURE

### Ultra Phono Cartridge Series

**500.** All features of V15 type V MR (see below) plus more. Total effective mass 0.165 mg; dynamic vertical stylus compliance at 10 Hz 20  $\mu$ m/dyne; output at 1,000 Hz, 5 cm/sec peak velocity, 3.2 mv ..... \$400

**400.** Total effective mass 0.190 mg; dynamic vertical stylus compliance at 10 Hz 14  $\mu$ m/dyne; output at 1,000 Hz, 5 cm/sec peak velocity, 4.0 mV ..... \$250

**300.** Total effective mass 0.165 mg; dynamic vertical stylus compliance at 10 Hz 11  $\mu$ m/dyne; output at 1,000 Hz, 5 cm/sec peak velocity, 3.2 mV ..... \$160

### V15 Type V-MR Phono Cartridge

MM cartridge with improved low-distortion Micro-Ridge stylus tip and Microwall beryllium stylus shank for increased trackability. Features viscous-damped Dynamic Stabilizer and Side-Guard stylus protection system; includes Duo-Point Alignment Gauge and computer performance printout. Output 3.2 mV at 1,000 Hz (5

# Stylus wear. By the time you hear it, it's too late.



If you haven't replaced your stylus (needle) in the past year, you may be permanently damaging every record you play.

Replacing your stylus is simple (see diagram). And selecting the proper stylus to replace it with is also easy. Make certain it's a genuine Shure stylus.

All Shure styli are designed to exacting specifications for precise stereo reproduction. And *only* a Shure stylus can restore your Shure cartridge to its original standard of performance.

Don't accept substitutes. Protect your records *and* your sound. Get a genuine Shure Replacement Stylus. Soon.

## SHURE®

BREAKING SOUND BARRIERS

For the name and locations of the Shure Stylus replacement center in your area, call toll-free: **1-800-257-4873.** In Illinois 1-800-624-8522.

CIRCLE NO. 41 ON READER SERVICE CARD

# CARTRIDGES & TONEARMS

cm/sec peak velocity); FR 10-28,000 Hz; sep 25 dB or greater at 1,000 Hz; tracking force 1.0 g; replacement stylus VN5MR ..... \$275

## V15 Type V-B Phono Cartridge

MM cartridge with exclusive Hyperelliptical tip, Microwall beryllium stylus shank, Dynamic Stabilizer and Side-Guard stylus protection system. Includes individual computer performance printout. Output 3.2 mV at 1 kHz (5 cm/sec peak velocity); FR 10-28,000 Hz; sep 25 dB or

greater at 1,000 Hz; tracking force 1.0 g; replacement stylus VN5HE; VN5MR upgrade .. \$220

## V15 Type V-P Phono Cartridge

Specifically designed for ultimate performance in P-Mount tonearms. Features Hyperelliptical tip; Microwall beryllium stylus shank; computer performance printout. Same specs as V15 type V-B. Replacement stylus VN5P ..... \$205

## ML140HE Phono Cartridge

Slim-line high-efficiency cartridge body pro-

vides an extremely flat frequency response from 20-22,000 Hz. Superb trackability with Microwall beryllium shank and accurate tracing with Hyperelliptical tip. Slim Dynamic Stabilizer combats record warp problems while destaticizing and cleaning the record, and Side-Guard helps protect stylus from accidental damage. Includes overhang gauge. Output 4.0 mV at 1,000 Hz (5 cm/sec peak velocity); sep 25 dB or greater at 1 kHz; tracking force 1.0 g. Replacement stylus N140HE ..... \$190

## M110HE Phono Cartridge

Features telescoped stylus shank, Hyperelliptical tip, and Side-Guard stylus protection system; rigid, low-mass converter allows mounting to either conventional 1/2"-mount tonearms or all P-Mount tonearms; same specs as M111HE. Replacement stylus N110HE \$110

## M105E Phono Cartridge

Features 0.2 x 0.7 mil elliptical tip and thin-walled, reinforced aluminum shank. Features Destaticizer Brush to clean dust from record grooves and remove static electricity from record surface, Side-Guard stylus protection system helps prevent accidental stylus damage. Fits most P-Mount tonearms and includes rigid 1/2"-mount converter. Output 5.0 mV at 1 kHz (5 cm/sec peak velocity); FR 20-20,000 Hz; sep 25 dB at 1 kHz; tracking force 1.25 g. Replacement stylus N105E ..... \$100

## SC39ED Phono Cartridge

Professional MM cartridge. Output 4 mV at 5 cm/sec peak velocity (1 kHz); FR 20-20,000 Hz; sep 25 dB at 1 kHz; tracking force 0.75-1.5 g; 0.2 x 0.7-mil biradial (elliptical) stylus; features MASAR tip; Side-Guard stylus deflector; replacement stylus SS39ED ..... \$80  
SC39EJ. Same as SC39ED except tracking force 1.5-3 g; ch sep 20 dB at 1 kHz; 0.4 x 0.7-mil stylus; replacement stylus SS39EJ ..... \$70

## M104E Phono Cartridge

Cartridge with accurate-tracing 0.2 x 0.7 mil elliptical stylus tip and tubular heat-treated aluminum stylus shank. P-Mount compatible and includes rigid 1/2"-mount converter. Output 5.0 mV at 1 kHz (5 cm/sec peak velocity); FR 20-20,000 Hz; sep 25 dB at 1 kHz; tracking force 1.25 g. Replacement stylus N104E ..... \$70

## M55E Phono Cartridge

MM cartridge. Output 6.2 mV at 5 cm/sec peak velocity (1 kHz); FR 20-20,000 Hz; tracking force 0.75-2 g; sep 20 dB (1 kHz); 0.2 x 0.7-mil biradial (elliptical) stylus, replacement stylus N55E ..... \$65

## SIGNET

### MK440ml MC Phono Cartridge

Dual moving MicroCoil design features a MicroLine stylus on a gold-plated beryllium cantilever. Output 0.1 mV at 5 cm/sec; FR 5-50,000 Hz; sep 33 dB at 1,000 Hz, 25 dB at 10,000 Hz; tracking-force range 1-1.6 g; cartridge weight 7 g ..... \$600

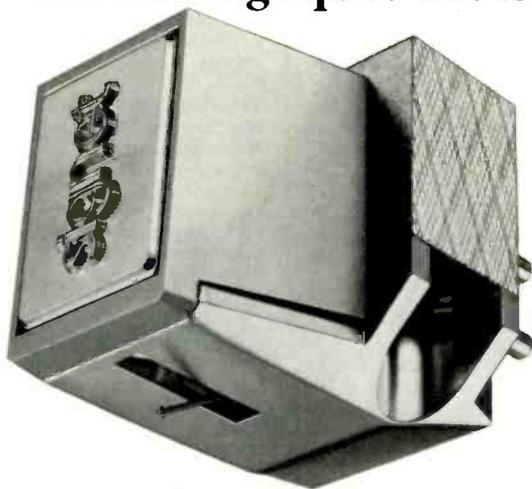
### MK220E MC Phono Cartridge

Dual moving MicroCoil design with non-user replaceable stylus. Features 0.2 x 0.7 mil nude square-shank miniature elliptical diamond. Output 0.4 mV at 5 cm/sec; FR 5-50,000 Hz; sep 30 dB at 1,000 Hz, 20 dB at 10,000 Hz; cartridge weight 4.8 g ..... \$400

### TK10ml Phono Cartridge

MicroLine nude diamond stylus mounted on a boron cantilever ..... \$375-400

**There's simply no other moving coil cartridge quite like it.**



## MK440ml Dual Moving MicroCoil™ Stereo Phono Cartridge with MicroLine™ Stylus

Start with the precision Dual Moving MicroCoils at the heart of the MK440ml. They are wound from Linear-Crystal Oxygen-Free Copper (LC-OFC) wire. The result is phase coherency and low distortion impossible with ordinary wire. And an unmatched ability to reproduce transients and the highest frequencies with superb clarity.

The MK440ml MicroLine stylus is equally outstanding. Mounted on a tiny beryllium rod, gold plated to reduce resonances. It has the minimum possible scanning radius for perfect tracing, yet an uncommonly long support radius for best tracking. This "contact ridge" maintains its unique shape throughout its useful life. Unlike all other stylus shapes, it exhibits no gradual increase in distortion, record wear, or erosion of frequency response. The Signet MicroLine stylus is indeed the most advanced stylus shape ever created.

The MK440ml is bench-crafted to remarkable standards of precision and uniformity in the finest Signet tradition. Until you've seen and heard this outstanding component, you can only guess how good your records can sound. At your helpful Signet dealer. Write or call today for the one nearest you.

  
signet

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CIRCLE NO. 36 ON READER SERVICE CARD

# CARTRIDGES & TONEARMS

## MR50ML MM Phono Cartridge

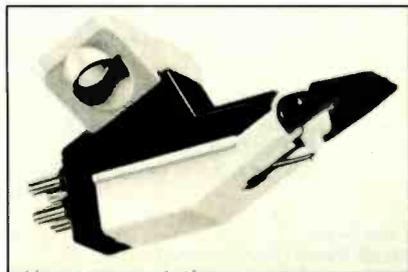
Unicore coil generating system with LC-OFC wire and microline stylus on gold-plated beryllium cantilever. Output 5 mV at 5 cm/sec; FR 5-37,000 Hz; sep 33 dB at 1,000 Hz, 25 dB at 10,000 Hz; tracking-force range 0.8-1.8 g; cartridge weight 6 g ..... \$350

## MR50LC MM Phono Cartridge

Unicore coil generating system with LC-OFC wire and square-shank nude stylus on beryllium cantilever. Output 50 mV; FR 5-35,000 Hz; sep 33 dB at 1,000 Hz, 23 dB at 10,000 Hz; tracking-force range 0.8-1.6 g; cartridge weight 6 g ..... \$275

## TK8LCp MM Phono Cartridge

Universal P-mount design with straight line contact stylus on a beryllium cantilever. Output 5 mV at 5 cm/sec; FR 5-35,000 Hz; sep 33 dB at 1,000 Hz, 23 dB at 10,000 Hz; tracking-force range 1-1.5 g; cartridge weight 6 g ..... \$225-250



Signet MK55e

## TK7LCA Phono Cartridge

FR 5-35,000 Hz; output 5.0 mV at 5 cm/sec; balance/sep 0.5/33 dB at 1000 Hz; tracking force 3/4-1 1/4 g; nude square-shank miniature Straight Line Contact micromass beryllium tube cantilever ..... \$225-250

## MR50me MM Phono Cartridge

Unicore coil generating system with LC-OFC wire and 0.2 x 0.7 mil square-shank nude stylus. Output 5 mV at 5 cm/sec; FR 5-30,000 Hz; sep 30 dB at 1,000 Hz, 20 dB at 10,000 Hz; tracking-force range 0.8-1.6 g; cartridge weight 6 g ..... \$225

## TK7Ea Phono Cartridge

FR 5-30,000 Hz; output 5.0 mV at 5 cm/sec; balance/sep 0.5 dB/33 dB at 1,000 Hz; tracking force 3/4-1 1/4 g; 0.2 x 0.7-mil nude square-shank miniature elliptical stylus; micro-mass beryllium cantilever ..... \$200-225

## MK120He Mc Phono Cartridge

High output design features user-replaceable stylus with 0.2 x 0.7 mil nude square-shank diamond. Output 2 mV at 5 cm/sec; FR 15-30,000 Hz; sep 29 dB at 1,000 Hz, 20 dB at 10,000 Hz; tracking-force range 1.2-1.8 g; cartridge weight 5 g ..... \$200

## MK66e MC Phono Cartridge

Low mass cartridge with dual moving micro-coil design. Features user-replaceable stylus with 0.2 x 0.7 mil square-shank nude diamond. Output 0.5 mV at 5 cm/sec; FR 15-30,000 Hz; sep 29 dB at 1,000 Hz, 20 dB at 10,000 Hz; tracking force range 1.2-1.8 g; cartridge weight 4.2 g ..... \$200

## MK110E MC Phono Cartridge

Features user-replaceable stylus with 0.2 x 0.7 mil square-shank nude diamond. Output 0.4 mV at 5 cm/sec; FR 15-30,000 Hz; sep 30 dB at 1,000 Hz, 20 dB at 10,000 Hz; tracking-force range 1.2-1.8 g; cartridge weight 4.8 g ..... \$195

## MR50e MM Phono Cartridge

Unicore coil generating system with LC-OFC wire and 0.3 x 0.7 mil nude stylus. Output 5 mV at 5 cm/sec; FR 10-30,000 Hz; sep 29 dB at 1,000 Hz, 19 dB at 10,000 Hz; tracking-force range 0.9-1.9 g; cartridge weight 6 g ..... \$195

## MK55e MC Phono Cartridge

Features low mass; dual moving micro-coil design; user-replaceable stylus with 0.3 x 0.7 mil nude mounted diamond. Output 0.5 mV at 5 cm/sec; FR 20-28,000 Hz; sep 28 dB at 1,000 Hz, 18 dB at 10,000 Hz; tracking-force range 1.2-1.8 g; cartridge weight 4.2 g ..... \$150

## TKGEp MM Phono Cartridge

Universal P-mount design with 0.2 x 0.7 mil square-shank nude diamond. Output 5 mV at 5 cm/sec; FR 10-30,000 Hz; sep 29 dB at 1,000 Hz, 20 dB at 10,000 Hz; tracking-force range 1-1.5 g; cartridge weight 6 g ..... \$130-150

## TK5Ea Phono Cartridge

FR 10-30,000 Hz; output 5.0 mV at 5 cm/sec; balance/sep 0.75/29 dB at 1 kHz; tracking force 3/4-1 1/4 g; 0.2 x 0.7-mil nude square-shank elliptical stylus; tapered cantilever; unicore coils \$130-150

## MR50 Basic MM Phono Cartridge

Unicore coil generating system with LC-OFC wire and 0.4 x 0.7 mil bonded elliptical stylus. Output 5 mV at 5 cm/sec; FR 15-25,000 Hz; sep 27 dB at 1,000 Hz, 17 dB at 10,000 Hz; tracking-force range 1.3-2.3 g; cartridge weight 6 g ..... \$125

## TK4Ep MM Phono Cartridge

Universal P-mount design with 0.3 x 0.7 mil nude stylus. Output 5 mV at 5 cm/sec; FR 15-20,000 Hz; sep 28 dB at 1,000 Hz, 19 dB at 10,000 Hz; tracking-force range 1-1.5 g; cartridge weight 6 g ..... \$85-100

## Tonearms

### XK-50 Tonearm

Integral tonearm to eliminate headshell connecting ring resonance and weight; has Signetrace damped planar tracking; designed to accommodate cartridges weighing 4-11 g; provides antikating adjust for elliptical conical line type styli; tracking force adjust 1/10 g; increments 0-1.6 g; overhang adjust 5 mm; tracking error  $\pm 1.5^\circ$  maximum; total arm, cable capacitance 80 pF; weight 9.5 g ..... \$400-425

**XKSP-1.** Extra integral tonearm tube to XK-50 ..... \$70-80

**XKSP-2.** S-arm replacement tube for XK-50. Features universal headshell connection (headshell not supplied). Recommended for medium-to-high-mass-and/or-compliance cartridges ..... \$60-70

### XK-35 Tonearm

Tonearm with Signetrace, damped planar tracking, nonremovable tube. Specs similar to XK-50 above ..... \$275-300

## SONUS BY SONIC RESEARCH

### CD-11 D-5 Dimension 5 Phono Cartridge

Magnetic cartridge with Lambda diamond stylus, integrated tapered aluminum cantilever; micro-machined armature; designed to reproduce direct-to-disc and PCM-mastered recordings. Output 0.8 mV/cm/sec; FR 10-20,000 Hz  $\pm 1$  dB, 20-40,000 Hz  $\pm 2$ -5 dB; compliance 50 cm/dyne  $\times 10^{-6}$ ; balance/sep  $\pm 1$ /30 dB at 1 kHz; tracking force range 1-1.5 g; 5.5 g ..... \$250

**CC-11 Calibrated D-5.** Similar to Dimension 5 except hand calibrated ..... \$350

## SB-11 Super Blue Phono Cartridge

Moving-iron cartridge with Lambda stylus and super-lightweight moving system. Sep 20 dB, 20-20,000 Hz; output 4 mV at 5 cm/sec; tracking force 1-1.5 g; 5.5 g ..... \$195

## CG-12 Gold Blue Phono Cartridge

High-compliance cartridge with low moving mass, sophisticated modified line-contact stylus. Output 4 mV at 5 cm/sec; compliance 50 cm/dyne  $\times 10^{-6}$ ; vertical tracking angle  $20^\circ$ ; sep 30 dB at 1 kHz; tracking force 1-1.5 g; 5.5 g ..... \$165

## Silver Phono Cartridges

Similar to Gold series. Output 1.0 ml/cm/sec at 1 kHz; compliance 40 cms/dyne  $\times 10^{-6}$ ; balance 2 dB; ch sep 30 dB at 1 kHz; load imp 47k ohms; tracking force range 1-1.5 g; 5.5 g.

**CS-22 Silver P.** Modified line-contact stylus (RCS-22 replacement stylus) ..... \$100

**CS-23 Silver E.** Biradial (elliptical) stylus FR 10-20,000 Hz  $\pm 1.5$  dB ..... \$95

## CB-23 Black A Phono Cartridge

Similar to Gold cartridges. Output 1.0 mV/cm/sec, 5 mV at 5 cms/sec; FR 10-10,000 Hz  $\pm 1$  dB, 10-20,000 Hz  $\pm 2$ -1 dB; balance/sep  $\pm 2$ /25 dB at 1 kHz; compliance 30  $\times 10^{-6}$  cm/dyne; load imp 47k ohms; 5.5 g. Precision-ground and polished biradial elliptical stylus; tracking force range 1.5-2 g ..... \$80

## SPM-5 Plug-In Cartridge

Nude line-contact stylus plus low-mass aluminum cantilever. FR 20-20,000 Hz -3 dB; sep 25 dB at 1,000 Hz. Available with adapter for fitting on standard tonearms. .... \$160

**SPM-4.** Similar to SPM-5 but has bonded line-contact stylus. Tracking force 1.25 gm  $\pm 0.25$ ; output 4.0 mV at 5 cm/second. (Replacement stylus RSPM-4) ..... \$135

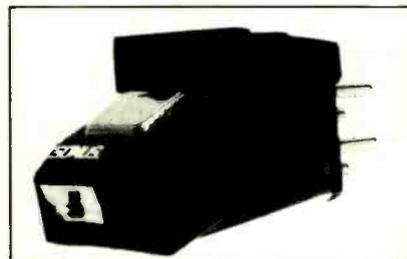
## SPM-3 Cartridge

Low-mass elliptical stylus 0.2 x 0.7 mil; FR 20-20,000 Hz, thin wall tube cantilever; ch balance  $\pm 1.5$  dB. (Replacement stylus RPSM-3) ..... \$115

## SPM-2 Cartridge

Elliptical stylus 0.2 x 0.7 mil, sep 20 dB at 1,000 Hz; 6.0 g ..... \$90

**SPM-1.** Similar to SPM-2 but has 0.3 x 0.7 mil elliptical stylus. (Replacement stylus RSPM-1) ..... \$60



Sonus Dimension 5

## SONY

### XL-MC3 Phono Cartridge

MC ultra-low-mass cartridge. Output 0.25 mV NAB; FR 10-50,000 Hz  $\pm 1$  dB; sep 30 dB; tracking-force range 1.2-1.8 grams; cartridge weight 3.0 g ..... \$300

### L-MC3 Phono Cartridge

Low-mass, high-compliance MC cartridge. Features patented Figure 8 voltage-generating system; replaceable super-elliptical diamond stylus.

# CARTRIDGES & TONEARMS

FR 10-50,000 Hz; 3 g ..... \$200  
**XL-MC2.** Similar to XL-MC3 except has standard elliptical stylus. High-end response 45 kHz ..... \$80  
**XL-MC1.** Similar to XL-MC2 except high-end response 30 kHz ..... \$60

**XL-MC2 Phono Cartridge**  
 MC ultra-low-mass cartridge. Output 0.25 mV NAB; FR 10-45,000 Hz  $\pm 1.5$  dB; sep 30 dB; tracking force 1.2-1.8 g; cartridge weight 3.0 g ..... \$165

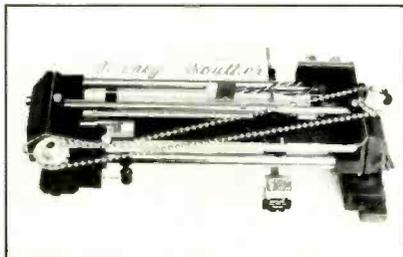
**XL-MC104P Phono Cartridge**  
 MC high-output P-Mount cartridge. Output 2.0 mV NAB; FR 10-35,000 Hz  $\pm 1$  dB; sep 26 dB; tracking force 1.25 g; cartridge weight 6.0 g \$165

**XL-MC10 Phono Cartridge**  
 MC high-output cartridge. Output 2.0 mV NAB; FR 10-35,000 Hz  $\pm 1$  dB; sep 26 dB; tracking force 1.2-1.8 g; cartridge weight 3.0 g ..... \$150

**XL-MC1 Phono Cartridge**  
 MC ultra-low-mass cartridge. Output 0.2 mV NAB; FR 10-30,000 Hz  $\pm 1.5$  dB; sep 26 dB; tracking force 1.2-1.8 g; cartridge weight 3.0 g ..... \$115

**VL-7 Phono Cartridge**  
 Lightweight MM cartridge with elliptical diamond stylus, carbon fiber cantilever; extends FR to 25 kHz ..... \$90

**VL-5 Phono Cartridge**  
 MM cartridge with low-mass aluminum cantilever, low-distortion moving system ..... \$50



Souther tonearm with Veritas cartridge

## SOUTHER ENGINEERING Veritas Cartridge

MC cartridge with coils on each side of pivot and hollow boron cantilever. Features line contact diamond. Output 0.5 mV at 5 cm/sec; FR 20-60,000 Hz  $\pm 0.5$  dB; sep 30 dB at 1,000 Hz; tracking force range 1.75-2.25 g; cartridge weight 4.4 g ..... \$700

### Tonearms

**SLA 3 Tri Quartz Straight Tonearm**  
 Statically balanced tonearm with pure quartz track and equimass patented system. Velox and titanium headshell; tracking force range 0.5-2.5 grams; effective mass adjustable from medium to high; offset angle 0°; overall length 254 millimeters; effective length 50 millimeters; tracking error 0°; 13.4 oz ..... \$850

**Souther Junior Straight Tonearm**  
 Statically balanced tonearm with special cover and linear and track gauge. Velox and titanium headshell; tracking force range 0.5-2.5 grams; effective mass 50 grams; offset angle 0°; overall length 254 millimeters; effective length 50 millimeters; tracking error 0°; 13 oz ..... \$550

## STANTON

### Calibration Series

**981 LZS Phono Cartridge**  
 Low-imp cartridge, fully calibrated for exact precision, with nude Stereohedron diamond stylus. Comes with mounted "longhair" brush. Output 0.06 mV/cm/sec  $\pm 2$  dB; FR 10-50,000 Hz  $\pm 2$  dB; sep 35 dB; weight 5.5 g ..... \$250

**981 HZS Phono Cartridge**  
 High-imp stereo cartridge with nude Stereohedron diamond stylus, fully calibrated. Comes with mounted "longhair" brush. Output 0.7 mV; FR 10-50,000 Hz  $\pm 2$  dB; sep 35 dB at 1 kHz; weight 5.5 g ..... \$250



Stanton 681EEE Mk II-S

**881S Phono Cartridge**  
 Output 0.9 mV; FR 10-25,000 Hz (individually calibrated to 20,000 Hz); balance/sep (1 kHz)  $\pm 1$  dB/35 dB; load imp 47k ohms; load capacitance 275 pF, including tonearm leads, cables, preamp; tracking force 0.75-1.25 g; nude Stereohedron stylus; 5.7 g with self-supporting (1 g) brush; white with silver handle, white brush; replacement stylus D81S, D810 for mono LPs, D827 for 78s ..... \$180

**681EEE MK II-S Phono Cartridge**  
 Induced-magnet cartridge with Stereohedron II stylus shape; dynamically improved cantilever assembly. Output 0.7 mV; FR 10-22,000 Hz; sep 35 dB at 1,000 Hz; tracking force range 1 g  $\pm 1/4$ ; cartridge weight 6.3 g ..... \$120

### High-Performance P-Mounts

**L-847S P-Mount Cartridge**  
 Top-of-the-line P-Mount cartridge. Features Stereohedron stylus; tracking  $3/4-1 1/2$  gs; output 0.7 mV; FR 10-36,000 Hz; ch balance  $< 2$  dB; sep 35 dB, 5.9 g; replacement stylus D84S \$180

**L-837S P-Mount Cartridge**  
 Features Stereohedron stylus; tracks at  $3/4-1 1/2$  g; output 0.9 mV; FR 10-30,000 Hz; ch balance  $< 2$  dB; sep 35 dB; 5.9 g; replacement stylus D83S ..... \$140

### Stereo Standard P-Mount Series

**L747S Plug-In Cartridge**  
 Features Stereohedron stylus. FR 10-25,000 Hz; tracking force  $3/4-1 1/2$  g; output 4.4 mV; sep 35 dB; 5.7 g. Replacement stylus D747S ..... \$125

**L737S Phono Cartridge**  
 Plug-in cartridge features Stereohedron stylus, tracks at  $3/4-1 1/2$  g. output 4.4 mV, FR 10-22,000 Hz; ch balance 2 dB; ch sep 35 dB. Replacement stylus D73S; weight 5.7 g ..... \$100

**L737E Plug-In Cartridge**  
 Elliptical stylus, 0.3 x 0.7 mil; output 4.4 mV; FR 10-22,000 Hz; tracking  $3/4-1 1/2$  g; ch balance 2 dB; sep 35 dB; weight 5.7 g. Replacement stylus D73E ..... \$85

**L-727E P-Mount Phono Cartridge**  
 Plug-in cartridge with 0.4 x 0.7-mil elliptical stylus. FR 10-25,000 Hz; tracking force  $3/4-1 1/2$  g; sep 32 dB; replacement stylus D727E ..... \$75

**L725E P-Mount Cartridge**  
 Cartridge with elliptical stylus; tracking force  $3/4-1 1/2$  g; output 3.0 mV; FR 10-22,000 Hz; ch balance  $< 2$  dB; sep 28 dB; replacement stylus D71-2E; weight 5.7 g ..... \$55

**L720EE P-Mount Cartridge**  
 Elliptical stylus 0.3 x 0.7 mil; output 3.2 mV; FR 10-20,000 Hz; tracking  $3/4-1 1/2$  g; ch balance 2 dB; ch sep 28 dB; replacement stylus D71EE. Weight 5.7 g ..... \$50

### Professional Cartridges

#### Low-Impedance Series

**885LZS Low-Impedance Cartridge**  
 Low-imp stereo cartridge with long-contact line Stereohedron stylus, mounted "longhair" brush. FR 20-40,000 Hz; sep 35 dB; 90-micron tracking at 1-g force; 5.5 g. Replacement stylus D88S ..... \$150

**785LZE Phono Cartridge**  
 Low-imp cartridge with 0.2 x 0.7-mil elliptical stylus. FR 20-30,000 Hz; sep 30 dB; 80-micron tracking at 1-g force; 5.5 g; replacement stylus D78E ..... \$100

### Disco Series

**681SE Phono Cartridge (Calibrated)**  
 Output 1 mV/cm/sec; FR 10-10,000 Hz 20.5 dB; 10,000 Hz to 20,000 Hz, individually calibrated; balance/sep 22 dB/35 dB (1 kHz); load imp 47k ohms; load capacitance 275 pF; tracking force 2-4 g; 0.4 x 0.7-mil elliptical stylus; weight 5.5 g with self-supporting (1 g) brush; replacement stylus D6800SE, D6810 for LPs, D6827 for 78s ..... \$110

**680SL Disco Cartridge**  
 Output 1.1 mV/cm/sec 22 dB; FR 20-20,000 Hz; balance/sep 2/30 dB; load resistance 47k ohms; load capacitance 275 pF; nude Stereohedron stylus tip; tracking force 3-6 g with brush; 5.5 g ..... \$109

**L680EL Disco Cartridge**  
 For P-Mount tonearms; automatically compensates for higher tracking forces. Comes with fluorescent-coated stylus. Output 1.1 mV; FR 20-18,000 Hz; sep 30 dB; tracking force  $3 1/2-4$  g; weight 8.4 g. Replacement stylus D6800EL. \$106

**680EL Disco Cartridge**  
 Output 0.82 mV/cm/sec; FR 20-18,000 Hz; balance/sep 22/30 dB (1 kHz); load imp 47k ohms; load capacitance 275 pF; tracking force 2-5 g; 0.4 x 0.7-mil elliptical diamond stylus; 5.5 g; replacement stylus D6800EL. Comes with extra stylus ..... \$100

### Stanton L680 EL



# CARTRIDGES & TONEARMS

## 680 Disco Cartridge

Output 1.1 mV/cm/sec; FR 20-18,000 Hz 22 dB; bal/sep 2/30 dB; load resistance 47,000 ohms; load capacitance 275 pF; tracking force 2-5 g; 0.7 mil spherical stylus tip; comes with extra stylus. Weight 5.5 g; replacement stylus D6800AL ..... \$90

## SUMIKO

### Series V Straight Tonearm

Dynamically balanced tonearm with ultra-rigid one-piece magnesium casting integrating headshell. Features arm shell and counterweight rails; captive ball-race bearings; VTA adjustable during play; internally tapered arm tube for reduced mass and better control of standing waves. Tracking force range 0-3 grams calibrated to 0.1; effective mass 11 grams ..... \$1,650

## SUPLEX BY SUMIKO

### SDX-2000 Phono Cartridge

Low-mass MC cartridge with boron tube cantilever. Rise time characteristics maintained by increasing output through use of rare-earth high-energy magnets. Advanced line contact stylus; uni-axial pivot. Output 2 mV; FR 10-50,000 Hz; 5 g ..... \$600

**SD-901E+**. Similar to SD-900E+ except output level 2 mV, allowing use without step-up device. FR 10-35,000 Hz ..... \$135

### SDX-2000 Boron High-Output Phono Cartridge

High-output MC cartridge which retains transient response characteristics of low-output MCs. Ultra-rigid, very low mass boron pipe cantilever; half-mass Vital diamond laser indexed to cantilever. Features 99.9% oxygen-free-copper coil windings. Each Supex SDX-2000 is hand-selected by David W. Fletcher. Output 1.75 mV at 3.54 cm/sec; FR 10-30,000 Hz  $\pm$  2 dB; sep 30 dB at 1,000 Hz; tracking force 1.5-2.1 g; cartridge weight 4.75 g ..... \$500

**SDX-2000 Boron**. Similar to above with output of 0.2 mV ..... \$500

### SD-901 Mark IV T.Q.A. Phono Cartridge

High-output MC cartridge with improvements over previous model (SD-901E) in high-frequency linearity, tracking ability, and dynamic contrasts. Output 1.7 mV at 3.54 cm/sec; FR 10-42,000 Hz  $\pm$  2 dB; sep 27 dB at 1,000 Hz; tracking force 1.8-2.2 g; cartridge weight 9.1 g ..... \$275

### SD-900 Mark QV T.Q.A. Phono Cartridge

Replaces the classic Supex SE-99E. Critical areas of image specificity, tracking ability, and dynamic contrast ability are improved over previous model. Also features nude mount elliptical Vital solid diamond stylus. Each cartridge is hand-selected by David W. Fletcher. Output 0.2 mV at 3.54 cm/sec; FR 10-50,000 Hz  $\pm$  2 dB; sep 27 dB at 1,000 Hz; tracking force range 1.8-2.2 g; cartridge weight 8.3 g ..... \$275

## TALISMAN BY SUMIKO

### Talisman S Moving-Coil Cartridge

MC cartridge with Direct Field Focus design to reduce magnetic losses and fringing effects by eliminating magnetic yokes and all but 1 pole piece; energy from samarium cobalt ring magnet is "pulled" across the coils by front-mounted pole piece creating a direct relationship between motion at coils and voltage at outputs; solid zinc body for reduced resonance, tapered for maximum rigidity; minimal internal air spaces; cantilever is a low-mass sapphire tube that is laser-indexed to a grain-oriented, long-line-contact diamond ..... \$300

**Talisman B**. Identical to Talisman S except for

rigid low-mass boron-tube cantilever ..... \$235  
**Talisman A**. Identical to Talisman S except for aluminum/magnesium alloy cantilever with nude-mounted elliptical diamond stylus ..... \$175

### Alchemist IIIs Phono Cartridge

"Intensified Focus" design allows high output without problems of slowed transients, poor tracking ability and audible straining at higher modulations. Intense magnetic focus at the coils concentrates generating mechanism's energy to prevent virtually all losses and fringing effects.

Also features hollow sapphire cantilever with laser-indexed, grain-oriented long-line contact stylus. Solid zinc body to prevent resonance. Output 2.0 mV at 3.54 cm/sec; FR 10-60,000 Hz; sep 30 dB at 1,000 Hz; tracking force 1.5-2.5 g; cartridge weight 6.7 g ..... \$425

**Alchemist I A**. Similar to Alchemist IIIs except aluminum/magnesium cantilever with nude-mount elliptical stylus ..... \$225



Sumiko Series V

## TECHNICS

### EPC-P205 CMK4 Moving-Magnet Cartridge

Ultra-low-mass-cantilever MM P-Mount cartridge. Output 2.5 mV at 5 cm/sec; FR 5-100,000 Hz; sep 25 dB at 1,000 Hz; Tracking force 1.25 g  $\pm$  0.25 g; cartridge weight 6 g; 0.2 x 0.7 mil elliptical nude diamond; effective moving mass 0.019 mg; neodymium magnet ..... \$250

**EPC-205 CMK4**. Regular mounting ..... \$280

### EPC-P310 MCMK2 Phono Cartridge

Ultra-low-mass cantilever MC cartridge. Output 1.22 mV at 5 cm/sec. FR 10-90,000 Hz; sep 25 dB at 1,000; tracking force 1.25 g  $\pm$  0.25 g; cartridge weight 6 g; 0.139 mg boron cantilever; neodymium magnet; coreless twin ring coils; 0.2 x 0.7 stylus nude diamond ..... \$200

### EPC-P550 Moving-Magnet Phono Cartridge

MM cartridge with ultra-low-mass cantilever. Output 2.5 mV at 5 cm/sec; FR 10-55,000 Hz; sep 25 dB at 1,000 Hz; tracking force range 2.5 g  $\pm$  0.25 g; cartridge weight 6 g; 0.3 x 0.7 mil elliptical diamond ..... \$100

### EPC-P540 Moving-Magnet Phono Cartridge

Output 2.5 mV cm/sec; FR 10-50,000 Hz; sep 25 dB at 1,000 Hz; tracking force 1.25  $\pm$  0.25 grams; cartridge weight 6 grams ..... \$70

### EPC-P530 Moving-Magnet Phono Cartridge

Output 2.5 mV at 5 cm/sec; FR 10-45,000 Hz; sep 25 dB at 1,000 Hz; tracking force 1.25  $\pm$  0.25 grams; cartridge weight 6 g ..... \$50

### Tonearm

#### EPA 250 S-Shaped Tonearm

Dynamically balanced tonearm with decoupled counterweight. Tracking force range 0-2 grams; effective mass 14 grams; stylus overhang 15 millimeters; overall length 343 millimeters; effective length 250 millimeters; tracking error +1° at inner groove and +2° at outer groove \$450

## THE WELL-TEMPERED LAB

### The Well-Tempered Arm

Tonearm with arm tube connected by short rod at pivot point to small disc suspended in tub of viscous silicon fluid; tube assembly suspended from above by short monofilament lines attached to disc, skewed slightly to apply anti-skating that changes as arm moves towards record center. Designed for use with any standard-mount cartridge. Skewed bifilar convergent ligament suspension eliminates mechanical rattles of gimbal bearing clearance, reduces tracking force when arm moves up, increases when arm moves down to minimize effects of warped records. Heavy groove modulation increases anti-skating and tracking force. Arm length 9"; effective mass 10 g ..... \$500

## YAMAHA

### MC-1000 Moving-Coil Cartridge

MC cartridge with diamond-coated pure beryllium tapered tubular cantilever. Features cross-matrix coil system; low-temp dependency damper. Output 0.17 mV at 5 cm/sec; FR 20-20,000 Hz  $\pm$  0.5 dB; sep 30 dB at 1,000 Hz; recommended tracking force 1.2 g  $\pm$  0.2 g; cartridge weight 5.3 g ..... \$280

### MC-3 Phono Cartridge

Cross-matrix air-core moving-core cartridge with samarium-cobalt magnet, 8 x 40-micron diamond stylus, tapered beryllium tube cantilever. Output 0.2 mV at 1 kHz, 5 cm/sec; FR 10-20,000 Hz; sep/balance >28/0.8 dB at 1 kHz; tracking force 1.2 g; 5.9 g ..... \$220

**MC-9**. Similar to MC-3 except has 8 x 20-micron stylus, aluminum-tube cantilever. Output 0.3 mV; balance within 1 dB at 1 kHz; tracking force 1.5 g; 5.3 g ..... \$100

### MC-4 Moving-Coil Cartridge

Phono cartridge with Cross Matrix coil system for precise reproduction of stereo imaging while permitting independent adjustment of vertical and horizontal compliance. Features equalizing damper; tapered tubular aluminum cantilever; resonance-free cartridge housing; samarium cobalt magnet; stylus is 0.06 mm square solid diamond 8 x 40  $\mu$ m; output 0.2 mV (1,000 Hz) 5 cm/sec peak 45°; ch separation >28 dB (1,000 Hz); FR 20-20,000 Hz; recommended tracking force 1.4 g  $\pm$  0.2 g ..... \$210

**MC-11**. Similar to MC-4 except rare earth magnet; stylus 0.1 x 0.2 mm square solid diamond 8 x 20  $\mu$ m; output 0.35 mV (1,000 Hz); 5 cm/sec peak 45°; ch sep >28 dB (1,000 Hz); FR 20-20,000 Hz (10-50,000 Hz capability); recommended tracking force 1.8 g  $\pm$  0.3 g ..... \$85

### MC-505 Phono Cartridge

MC cartridge with pure beryllium tapered tubular cantilever and diamond stylus. Output 0.35 mV at 5 cm/sec; FR 20-20,000 Hz; sep 28 dB at 1,000 Hz; tracking force range 1.2-1.8 g; cartridge weight 3.4 g ..... \$200

**MC 501**. Similar to MC-505 except has tapered aluminum tube cantilever ..... \$150

### Supex SDX-2000





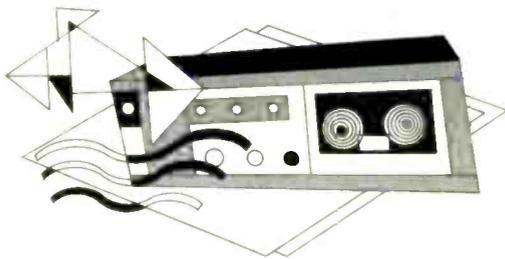
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# CASSETTE DECKS



## ADS

### C3 Two-Speed Cassette Deck

4-track 2-channel cassette deck which provides for recording and play at 1 1/2 IPS (standard speed) and 3 3/4 IPS (double speed). Features quartz PLL direct-drive capstan multiple-pole outer-rotor motor; repeat; mike/line mixing; 3 heads; 2 motors; Dolby B; Dolby C; music search; memory stop/play; LED meters; headphone jack. W&F standard speed 0.04% WRMS, high speed 0.035%; FR (with all tape types) standard speed 20-20,000 Hz  $\pm$  2 dB, high speed 25-22,000 Hz  $\pm$  2 dB; S/N (A-wtd, all tape types) standard speed: > 58 dBA no NR, > 66 dBA Dolby B, > 74 dBA Dolby C, high speed: > 60 dBA no NR, > 68 dBA Dolby B, > 76 dBA Dolby C; line-input sens for 0-dB reading 100 mV; line output level with 0-dB indication 700 mV; mike input sens 0.56 mV. 17.5" W x 2.75" H x 14.8" D; 19.6 lbs. \$799



ADS C3

### Atelier C2 Cassette Deck

Stereo cassette deck with single-capstan design and DC frequency generator servo-motor drive. Features speed accuracy of  $\pm$  1% or better, 80 sec winding time for C-60 cassettes; Dolby C, Dolby B NR; 12-segment, 2-color LEDs. W&F 0.06% DIN; FR normal and chrome, 20-18,000 Hz  $\pm$  2 dB, ferrichrome and metal 20-20,000 Hz  $\pm$  2 dB; S/N (ref to level producing 3% THD at 315 Hz) > 74 dBA with Dolby C, > 66 with Dolby B, > 58 dBA without Dolby; headphone output 320 mV into 200 ohms (0.5 mW); 17.52" W x 2.76" H x 14.84" D; 18.3 lbs. \$449

## AIWA

### AD-F990UB Dolby B & C Cassette Deck

Features 3 heads; 2 motors; auto bias/EQ; Dolby HX Pro; dual capstans; bias fine tuning; remaining-time counter; music search; output level control; memory stop/play; mike inputs; headphone jack; rec mute; IC logic controls; fluorescent meters with peak hold; MPX filter switch; timer rec/play standby; auto Dolby NR detector; intro-play Auto-De-Magnetizing System (A.D.M.S.). W&F 0.025% WRMS; FR ferric 20-18,000 Hz  $\pm$  3 dB, high bias 20-19,000 Hz  $\pm$  3 dB, metal 20-20,000 Hz  $\pm$  3 dB; S/N (A-wtd) metal: 68 dB Dolby B, 80 dB Dolby C; line-input sens for 0-dB reading 50 mV; line output level with 0-dB indication 400 mV; mike input sens 1 mV. 16 1/16" W x 4 3/8" H x 11 3/16" D; 12.1 lbs. \$595

### AD-F770UB Dolby B & C Cassette Deck

Features 3 heads; 2 motors; auto bias/EQ;

Dolby HX Pro; dual capstans; bias fine tuning; remaining-time counter; music search; output level control; memory stop/play; mike inputs; headphone jack; rec mute; digital automatic tape adaptation; IC logic controls; fluorescent meters with peak hold; auto Dolby NR detector; intro play A.D.M.S. W&F 0.025% WRMS; FR ferric 20-17,000 Hz  $\pm$  3 dB, high bias 20-18,000 Hz  $\pm$  3 dB, metal 20-19,000 Hz  $\pm$  3 dB; S/N (A-wtd) metal: 68 dB Dolby B, 80 dB Dolby C; line-input sens for 0-dB reading 50 mV; line output level with 0-dB indication 400 mV; mike input sens 1 mV. 16 1/16" W x 4 3/8" H x 11 3/16" D; 12.1 lbs. \$495

### AD-WX220U Dolby B & C Cassette Deck

Features 2 heads; 2 motors; auto bias/EQ; bias fine tuning; music search; output level control; LED meters; mike inputs; headphone jack; rec mute; 1/4 time dubbing cassette deck random programmable; dubbing playback; random Dolby B & C; 1-touch synchro-dubbing. W&F 0.038% WRMS; FR ferric 20-13,000 Hz  $\pm$  3 dB, high bias 20-15,000 Hz  $\pm$  3 dB, metal 20-16,000 Hz  $\pm$  3 dB; S/N (A-wtd) metal: 66 dB Dolby B, 78 dB Dolby C; line-input sens for 0-dB reading 50 mV. 16 1/16" W x 4 3/8" H x 12 3/4" D; 12.3 lbs. \$460

### AD-F660U Dolby B & C Cassette Deck

Features 3 heads; 2 motors; auto bias/EQ; Dolby HX Pro; dual capstans; bias fine tuning; remaining-time counter; music search; memory stop/play; LED meters; mike inputs; headphone jack; rec mute; IC logic controls; MPX filter switch; timer rec/play standby; dual micro-grain capstans; A.D.M.S.; intro play. W&F 0.028% WRMS; FR ferric 20-17,000 Hz  $\pm$  3 dB, high bias 20-18,000 Hz  $\pm$  3 dB, metal 20-19,000 Hz  $\pm$  3 dB; S/N (A-wtd) metal: 68 dB Dolby B, 80 dB Dolby C; line-input sens for 0-dB reading 50 mV; line output level with 0-dB indication 400 mV; mike input sens 1 mV. 16 1/16" W x 4 3/8" H x 11 1/16" D; 12.1 lbs. \$375

### AD-R650U Auto-Reverse Cassette Deck

Features 3 heads; 2 motors; auto bias/EQ; Dolby B; Dolby C; Dolby HX Pro; bias fine tuning; LED meters; headphone jack; rec mute; 0.2 sec auto-reverse; timer rec/play standby; micro-grain capstan. W&F 0.035% WRMS; FR ferric 20-16,000 Hz  $\pm$  3 dB, high bias 20-17,000 Hz  $\pm$  3 dB, metal 20-18,000 Hz  $\pm$  3 dB; S/N (A-wtd) metal: 68 dB Dolby B, 80 dB Dolby C; line-input sens for 0-dB reading 50 mV. 16 1/16" W x 4 3/8" H x 11 13/16" D; 11 lbs. \$360

### AD-S40 Dolby B & C Cassette Deck

Features 3 heads; 2 motors; auto bias/EQ; Dolby HX Pro; dual capstans; bias fine tuning; headphone jack; rec mute; computer designed keyboard front control panel; A.D.M.S.; electronic digital tape counter; feather-touch IC logic controls; cue & review; fluorescent peak meters. W&F 0.028% WRMS; FR ferric 20-16,000 Hz  $\pm$  3 dB, high bias 20-17,000 Hz  $\pm$  3 dB, metal 20-18,000 Hz  $\pm$  3 dB; S/N (A-wtd) metal: 78

dB Dolby C; line-input sens for 0-dB reading 50 mV; line output level with 0-dB indication 380 mV. 16 1/8" W x 4 3/8" H x 11 3/8" D; 10.4 lbs. \$320

### AD-R550U Auto-Reverse Cassette Deck

Features 2 heads; 2 motors; auto bias/EQ; Dolby B; Dolby C; Dolby HX Pro; bias fine tuning; music search; blank skip; output level control; mike inputs; headphone jack; rec mute; 0.2 sec auto-reverse; micro-grain capstans; timer standby; fluorescent peak meter; edit assist; IC logic controls. W&F 0.04% WRMS; FR ferric 25-13,000 Hz  $\pm$  3 dB, high bias 25-15,000 Hz  $\pm$  3 dB, metal 25-16,000 Hz  $\pm$  3 dB; S/N (A-wtd) metal: 65 dB Dolby B, 78 dB Dolby C; line-input sens for 0-dB reading 50 mV. 16 1/16" W x 4 3/8" H x 11 3/16" D; 11.4 lbs. \$250

### AD-S20 Dolby B & C Cassette Deck

Features 3 heads; 1 motor; auto bias/EQ; bias fine tuning; LED meters; headphone jack; rec mute; A.D.M.S.; feather-touch IC logic controls; cue & review; timer rec/play standby. W&F 0.065% WRMS; FR ferric 20-16,000 Hz  $\pm$  3 dB, high bias 20-17,000 Hz  $\pm$  3 dB, metal 20-18,000 Hz  $\pm$  3 dB; S/N (A-wtd) metal: 78 dB Dolby C; line-input sens for 0-dB reading 50 mV; line output level with 0-dB indication 380 mV. 16 1/8" W x 4 3/8" H x 11 1/8" D; 9.3 lbs. \$250

## AKAI

### GX-9 Dolby B & C Cassette Deck

Features 3 heads; 4 motors; auto bias/EQ; dual capstans; bias fine tuning; direct drive; elapsed-time counter; remaining-time counter; music search; output level control; memory stop/play; headphone jack; rec mute; direct lead-in and power eject; record cancel; auto fader; peak/spectrum display; super GX 3-head (glass & ferrite crystal) MPX filter. W&F 0.25% WRMS; FR ferric 20-19,000 Hz  $\pm$  3 dB, high bias 20-20,000 Hz  $\pm$  3 dB, metal 20-21,000 Hz  $\pm$  3 dB; S/N (A-wtd) metal: 60 dB no NR, 70 dB Dolby B, 80 dB Dolby C; line-input sens for 0-dB reading 70 mV; line output level with 0-dB indication 410 mV. 17.3" W x 4.1" H x 14.6" D; 15.4 lbs. \$500

### GX-R70 Auto-Reverse Cassette Deck

Dolby B, C and dbx cassette deck with super GX (ferrite and glass crystal) twin field head. Features 2 heads; 3 motors; auto bias/EQ; dual capstans; elapsed-time counter; music search; output level control; headphone jack; rec mute; computer record-level processing system (CRLP); auto fader. W&F 0.05% WRMS; FR ferric 20-17,000 Hz  $\pm$  3 dB, high bias 20-18,000 Hz  $\pm$  3 dB, metal 20-19,000 Hz  $\pm$  3 dB; S/N (A-wtd) metal: 60 dB no NR, 70 dB Dolby B, 80 dB Dolby C, 92 dB dbx; line-input sens for 0-dB reading 70 mV; line output level with 0-dB indication 410 mV. 17.3" W x 4.13" H x 11" D; 11 lbs. \$400

### GX-R55 Auto-Reverse Cassette Deck

Features 2 heads; 2 motors; Dolby B; Dolby C;

# CASSETTE DECKS

dual capstans; music search; blank skip; output level control; memory stop/play; mike inputs; headphone jack; rec mute; random music play system; record cancel; programmable intro-scan (1-29 sec); super GX (glass & ferrite crystal) twin field head; MPX filter. W&F 0.05% WRMS; FR ferric 20-17,000 Hz  $\pm$  3 dB, high bias 20-18,000 Hz  $\pm$  3 dB, metal 20-19,000 Hz  $\pm$  3 dB; S/N (A-wtd) metal: 60 dB no NR, 70 dB Dolby B, 80 dB Dolby C; line-input sens for 0-dB reading 70 mV; line output level with 0-dB indication 410 mV. 17.3" W x 4.1" H x 11.3" D; 10.6 lbs ..... \$360

## GX-R60 Auto-Reverse Cassette Deck

Features 2 heads; 3 motors; Dolby B; Dolby C; dbx; dual capstans; music search; output level control; headphone jack; rec mute; super GX (glass & ferrite crystal) twin field head. W&F 0.05% WRMS; FR ferric 20-17,000 Hz  $\pm$  3 dB, high bias 20-18,000 Hz  $\pm$  3 dB, metal 20-19,000 Hz  $\pm$  3 dB; S/N (A-wtd) metal: 60 dB no NR, 70 dB Dolby B, 80 dB Dolby C, 92 dB dbx; line-input sens for 0-dB reading 70 mV; line output level with 0-dB indication 410 mV. 17.3" W x 4.1" H x 11 D; 10.5 lbs ..... \$300

## HX-R40 Auto-Reverse Cassette Deck

Features 2 heads; 2 motors; Dolby B; Dolby C; dual capstans; music search; LED meters; mike inputs; headphone jack; rec mute. W&F 0.05% WRMS; FR ferric 20-16,000 Hz  $\pm$  3 dB, high bias 20-17,000 Hz  $\pm$  3 dB, metal 20-18,000 Hz  $\pm$  3 dB; S/N (A-wtd) metal: 58 dB no NR, 68 dB Dolby B, 78 dB Dolby C; line-input sens for 0-dB reading 70 mV; line output level with 0-dB indication 410 mV; mike input sens 2.5 mV. 17.3" W x 4.3" H x 9.8" D; 10 lbs ..... \$230

## GX-A5X dbx Cassette Deck

Features 2 heads; 1 motor; Dolby B; Dolby C; dbx; memory stop/play; mike inputs; headphone jack; rec mute; MPX filter; GX (glass & ferrite crystal) head; fluorescent display. W&F 0.05% WRMS; FR ferric 20-17,000 Hz  $\pm$  3 dB, high bias 20-18,000 Hz  $\pm$  3 dB, metal 20-19,000 Hz  $\pm$  3 dB; S/N (A-wtd) metal: 60 dB no NR, 70 dB Dolby B, 80 dB Dolby C, 92 dB dbx; line-input sens for 0-dB reading 70 mV; line output level with 0-dB indication 380 mV; mike input sens 2.5 mV. 17.3" W x 4.1" H x 11.2" D; 9 lbs ..... \$230

## BANG & OLUFSEN

### Beocord 9000 Stereo Cassette Deck

Top-loading stereo cassette deck with automatic computer-controlled calibration that automatically adjusts for specific tape formulation used. Features Dolby B & C NR and Dolby HX Pro (headroom-extension) systems; double Sendust/ferrite tape head with separate gaps for record and playback; manual switching system for normal/CrO<sub>2</sub>/metal tape formulations; special low-noise playback amplifier; -20 to +6 dB record/playback peak signal-level meters; automatic demagnetization; minutes/seconds tape counter; tape-end indicator; single-motor/capstan drive system. W&F DIN/WRMS <0.1%/<0.045%; FR 10-25,000 Hz  $\pm$  3 dB referred to 250 nWb/m, -20 dB, 20-20,000 Hz  $\pm$  1.5 dB all tape formulations; S/N B/C 68/79 dB Scotch Metal fine and Sony FeCr, 70/80 dB BASF chrome II, 64/74 dB BASF LHI tape; sep > 40 dB at 1 kHz; input sens/imp 0.4V/47k radio, 15 mV/22k ohms line, 0.15 mV/3K mic, 40 mV/22k ohms AUX; output level/imp 500-2000 mV/5/6k ohms radio, 10 V max/56 ohms headphones; fast-wind time 70 secs with C60 cassette; 20%\*W x 11 1/8"D x 5 1/8"H; 17 lb ..... \$1,299

### Beosystem 5000 Cassette Deck

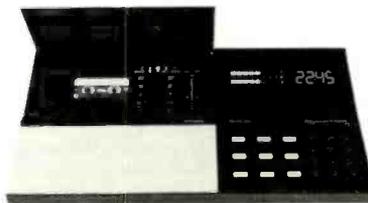
Stereo cassette deck with transport-in-a-drawer design and Dolby HX Professional headroom-extension system. Can be operated by remote control with Beomaster 5000 receiver and Master Control Panel or remote-control terminal. Features Dolby B and C NR; peak-reading meters; Auto Search; auto bias and EQ. W&F < $\pm$  0.078% WRMS; speed deviation < $\pm$  1.5%; FR 30-18,000 Hz  $\pm$  3 dB with chrome S/N 74 dB with metal tape ..... \$699

### Beocord 8004 Stereo Cassette Deck

Stereo cassette deck with Dolby B and C NR and Dolby HX-Pro headroom-extension system. Features auto normal/CrO<sub>2</sub>/metal bias selection; real-time calibration system that gives index to music in minutes and seconds; auto computer-controlled search; single-gap record/play head; auto demagnetizing; stop function that places 4-sec noise-free pause between cuts; timer start/stop function for record and play. Fast-wind time with C-60 tape 70 sec. FR 20-20,000 Hz  $\pm$  3 dB; W&F <0.045% WRMS; S/N 78 dB (metal, C); sep > 35 dB. 20 7/8" W x 11 1/8" D x 5 1/8" H; 16.5 lbs ..... \$699

### Beocord 2000 Stereo Cassette Deck

The cassette deck of Beosystem 2000 with same design as other Beosystem 3000 components. Features touch-sensitive controls; repeat of tape up to 4 times; fast-forward to next segment; LED peak program meter; auto head demagnetizing at end of record; Dolby B NR; metal/chrome EQ; MX permalloy tape head; W&F 0.08% WRMS; speed deviation  $\pm$  1.5%; FR 20-15,000 Hz  $\pm$  3 dB; S/N Dolby B, metal 64 dB, chrome 65 dB, ferro 63 dB; ch/sep 35 dB; erasure 70 dB; input 40 mV/22k ohms; output 660 mV/100 ohms; 16 1/2" W x 2 3/4" H x 9 7/8" D ..... \$450



Bang & Olufsen Beocord 9000

## DENON

### DRM-44HX dbx Cassette Deck

Features 3 heads; 3 motors; auto bias/EQ; Dolby B; Dolby C; Dolby HX Pro; dual capstans; bias fine tuning; manual azimuth adjust; direct drive; elapsed-time counter; remaining-time counter; music search; blank skip; output level control; memory stop/play; LED meters; soft-touch controls; mike inputs; headphone jack; rec mute; MPX filter; non-slip reel drive. W&F 0.035% WRMS; FR metal 25-20,000 Hz  $\pm$  3 dB; S/N (A-wtd) high bias: 75 dB no NR ..... \$600

### DRM-33HX Dolby B & C Cassette Deck

Features 3 heads; 3 motors; auto bias/EQ; Dolby HX Pro; dual capstans; bias fine tuning; manual azimuth adjust; direct drive; elapsed-time counter; remaining-time counter; music search; blank skip; output level control; memory stop/play; LED meters; soft-touch controls; mike inputs; headphone jack; rec mute; non-slip reel drive. W&F 0.04% WRMS; FR metal 25-20,000 Hz  $\pm$  3 dB; S/N (A-wtd) high bias: 75 dB no NR ..... \$500

### DRM-22 Dolby B & C Cassette Deck

Features 3 heads; 3 motors; auto bias/EQ; dual

capstans; bias fine tuning; manual azimuth adjust; direct drive; elapsed-time counter; remaining-time counter; music search; blank skip; output level control; memory stop/play; LED meters; soft-touch controls; mike inputs; headphone jack; rec mute; wireless remote. W&F 0.045% WRMS; FR metal 30-19,000 Hz  $\pm$  3 dB; S/N (A-wtd) metal: 73 dB no NR; line-input sens for 0-dB reading 77.5 mV; line output level with 0-dB indication 775 mV ..... \$400

### DRM-11 Dolby B & C Cassette Deck

Features 2 heads; 3 motors; bias fine tuning; elapsed-time counter; remaining-time counter; music search; output level control; memory stop/play; LED meters; soft-touch controls; mike inputs; headphone jack. W&F 0.045% WRMS; FR metal 30-18,000 Hz  $\pm$  3 dB; S/N (A-wtd) metal: 70 dB no NR; line output level with 0-dB indication 775 mV; mike input overload 77.5 mV ..... \$300

### DRM-10 Dolby B & C Cassette Deck

Features 2 heads; 3 motors; auto bias/EQ; bias fine tuning; output level control; memory stop/play; LED meters; soft-touch controls. W&F 0.05% WRMS; FR metal 33-17,000 Hz  $\pm$  3 dB; S/N (A-wtd) metal: 70 dB no NR. \$250

## FISHER

### CRW-52 Double Cassette Deck

Double high-speed dubbing cassette deck. Features Dolby B; Dolby C; elapsed-time counter; LED meters; soft-touch controls; headphone jack; synchronized high-speed dubbing; sequential play ..... \$250

### CRW-37 Double Cassette Deck

Double high-speed dubbing; Dolby B; Dolby C; elapsed-time counter; LED meters; soft-touch controls; headphone jack; synchronized dubbing; sequential play ..... \$200

## HARMAN KARDON

### CD491 Dolby B/C/HX Pro Cassette Deck

Ultrawideband cassette deck with direct-drive dual-capstan transport. Features 3 heads; 2 motors; Dolby B; Dolby C; Dolby HX Pro; bias fine tuning with record and bias calibration test-tone oscillators; music search; output level control; memory stop/play; logic control; weighted peak-hold LED meters; mike inputs; mike/line mixing; headphone jack; rec mute. Timer controllable. W&F 0.025% WRMS; FR with all tape types 20-24,000 Hz  $\pm$  3 dB; S/N (A-wtd, with high bias tape) 58 dB no NR, 66 dB Dolby B, 75 dB Dolby C; line-input sens for 0-dB reading 40 mV; line output level with 0-dB indication 420 mV; mike input sens 0.65 mV; mike input overload 18 mV. 17 3/8" W x 4 7/8" H x 13 1/2" D; 18 lbs ..... \$825

### TD392 Dolby B/C/HX Pro Cassette Deck

Cassette deck with 3 heads for monitoring during recording. Sendust record head, narrow-gap high-density ferrite play head. Features 1 motor; Dolby B; Dolby C; Dolby HX Pro; solenoid logic transport; bias fine tuning with test-tone oscillator; output level control; weighted LED meters; headphone jack; rec mute. W&F 0.05% WRMS; FR with all tape types 20-22,000 Hz  $\pm$  3 dB; S/N (A-wtd, with high bias tape) 58 dB no NR, 66 dB Dolby B, 75 dB Dolby C; line-input sens for 0-dB reading 50 mV; line output level with 0-dB indication 500 mV. 17 3/8" W x 4 7/8" H x 13 1/2" D; 16 lbs ..... \$550

### TD292 Dolby B/C Cassette Deck

Ultrawideband cassette deck with Dolby B and C. Sendust narrow-gap play/record head. Fea-

# CASSETTE DECKS

tures 1 motor; solenoid logic transport; auto repeat; bias fine tuning; peak-reading LED meters; MPX filter switch; headphone jack; rec mute. W&F 0.05% WRMS; FR with all tape types 20-21,000 Hz  $\pm$  3 dB; S/N (A-wtd, with high bias tape) 57 dB no NR, 65 dB Dolby B, 73 dB Dolby C; line-input sens for 0-dB reading 50 mV; line output level with 0-dB indication 500 mV. 17 $\frac{1}{8}$ " W x 4 $\frac{1}{8}$ " H x 13 $\frac{1}{2}$ " D; 16 lbs. \$335

## TD192 Dolby B Cassette Deck

Ultrawideband cassette deck with Dolby B and narrow-gap play/record head. Features 2 heads; 1 motor; solenoid logic controls; auto repeat; peak-reading LED meters; MPX filter switch; headphone jack; rec mute. W&F 0.05% WRMS; FR with all tape types 20-20,000 Hz  $\pm$  3 dB; S/N (A-wtd, with high bias tape, ref 250 nW/m) 57 dB no NR, 65 dB Dolby B; line-input sens for 0-dB reading 50 mV; line output level with 0-dB indication 500 mV. 17 $\frac{1}{8}$ " W x 4 $\frac{1}{8}$ " H x 13 $\frac{1}{2}$ " D; 16 lbs. \$250

## HITACHI

### D-X10 Cassette Deck

Quick auto reverse cassette deck with three heads and FL meter. Features 2 motors; auto reverse; auto bias/EQ; Dolby B; Dolby C; dual capstans; bias fine tuning; direct drive Unitorque motor; elapsed-time counter; remaining-time counter; music search; blank skip; output level control; memory stop/play; headphone jack; rec mute; auto tape response system; random programmability; scanning play. W&F 0.03% WRMS; FR high bias 20-20,000 Hz  $\pm$  3 dB, metal 20-21,000 Hz  $\pm$  3 dB; S/N (A-wtd) metal: 61 dB no NR, 69 dB Dolby B, 75 dB Dolby C; line-input sens for 0-dB reading 80 mV; line output level with 0-dB indication 500 mV. 17 $\frac{1}{8}$ " W x 4 $\frac{1}{2}$ " H x 11" D; 12 lbs. \$660

### D-W800 Double Cassette Deck

High-speed dubbing dual cassette deck with FL meter. Features feather-touch controls; Dolby B and C NR; mike inputs; DC servo motor; rec mute; headphone jack. W&F 0.04% A-wtd; FR metal 20-18,000 Hz; S/N metal 72 dB Dolby C; 17 $\frac{1}{8}$ " W x 4 $\frac{1}{8}$ " H x 10 $\frac{1}{16}$ " D; 10 lbs. \$390

### D-W440 Cassette Deck

High-speed dubbing dual cassette deck with LED meter. Features 2 heads; 2 motors; Dolby B; soft-touch controls; mike inputs; headphone jack; auto tape selector; continuous play (tape 1 to tape 2); one-touch dubbing. W&F 0.08% WRMS; FR high bias 20-16,000 Hz  $\pm$  3 dB, metal 20-17,000 Hz  $\pm$  3 dB; S/N (A-wtd) metal: 58 dB no NR, 66 dB Dolby B; line-input sens for 0-dB reading 80 mV; line output level with 0-dB indication 500 mV; mike input sens 0.8 mV. 17 $\frac{1}{8}$ " W x 4 $\frac{1}{8}$ " H x 9" D; 7 lbs. \$300

### D-X6 Auto-Reverse Cassette Deck

Quick auto-reverse cassette deck with FL meter. Features feather-touch controls; Dolby B and C NR; mike inputs; DC servo motor; headphone jack. W&F 0.04% A-wtd; FR metal 20-19,000 Hz; S/N metal 74 dB Dolby C; 17 $\frac{1}{8}$ " W x 4 $\frac{1}{8}$ " H x 10 $\frac{1}{16}$ " D; 9 lbs. \$290

### D-W400 Cassette Deck

Soft-touch dual cassette deck with LED meter. Features 2 heads; 2 motors; Dolby B; mike inputs; headphone jack; auto tape selector; continuous play (tape 1 to tape 2). W&F 0.08% WRMS; FR high bias 20-16,000 Hz  $\pm$  3 dB, metal 20-17,000 Hz  $\pm$  3 dB; S/N (A-wtd) metal: 58 dB no NR, 66 dB Dolby B; line-input sens for 0-dB reading 80 mV; line output level with 0-dB indication 500 mV; mike input sens 0.8 mV. 17 $\frac{1}{8}$ " W x 4 $\frac{1}{8}$ " H x 9" D; 7 lbs. \$200

## JVC

### DD-VR9 Cassette Deck

3-head U-turn quick auto-reverse cassette deck. Features direct drive; soft-touch controls; LED meters; Dolby and C NR; rec mute; headphone jack; auto bias/EQ; memory stop/play. W&F 0.035% WRMS; FR ferric, 25-17,000 Hz  $\pm$  3 dB; high bias, 25-18,000 Hz  $\pm$  5 dB; metal, 25-18,000 Hz  $\pm$  3 dB; S/N 60 dB with metal tape and no NR; line-input level for 0-dB meter indication 80 mV; line-output level with 0-dB indication 500 mV; 17 $\frac{1}{8}$ " W x 4 $\frac{1}{8}$ " H x 10 $\frac{1}{16}$ " H; 15.7 lbs. \$800

### DD-VR77 Auto-Reverse Cassette Deck

Hi-Fi U-turn quick auto-reverse cassette deck with direct drive. Features 3 heads; 3 motors; Dolby B; Dolby C; elapsed-time counter; remaining-time counter; music search; blank skip; output level control; memory stop/play; soft-touch controls; headphone jack; rec mute. W&F 0.035% WRMS; FR ferric 20-16,000 Hz  $\pm$  3 dB, high bias 20-17,000 Hz  $\pm$  3 dB, metal 20-17,000 Hz  $\pm$  3 dB; S/N (A-wtd) metal: 58 dB no NR; line-input sens for 0-dB reading 80 mV; line output level with 0-dB indication 300 mV. 17 $\frac{1}{8}$ " W x 4 $\frac{1}{8}$ " H x 11 $\frac{1}{8}$ " D; 11.4 lbs. \$500

### KD-V6 Dolby B & C Cassette Deck

Features soft-touch controls; LED meters; rec mute; headphone jack; auto bias/EQ. W&F 0.05%; FR ferric, 20-18,000 Hz  $\pm$  3 dB; high bias, 20-19,000 Hz  $\pm$  3 dB; metal, 20-19,000 Hz  $\pm$  3 dB; S/N 58 dB with metal tape and no NR; line-input level for 0-dB meter indication 80 mV; line-output level with 0-dB indication 300 mV; 17 $\frac{1}{8}$ " W x 4 $\frac{1}{8}$ " H x 11" D; 10 lbs. \$350

### KD-W55 Dolby B Cassette Deck

Double mechanism cassette deck with full logic. Features 3 heads; 4 motors; auto bias/EQ; music search; LED meters; soft-touch controls; mike inputs; headphone jack; rec mute; double speed dubbing with syncro start; random access programmability; computer shift control; blank search; blank skip; rewind and auto play; index scan. W&F 0.06% WRMS; FR ferric 30-15,000 Hz  $\pm$  3 dB, high bias 30-16,000 Hz  $\pm$  3 dB, metal 30-16,000 Hz  $\pm$  3 dB; S/N (A-wtd) metal: 58 dB no NR; line-input sens for 0-dB reading 80 mV; line output level with 0-dB indication 300 mV; mike input sens 0.25 mV. 17 $\frac{1}{8}$ " W x 4 $\frac{1}{8}$ " H x 11 $\frac{1}{4}$ " D; 10.8 lbs. \$340

### KD-VR5 Auto-Reverse Cassette Deck

Hi-Fi U-turn quick auto-reverse cassette deck with Dolby B and C. Features 2 heads; 3 motors; music search; music scan; blank skip; blank scan; index scan; memory stop/play; soft-touch controls; mike inputs; headphone jack; rec mute; digital peak display; auto fader; compu-scanning control; timer standby; Sen-Alley head; mechanism mode indicator. W&F 0.05% WRMS; FR ferric 30-15,000 Hz  $\pm$  3 dB, high bias 30-16,000 Hz  $\pm$  3 dB, metal 30-16,000 Hz  $\pm$  3 dB; S/N (A-wtd) metal: 58 dB no NR; line-input sens for 0-dB reading 80 mV; line output level with 0-dB indication 300 mV; mike input sens 0.4 mV. 17 $\frac{1}{8}$ " W x 4 $\frac{1}{8}$ " H x 11 $\frac{1}{8}$ " D; 10.3 lbs. \$320

### KD-VR320 Auto-Reverse Cassette Deck

Hi-Fi U-turn auto-reverse cassette deck with Dolby B and C. Features 2 heads; 3 motors; music search; music scan; blank skip; blank scan; index scan; soft-touch controls; mike inputs; headphone jack; rec mute; compu-scanning control; 2-color fluorescent peak meter; timer standby; mechanism mode indicator. W&F 0.05% WRMS; FR ferric 30-14,000 Hz  $\pm$  3 dB,

high bias 30-15,000 Hz  $\pm$  3 dB, metal 30-15,000 Hz  $\pm$  3 dB; S/N (A-wtd) metal: 58 dB no NR; line-input sens for 0-dB reading 80 mV; line output level with 0-dB indication 300 mV; mike input sens 0.4 mV. 17 $\frac{1}{8}$ " W x 4 $\frac{1}{8}$ " H x 11 $\frac{1}{8}$ " D; 9.5 lbs. \$250

### KD-W110 Dolby B Cassette Deck

Soft-touch cassette deck with Dolby B. Features LED meters; mike inputs; rec mute; headphone jack, black finish. W&F 0.08%; FR ferric, 30-15,000 Hz  $\pm$  3 dB; high bias, 30-16,000 Hz  $\pm$  3 dB; metal, 30-16,000 Hz  $\pm$  3 dB; S/N 58 dB with metal tape and no NR; line-input level for 0-dB indication 80 mV; line-output level with 0-dB indication 300 mV; 17 $\frac{1}{8}$ " W x 4 $\frac{1}{8}$ " H x 11" D; 10.3 lbs. \$250

### TD-W20 Dolby B & C Cassette Deck

Double mechanism cassette deck with logic control. Features 3 heads; 2 motors; auto bias/EQ (deck A); LED meters; soft-touch controls; mike inputs; double speed dubbing with syncro start; auto input selector. W&F 0.08% WRMS; FR ferric 40-14,000 Hz  $\pm$  3 dB, high bias 40-15,000 Hz  $\pm$  3 dB, metal 40-15,000 Hz  $\pm$  3 dB; S/N (A-wtd) metal: 58 dB no NR; line-input sens for 0-dB reading 80 mV; line output level with 0-dB indication 300 mV. 17 $\frac{1}{8}$ " W x 4 $\frac{1}{8}$ " H x 8 $\frac{1}{2}$ " D; 8.8 lbs. \$210



Kenwood KX-94W

## KENWOOD

### KX-94W(B) Double Cassette Deck

Auto-reverse double cassette deck with Dolby B and C NR. Features elapsed-time counter; mike inputs; full electronic logic control; continuous relay play; direct program search system; synchronized recording with KD-74F(B)/KD-64F(B); index scan; re-recording standby; automatic tape selector. W&F 0.06% WRMS; FR metal 20-18,000 Hz  $\pm$  3 dB; S/N (A-wtd) metal: 73 dB Dolby C; 16 $\frac{1}{32}$ " W x 4 $\frac{1}{32}$ " H x 10 $\frac{1}{8}$ " D; 9.7 lbs. \$365

### KX-74R(B) Auto-Reverse Cassette Deck

Features Dolby B and C NR; elapsed-time counter; mike inputs; rec mute; full electronic logic control; photo sensor auto reverse; rotary head system; direct program search system; index scan; auto record mute; 2-motor drive; synchronized recording with KD-74F(B)/KD-64F(B). W&F 0.06% WRMS; FR metal 20-18,000 Hz  $\pm$  3 dB; S/N (A-wtd) metal: 73 dB Dolby C. 16 $\frac{1}{32}$ " W x 4 $\frac{1}{32}$ " H x 10 $\frac{1}{8}$ " D; 8.1 lbs. \$275

## KYOCERA

### D-811 Dolby Hx Pro Cassette Deck

Features 2 heads; 3 motors; auto reverse; auto bias/EQ; Dolby B; Dolby C; dual capstans; bias fine tuning; direct drive; elapsed-time counter; remaining-time counter; digital electronic counter; output level control; memory stop/play; LED meters; soft-touch controls; mike inputs; headphone jack; rec mute; wireless remote. W&F 0.035% WRMS; FR ferric 20-

# CASSETTE DECKS

22,000 Hz  $\pm$  3 dB, high bias 20-20,000 Hz  $\pm$  3 dB, metal 20-20,000 Hz  $\pm$  3 dB; S/N (A-wtd) metal: 58 dB no NR, 10 dB Dolby B, 20 dB Dolby C; line-input sens for 0-dB reading 70 mV; line output level with 0-dB indication 580 mV; mike input sens 0.5 mV ..... \$625

## D-611 Dolby B & C Cassette Deck

Features 2 heads; 3 motors; auto reverse; auto bias/EQ; bias fine tuning; direct drive; output level control; memory stop/play; LED meters; soft-touch controls; mike inputs; headphone jack; rec mute; wireless remote. W&F 0.035% WRMS; FR ferric 20-22,000 Hz  $\pm$  3 dB, high bias 20-20,000 Hz  $\pm$  3 dB, metal 20-20,000 Hz  $\pm$  3 dB; S/N (A-wtd) metal: 58 dB no NR, 10 dB Dolby B, 20 dB Dolby C; line-input sens for 0-dB reading 70 mV; line output level with 0-dB indication 580 mV; mike input sens 0.5 mV. 18 1/8" W x 4" H x 12 1/8" D; 16 lbs ..... \$485

## LUXMAN

### K-03 Cassette Deck

Three-head cassette deck with direct-drive. Features 3 motors; Dolby B; Dolby C; dual capstans; bias fine tuning; direct drive; remaining-time counter; output level control; memory stop/play; headphone jack; rec mute; logic control; Duo-Beta circuitry. W&F 0.002% WRMS; FR ferric 20-20,000 Hz  $\pm$  3 dB, high bias 20-20,000 Hz  $\pm$  3 dB, metal 20-20,000 Hz  $\pm$  3 dB; S/N (A-wtd); ferric: 56 dB no NR, 64 dB Dolby B, 71 dB Dolby C, high bias: 58 dB no NR, 66 dB Dolby B, 73 dB Dolby C, metal: 60 dB no NR, 67 dB Dolby B, 73 dB Dolby C; line-input sens for 0-dB reading 150 mV; line output level with 0-dB indication 580 mV. 17 1/16" W x 6 3/8" H x 14 3/8" D ..... \$1,000

### K-405 Cassette Deck

Auto reverse cassette deck with Dolby BC and dbx. Features 2 heads; 3 motors; auto bias/EQ; Dolby B; Dolby C; dbx; dual capstans; music search; blank skip; output level control; memory stop/play; LED meters; headphone jack; rec mute; logic control; Duo-Beta circuitry. W&F 0.005% WRMS; FR metal 30-18,000 Hz  $\pm$  3 dB; S/N (A-wtd) metal: 60 dB no NR, 67 dB Dolby B, 71 dB Dolby C, 90 dB dbx; 17 1/16" W x 6 3/8" H x 14 3/8" D ..... \$900

### K-240 Dolby B and C Cassette Deck

Stereo cassette deck with full-logic soft-touch controls and Dolby B and C NR. Features music search system; auto tape selector; auto disc pause; memory play/rewind/repeat; bias fine tune; FL peak level meters; metal tape capability; headphone and mike jacks. FR 20-19,000 metal, to 18,000 chrome, to 17,000 ferric; S/N with metal tape >71 dB with Dolby C, >67 dB with Dolby B, >59 dB without NR; W&F 0.04% ..... \$300

### K-220 Dolby B and C Cassette Deck

Stereo cassette deck with Dolby B and C NR. Features FL peak level meters; soft-touch controls; metal-tape compatibility; headphone and mike jacks. FR 20-19,000 metal, to 18,000 chrome, to 17,000 ferric; S/N with metal tape >70 dB with Dolby C, >64 dB with Dolby B, >58 dB without NR; W&F 0.06% ..... \$200

## MARANTZ

### SD74 Auto-Reverse Cassette Deck

Features 3 heads; 2 motors; Dolby B; Dolby C; dbx; elapsed-time counter; remaining-time counter; music search; blank skip; LED meters; mike inputs; headphone jack; wireless remote; full logic; timer standby; auto tape selector; electronic counter; auto monitor; song repeat; index

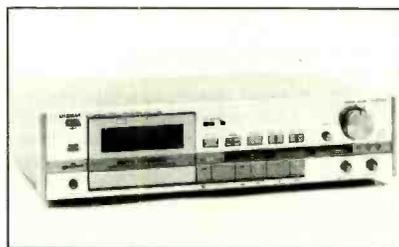
scan. W&F 0.08% WRMS; FR ferric 40-16,000 Hz  $\pm$  3 dB, high bias 40-18,000 Hz  $\pm$  3 dB, metal 40-19,000 Hz  $\pm$  3 dB; S/N (A-wtd) ferric: 52 dB no NR, 58 dB Dolby B, 66 dB Dolby C, 73 dB dbx; line-input sens for 0-dB reading 70 mV; line output level with 0-dB indication 400 mV. 16 3/8" W x 4 3/8" H x 13 3/8" D; 14.3 lbs ..... \$500

### SD551 Auto-Reverse Cassette Deck

Features 2 heads; 2 motors; Dolby B; Dolby C; dbx; music search; blank skip; LED meters; mike inputs; headphone jack; wireless remote; full logic; timer standby; auto tape selector; electronic counter; auto record mute. W&F 0.15% WRMS; FR ferric 40-12,500 Hz  $\pm$  3 dB, high bias 40-14,000 Hz  $\pm$  3 dB, metal 40-15,000 Hz  $\pm$  3 dB; S/N (A-wtd) ferric: 51 dB no NR, 57 dB Dolby B, 65 dB Dolby C, 72 dB dbx; line-input sens for 0-dB reading 70 mV; line output level with 0-dB indication 400 mV; mike input sens 0.3 mV. 16 1/2" W x 3 1/16" H x 10 1/4" D; 10.4 lbs ..... \$330

### SD351 Auto-Reverse Cassette Deck

Features 2 heads; 2 motors; Dolby B; Dolby C; music search; blank skip; LED meters; mike inputs; headphone jack; wireless remote; full logic; timer standby; auto tape selector; auto record mute; index scan. W&F 0.15% WRMS; FR ferric 40-12,500 Hz  $\pm$  3 dB, high bias 40-14,000 Hz  $\pm$  3 dB, metal 40-15,000 Hz  $\pm$  3 dB; S/N (A-wtd) ferric: 51 dB no NR, 57 dB Dolby B, 65 dB Dolby C; line-input sens for 0-dB reading 70 mV; line output level with 0-dB indication 400 mV; mike input sens 0.3 mV. 16 1/2" W x 3 1/16" H x 10 1/4" D; 9.9 lbs ..... \$250



Luxman K-405

### SD255 Double Cassette Deck

Features 2 heads; Dolby B; Dolby C; LED meters; soft-touch controls; mike inputs; headphone jack; auto tape selector. W&F 0.18% WRMS; FR ferric 40-12,500 Hz  $\pm$  3 dB, high bias 40-12,500 Hz  $\pm$  3 dB, metal 40-12,500 Hz  $\pm$  3 dB; S/N (A-wtd) ferric: 51 dB no NR, 57 dB Dolby B, 65 dB Dolby C; 16 1/2" W x 4 7/16" H x 10 1/4" D; 10.4 lbs ..... \$250

### SD155 Double Cassette Deck

Features 2 heads; Dolby B; LED meters; soft-touch controls; mike inputs; headphone jack; auto tape selector. W&F 0.18% WRMS; FR ferric 40-12,500 Hz  $\pm$  3 dB, high bias 40-12,500 Hz  $\pm$  3 dB, metal 40-12,500 Hz  $\pm$  3 dB; S/N (A-wtd) ferric: 51 dB no NR, 57 dB Dolby B, 16 1/2" W x 4 7/16" H x 10 1/4" D; 10.5 lbs ..... \$220

## MITSUBISHI

### DT-156 Cassette Deck

Dual cassette deck with 7 cassette auto-changes. Features 3 heads; 6 motors; auto reverse; Dolby B; music search; blank skip; memory stop/play; soft-touch controls; Programmable playback (up to 9 selections from side A or B of 7 cassettes); programmable record; double speed dubbing; blank skip; repeat playback. W&F 0.12% WRMS; FR ferric 30-16,000 Hz  $\pm$  3 dB, high bias 30-17,000 Hz  $\pm$  3 dB, S/N (A-wtd) high

bias: 58 dB no NR, 68 dB Dolby B. 16 1/16" W x 6 3/8" H x 11 1/16" D; 20 lbs ..... \$330

## NAD

### 6155 Dolby B/C/Hx Pro Cassette Deck

Cassette deck with Play Trim circuit to allow adjustment of playback EQ to compensate for differences in cassettes made on other decks. Also allows for overall high frequency compensation. Features Dolby B; Dolby C; Dolby HX Pro; DC servo motors; LED meters ..... \$348

### 6125 Cassette Deck

Cassette deck with Dolby B and C NR; peak reading LED meters; sensitive mike input; high transport headroom. Features low flutter transport, DC servo motors. W&F 0.05% JIS-weighting; FR ferric, 30-15,000 Hz  $\pm$  3 dB; high bias, 30-16,000 Hz  $\pm$  3 dB; metal, 30-17,000 Hz  $\pm$  3 dB. S/N at 3.0% distortion level, ferric tape, 56 dB no NR, 65 dB Dolby B; 70 dB Dolby C; high bias 57 dB no NR; 66 dB Dolby B; 71 dB Dolby C; metal 59 dB no NR, 67 dB Dolby B, 73 dB Dolby C; line-input level for 0-dB meter indication 580 mV; line-output level with 0-dB indication 580 mV; 16.5" W x 4" H x 9.5" D; 7 lbs 8 oz ..... \$198

## NAKAMICHI

### Dragon Stereo Cassette Deck

Microprocessor-controlled auto-reverse 3-head cassette deck with Dolby B and C NR. Features Auto Azimuth Correction system; asymmetrical diffused resonance transport; Super Linear Torque direct-drive motors; auto retracting slot guides; tape-pad lifter; auto tape slack take-up; 2-speed cueing; 2-speed master fader; auto rec pause; rec level and bias calibration controls with 2-tone oscillator; dual-gap ferrite/sendust erase head; separate tape and EQ switches for ZX, SX, and EX cassettes; direct-coupled recording and playback amplifiers; left, right, master input levels; output level control; rec mute; high-output headphone jack; defeatable infrasonic filter; 4-digit LED electronic counter with memory stop and repeat. W&F 0.019% wtd rms; FR 20-22,000 Hz  $\pm$  3 dB with ZX tape; S/N Dolby B/C on 66/72 dB at 400 Hz with 3% THD (A-wtd with ZX tape at 400Hz, 0 dB); sep/crosstalk 37/60 dB at 1,000 Hz, 0 dB; input sens/imp 50 mV/50k ohms line; output level/imp 1 V/2.2k ohms line. 45 mW/8 ohm headphones; 17 3/4" W x 5 1/8" H x 11 1/16" D; 21 lbs ..... \$1,850

### RX-505 Auto-Reverse Cassette Deck

Discrete 3-head stereo cassette deck with Unidirectional Auto Reverse to eliminate bidirectional azimuth error. Mechanism turns cassette over at end of side during record or playback. Features asymmetrical dual-capstan closed-loop transport; auto fade (20 secs before end of tape); Dolby B and C; DC servo motors; auto record pause; LED peak level meters reading from -40 to +10 dB; dual-speed master fader; punch-in recording; memory stop/play; soft-touch controls. W&F <0.04% wtd rms; FR 20-20,000 Hz  $\pm$  3 dB all tape types; S/N >70 dB with Dolby C and metal tape; THD <0.9% with ZX tape; line-input sens for 0-dB reading 50 mV; line-output level with 0-dB indication 1,000 mV; 17 3/4" W x 5 1/16" H x 11 1/16" D; 22 lbs ..... \$1,090

RX-202. Cassette deck similar to RX-505. W&F <0.06% wrms; 17 3/4" W x 5 3/8" H x 10" D; 19 lbs 13 oz ..... \$595

### MR-1 Discrete 3-Head Pro Cassette Deck

3-head cassette deck with Asymmetrical Dual-Capstan Diffused-Resonance Transport. Features Dolby B and C; 3 motors; memory stop;

# CASSETTE DECKS

rec mute; external NR loop accessed via standard phono jacks; dual 16-segment peak-reading electronic level meters; Crystalloy recording and play heads; subsonic filter; MPX filter;  $\pm 6\%$  pitch control front-panel  $\frac{1}{4}$ " balanced line-input jacks; rear balanced XLR input and output jacks; unbalanced  $\frac{1}{4}$ " rear jacks. Balanced inputs: imp 600 ohms; rated input level  $+4$  dBm; headroom 16 dB to max input level ( $+20$  dBm); min input level  $-6$  dBm. Unbalanced inputs: imp 100 kohm; nominal recording level with input of  $-20$  dBV (0.1 V); nominal input level 0.316 V. Comes with EIA standard rack-mount adapter. Optional remote control. W&F 0.027% WRMS,  $\pm 0.048\%$  wtd peak; FR 20-20,000 Hz  $\pm 3$  dB at  $-20$  dB ..... \$895

## BX-300 Cassette Deck

Discrete 3-head cassette deck with asymmetrical dual-capstan transport driven by direct-drive capstan motor. Features 3 heads; 3 motors; Dolby B; Dolby C; dual capstans; bias fine tuning; direct drive; output level control; memory stop/play; LED meters; soft-touch controls; headphone jack; rec mute; pitch control; wired remote control; 2-speed master fader; defeatable MPX filter; 2-position EQ switch; 3-position tape selector; separate L + R output level. W&F 0.027% WRMS; FR ferric 20-20,000 Hz  $\pm 3$  dB, high bias 20-20,000 Hz  $\pm 3$  dB, metal 20-20,000 Hz  $\pm 3$  dB; S/N (A-wtd) metal: 64 dB Dolby B, 70 dB Dolby C; line-input sens for 0-dB reading 50 mV; line output level with 0-dB indication 1,000 mV.  $16\frac{1}{16}$ " W x  $3\frac{1}{16}$ " H x  $9\frac{7}{8}$ " D; 12.4 lbs ..... \$695

## BX-125 Cassette Deck

Microprocessor-controlled silent mechanism 2-head cassette deck. Features 2 heads; 3 motors; Dolby B; Dolby C; output level control; memory stop/play; LED meters; soft-touch controls; headphone jack; 2-speed master fader; defeatable MPX filter; 2-position EQ switch; 3-position tape selector; separate L + R output level. W&F 0.06% WRMS; FR ferric 20-20,000 Hz, high bias 20-20,000 Hz, metal 20-20,000 Hz; S/N (A-wtd) metal: 62 dB Dolby B, 68 dB Dolby C; line-input sens for 0-dB reading 50 mV; line output level with 0-dB indication 500 mV.  $16\frac{1}{16}$ " W x  $3\frac{1}{16}$ " H x  $9\frac{7}{8}$ " D; 11 lbs ..... \$399

## NIKKO

### ND-1000C Dolby B & C Cassette Deck

Features 3 heads; 2 motors; auto bias/EQ; output level control; memory stop/play; LED meters; soft-touch controls; mike inputs; headphone jack; rec mute; rack mountable. W&F 0.05% WRMS; FR ferric 30-15,000 Hz  $\pm 3$  dB, high bias 30-19,000 Hz  $\pm 3$  dB, metal 30-20,000 Hz  $\pm 3$  dB; S/N (A-wtd) ferric: 75 dB no NR, high bias: 75 dB no NR, metal: 75 dB no NR; line output level with 0-dB indication 50 mV; mike input sens 0.25 mV.  $17\frac{1}{8}$ " W x  $4\frac{1}{2}$ " H x  $10"$  D; 13 lbs, 5 oz ..... \$550

### ND-750 Auto-Reverse Cassette Deck

Features 3 heads; 3 motors; Dolby B; Dolby C; dual capstans; music search; memory stop/play; LED meters; soft-touch controls; mike inputs; headphone jack; rec mute. W&F 0.045% WRMS; FR ferric 30-15,000 Hz  $\pm 3$  dB, high bias 30-16,000 Hz  $\pm 3$  dB, metal 30-18,000 Hz  $\pm 3$  dB; S/N (A-wtd) ferric: 73 dB no NR, high bias: 73 dB no NR, metal: 73 dB no NR. 8.6 lbs ..... \$300

## ONKYO

### TA-2090 Cassette Deck

Computer-controlled cassette deck with Dolby B, Dolby C, Dolby HX Pro, and dbx. Features 3

heads; 3 motors; auto bias/EQ; dual capstans; bias fine tuning; direct drive, elapsed-time counter; remaining-time counter; music search; output level control; memory stop/play; mike inputs; headphone jack; rec mute; remote control optional; record calibration controls; side panels optional; sendust heads; MPX filter; fluorescent meters; 2-color peak hold. W&F 0.02% WRMS; FR ferric 25-17,000 Hz  $\pm 3$  dB, high bias 25-19,000 Hz  $\pm 3$  dB, metal 25-21,000 Hz  $\pm 3$  dB; S/N (A-wtd) metal: 60 dB no NR, 70 dB Dolby B, 80 dB Dolby C, 87 dB dbx; line-input sens for 0-dB reading 60 mV; line output level with 0-dB indication 750 mV; mike input sens 0.6 mV; mike input overload 165 mV.  $17\frac{1}{16}$ " W x  $3\frac{1}{16}$ " H x  $15\frac{1}{16}$ " D; 20 lbs ..... \$800

### TA-RW11 Double Auto Reverse Cassette Deck

Computer-controlled double auto-reverse cassette deck with dubbing capabilities. Features 4 heads; 6 motors; auto reverse; Dolby B; Dolby C; music search; LED meters; mike inputs; headphone jack; rec mute; real-time dubbing; different size tape dubbing; continuous play 12 hours; dual azimuth adjust; photoelectric end of tape to leader detector; MPX filter. FR ferric 30-13,000 Hz  $\pm 3$  dB, high bias 30-14,000 Hz  $\pm 3$  dB, metal 30-15,000 Hz  $\pm 3$  dB; S/N (A-wtd) metal: 60 dB no NR, 70 dB Dolby B, 80 dB Dolby C; line-input sens for 0-dB reading 60 mV; line output level with 0-dB indication 500 mV; mike input sens 1 mV; mike input overload 100 mV.  $16\frac{1}{2}$ " W x  $4\frac{1}{8}$ " H x  $13\frac{1}{4}$ " D; 15 lbs ..... \$415



Parasound CD400

### TA-2056 Dolby B & C Cassette Deck

Computer-controlled cassette deck with MPX. Features 3 heads; 3 motors; dual capstans; bias fine tuning; elapsed-time counter; remaining-time counter; music search; memory stop/play; LED meters; mike inputs; headphone jack; rec mute; auto tape selector; preset level controls with master fader; hard permalloy heads. W&F 0.045% WRMS; FR ferric 30-16,000 Hz  $\pm 3$  dB, high bias 30-17,000 Hz  $\pm 3$  dB, metal 30-18,000 Hz  $\pm 3$  dB; S/N (A-wtd) metal: 60 dB no NR, 70 dB Dolby B, 80 dB Dolby C; line-input sens for 0-dB reading 60 mV; line output level with 0-dB indication 500 mV; mike input sens 1 mV; mike input overload 150 mV.  $17\frac{1}{8}$ " W x  $4\frac{3}{8}$ " H x  $14\frac{3}{8}$ " D; 14 lbs ..... \$395

### TA-R33 Auto-Reverse Cassette Deck

Computer-controlled cassette deck with auto reverse. Features 2 heads; 3 motors; Dolby B; Dolby C; music search; blank skip; memory stop/play; LED meters; mike inputs; headphone jack; rec mute; infrared end-of-tape-to-leader reversing detector; timer record/play; MPX filter; dual azimuth adjust for A & B sides; auto tape selector. FR ferric 30-14,000 Hz  $\pm 3$  dB, high bias 30-15,000 Hz  $\pm 3$  dB, metal 30-16,000 Hz  $\pm 3$  dB; S/N (A-wtd) metal: 60 dB no NR, 70 dB Dolby B, 80 dB Dolby C; line-input sens for 0-dB reading 60 mV; line output level with 0-dB indication 500 mV; mike input sens 1 mV; mike input overload 100 mV.  $16\frac{1}{2}$ " W x  $4\frac{3}{8}$ " H x  $10\frac{3}{4}$ " D; 11 lbs ..... \$315

### TA-2047B Dolby B & C Cassette Deck

Computer-controlled cassette deck with Dolby B and C. Features 2 heads; 3 motors; bias fine tuning; elapsed-time counter; remaining-time counter; music search; memory stop/play; LED meters; mike inputs; headphone jack; rec mute; MPX filter; subsonic filter; preset levels with master fader; auto tape select; remote control optional. W&F 0.045% WRMS; FR ferric 30-15,000 Hz  $\pm 3$  dB, high bias 30-16,000 Hz  $\pm 3$  dB, metal 30-17,000 Hz  $\pm 3$  dB; S/N (A-wtd) metal: 60 dB no NR, 70 dB Dolby B, 80 dB Dolby C; line-input sens for 0-dB reading 60 mV; line output level with 0-dB indication 500 mV; mike input sens 1 mV; mike input overload 150 mV.  $17\frac{1}{8}$ " W x  $4\frac{3}{8}$ " H x  $14\frac{3}{8}$ " D; 13 lbs; black only ..... \$300

### TA-R22 Auto-Reverse Cassette Deck

Computer-controlled cassette deck with Dolby B and C. Features 2 heads; 2 motors; music search; blank skip; LED meters; mike inputs; headphone jack; rec mute; infrared end-of-tape-to-leader detector; MPX filter. FR ferric 30-14,000 Hz  $\pm 3$  dB, high bias 30-15,000 Hz  $\pm 3$  dB, metal 30-16,000 Hz  $\pm 3$  dB; line-input sens for 0-dB reading 60 mV; line output level with 0-dB indication 500 mV; mike input sens 1 mV; mike input overload 100 mV.  $17\frac{1}{8}$ " W x  $4\frac{1}{2}$ " H x  $10\frac{1}{2}$ " D; 10 lbs ..... \$260

TA-R22B. Same as above in black ..... \$260

### TA-W55 High-Speed Dubbing Cassette Deck

Features 4 heads; 2 motors; Dolby B; music search; LED meters; soft-touch controls; mike inputs; rec mute; timer rec/play; continuous play; simultaneous play of 2 cassettes; 5 track mixing; auto tape selector; DC servo-controlled motors. W&F 0.07% WRMS; FR ferric 30-14,000 Hz  $\pm 3$  dB, high bias 30-15,000 Hz  $\pm 3$  dB, metal 30-16,000 Hz  $\pm 3$  dB; S/N (A-wtd) metal: 56 dB no NR, 66 dB Dolby B; line-input sens for 0-dB reading 60 mV; line output level with 0-dB indication 500 mV; mike input sens 1 mV; mike input overload 100 mV.  $17\frac{1}{8}$ " W x  $4\frac{1}{16}$ " H x  $10\frac{1}{16}$ " D; 12 lbs ..... \$250

TA-W55B. Same as above in black ..... \$250

## PARASOUND

### CD400 Cassette Deck

Cassette deck with Dolby B and C. Features 2 heads; 1 motor; music search; LED meters; soft-touch controls; mike inputs; headphone jack; stabilized DC servo-drive; removable cassette door. W&F 0.07% WRMS; FR ferric 30-15,000 Hz  $\pm 3$  dB, high bias 30-15,000 Hz  $\pm 3$  dB, metal 30-16,000 Hz  $\pm 3$  dB; S/N (A-wtd) ferric: 55 dB no NR, 64 dB Dolby B, 72 dB Dolby C; high bias: 56 dB no NR, 65 dB Dolby B, 72 dB Dolby C; metal: 58 dB no NR, 66 dB Dolby B, 73 dB Dolby C; line-input sens for 0-dB reading 58 mV; line output level with 0-dB indication 200 mV; mike input sens 0.4 mV; mike input overload 200 mV.  $17\frac{1}{4}$ " W x  $4\frac{1}{2}$ " H x  $10\frac{1}{2}$ " D; 10 lbs ..... \$230

## PIONEER

### CT-A9X Cassette Deck

3-head cassette deck with Reverse Master Mechanism. Features Dolby B; Dolby C; dual capstans; bias fine tuning; auto azimuth adjust; direct drive; remaining-time counter; music search; output level control; memory stop/play; soft-touch controls; headphone jack; auto rec mute; auto tape select; timer standby; ribbon sendust heads. W&F 0.018% WRMS; FR ferric 30-19,000 Hz  $\pm 3$  dB, high bias 25-20,000 Hz  $\pm 3$  dB, metal 25-21,000 Hz  $\pm 3$  dB; line-input sens for 0-dB reading 63 mV; line output level

# CASSETTE DECKS

with 0-dB indication 630 mV. 18" W x 5 1/4" H x 14 3/4" D; 21 lbs, 1 oz ..... \$800

## CT-A7X Cassette Deck

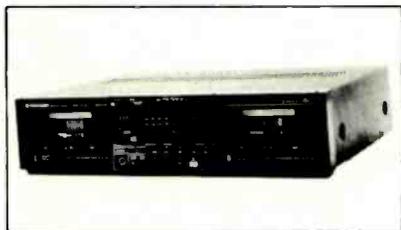
3-head cassette deck with Reference Master Mechanism. Features Dolby B; Dolby C; dual capstans; auto azimuth adjust; remaining-time counter; music search; soft-touch controls; auto rec mute; Ribbon sendust heads; auto tape loader; auto tape select; timer standby. W&F 0.028% WRMS; FR ferric 30-19,000 Hz  $\pm$  3 dB, high bias 25-19,000 Hz  $\pm$  3 dB, metal 25-20,000 Hz  $\pm$  3 dB; line-input sens for 0-dB reading 63 mV; line output level with 0-dB indication 630 mV. 18" W x 5 1/4" H x 14 3/4" D; 17 lbs, 7 oz ... \$500

## CT-Z99W Double Cassette Deck

Double cassette deck with Dolby B. Features 3 heads; high-speed dubbing; synchro start; relay play; auto fader; 7-band graphic equalizer; 4 motors; music search; LED meters; soft-touch controls; mike inputs; rec mute. Black. FR metal 25-17,000 Hz  $\pm$  3 dB; S/N (A-wtd) high bias: 55 dB no NR. 16 1/16" W x 6 1/8" H x 12 7/16" D; 17 lbs, 7 oz ..... \$500

## CT-S99WR Double Cassette Deck

Double cassette deck with auto reverse, Dolby B, C, and dbx. Features high-speed dubbing; synchro recording; relay play; auto tape selector; auto editing copy; 7-band graphic equalizer; 6 motors; music search; LED meters; rec mute. Black. FR metal 25-18,000 Hz  $\pm$  3 dB; S/N (A-wtd) high bias: 58 dB no NR. 16 1/16" W x 4" H x 12 7/16" D; 14 lbs, 10 oz ..... \$450



Pioneer CT-S99WR

## CT-V70 Double Auto-Reverse Cassette Deck

Features 4 heads; 6 motors; auto reverse; Dolby B; Dolby C; dbx; elapsed-time counter; music search; blank skip; memory stop/play; LED meters; soft-touch controls; headphone jack; rec mute; high speed dubbing; parallel record; synchro record; random programmable play and record. W&F 0.06% WRMS; FR ferric 25-17,000 Hz  $\pm$  3 dB, high bias 25-17,000 Hz  $\pm$  3 dB, metal 25-18,000 Hz  $\pm$  3 dB; S/N (A-wtd) ferric: 57 dB no NR, 67 dB Dolby B, 76 dB Dolby C, 92 dB dbx, high bias: 57 dB no NR, 67 dB Dolby B, 76 dB Dolby C, 92 dB dbx; line-input sens for 0-dB reading 63 mV; 16 1/16" W x 4" H x 12 3/8" D; 14.2 lbs. \$420

## CT-S88R Auto-Reverse Cassette Deck

Programmable auto-reverse cassette deck with Dolby B and C and dbx. Features 2 heads; 3 motors; auto tape selector; fluorescent meters; music search; blank skip; mike inputs; headphone jack; rec mute. Black. W&F 0.06% WRMS; FR metal 25-18,000 Hz  $\pm$  3 dB; S/N (A-wtd) high bias: 58 dB no NR. 16 1/16" W x 4" H x 12 3/8" D; 12 lbs, 2 oz ..... \$325

## CT-S77W Double Cassette Deck

Double cassette deck with Dolby B and C. Features high-speed dubbing; synchro start; relay play; 2 motors; LED meters; soft-touch controls.

Black. W&F 0.07% WRMS; FR metal 25-17,000 Hz  $\pm$  3 dB; S/N (A-wtd) high bias: 58 dB no NR. 16 1/16" W x 4 1/16" H x 10 3/8" D; 10 lbs, 9 oz ..... \$240

## CT-S66R Auto-Reverse Cassette Deck

2-head auto-reverse cassette deck with Dolby B and C and dbx. Features 3 motors; music search; LED meters; mike inputs; rec mute. W&F 0.08% WRMS; FR metal 25-17,000 Hz  $\pm$  3 dB; S/N (A-wtd) high bias: 58 dB no NR. 16 1/16" W x 4" H x 8 1/16" D; 8 lbs, 6 oz ..... \$230

## PROTON

### 740 Auto-Reverse Cassette Deck

Full-logic controlled cassette deck with Dolby B, C, and dbx. Features 2 heads; 1 motor; auto bias/EQ; elapsed-time counter; music search; output level control; memory stop/play; LED meters; soft-touch controls; mike inputs; headphone jack; rec mute; sleep timer function; 9 program memory selection; adaptable to a timer for playback or record. W&F 0.05% WRMS; FR ferric 25-16,000 Hz  $\pm$  3 dB, high bias 25-18,000 Hz  $\pm$  3 dB, metal 25-19,000 Hz  $\pm$  3 dB; S/N (A-wtd) ferric: 49 dB no NR, 58.5 dB Dolby B, 68 dB Dolby C, 78 dB dbx, high bias: 53 dB no NR, 62 dB Dolby B, 71.5 dB Dolby C, 85 dB dbx, metal: 53 dB no NR, 60 dB Dolby B, 70 dB Dolby C, 95 dB dbx; line-input sens for 0-dB reading 90 mV; line output level with 0-dB indication 700 mV; mike input sens 0.35 mV. \$330

### 720 Dolby B and C Cassette Deck

Stereo cassette deck with Dolby B and C. Features soft-touch operation; one-touch record; bias circuit to reduce crosstalk and channel separation; defeatable MPX filter; LED record indicators; balance control; mike inputs; headphone jack; mike/line mixing capability. W&F 0.8%; FR ferric, 30-17,000 Hz  $\pm$  3 dB; high bias, 17,000 Hz  $\pm$  3 dB; metal, 30-18,000 Hz  $\pm$  3 dB; at 3.0% distortion level with A or CCIR/ARM ferric, 65.5 dB with Dolby B, 74 dB with C; high bias, 69.5 dB with Dolby B; 78 dB with C; metal, 69.5 dB with Dolby B, 78 dB with C; line-input level for 0-dB meter indication 0.4 line-output level with 0-dB indication 580 mV; 16 1/2" W x 4 3/8" H x 9 3/4" D; 15 lbs ..... \$240

## RCA

### MTR-120 Dimensia Cassette Deck

Auto-reverse cassette deck with automatic status indication, switching and control indication; system record protection logic; system link cabling; screen displays for volume mute (volume graphics) and all deck functions. Features Dolby B; Dolby C; dual capstans; music search; output level control; soft-touch controls; mike inputs; headphone jack; rec mute. Programmable for 15 tracks and works with Dimensia 256 function remote control. W&F 0.06% WRMS; FR ferric 20-16,000 Hz  $\pm$  3 dB, high bias 20-18,000 Hz  $\pm$  3 dB, metal 20-19,000 Hz  $\pm$  3 dB; S/N (A-wtd) metal: 59 dB no NR, 68 dB Dolby B, 74 dB Dolby C; line-input sens for 0-dB reading 55 mV 200 kohms or more; line output level with 0-dB indication 500 mV 50 kohms or more; mike input sens 0.4 mV. 17 1/8" W x 4 1/2" H x 11 1/8" D; 10 lbs ..... \$349

## REALISTIC

### SCT-80 Dolby B & C Cassette Deck

Features 2 heads; auto-reverse; auto bias selector; slide-action record level controls; auto-record mute; record, pause indicators; 3-digit tape counter; 1/4" mike and headphone jacks; high-speed auto music search; 2-color 8-segment peak LED meters. FR 40-16,000 Hz  $\pm$  3 dB FR metal, 40-15,000 Hz  $\pm$  3 dB high bias and nor-

mal, W&F 0.07% WRMS; S/N 72 dB Dolby C; 1.5% 3rd HD. 4" x 17" x 10 1/8" ..... \$239

## SCT-60 Double Cassette Deck

Features 2 heads (each deck); Dolby B & C; high-speed dubbing; soft-touch controls; full auto-stop; bias selector for both decks; record mute; separate record-level controls; LED power indicator; 3-digit tape counter; 1/4" mike and headphone jacks; auto continuous-play mode; 2-color 5-LED peak level meters. FR 40-14,000 Hz  $\pm$  3 dB metal, 40-13,000 Hz  $\pm$  3 dB high bias, 40-12,000 Hz  $\pm$  3 dB normal; W&F 0.1% WRMS; S/N 70 dB Dolby C; dist 1.2% 3rd HD. 5" x 16 1/2" x 8 3/8" ..... \$200

## REVOX

### B215 Cassette Deck

Cassette deck with 3 microprocessors for control of bias, level, EQ, transport, and real-time counter. Features 3 heads; 4 motors; digital storage of bias, level, EQ settings for 6 tape formulations; manual or auto record-level setting; die-cast transport chassis; azimuth-stable pivoting headblock; 2 programmable locate buttons; loop mode; auto start-of-record locate. Counter computes elapsed time on partially wound tapes. W&F 0.1% WRMS; FR ferric 30-18,000 Hz  $\pm$  3 dB, high bias and metal 30-20,000 Hz  $\pm$  3 dB; S/N (A-wtd) ferric: 55 dB no NR, 64 dB Dolby B, 70 dB Dolby C, high bias: 57 dB no NR, 65 dB Dolby B, 72 dB Dolby C, metal: 58 dB no NR, 66 dB Dolby B, 72 dB Dolby C; line-input sens for 0-dB reading 50 mV; line output level with 0-dB indication 775 mV; 17.7" W x 6" H x 13" D ..... \$1,400

## ROTEL

### RD850 Stereo Cassette Deck

Cassette deck with Sendust rec/play head, ferrite core erase head. Features soft-touch controls; LED meters; Dolby B and C NR; mike inputs; DC servo motors; headphone jack. W&F 0.08% WRMS; FR ferric 30-17,000 Hz  $\pm$  3 dB, high bias 30-17,000 Hz  $\pm$  3 dB, metal 30-18,000 Hz  $\pm$  3 dB; S/N high bias: 55 dB no NR, 64 dB Dolby B, 72 dB Dolby C; 17" W x 4 1/2" H x 10 1/8" D; 9.1 lbs ..... \$199

## SAE

### C101 Cassette Deck

Full-logic microprocessor cassette deck. Features 3 heads; 2 motors; LED meters; Dolby B; Dolby C; memory stop/play; Sendust heads; remote control optional. W&F 0.06% WRMS; FR ferric 20-20,000 Hz  $\pm$  3 dB for all tape types. S/N high bias: 55 dB no NR, 66 dB Dolby B, 75 dB Dolby C; line-input level for 0-dB reading 70 mV; line-output level with 0-dB indication 650 mV; 19" W x 5.25" H x 12.5" D; 17 lbs. . \$650

### C102 Cassette Deck

Full-logic microprocessor cassette deck. Features tape transport encased in electronic sliding drawer; 2 heads; 2 motors; Dolby B; Dolby C; manual azimuth adjust; elapsed-time counter; remaining-time counter; music search; blank skip; memory stop/play; LED meters; rec mute; Sendust heads. W&F 0.06% WRMS; FR 20-20,000 Hz for all tape types; S/N (A-wtd) high bias: 55 dB no NR, 65 dB Dolby B, 74 dB Dolby C; line-input sens for 0-dB reading 70 mV; line output level with 0-dB indication 650 mV. 19" W x 3.5" H x 14" D; 18 lbs ..... \$429

### C2 Dolby B and C Cassette Deck

Stereo cassette deck with full logic transport control system. Features LED meters, Dolby B and C NR, mike inputs, memory stop/play; remote control optional for \$50. W&F 0.06%; FR

# CASSETTE DECKS

ferric 30-14,000 Hz  $\pm 3$  dB; high bias, 30-16,000 Hz  $\pm 2.5$  dB; metal, 30-18,000 Hz  $\pm 2.5$  dB. S/N ferric 52 dB no NR, 60 dB Dolby B, 68 dB Dolby C; S/N high bias 55 dB no NR, 63 dB Dolby B, 70 dB Dolby C; S/N metal 57 dB no NR, 65 dB Dolby B, 70 dB Dolby C. Line-input level for 0-dB meter indication 57 mV; line-input level with 0-dB indication 350 mV; 16.5" W x 14" H x 4.2" H; 11 lbs ..... \$299

## SANSUI

### D-905R Auto-Reverse Cassette Deck

Auto-reverse cassette deck with 3 heads and 2 motors. Features auto bias/EQ; Dolby B; Dolby C; bias fine tuning; direct drive; elapsed time counter; remaining time counter; music search; blank skip; output level control; LED meters; headphone jack; rec mute; random music program search; electronic tape tension control system; timer switch; optional wired remote. W&F 0.038% WRMS; FR metal 20-19,000 Hz; S/N A-weighted metal 60 dB no NR, 68 dB Dolby B NR, 82 dB Dolby C NR. 17 $\frac{1}{2}$ " W x 4 $\frac{1}{16}$ " H x 11 $\frac{1}{4}$ " D; 11 lbs ..... \$699

### D-990R Auto-Reverse Cassette Deck

Quick auto-reverse microprocessor-controlled cassette deck with Dolby B and C and dbx NR. Features built-in 5-band graphic equalizer; Introskip Play; blank search; peak level meter; pitch control ( $\pm 5\%$ ); electronic 4-digit tape counter and real-time display; 15-selection Auto Music Program Search; quiet pause switch; 3 motors; 2 heads; wired remote control. W&F 0.04%; S/N 78 dB with Dolby C; FR 20-19,000 Hz with metal tape. Black or silver. .... \$649



Sansui D-W10

### D-W10 Double Cassette Deck

Double auto-reverse high-speed dubbing cassette deck. Features 2 heads and 2 motors for each transport; Compu-Edit; 16-track RMPS; 15-track Automatic Music Program Search; auto fader; rec cancel; intro skip; timer record/play; manual and auto level controls; auto bias/EQ; Dolby B; Dolby C; dual capstans; auto azimuth adjust; elapsed-time counter; music search; blank skip; memory stop/play; LED meters; mike inputs; headphone jack; rec mute; black or silver. W&F 0.05% WRMS; FR metal 30-17,000 Hz  $\pm 3$  dB; S/N (A-wtd) metal: 57 dB no NR, 66 dB Dolby B, 73 dB Dolby C. 16 $\frac{1}{16}$ " W x 4 $\frac{3}{8}$ " H x 12" D; 13.4 lbs ..... \$499

### D-95WR Double Cassette Deck

Double auto-reverse high-speed dubbing cassette deck. Features 2 heads and 2 motors in each transport; normal or double-speed dubbing; Compu-Edit; relay play; 15-track RMPS; rec cancel; program skip; intro skip; auto fader; auto level control; auto bias/EQ; Dolby B; Dolby C; auto azimuth adjust; elapsed-time counter; music search; blank skip; headphone jack; rec mute; black or silver. W&F 0.06% WRMS; FR metal 20-17,000 Hz  $\pm 3$  dB S/N 78 dB Dolby C. 16 $\frac{1}{16}$ " W x 4 $\frac{1}{16}$ " H x 8 $\frac{1}{16}$ " D; 11.9 lbs ..... \$480

### D-W9 Double Cassette Deck

Stereo cassette deck with 2 transports for simultaneous or sequential recording. Features full-

logic controls; 15-selection Random Music Program Search; 3-function memory; Dolby B and C NR; auto bias and EQ; 4-sec record mute; auto leader bypass; timer record and playback capability; 6-segment peak level display; auto level control. FR 30-18,000 Hz; W&F 0.04% WRMS; S/N 78 dB with Dolby C. 14 lbs; black or silver ..... \$449

### D-75CW Double Cassette Deck

High-speed dubbing deck with auto program search, Compu-Edit, and Compu-Selector system. Features direct drive; dual capstans; soft-touch controls; Dolby B and C NR; rec mute; auto bias/EQ set; memory stop/play. W&F 0.05% WRMS; FR metal 20-16,000 Hz  $\pm 3$  dB; S/N 78 dB Dolby C. Black or silver ..... \$380

### D-75BW Double Cassette Deck

Dual-transport stereo cassette deck with Compu-Edit for synchronization with some Sansui turntables. Features separate record/play and play-only transports; Auto Music Program Search; play one transport while recording on other; full IC-logic transport controls; auto level control; Compu-Selector for 1-touch operation with some Sansui amplifiers/receivers; provision for external timer operation. W&F 0.05% WRMS; FR 20-16,000 Hz  $\pm 3$  dB; S/N 68 dB Dolby B. Black or silver ..... \$270

### D-65CR Auto-Reverse Cassette Deck

Bidirectional record/play stereo cassette deck with Compu-Edit to make recording easy with Sansui turntables. Features Auto Level Control; Auto Music Program Search; IC-controlled transport; Compu-Selector system; Dolby B. W&F 0.05% WRMS; FR 20-16,000 Hz  $\pm 3$  dB; S/N 78 dB with Dolby C ..... \$240

## SANYO

### RDW77 Double Cassette Deck

Dual-transport cassette deck with auto reverse. Features high-speed dubbing; Dolby B; metal tape capability; auto stop; 3 heads. W&F 0.1% WRMS; FR high bias 40-15,000 Hz  $\pm 3$  dB, metal 40-16,000 Hz  $\pm 3$  dB; S/N (A-wtd) metal: 57 dB no NR, 65 dB Dolby B. 16.5" W x 4" H x 8.9" D ..... \$200

### RDW55 Double Cassette Deck

Auto-reverse double cassette deck with synchronized and high-speed dubbing. Features 2 heads; 1 motor; Dolby B; manual azimuth adjust; LED meters; mike inputs; soft-touch mechanism; continuous play; headphone jack. W&F 0.1% WRMS; FR ferric 40-12,500 Hz, high bias 40-13,000 Hz, metal 40-14,000 Hz, all  $\pm 3$  dB; S/N (A-wtd) metal 60 dB Dolby B; line-input sens for 0-dB reading 100 mV; line output level with 0-dB (Dolby level) indication 400 mV; mike input sens 0.5 mV. 16 $\frac{1}{4}$ " W x 5 $\frac{1}{4}$ " H x 8 $\frac{3}{4}$ " D; 3.5 lbs ..... \$130

## SCOTT

### 695DD Dubbing Cassette Deck

IC logic cassette deck with random programming playback. Features 2 heads; 4 motors; Dolby B; Dolby C; elapsed-time counter; remaining-time counter; music search; blank skip; output level control; memory stop/play; mike inputs; headphone jack; rec mute; 3-way mixing; high speed dubbing; repeat play; tape standby; auto Dolby off; timer play/rec; fluorescent level meters; metal tape compatibility. W&F 0.04% WRMS; FR ferric 30-14,000 Hz  $\pm 3$  dB, high bias 30-15,000 Hz  $\pm 3$  dB, metal: 30-16,000 Hz  $\pm 3$  dB; S/N (A-wtd) metal 58 dB no NR, 66 dB Dolby B, 72 dB Dolby C; line-input sens for 0-dB reading 80 mV; line output level with 0-dB

indication 500 mV; mike input sens 0.4 mV. 17" W x 4 $\frac{1}{4}$ " H x 10 $\frac{1}{4}$ " D; 10.5 lbs ..... \$400

### 685DD High Speed Dubbing Cassette Deck

Features 2 heads; 2 motors; Dolby B; elapsed-time counter; output level control; LED meters; soft-touch controls; mike inputs; headphone jack; rec mute; continuous playback damped eject; mixing; record; timer start; metal compatibility; auto play after rewind. W&F 0.08% WRMS; FR ferric 30-14,000 Hz  $\pm 3$  dB, high bias 30-15,000 Hz  $\pm 3$  dB, metal 30-16,000 Hz  $\pm 3$  dB; S/N (A-wtd) metal: 58 dB no NR, 66 dB Dolby B; line-input sens for 0-dB reading 80 mV; line output level with 0-dB indication 500 mV. 17" W x 4 $\frac{1}{4}$ " H x 10 $\frac{1}{4}$ " D; 9.5 lbs ..... \$300

## SHARP

### RT-350 Auto-Reverse Cassette Deck

Stereo cassette deck with Dolby B and C NR and auto reverse. Features full-logic control; auto program search; intro-scan; blank tape pass to skip blanks  $> 30$  sec; auto tape selector for metal, CrO<sub>2</sub>, normal tapes; 2-color LED peak-level meters. W&F 0.07% wrms; FR 40-15,000 Hz  $\pm 3$  dB metal, 30-13,000 CrO<sub>2</sub>, 40-12,000 normal tape; S/N Dolby off 57 dB, with Dolby B up 10 dB over 5 kHz, with C up 20 dB 1-10 kHz. 16 $\frac{1}{16}$ " W x 9 $\frac{7}{8}$ " D x 4 $\frac{1}{8}$ " H; 12.8 lb. \$240

### RT-1010 Cassette Deck

Double cassette deck with high speed dubbing, continuous playback. Features synchronous dubbing start; soft-eject; 3 heads; 2 motors; Dolby B; music search; LED meters; soft-touch controls; mike inputs; headphone jack; rec mute. W&F 0.07% wrms; FR ferric 40-13,000 Hz  $\pm 3$  dB, high bias 40-14,000 Hz  $\pm 3$  dB, metal 40-16,000 Hz  $\pm 3$  dB; S/N (A-wtd) high bias: 56 dB no NR, 66 dB; line-input sens for 0-dB reading 50 mV; line output level with 0-dB indication 550 mV; mike input sens 0.2 mV. Available in black or silver. 17" W x 4 $\frac{3}{8}$ " H x 8 $\frac{1}{16}$ " D; 8.2 lbs ..... \$200

## SHERWOOD

### S-250 CP Dolby B/C Cassette Deck

Metal-capable stereo cassette deck with Dolby B and C NR. Features Dynalloy tape heads; normal/CrO<sub>2</sub>/metal tape selector; soft-touch transport controls; 12-segment LED level meters. W&F  $< 0.06\%$  WRMS; FR 30-19,000 Hz  $\pm 1/3$  dB; S/N  $> 76$  dB with Dolby C; THD 3%; 17 $\frac{1}{2}$ " W x 15 $\frac{1}{2}$ " D x 4 $\frac{3}{8}$ " H ..... \$250

### S-260 R Auto-Reverse Cassette Deck

Cassette deck with 3-mode auto reverse. Features 2 heads; Dolby B; Dolby C; bias fine tuning; music search; memory stop/play; LED meters; soft-touch controls; mike inputs; headphone jack; rec mute; auto music search; permalloy head; function indicators; damped cassette door. W&F 0.08% WRMS; FR ferric 25-16,000 Hz  $\pm 3$  dB, high bias 25-16,500 Hz  $\pm 3$  dB, metal 25-17,500 Hz  $\pm 3$  dB; S/N (A-wtd) high bias: 56 dB no NR, 65 dB Dolby B, 73 dB Dolby C; line-input sens for 0-dB reading 70 mV; line output level with 0-dB indication 500 mV; mike input sens 0.7 mV. 17.3" W x 4.5" H x 11" D; 14.8 lbs ..... \$250

### S-270 DD Double Cassette Deck

Metal-capable cassette deck with Dolby NR. Features 2 heads; bias fine tuning; 3-digit counter; LED meters; permalloy head; soft-touch controls; mike inputs; headphone jack; high-speed dubbing; continuous playback; mike mixing, one-touch dubbing; function indicators; damped cassette doors; separate L/R input level controls. W&F 0.10% WRMS; FR ferric 30-

# CASSETTE DECKS

15,500 Hz  $\pm 3$  dB, high bias 30-16,000 Hz  $\pm 3$  dB, metal 30-16,500 Hz  $\pm 3$  dB; S/N (A-wid) high bias: 56 dB no NR, 65 dB Dolby B; line-input level sens for 0-dB reading 70 mV; line output level with 0-dB indication 500 mV; mike input sens 0.7 mV. 17.3" W x 4.5" H x 11" D; 14 lbs ..... \$230

## SONY

### TC-K66SES Three-Head Cassette Deck

3-head direct-drive cassette deck with variable bias and EQ. Features direct drive; dual capstan; closed loop; LED meters; Dolby B and C NR; DC servo motors; rec mute; headphone jack; auto bias/EQ; memory stop/play; remote-control option \$25. W&F 0.025% A-wid; FR ferric 20-18,000 Hz  $\pm 3$  dB; high bias 20-19,000 Hz  $\pm 3$  dB; metal 20-20,000 Hz  $\pm 3$  dB. S/N: ferric 58 dB no NR, 64 dB Dolby B, 70 dB Dolby C; high bias, 60 dB no NR, 67 dB Dolby B, 73 dB Dolby C; metal, 62 dB no NR, 68 dB Dolby B, 74 dB Dolby C; line-input level for 0-dB meter indication 775 mV; line-output level with 0-dB indication 435 mV; 26 lb; 17" W x 4 1/4" H x 15 1/4" D ..... \$650



Sony TC-W5

### TC-K55SES Three-Head Cassette Deck

Three-head cassette deck. Features dual capstans; closed-loop; LED meters; Dolby B and C NR; DC servo motors; rec mute; headphone jack; memory stop/play; remote-control option \$25. W&F 0.04% A-wid; FR ferric, 25-16,000 Hz  $\pm 3$  dB; high bias, 25-18,000 Hz  $\pm 3$  dB; metal, 25-19,000 Hz  $\pm 3$  dB; S/N ferric 56 dB no NR, 63 dB Dolby B, 69 dB Dolby C; high bias, 58 dB no NR, 65 dB Dolby B, 72 dB Dolby C; line-input level for 0-dB meter indication 77.5 mV; line-output level with 0-dB indication 435 mV; 17" W x 4 1/4" H x 11 1/4" D; 13 lb., 8 oz. .... \$500

### TC-V77WR Double Cassette Deck

Double cassette deck with high-speed dubbing. Features 2 heads; 2 motors; auto reverse; auto bias/EQ; Dolby B; Dolby C; elapsed-time counter; music search; blank skip; memory stop/play; LED meters; feather-touch controls; headphone jack; rec mute; wireless remote. W&F 0.45% WRMS; FR ferric 30-15,000 Hz  $\pm 3$  dB, high bias 30-17,000 Hz  $\pm 3$  dB, metal 30-17,000 Hz  $\pm 3$  dB; S/N (A-wid) ferric: 54 dB no NR, 61 dB Dolby B, 67 dB Dolby C; high bias: 58 dB no NR, 65 dB Dolby B, 71 dB Dolby C; metal: 59 dB no NR, 66 dB Dolby B, 72 dB Dolby C; line-input sens for 0-dB reading 77.5 mV; line output level with 0-dB indication 0.44 mV. 17" W x 3 1/8" H x 14" D; 15 lbs ..... \$479

### TC-K501R Auto-Reverse Cassette Deck

Features 2 heads; 2 motors; auto bias/EQ; Dolby B; Dolby C; auto Dolby calibration; dual capstans; elapsed-time counter; music search; blank skip; memory stop/play; LED meters; feather-touch controls; mike inputs; headphone jack; rec mute; wireless remote; automatic record-level control. W&F 0.04% WRMS; FR ferric 30-15,000 Hz  $\pm 3$  dB, high bias 30-17,000 Hz  $\pm 3$  dB, metal 30-17,000 Hz  $\pm 3$  dB; S/N (A-wid) ferric: 54 dB no NR, 61 dB Dolby B, 67 dB Dolby C; high bias: 58 dB no NR, 65 dB Dolby B, 71 dB Dolby C; metal: 59 dB no NR, 66 dB Dolby B, 72 dB Dolby C; line-input sens for 0-

dB reading 77.5 mV; line output level with 0-dB indication 0.44 mV. 17" W x 4 1/8" H x 13" D; 13 lbs ..... \$450

### TC-FX520R Auto-Reverse Cassette Deck

Features 2 heads; 2 motors; auto bias/EQ; Dolby B; Dolby C; dual capstans; elapsed-time counter; music search; blank skip; memory stop/play; LED meters; feather-touch controls; mike inputs; headphone jack; rec mute; wireless remote. W&F 0.045% WRMS; FR ferric 30-15,000 Hz  $\pm 3$  dB, high bias 30-17,000 Hz  $\pm 3$  dB, metal 30-17,000 Hz  $\pm 3$  dB; S/N (A-wid) ferric: 53 dB no NR, 60 dB Dolby B, 66 dB Dolby C; high bias: 57 dB no NR, 64 dB Dolby B, 70 dB Dolby C; metal: 58 dB no NR, 65 dB Dolby B, 71 dB Dolby C; line-input sens for 0-dB reading 77.5 mV; line output level with 0-dB indication 0.44 mV. 17" W x 4 1/8" H x 13" D; 11 lbs ..... \$270

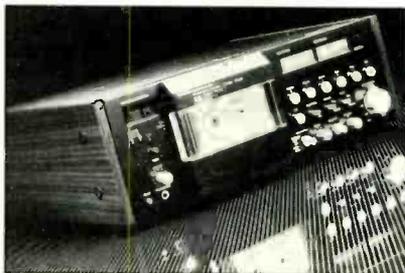
### TC-W5 Double Cassette Deck

Features 2 heads; 1 motor; auto reverse; auto bias/EQ; Dolby B; Dolby C; music search; LED meters; feather-touch controls; mike inputs; headphone jack; rec mute; wireless remote. W&F 0.05% WRMS; FR ferric 30-14,000 Hz  $\pm 3$  dB, high bias 30-16,000 Hz  $\pm 3$  dB, metal 30-16,000 Hz  $\pm 3$  dB; S/N (A-wid) ferric: 53 dB no NR, 60 dB Dolby B, 66 dB Dolby C; high bias: 57 dB no NR, 64 dB Dolby B, 70 dB Dolby C; metal: 58 dB no NR, 65 dB Dolby B, 71 dB Dolby C; line-input sens for 0-dB reading 77.5 mV; line output level with 0-dB indication 0.44 mV. 17" W x 4 1/8" H x 14" D; 10 lbs ..... \$250

## TANDBERG

### TCD 3014A Cassette Deck

8-bit, 32K, E-PROM microprocessor-controlled stereo cassette deck with 4 servo-controlled tape-transport motors. Has scan to play, scan to stop, auto rewind, auto replay, timer record/play functions. Features 3 heads; Dolby B and C; azimuth alignment; bias adjustment; record current adjustment utilizing built-in test system; linear motor to position heads and pinch-rollers to tape; instant "flying start" record/play; Dyneq record equalization; Actilinear II headroom-extension system; peak-reading meters; cue and review at half speed; real time/real revolution counter; LED indication of all transport functions. Wireless infrared remote control with built-in receiver included. Rosewood side panels and rack mounts available ..... \$1,595



Tandberg TCD 3014A

## TEAC

### R-999X Dolby B/C/dbx Cassette Deck

Direct-drive stereo cassette deck. Features dual capstan; soft-touch controls; LED meters; mike inputs; DC servo motor; rec mute; headphone jack; memory stop/play. W&F 0.25% WRMS; FR ferric, 30-19,000 Hz; high bias, 30-20,000 Hz; metal, 30-21,000 Hz; S/N 92 dB dbx; 432 mm W x 119 H x 350 H; 8.5 kg ..... \$899

### V-900X 3-Head Cassette Deck

Features Dolby B; Dolby C; dbx; dbx disc; bias fine tuning; program search; auto tape select; DC configuration amplifier; FL peak level meters; direct capstan drive; auto calibration; multi-function tape counter; intro check; monitor sync; timer rec/play switch. W&F 0.028%; FR 30-21,000 Hz; S/N 92 dB with dbx ..... \$725

### R-777X Dolby B/C/dbx Cassette Deck

Direct-drive stereo cassette deck with double Dolby NR. Features dual capstan; LED meters; headphone jack; memory stop/play. W&F 0.03% WRMS; FR ferric, 30-18,000 Hz; high bias, 30-19,000 Hz; metal, 30-20,000 Hz. S/N 91 dB dbx; 432 mm W x 119 H x 350 H; 8 kg ..... \$650

### R-888X Auto-Reverse Cassette Deck

Three-head cassette deck. Features 3 motors; Dolby B; Dolby C; dbx; elapsed-time counter; output level control; memory stop/play; LED meters; headphone jack; rec mute. W&F 0.04% WRMS; FR ferric 20-18,000 Hz  $\pm 3$  dB, high bias 20-20,000 Hz  $\pm 3$  dB, metal 20-21,000 Hz  $\pm 3$  dB; S/N (A-wid) metal 70 dB Dolby B, 80 dB Dolby C, 92 dB dbx; line-input sens for 0-dB reading 60 mV; line output level with 0-dB indication 0.5 mV. 17" W x 7 1/8" H x 13 3/4" D; 17 lbs ..... \$600

### V-800X 3-Head Cassette Deck

Features Dolby B; Dolby C; dbx; dbx disc; bias fine tuning; program search; auto tape select; DC configuration amplifier; FL peak level meters; multi-function tape counter; timer rec/play switch. W&F 0.035%; FR 25-20,000 Hz; S/N 92 dB with dbx ..... \$599

### V-700 3-Head Cassette Deck

Features Dolby B; Dolby C; bias fine tuning; program search; auto tape select; FL peak level meters; multi-function tape counter; bi-polar power supply. W&F 0.035%; FR 25-20,000 Hz; S/N 79 dB with Dolby C ..... \$500

### R-666X Auto-Reverse Cassette Deck

Stereo cassette deck with Dolby B and C and dbx NR. Features servo capstan; soft-touch controls; LED meters; mike inputs; DC servo motor; rec mute; headphone jack. W&F 0.45% WRMS; FR ferric, 30-16,000 Hz; high bias, 30-17,000 Hz; metal, 30-18,000 Hz; S/N 90 dB dbx; 432 mm W x 110 H x 270 D; 3.8 kg ..... \$459

### V-430X Dolby B/C/dbx Cassette Deck

Features LED meters; mike inputs; soft-touch controls; DC servo motor; headphone jack. W&F 0.045% WRMS; FR ferric, 30-16,000 Hz; high bias, 30-17,000 Hz; metal, 30-19,000 Hz; S/N 90 dB dbx; 432 mm W x 110 H x 270 D; 4.9 kg ..... \$280

## TECHNICS

### RS-B100 3-Head Cassette Deck

Rack-mountable cassette deck with 3 motors. Features direct drive; double capstan; closed loop transport; quartz-locked; microprocessor-feather-touch controls; Dolby B and C; dbx NR; FL meters; bias and rec level calibration; phase compensation circuitry; linear feedback; amorphous heads; mike inputs; DC servo motors; rec mute; memory stop/play. Remote control optional for \$35. W&F 0.002% WRMS; FR ferric 20-19,000 Hz  $\pm 3$  dB, high bias 20-21,000 Hz  $\pm 3$  dB, metal 20-23,000 Hz  $\pm 3$  dB; S/N high bias, 60 dB no NR; 70 dB Dolby B; 78 dB Dolby C; 92 dB dbx; 16 1/8" W x 3 3/8" H x 10 1/4" D: 12.3 lbs ..... \$800

### RS-B85 3-Head Cassette Deck

Cassette deck with linear-feedback and phase-

# CASSETTE DECKS

compensation circuits. Features AX Amorphous combination head system; 2 motors; microprocessor logic control; auto bias/EQ; Dolby B; Dolby C; dbx; bias fine tuning; remaining time counter; music search; output level control; 3-color fluorescent meters; feather-touch controls; headphone jack; optional remote control. FR ferric 20-20,000 Hz  $\pm$  3 dB, high bias 20-21,000 Hz  $\pm$  3 dB, metal 20-22,000 Hz  $\pm$  3 dB; S/N (A-wtd) 60 dB no NR, 70 dB Dolby B, 78 dB Dolby C, 92 dB dbx; line-input sens for 0-dB reading 60 mV ( $>$ 47,000 ohms). 16 $\frac{1}{8}$ " W x 3 $\frac{3}{8}$ " H x 11" D; 11.5 lbs ..... \$480

## RS-B78R Auto-Reverse Cassette Deck

Quick-reverse record/play deck with Dolby B and C and dbx. Features microprocessor control; thrust-hold rotary head for uniformity of performance and reliability in both directions; quick infrared-sensing reverse; versatile mode/direction selection; blank skip (10 sec) on playback; music repeat and random access DMS (direct music sheet) for up to 12 selections on each side of tape; FL meters; mike inputs; DC servo motor; auto reverse; rec mute; headphone jack. Remote control optional. W&F 0.004% WRMS; FR ferric 20-18,000 Hz; high bias, 20-19,000 Hz; metal, 20-20,000 Hz; S/N high bias 58 dB no NR; 68 dB Dolby B; 76 dB Dolby C; 92 dB dbx; 16 $\frac{1}{8}$ " W x 3 $\frac{3}{8}$ " H x 10 $\frac{1}{4}$ " D ..... \$400

## RS-B49R Auto-Reverse Cassette Deck

Auto-reverse cassette deck with Dolby B and C and dbx. Features 2 heads; 1 motor; auto bias/EQ; music search; blank skip; 3-color fluorescent meters; feather-touch controls; mike inputs; headphone jack; electronic tape counter; timer capable. FR ferric 20-16,000 Hz  $\pm$  3 dB, high bias and metal 20-17,000 Hz  $\pm$  3 dB; S/N (A-wtd) 57 dB no NR, 67 dB Dolby B, 75 dB Dolby C; line-input sens for 0-dB reading 60 mV ( $>$ 47,000 ohms); mike input sens 0.25 mV; mike input overload 400-10,000 ohms. 16 $\frac{1}{8}$ " W x 3 $\frac{3}{8}$ " H x 9" D; 7.9 lbs ..... \$290

## RS-B33W Cassette Deck

Double cassette deck with AX Amorphous head. Features 2 heads in rec/play transport, 1 head in play transport; 1 motor in each transport; auto bias/EQ; Dolby B; Dolby C; dbx; soft-touch controls; mike inputs; headphone jack; synchro start; series play; mike mixing; fluorescent meters. FR ferric 20-17,000 Hz  $\pm$  3 dB, high bias and metal 20-18,000 Hz  $\pm$  3 dB; S/N (A-wtd) 57 dB no NR, 67 dB Dolby B, 72 dB Dolby C, 92 dB dbx; line-input sens for 0-dB reading 60 mV (zero  $>$ 47,000 ohms); mike input sens 1 mV; mike input overload 400-10,000 ohms. 16 $\frac{1}{8}$ " W x 4 $\frac{1}{4}$ " H x 9 $\frac{1}{8}$ " D; 9.5 lbs ..... \$280

## UHER OF AMERICA

### CR-260AV Auto-Reverse Cassette Deck

Features 3 heads; 1 motor; dual capstans; manual azimuth adjust; elapsed time counter; mike inputs; headphone jack; DIN accessory facility for film dubbing; built-in monitor speaker; built-in mike; switchable auto level control. Operates on dry cells, 12 volt car battery or 120V AC. W&F 0.24% DIN; FR ferric 30-15,000 Hz  $\pm$  3 dB, high bias 30-16,000 Hz  $\pm$  3 dB; S/N ferric: 63 dB no NR; high bias: 58 dB no NR; line-input sens for 0-dB reading 600 mV; line output level with 0-dB indication 775 mV; mike input sens 0.2 mV. 23.5" W x 5.9" H x 18.5" D; 6 lbs ..... \$1,285

## ULTRX

### RDR 81 Auto-Reverse Cassette Deck

Cassette deck with Dolby B and C and dbx NR. Features full-logic controls; switchable FM mul-

tiplex filter; optical density detector; wired remote control; auto music selection; auto intro scan; rec mute; timer standby; auto tape type selector; elapsed-time counter; remaining time counter; music search; output level control; expanded-scale peak-hold fluorescent meters; headphone jack with level control. W&F 0.04%; FR ferric 20-15,000 Hz, high bias to 17,000 Hz, metal to 18,000 Hz, all  $\pm$  3 dB; S/N (A-wtd, with metal) 68 dB Dolby B, 76 Dolby C, 92 dbx; line-input sens for 0-dB reading 80 mV; line-output level with 0-dB indication 400 mV; mike-input sens 0.3 mV. 420 mm W x 100 H x 225 D; 9.9 lbs ..... \$330

## RDC 61 dbx Cassette Deck

Full-logic cassette deck with Dolby B and C NR and wired remote control. Features amorphous record/play head; 1 motor; auto-record mute (leaves 4 secs blank between tracks); blank search; timer standby; peak-hold fluorescent meters; auto rewind; auto tape select for ferric, high-bias, or metal tape; auto-music sel; MPX filter; mike inputs; manual azimuth adjust; headphone jack; rec mute; memory stop/play; elapsed- and remaining-time counter; remote control unit included. W&F 0.05% WRMS; FR ferric 20-16,000 Hz, to 18,000 with high bias, to 19,000 with metal, all  $\pm$  3 dB; S/N (A-wtd, metal) 69 dB Dolby B, 77 Dolby C, 93 dbx; line-input sens for 0-dB reading 80 mV; line-output level with 0-dB indication 400 mV; mike-input sens 0.3 mV. 420 mm W x 110 H x 220 D; 8.4 lbs ..... \$270

## RDC 41 dbx Cassette Deck

Full-logic cassette deck with wired remote control. Features 2 heads; 2 motors; Dolby B; Dolby C; auto tape type selector; peak-hold fluorescent meters; manual azimuth adjust; music search; mike inputs; headphone jack; rec mute. W&F 0.05% WRMS; FR ferric 20-14,000 Hz  $\pm$  3 dB, high bias 20-16,000 Hz  $\pm$  3 dB, metal 20-17,000 Hz  $\pm$  3 dB; S/N (A-wtd, metal tape) 68 dB Dolby B, 76 dB Dolby C, 92 dB dbx; line-input sens for 0-dB reading 80 mV; line output level with 0-dB indication 400 mV; mike input sens 0.3 mV. 16 $\frac{1}{2}$ " W x 4 $\frac{1}{4}$ " H x 8 $\frac{1}{16}$ " D; 8.4 lbs ..... \$220

## RDR 51 Auto-Reverse Cassette Deck

Full-logic auto-reverse cassette deck with Dolby B and C. Features 2 heads; 2 motors; auto tape-type selector; manual azimuth adjust; music search; LED meters; mike inputs; headphone jack. W&F 0.05% WRMS; S/N (A-wtd) metal: 62 dB Dolby B, 72 dB Dolby C; line-input sens for 0-dB reading 100 mV; line output level with 0-dB indication 440 mV; mike input sens 0.5 mV. 16 $\frac{1}{2}$ " W x 4 $\frac{1}{16}$ " H x 10 $\frac{1}{16}$ " D ..... \$220

## VECTOR RESEARCH

### VCX-650 Dolby B & C Cassette Deck

Cassette deck with 3 heads and built-in 5-band record/play graphic equalizer. Features LED meters; Dolby B and C NR; mike inputs; DC servo motor; rec mute; headphone jack; memory stop/play. W&F 0.04%; FR ferric 20-18,000 Hz  $\pm$  3 dB; high bias, 20-19,000 Hz  $\pm$  3 dB; metal, 20-20,000 Hz  $\pm$  3 dB; S/N metal 56 dB no NR, 66 dB Dolby B, 76 dB Dolby C; 17" W x 4 $\frac{1}{4}$ " H x 14" D ..... \$500

### VCX-450 Auto-Reverse Cassette Deck

Cassette deck with multi-skip music search. Features dual capstan; LED meters; Dolby B and C NR; mike inputs; DC servo motor; rec mute; headphone jack; memory stop/play. W&F 0.07%; FR ferric, 20-16,000 Hz  $\pm$  3 dB; high bias, 20-17,000 Hz  $\pm$  3 dB; metal, 20-18,000 Hz  $\pm$  3 dB; S/N metal 55 dB no NR, 65

dB Dolby B, 75 dB Dolby C ..... \$380

### VCX-250 Dolby B & C Cassette Deck

Power-assisted 1-motor cassette deck with music search. Features mike inputs; DC servo motor; rec mute; headphone jack. W&F 0.06%; FR ferric, 30-15,000 Hz  $\pm$  3 dB; high bias, 30-16,000 Hz  $\pm$  3 dB; metal, 30-17,000 Hz  $\pm$  3 dB; S/N metal 55 dB no NR, 65 dB Dolby B, 75 dB Dolby C ..... \$230

### VCX-350 Dubbing Cassette Deck

High speed dubbing cassette deck with auto start. Features synchronized dubbing. W&F 0.07% WRMS; FR ferric 30-14,000 Hz  $\pm$  3 dB, high bias 30-16,000 Hz  $\pm$  3 dB, metal 30-18,000 Hz  $\pm$  3 dB; S/N (A-wtd) Ferric; 63 dB Dolby B, 72 dB Dolby C; high bias: 64 dB Dolby B, 73 dB Dolby C; metal: 64 dB Dolby B, 73 dB Dolby C. 17" W x 4 $\frac{1}{2}$ " H x 11" D; 11 lbs ..... \$230

## YAMAHA

### K-1020 3-Head Cassette Deck

Cassette deck with closed loop transport. Features 3 motors; auto bias/EQ; Dolby B; Dolby C; Dolby HX Pro; dbx; dual capstans; bias fine tuning; manual azimuth adjust; direct drive; elapsed-time counter; remaining-time counter; music search; output level control; memory stop/play; fluoroscan meters; soft-touch controls; headphone jack; rec mute; optional wired remote and rack mount adapters; dual speed FF/RW; master fader; optimum record bias tuning; pure sendust record/playback heads. W&F 0.03% WRMS; FR ferric 20-18,000 Hz  $\pm$  3 dB, high bias 20-20,000 Hz  $\pm$  3 dB, metal 20-23,000 Hz  $\pm$  3 dB; S/N (A-wtd) high bias: 59 dB no NR, 67 dB Dolby B, 75 dB Dolby C, 95 dB dbx; line-input sens for 0-dB reading 40 mV; line output level with 0-dB indication 360 mV. 17 $\frac{1}{8}$ " W x 5 $\frac{1}{4}$ " H x 15" D; 16 $\frac{1}{4}$  lbs ..... \$599

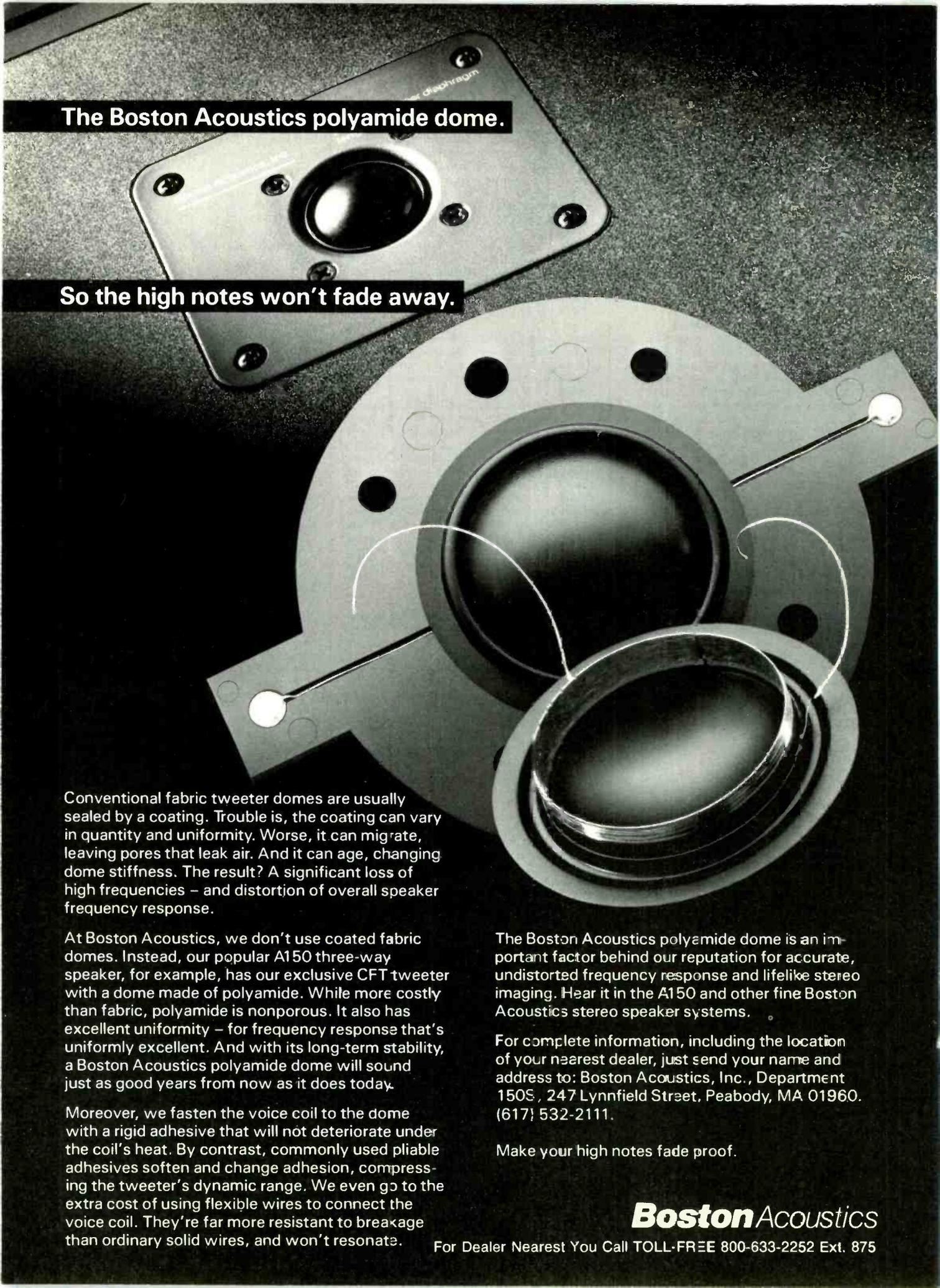
### K-720 Auto-Reverse Cassette Deck

Cassette deck with 15 programmable selection recording and random playback. Features 3 heads; 3 motors; auto bias/EQ; Dolby B; Dolby C; Dolby HX Pro; dbx; manual azimuth adjust; elapsed-time counter; remaining-time counter; music search; blank skip; memory stop/play; fluoroscan meters; soft-touch controls; mike inputs; headphone jack; rec mute; optional wired remote; repeat auto fader; bi-directional record; intro scan; auto source change; sendust record/playback head. W&F 0.04% WRMS; FR ferric 30-17,000 Hz  $\pm$  3 dB, high bias 30-19,000 Hz  $\pm$  3 dB, metal 30-20,000 Hz  $\pm$  3 dB; S/N (A-wtd) high bias: 59 dB no NR, 67 dB Dolby B, 75 dB Dolby C, 90 dB dbx; line-input sens for 0-dB reading 45 mV; line output level with 0-dB indication 360 mV; mike input sens 0.4 mV. 17 $\frac{1}{8}$ " W x 4 $\frac{1}{2}$ " H x 11 $\frac{1}{8}$ " D; 12 $\frac{1}{2}$  lbs ..... \$449

### K-600 Auto-Reverse Cassette Deck

Cassette deck with car EQ and sendust record/playback head. Features 3 heads; 3 motors; auto bias/EQ; Dolby B; Dolby C; manual azimuth adjust; elapsed-time counter; remaining-time counter; music search; blank skip; memory stop/play; LED meters; soft-touch controls. mike inputs; headphone jack; rec mute; optional wired remote. W&F 0.04% WRMS; FR ferric 30-17,000 Hz  $\pm$  3 dB, high bias 30-19,000 Hz  $\pm$  3 dB, metal 30-20,000 Hz  $\pm$  3 dB; S/N (A-wtd) high bias: 59 dB no NR, 67 dB Dolby B, 75 dB Dolby C; line-input sens for 0-dB reading 45 mV; line output level with 0-dB indication 360 mV; mike input sens 0.4 mV. 17 $\frac{1}{8}$ " W x 4 $\frac{1}{2}$ " H x 11 $\frac{1}{8}$ " D; 12 $\frac{1}{2}$  lbs ..... \$349

**K-420.** Similar to K-600 except without sendust head, real-time counter, car EQ, blank skip, memory stop/play ..... \$249



**The Boston Acoustics polyamide dome.**

**So the high notes won't fade away.**

Conventional fabric tweeter domes are usually sealed by a coating. Trouble is, the coating can vary in quantity and uniformity. Worse, it can migrate, leaving pores that leak air. And it can age, changing dome stiffness. The result? A significant loss of high frequencies – and distortion of overall speaker frequency response.

At Boston Acoustics, we don't use coated fabric domes. Instead, our popular A150 three-way speaker, for example, has our exclusive CFT tweeter with a dome made of polyamide. While more costly than fabric, polyamide is nonporous. It also has excellent uniformity – for frequency response that's uniformly excellent. And with its long-term stability, a Boston Acoustics polyamide dome will sound just as good years from now as it does today.

Moreover, we fasten the voice coil to the dome with a rigid adhesive that will not deteriorate under the coil's heat. By contrast, commonly used pliable adhesives soften and change adhesion, compressing the tweeter's dynamic range. We even go to the extra cost of using flexible wires to connect the voice coil. They're far more resistant to breakage than ordinary solid wires, and won't resonate.

The Boston Acoustics polyamide dome is an important factor behind our reputation for accurate, undistorted frequency response and lifelike stereo imaging. Hear it in the A150 and other fine Boston Acoustics stereo speaker systems.

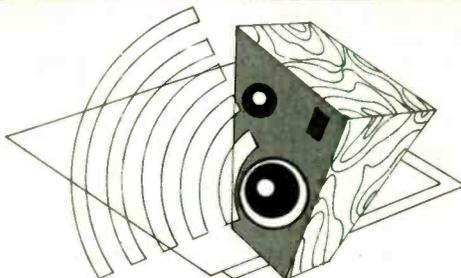
For complete information, including the location of your nearest dealer, just send your name and address to: Boston Acoustics, Inc., Department 150S, 247 Lynnfield Street, Peabody, MA 01960. (617) 532-2111.

Make your high notes fade proof.

**Boston Acoustics**

For Dealer Nearest You Call TOLL-FREE 800-633-2252 Ext. 875

# SPEAKERS



## AAL

### D9500 Speaker

Floor-standing ported speaker with computer-aided Theil aligned design. Features sub-bass coupler system; 4-way crossover; 12" cone woofer; two 5" cone sealed back ferrofluid midranges; 3" cone tweeter; 2 1/2" horn-loaded quartz supertweeter. FR 32-22,000 Hz  $\pm$  3 dB; minimum power 5 W; max power 205 W; sens 99.5 dB SPL/W/m; imp 4/8 ohms. 15 1/16" W x 39 1/16" H x 14 1/16" D; 76 lbs; amari walnut woodgrain finish ..... \$1,000/pr

### D5500 Speaker

Floor-standing ported speaker with computer-aided Theil aligned design. Features 4-way crossover; 12" cone woofer; 5" cone sealed back ferrofluid midrange; 3" cone tweeter; 2 1/2" horn-loaded quartz supertweeter. FR 43-22,000 Hz  $\pm$  3 dB; minimum power 5 W; max power 116 W; sens 96.5 dB SPL/W/m; imp 4/8 ohms. 15 1/2" W x 27" H x 10 1/4" D; 40 lbs; amari walnut woodgrain finish ..... \$700/pr

### D4500 Speaker

Ported speaker with computer-aided Theil aligned design. Features 3-layer voice coil; horn-loaded 2-piece grille design; 10" cone woofer; 5" cone sealed back midrange; 2 1/2" horn-loaded quartz tweeter. FR 45-22,000 Hz  $\pm$  3 dB; minimum power 5 W; max power 78 W; sens 95.5 dB SPL/W/m; imp 4/8 ohms. 15" W x 24" H x 10" D; 34 lbs; amari walnut woodgrain finish ..... \$500/pr

### D3500 Speaker

Ported speaker with computer-aided Theil aligned design. Features non-magnetic tweeter perfect for use near video monitors; horn-loaded 2-piece grille design; 8" cone woofer; 2 1/2" horn-loaded quartz tweeter. FR 60-20,000 Hz  $\pm$  3 dB; minimum power 5 W; max power 42 W; sens 94.5 dB SPL/W/m; imp 4/8 ohms. 11 1/4" W x 18 1/2" H x 8" D; 19 lbs ea; amari walnut woodgrain finish ..... \$340/pr

## ACOUSTAT

### Professional Series

#### Model Eight Speaker System

Similar to Model Two+Two below except utilizes 2 MK-121 drive units and requires 2 stereo amps. Can produce concert-hall levels in very large rooms. FR 24-20,000 Hz  $\pm$  2 dB; min power 50 W x 4; nominal imp 6 ohms; 96" H x 36" W x 4" D; 210 lb ..... \$5,199/pr

**Model Six.** Similar to Model 8 except FR 26-20,000 Hz; 28" W x 3 1/2" D; 150 lb ..... \$4,149/pr

#### Model Two+Two Speaker System

Full-range-element electrostatic speaker with patented MK-121 drive system in floor-ceiling vertical-line-source design. FR 28-20,000 Hz  $\pm$  2 dB; max output 115 dB SPL at 22 ft; min power 50 W; nominal imp 4 ohms; 96" H x 20" W x 3 1/2" D; 105 lb ..... \$2,399/pr

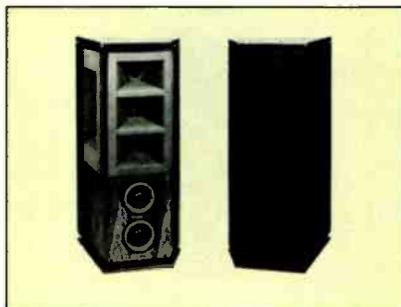
**Model Three.** Similar to Model Two+Two ex-

cept FR 30-20,000 Hz; 70 W min power; sens 110 dB SPL at 18 ft; 72" H x 28" W x 3 1/2" D; 75 lb ..... \$1,995/pr

**Model One+One.** Similar to Model Two+Two but half the width. FR 30-20,000 Hz  $\pm$  2 dB; min power 70 W; 93" H x 11" W x 3 1/2" D; 72 lb ..... \$1,549/pr

#### Model One Speaker System

Single-panel speaker; hybrid system with 18" satellite woofer cube; FR 30-18,000 Hz  $\pm$  3 dB; min power 75 W; imp 4 ohms; 72" H x 11" W x 3 1/2" D; 65 lb ..... \$1,249/pr



Acoustic Research MGC-1

## ACOUSTIC RESEARCH

### MGC-1 Ambience-Subsystem Speaker

Floor-standing acoustic-suspension speaker with delayed ambience subsystem built into enclosure plus MGC-1E control and amplification electronics. Speakers are mirror-imaged pairs consisting of a 4-way passive system and 6-element 2-way active subsystem for delayed ambience radiation. Electronic unit controls system parameters and provides signal processing, delay, and power amplification for delayed ambience subsystem. Two 8" cone woofers, two 4" cone midranges, 1 1/2" dome tweeters, 3/4" dome supertweeter. FR (3-dB down point, half power) 39 and 32,000 Hz; power range 25-250 W; sens 88 dB SPL/W/m; imp 4 ohms; 26 1/4" W x 52" H x 16 1/8" D; 150 lbs.

Rosewood ..... \$7,100/pr  
Walnut ..... \$3,600/pr

### AR9LSI Floor-Standing Speaker

Floor-standing acoustic-suspension speaker with vertically aligned drivers. 12" cone woofer; 10" cone woofer; 8" cone midrange; 1 1/2" dome midrange; 3/4" dome tweeter. FR 28-32,000 Hz  $\pm$  3 dB; power range 15-400 W; sens 87 dB SPL/W/m; imp 4 ohms; oiled walnut veneer finish; 18 1/2" W x 5 1/8" H x 14 1/2" D; 135 lbs ea ..... \$1,950/pr

### AR98LSI Bookshelf Speaker

Bookshelf acoustic-suspension speaker with 4 drivers in vertical array, 2 of which are closely spaced on single magnet structure for uniform vertical dispersion. 12" cone woofer; 8" cone midrange; 1 1/2" dome midrange; 3/4" dome tweeter.

er. FR 39-32,000 Hz  $\pm$  3 dB; power range 15-250 W; sens 87 dB SPL/W/m; imp 4 ohms; oiled walnut veneer finish; 14 1/2" W x 29 1/2" H x 9 1/2" D; 70 lbs ea ..... \$1,190/pr

### AR58BX Floor-Standing Speaker

Floor-standing acoustic-suspension speaker with drivers vertically aligned for precise stereo imaging. 12" cone woofer; 4" cone midrange; 3/4" dome tweeter. FR 39-32,000 Hz  $\pm$  3 dB; power range 15-175 W; sens 90 dB SPL/W/m; imp 4 ohms; walnut vinyl finish; 13 1/2" W x 30 1/2" H x 10" D; 53 lbs ea ..... \$720/pr

### AR48BX Floor-Standing Speaker

Acoustic-suspension speaker with drivers vertically aligned for precise stereo imaging. 10" cone woofer; 4" cone midrange; 3/4" dome tweeter. FR 45-32,000 Hz  $\pm$  3 dB; power range 15-150 W; sens 88 dB SPL/W/m; imp 6 ohms; walnut vinyl finish; 13" W x 27 1/4" H x 9 3/8" D; 43.3 lbs ..... \$570/pr

### AR38BX Bookshelf Speaker

Acoustic-suspension speaker with drivers vertically aligned for precise stereo imaging. 8" cone woofer; 4" cone midrange; 3/4" dome tweeter. FR (3-dB down points) 52 and 32,000 Hz; power range 10-100 W; sens 88 dB SPL/W/m; imp 6 ohms; walnut vinyl finish; 21 3/4" W x 13" H x 7 3/8" D; 59.9 lbs ..... \$440/pr

### AR28BX Floor-Standing Speaker

Acoustic-suspension speaker with drivers vertically aligned for precise stereo imaging. 10" cone woofer; 1" cone tweeter. FR 42-22,000 Hz  $\pm$  3 dB; power range 10-100 W; sens 89 dB SPL/W/m; imp 8 ohms; walnut vinyl finish; 13" W x 27 1/8" H x 10 1/8" D; 59.9 lbs ..... \$400/pr

### AR18BX Bookshelf Speaker

Acoustic-suspension speaker with drivers vertically aligned for precise stereo imaging. 8" cone woofer; 1" cone tweeter. FR 52-25,000 Hz  $\pm$  3 dB; power range 10-75 W; sens 87 dB SPL/W/m; imp 8 ohms; walnut vinyl finish; 10 1/16" W x 17 3/8" H x 8 1/4" D; 18 lbs ..... \$260/pr

### AR1MS Miniature Speaker

Acoustic-suspension speaker with rigid deep-drawn aluminum cabinet. Threaded inserts on rear allow multiple mounting options. 4" cone woofer; 1" dome tweeter. FR 95-25,000 Hz  $\pm$  3 dB; power range 7-75 W; sens 95 dB SPL/W/m; imp 4 ohms; satin black finish; 4 1/4" W x 7 3/4" H x 4 2/32" D; 4.5 lbs ..... \$250/pr

## ADS

### 400 Miniature Speaker

Two-way acoustic-suspension speaker with 7" Stüffli high-compliance ultra-long-excursion cone woofer, 1" soft-dome tweeter; drivers are diffraction-corrected and flush-mounted. Features high-grade oak or walnut finish with radius-edged oak/walnut inserts, black convex steel grille. FR 60-20,000 Hz  $\pm$  3 dB; crossover at 2 kHz; sens 90 dB SPL/W/m; power rating 50 W nominal, 75 W peak program; nominal imp 4

# SPEAKERS

ohms; 11 $\frac{1}{4}$ " H x 7 $\frac{3}{8}$ " W x 7 $\frac{3}{8}$ " D; walnut and black finish. Available in pairs only . . . \$400/pr

## 300W Miniature Speaker System

Acoustic-suspension 2-way speaker system with 5 $\frac{1}{4}$ " high-compliance, long-excursion Stiffite woofer, 1" soft-dome tweeter; drivers diffraction-corrected and flush-mounted. Features walnut-veneer cabinet with radius-edged solid walnut corner inserts, acoustically transparent black metal grille in complementary finish. FR 65-20,000 Hz  $\pm$  3 dB; crossover 2.0 kHz with 12-dB/octave slope; sens 89 dB SPL/W/m; power rating 50 W nominal, 75 W peak program; imp 4 ohms; 8 $\frac{3}{8}$ " H x 6 $\frac{1}{8}$ " D x 6 $\frac{3}{8}$ " W. Available in pairs only . . . \$350/pr

## 200 Miniature Speaker

Miniature 2-way acoustic-suspension speaker with 4" high-compliance ultra-long-excursion woofer, 1" soft-dome tweeter. Features brushed aluminum enclosure (black textured urethane) with black convex steel grille. FR 85-20,000 Hz  $\pm$  3 dB; crossover 2.0 kHz with 12-dB/octave slope; sens 88-dB SPL/W/m; rated input 30 W continuous, min input 5 W; imp 4 ohms; 6 $\frac{7}{8}$ " H x 4 $\frac{1}{4}$ " W x 4 $\frac{1}{4}$ " D . . . \$260/pr

## Series 2

### L1590 Speaker

Floor-standing acoustic-suspension speaker with glass fiber damping and separate chamber for each woofer. Features optional PAL biamp/crossover module installs in recess in rear of speaker; tweeter and midrange wet wound, single layer high temperature voice coil assembly; magnetic fluid cooling; woofers are high compliance with tapered damped stiffite cones with butyl; rubber surrounds wet wound, two layer, high temperature linear drive voice coil assemblies in extended pole-magnet structures; two 10" cast basket high compliance woofers; 2" woven soft-dome damped midrange; .75" woven soft-dome damped tweeter. FR 28-27,000 Hz  $\pm$  3 dB; maximum power 500 W; sens 90 dB SPL/W/m; imp 8; black finish; 11.5" W x 47.3" H x 14.2" D; 100 lbs . . . \$1,990/pr  
Walnut finish . . . \$2,099/pr  
Rosewood finish . . . \$2,750/pr

### L1290 Monitor Speaker

Acoustic-suspension 3-way monitor speaker with 2 8 $\frac{1}{4}$ " high-compliance Stiffite woofers in separate chambers, 2" soft-dome midrange,  $\frac{3}{4}$ " magnetic cooling fluid soft-dome tweeter. Features single-switch biamp conversion; tweeter level switch; removable black metal grille. FR 40-27,000 Hz  $\pm$  3 dB; crossovers 500 and 5k Hz; sens 90 dB SPL/W/m; power rating 300 W max; nominal imp 8 ohms; 41 $\frac{1}{8}$ " H x 10 $\frac{1}{2}$ " W x 11 $\frac{1}{8}$ " D; walnut veneer finish . . . \$1,300/pr  
Black finish . . . \$1,260/pr

### L1090 Speaker System

Three-way acoustic-suspension speaker system with 2 7 $\frac{1}{4}$ " high-compliance Stiffite cone woofers in separate chambers, 2" soft-dome midrange,  $\frac{3}{4}$ " magnetic cooling fluid soft-dome tweeter. Features high-grade walnut veneer or black finish and removable black metal grille. FR 44-27,000 Hz  $\pm$  3 dB; crossovers 550 and 5k Hz; sens 89 dB SPL/W/m; power rating 175 W max; nominal imp 8 ohms; 37 $\frac{3}{8}$ " H x 9 $\frac{1}{2}$ " W x 9 $\frac{3}{8}$ " D. Walnut veneer finish . . . \$1,040/pr  
Black finish . . . \$1,000/pr

### L880 Speaker

Three-way acoustic-suspension speaker with 10" Stiffite long-excursion woofer, 2" soft-dome midrange,  $\frac{3}{4}$ " magnetic-cooling fluid soft-dome tweeter. Tweeter level switch; genuine walnut or black finish with black metal grille. FR 40-

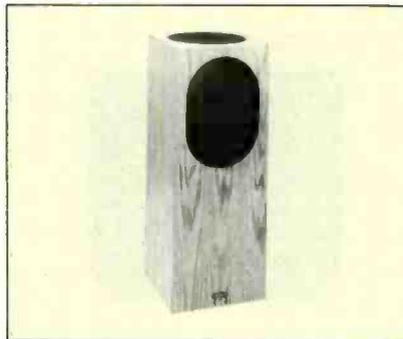
27,000 Hz  $\pm$  3 dB; crossovers 550 and 5k Hz; sens 89 dB SPL/W/m; imp 8 ohms; power 200 W max; walnut veneer finish . . . \$800/pr  
Black finish . . . \$760/pr

### L780 Speaker

Acoustic-suspension 3-way speaker with 8 $\frac{1}{4}$ " high-compliance long-excursion Stiffite cone woofer, 1 $\frac{1}{2}$ " soft-dome midrange, 34" magnetic cooling fluid soft-dome tweeter and midrange; drivers are diffraction-corrected and flush-mounted. Features black perforated steel grille. FR 42-27,000 Hz  $\pm$  3 dB; crossovers 650 and 5 kHz; sens 88 dB SPL/W/m; power rating 125 W max, nominal imp 8 ohms; 20 $\frac{1}{8}$ " H x 12 $\frac{1}{4}$ " W x 10 $\frac{1}{2}$ " D; walnut veneer finish . . . \$640/pr  
Black finish . . . \$600/pr

### L470 Speaker

Two-way acoustic-suspension speaker with self-resetting solid-state tweeter protectors. Features 7" Stiffite woofer and 1" soft-dome tweeter. Walnut, vinyl or black finish. FR 50-20,000 Hz  $\pm$  3 dB; crossover at 2 kHz; sens 88 dB SPL/W/m; nominal imp 8 ohms; 16" H x 10 W" x 9" D; walnut and black finish . . . \$320/pr



Allison CD8

## ADVENT

### 6003 Speaker System

Acoustic-suspension 3-way speaker system with Advent woofer, Advent midrange, and 1" dome tweeter. Genuine walnut veneer cabinet with dark brown grille cloth. FR 40-22,000 Hz  $\pm$  2.5 dB; crossovers 750 Hz and 4,500 Hz; sens 88.5 dB SPL/W/m; imp 8 ohms; 32 $\frac{1}{4}$ " W x 22" H x 8 $\frac{3}{4}$ " D . . . \$750/pr

### Prodigy Speaker

Digital ready floor-standing speaker with solid pecan endcaps and wraparound grille. Features 8" high excursion surround with aluminum voice coil form woofer;  $\frac{3}{4}$ " ferrofluid filled soft dome tweeter with complex crossover network. FR 48-22,000 Hz  $\pm$  3 dB; min power 75 W; RMS max peak power 300 W; sens 87 dB SPL/W/m; imp 8 ohms. 13" W x 22" H x 8 $\frac{3}{8}$ " D; 22 lbs . . . \$299/pr

### The Baby Advent

Two-way speaker with 6 $\frac{1}{2}$ " woofer and 1 $\frac{1}{4}$ " ferrofluid cone tweeter. FR 60-25,000 Hz  $\pm$  3 dB; imp 8 ohms; sens 87 dB SPL/W/m; max power > 150 W peak; 11" W x 16 $\frac{1}{2}$ " H x 6 $\frac{3}{4}$ " D; 13 lbs . . . \$198/pr

## AKAI

### SW-A90 Speaker

Floor-standing speaker. Features 10 sq flat diaphragm passive rad; 10 sq flat diaphragm woofer; 4 sq flat diaphragm midrange; 1 sq flat diaphragm tweeter. FR 30-40,000 Hz; minimum power 10 W; max power 200 W; imp 8 ohms. 33.1 lbs; PVC walnut finish . . . \$450/pr

### SW-A70 Speaker

Floor-standing ported speaker. Features 12" polypropylene cone woofer; 1.5" dome midrange;  $\frac{1}{2}$ " dome tweeter;  $\frac{1}{2}$ " piezo supertweeter. FR 30-35,000 Hz  $\pm$  3 dB; minimum power 10 W; max power 180 W; sens 90 dB SPL/W/m; imp 8 ohms. 33.1 lbs; PVC walnut finish . . . \$400/pr

### SR-LA301 Speaker

Floor-standing box speaker. Features 12" cone woofer; 4" cone midrange; 3" cone tweeter. FR 36-20,000 Hz; minimum power 10 W; max power 130 W; sens 90 dB SPL/W/m; imp 8 ohms. 15" W x 27" H x 12 $\frac{1}{2}$ " D; 33.1 lbs; PVC walnut finish . . . \$270/pr

### SR-LA201 Speaker

Floor-standing box speaker. Features 10" cone woofer; 4" cone midrange; 3" cone tweeter. FR 40-20,000 Hz; minimum power 10 W; max power 110 W; sens 90 dB SPL/W/m; imp 8 ohms. 13" W x 26" H x 10.5" D; 25.4 lbs; PVC walnut finish . . . \$200/pr

### SW-M40 Speaker

Bookshelf box speaker with magnetic shielding. Features 7" flat diaphragm woofer; 1.5" cone tweeter. FR 50-25,000 Hz; minimum power 10 W; max power 60 W; sens 88 dB SPL/W/m; imp 8 ohms. 8" W x 15" H x 7 $\frac{1}{2}$ " D; black finish . . . \$180/pr

## ALLISON

*Prices slightly higher in the West.*

### Model One Speaker

Stabilized-radiation-loading design with two 10" woofers, two 3 $\frac{1}{2}$ " convex midranges, two 1" convex tweeters. Features LC half-section crossover network; air-core chokes; nonpolarized computer-grade capacitors; switches for selecting system acoustic power response (flat to concert-hall balance slope). Crossovers 350 and 3,750 Hz; imp 8 ohms; efficiency 0.7% at floor-wall intersection; min power 30 W/ch for 100-dB SPL in reverberant field; system resonance 45 Hz nominal; 40" H x 19" W x 10 $\frac{3}{4}$ " D . . . \$1,300/pr

**Model Two.** Same as Model One except has two 8" woofers, two 3 $\frac{1}{2}$ " convex midranges, two 1" convex tweeters. System resonance 52 Hz nominal; 36" H x 16" W x 9 $\frac{3}{8}$ " D . . . \$1,100/pr

### Model Three Speaker

Stabilized-radiation-loading speaker with 10" woofer, 3 $\frac{1}{2}$ " convex midrange, 1" convex tweeter. Features corner-mount design; LC half-section crossover network; switches for selecting system acoustic power response; biampification capability using external crossover; walnut-veneer, oil-finished enclosure. Crossovers at 350 and 3,750 Hz; min power 30 W/ch for 100-dB reverberant SPL; resonance 45 Hz; imp 4 ohms; 40" H x 15 $\frac{1}{4}$ " W x 10" D . . . \$870/pr

### Model CD8 Speaker

Three-way stabilized-radiation-loading speaker with 8" woofer, 3 $\frac{1}{2}$ " convex-diaphragm midrange, 1" convex-diaphragm tweeter, designed for placement on floor close to a wall. Features LC half-section crossover network with switches to select system acoustic power response from flat to concert slope. Crossover frequencies 450 and 3,750 Hz; efficiency 0.7%; power range 30-200 W; resonance 49 Hz; 28 $\frac{3}{8}$ " H x 10 $\frac{1}{2}$ " W x 10 $\frac{1}{2}$ " D. Walnut- or oak-veneer cabinet, hand-rubbed lacquer finish . . . \$790/pr

### Model Four Speaker System

Two-way stabilized-radiation-loading system with 8" woofer, two 1" convex-diaphragm tweeter

# S P E A K E R S

ers. Designed to be used against or hung on wall with included hardware. Features walnut or oak veneer enclosure; LC quarter-section network with 3-position switch to adjust response from nominally flat to "concert hall" balance slope. Crossover 2,000 Hz; resonance 52 Hz; imp 8 ohms; min power 30 W/ch for 100 dB SPL in reverberant field; 19 1/4" W x 11" W x 10" D ..... \$600/pr

### Model CD7 Speaker System

Two-way stabilized-radiation-loading speaker system with 8" woofer, 1" convex-diaphragm tweeter, designed for placement on floor against single wall. Features LC crossover network that uses premium chokes, computer-grade capacitor, walnut- or oak-veneer cabinet with hand-rubbed lacquer finish. Crossover 2,000 Hz; resonance 52 Hz; imp 4 ohms; power range 15-150 W; 26 1/2" H x 9 3/8" W x 9 3/8" D ..... \$500/pr

**Model CD6 Speaker.** Same as Model CD7 except designed for wall or shelf mounting and smaller; resonant frequency is 59 Hz; 11 1/4" H x 11 1/4" W x 11 1/4" D ..... \$390/pr

### Model Five Speaker

Two-way stabilized-radiation-loading speaker with 8" woofer, 1" convex tweeter, designed for placement against single wall. Features LC quarter-section network with premium quality components; oil-finished walnut-veneer enclosure. Crossover 2,000 Hz; resonance 52 Hz; min power 15 W for 97-dB SPL in reverberant field; 18 1/2" H x 11" W x 10" D ..... \$430/pr

### Series 100 Speakers

*Two-way stabilized-radiation-loading speakers which perform optimally standing on floor. All have walnut-grain vinyl cabinet and Allison convex-diaphragm 1" tweeter; quarter-section LC crossover network. Crossover 2,000 Hz; sens 90 dB SPL/2.83 V/m. Power range 15-150 W.*

**Model 120.** 8" woofer; resonance 52 Hz. 21 1/4" H x 13 3/4" W x 7 1/2" D ..... \$320/pr

**Model 110.** 8" woofer; resonance 59 Hz. 18" H x 11 1/2" W x 7 1/2" D ..... \$260/pr

## AUDIOSOURCE

### LS-Nine Speaker

Box speaker intended for bookshelf placement. Features L-C crossover at 3.5 kHz. Contains 8" polypropylene woofer; 1" tweeter. FR 65-20,000 Hz  $\pm$  3 dB; max power 80 W; sens 88 dB; imp 6 ohms; white oak with cloth grille; 11 1/4" W x 17 1/8" H x 8 3/4" D ..... \$300/pr

### LS-Seven Speaker

Two-way compact speaker with 6 1/2" polywoofer 1" soft-dome tweeter, wood enclosure. FR 70-20,000 Hz; max power 60 W; imp 8 ohms; sens 87 dB SPL/W/m; L-C crossover at 2 kHz; genuine white oak veneer, cloth grille; 8 3/4" W x 13 3/8" H x 6 1/8" D; 7 lbs ..... \$199/pr

## BANG & OLUFSEN

### Beovox MC-120-2 Speaker

Three-way speaker in ported cabinet tuned to Bessel function for optimum room matching with 8" woofer, 3" dome midrange driver, 1" tweeter. Features baffle moldings; acoustic centers of drivers aligned on common axis for min phase distortion; crossover network with min phase shift; auto protection for drivers; rosewood veneer (other finishes available). FR 42-22,000 Hz; max power 120 W RMS; distortion 0.5%; dispersion 100° ..... \$898/pr

### Beovox S-80-2 Speaker

Three-way speaker in infinite-baffle cabinet

with 8" woofer, 3" dome phase-link midrange, 1" tweeter. Features baffle moldings, speaker mounting designed for min diffraction; acoustic centers of drivers aligned on common axis to eliminate phase distortion; crossover network with min phase shift; auto protection for drivers; rosewood-veneer cabinet finish (other finishes available). FR 50-22,000 Hz; max power 80 W RMS; distortion 0.7%; dispersion 100° ..... \$598/pr

### CX100 Compact Speaker

Bookshelf box speaker. Features 2 4" cone woofers; 4" dome tweeter. FR 50-20,000 Hz; power range 10-110 W; sens 89 dB SPL/W/m; imp 6 ohms; available in black or brushed aluminum finish; 4" W x 12" H x 8" D; 13.5 lbs. .... \$298/pr

## B&W LOUDSPEAKERS LTD.

### 808 Speaker

Ported floor-standing speaker with 2 300-mm thermoplastic cone woofers, 2 100-mm polyamide matrix-cone midranges, 32-mm polyamide dome tweeter. Features computer-optimized drivers and cabinet; Audio Powered Overload Circuit; 4th-order Butterworth crossover; sep terminals for bi and triamping. FR 30-20,000 Hz  $\pm$  2 dB; min power 100 W; sens 91 dB SPL/W/m; imp 8 ohms; walnut, rosewood, or black ash finish; 25 3/4" W x 41 1/4" H x 20" D; 180 lbs. .... \$7,500/pr

### 801F Speaker

Floor-standing 3-way acoustic-suspension speaker with vertically aligned drivers to minimize time delays. Features 4th-order Butterworth crossover system; APOC to prevent driver damage; choice of cabinet finishes. FR 45-20,000 Hz  $\pm$  2 dB; power range 50 W-no upper limit due to APOC; imp 8 ohms; 37.3" H x 22" D x 17" W; 97 lb. Walnut, teak, or black ash finish ..... \$3,500/pr  
Rosewood finish ..... \$3,950/pr

### 802F.SP Speaker

Floor-standing acoustic-suspension speaker with 2 165-mm woofers, 100-mm midrange, 26-mm tweeter. Features Butterworth Squared crossovers; APOC; environmental controls; choice of cabinet finishes. FR 55-20,000 Hz  $\pm$  2 dB; power range 50 W-no upper limit due to APOC; 2nd- and 3rd-harmonic distortion < 1%; 100-20,000 Hz for 90 dB SPL; sens 85 dB SPL/W/m; 41" H x 14 12" W x 11 34" D; 70 lb. Walnut, teak, or black ash finish ..... \$2,500/pr  
Rosewood finish ..... \$2,950/pr

### DM 3000 Speaker

Acoustic-suspension floor-standing speaker with 8" polyamide woofer, 8" polyamide midrange, 1" polyamide dome tweeter, 10" passive radiator. Features triangular cabinet; APOC; electronic time delay; laser-optimized drivers. FR 50-20,000 Hz  $\pm$  2 dB; min power 80 W; sens 89 dB SPL/W/m; imp 8 ohms; walnut, rosewood, or black ash finish; 12 1/4" W x 38 4" H x 15 3/4" D; 77 lbs ..... \$1,790/pr

### DM 2000 Speaker

Acoustic-suspension floor-standing speaker with 8" polyamide woofer, 1" tweeter, 8" passive radiator. Features triangular cabinet, APOC. FR 50-20,000 Hz  $\pm$  2 dB; min power 50 W; sens 87 dB SPL/W/m; imp 8 ohms; walnut, rosewood, or black ash finish; 12 1/4" W x 32 1/4" H x 15 3/4" D; 55 lbs ..... \$1,390/pr

### DM1400 Speaker

Acoustic-suspension speaker with 150-mm midwoofer, 26-mm tweeter. Features overload protection; electronic time delay; choice of cabi-

net finishes. FR 80-20,000 Hz  $\pm$  2 dB; power range 30 W-no upper limit due to overload protection; sens 86 dB SPL/W/m; imp 8 ohms; 31 1/2" W x 11 1/2" D x 10" H; 35 lb. Walnut, teak, or black ash finish ..... \$1,000/pr  
Rosewood finish ..... \$1,150/pr

### The DM17 Limited Speaker

Speaker with top-mounted treble unit time-aligned to bass/midrange driver. Features bextrene thermoplastic cone; dome-shaped 26mm-diaphragm high-frequency driver. Pairs are computer-matched to  $\pm$  0.5 dB; resonance-free cabinet; automatic protection; min power 40 W; selected veneers of black ash or walnut; FR better than 85-20,000 Hz  $\pm$  2 dB free-field on listening axis at 2 m; imp 8 ohms; sens 85 dB SPL/W/m into 8 ohms; 8 1/2" W x 10 1/2" D x 16" H; 19.8 lb ..... \$900/pr

### DM1200 Speaker

Compact acoustic-suspension speaker system with 150-mm midwoofer, 26-mm tweeter. Features electronic time delay; overload protection; choice of cabinet finishes. FR 85-20,000 Hz  $\pm$  2 dB; power range 30 W-no upper limit due to overload protection; sens 85 dB SPL/W/m; imp 8 ohms; 14" H x 10 12" D x 8 34" W; 21 lb. Walnut or black ash finish ..... \$770/pr  
Rosewood finish ..... \$870/pr

### DM330 Speaker

Acoustic-suspension floor-standing speaker with 8" woofer, 8" midrange, 1" polyamide dome tweeter. FR 48-20,000 Hz  $\pm$  3 dB; power range 10-100 W; sens 91 dB SPL/W/m; imp 8 ohms; walnut or black ash finish; 11 1/2" W x 33 3/4" H x 12 3/8" D; 37/ lbs ..... \$698/pr

### DM220 Speaker

Three-way system employing two 8" drivers; one for lower bass; other handles upper bass and midrange frequencies; 1" dome tweeter; available in American walnut or black ash simulated veneers. Sens 90 dB/SPL/W/m; FR 53-20,000 Hz; power range 10-75 W RMS; useful bass cut-off frequency 45 Hz; distortion less than 3% 2nd harmonic, less than 0.5% 3rd harmonic; 26.75" H x 11.4" W x 12.6" D; 30.4 lbs. .... \$538/pr

### LM-1 Leisure Monitor Speaker

Two-way mini speaker with colored nextel finishes, protection against overload; for home and car use. Switchable for 8 or 4 ohms. Available in brown, beige, charcoal, black, or red. Min power 10 W; 4" woofer, 7/8" tweeter ..... \$498/pr  
LM-1/PM. Panel-mount version ..... \$450/pr  
LM-1/Mar. Marine version, protected against corrosion ..... \$598/pr  
LM-1/PM-Mar. Marine version, panel mount ..... \$552/pr

### DM110 Speaker

Two-way vented speaker employing 2 drive units; 8" woofer crossed over to 1" dome tweeter via 4th-order Butterworth squared circuit that provides frequency division at 3,000 Hz. Sens 90 dB SPL/W/m; FR 70-20,000 Hz  $\pm$  3 dB; recommended power 10-75 W RMS; 19.3" H x 10.25" W x 9.8" D; 18.5 lbs ..... \$338/pr

## BES

### SM300 Omnidirectional Speaker

Floor-standing 4-way system with dual-polymer diaphragm. Features 360° omnidirectional dispersion; rotary midrange/high-frequency level controls; bi-amplification capability; wood frame. Sens 93 dB SPL/W/m; recommended power 25-250 W continuous; imp 8 ohms; 53.5" H x 22" W x 6.75" D ..... \$1,500/pr

# SPEAKERS

## SM280 Omnidirectional Speaker

Large floor-standing 4-way system with dual polymer diaphragm. Features 360° omnidirectional dispersion; rotary midrange/high-frequency level controls; wood frame. FR 32-22,000 Hz; sens 93 dB SPL/W/m; recommended power 10-200 W continuous, imp 8 ohms; 44.25" H x 22" W x 6.75" D ..... \$1,100/pr

## SM275 Omnidirectional Speaker

Large floor-standing 3-driver system with double computer-designed polymer diaphragm. Features omnidirectional dispersion; midrange/high-frequency rotary level controls; dual circuit breaker. FR 32-22,000 Hz ± 3 dB; power range 10-200 W; sens 93 dB SPL/W/m; imp 8 ohms; oiled walnut frame; 58 lbs; 20" W x 40" H x 5 1/4" D ..... \$950/pr

## SM90 Indoor/Outdoor Speaker

Multiple-placement weather-resistant indoor/outdoor 2-driver system with single polymer diaphragm. FR 42-19,000 Hz ± 3 dB; power range 5-125 W; sens 88 dB SPL/W/m; imp 8 ohms; anodized aluminum; 20 lbs; 19" W x 27 3/4" H x 4 1/4" D ..... \$760/pr

## SM255 Mark II Omnidirectional Speaker

Smaller floor-standing 3-way speaker with single polymer diaphragm. Features 360° omnidirectional dispersion; dual rotary midrange/high-frequency level controls; wood frame. Sens 91 dB SPL/W/m; recommended power 10-200 W continuous; imp 8 ohms; 30.25" H x 20" W x 5.75" D ..... \$700/pr

## SM100 Omnidirectional Speaker

Smaller floor-standing 2-way system with single polymer diaphragm. Features 360° omnidirectional dispersion; simulated wood frame. Sens 88 dB SPL/W/m; recommended power 5-125 W continuous; imp 8 ohms; 27.75" H x 19" W x 4.25" D ..... \$460/pr

## BOSE

### 901 Series V Speaker System

Direct/reflecting acoustic-matrix speaker with Active Equalizer and 8 rear-facing, 1 front-facing 4 1/2" full-range drivers. Features pentagon-shaped cabinet with multi-cell injection-molded core with particle board external panels and walnut veneer finish; Active Equalizer with specifically designed fixed EQ; continuously adjustable mid-treble contour control to provide 6 dB of boost or cut centered at 225 Hz; bass shelf control to provide 6 dB of attenuation at 40 Hz; tape monitor switch. Power range 10 W to unlimited; imp 8 ohms; dynamic range 106 dB; noise 90 dB re 1 V (A-wtd); max input 2.1 V rms at 35 Hz; imp 47k ohms. Equalizer 13" W x 4 7/8" D x 2 3/4" H. Speaker 21" W x 13" D x 12 3/8" H. Sold only in stereo pairs (equalizer supplied with each pair) ..... \$1,399/pr  
Speakers only ..... \$1,190/pr

### 10.2 Speaker

Floor-standing ported speaker with two 8" cone woofers and two 3" cone tweeters. Features Stereo Everywhere technology; Stereo Targeting system; automatic system protection; Syncom II computer quality control. Power range 10-180 W; sens 88 dB SPL/W/m; imp 4 ohms; genuine hardwood veneer, waxed teak; 12" W x 39 3/4" H x 12" D; 61 lbs ..... \$1,199/pr

### 8.2 Speaker

Floor-standing ported speaker with 10" cone woofer and two 3" cone tweeters. Features dual-chamber design; Stereo Targeting system; Stereo Everywhere technology; ducted port enclosure;

automatic system protection circuit; Syncom II computerized quality control. Power range 10-120 W; sens 86 dB SPL/W/m; imp 4 ohms; teak vinyl; 16" W x 33" H x 9 1/4" D; 41 lbs ..... \$949/pr

### 601 Series II Speaker System

Two-way Direct/reflecting floor-standing speaker system with 4 3" tweeters, 2 8" long-excursion woofers. Tweeters, one woofer mounted above main enclosure in Free Space Array configuration for lifelike stereo imaging. Features subport enclosure system; dual-frequency crossover; automatic tweeter protection; walnut-grain vinyl finish. Crossovers 1.5 and 2.5 kHz; imp 8 ohms; power range 20-150 W; 29 1/2" H x 14" W x 13" D. Sold only in pairs ..... \$944/pr

### 501 Series IV Speaker System

Direct/reflecting 2-way acoustic-suspension floor-standing speaker system with 2 3" tweeters, mounted in Free Space Array and 10" long-excursion woofer. Features dual frequency crossover to allow woofer and tweeter to operate simultaneously over a full octave; thermal system protection circuit; teac-grain vinyl veneer finish. Crossover 1.5 and 2.5 kHz; power range 20-125 W continuous; imp 8 ohms; 25" H x 16" W x 14" D. Sold only in stereo pairs ..... \$684/pr

### 301 Series II Speaker System

Direct/reflecting ported 2-way bookshelf speaker system with 8" woofer, two 3" tweeters in Free Space Array. Features dual-frequency crossover to allow woofer and tweeter to operate simultaneously over nearly a full octave; tweeter protection circuit; particle board cabinet with walnut-grain vinyl veneer finish. Transition frequencies 3 kHz woofer, 1.2 kHz tweeter; power range 10/60 W/ch continuous; impedance 8 ohms; 17" W x 10 1/2" H x 9 1/2" D. Sold only in stereo pairs ..... \$390/pr

### RM-1 RoomMate Powered Speaker

Pair of speakers with stereo amp in one to accept output of pocket stereo through audio cable. 4 1/2" full-range driver with helical voice coils in each speaker. Features active EQ; distortion-limiting circuitry; AC powered. Power supply 25-W transformer; enclosure of structural polypropylene composite; each speaker 6" x 9" x 6"; 10 lbs. Mounting arms optional at extra cost ..... \$229/pr

### 101 Music Monitor

Indoor/outdoor ported speakers. Features high-impact polystyrene copolymer cabinet for environmental applications; 4 1/2" full-range passive-radiator speaker with integrated electronics per enclosure; optional multi purpose mounting arms and plush style brackets available at extra cost. Power range 10-60 W; Available in black or white with white, blue, red, or green grilles; 10 lbs/pr; 9" W x 6" H x 5" D. Approx. \$199-219/pr

## BOSTON ACOUSTICS

### A400 Speaker

Three-way 4-driver speaker with dual 8" woofers, 6 1/2" midrange unit in its own internal subenclosure; 1" copolymer dome CFT/1 tweeter; crossover frequency 300 Hz from woofer to midrange; oak or walnut ..... \$900/pr

### A150 Series II Speaker

3-way speaker with 10" acoustic-suspension woofer, 1" CFT/1 dome tweeter and 3 1/2" midrange. FR 38-25,000 ± 3 dB; imp 8 ohms; crossover frequencies 650 Hz and 3,000 Hz; power handling 100 W (DIN 45 573); 32 1/2" H x

16" W x 8 3/8" D. Oak or walnut veneers \$590/pr  
Wood-grain vinyl finish ..... \$500/pr

### A100 Series II Speaker

Two-way acoustic-suspension speaker with 10" low-frequency driver and 1" CFT high-frequency unit. Features self-damped copolymer dome and magnetic fluid convection cooling of CFT voice-coil structure; wood-grained vinyl-veneered cabinet; black pedestal base standard. FR 38-25,000 Hz ± 3 dB; crossover at 2,000 Hz; power handling 75 W (DIN 45573). 32 1/2" H including base; 16" W x 8 3/8" D ..... \$390/pr

### A60 Series II Speaker

Acoustic-suspension speaker. Features 8" polymer cone woofer; 1" Textile dome tweeter with ferrofluid. FR 55-20,000 Hz ± 3 dB; power range 10-60 W; sens 90 dB SPL/W/m; imp 8 ohms; wood-grain or black vinyl finish; 11 1/2" W x 18" H x 7 1/2" D ..... \$220/pr

### A40 Series II Speaker

Bookshelf acoustic-suspension speaker. Features 6 1/2" polymer cone woofer; 3/4" polymer dome tweeter with Ferrofluid. FR 65-20,000 Hz ± 3 dB; power range 5-50 W; sens 89 dB SPL/W/m; imp 8 ohms; wood-grain or black vinyl finish; 8 1/4" W x 13 1/2" H x 7 1/2" D ..... \$160/pr

## BOZAK

### LS-330A Speaker

Infinite-baffle 3-way speaker with 12" woofer, 6" midrange, 1" soft-dome tweeter. FR 40-20,000 Hz; crossovers 500 and 2.5 kHz; max power 200 W continuous music; imp 8 ohms; walnut cabinet; 34 1/2" H x 15 1/2" W x 12 1/4" D ..... \$1,038/pr  
LS-250A. Similar to LS-330A except uses 4 1/2" midrange driver; FR 45-20,000 Hz; crossovers 500 and 2 kHz; 23 1/8" H x 14 1/2" W x 12 1/4" D ..... \$598/pr

### CS-400 Speaker

Infinite-baffle 3-way speaker with 12" variable-density woofer, 6" aluminum midrange, 2 aluminum "Z" tweeters. FR 40-20,000 Hz; crossovers 800 and 2.5 kHz; max power 100 W continuous; imp 8 ohms; walnut finish; 25 1/2" H x 18" W x 13 1/4" D ..... \$898/pr

### MB-80 Speaker

Miniature two-way high-performance acoustic-suspension speaker. Features 6" aluminum cone woofer, 1" soft-dome tweeter; fail-safe tweeter protection circuit; oak veneer cabinet. FR 80-20,000 Hz; crossover 1.6 Hz; max power 250 W continuous music; imp 8 ohms; 12 1/2" H x 7 7/8" W x 7 7/8" D ..... \$549/pr

### B-1002 Bard Outdoor Speaker

All-weather 2-way speaker with 8" aluminum midrange/woofer, 2" aluminum tweeter. FR 50-20,000 Hz; max power 60 W continuous music; imp 8 ohms; uses jack and plug connector; 18" dia. x 21" x 12" ..... \$519/pr  
B1000. Same as B-1002 except without tweeter ..... \$439/pr

### Digital Music Series

#### DMS-5500W Speaker

Features 12" woofer; 6" midrange; 1" tweeter. FR 30-21,000 Hz ± 3 dB; Max power 250 W; dark oak wood veneer; 41" H x 12 1/4" D x 15 1/2" W ..... \$550

#### DMS-5500 Speaker

Three-way speaker features 12" woofer; 6" midrange; 1" soft dome tweeter. FR 30-21,000 Hz ± 3 dB; nominal impedance 8 ohms; sens 94 dB, 1 W, 1 meter; max power 250 W; dark oak

# SPEAKERS

wood veneer; 41" H x 11" D x 15½" W . . \$420

## DMS-3500 Speaker

Three-way speaker with 8" woofer; 4" midrange; 1" soft dome tweeter. FR 35-21,000 Hz ± 3 dB; max power 150 W; genuine dark oak wood veneer; 37" H x 8¾" D x 10½" W; 40 lbs . . \$320

## Miniature System Series

### MB-80 Speaker

2-way speaker with 6" aluminum woofer, and 1" soft plastic dome tweeter. FR 80-20,000 Hz ± 3 dB; imp 8 ohms nominal, 6 ohms minimum; sens 85 dB SPL/W/m; min power 35 W; max power 250 W; crossover modified 6 dB/octave at 1,600 Hz. 12½" H x 7½" W x 7½" D; 40 lbs/pr; genuine wood veneer . . . \$550/pr

### MBS-1 Subwoofer

Variable-Density pulp/lamb's wool cone subwoofer with 2 voice coils. Features baffle design; vented cabinet. FR 20-85 Hz ± 3 dB; imp 8 ohms nominal; sens 88 dB SPL/W/m; min power 25 W; max power 200 W; crossover 12 dB/octave at 80 Hz. 23½" H x 14½" W x 12½" D; 48 lbs; genuine wood veneer . . . \$400 ea

## CANTON

### Ergo A Speaker

Amplified 3-way floor-standing speaker with 2 260-mm woofers, 125-mm midrange, 20-mm tweeter, separate bass, midrange, treble hybrid amps. Features signal-correction circuit; thermal overload, short-circuit protection; bass level control; switchability for left/right configuration; oak, black, gloss mahogany, or white finish; perforated steel grille. FR 20-30,000 Hz; crossovers 130 and 2,200 Hz; max amp power 100 W ch; THD/IMD <0.05%/<0.05%; S/N >80 dB woofer amp, >90 dB midrange, tweeter amps; 39" H x 15" W x 15" D . . . \$3,500/pr

### CT 2000 Speaker

Modified reflex floor-standing speaker with 310-mm cone woofer; 120-mm cone midrange; 25-mm dome tweeter. Features screw-plug connectors; 5-meter cable; removable grille; integrated stand. FR 18-30,000 Hz ± 6 dB; max power 300 W; imp 4 ohms; gloss mahogany, ash black, ash white, or walnut finish; 14" W x 38½" H x 13½" D; 100 lbs . . . \$2,000/pr

### CT 1000 Speaker

3-way floor-standing speaker with 25-mm titanium dome tweeter; 120-mm cone midrange; long-throw 310-mm woofer. Enclosure surfaces black, white, walnut, or gloss mahogany veneer; grille of perforated steel plate; color to match enclosure; permafex spring clamps for easy connection; 5-m connecting cable; removable grille. Nominal imp 4 ohms; nominal power handling 110/160 W; FR 20-30,000 Hz; crossovers 450 Hz, 3,100 Hz; 13.98" W x 25.98" H x 12.6" D; 21.5kg . . . \$1,350/pr  
With optional FG200 speaker stands \$1,500/pr

### CT-800 Speaker

3-way shelf and/or floor standing box-enclosed speaker. Features 260 mm cone woofer; 120 mm cone midrange; 25 mm dome tweeter. FR 22-30,000 Hz; minimum power 50 W; max power 150 W; sens 93.4 dB SPL with 1 W input measured at 1 m; imp 4 ohms. 13.8" W x 22.8" H x 13" D; 18.8 Kg; black/white ash, Walnut, oak finishes . . . \$1000/pr  
Gloss mahogany finish . . . \$1250/pr

### GL-300 F Speaker

Low-profile 2-way speaker acoustically tuned for wall mounting. Features 20-mm dome

tweeter (fabric); long-throw 160-mm cone woofer cone. Enclosure surfaces black, white or walnut veneer; grille of perforated steel plate; color to match enclosure; permafex spring clamps; 5-m connecting cable; removable grille. Nominal imp 4 ohms; nominal power handling 40/60 W; FR 48-30,000 Hz; crossover at 1,700 Hz; 12.6" W x 8.66" H x 3.15" D; 3.1 kg. . . . \$375/pr

### GL-260 Speaker

Low-profile 2-way speaker with 160 mm woofer, tweeter. Features wall-mounting suitability; white, or brown finish; perforated metal grille. 42-30,000 Hz; crossover 1,700 Hz; power range 60 W; distortion <1%; imp 4 ohms; 10.5" H x 7.12" W x 4.75" D . . . . \$350/pr

### HC 100 Speaker

Bookshelf speaker with 110-mm cone woofer, 20-mm dome tweeter. Features Permafex spring clamps; 5-m connecting cable; one-point mounting fixture; removable grille. FR 48-30,000 Hz; max power 60 W; imp 4 ohms; black, white, or bronze finish; 5½" W x 7½" H x 5¼" D; 5 lbs . . . . \$250/pr

### Plus S Speaker

2-way bookshelf minispeaker suitable as satellite in connection with Canton Plus B and Plus C speakers. Features 110 mm cone woofer; 20 mm dome tweeter; flush wall mount; removeable grille. FR 45-30,000 Hz; minimum power 20 W; max power 80 W; sens 87.2 dB SPL/W/m; imp 4 ohms. 4.72" W x 8.07" H x 3.94" D; 2 Kg; black, white, brown finishes . . . . \$250/pr  
Walnut finish . . . . \$350/pr

### Karat Series Speakers

300. 3-way bookshelf box-enclosed speaker. Features 260 mm cone woofer; 38 mm dome midrange; 25 mm dome tweeter. FR 25-30,000 Hz; minimum power 45 W; max power 130 W; sens 90.9 dB SPL/W/m; imp 8 ohms. 12.2" W x 19.7" H x 11.4" D; 13 Kg; black, white, walnut finishes . . . . \$800/pr

200. 3-way bookshelf box-enclosed speaker. Features 220 mm cone woofer; 28 mm dome midrange; 20 mm dome tweeter. FR 28-30,000 Hz; minimum power 30 W; max power 100 W; sens 89.9 dB SPL/W/m; imp 8 ohms. 10.4" W x 16.5" H x 9.9" D; 9.5 Kg; black, white, walnut finishes . . . . \$650/pr

### Fonum Series Speakers

90. Sealed box bookshelf speaker. Features 230-mm cone woofer; 28-mm dome midrange; 20-mm tweeter. FR 25-30,000 Hz ± 6 dB; max power 100 W; sens 88.6 dB SPL/W/m; imp 8 ohms. 12" W x 17" H x 10" D; 20 lbs; black or bronze/brown finishes . . . . \$499/pr

60. Sealed box bookshelf speaker. Features 210 mm cone woofer; 28 mm dome midrange; 20 mm dome tweeter. FR 28-30,000 Hz ± 6 dB; max power 80 W; sens 88.2 dB SPL/W/m; imp 8 ohms. 10" W x 15" H x 7" D; 15 lbs; black or bronze/brown finishes . . . . \$429/PR

### Subwoofers

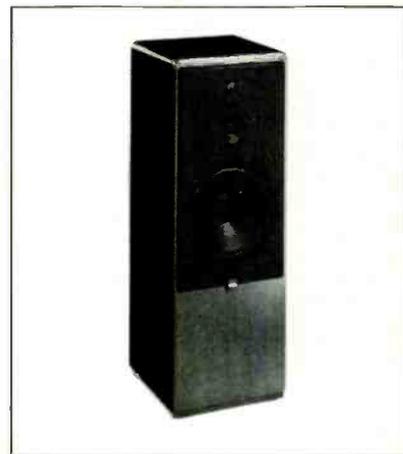
#### Plus A Subwoofer

Self-powered super-subwoofer (bass cube) with built-in integrated power stereo amps for midrange-tweeter satellites; bass amp with 2 hybrid amps in thin film configuration as bridge circuit. Features 2 long-throw woofers (cone diaphragm 310 mm); enclosure surfaces black, white, or walnut; grille of perforated steel plate; color to match enclosure; bass level and input sens digitally selected and freely switchable on upper front panel; digital feed of input data; dig-

ital display (manual override) via LED scale; separate for subwoofer; left and right chs; 30.71" W x 22.64" H x 16.93" D; FR 16-30,000 Hz (with satellites) . . . . \$2,500/ea  
Complete with Quinto 520 speakers as satellites . . . . \$3,100

### Plus B Subwoofer

Amplified subwoofer with 310-mm long-throw woofer, separate bass, midrange/treble hybrid amps. Features signal-correction circuit; thermal overload; short-circuit protection; bass level control; automatic/manual switching with time-delay relay; terminals, switching controls for up to 4 satellite speakers; walnut, black, or bronze-brown finish; removable perforated steel grille. FR 20-130 Hz; crossover 130 Hz; max amp output power 100 W each; THD and IMD <0.05% all amps; 15½" H x 15" D x 13½" W . . . . \$1,100/ea



Canton CT 2000

## CELESTION

### SL600 2-Way Speaker

Acoustic-suspension speaker with 1¼" copper-alloy dome tweeter, VHP woofer. Honeycomb aluminum cabinet . . . . \$1,250/pr

SL6. Similar to above. Features unique design for min vibration distortion. Rosewood finish . . . . \$800/pr  
American walnut cabinet . . . . \$700/pr

### DL10 3-Way Speaker

Bass-reflex speaker with separate midrange enclosure. 10" woofer, 6½" midrange; 1¼" aluminum hard-dome tweeter. American walnut finish. Crossovers at 530 and 3,800 Hz; power range 10-150 W; sens 90 dB/W 48-20,000. 29" H x 14" W x 12" D; 42.5 lbs ea . . . . \$849/pr

### Ditton 250 3-Way Speaker

Acoustic-suspension 3-way speaker with UL-TRA 1" dome tweeter; 5" cone midrange; 8" PVC-surround woofer. Features flush-mounted, vertically aligned drivers; walnut cabinet; 22½" H x 11½" W x 9½" D . . . . \$600/pr

### DL8 2-Way Speaker

Sealed cabinet speaker with 8" fiber-cone woofer and 1" metal-foil (aluminum hard-dome) tweeter. American walnut finish, dark-brown cloth over front panel; gold-plated terminals; rigid cabinets. Crossover at 2,500 Hz; power range 10-150 W; sens 89 dB/W 50-20,000 Hz; imp 8 ohms. 500 mm H x 275 W x 278 D . . . \$499/pr

### DL6 2-Way Speaker

Bass-reflex (rear port) speaker with 8" fiber

# S P E A K E R S

woofer and 1" plastic-foil soft-dome tweeter. American walnut finish, dark-brown cloth over front panel; gold-plated terminals; rigid cabinets. Crossover at 2,500 Hz; power range 10-100 W; sens 89 dB/W 60-20,000 Hz; imp 8 ohms. 454 mm H x 245 W x 262 D ..... \$399/pr

### DL4 2-Way Speaker

Bass-reflex (rear port) speaker with 6½" fiber woofer and 1" plastic-foil soft-dome tweeter. American walnut finish, dark-brown cloth over front panel; gold-plated terminals; rigid cabinets. Crossover at 2,500 Hz; power range 10-75 W; sens 89 dB/W 70-20,000 Hz; imp 8 ohms. 384 mm H x 208 W x 227 D ..... \$299/pr

### Ditton 100 Speaker

Compact 2-way speaker with 6½" PVC surround woofer; 1" ULTRA tweeter. Features vertically aligned flush-mounted drivers; walnut grain vinyl finish; black grille cloth; FR 78-20,000 Hz; crossover 2,300 Hz; power range 10-40 W; sens 87 dB SPL/W/m; imp 8 ohms; 13" H x 8¼" W x 7¾" D; 9.75 lb ..... \$260/pr

## CERWIN-VEGA

### Digital Series Speaker Systems

#### D-9 Speaker System

Three-way, four-driver, floor-standing speaker with 15" woofer, dual 6" midrange and 1" tweeter. Features Helmholz/Theile enclosure fabricated from high-density pressed board with woodgrain vinyl finish and acoustically transparent brown stretch grille. FR 29-20,000 Hz; power range 5-350 W; sens 101 dB; imp 4 ohms; crossover frequencies 500 and 3,500 Hz; 35½" x 18" x 17¾"; 85 lbs ..... \$950/pr

#### D-7 Speaker System

3-way tower speaker with 12" woofer, dual 6" cone distributed midrange driver in large chamber, 1" horn tweeter. Features circuit protection; midrange, tweeter level controls; FR 25-20,000 Hz ± 3 dB; crossovers 500 and 3.5 kHz; sens 98 dB SPL/W/m; max power 200 W; imp 8 ohms ..... \$790/pr

#### D-5 Speaker System

Floor/shelf 3-way speaker with 12" woofer, 6" cone midrange, 1" horn tweeter. Features circuit protection; tweeter level controls; FR 32-20,000 Hz ± 3 dB; crossovers 700 and 3.5 kHz; sens 96 dB SPL/W/m; max power 150 W; imp 8 ohms ..... \$630/pr

#### D-3 Speaker System

3-way shelf-speaker with 10" woofer, 6" cone midrange, 1" horn tweeter. Features circuit protection; midrange, tweeter level controls; FR 30-20,000 Hz ± 3 dB; crossovers 700 and 3.5 kHz; sens 94 dB SPL/W/m; imp 8 ohms; finished in hickory woodgrain vinyl w/brown stretch cloth grille ..... \$530/pr

#### D-2 Speaker System

2-way speaker system with 10" woofer in a cast aluminum frame and 1" voice coil horn. Features high-frequency protection circuit breaker; direct-radiating vented enclosure; hickory woodgrain vinyl finish with brown stretch cloth grille. FR 30-20,000 Hz; power handling min/max 5/125 W; sens 94 dB; nominal imp 8 ohms; crossover frequency 3,000 Hz; 24½" x 14" x 10"; 38 lbs ..... \$410/pr

### 2000 Speaker Series

#### 2000-15 Speaker

Three-way floor-standing speaker with 15" cone woofer, six 6" cone midrange drivers, 1" dome tweeter. Features dual acoustical transformer in

vertical array, enclosed in vented direct-radiating monolithic cabinet; level controls for midrange and high frequency; integral base for floor placement. FR 29-20,000 Hz ± 2.5 dB; power range 5-350 W; sens 100 dB SPL/W/m; imp 4 ohms; hand-rubbed walnut finish; 24" W x 50" H x 91¾" D; 111 lbs ..... \$1,400/pr

#### 2000-10 Speaker

Floor-standing speaker with 10" cone woofer, two 6" cone midrange drivers in symmetrical vertical array, 1" dome tweeter with dual acoustical transformer in vented, direct radiating monolith. FR 29-20,000 Hz ± 2.5 dB; power range 5-125 W; sens 94 dB SPL/W/m; imp 8 ohms; hand-rubbed walnut finish; 15½" W x 34" H x 8½" D; 50 lbs ..... \$800/pr

## DAHLQUIST

#### DQ-20 Speaker

Vertical-phased-array speaker intended for floor placement. Oak with white grille, or oak with black grille ..... \$1,800/pr

#### DQ-10 Speaker

Phased-array speaker. Features low-diffraction time-delay treble-slope control; solid walnut or oak trim black or white grille cloth; in mirror-image pairs. FR 37-27,000 Hz; crossovers 400, 1k, 6k, 12.5 power range 60-200 W; imp 8 ohms; 31½" H x 9" D ..... \$1,200/pr

#### DQ-1 W Subwoofer

Subwoofer with 13" driver in heavy cast frame for biamplified systems. Features walnut or oak finish with black or white grille cloth; 28" H x 18" W x 14" D ..... \$395

### Dynamic Tracking Studio Monitors

#### DQM-9 Speaker System

Dual rear-firing tuned-port speaker system features rigid diecast zinc chassis drivers on anti-diffraction baffle in "unbox" enclosure; 11" woofer and 5" cone midrange feature flat-wound ribbon wire voice coils; tweeter is 1" dome. FR 28-22,000 Hz; power range 25-200 W; sens 95 dB at 1 kHz; crossovers 450 and 3.5 kHz; imp 8 ohms; 14.5" W x 25" H x 13¼" D; 65 lbs; suede gray Nextel vibration damping and oak or walnut sides with black lacquer top finishes ..... \$1,200/pr

#### DQM-7 Compact Speaker System

Dual rear firing tuned-port speaker. Features rigid diecast zinc chassis drivers on anti-diffraction baffle in "unbox" enclosure; 9" woofer; features flat-wound ribbon wire voice coil; tweeter is 1" dome; FR 37-22,000 Hz; power range 25-120 W; sens 92 dB at 1,000 Hz; crossover 3 kHz; imp 8 ohms; 21¼" H x 13¾" W x 11¼" D; 50 lbs; suede gray Nextel vibration damping finish ..... \$730/pr

#### DQM-5 Speaker System

Dual rear-firing tuned-port speaker in "unbox" enclosure with drivers mounted on anti-diffraction baffle. Features 9" woofer; flat-wound ribbon wire voice coil; 1" dome tweeter; FR 37-22,000 Hz; power range 25-100 W; sens 90 dB at 1 kHz; crossover 3 kHz; imp 8 ohms; 21¼" H x 13¾" W x 11¼" D; 46 lbs; suede gray Nextel vibration-damping finish ..... \$600/pr

#### DQM-3 Speaker System

Acoustic-suspension speaker in "unbox" enclosure with drivers mounted on anti-diffraction baffle. 8" woofer features flat wound ribbon wire voice coil; 1" dome tweeter; FR 50-20,000 Hz; power range 25-120 W; sens 90 dB at 1 kHz; crossover 2 kHz; imp 8 ohms; 17¼" H x 11¼"

W x 10¾" D; 35 lbs; suede gray Nextel vibration-damping finish ..... \$450/pr

## DALI

### HE 1288 Speaker

Floor-standing bass-reflex speaker. Features high-density pressed board enclosure; acoustically transparent black cloth grille; 12" cone woofer; 8" cone midrange; horn tweeter. FR 30-20,000 Hz ± 3 dB; power range 5-400 W; sens 101 dB SPL/W/m; imp 4 ohms; black vinyl with real walnut wood baffle board finish; 17¼" W x 40" H x 17¼" D; 92 lbs ..... \$596/pr

### Dali 8 Speaker

Floor-standing bass-reflex speaker. Features high-density pressed board enclosure; extensively braced; acoustically transparent black cloth grille. Speaker houses two 8" cone woofers; 4½" cone midrange; 1½" dome tweeter; ¼" dome supertweeter. FR 33-23,000 Hz ± 3 dB; power range 10-350 W; sens 92 dB SPL/W/m; imp 8 ohms; genuine walnut veneer finish; 11½" W x 38" H x 16" D; 63 lbs ..... \$596/pr

### HE 1266 Speaker

Bass-reflex speaker. Features real walnut wood front baffle board; acoustically transparent black cloth grille. Speaker houses 12" cone woofer; 8" cone midrange; horn tweeter. FR 35-20,000 Hz ± 3 dB; power range 5-300 W; sens 100 dB SPL/W/m; imp 4 ohms; available in black vinyl with real wood walnut front baffle board; 13¼" W x 37" H x 16" D ..... \$459/pr

### Dali 6 Speaker

Floor-standing acoustic-suspension speaker. Features 3rd order acoustical Butterworth crossover; high density (7/8") pressed board enclosure; acoustically transparent black cloth floating grille. Speaker houses 10" cone woofer; 8" cone midrange; 1½" dome tweeter. FR 40-20,000 Hz ± 3 dB; power range 10-200 W; sens 91 dB SPL/W/m; imp 6 ohms; walnut veneer finish; 37" W x 11" H x 12½" D; 48 lbs ..... \$396/pr

### HE 1255 Speaker

Floor-standing bass-reflex speaker. Features high density pressed board enclosure; acoustically transparent black cloth grille; 12" cone woofer; 5" cone midrange; horn tweeter. FR 40-20,000 Hz ± 3 dB; power range 5-200 W; sens 98 dB SPL/W/m; imp 8 ohms; black vinyl with real wood walnut front baffle finish; 12" W x 27½" H x 12" D; 44 lbs ..... \$359/pr

### Dali 3 Speaker

Bookshelf acoustic-suspension speaker with 3rd order acoustical Butterworth crossover. Features enclosure sides ¾"; front and rear baffle ½"; acoustically transparent black cloth grille. Speaker houses 8" cone woofer; 1" dome tweeter. FR 55-20,000 Hz ± 3 dB; power range 5-80 W; sens 90 dB SPL/W/m; imp 8 ohms; walnut veneer finish; 17½" W x 11" H x 9½" D; 19 lbs ..... \$160/pr

## DBX

### dbx Soundfield One Speaker System

Two floor-standing enclosures, each with four 10" woofers, four 4" midranges, and six ½" dome tweeters. Phased-array design produces both measurably flat power response (20-20,000 Hz) and stable and consistent image anywhere in listening area (no preferred listening location). Computer-designed crossover individually tailors amplitude and phase of each driver to produce psychoacoustically optimized radiation pattern and constant imp (4½ ohms ± 1½ ohms 20-20,000 Hz). System includes processor



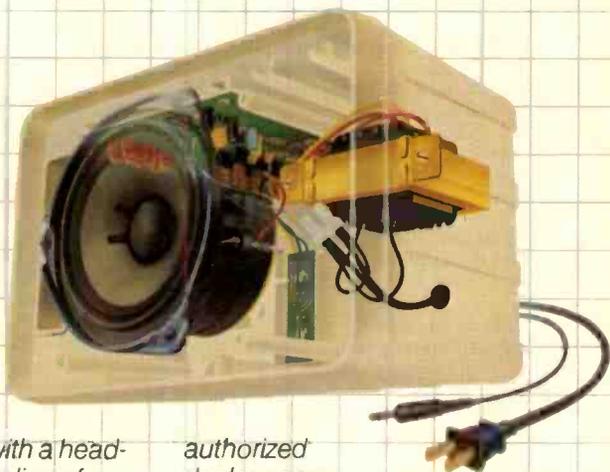
## Toteworthy Stereo

**T**oday, a good stereo's place isn't necessarily just in the home. Plug the new Bose® RoomMate® powered speaker system into a personal stereo, and you'll have a complete, compact, room-filling stereo system that you can use nearly anywhere. Or combine the RoomMate system with one of the new generation of portable compact disc players, and you'll have a digital stereo system that's as compact and easy to carry as a camera outfit!

The RoomMate system can create true high fidelity out of personal stereos and CD players because it has its own built-in amplifier and active

equalizer. In fact, the RoomMate system uses some of the same audio technology that made the Bose 901® speaker an audio legend. The RoomMate system works with keyboards, personal computers, and virtually anything equipped with a headphone jack. And there's a line of accessories available such as mounting arms, wall brackets, and the travel bag shown above. Best of all, the RoomMate system's price is very easy to live with.

You'll probably find applications for the system all around you—because there's high fidelity hidden inside almost all of your personal electronics! Audition the Bose RoomMate system at your



authorized dealer soon.

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**BOSE**  
**Roommate**

POWERED SPEAKER SYSTEM

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# SPEAKERS

to go in preamp/receiver tape-monitor loop. Processor equalizes speaker FR and also features power amp monitor/speaker protector; rumble suppressor; adjustable HF/LF EQ and high pass/low pass filters for ends of audio band; auto ch balancing for out-of-balance program material; ambience control; bypass (for headphone listening); and replacement tape monitor; Sens 90 dB SPL 2.83 V/1 m, average room; power range 30-400 W/ch; system will produce 110 dB SPL in 3,000 cu.-ft. room; walnut or oak veneer with dark brown grilles. 42" H x 14 1/2" W x 14 1/2" D ..... \$2,600/system

## Soundfield Ten Speaker

Floor-standing sealed box speakers with two 10" cone woofers, two 4" cone midranges, four 1/2" dome tweeters. Features outboard processor with adjustable low-frequency/high-frequency EQ; EQ for against-wall and out-from-wall placement; bypass switch for headphone listening; replacement tape monitor; phased array produces measurably flat power response from 30-20,000 Hz. FR 30-20,000 Hz  $\pm$  3 dB; min power 40 W; max power 300 W; nominal imp 90 dB SPL/W/m. 14 1/2" W x 34" H x 14 1/2" D; 50 lbs; oak or walnut finishes ..... \$1,250/pr

## DCM

### Time Window 3 Speaker

Folded transmission-line 3-way speaker intended for floor placement. Features time-coherent point source for more accurate off-axis sound reproduction. Adjustable high and middle frequency energy output, narrow to wide image spatial control; also utilizes acoustic anti-diffraction lenses. 8" cone woofer; 6 1/2" cone midrange; 2 3/4" soft plastic dome tweeters. FR 24-20,000 Hz; min power 10 W, max power 200 W; sens 90 dB; imp 8 ohms; available in dark oak with dark brown fabric; 45 lbs; 16 1/4" W x 39 1/4" H x 12 3/8" D ..... \$1,397/pr

### Time Window 1A Speaker

Hybrid transmission-line speaker intended for floor placement. Improved version of original Time Window with wide-angle sound distribution, pinpoint imaging properties and high power-handling capability. Features cylindrical back and triangular prism front. Optimized for min time-dispersion error. Contains two 6 1/2" cone woofers with acoustic lens; 2 3/4" soft plastic dome tweeter with acoustic lens. FR 30-20,000 Hz; min power 10 W, max power 200 W; sens 91 dB; imp 8 ohms; available in dark oak with dark brown fabric; 32 lbs; 15" W x 36" H x 11 3/4" D ..... \$877/pr

### QED 1A Speaker

Hybrid transmission line speaker intended for floor placement. Improved version of original QED speaker. Features new 3/4" soft plastic dome tweeter with acoustic lens and new 8" low frequency driver. Time-coherent design featuring electronic correction circuitry replacing usual crossover network. 8" cone woofer; 1" soft plastic dome tweeter with acoustic lens. FR 32-20,000 Hz; min power 10 W, max power 200 W; sens 90 dB; imp 8 ohms; available in dark oak with dark brown fabric; 37 lbs; 11 1/4" W x 36" H x 9 1/4" D ..... \$657/pr

### Time Frame TF500 Speaker

Mirror-imaged floor-standing loudspeaker. Features 6 1/2" cone woofer; 3/4" soft plastic dome tweeter with acoustic lens; FR 38-20,000 Hz; power range 10-100 W; sens 90 dB SPL/W/m; imp 8 ohms; dark oak finish with dark brown fabric grille; 17" W x 41" H x 6 3/4" D; 42 lbs ..... \$499/pr

## ImageMaster Speaker

Folded transmission-line 3-way bookshelf system features high 93 dB/2.8V/m sens along with accurately equalized time domain (impulse) response and high power-handling capability; electronically phased radiation pattern improves stereo image stability. Power range 5-100 W; imp 8 ohms; 23 3/4" H x 12 3/8" W x 13 3/4" D; Walnut vinyl cabinet ..... \$499/pr

## Macrophone Speaker

Unique-shaped 2-way bookshelf speaker that makes efficient use of shelf space; mirror-image pairs. 6 1/2" cone woofer, 3/4" soft plastic dome tweeter with acoustic lens. FR 40-18,000; resonance 30 Hz; sens 89 dB/2.8 V/m; power range 10-100 W; imp 8 ohms; 13" H x 12 1/2" D x 9" W; Walnut vinyl cabinet ..... \$399/pr

## DESIGN ACOUSTICS

### PS-30 Three-Piece Speaker System

Consists of 2 PS-5 satellites, PS-LF bass module. Satellites are low-diffraction design with 5" midwoofer, 1" soft-dome tweeter. Bass module has 12" dual voice coil, long-throw woofer; power satellites/subwoofer 35/250 W; imp 8 ohms ..... \$695/set

### PS-5 Speaker

Acoustic-suspension 2-way miniature bookshelf speaker with 5" woofer, 1" dome tweeter. Features midrange, tweeter level controls; walnut veneer cabinet; brown cloth grille. FR 80-16,000 Hz  $\pm$  1.5 dB; crossover 2.5 kHz; sens 85 dB SPL/W/m; power range 15-50 W; imp 4 ohms; 11 1/4" H x 7 3/8" W x 5 1/2" D ..... \$350/pr

### Point Source Series

PS-10. Acoustic-suspension 3-way speaker with down-firing 10" long-throw woofer, 5" midwoofer, 1" soft-dome tweeter. Features tweeter level control; mirror-image driver placement; acoustically treated baffle; walnut-vinyl finish; brown cloth grille. FR 48-20,000 Hz; crossovers 190 and 2,000 Hz; sens 90 dB SPL/W/m; power range 15-200 W; imp 8 ohms; 14" H x 13 3/4" D x 11" W ..... \$500/pr

PS-6. Two-way design with 6" woofer, 3/4" soft-dome tweeter; FR 50-20,000 Hz; sens 88 dB SPL/W/m; power range 15-100 W; 11 1/2" D x 12" H x 8 1/8" W; 12 lbs ..... \$240/pr

PS-8A. Bookshelf acoustic-suspension speaker. Features 8" down-firing, long-throw woofer; 4" cone mid-woofer; 3/4" soft-dome tweeter; tweeter level control; mirror-image driver placement; acoustically-treated baffle; crossover at 200 and 2,000 Hz. FR 50-20,000 Hz; power range 15-175 W; sens 89 dB SPL/W/m; imp 8 ohms; walnut-vinyl finish; 9" W x 11" H x 13 3/4" D ..... \$360/pr

PS-6V. Bookshelf acoustic-suspension speaker. Features 6 1/2" long-throw woofer; 3/4" soft-dome tweeter; mirror-image driver placement; acoustically-treated baffle; shielded magnets for use with video monitors. FR 50-20,000 Hz; power range 10-100 W; sens 88 dB SPL/W/m; imp 8 ohms; black gray grille; 8" W x 12" H x 11 1/2" D ..... \$260/pr

## DYNACO BY ESS

### 123C Speaker System

Passive-radiator floor-standing speaker with 12" woofer, 5" midrange and 2" x 5" piezoelectric tweeter. Features auto-reset circuit breaker; tweeter crossover control +3 to -20 dB; midrange crossover control +3 to -4 dB; FR 20-30,000 Hz  $\pm$  4 dB; power range 18-175 W; sens 96 dB SPL/W/m; imp 6 ohms; walnut grain finish; 14 1/4" W x 39" H x 11 1/4" D; 45 lbs ..... \$998/pr

## 312 Speaker

Passive-radiator bookshelf speaker with 12" woofer, 5" midrange, and 2" x 5" piezoelectric tweeter. Features auto-reset circuit breaker; tweeter crossover control +3 to -20 dB; midrange crossover control +3 to -4 dB; FR 23-30,000 Hz  $\pm$  4 dB; power range 15-150 W; sens 96 dB SPL/W/m; imp 6 ohms; walnut grain finish; 14 1/4" W x 25" H x 11 1/4" D; 35 lbs ..... \$798/pr

## 310 Speaker

Passive-radiator bookshelf speaker with 10" woofer, 5" midrange and 2" x 5" tweeter. Features auto-reset circuit breaker; tweeter crossover control +3 to -20 dB; midrange crossover control +3 to -4 dB; FR 25-25,000 Hz  $\pm$  4 dB; power range 12 to 120 W; sens 96 dB SPL/W/m; imp 6 ohms; walnut grain finish; 14 1/4" W x 25" H x 11 1/4" D; 35 lbs ..... \$598/pr

## EGO SYSTEMS LOUSPEAKERS

### Super Tower Speaker

Floor-standing tower speaker with two 10" woofers, 10" passive radiator, 5" midrange, 1" Mylar dome tweeter with ferrofluid. Features fuse protection; phase-compensation switch; brightness control; alagash vinyl finish; removable black cloth grille. FR 22-23,000 Hz; crossovers 400 and variable 4k-8k Hz; power range 10-150 W; sens 97 dB SPL/W/m; impedance 6 ohms; 37 3/8" H x 13 1/2" W x 14 1/2" D (includes integral 2" pedestal) ..... \$1,190/pr

### SE 12.3 Speaker

Ducted port 3-way speaker with 12" woofer, 5" midrange, 1" Mylar dome tweeter with ferrofluid. Features LED peak-level indicator; spring terminals; brightness control; midrange pad; fuse protection; Phase Compensation switches; front-mounted crossover panel; removable black knit grille. FR 30-21,000 Hz; crossovers 700 and variable 5k-8k Hz; power range 10-100 W RMS; SPL 97 dB; imp 6 ohms; 26 3/8" H x 15 1/2" W x 11 3/8" D; 48 lbs ..... \$790/pr

### PS-8 Speaker

Bookshelf ported speaker with removable black knit grille. Features 8" polypropylene cone woofer; 3/4" ferrofluid dome tweeter. FR 40-20,000 Hz  $\pm$  3 dB; min power 10 W; max power 60 W; sens 92 dB SPL/W/M; imp 4 ohms; crossover 4,000 Hz. 12 1/8" W x 22 1/2" H x 9 1/2" D; 23 lbs; walnut vinyl veneer ..... \$299/pr

### PS-5 Speaker

Bookshelf ported speaker with removable black knit grille. Features 5 1/4" cone woofer; 3/4" dome tweeter. FR 50-20,000 Hz  $\pm$  3 dB; min power 10 W; max power 50 W; sens 90 dB SPL/W/M; imp 6 ohms; crossover at 5,000 Hz. 6 3/4" W x 11 1/4" H x 7 3/8" D; 10 lbs; walnut vinyl veneer finish ..... \$198/pr

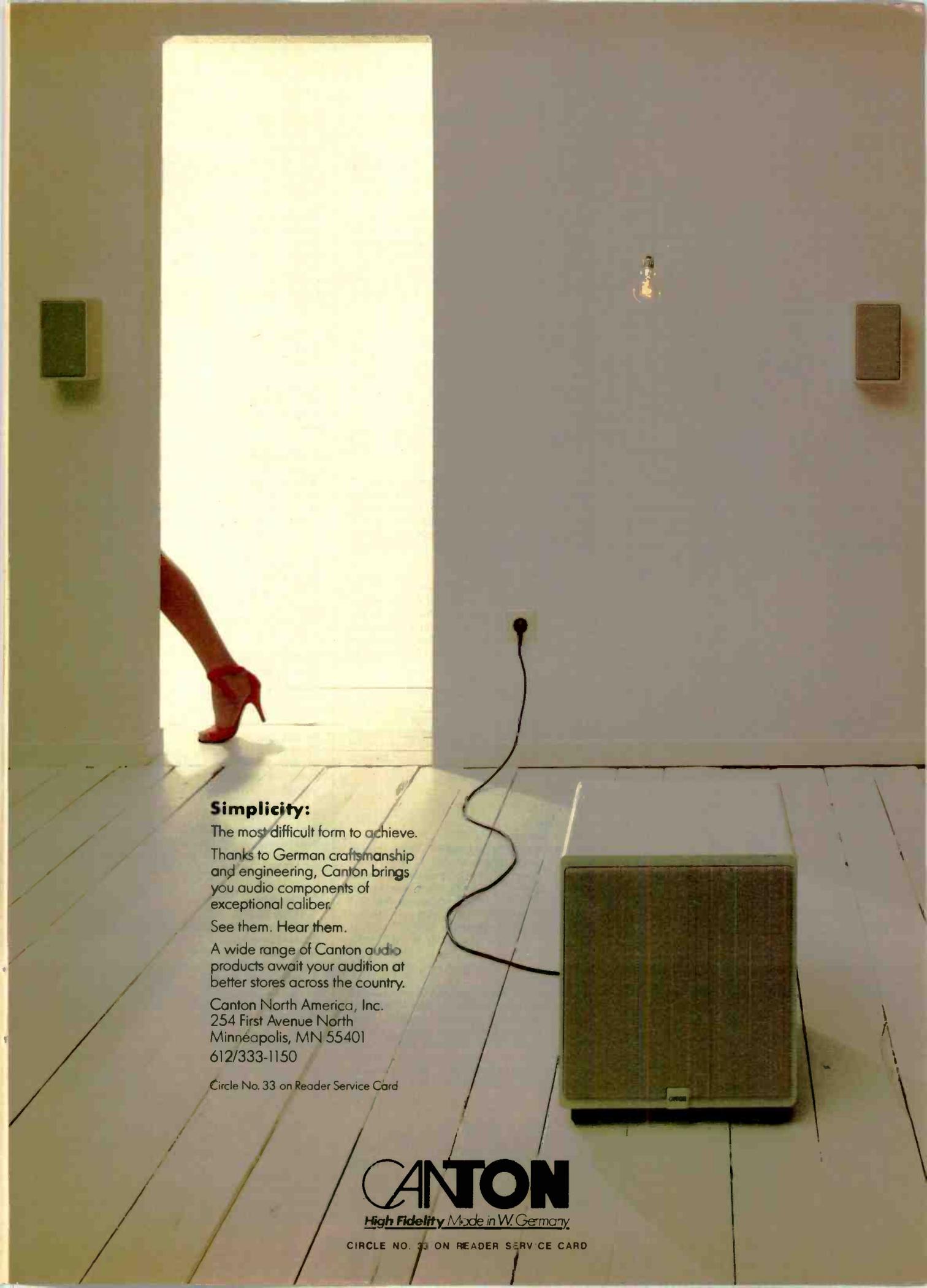
## EMPIRE

### FET-600 Speaker

Bookshelf speakers with 6 1/2" polypropylene cone woofer and 1" aperiodic soft-dome tweeter. Max power 200 W; Crossover 3,000 Hz; imp 8 ohms; efficiency 90 dB SPL at 1 meter with 1 W input. Walnut veneer; 17 3/4" H x 9 1/2" W x 10 3/4" D ..... \$499/pr

### FET-450 Speaker

Bookshelf speaker with 2 x 4 1/2" cone woofer; 3/8" polymer dome tweeter. Max power 150 W; imp 4 ohms; efficiency 90 dB SPL at 1 meter with 1 W input; crossover 10,000 Hz. Walnut veneer; 19" H x 7 3/8" W x 8" D ..... \$349/pr



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# SPEAKERS

## ENERGY BY API

### 22 Reference Monitor

Two-way bass-reflex front-port monitor matched within 1/8 dB left and right. Features 7" polypropylene cone woofer with PVC stitched suspension; 1.5" Dual Hyperdome tweeter; includes stands. FR 34-20,000 Hz  $\pm$  1.5 dB off axis; sens 89 dB SPL/W/m; imp 8 ohms; power range 20-200 W; 24 3/4" H x 10 1/2" W x 12" D; 34 lbs ..... \$1,100/pr

### 22 Pro Monitors

Two-way bass-reflex mirror-imaged speaker, matched 0.5 dB left and right. Includes stands. Features 7" polypropylene cone woofer with PVC stitched suspension; 1.5" Dual Hyperdome tweeter. Walnut-grain vinyl with black sagesistant fabric grilles. FR 28-20,000 Hz  $\pm$  1.5 dB off axis; sens 89 dB SPL/W/m; imp 8 ohm; power range 20-200 W; 24 3/4" H x 10 1/2" W x 12" D; 34 lbs ..... \$800/pr

### ESM-3 Speaker

2-way bass-reflex speaker, mirror-imaged and matched within 1 dB left and right. Features 8" polypropylene cone woofer with foam surround; 3/4" soft dome ferrofluid cooled tweeter; black sag resistant fabric grille. FR 45-22,000 Hz  $\pm$  3 dB on axis; sens 86.5 dB SPL/W/M; imp 8 ohms; min power 10 W; max power 80 W; crossover 2,000 Hz phase corrected. 20" H x 10 3/8" W x 8 3/4" D; 20 lbs/ea; walnut grain vinyl veneer finish; stands optional ..... \$250/pr

## EPI BY EPICURE

### Stat 450 Speaker

Floor-standing two-way hybrid electrostatic speaker. Features 10" two-layer Time/Energy cone woofer; three electrostatic panels with almost 60 square inches of sound radiating surface area; electrostatic panel level control. FR 44-20,000 Hz  $\pm$  3 dB; crossover 1,000 Hz; power range 20-250 W; imp 4 ohms; walnut-grain vinyl veneered cabinet and brown grille cloth ..... \$700/pr

### EPI Time/Energy Series Speakers

All EPI Time/Energy Series speakers feature two-layer woofer cones and tweeter diaphragms; stiff plastic layer that resists flexing; damping layer that controls resonances; ferrofluid cooling in the midrange and tweeter.

### T/E 360 Speaker System

Floor-standing 3-way speaker system with 10" woofer, 12" passive piston bass radiator; 4" sealed-frame midrange and 1" tweeter. Features oak-grain vinyl-veneered cabinet and brown grille cloth; FR 32-20,000 Hz  $\pm$  3 dB; crossovers 700 and 3,000 Hz; power range 20-250 W; imp 4 ohms; 37 1/2" H x 17" W x 10 1/2" D ..... \$700/pr

### T/E 320 Speaker System

Floor-standing 3-way speaker system with 10" woofer; 4" sealed-frame midrange and 1" tweeter. Features walnut-grain vinyl-veneered cabinet and brown grille cloth. FR 42-20,000 Hz  $\pm$  3 dB; crossovers 700 and 3,000 Hz; power range 20-250 W; imp 4 ohms; 29" H x 17" W x 10 1/2" D ..... \$500/pr

### T/E 120 Speaker System

Bookshelf/floor-standing 2-way speaker system with 10" woofer and 1" tweeter. Features walnut-grain vinyl-veneered cabinet and brown grille cloth. FR 38-20,000 Hz  $\pm$  3 dB; crossover 1,600 Hz; power range 15-90 W; imp 8 ohms; 25 1/4" H x 15" W x 10 1/2" D ..... \$360/pr

### T/E 100 Plus Speaker System

Bookshelf 2-way speaker system with 8" woofer

and 1" tweeter. Features oak-grained vinyl-veneered cabinet and brown grille cloth. FR 38-20,000 Hz  $\pm$  3 dB; power range 15-90 W; imp 8 ohms; 21 3/4" H x 13 1/2" W x 8 3/4" D ..... \$280/pr

### T/E 70 Speaker System

Bookshelf 2-way speaker system with 6" woofer and 1" tweeter. Features walnut-grained vinyl-veneered cabinet and brown grille cloth. FR 55-20,000 Hz  $\pm$  3 dB; crossover 1,800 Hz; power range 15-90 W; imp 8 ohms; 16" H x 10 1/2" W x 7 1/2" D ..... \$184/pr

### Magnus Series Speakers

#### EPI Magnus A24 Speaker

Floor-standing three-way speaker system with two 12" woofers, 6" mid/bass driver and CDH tweeter. Features constant dispersion horn tweeters; dual level controls; closed frame. FR 33-20,000 Hz; crossovers 500 and 4,000 Hz; power range 10-350 W peak; imp 4 ohms. walnut grain vinyl veneered cabinet and brown grille cloth; 10 1/2" H x 17" W x 10 3/8" D \$700/pr

#### EPI Magnus A12 Speaker

Bookshelf three-way speaker system with 12" woofer, 6" mid/bass driver and CDH tweeter. FR 35-20,000 Hz; crossover 500 and 4,000 Hz; power range 10-300 W peak; imp 4 ohms; walnut-grain vinyl veneered cabinet and brown grille cloth; 25 3/8" H x 15 3/8" W x 11 1/2" D \$500/pr

#### EPI Magnus A11 Speaker

Bookshelf three-way speaker system with 10" woofer, 6" mid/bass driver and CDH tweeter. FR 40-20,000 Hz; crossover 500 and 4,000 Hz; power range 10-220 W peak; imp 4 ohms; walnut-grain vinyl veneered cabinet and brown grille cloth; 22 3/8" H x 12 7/8" W x 11 1/2" D \$400/pr

#### EPI Magnus A10 Speaker

Bookshelf two-way speaker system with 10" woofer and CDH tweeter. FR 45-20,000 Hz; crossover 4,000 Hz; power range 10-200 W peak; imp 4 ohms; walnut-grain vinyl veneered cabinet and brown grille cloth; 22 3/8" H x 12 7/8" W x 11 1/2" D ..... \$320/pr

## ESS

### AMT Series

#### AMT 1D Speaker

Floor-standing passive-radiator 2-way speaker with 12" polypropylene woofer, 12" passive radiator. Features midrange presence, brilliance controls; oiled-walnut finish; black-brown grille. FR 35-23,000 Hz  $\pm$  3 dB; crossover 800 Hz; max power 400 W; imp 6 ohms; horizontal/vertical dispersion 120°/30° sens 91 dB SPL/W/m; 35.25" H x 16.25" W x 16.25" D; 85 lbs ..... \$1,270/pr

#### AMT II Speaker

Floor-standing passive-radiator 2-way speaker with 10" fiber cone woofer, 10" passive radiator. Features midrange, presence, brilliance controls; oiled-walnut finish; black-brown grille. FR 38-23,000 Hz  $\pm$  3 dB; crossover 900 Hz; max power 160 W music; imp 6 ohms; horizontal/vertical dispersion 120°/30°; sens 91 dB SPL/W/m; 33 3/4" H x 15 1/2" W x 15 1/2" D; 65 lbs ..... \$950/pr

#### AMT Bookshelf Speaker

Passive-radiator 2-way bookshelf speaker with 12" woofer, 12" passive radiator, 21.5 in Heil air motion transformer with polyester articulated silicon-edged diaphragm. Features presence/brilliance control; oiled walnut finish; black-brown grille. FR 40-23,000 Hz  $\pm$  3 dB;

crossover 800 Hz; max 400 W music power; imp 6 ohms; horizontal/vertical dispersion 120°/30°; sens 91 dB SPL/W/m; 24" H x 14" W x 14" D ..... \$1,100

### Mini Monitor 620 Speaker

Two-way mini bookshelf speaker. Features dynamic 5 1/4" long excursion woofer; 1 1/4" dome shape tweeter; 5" passive radiator. FR 60-20,000 Hz  $\pm$  4 dB; power range 10-60 W; sens 87 dB SPL/W/m; imp 8 ohms; oiled walnut veneer finish; 7" W x 12" H x 7 1/2" D; 16 1/2 lbs/pr ..... \$152/pr

### Performance Series

#### PS-12C Speaker System

Passive-radiator speaker system with 12" woofer, Heil air-motion transformer with 10.4-sq-in. radiating area. Features walnut vinyl finish. FR 32-22,000 Hz  $\pm$  3 dB; crossover 1.8 kHz; power range 15-160 W; sens 93 dB SPL/W/m; imp 6 ohms; 25" H x 142" W x 13 1/2" D ..... \$718/pr

#### PS-6D Speaker System

Passive-radiator speaker system with 10" woofer, Heil tweeter/midrange driver. Oiled walnut-grain finish. FR 40-22,000 Hz  $\pm$  3 dB; power range 15-140 W; imp 6 ohms; crossover 2.4 kHz; sens 93 dB SPL/W/m; 24.12" H x 14" W x 14" D; 49 lbs ..... \$678/pr

## FISHER

### ST-845 Speaker

Floor-standing bass reflex speaker. Features 15" cone woofer; 6" ferrofluid dome midrange; 4" Ferrofluid superhorn. 17 1/16" W x 31 1/8" H x 13 1/16" D ..... \$600/pr

### ST-832 Speaker

Floor-standing reflex speaker. Features 15" woofer; 5" ferrofluid damped midrange; 3" Ferrofluid damped tweeter. Max power 100 W; 17.75" W x 31.88" H x 14.25" D ..... \$500/pr

### ST-828 Speaker

Floor-standing bass reflex speaker. Features 15" woofer; 5" ferrofluid damped midrange; 3" Ferrofluid damped tweeter. Maximum power 100 W; 16.75" W x 29.4" H x 12.9" D ..... \$400/pr

### STV-015 Speaker

Bookshelf bass reflex speaker. Features a magnetic shielding for placement next to TV; 8" woofer; 4" midrange; 3" tweeter. Max power 100 W; 11" W x 19" H x 13.25" D ..... \$300/pr

## GENESIS

### G 44 Speaker

Floor-standing quasi-infinite baffle, passive radiator speaker. Features 10" cone passive rad; 8" treated cone, long excursion woofer; .75" double inverted, rigid dome ferrofluid tweeter. FR 27-24,000 Hz  $\pm$  4 dB; power range 30-250 W; sens 87 dB SPL/W/m; imp 6 ohms; teak vinyl, hand rubbed oak veneer finish; 18" W x 31.5" H x 9" D; 42 lbs ..... \$700/pr

### G 33 Speaker

Floor-standing quasi-infinite baffle, passive radiator speaker. Features low crossover point for wide dispersion; low distortion; lifetime warranty. Speaker houses 10" cone passive rad; 8" treated cone long excursion woofer; 1" inverted dome ferrofluid tweeter. Power range 20-100 W; sens 90 dB SPL/W/m; imp 6 ohms; teak vinyl finish; 16" W x 29" H x 8" D; 31 lbs ..... \$500/pr

### G 11 Speaker

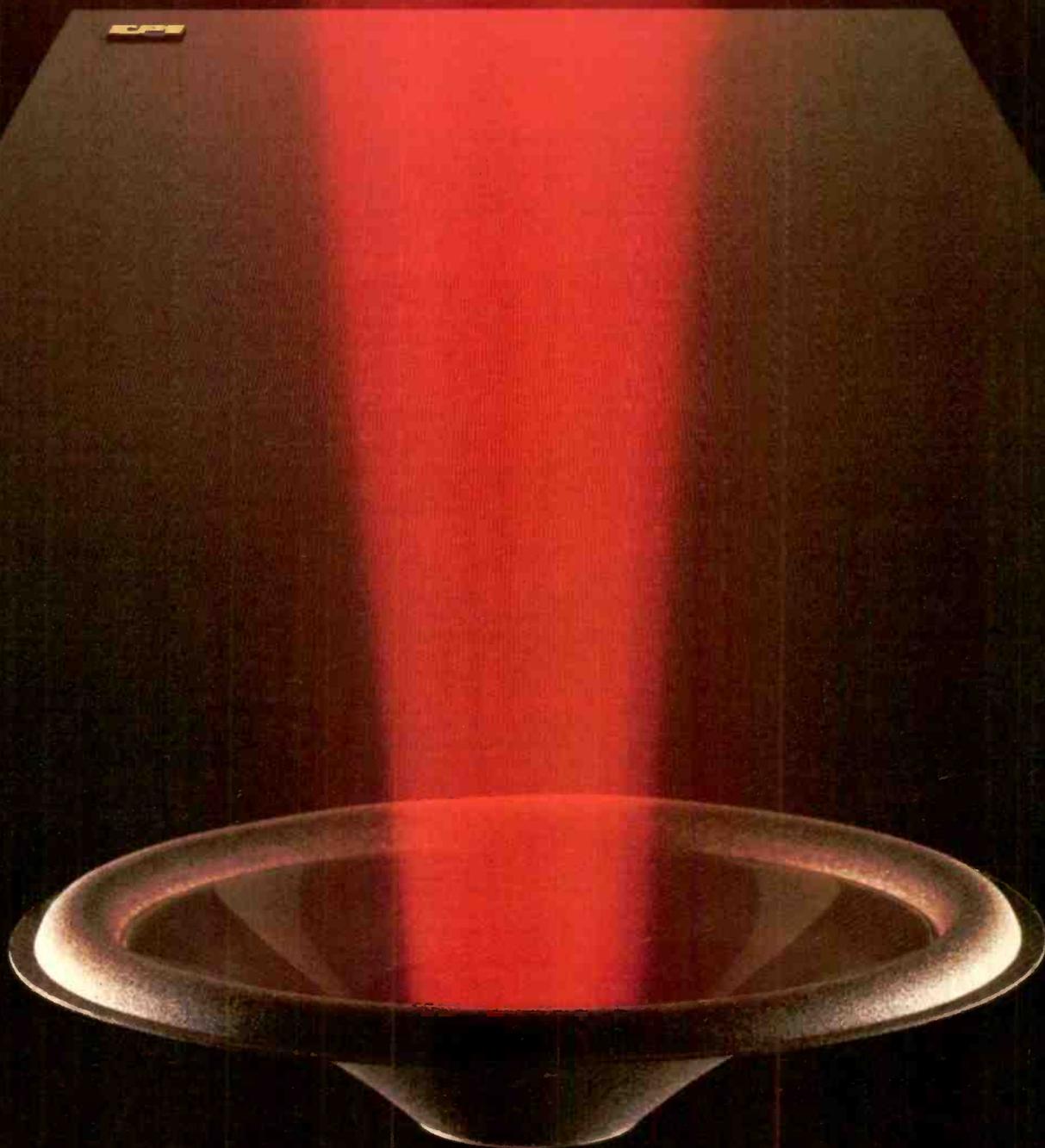
Bookshelf quasi-infinite baffle vented speaker. Features low crossover for wide dispersion; life-

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# SPEAKERS

time warranty. Speaker houses 8" treated cone long throw woofer; 1" inverted dome ferrofluid tweeter. FR 50-20,000 Hz  $\pm$  4 dB; power range 20-100 W; sens 90 dB SPL/W/m; imp 6 ohms; teak vinyl finish; 12.25" W x 19" H x 7.5" D; 16 lbs ..... \$278/pr

## HITACHI

### HSA4000 Speaker

Floor-standing tower speaker with detachable grille. Features 12" cone passive radiator; 12" cone woofer; 4" cone midrange; 2" cone tweeter. FR 35-20,000 Hz; max power 100 W; sens 90 dB SPL/W/m; imp 8 ohms; hickory wood grain vinyl finish; 11 $\frac{3}{4}$ " W x 39 $\frac{3}{4}$ " H x 15 $\frac{3}{4}$ " D; 44 lbs ..... \$290/pr

### HSA3000 Speaker

Floor-standing tower speaker. Features 10" cone passive radiator; 10" cone woofer; 4" cone midrange; 3" cone tweeter. FR 40-20,000 Hz; power range 50 W; sens 90 dB SPL/W/m; imp 8 ohms; hickory wood grain vinyl finish; 13 $\frac{1}{2}$ " W x 35 $\frac{3}{4}$ " H x 10 $\frac{1}{2}$ " D; 27 lbs ..... \$230/pr

## INFINITY

### Reference Standard Speaker System

Modular 4-piece floor-standing speaker: 2 woofer modules with 6 servoed 8" polypropylene woofers, 2 midrange/tweeter curved sections with 7 dipole EMIT drivers, 3 EMIT tweeters, 1 super-high-dispersion EMIT in dipole source array. Features bass variable low-pass filters; low-pass variable damping with level control; selectable imp controls for midrange/tweeter amp; bass amp phase switch; servo-controlled bass circuitry; Monster Cable throughout; mid-tweeter, high-tweeter control on rear of midrange/tweeter module; lacquered oak and hardwood veneers. FR 22-32,000 Hz  $\pm$  1.5 dB; woofer crossover variable 100-200 Hz; crossovers 125, 750, 3,000, 8,000 Hz; 60" H x 12" W x 12" D bass column; 60" H x 24" W screens ..... \$5,500/system

### Reference Standard 2B Speaker System

Floor-standing 5-way speaker with active equalizer (contour and level) for extended low FR. 3 EMIT midrange drivers, 2 EMIT (1 front, 1 back) tweeters, and 1 EMIT supertweeter. Oak diffraction wings. 55" H x 25" W x 20" D ..... \$3,195/system

### Reference Standard 3B Speaker System

Floor-standing 3-way speaker with 2 10" polypropylene woofers with L-C tuning for bass extension, 2" polypropylene dome midrange, EMIT tweeter. Designed for min diffraction distortion. Features hand-rubbed oak hardwoods and veneers. FR 35-32,000 Hz  $\pm$  3 dB; crossovers 1 and 4 kHz; power range 50-200 W; 48" H x 18" W x 7 $\frac{1}{4}$ " D ..... \$1,398/pr

### Reference Standard 4B Speaker System

Floor-standing 3-way speaker designed for min diffraction distortion with two 8" polypropylene woofers with L-C tuning for bass extension, 2" polypropylene dome midrange, EMIT tweeter. Features hand-rubbed oak hardwoods and veneers. FR 40-32,000 Hz  $\pm$  3 dB; crossovers 1 and 4 kHz; power range 40-150 W; imp 4-8 ohms; 42 H x 14 $\frac{1}{2}$  W x 10 $\frac{1}{8}$  D ..... \$1,078/pr

**Reference Standard 5B.** Same as 4B except FR 43-32,000 Hz  $\pm$  3 dB; power range 35-160 W; 24 $\frac{1}{2}$ " H x 15 $\frac{1}{2}$ " W x 9 $\frac{1}{2}$ " D ..... \$838/pr

### Reference Standard 6B Speaker System

Floor-standing or bookshelf 3-way speaker with 8" polypropylene woofer, 2" polypropylene dome midrange, EMIT tweeter. Features hand-

rubbed oak hardwoods and veneers. FR 45-32,000 Hz  $\pm$  3 dB; crossovers 600 and 4 kHz; power range 35-100 W; imp 4-8 ohms; 22" H x 13 $\frac{1}{2}$ " W x 10" D ..... \$638/pr

## INTERAUDIO BY BOSE

### SA 1000 Speaker

Floor-standing ported speaker with dual-chamber enclosures for extended low frequency response. Features auto tweeter overload protection; high efficiency tweeter with wide-angle lens; 5-year transferrable warranty; removable grille; push-type connections. Contains 10" subwoofer; 6" cone woofer; 3" cone tweeter; min power 15 W; max power 200 W; sens 90 dB SPL/W/m; imp 8 ohms; walnut grain vinyl finish ..... \$858/pr

### SA 500 Speaker

Dual-ported floor-standing speaker with first-order crossover. Contains 10" cone woofer; 3" cone tweeter with lens. Min power 15 W, max power 150 W; sens 91 dB SPL/W/m; imp 8 ohms; walnut grain vinyl finish; 22.5 lbs/ea; 13 $\frac{1}{4}$ " W x 22 $\frac{1}{4}$ " H x 11 $\frac{1}{4}$ " D ..... \$538/pr

### SA 200 Speakers

Single-ported bookshelf speaker with two-way design and first-order crossover network; auto tweeter-overload protection with front panel indicator. High efficiency tweeter with wide-angle lens. Features removable grille cloth assembly; push-type connection system; full 5-year transferable warranty; 6-layer voice coil woofer and computer-designed port system for deep bass. Contains 6" cone woofer; 3" cone tweeter with lens. Min power 10 W, max power 75 W; sens 90 dB SPL/W/m; imp 8 ohms; walnut grain vinyl finish; 10.3 lbs ea; 9" W x 14" H x 7 $\frac{1}{4}$ " D ..... \$278/pr

## JAMO

### Power Line Series

**566.** Features 12" woofer; 2" horn midrange; five 1" horn tweeters; midrange/tweeter sound pressure control; midrange/tweeter overload diode. Peak power 500 W/RMS; continuous power 350 W/RMS; sens 97 dB SPL/W/m; FR 22-20,000 Hz; crossover 1,200-3,500 Hz; imp 8 ohms. 75 lbs ..... \$1180/pr

**366.** Features 9 $\frac{1}{4}$ " woofer; 1" horn midrange; 1" horn tweeter; midrange/tweeter sound pressure control; midrange/tweeter overload diode. Peak power 350 W/RMS; continuous power 200 W/RMS; sens 96 dB SPL/W/m; FR 22-20,000 Hz; crossover 1,250-5,000 Hz; imp 8 ohms. 48.5 lbs ..... 740/pr

**266.** Features 8 $\frac{1}{4}$ " woofer; 1" horn midrange; 1" horn tweeter; midrange/tweeter overload diode. Peak power 200 W/RMS; continuous power 150 W/RMS; sens 95.2 dB SPL/W/m; FR 25-20,000 Hz; crossover 1,400-4,800 Hz; imp 8 ohms. 33 lbs ..... \$520/pr

**166.** Features 8 $\frac{1}{4}$ " woofer; 1" horn tweeter; tweeter overload diode. Peak power 150 W/RMS; continuous power 100 W/RMS; sens 94.2 dB SPL/W/m; FR 30-20,000 Hz; crossover 2,500 Hz; imp 8 ohms. 19.8 lbs ..... \$332/pr

### Scan Line Series

**SL-150.** 2-way bass reflex speaker with 6 $\frac{1}{2}$ " woofer and 1" tweeter. Features tweeter overload diode; tweeter sound pressure control. Peak power 140 W/RMS; continuous power 100 W/RMS; sens 91.4 dB SPL/W/m; FR 32-20,000 Hz; crossover 3,800 Hz; imp 8 ohms. 28.6 lbs ..... \$500/pr

**SL-140.** 3-way bass reflex speaker with 8" woofer, 5" midrange and, 1" dome tweeter.

Peak power 200 W/RMS; continuous power 130 W/RMS; sens 92.6 dB SPL/W/m; FR 30-20,000 Hz; crossover 1,400-4,000 Hz; imp 8 ohms. 18 lbs ..... \$340/pr

**SL-100.** 3-way bass reflex speaker with 6 $\frac{1}{2}$ " woofer, 5" midrange, and 1" dome tweeter. Peak power 120 W/RMS; continuous power 90 W/RMS; sens 92.2 dB SPL/W/m; FR 35-20,000 Hz; crossover 1,500-4,000 Hz; imp 8 ohm. 15 $\frac{1}{2}$  lbs ..... \$260/pr

**SL-80.** 2-way bass reflex speaker with 6 $\frac{1}{2}$ " woofer and 1" dome tweeter. Peak power 100 W/RMS; continuous power 70 W/RMS; sens 91.5 dB SPL/W/m; FR 40-20,000 Hz; crossover 2,500 Hz; imp 8 ohms. 9 $\frac{1}{2}$  lbs ..... \$200/pr

## JBL

### L Series

#### L250 Speaker

Floor-standing 4-way speaker with 14" woofer, 8" midwoofer, 5" midrange, 1" tweeter. Features bus-bar midrange, high, ultra-high level adjustment; high-resolution crossover network; walnut or black finish; choice of removable fabric grille colors. Crossovers 400, 1.6k, 4.5k Hz; max power 400 W; sens 90 dB SPL/W/m; imp 8 ohms; 52" H x 22 $\frac{1}{2}$ " W x 14 $\frac{1}{4}$ " D; 135 lb. Walnut or black finish ..... \$3,000/pr

#### L150A Speaker

Floor-standing 3-way speaker with 12" woofer, 12" passive radiator, 5" midrange in isolated chamber, 1" dome radiator. Features midrange, tweeter level controls; compressed wood cabinet with American black walnut veneer finish; brown, rust, or camel grille. Crossovers 1.1 and 3.7 kHz; power range 10-300 W continuous; sens 89 dB SPL/W/m; 41 $\frac{1}{2}$ " H x 17" W x 13" D; 83.5 lbs ..... \$1,500/pr



JBL 250 Ti

#### L96 Speaker

Ported 3-way bookshelf speaker with 10" woofer, 5" midrange, 1" tweeter. Features midrange, tweeter level controls; oiled-walnut finish; removable brown cloth grille. Crossovers 1.1 and 3.7 kHz; max power 250 W; sens 87 dB SPL/W/m; imp 8 ohms; 23 $\frac{1}{2}$ " H x 14 $\frac{1}{4}$ " W x 11 $\frac{1}{4}$ " D ..... \$850/pr

#### L80T Speaker

Three-way floor-standing loudspeaker. Features 10" Aquaplas laminate low frequency transducer; 5" polymer laminate mid-frequency transducer; 1" pure titanium diaphragm high frequency transducer. Power handling: 150 W continuous, 600 W peak; crossover 800 Hz and

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# SPEAKERS

4,500 Hz; sens 90 dB SPL 2.83 V at 1 meter. Oiled hardwood veneer; 33½" H x 14" W x 11¼" D; 53 lbs ..... \$790/pr

## L86 3-Way Loudspeaker

Speaker with 8" bass driver; 5" midrange and light-weight dome tweeter; recommended amp power 10-200 W; nominal imp 8 ohms; crossover frequencies 800 Hz, 3,700 Hz; sens 88 dB SPL/W/m; 2¾" x 13" x 10"; 35 lbs. .... \$590/pr

## L60T Speaker

Two-way floor-standing loudspeaker. Features 8" high-polymer laminate low frequency transducer; 1" pure titanium high-frequency transducer. Power handling: 120 W continuous, 400 W peak; crossover 2,500 Hz; sens 89 dB SPL 2.83 V at 1 meter. Oiled hardwood veneer; 30½" H x 12" W x 10" D; 38 lbs ..... \$530/pr

## L46 Speaker

Ported 2-way speaker with 8" woofer, 1" tweeter. Features oiled-walnut finish; removable brown grille. Crossover 3 kHz; power range 10-100 W; sens 88 dB SPL/W/m; imp 8 ohms; 20¾" H x 12½" W x 10½" D; 29 lb ... \$398/pr

## L20T Speaker

Two-way bookshelf loudspeaker. Features six ½" filled polypropylene low-frequency transducers; 1" pure titanium diaphragm high-frequency transducer. Power handling: 100 W continuous; 400 W peak; crossover 3,000 Hz; sens 88 dB SPL 2.83 V at 1 meter. Oiled hardwood veneer; 9¾" H x 14¾" W x 8½" D; 36 lbs ..... \$390/pr

## B-380 Bass System

Bass system with 15" bass driver and 4" ribbon wire voice coil in a vented alignment. Features hand-crafted oiled American black walnut veneer cabinet; biamp option with BX63A; max recommended amp power 600 W continuous sine wave; crossover frequency 63 Hz; sens 90 dB; 27½" x 20¾" x 17" ..... \$595/ea

## B460 Bass/Subwoofer

Bass system consists of JBL Model 2245H 18" driver mounted in vented enclosure of 8 cubic feet; the combination is third-order quasi-Butterworth. Features die-cast aluminum frame; integrally stiffened cone with foam surround; edge-wound voice coil 4" diameter and nearly 1" long; individually machined magnetic pole piece and back plate; cone coated with aquaplas damping formulation for optimum mass and density; driver features large high-flux symmetrical-field-geometry magnetic structure to reduce second-harmonic distortion; enclosure is density compressed wood, 1" thick and heavily braced. Min recommended amp power 200 W continuous wave; normal imp 8 ohms; crossover frequency 63 Hz (external crossover); sens 94 dB SPL; magnetic assembly weight 20 lb; 24½" H x 38¾" W x 24¼" D; shipping weight 125 lbs ..... \$1,500/ea

## TLX Series

### 4312 Monitor Speaker

Ported bookshelf 3-way speaker with 12" woofer, 3" midrange, 1.4" tweeter. Features midrange, tweeter level controls; American black walnut finish; removable grille. Crossovers 1.5 and 6 kHz; power 10-200 W; sens 91 dB SPL/W/m; imp 8 ohms; 23½" H x 14¼" W x 11¼" D; 52 lbs ..... \$910/pr

## Ti Series

### 250 Ti Speaker

Four-way floor-standing 14" loudspeaker. Features ultra low mass pure titanium diaphragm

high-frequency transducer; SFG magnetic structure and polypropylene mid-frequency transducer. Max power 400 W; nominal imp 8 ohms; crossover 400 Hz, 1,400 Hz, 5,200 Hz; sens 90 dB SPL 2.83 V at 1 meter. Hand oiled Burmese teak; 52" H x 22½" W x 14¼" D; 126 lbs ..... \$3,396/pr

## 240 Ti Speaker

Three-way floor-standing 14" loudspeaker. Features ultra-low-mass pure titanium diaphragm high-frequency transducer; SFG magnetic structure; polypropylene mid-frequency transducer. Max power 300 W/ch; nominal imp 8 ohms; crossover 900 Hz, 4,000 Hz; sens 89 dB SPL 2.83 V at 1 meter. Hand-oiled Burmese teak; 36¾" H x 18" W x 12" D; 85 lbs ... \$1,682/pr

## 18 Ti Speaker

Two-way 6½" loudspeaker. Features ultra-low mass pure titanium diaphragm high-frequency transducer; SFG magnetic structure; polypropylene low-frequency transducer. Max power 200 W/ch; nominal imp 8 ohms; crossover 3,000 Hz; sens 88 dB SPL 2.83 V at 1 meter. Hand-oiled Burmese teak; 14¾" H x 9¾" W x 7½" D; 17½ lbs ..... \$268/pr

## JENSEN

### Concert Series Speakers

**1230.** Acoustic-suspension 3-way speaker with 12" woofer, 5" midrange, 3" direct-radiator tweeter. Features walnut-grain vinyl finish; black cloth grille. FR 56-21,000 Hz; crossovers 3.5 and 10 kHz; power range 10-70 W continuous; imp 8 ohms; 27" H x 16½" W x 11½" D ..... \$398/pr

**1030.** Similar to 1230 except has 10" woofer. Low-end response 58 Hz; power range 10-60 W; 24½" H x 15" W x 10½" D ..... \$338/pr

**820.** Similar to 1030 except 8" woofer, no midrange driver; crossover 3.5 kHz; power range 10-50 W; 20½" H x 11¼" W x 9¼" D ..... \$238/pr

## JOHN BOWERS

### Active 1 Speaker

Floor placement ported speaker with built-in amp (200 W/bass unit, 100 W/high frequencies) and power overload protection circuit. Features two 6" cone midranges; 1" dome tweeter. FR 45-18,000 Hz ± 2 dB; imp 8 ohms. 10" W x 34" H x 14" D; walnut, black ash, rosewood finish ..... \$2,995/pr

## JSE

### Infinite Slope Model 1 Loudspeaker

Sealed floor-standing speaker featuring Infinite Slope crossover and patented Phase Shift Bass Loading. Front of speaker angled 15°. Two cone woofers 6.5", 8"; 28 mm dome tweeter. Available in oak, walnut, black lacquer. FR 40-18,000 Hz ± 2 dB; power range 20-150 W; imp 8 ohms; sens 90 dB SPL/W/m; 31" H x 13" W x 14.5" D at bottom, 6" D at top; 60 lbs. .... \$899/pr

### Infinite Slope Model .6 Speaker

Floor-standing ported speaker with Infinite Slope crossover 100 dB octave. Features 8" cone woofer; 1" dome tweeter. FR 40-20,000 Hz ± 3 dB; power range 5-150 W; sens 91 dB SPL/W/m; imp 8 ohms; walnut, oak, black lacquer finish; 11" W x 23" H x 13" D; 35 lbs ..... \$579/pr

## JVC

### SXA5 Speaker

Floor placement 4-way, 5-speaker system with passive radiator. Features 9¼" x 13¼" flat diaphragm passive rad.; two 3" cone x 2

rear speakers; 8" cone woofer; 1¼" soft dome midrange; 1" soft dome tweeter; built-in protection circuit. FR 25-23,000 Hz; power handling capacity 150 W, 240 W (music); sens 89 dB SPL/W/m; imp 6 ohms. 15¾" W x 31¾" H x 10¼" D; 38.6 lbs ..... \$500/pr

## KEF

### Model 105.2 Speaker

Floor-standing 3-way speaker with min inter-unit time delay. Flat FR 38-22,000 Hz. Features visual indication of optimum listening area; variable system geometry extends choice of listening position; contoured midrange, tweeter cabinets reduce off-axis coloration; novel bass-loading technique; electronic protection (S-STOP) against overload, fault conditions; peak level indicator; pairing of systems for sens, FR match to within 0.5 dB. Max output 107 dB SPL on program peaks; THD <1%, 20-20,000 Hz; 965 mm H x 415 W; 80 lbs ..... \$2,800/pr

### 104/2 Speaker

Floor-standing speaker with cone woofers vertically aligned, coupled-cavity bass loading technique, chassis-less drivers, conjugate load matching. Two 8" cone woofers, two 4½" cone midranges and 1" ferrofluid-cooled dome tweeter. FR 55-20,000 Hz ± 2 dB; power range 25-200 W; sens 92 dB SPL/W/m; imp 4 ohms; walnut, black ash, rosewood finish; 11" W x 35 12" H x 16 38" D; 70.5 lbs ..... \$1,600/pr

### Model 103.2 Speaker

Floor-standing 2-way speaker with novel bass loading; S-STOP protection; pairing of systems for sens, FR match to within 0.5 dB. FR flat 60-20,000 Hz; SPL output 106 dB on program peaks; THD <1%, 50-20,000 Hz; imp 8 ohms; 506 mm H x 265 W x 249 D; 19 lbs .. \$900/pr

### Carlton III Speaker

Two-way floor-standing loudspeaker fitted with a passive bass radiator which extends low frequencies down to 47 Hz, and a computer-designed "seamless" dividing network which eliminates phasing. FR 47-20,000 Hz ± 2.5 dB; max output of 106 dB; THD <1% from 60-20,000 Hz; nominal imp 8 ohms; 26.21 lbs.; 27½" H x 12¾" W x 11" D ..... \$650/pr

### Model 101 Speaker

Acoustic-suspension 2-way speaker with 110-mm woofer, milinex dome tweeter. Features teak/walnut cabinet; black/brown cloth grille. FR 90-30,000 Hz ± 2 dB; sens 81 dB SPL/W/m; input range 20-100 W; imp 8 ohms; 340 mm H x 190 D x 180 W ..... \$590/pr

### Carina II Speaker

Two-way compact 3-drive-unit speaker with high-frequency unit mounted between twin bass drivers to provide higher power output and reduced distortion, especially when playing Compact Discs. Features KEF Series 'C' loading technique to extend bass without overloading on infrasonic signals; ferrofluids provide cooling for voice coil eliminating the risk of thermal damage. FR 55-20,000 Hz ± 3 dB at 2 m on reference axis; max output 108 dB; THD <1% 70-20,000 Hz; nominal imp 8 ohms; 80 W program rating; 20.7 lbs; 23¾" H x 11¼" W x 10" D ..... \$500/pr

## KENWOOD

### LSK-701(W) Speaker

Bookshelf acoustic-suspension 3-way, 3-driver speaker with 12" thermal shock-treated cone woofers; 4¾" cone midrange; 2½" tweeter. Max power 160 W; sens 90 dB SPL/W/m; imp 8 ohms; walnut-grain vinyl finish; 14½" W x 26¾" H x 10½" D; 24.2 lbs each ..... \$350/pr

# SPEAKERS

## LSK-501(W) Speaker

Bookshelf acoustic-suspension 3-way, 3-driver speaker. Features high-strength enclosure with edgeless baffle; 10" thermal shock-treated cone woofer; 4 3/8" cone midrange; 2 3/8" cone tweeter. Max power 130 W; sens 89 dB SPL/W/m; imp 8 ohms; walnut-grain vinyl finish; 14" W x 25 3/8" H x 10 3/16" D; 20.9 lbs each. .... \$305/pr

## KLIPSCH

### Klipschorn Speaker

Fully horn-loaded 3-way speaker requiring corner placement. Sens 104 dB SPL/W/m; power handling 100 W; FR 35-17,000 Hz  $\pm$  5 dB; 52" H x 31 1/4" W x 28 1/2" D. Priced depending on finish from approx. .... \$2,800/pr

**Belle Klipsch.** Fully horn-loaded floor-standing 3-way speaker. Utilizes same drive components as Klipschorn. Sens 104 dB SPL/W/m; power handling 100 W; FR 45-17,000 Hz  $\pm$  5 dB; 35 3/8" H x 30 3/8" W x 18 3/4" D. Available in exotic woods, priced depending on finish from approx. .... \$2,250/pr

**Cornwall.** Similar tweeter and midrange drivers (horn loaded) as Klipschorn with 15" woofer in ported enclosure. Sens 98 dB SPL/W/m; power handling 100 W; FR 38-17,000 Hz  $\pm$  5 dB; 35 3/4" H x 25 1/2" W x 15 1/2" D. Available in exotic woods, priced depending on finish from approx. .... \$1,550/pr

**Forte.** 3-way speaker with horn-loaded compression drivers for tweeter and midrange, 12" woofer, and 12" passive radiator mounted on rear of cabinet. FR 32-20,000  $\pm$  3 dB; sens 96 dB SPL/W/m; imp 4 ohms. Priced depending on finish from approx. .... \$1,000/pr

**Heresy.** Same tweeter and midrange drivers (horn loaded) as Cornwall with 12" woofer in sealed enclosure. FR 50-17,000 Hz  $\pm$  5 dB; max handling power 100 W; sens 96 dB SPL/W/m; 21 3/8" H x 15 1/2" W x 13 3/4" D; priced depending on finish from approx. .... \$830/pr

### kg<sup>f</sup> Floor-Standing Speaker

2-way speaker with 12" rear-loaded passive radiator, two 8" polymer-cone woofers, horn-loaded tweeter. FR 38-20,000 Hz  $\pm$  3 dB; max power 100 watts; sens 91 dB SPL/W/m; imp 4 ohms; 45 lbs. From approx. .... \$550/pr

### kg<sup>f</sup> Two-Way Speaker

Two-way speaker with rear-mounted passive radiator. Crossover frequency 1,800 Hz. FR 35-20,000 Hz  $\pm$  3 dB; sens 90 dB SPL/W/m; power handling 65 W; 18 3/8" H x 11 1/2" W x 13 3/4" D. From approx. .... \$420/pr

## KOSS

### Kossfire 160 Speaker

Vertically aligned 4-driver, 3-bandpass speaker with 12" woofer, 5" midrange, 2.1" tweeters. Features midrange, tweeter level controls; linear-phase, constant-voltage crossover network; pecan veneer over particle-board cabinet-molded rigid grille. FR 30-20,000 Hz; power range 10-100 W/ch; sens 92 dB SPL/W/m; imp 8 ohms; 32 1/2" H x 15 1/2" W x 13 1/2" D. .... \$450/pr

### Kossfire 110 Speaker

Speaker system with 10" woofer, 1 3/4" magnetic-fluid damped midtweeter, two 1 1/4" tweeters. Features  $\pm$  5-dB tweeter level control; 3-bandpass, 4-driver design; auto-reset circuit-breaker protection; scratch-resistant vinyl-laminate finish; cloth/rigid-foam grille. FR 30-20,000 Hz; power range 10-100 W/ch; imp 8 ohms; 32" H x 13 3/8" W x 10 3/8" D. .... \$300/pr

### Dynamite M-80 Speaker

Speaker with two 4 1/4" woofers, 1" dome tweeter.

Features hand-rubbed walnut-veneer finish. FR 50-30,000 Hz; power range 10-30 W/ch; sens 87 dB SPL/W/m; imp 6 ohms; 12 3/4" H x 5 1/8" D x 5 1/4" W. .... \$260/pr

## LINN SONDEK BY AUDIOPHILE SYSTEMS

### DMS Isobarik Speaker System

Isobarik-loading 3-way floor-standing speaker with 12", 9" woofers, 5" midrange, two 1" dome tweeters. FR 25-20,000 Hz  $\pm$  1.5 dB; crossovers 375 and 3 kHz; instantaneous dynamic range 54 dB; imp 4 ohms; power range 50-500 W; 30" H x 15" W x 16 1/2" D. .... \$2,495/pr

### S.A.R.A. Isobarik Speaker System

Isobarik-loading 2-way bookshelf speaker system with two 8" woofers, 1" dome tweeter. Features cast structural foam housing. FR 36-20,000 Hz  $\pm$  2 dB; imp 4 ohms; 17" H x 13" W x 10" D. .... \$995/pr

### K.A.N. Speaker System

Acoustic-suspension 2-way bookshelf speaker with 5" woofer, 1" dome tweeter. FR 70-20,000 Hz  $\pm$  3 dB; imp 8 ohms; 12" H x 7 1/2" W x 6 1/2" D. .... \$425/pr

## MAGNEPAN

### Magneplanar Tympani-IVa

Planar-magnetic speaker with reduced-mass mid-range driver. Features 5-ft-long, 2.5-microns-thick transformerless and bipolar aluminum ribbon tweeter; 2 bass panels. Tweeter FR 2,000-50,000 Hz. .... \$3,800/pr

### Magneplanar MG-III Speaker

Floor-standing full-range bipolar panel speaker with planar magnetic and ribbon driver design. Can be biamplified. Drivers are 1 planar-magnetic woofer (620" sq.); 1 planar-magnetic midrange (170" sq.); 1 line-source 5" bipolar ribbon tweeter (14.25" sq.). Imp 4 ohms; off-white cloth, oak frame; 55 lbs ea. .... \$2,225/pr

### Magneplanar MG-IIB Speaker

Floor-standing 2-way speaker with Magneplanar woofer, Magneplanar tweeter. Features oak side rails; brown fabric grille. FR 40-18,000 Hz  $\pm$  3 dB; power range 25-200 W RMS; imp 5 ohms purely resistive; crossover 400-1,600 kHz at 6 dB/octave; 71" H x 22" W x 2" D; 70 lbs. .... \$1,200/pr

### Magneplanar MG-IB Speaker

Floor-standing 2-way speaker with Magneplanar woofer, Magneplanar tweeter. Features oak side rails; off-white fabric grille. FR 45-18,000 Hz  $\pm$  4 dB; crossover 1.6 kHz; sens 82-dB SPL/W/3 ft.; power range 40-200 W RMS; imp 5 ohms purely resistive; 60" H x 22" W x 2" D. .... \$850

### Magneplanar SMGa Speaker

Full-range 2-way speaker with 0.5-mil diaphragm driven by Magneplanar magnetic field. Features oak side rails; brown fabric grille. FR 50-16,000 Hz  $\pm$  4 dB; power range 20-100 W rms; imp 4 ohms purely resistive; crossover 2.4 kHz; 48 3/16" H x 24 1/4" W x 1 3/4" D. .... \$525

## M&K

### SV-200 Tower Speaker

Tower speaker combining elements of S-2B and V-1B (see below) in a single cabinet. 41" H x 15 1/2" W x 15 1/2" D; 55 lbs. .... \$1,650/pr

### Satellite 1B Speaker

Acoustic-suspension 2-way speaker with two 5" polypropylene woofers, two 1" soft-dome tweeters.

Features 36 tonal balances through midrange, tweeter character switches; walnut or oak finish; black grille. FR 70-22,000 Hz  $\pm$  3 dB; power range 7.5-400 W; imp 4 ohms; 21" H x 7 3/4" W x 7 3/8" D; 19 lbs. .... \$645/pr

### Satellite 2B Speaker

Acoustic-suspension 2-way speaker with 6 1/2" polypropylene woofer, 1" soft-dome tweeter. Features selector for 36 tonal balances; midrange, treble character switches; walnut or oak finish; black grille. FR 65-20,000 Hz  $\pm$  3 dB; power range 15-100 W; 10 1/2" H x 7" D x 6 1/2" W; 9 lbs. .... \$495/pr

### SX-4 Satellites

Acoustic-suspension 2-way speaker with two 5" woofers and two 1" soft dome tweeters. 4 tonal balances available through multiple inputs. Hickory/walnut vinyl or black vinyl finish. FR 70-20,000 Hz  $\pm$  3 dB. .... \$430/pr

## Subwoofers

### VIB Subwoofer

Internally amplified subwoofer with 12" polypropylene driver. Features preamp, power amp inputs; active filtering at 24 dB/octave; with adjustable roll-off point. Walnut or oak finish; black grille. FR 18-125 Hz  $\pm$  3 dB; 18 3/4" W x 17 3/4" H x 15 3/4" D; 50 lb. .... \$750

**V2B.** Similar to V1B except less powerful; 43 lbs. .... \$600

**V3B.** Similar to V2B except less powerful and black plastic enclosure; 17 1/2" H x 17 1/2" W x 14 1/2" D; 43 lbs. .... \$500

### VX-4 Subwoofer

Internally amplified subwoofer with 12" driver. 50 W continuous power output. Hickory/walnut vinyl finish. Features adjustable low-pass filter; FR 40-125  $\pm$  3 dB. .... \$365/ea

## MARANTZ

### SP 1500 Speaker

Floor-standing ported speaker. Features 15" woofer; 5" Ferrofluid cone midrange; 3" Ferrofluid cone tweeter; sculptured furniture style cabinet. FR 18-20,000 Hz; max power 150 W; sens 92 dB SPL/W/m; imp 8 ohms; Bartonwood vinyl finish; 18" W x 32 1/2" H x 16 1/2" D; 47 lbs. .... \$500/pr

### SP 1250 Speaker

Floor-standing ported speaker. Features 12" woofer; 5" Ferrofluid cone midrange; 3" Ferrofluid cone tweeter; sculptured furniture style cabinet. Maximum power range 150 W; sens 90 dB SPL/W/m; imp 8 ohms; Bartonwood vinyl finish; 15" W x 32 1/2" H x 11 1/2" D; 33 lbs. .... \$340/pr

### SP 1200 Speaker

Floor-standing ported speaker. Features 12" woofer; 4" Ferrofluid cone midrange; 3" Ferrofluid cone tweeter. Maximum power range 150 W; sens 90 dB SPL/W/m; imp 8 ohms; Bartonwood vinyl finish; 15" W x 29 1/2" H x 11 1/2" D; 32 lbs. .... \$300/pr

### SP 1000 Speaker

Ported speaker. Features 10" woofer; 4" Ferrofluid cone midrange; 3" Ferrofluid cone tweeter. Maximum power range 110 W; sens 89 dB SPL/W/m; imp 8 ohms; Bartonwood vinyl finish; 13" W x 27" H x 11" D; 25 lbs. .... \$240/pr

## MARTIN-LOGAN

### The Monolith Speaker

Floor-standing curvilinear electrostatic panel speaker mounted atop tuned subwoofer box. Designed for wide dispersion without the use of

# S P E A K E R S

delay lines or lenses. Constant Voltage Crossover provides phase coherency. Electrostatic cell is 2 ft x 4 ft for 100-22,000 Hz. Polypropylene-cone 12" subwoofer (with 2" voice coil) is down 3 dB at 26 Hz. FR 28-22,000 Hz  $\pm$  2 dB; power range 30-500 W; sens 90 dB SPL/W/m; imp 8 ohms; oak finish; 25" W x 75" H x 13.5" D; 165 lbs ea ..... \$4,850/pr

## CLS Speaker

Floor-standing curved electrostatic speaker. Features wide dispersion format for full range reproduction; one Electrostatic cell reproduces all frequencies from 50-22,000 CPS; 2X4 ESL cell; 87 dB 1 watt/meter 30 degree seamless dispersion horizontal; 4" line source vertical; arc-free diaphragm; see through appearance; FR 50-22,000 Hz  $\pm$  2 dB; power range 20-150 W; sens 87 dB SPL/W/m; imp 6 ohms; oak finish; 26" W x 4' 8" H x 2" D; 50 lbs ea. .... \$2,450/pr

## McINTOSH

### XRT 18 Speaker

Speaker with sixteen 1"-dome tweeters per side, 6" midrange, and 12" woofer. Features complex crossover network with 46 parts; woofer has copper-wire voice coil wound on a black anodized-aluminum voice coil; air-tight seal-around dome tweeters. FR 20-20,000 Hz; max power 150 W continuous; crossover frequencies 350 and 1,500 Hz; nominal impedance 8 ohms ..... \$4,500/pr

### XR 14 Isoplanar Speaker

Speaker system produces equal intensity at  $\pm$  90° to the perpendicular from the plane of the radiators; crossover frequencies 250, 1,400, and 7,000 Hz; imp 8 ohms; can be driven up to 100 W; overload-protection system; sens 89 dB SPL/W referred to 8 ohms; woofer 10", low-midrange radiator 5", midrange 3 1/2", upper-midrange 1 1/2", tweeter 1"; 30 1/4" W x 14 1/4" H x 10" D; 52 lbs. .... \$1,498/pr

### XL 10 Speaker

Three-way speaker system with one passive and two active drivers. Max power, woofer 100 W program noise, tweeter 60 W program noise; min power 30 W; imp 8 ohms nominal. Tweeter protected by 0.6-ampere fast-acting fuse; reference output level -89 dB/W/m. Driver sizes: lower bass, 10" (25.4 cm); bass driver, 8" (20.3 cm); dome tweeter, 1" (2.54 cm). 24 1/8" W x 14 1/8" H x 7 1/8" D; 27.5 lbs. .... \$858/pr

### XL 1W Bass Subwoofer

Dual-voice-coil subwoofer system for XL 1 (below). Features 12" driver; two 1.5-amp fast-acting fuses; can handle up to 250 W on peaks; Power Guard circuit automatically prevents destructive clipping. Crossover frequency 90 Hz; nominal imp 8 ohms ..... \$549 ea

### XL 1 Speaker

Two-way compact speaker with 6" woofer. Features 1,000-Hz crossover; dome tweeter; copper-wire voice coil. FR 70-20,000 Hz; nominal imp 8 ohms; output 85 dB/m/W SPL ..... \$525/pr

## MIRAGE ACOUSTICS BY API

### 750 Speaker

Acoustic-suspension speaker intended for floor placement (with T-2 stand). Reference speaker with extended response, proper low-frequency room loading. Uses exclusive Mirage 3/4" tweeter with integral anti-diffraction treatment, ferrofluid cooling, and high-loss proprietary dome material. Incorporates midrange anti-diffraction treatment for use on T-2 stands. Contains 10" plastic-impregnated cone woofer; 1 5/4" plastic-impregnated cone midrange; 1 1/4"

proprietary thermoplastic tweeter. FR 39-20,000 Hz  $\pm$  3 dB, 200-20,000 Hz  $\pm$  .75 dB; min power 25 W, max 200 W; sens 91 dB SPL/W/m; imp 8 ohms; walnut vinyl or oak veneer; 44 lbs; 12 1/4" x 31 1/2" x 9 1/4" D ..... \$599/pr

### 650 Speaker

Very high power handling speaker with cast-frame woofer using 1 1/2" voice coil, and exclusive Mirage tweeter with integral anti-diffraction treatment, ferrofluid cooling and proprietary dome material; multi-time constant crossover designed for superb imaging. 10" flat diaphragm passive radiator; 10" plastic-impregnated woofer; 1" proprietary thermoplastic dome tweeter. FR 44-20,000 Hz  $\pm$  3 dB; min power 20 W, max 150 W; sens 90 dB SPL/W/m; imp 8 ohms; available in walnut vinyl or oak veneer; 44 lbs; 12 1/4" W x 31 1/2" H x 9 1/4" D ..... \$549/pr

### 350 Speaker

Acoustic-suspension speaker uses exclusive Mirage 1" tweeter with high-loss plastic dome, integral anti-diffraction treatment, ferrofluid cooling. Woofer has a plastic impregnated cone for high power-handling. Multi-time constant™ crossover designed for superb imaging characteristics with high power handling capacity. May be used with Mirage subwoofer (below). Contains 8" plastic-impregnated cone woofer; 1" dome tweeter (proprietary thermoplastic). FR 57-20,000 Hz  $\pm$  3 dB; min power 10 W, max 200 W; sens 92 dB SPL/W/m; imp 4 ohms; available in walnut vinyl and oak veneer; 48 lbs/pr; 11 1/8" W x 18" H x 8 3/4" D ..... \$299/pr

### The Subwoofer

Acoustic-suspension subwoofer for floor placement. Totally independent chs, includes passive crossover for use with Mirage bookshelf speakers. Ideal low-frequency room loading. Can be used with other sets. Contains two 10" cone subwoofers. FR 37-300 Hz  $\pm$  3 dB; min power 20 W, max 200 W; sens 92 dB; imp 6-10 ohms; available in walnut vinyl and oak veneer; 67.5 lbs; 24 1/4" W x 19 1/8" H x 15 1/4" D ..... \$449/ea

## MISSION ELECTRONICS

### 780 Argonaut Speaker

Infinite-baffle double-chamber acoustical speakers with matching stands. MDF cabinet construction; 2 woofers operating in tandem. 2 reinforced homopolymer cone woofers; impedance transformer tweeter. FR 35-20,000 Hz  $\pm$  3 dB; min power 50 W, max power 200 W; sens 94 dB SPL/W/m; imp 4 ohms; walnut and black; 35 kgs; 270 mm W x 710 H x 300 D .. \$1,400/pr

### 770 Freedom Speaker

Bass-reflex floor-standing speaker with matching stands. Features MDF cabinet construction with visco-elastic dampings; reinforced homopolymer cone woofer; 25-mm polymer dome ferrofluid tweeter. FR 40-20,000 Hz  $\pm$  3 dB; min power 20 W; max power 150 W; sens 92 dB SPL/W/m; imp 8 ohms; black and walnut; 25 kgs pr; 270 mm W x 610 H x 300 D .. \$799/pr

### 737 Renaissance Speaker

Two-way speaker features 215-mm polypropylene cone woofer, 19-mm polymer-dome tweeter with ferrofluid; crossover frequency 2,400 Hz. FR 40-20,000 Hz  $\pm$  3 dB; nominal imp 8 ohms; power range 20-125 W/ch; sens 90 dB SPL/W/m; 540 mm H x 250 W x 270 D; 19.5 kg/pr; finish black/walnut ..... \$599

### 707 Speaker

Bass-reflex 2-way speaker with special limestone/polypropylene front baffle board. Features steel-reinforced paper woofer; 210 mm carbon/paper woofer; 19-mm polymer dome

(ferrofluid damped) tweeter. FR 50-20,000 Hz  $\pm$  3 dB; min power 20 W, max power 100 W; sens 92 dB SPL/W/m; imp 8 ohms; black and walnut; 16 kgs pr; 250 mm W x 470 H x 270 D ..... \$449/pr

### 700.2 Speaker

Infinite baffle 2-way speaker with 210-mm woofer, 19-mm ferrofluid tweeter. Walnut or black finish. FR 55-20,000 Hz  $\pm$  3 dB; power range 15-100 W; imp 8 ohms; sens 91 dB; 460 mm H x 260 W x 255 D; 6.5 kg ..... \$299/pr

## NAD

### 30 Speaker

Floor-standing acoustic-suspension speaker. Features 3-way design; 10" cone woofer; 4" soft dome midrange; 1" soft dome tweeter; speaker response tailored for complementary action of NAD bass EQ circuit; black finish ..... \$598/pr

## NEC

### RS-100 Speaker

Floor placement speaker with twin transmission path low-frequency (variably damped) enclosure. Features Poly-Arc adjustable high frequency array; 10" polypropylene passive rad; two 8" polypropylene woofers; 35 mm cambric dome midrange; 1" elliptical dome tweeter. FR 28-18,500 Hz  $\pm$  3 dB; min power 25 W; max power 200 W; sens 90 dB SPL/W/M; imp 4 ohms. 14" W x 42" H x 16" D; 103 lbs ..... \$1,500

## NIKKO

### DRM-3000 Speaker

Floor placement 3-way box speaker. Features 12" robbed cone woofer; 5" cone midrange; 3" cone tweeter. Minimum power 5 W; max power 65 W; 43 lbs ..... \$200/pr

### DRM-4000 Speaker

Floor placement ported digital reference monitor. Features 12" ribbed cone 2" VC woofer; 5" cone 1" VC midrange; 3" x 5" dome 1 1/4" VC tweeter. Minimum power 10 W; max power 220 W; sens 88 dB SPL/W/m; imp 8 ohms. 48 lbs; wood grain finish ..... \$200/pr

## OHM ACOUSTICS

### Model F Speaker

Floor-standing speaker with 12" Walsh radiator, 16" tweeter. Features oiled-walnut cabinet. FR 37-19,000 Hz  $\pm$  4 dB; power range 75-250 W; imp 4 ohms; 44" H x 17 1/2" W x 17 1/4" D (tapers to 13" W x 13" D at top) ..... \$4,000/pr

### Walsh 4 Speaker

Features 10" Walsh driver; 3 controls for low, perspective (midrange), and high, each with 3 positions; press-connector inputs accept banana plugs and up to 12-gauge wire; casters; standard finish walnut and oak, available in Scandinavian rosewood, black or white lacquer. FR 32-17,000 Hz  $\pm$  4 dB; sens 87 dB SPL/m/2.83 V; rec power 50-500 W/ch; 40" H, 12.5" x 12.5" at top, 15.5" x 15.5" at base; 63 lbs. .... \$1,895/pr

### Walsh 3 Speaker

Floor-standing vented speaker. Features Walsh driver; 3 controls for low, perspective (midrange) and high, each with 3 positions; press-connector inputs accept banana plugs and up to 12-gauge wire; casters. FR 37-17,000 Hz  $\pm$  4 dB; power range 35-200 W; sens 87 dB SPL/W/m. Finished in rosewood, black or white lacquer. 36" H x 12 1/2" x 13 1/2" at base tapering to 11 1/4" x 11 1/4" at top; 48 lbs \$1,395/pr

### Walsh 2 Speaker

Floor-standing vented speaker designed for excellent imaging and reliability. Features inverted conical surface; sub-bass activator; tufflex

# How To Get Your Money's Worth In Speakers



Experts agree that speakers are the most important component in your hi-fi system.

Today, no less than 50 companies make and sell speakers – each with as many as six models to choose from. As a result, it can be a time consuming, confusing, laborious task to make the right speaker decision.

A little common sense can help you. Consider these points when you shop:

## 1. High Sensitivity

The more sensitive a speaker, the louder it will play on a given power level. All things being equal, a sensitive speaker gives your amplifier a higher reserve of power – power it can put to good use with today's digital recordings and expanded dynamic range.

Look for sensitivity ratings of at least 90 dB/SPL. This means a speaker will deliver 90 decibels of sound pressure level, (a normal listening level), to a distance of one meter while operating on one watt of power. KLIPSCH® makes speakers with sensitivity ratings up to 104 dB/SPL.

## 2. Low Distortion

There are numerous types

of distortion, many of which are irritating, some inaudible. There is little or no agreement as to which forms are most important. So you might as well disregard specifications. The best test is to listen – especially to violins, vocals, and piano. Everything should sound clear and open. The speakers should effortlessly produce loud passages.

## 3. Digital Readiness

Back up and read points 1 and 2. Any speaker with high sensitivity and low distortion is half way to digital readiness. Another important point is high output capability. How loud will it play without audible distortion?

And finally, what kind of components are in that speaker? For the demands of digital, the more rugged the better. KLIPSCH uses rugged compression drivers mated to specially designed horns. The same components used in professional concert and theatre applications.

## 4. Quality Of Cabinetry

Face it. You'll probably want your speakers to look as good as they sound. Real wood gives you *natural* beauty and *lasting* value. Accept nothing less.

## 5. Brand History

For 42 years, KLIPSCH Loudspeakers have been rewarding critical listeners with outstanding musical performance. Many of the early KLIPSCH Loudspeakers are still in use today. KLIPSCH Loudspeakers are also a popular choice for recording artists, recording studios, concert sound companies, and large motion picture theatres – where dependable, quality sound is a necessity and a way of life.

## 6. Dealer History

The same pride that goes into KLIPSCH products goes into the selection of KLIPSCH dealers. They are known for their professionalism and integrity. To find your nearest authorized KLIPSCH dealer and to hear a demonstration of the KLIPSCH line, look in the Yellow Pages. Or call toll free, 1-800-223-3527.

Thank you, and good listening.

 **klipsch**<sup>®</sup>  
A Legend In Sound.™

P.O. Box 688 • Hope, Arkansas USA 71801

CIRCLE NO. 2 ON READER SERVICE CARD

# SPEAKERS

transmission block; ferrofluid ferro lube; protection circuits; acoustic insulation; acoustical attenuator; acoustically transparent circular metal grille; high-frequency balance control. FR 45-16,000 Hz  $\pm 4$  dB; sens 89 dB SPL/m/2.83 V; max power 120 W RMS; imp nominal/minimal 4/4 ohms; 3 1/2" H x 11 1/2" x 11 1/2" at bottom tapering to 9 1/4" x 9 1/4" at top; 29 lbs. . . . \$995/pr

## Ohm C Speaker

Features 10" polypropylene driver; 38-oz ferrite magnet; 1 1/2" liquid-cooled voice coil; pentavented liquid-cooled 1" soft dome tweeter; 10-oz ferrite magnet; 2,400 Hz/14,000 Hz sub-bass activator; vented (quasi-third order Butterworth filter); press connectors; 3/8" flakeboard stock-oiled walnut finish, oak on special order. FR 37-21,000 Hz  $\pm 4$  dB; imp 4 ohms; 26 3/8" H x 15" W x 11 3/4" D . . . \$750/pr

## Ohm Walsh 1 Speaker

Floor-standing vented speaker with inverted conical surface. FR 48-18,000 Hz  $\pm 4$  dB; power range 20-90 W; sens 87 dB SPL/W/m; imp 8 ohms; walnut finish; 24 lbs . . . \$595/pr

## ONYKO

### HS-15 Compact Speaker

Compact speaker. Features dual tweeters; high-strength mesh grille; 6 1/4" cone woofer; two 2 3/4" cone tweeters. FR 55-20,000 Hz; max power 45 W; imp 8 ohms; 8 1/8" W x 13 1/16" H x 9 3/8" D; 10 lbs. Available in dark grey; mirror-image pair . . . \$220/pr

## PARASOUND

### Perfect Image Speaker

Ported floor-standing speaker designed to be very linear with uncaney imaging, unrestrained dynamic range, high sens, and smooth imp. Rounded and angled baffle minimizes diffraction and time-aligns drivers. 8" polypropylene cone woofer, 1" soft-dome tweeter. FR 25-20,000 Hz  $\pm 2.5$  dB; power range 10-300 W; sens 92 dB SPL/W/m; imp 8 ohms; black lacquered or medium natural oak; 19" W x 37" H x 13" D; 50 lbs . . . \$900/pr

## CMs330 Monitor Speaker

Compact monitor bookshelf speaker in die-cast aluminum enclosure. High-compliance polypropylene 4" cone woofer, 1" soft-dome tweeter with phasing plug and ferrofluid damping. 12 dB/octave crossover includes separate choke for woofer. With mounting brackets. FR 60-22,000 Hz  $\pm 4$  dB; power range 10-80 W; sens 89 dB SPL/W/m; imp 4 ohms; black aluminum; 4 3/8" W x 7 1/8" H x 4 1/2" D; 6 lbs . . . \$200/pr

## AWs280 All-Weather Speaker

Ported bookshelf speaker designed to function outdoors year-round. 6" polypropylene cone woofer, labyrinth bass loading, 1 1/2" poly cone tweeter. Features high-density particle-board enclosure with molded outer shell and mounting hooks. FR 65-20,000 Hz  $\pm 4$  dB; power range 10-60 W; sens 88 dB SPL/W/m; imp 8 ohms; black finish; 10" W x 14 1/2" H x 9 1/2" D; 11 lbs . . . \$230/pr

## PIONEER

### CS-V900D Speaker

Floor placement, digital-ready speaker system. Features ported enclosure; 12" polymer graphite cone woofer; 4 3/4" single piece boron cone midrange; beryllium tweeter; metalized film capacitors in crossover; magnetically shielded. FR 30-50,000 Hz  $\pm 3$  dB; max power 240 W; sens 91 dB SPL/W/m; imp 6 ohms; 15 3/8" W x 26 3/4" H x 13 3/8" D; 57 lbs, 5 oz; real walnut veneer; mirror image pair . . . \$1,200/pr

## DSS-E10 L/R Speaker

3-way bass-reflex speaker system. Features linear-drive magnetic circuit; electronic bass drive; dynamic response suspension; two 12" PG cone woofers; two 4 3/4" Boron cone midranges; 2 Beryllium ribbon tweeters. FR 30-50,000 Hz; maximum power 240 W; sens 91 dB SPL/W/m; imp 6 ohms; natural wood veneer finish; 15 3/8" W x 26 3/4" H x 13 3/8" D; 57 lbs, 5 oz . . . \$1,000/pr

## CS-705 Speaker

Bass-reflex floor-standing four-way speaker features electronic bass drive; 3-position tone selector, LED power indicators. Contains 15" cone woofer; 4 3/4" cone midrange; horn tweeter; aluminum ribbon supertweeter. FR 20-40,000 Hz; max power 200 W; sens 98 dB SPL/W/m; imp 8 ohms; walnut; 44 lbs; 17 1/16" W x 27 3/16" H x 10 3/16" D . . . \$600/pr

## CS-605 Speaker

Bass-reflex floor-standing four-way speaker features electronic bass drive, 3-position tone selector, LED power indicators. Contains 12" cone woofer; 4 3/4" cone midrange; horn tweeter; aluminum ribbon supertweeter. FR 25-40,000 Hz; max power 150 W; sens 96 dB SPL/W/m; imp 8 ohms; walnut; 35 lbs 8 oz; 16 1/8" W x 27 3/8" H x 10 1/16" D . . . \$500/pr

## DSS-6 R/L Speaker

Floor-standing box speaker. Features two 8" PG cone woofers; two 2 1/2" Boron cone midranges; 2 Beryllium ribbon tweeters; linear-drive magnetic circuit; electronic bass drive; dynamic response suspension. FR 40-50,000 Hz; maximum power 120 W; sens 90 dB SPL/W/m; imp 6 ohms; natural wood veneer finish; 10 3/8" W x 18 1/2" H x 9 9/16" D; 23 lbs, 2 oz . . . \$400/pr

## CS-405 Speaker

Bass-reflex floor-standing 3-way system. Contains 12" cone woofer; 3 1/16" cone midrange; aluminum ribbon tweeter. FR 40-40,000 Hz; max power 120 W; sens 93 dB SPL/W/m; imp 8 ohms; walnut; 24 lbs 4 oz; 14 1/16" W x 24 1/2" H x 10 3/8" D . . . \$300/pr

## S-T5 Speaker

Scaled 2-way bookshelf system with polymer graphite woofer and electronic bass drive. FR 45-20,000 Hz; max power 90 W; sens 89 dB SPL/W/m; imp 6.3 ohms; gray; 9 lbs 15 oz; 7 3/16" W x 10 1/8" H x 7 3/16" D . . . \$280/pr

## CS-G301WA Speaker

Ported 3-way bookshelf speaker contains 12" cone woofer; 4 3/4" cone midrange; 2 3/8" cone tweeter. FR 35-20,000 Hz; max power 120 W; sens 91.5 dB SPL/W/m; imp 6.3 ohms; walnut; 29 lbs 12 oz; 14 1/16" W x 26 1/2" H x 13" D . . . \$260/pr

## POLK AUDIO

### SDA-SRS Speaker

Floor-standing speaker that incorporates coherent Stereo Dimension Array (SDA) technology for lifelike three-dimensional imaging. Features 15" planar passive radiator; eight 6 1/2" trilaminate polymer midranges; four 1" silver coil soft dome tweeters. FR 14-26,000 Hz  $\pm 3$  dB; power range 10-1,000 W; sens 95 dB SPL/W/m; imp 4 ohms; oiled oak or oiled walnut finish; 21" W x 63 3/4" H x 13" D; 175 lbs/ea . . . \$2,790/pr

## SDA-1A Speaker System

Speaker with 4 Polk MW 6600x trilaminate polymer bass-midrange drivers; Stereo/Dimensional isophase crossover system for blending all 12 active drivers of 2 SDA-1s; SL 2000 L/P high-frequency radiator incorporating an exclusive silver coated voice coil windings for FR be-

yond 25,000 Hz and hyperbolic section polyamide diaphragm; sub-bass radiator. Recommended amplification 10-500 W/ch; FR 15-26,000 Hz; imp 4 ohms; crossover frequencies 50 Hz, 100 Hz, 2,500 Hz; system resonance 15 Hz; efficiency 95 dB SPL/W/m; oiled walnut or oak cabinet finish; 43 1/2" H x 16" W x 12" D; 85 lbs . . . \$1,750/pr

## SDA-2 Speaker System

Similar to SDA-1 except 3 6600X bass-midrange drivers and crossover frequencies at 50 and 2,500 Hz. FR 16-26,000 Hz; system resonance 16Hz; efficiency 92dB/W/m; cabinet finish furniture-grade walnut or rosewood woodgrain vinyl; oiled walnut or oak; 39 1/2" H x 16" W x 12" D; 80 lbs . . . \$1,250/pr

## R.T.A. 12C Monitor Speaker System

Real-time-array 3-way floor-standing speaker with 12" low-resonance molded-foam subwoofer, two 6 1/2" polymer laminated bass-midrange drivers, SL 2,000 tweeter. FR 17-25,000 Hz; crossovers 40 and 2,000 Hz; power range 10-500 W; imp 4 ohms; walnut or rosewood grain finish (genuine walnut veneer available at extra cost); 39" H x 16" W x 12" D . . . \$960/pr

## SDA Compact Reference System

Bookshelf speaker with SDA technology for lifelike three-dimensional imaging. Two 6 1/2" cone midranges; two 1" SL 2,000 polymer dome tweeters; 10" passive cone radiator. FR 26-25,500 Hz; power range 10-200 W; sens 92 dB SPL/W/m; imp 4 ohms; walnut or rosewood furniture grade vinyl finish or real hand-rubbed oak or walnut at extra cost; 20" W x 12 1/2" H x 9 1/2" D . . . \$790/pr

## Ten B Speaker System

Sub-bass radiator/sealed 3-way floor-standing speaker with 10" fluid-coupled subwoofer, two 6 1/2" bass/midrange drivers, 1" soft-dome tweeter. FR 22-25,000 Hz; crossovers 60 and 3,000 Hz; power range 10-200 W/ch; imp 6 ohms; walnut or rosewood grain finish (genuine walnut veneer available at extra cost); 28" H x 16" W x 11 1/2" D . . . \$660/pr

## Seven C Speaker System

Sub-bass radiator/sealed 3-way bookshelf speaker with 10" subwoofer, 6 1/2" plasticized bass/midrange, 1" soft-dome tweeter. FR 26-25,000 Hz; crossovers 60 and 3,000 Hz; power range 10-100 W; imp 8 ohms; walnut or rosewood grain finish; 24" H x 14" W x 9 1/4" D . . . \$500/pr

## Monitor 5jr Speaker

Bookshelf speaker with 1" SL 2,000 tweeter; 6 1/2" trilaminate polymer bass-midrange. FR 30-26,000 Hz; power range 10-100 W; imp 4 ohms; furniture grade walnut or rosewood grain vinyl finish or real walnut or oak veneer at extra cost; 9" W x 7" H x 8 3/8" D . . . \$260/pr

## PROTON

### 303 Speaker

Video loudspeaker. Features 4 1/2" cone woofer; 1 3/4" ferrofluid-cooled cone tweeter. FR 60-20,000 Hz  $\pm 3$  dB; min power 3 W, max 60 W; sens 89 dB SPL/W/m; imp 8 ohms; black finish; 27 lbs; 6.5" W x 23" H x 7.25" D . . . \$150/pr

### 302 Speaker

Video loudspeaker. Features 4 1/2" cone woofer; 1 3/4" ferrofluid-cooled cone tweeter. FR 100-20,000 Hz  $\pm 3$  dB; min power 3 W, max 60 W; sens 89 dB SPL/W/m; imp 8 ohms; black finish; 22 lbs; 6.5" W x 18" H x 7.3" D . . . \$150/pr

# SPEAKERS

## QUAD

### ESL-63 Electrostatic Loudspeaker

Full-range electrostatic double speaker with dipole source. Features 2 protection circuits. Power range 100-190 W; sens 86 dB, 2.83 V RMS; imp 8 ohms; axis band limits -6 dB at 35 Hz, third-order, -6 dB at 20 kHz; 92.5 x 66 x 27 cm; 23 kg ..... \$2,450/pr



Proton 302

## QUASAR

### SW494XW Speaker

Floor-standing box speaker with magnetic shielding for use with video products. Features 11 1/2" cone woofer; 4 3/4" cone midrange; horn with acoustic lens supertweeter. FR 33-25,000 Hz ± 16 dB; max power 150 W; imp 8 ohms; hickory finish; 50 lbs/ea ..... \$350-400/pr

## RCA

### SPK-385 Dimensia Speaker

Floor placement air suspension magnetically shielded 3-way speaker system. Features midrange and tweeter level controls; 11" polypropylene cone woofer; 4" polypropylene cone midrange; 1" soft cloth dome tweeter. FR 35-20,000 Hz; max power 120 W; sens 91 dB SPL/W/m; imp 6 ohms. 13 3/8" W x 24 3/8" H x 12 3/4" D; 36 lbs; oak/ebony finishes... \$400/pr

### SPK-375 Dimensia Speaker

Floor placement air suspension speaker. Features midrange and tweeter level controls; 11" polypropylene cone woofer; 4" polypropylene cone midrange; 1" soft cloth dome tweeter. FR 35-20,000 Hz; max power 120 W; sens 91 dB SPL/W/m; imp 8 ohms. 13 3/8" W x 24 3/8" H x 12 3/4" D; 36 lbs; oak/ebony finishes... \$400/pr

### SPK-380 Digital Command Speaker

Floor placement air suspension magnetically shielded 3-way speaker system. Features midrange and tweeter level controls; bass and midrange polypropylene drivers; 11" polypropylene cone woofer; 4" polypropylene cone midrange; 1" soft cloth dome tweeter. FR 35-20,000 Hz; max power 120 W; sens 91 dB SPL/W/m; imp 6 ohms. 13 3/8" W x 24 3/8" H x 12 3/4" D; 36 lbs; oak/ebony finishes; approx ..... \$400/pr

### SPK-125 Digital Command Speaker

Bookshelf air suspension magnetically shielded 2-way speaker system. Features polypropylene bass driver; tweeter level control; 6" polypropylene cone woofer; 1" soft cloth dome tweeter. FR 50-20,000 Hz; max power 80 W; sens 89 dB SPL/W/m; imp 6 ohms. 9 1/4" W x 15 3/4" H x 9 1/8" D; 14.74 lbs; approx ..... \$200/pr

## REALISTIC

### Optimus Speaker System

400. Infinite-baffle speaker with 12" woofer, 5" cone midrange. Level controls for tweeter and midrange. FR 40-40,000; 26 3/4" x 14 3/8" x 11 3/8" ..... \$400/pr

T-120. High-efficiency 3-way tower speaker in genuine walnut veneer. Features 10" long-throw woofer; 5" midrange driver; 1" liquid-cooled tweeter; sealed acoustic-suspension enclosure; ferrofluid-cooled dome tweeter; removable cloth grille; level controls for midrange and tweeter. FR 50-20,000 Hz; power-handling capacity 80 W; sens 91 dB SPL/W/m; imp 8 ohms; 35 1/2" x 12 1/2" x 11 1/2" ..... \$360/pr

800. Three-way speaker with variable mid-range and tweeter controls. Features 12" woofer; 4" midrange; 2 1/2" tweeter; tuned port; front and rear-projecting midrange. FR 50-20,000 Hz; max power 80 W; sens 90 dB SPL at 1 watt/1 meter; imp 8 ohms. Oiled-walnut veneer; 29 3/4" x 14" x 9 3/4" ..... \$320/pr

45. Vented speaker with 10" woofer, 5" cone midrange, 2 1/2" dome tweeter. Level controls for midrange and tweeter. FR 50-20,000 Hz; 23 3/16" x 13" x 10 3/16" ..... \$280/pr

600. Three-way bass-reflex speaker. Features 8" woofer; 4" midrange; 2 1/2" cone tweeter; removable cloth grille; recessed color-coded spring-loaded terminals. Max power 70 W; sens 90 dB SPL at 1 watt/1 meter; FR 50-20,000 Hz. Oiled walnut veneer finish ..... \$200/pr

### Mach Two Speakers

Vented speaker with 15" woofer, 5" cone midrange, 4" dual-radial tweeter. Level controls for midrange and tweeter. FR 25-40,000 Hz; 27 3/16" x 17 3/4" x 11 13/16" ..... \$440/pr

### Nova 15 Speakers

Walnut-veneered vented speaker with 2 1/2" tweeter. FR 60-20,000 Hz; 19" x 16 1/4" x 7 1/2" ..... \$160/pr

### Minimus Speakers

35. Two-way mini speaker. Features 5 1/4" honeycomb woofer; 2" liquid-cooled tweeter; color-coded spring-loaded terminals. Max power 50 W; FR 60-20,000 Hz. Oiled walnut; 11" x 6 1/2" x 6 13/16" ..... \$140/pr

7W. Walnut veneer mini-speaker. Features 4" woofer; 1" soft dome tweeter; removable cloth grille; spring terminals. Power handling capacity 40 W; 8 x 5 x 4" ..... \$100/pr

## REVOX

### Agora B Speaker

Floor-standing triamplified active ported speaker incorporating three 100-watt amps with active dividing networks in each enclosure. Designed to be driven from preamp or direct from high-level sources such as CD player. Features push-pull dual woofer design with one woofer facing into enclosure to eliminate even-order harmonic distortion. Two 8" cone woofers; 4 3/4" cone midrange; 3/4" titanium dome tweeter. Low-frequency amp utilizes feedback to compensate for back-EMF. Also features 4-step bass and treble controls; bass blend switch; auto power on/off. FR 30-21,000 Hz ± 3 dB; sens 110 dB SPL/W/m; real walnut veneer finish, brown grille. 16 3/4" W x 29" H x 16 3/4" D; 68 lbs ..... \$2,600/pr

### Plenum B Speaker

Bass-reflex 3-way speaker with woofer featuring extended voice coil/magnet assembly, dome midrange, dome tweeter. Features custom crossover network to prevent tweeter overload; handcrafting with premium wood veneers. Sens 90 dB SPL/W/m; distortion 0.4%; maximum

power 120 W ..... \$1,198/pr  
Forum B. Similar to Plenum B except maximum power 90 W ..... \$798/pr

### Piccolo Speaker

Miniature satellite speaker. May be used with or without companion subwoofer. Satellites feature 4 3/16" cone woofer; 3/4" dome tweeter. Subwoofer features 10 3/16" cone subwoofer. FR 48-22,000 Hz ± 3 dB; power range 20-70 W; sens 86 dB SPL/W/m; imp 4 ohms; black finish. Satellite 5 1/2" W x 8 3/4" H x 5 3/4" D, 5 1/2 lbs; subwoofer 15 3/8" W x 14 3/16" H x 14 3/8" D, 32 lbs. Satellites ..... \$198/pr  
Subwoofer ..... \$250

## RICH ACOUSTICS

### SF-1202 Speaker

Box speaker with passive radiator. Features multiple driver system, time aligned; four 1" Ferrofluid soft-dome tweeters in multiple array alignment; four 6.5" polypropylene mid-bass drivers in phase fluid-coupled with a 12" sub-bass radiator. FR 25-20,000 Hz ± 3 dB; power range 10-350 W; sens 91 dB SPL/W/m; imp 8 ohms; walnut veneer finish. .... \$1,295/pr

### Model 7 Speaker

Ported bookshelf or floor-standing speaker with 8" polypropylene cone woofer; 3" soft-dome midrange; 1" soft-dome tweeter vertically aligned. Phase-corrected crossovers at 1,100 and 4,000 Hz with 12-dB slopes. FR 38-20,000 Hz ± 3 dB; power range 10-250 W; sens 90 dB SPL/W/m; imp 8 ohms; available in oak and walnut veneers; 13" W x 26" H x 11" D; 48 lbs ..... \$799/pr

### SF-702 Speaker

Box speaker with passive radiator. Features two 6.5" mid-bass drivers; 1" Ferrofluid dome tweeter; 10" sub-bass unit. FR 30-20,000 Hz ± 3 dB; power range 10-200 W; sens 91 dB SPL/W/m; imp 4 ohms; real wood walnut veneer finish ..... \$599/pr

### SF-502 Speaker

Box passive radiator speaker. Features 6.5" mid-bass driver; 1" Ferrofluid dome tweeter; 10" sub-bass unit. FR 32-20,000 Hz ± 3 dB; power range 32-20,000 W; sens 91 dB SPL/W/m; imp 8 ohms; real wood walnut veneer finish. \$449/pr

### Model 3 Speaker

Ported speaker for bookshelf or stand placement. 6.5" bextrene cone woofer; 1" soft-dome tweeter. Crossover at 2,500 Hz. FR 45-20,000 Hz ± 3 dB; power range 10-100 W; sens 90 dB SPL/W/m; imp 8 ohms; available in oak and walnut veneers; 10" W x 17" H x 8 3/8" D; 24 lbs ..... \$320/pr

## SANSUI

### XL-900C Speaker

Infinite baffle floor-standing speaker with 12 3/4" tri-composite carbon-fiber woofer (TCCF); 2 1/2" ceramic midrange; 1" titanium dome tweeter. Features rounded cabinet edge for smoother dispersion; FR 30-35,000 Hz; max power 150 W; sens 93 dB SPL/W/m; imp 6 ohms; wood finish; 17" W x 30" H x 17" D; 58 lbs ..... \$1,200/pr

### XL-500C Speaker

Floor placement tower 4-way passive radiator speaker system. Features ported enclosure; TCCF; polypropylene mica and carbon midrange (PM-C); 12" passive rad; 12" TCCF cone woofer; 4 3/4" cone midrange; 2" dome tweeter; 3/8" dome supertweeter. Max power 320 W; sens 93 dB SPL/W/m; imp 8 ohms. Available in walnut finish. 15" W x 40 1/8" H x 13" D; 55 lbs ..... \$1,000/pr

# S P E A K E R S

## S-1117 Speaker

Three-way tower speaker with 12" woofer, passive radiator. FR 28-22,000 Hz; max power 160 W; sens 92 dB SPL/W/m; imp 8 ohms; 14" W x 41" H x 13" D ..... \$900/pr

## XL-300 Speaker

Floor placement 4-way speaker system. Features ported enclosure; 3-step level control; 10 1/2" TCCF cone woofer; 4 1/4" PC-M cone midrange; 2" dome tweeter; 3/8" dome supertweeter. Max power 270 W; sens 92 dB SPL/W/m; imp 8 ohms. Available in walnut finish. 15" W x 31 1/8" H x 9 1/16" D; 46.2 lbs ..... \$800/pr

## XL-100 Speaker

Floor placement 3-way speaker system. Features ported enclosure; 3-step level control; 10 1/2" TCCF cone woofer; 4 1/4" PC-M cone midrange; 2" dome tweeter. Max power 200 W; sens 91 dB SPL/W/m; imp 8 ohms. Available in walnut finish. 14 3/4" W x 26 1/16" H x 12 1/16" D; 28.7 lbs ..... \$600/pr

## S-917 Speaker

Three-way acoustic-suspension speaker with 12" woofer. FR 30-22,000 Hz; max power 150 W; sens 92 dB SPL/W/m; 14 1/2" W x 27" H x 13 3/8" D ..... \$450/pr

S-717. Similar to S-917 except with 10" woofer; max power 120 W; sens 91 dB SPL/W/m; 13" W x 25" x 11 3/4" D ..... \$290/pr

S-517. Similar to S-717 except with 8" woofer; max power 65 W; sens 90 dB SPL/W/m; 12" W x 23 1/2" H x 10 1/8" D ..... \$180/pr

## SCOTT

### Pro-100BII Monitor Speaker

Bidirectional 3-way air-suspension floor-standing monitor speaker with 15" woofer, two 4 1/2" midranges; three 1" dome tweeters. Features tweeter, midrange level controls; bi-directional control; tweeter burn out protection; oiled-walnut finish; 2 removable grilles. FR 36-20,000 Hz  $\pm$  4 dB; crossovers 700 and 3.5k Hz; sens 90 dB SPL/W/m; power range 20-300 W; imp 4 ohms; 29 1/4" H x 19" W x 14 1/2" D ..... \$1,590/pr

### 312D Three-Way 12" Loudspeaker

Features 1 3/4" wide-dispersion tweeter; 5" acoustically isolated midrange; 12" high-power-construction woofer; variable midrange/tweeter high-frequency control; imp 8 ohm; power handling 10-110 W; mountain walnut finish; 26" H x 15 1/2" W x 11 3/4" D; 35 lbs ..... \$660/pr

### 312DL Air-Suspension Speaker

Three-way air-suspension floor-standing speaker with removable grille. 12" high power construction cone woofer; 5" acoustically isolated cone midrange; 1 3/4" wide-dispersion ferrofluid cone tweeter. FR 45-20,000 Hz  $\pm$  4 dB; min power 10 W, max 90 W; sens 92 dB SPL/W/m; imp 8 ohms; walnut; 27.5 lbs 16 1/2" W x 27 1/2" H x 11" D ..... \$540/pr

### 177DL Bookshelf Speaker

Air-suspension bookshelf 3-way 8" speaker. Features removable grille; 8" high compliance cone woofer; 5" acoustically isolated cone midranges; 1 3/4" wide-dispersion ferrofluid cone tweeter. FR 55-22,000 Hz  $\pm$  4 dB; min power 5 W, max 60 W; sens 92 dB SPL/W/m; imp 8 ohms; walnut; 23 1/2 lbs 13" W x 23" H x 9 1/4" D ..... \$350/pr

### Boston Audiophile Series

FOUR. 3-way 15" multi-directional floor placement loudspeaker. Features acoustic suspension; 15" PVA treatment, high temp VC woofer; two 4 1/2" midranges; three 1" wide dispersion dome tweeters. FR 36-20,000 Hz  $\pm$  4; min power 20 W; max power 320 W; sens 90 dB

SPL/W/m; imp 4 ohms. 18 3/4" W x 35 1/2" H x 43 1/4" D; contemporary walnut finish. \$1600/pr  
THREE. Floor placement 3-way 12" speaker system. Features acoustic suspension; 12" PVA cone treatment high temp VC, PVC neoprene surround woofer; 4 1/2" acoustically isolated midrange; 1" wide dispersion dome tweeter. FR 38-20,000 Hz  $\pm$  4 dB; min power 15 W; max power 250 W; sens 91.5 dB SPL/W/m; imp 8 ohms. 16 3/16" W x 33 3/4" H x 11" D; contemporary walnut finish ..... \$720/pr

ONE. 2-way 6" bookshelf speaker system. Features acoustic suspension; 6 1/2" PVA cone treatment high temp VC woofer; 1" wide dispersion dome tweeter. FR 55-20,000 Hz  $\pm$  4; min power 10 W; max power 120 W; sens 89.5 dB SPL/W/m; imp 4 ohms; 9" W x 14 3/4" H x 7 1/8" D; contemporary oak finish ..... \$280/pr

## SHERWOOD

### S-728 Speaker

Four way, floor-standing acoustic-suspension speaker. Features 12" cone shaped passive radiator; 12" cone woofer; 5" liquid cooled cone midrange; 3" liquid cooled cone tweeter; Planar Ribbon super tweeter; removable grille; wire mesh driver protectors; furniture base. Maximum power range 120 W; imp 8 ohms; nottingham hickory vinyl finish; 14 3/4" W x 43 1/4" H x 13" D; 51 lbs ..... \$500/pr

### S-724 Speaker

Floor-standing, 4-way acoustic-suspension speaker. Features 12" cone woofer; 5" liquid cooled cone midrange; 3" liquid cooled cone tweeter; Planar ribbon super tweeter; wire mesh driver protectors; removable grilles; furniture base. Maximum power range 120 W; imp 8 ohms; nottingham hickory vinyl finish; 15 1/4" W x 29 1/2" H x 13" D; 36 lbs ..... \$400/pr

### S-718 Speaker

Floor-standing, 3-way acoustic-suspension speaker. Features 10" cone woofer; 5" liquid cooled cone midrange; 3" liquid cooled cone tweeter; wire mesh protectors; removable grilles; furniture base. Maximum power range 75 W; imp 8 ohms; nottingham hickory vinyl finish; 15 1/4" W x 28 1/2" H x 10 3/4" D; 28 lbs ..... \$300/pr

## SNELL ACOUSTICS

### Type A/III Speaker System

Floor-standing 4-way speaker designed to produce sound energy that is an exact analog of applied electrical input. Features 10" fused woofer in its own cabinet, 4" fused midrange, 1" fused tweeter mounted in separate cabinet on special curved enclosure to minimize diffraction effects, provide uniform dispersion into listening environment. Can be biamped with exclusive Snell electronic crossover specific to Type A/III. FR 34-24,000 Hz  $\pm$  1.25 dB on axis, up to 25° off-axis; crossover 275,2,500 Hz, 15,000 Hz min power 80 W/ch; imp 4 ohms; 47" H x 24" W x 13" D. Hand-sanded hand-rubbed white oak cabinet ..... \$3,890/pr  
American walnut ..... \$3,770/pr

### Type C Speaker System

Floor-standing mirror-imaged speaker utilizing front-loaded 10" long-throw woofer, 4" midrange, 3/4" ultra-low-mass soft-dome tweeter; rear-firing supertweeter; drivers are crossed over at 375 Hz, 3,500 Hz and 15,000 Hz for rear-firing tweeter; crossovers individually adjusted; individual inputs to low and high-frequency drivers allow speakers to be optionally bi-wired; hand-sanded hand-rubbed oak or American walnut. FR from 35-22,000 Hz  $\pm$  1.25 dB sens 90 dB SPL/W/2.8 V/ pink noise; nominal imp 4

ohms; power range 80-400 W/ch 44" H x 15" W x 13" D. Oak ..... \$1,720/pr  
Walnut ..... \$1,800/pr

### Type E/II Speaker System

Floor-standing speaker with 8" woofer, 1" dome tweeter, and ultra-low-mass 3/4" rear-firing supertweeter designed for accuracy of early-arrival sound and accuracy of listening room response. Features individual inputs for woofer and high frequency drivers for optional bi-wiring of speakers; individually adjusted crossovers; hand-sanded, hand-rubbed oak or American walnut. Frequency response 39-22,000 Hz  $\pm$  1.75 dB; crossover frequencies 2,300 Hz and 15,000 Hz for rear-mounted supertweeter; nominal imp 8 ohms; sens 93 dB SPL/2.8 V pink noise with unit-to-unit efficiency variation less than 1/2 dB; max power handling 150 W/ch; 33" H x 14" W x 11" D. Oak ..... \$925/pr  
Walnut ..... \$975/pr

### Type K Speaker System

Bookshelf acoustic-suspension speaker using 8" woofer and 3/4" tweeter; crossover at 2,300 Hz; system designed for accuracy of early arrival sound and accuracy of listening room response; woofer incorporates polymer edge-treated curvilinear cone for accurate midrange clarity and natural tonal balance; soft-dome tweeter features unique polyamide vacuum-formed diaphragm for fast transient response and wide dispersion; individually adjusted crossovers; individual inputs to low-and high-frequency drivers for bi-wiring; hand-sanded and hand-rubbed oak or American walnut. Nominal imp of 8 ohms; sens 90 dB SPL/2.8 V/m pink noise with unit-to-unit efficiency variation less than .5 dB; max power 100 W/ch; 18" H x 13" W x 9" D. Oak ..... \$430/pr  
Walnut ..... \$450/pr

## SONAB BY AUDIOSOURCE

### OA-52 Speaker

Bass reflex (tuned to 38 Hz) speaker with 7" woofer and 1" dome tweeter. FR 27-20,000 Hz  $\pm$  3 dB; sens 89 dB SPL/W/m; imp 8 ohms; 16 1/16" x 20 1/4" x 14 1/2"; 43.5 lbs ea; rosewood or walnut veneers ..... \$1,500/pr

### OA-51 Speaker

Bass reflex (tuned to 38 Hz) speaker with 7" woofer and 1" dome tweeter. FR 32-20,000 Hz  $\pm$  3 dB; sens 88 dB SPL/W/m; imp 8 ohms. 16 1/16" x 11 7/8" x 10 7/8"; 28.5 lbs ea; rosewood or walnut veneers ..... \$900/pr

### OA-50 Speaker

Bass reflex (tuned to 30 Hz) speaker with 6 1/2" woofer and 1" dome tweeter. FR 28-20,000 Hz  $\pm$  3 dB; sens 89 dB SPL/W/m; imp 8 ohms; 14 1/2" x 18 3/16" x 12 1/16"; 33 1/2 lbs; walnut, black, and oak veneers ..... \$720

## SONY

### APM-77W Square-Driver Speaker

Floor standing speaker with flat, square, APM drivers. Contains honeycomb square woofer; honeycomb square midrange; 1 honeycomb square tweeter. FR 28-20,000 Hz +4-8 dB; min power 30 W, max 200 W; sens 91 dB/SPL/W/m; imp 8 ohms; oiled walnut finish; 50 lbs; 16" W x 32" H x 13" D ..... \$2,400/pr

### APM-55W Square-Driver Speaker

Speaker with flat, square APM drivers. Honeycomb square woofer; honeycomb square midrange; honeycomb square tweeter. FR 32-20,000 Hz +4/-0 dB; min power 25 W, max 200 W; sens 91 dB SPL/W/m; imp 8 ohms; oiled walnut finish; 44 lbs; 15" W x 28" H x 13" D ..... \$1,600/pr

# SPEAKERS

## APM-33W Bookshelf Speaker

Bookshelf speaker with flat, square APM drivers. Features honeycomb woofer; honeycomb square tweeter. FR 30-20,000 Hz +4/-0 dB; min power 20 W, max 160 W; sens 91 dB SPL/W/m; imp 8 ohms; walnut oiled finish; 34 lb; 14" W x 24" H x 11" D ..... \$800/pr

## APM-707 Bookshelf Speaker

Bookshelf speaker with flat, square APM drivers. Features honeycomb square passive radiator; honeycomb square woofer; honeycomb square tweeter. FR 40-20,000 Hz; min power 15 W, max 160 W; sens 90 dB SPL/W/m; imp 6 ohms; walnut finish; 27 lb 8 oz; 13" W x 25 1/2" H x 10 1/2" D ..... \$400/pr

## SPEAKERLAB

### DAS Series Speakers

All DAS speakers are available in natural, colored or black oak finishes.

**DAS-8.** Floor placement speaker with Inverse Axis Alignment (IAA); computer-designed rear vent, and rear-mounted subwoofer. Features one 10" and one 12" woofer; 1" dome tweeter; one 6" cone and one 3" dome midrange. Crossover 150, 350, 1,500, 5,000 Hz; sens 94 dB SPL/W/m; imp 4 ohms; FR 23-21,000 Hz ± 3 dB; min power 20 W RMS/ch; max power 300 W RMS/ch. 46" H x 16" W x 13" D; 105 lbs ..... \$1,798/pr

**DAS-7.** Floor placement speaker with IAA, computer-designed rear vent, and rear-mounted subwoofer. Features 10" and 12" woofers; 1" dome tweeter; 6 1/2" cone midrange. Crossover 180, 350, 3,000 Hz; sens 94 dB SPL/W/m; imp 4 ohms; FR 25-21,000 Hz ± 3 dB; min power 20 W RMS/ch; max power 275 W RMS/ch. 38 1/2" H x 14" W x 16" D; 86 lbs ..... \$998/pr

**DAS-6.** Floor placement speaker with IAA, computer-designed rear vent, and rear-mounted subwoofer. Features one 8" and one 10" woofer; 1" dome tweeter. Crossover 180, 2,500 Hz; sens 94 dB SPL/W/m; imp 4 ohms; FR 30-21,000 Hz ± 3 dB; min power 20 W RMS/ch; max power 275 W RMS/ch. 36" H x 12 1/2" W x 14" D; 62 lbs ..... \$798/pr

**DAS-5.** Bookshelf or floor placement speaker with IAA, computer-designed rear vent, and rear mounted subwoofer. Features one 8" and one 6 1/2" woofer; 1" dome tweeter. Crossover 180, 2,500 Hz; sens 93 dB SPL/W/m; imp 4 ohms; FR 34-21,000 Hz ± 3 dB; min power 20 W RMS/ch; max power 175 W RMS/ch. 31" H x 11" W x 13" D; 47 lbs ..... \$598/pr

**DAS-4.** Bookshelf or floor placement speaker with IAA and computer-designed rear vent. Features 8" woofer; 3/4" dome tweeter. Crossover 2,500 Hz; sens 92 dB SPL/W/m; imp 4 ohms; FR 36-21,000 Hz ± 3 dB; min power 20 W RMS/ch; max power 100 W RMS/ch. 28" H x 10" W x 12" D; 39 lbs ..... \$398/pr

**DAS-3.** Bookshelf or floor placement speaker with IAA and computer-designed rear vent. Features 8" woofer; 3/4" dome tweeter. Crossover 2,500 Hz; sens 91 dB SPL/W/m; imp 4 ohms; FR 42-21,000 Hz ± 3 dB; min power 10 W RMS/ch; max power 100 W RMS/ch. 21" H x 8" W x 10" D; 23 lbs ..... \$298/pr

## DAS-SW Subwoofer

Features computer-designed rear vent; 10" dual-voice-coil woofer. Crossover 150 Hz; sens 92 dB SPL/W/m; imp 8 ohms; FR 30-160 Hz ± 3 dB; min power 20 W RMS/ch; max power 150 W MS/ch. 18" H x 18" W x 18" D; 62 lbs ..... \$329/ea

## STAX

### ELS-F81 Panel Speaker

Electrostatic floor-standing panel speaker with

phase-coherent mono driver system, bipolar radiation. Features signal-delay device for wide dispersion. FR 20-20,000 Hz -10 dB; power range 100-300 W; sens 83 dB SPL/W/m; imp 8 ohms; teak finish; 450 mm W x 1,020 H x 290 D; 44 lbs ea ..... \$3,100/pr

## TANNOY

### Albury SY120 Speaker

Bass-reflex floor-standing speaker with 2" dome tweeter/midrange mounted concentrically behind 15" cone woofer. FR 35-20,000 Hz ± 3 dB; power range 10-250 W; sens 95 dB SPL/W/m; imp 8 ohms; walnut-veneer finish; 19.5" W x 39.5" H x 14.5" D ..... \$1,998/pr

### Bradley SY80 Speaker

Bass-reflex floor-standing speaker with 2" dome midrange/tweeter mounted concentrically behind 12" cone woofer. FR 38-20,000 Hz ± 3 dB; power range 10-180 W; sens 93 dB SPL 1/W/m; imp 8 ohms; walnut veneer finish; 16" W x 34.5" H x 15" D ..... \$1,498/pr

### Darking SY40 Speaker

Bass-reflex bookshelf speaker, to be used on stand for floor placement. 1 1/2" dome midrange/tweeter mounted concentrically behind 10" cone woofer. FR 45-20 Hz ± 3 dB; power range 10-120 W; sens 93 dB SPL/W/m; imp 8 ohms; walnut veneer finish; 14" W x 20.5" H x 10.5" D ..... \$1,148/pr

### Esher SY-30 Speaker

Bass-reflex bookshelf speaker, to be used with stand for floor placement. 1 1/2" dome tweeter mounted concentrically behind 8" cone woofer. FR 45-20,000 Hz ± 3 dB; power range 10-100 W; sens 93 dB SPL/W/m; imp 8 ohms; walnut veneer; 12.5" W x 18" H x 10.5" D ..... \$998/pr

### Jupiter J-40 Speaker

Bass reflex-suspension bookshelf speaker, to be used on stands for floor placement. Incorporates sync-source Time Alignment System; 1" dome tweeter, 8" mid-bass cone. FR 42-20,000 Hz ± 3 dB; power range 10-120 W; sens 91 dB SPL/W/m; imp 8 ohms; Canoletto walnut finish; 12 1/2" W x 23" H x 11" D; 30 lbs ..... \$858/pr

### Oxford T-125 Speaker

Bass-reflex bookshelf speaker, to be used on stands for floor placement. 1" compression horn midrange, 10" cone woofer. FR 50-20,000 Hz ± 3 dB; power range 10-150 W; sens 93 dB SPL/W/m; imp 8 ohms; walnut veneer finish; 13" W x 22" H x 10 1/2" D; 27 lbs ..... \$658/pr

### Saturn S-25 Speaker

Bass-reflex bookshelf speaker, to be used on stand for floor placement, with computer-designed phasing plate on tweeter for proper air loading. 8" cone woofer; 1" dome tweeter. FR 50-20,000 Hz ± 3 dB; power range 10-100 W; sens 93 dB SPL/W/m; imp 8 ohms; walnut vinyl finish; 12" W x 21" H x 10" D; 21 lbs ..... \$458/pr

### Mercury M-20 Speaker

Bass-reflex bookshelf speaker, to be used on stand for floor placement, with 8" polyolefin copolymer cone woofer, 1" dome tweeter. FR 55-20,000 Hz ± 3 dB; power range 10-100 W; sens 93 dB SPL/W/m; imp 8 ohms; walnut vinyl finish; 10 1/2" W x 19" H x 9" D; 14 lbs ..... \$358/pr

## TECHNICS

### SB-M3 Speaker

Ported floor-standing 3-way honeycomb linear-phase disc speaker. Right-left mirror image cabinets. Tweeter and mid-range attenuators. Low-noise crossover network, 18 dB/octave mid-high crossover. Heavy-duty terminals

accommodate large-gauge speaker wires. Resettable thermal relay protection. Contains 13" honeycomb disc woofer; 3 1/8" honeycomb disc midrange; 1 1/8" honeycomb disc tweeter. FR 38-35,000 Hz ± 5 dB; max power 200 W music, 100 W DIN; sens 90 dB SPL/W/m; imp 6 ohms; walnut grain; 68.3 lbs; 15 3/4" W x 26 3/8" H x 13 1/8" D ..... \$1,800/pr

### SB-M5 Speaker

Ported floor-standing 3-way honeycomb disc linear-phase speaker. Right-left mirror image cabinets. Tweeter and midrange attenuators; low-distortion crossover network with ferrite-core coils; heavy-duty terminals accommodate large-gauge speaker wiring; resettable thermal-relay protected. Contains 10" honeycomb disc woofer; 3 1/8" honeycomb disc midrange; 1 1/8" honeycomb disc tweeter. FR 43-33,000 Hz ± 5 dB; max power 160 W music, 80 W DIN; sens 92 dB SPL/W/m; imp 6 ohms; walnut grain; 36.4 lbs; 13 3/4" W x 23 3/8" H x 12 1/2" D ..... \$800/pr

### SB-R200 Speaker

Ported (passive radiator) speaker for wall mounting. Features concentric coaxial honeycomb-disc drivers, outermost of which is a passive radiator, all in the same plane for phase linearity. Resettable thermal relay protection; internally shielded. Includes wall-kit, angled stands and flat speaker cables. 12 1/2" honeycomb passive radiator; honeycomb disc woofer; honeycomb disc tweeter. FR 65-25,000 Hz ± 5; max power 160 W music, 80 W DIN; imp 8 ohms; available in black; 19.8 lbs; 23 3/8" x 14 3/8" x 3 3/4" D ..... \$600/pr

### SB-X500A Speaker

Floor-standing ported speaker. Features thermal relay protection; easy to use connections; 10" honeycomb disc woofer; 3 1/8" honeycomb disc midrange; 1 1/8" honeycomb disc tweeter. FR 37-30,000 Hz ± 10 dB; maximum power 130 W; sens 90 dB SPL/W/m; imp 8 ohms; walnut grain finish; 14 1/8" W x 24 1/8" H x 12 1/2" D; 33 lbs ..... \$400/pr

### SB-X300A Speaker

Floor-standing ported speaker. Features thermal relay protection; easy to use speaker connections; 9" honeycomb disc woofer; 2" honeycomb disc midrange; 1 1/8" honeycomb disc tweeter. FR 45-30,000 Hz ± 10 dB; maximum power 110 W; sens 90 dB SPL/W/m; imp 8 ohms; walnut grain finish; 12" W x 22 1/8" H x 10 1/2" D; 21 lbs ..... \$300/pr

### SB-F2MK2 Speaker

Sealed box mini speaker in die-cast metal enclosure. Internally shielded. Resettable thermal relay protection. Protective metal grilles. Honeycomb disc drivers. Switchable 4/8 ohm imp; tripod mountable. Linear phase design. Contains 5 1/2" honeycomb disc woofer; 1 1/8" honeycomb disc tweeter. FR 55-33,000 Hz ± 5; max power 100 W music, 50 W DIN; sens 88 dB SPL/W/m; imp 4/8 ohms; metallic; 11 lbs; 6 1/4" W x 10 1/8" H x 6 3/4" D ..... \$300/pr

### SB-R100 Speaker

Ported (passive radiator) speaker for wall mounting. Features 3 concentric coaxial honeycomb disc drivers, outermost of which is a passive radiator, all in the same plane for phase linearity. Features resettable thermal relay protection; internally shielded; includes wall-mounting kit and flat speaker cables. Contains 10" (outer diameter) honeycomb disc passive radiator; honeycomb disc woofer; 1 honeycomb disc midrange; 1 honeycomb disc tweeter. FR 70-25,000 Hz ± 5 dB; max power 100 W music, 50 W DIN; sens 87 dB SPL/W/m; imp 8 ohms;

# SPEAKERS

available in black; 9.9 lbs; 12<sup>3</sup>/<sub>8</sub>" W x 12<sup>3</sup>/<sub>8</sub>" H x 2<sup>1</sup>/<sub>2</sub>" D ..... \$260/pr

## SB-L72 Speaker

Ported floor-standing linear-phase speaker. Contains 12" cone woofer; 2<sup>1</sup>/<sub>8</sub>" cone tweeter; heat-resistant horn supertweeter. FR 45-25,000 Hz  $\pm$  5 dB; sens 92 dB SPL/W/m; imp 8 ohms; woodgrain; 23 lbs; 14<sup>1</sup>/<sub>4</sub>" W x 27<sup>1</sup>/<sub>4</sub>" H x 12<sup>3</sup>/<sub>4</sub>" D ..... \$250/pr

## SB-F10 3-Way Speaker System

3-way system with 14-cm (5<sup>1</sup>/<sub>2</sub>") cone woofer, 6-cm (2<sup>3</sup>/<sub>8</sub>") cone midrange; 1.4 cm (9/16") dome tweeter; heavy-duty enclosure; thermal relay protection. Can be used at 8 ohms for 60 W music, 30 W DIN with 87 dB W/M or at 4 ohms for 100 W music, 50 W DIN with 88dB W/M; crossover frequencies 4,000 Hz, 15,000 Hz; FR at 8 ohms 80-20,000 Hz closed mode, 75-20,000 Hz bass reflex, at 4 ohms 85-20,000 Hz closed mode, 80-20,000 Hz bass reflex mode; 12<sup>1</sup>/<sub>3</sub>" x 6<sup>1</sup>/<sub>3</sub>" x 7<sup>3</sup>/<sub>8</sub>"; 5.5 lbs ..... \$220/pr

## THIEL

### CS 2 Coherent Source Speaker

Floor-standing ported speaker. Completely time and phase coherent. Time coherence achieved with sloping baffle; phase coherence achieved with synthesized first-order crossover networks. Features anti-diffraction grille; cast magnesium driver baskets; polypropylene crossover capacitors; 8" cone woofer; 3" cone midrange; 28 mm dome tweeter. FR 43-20,000 Hz  $\pm$  2 dB; power range 40-250 W; sens 87 dB SPL/W/m; imp 6 ohms; teak finish; 12" W x 39" H x 12" D; 62 lbs ..... \$1,350/pr

## TRIAD DESIGN

### System Two Speaker

Floor-standing acoustic-suspension speaker. Features time offset corrected satellite mounted on stand with woofer and 70 W built-in amplifier (in each stand); 6<sup>1</sup>/<sub>2</sub>" polypropylene cone woofer; 3<sup>1</sup>/<sub>2</sub>" treated paper cone midrange; 3/4" ferrofluid cooled dome tweeter. FR 35-20,000 Hz  $\pm$  4 dB; power range 25-200 W; sens 87 dB SPL/W/m; imp 8 ohms; oak, walnut, or zebra-wood finish ..... \$800/four piece system

### System One Speaker

Three piece all acoustic-suspension speakers. Features two time offset connected satellites; infinitely adjustable volume control; 6<sup>1</sup>/<sub>2</sub>" polypropylene cone woofer; 3<sup>1</sup>/<sub>2</sub>" treated cone midrange; 3/4" ferrofluid cooled dome tweeter. FR 45-20,000 Hz  $\pm$  4 dB; power range 25-200 W; sens 87 dB SPL/W/m; imp 8 ohms; oak or walnut finish ..... \$525/three piece system

### HSS-400 Speaker

Acoustic-suspension speaker with unique shape that produces proper time-offset correction. Features 6<sup>1</sup>/<sub>2</sub>" polypropylene cone woofer; 1" dome tweeter. FR 90-16,000 Hz  $\pm$  3 dB; power range 10-100 W; sens 89 dB SPL/W/m; imp 8 ohms; walnut finish; 14" W x 18" H x 8" D; 13 lbs ..... \$400/pr

### HSS-300 Speaker

Bookshelf acoustic-suspension speaker. Features time offset corrected satellite designed to match HSW-300; Triad powered woofer crossover designed for minimum phase shift. Features 6<sup>1</sup>/<sub>2</sub>" polypropylene cone woofer; 1" dome tweeter. FR 90-16,000 Hz  $\pm$  3 dB; power range 10-100 W; sens 89 dB SPL/W/m; imp 8 ohms; oak, walnut finish; 8" W x 12" H x 12" D; 11 lbs ..... \$350/pr

### HSW-300 Speaker

Floor-standing acoustic-suspension speaker.

Features powered woofer to augment bass performance of small to medium sized speakers; 70 W power amplifier to allow operation below resonance; 8" polypropylene. FR 25-90 Hz  $\pm$  3 dB; power range 5-200 W; imp 1,000 ohms; oak, walnut finish; 12" W x 10" H x 11" D; 18 lbs ..... \$300/only one required

## WHARFEDALE

### 708 Speaker

Acoustic-suspension speaker. Features 3/4" metal-dome tweeter; 8" propylene cone bayonet-mounted woofer; lightweight "sandwich" cabinet with melamine construction; fully soldered internal wiring; computer grade crossover board; five-way terminals. FR 40-40,000 Hz (DIN); power range 15-100 W; sens 87 dB SPL/W/m; gray Italian veneer or black wood finish; 10" W x 19<sup>1</sup>/<sub>4</sub>" H x 9" D ..... \$750/pr

### 312 Speaker

Reflex speaker. Features 1" compression-driven horn tweeter; 4" paper cone midrange; 12" paper cone woofer; rigid cabinet design; fully soldered internal wiring; five-way terminals. FR 35-25,000 Hz; power range 15-200 W; sens 97 dB SPL/W/m; imp 8 ohms; walnut or black wood effect finish; 15" W x 31" H x 11" D ..... \$580/pr

### 310 Speaker

Reflex speaker. Features 1" compression-driven horn tweeter; 4" paper cone midrange; 10" paper cone woofer; rigid cabinet design; fully soldered internal wiring; five-way terminals. FR 35-25,000 Hz; power range 15-150 W; sens 97 dB SPL/W/m; imp 8 ohms; walnut or black wood effect finish; 13" W x 26" H x 11" D ..... \$480/pr

### 508 Speaker

Acoustic-suspension speaker. Features 3/4" metal-dome tweeter; 8" propylene cone bayonet-mounted woofer; rigid cabinet design; fully soldered internal wiring; computer grade crossover board; five-way terminals. FR 38-40,000 Hz (DIN); power range 15-100 W; sens 87 dB SPL/W/m; imp 8 ohms; walnut effect finish; 11" W x 21" H x 9" D ..... \$450/pr

### 308 Speaker

Acoustic-suspension speaker. Features 3/4" plastic dome tweeter; two 8" paper cone woofers; rigid cabinet design; fully soldered internal wiring; five-way terminals. FR 40-25,000 Hz; power range 15-120 W; sens 94 dB SPL/W/m; imp 8 ohms; walnut or black wood effect finish; 11" W x 24" H x 9" D ..... \$380/pr

### 506 Speaker

Acoustic-suspension speaker. Features 3/4" metal-dome tweeter; 8" paper cone bayonet-mounted woofer; rigid cabinet design; fully soldered internal wiring; computer grade crossover board; five-way terminals. FR 40-40,000 Hz (DIN); power range 15-75 W; sens 88 dB SPL/W/m; imp 8 ohms; walnut effect finish; 10<sup>1</sup>/<sub>2</sub>" W x 18<sup>1</sup>/<sub>2</sub>" H x 9" D ..... \$300/pr

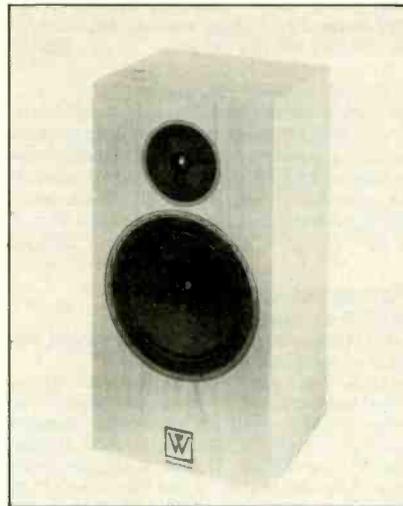
### 306 Speaker

Acoustic-suspension speaker. Features 3/4" plastic dome tweeter; 4" paper cone midrange; 8" paper cone woofer; rigid cabinet design; fully soldered internal wiring; five-way terminals. FR 40-25,000 Hz; power range 15-100 W; sens 92 dB SPL/W/m; imp 8 ohms; walnut or black wood effect finish; 11" W x 21" H x 7" D \$300/pr

### 304 Speaker

Acoustic-suspension speaker. Features 3/4" plastic dome tweeter; 8" paper cone woofer; rigid cabinet design; fully soldered internal wiring; five-way terminals. FR 45-25,000 Hz; power

range 15-85 W; sens 92 dB SPL/W/m; imp 8 ohms; walnut or black wood effect finish; 10" W x 19" H x 7" D ..... \$240/pr



Wharfedale 708

## YAMAHA

### NS-2000 Speaker

3-way acoustic-suspension speaker with 13" woofer of pure carbon fibre. Features rounded baffle-board construction; flush-mounted drivers and offset grille cover; centered in-line array; thick internal baffle boards; hand-selected walnut wood; midrange 8.8-cm (3<sup>1</sup>/<sub>2</sub>") beryllium dome; tweeter 3 cm (1<sup>1</sup>/<sub>8</sub>") beryllium dome; max power 125 W; 90 dB SPL/W/m; FR 28-20,000 Hz ..... \$2,900/pr

### NS-1000M Speaker

Speaker with 12" woofer, 3<sup>1</sup>/<sub>2</sub>" midrange, 1<sup>1</sup>/<sub>8</sub>" tweeter. Features vapor-deposition beryllium-dome drivers; midrange, tweeter level controls; semigloss black finish; detachable black grille; sold in mirror-image pairs only. FR 40-20,000Hz; crossovers 500 and 6,000 Hz; sens 90 dB SPL/W/m; max power 100 W; imp 8 ohms; 26<sup>1</sup>/<sub>2</sub>" W x 14<sup>3</sup>/<sub>4</sub>" H x 12<sup>3</sup>/<sub>4</sub>" D ..... \$1,300/pr

### NS-500 M Speaker

Acoustic-suspension speaker with 12" carbon fiber cone woofer, 2<sup>3</sup>/<sub>8</sub>" titanium carbide midrange, 1" beryllium dome tweeter. Midrange and tweeter controls. FR 35-20,000 Hz  $\pm$  3 dB; power range 15-200 W; sens 89 dB SPL/W/m; imp 6 ohms; black finish; 15<sup>1</sup>/<sub>4</sub>" W x 26" H x 14<sup>1</sup>/<sub>4</sub>" D; 56 lbs ..... \$770/pr  
NS-200M. Similar to NS-500M except with 10" spruce pulp woofer; titanium carbide tweeter, midrange. FR 40-20,000 Hz  $\pm$  3 dB. 12<sup>1</sup>/<sub>2</sub>" W x 22<sup>3</sup>/<sub>8</sub>" H x 13<sup>1</sup>/<sub>2</sub>" D; 41 lbs ..... \$570/pr

### NS-75T Acoustic Suspension Speaker

Bookshelf speaker with titanium-carbide dome tweeter and midrange. Features 12" woofer; 2<sup>3</sup>/<sub>8</sub>" midrange; 1<sup>1</sup>/<sub>8</sub>" tweeter; individual level controls; carbon fiber woofer; heavy-duty speaker terminals; walnut vinyl covering over high-density particle board. FR 40-20,000 Hz; power range 10-200 W; sens 90 dB SPL/W/m; imp 6 ohms; American walnut finish; 14<sup>3</sup>/<sub>4</sub>" W x 26<sup>1</sup>/<sub>16</sub>" H x 12<sup>3</sup>/<sub>4</sub>" D; 47 lbs, 5 oz ..... \$770/pr  
NS-55T. Similar to NS-75T except with 10" spruce cone woofer; lacks level controls \$570/pr  
NS-35T. Similar to NS-55T except 10" 2-way ..... \$390/pr  
NS-25T. Similar to NS-35T except 8" woofer ..... \$270/pr

# CD PLAYERS



## ADC

### CD-100X Compact Disc Player

Drawer-loading CD player with 3-beam laser. Features programming of 16 tracks in random order; repeat track, disc, program; skip forward and back; fast forward and reverse. Displays current track, remaining time on disc, elapsed time of track. FR 10-20,000 Hz  $\pm 0.8$  dB; S/N 95 dB; sep 90 dB at 1,000 Hz; dynamic range 96 dB ..... \$300

## ADCOM

### GCD-300 Compact Disc Player

Drawer-loading CD player. Features three-beam laser; skip forward; skip back; repeat phrase; remote control; displays current track number, elapsed time of current track, elapsed time of disc, program stored in memory. Cues by track number. Max line output 2.5 V; THD at 1,000 Hz 0.004%; sep 80 dB; FR 5-20,000 Hz  $\pm 0.5$  dB ..... \$500

## ADS

### Atelier CD3 Compact Disc Player

Drawer-loading CD player. Features three-beam laser; digital filtering (resampling frequency 88.2 kHz); programming of 30 tracks in random order; sound audible during fast forward and fast reverse; skip forward; skip back; fast forward; fast reverse; cancel; repeat track, disc, phrase, program; full-function remote control; headphone jack with adjustable level. Displays current track number, elapsed time of current track, elapsed time of disc, remaining time on disc, program stored in memory. Cues by track number, index number. Max line output 2 V; headphone output 2 V; THD at 20-20,000 Hz  $< 0.01\%$  at  $-0$  dB; S/N  $> 102$  dB; sep  $> 86$  dB; FR 20-20,000 Hz  $\pm 0.25$  dB; 20 lbs; 17.5" W x 2.75" H x 14.8" D ..... \$895



ADS Atelier CD3

## AIWA

### DX-1200 Compact Disc Player

Drawer-loading CD player. Features 3-beam laser; digital filtering (resampling frequency 88.2 kHz); programming of 18 tracks in random order; sound audible during fast forward and fast reverse; skip forward; skip back; fast forward; fast reverse; repeat track, disc, phrase, program; headphone jack with adjustable level. Display current track number, elapsed time of current track, program stored in memory. Cues by track number. Max line output 2 V; THD at 1,000 Hz 0.003% at  $-0$  dB; S/N 96 dB; sep 95 dB; FR 2-

20,000 Hz  $+0.3, -0.5$  dB; 12.3 lbs; 13" W x 2 $\frac{1}{16}$ " H x 12" D ..... \$450

## AKAI

### CD-A7T Compact Disc Player

Drawer-loading CD player. Features three-beam laser; programming of 16 tracks in random order; skip forward; skip back; fast forward; fast reverse; cancel; repeat track, disc, phrase, program; 27-function remote control; headphone jack with adjustable level. Displays current track number, elapsed time of current track, elapsed time of disc, program stored in memory. Cues by track number, index number. Max line output 2 V; THD at 1,000 Hz 0.005%; S/N 90 dB; sep 85 dB; FR 5-20,000 Hz  $\pm 0.5$  dB; 12.8 lbs; 17.3" W x 3" H x 10" D ..... \$499

### CD-M88T Compact Disc Player

Drawer-loading CD player. Features three-beam laser; programming of 16 tracks in random order; skip forward; skip back; fast forward; fast reverse; cancel; repeat track, disc, phrase, program; 27-function remote control; headphone jack with adjustable level. Displays current track number, elapsed time of current track, elapsed time of disc, program stored in memory. Cues by track number, index number. Max line output 2 V; THD at 1,000 Hz 0.005%; S/N 90 dB; sep 85 dB; FR 5-20,000 Hz  $\pm 0.5$  dB; 14.3 lbs; 13.8" W x 2.8" H x 10" D ..... \$499

## AUDIO-TECHNICA

### AT-CD10 Compact Disc Player

Features 3-beam laser tracking; programming of 9 tracks in random order; double resolution digital filtering; programmable random access playback; multi-function indicator with digital readout on panel; sample and hold circuit; low-angle analog filter; phase shift. FR 5-20,000 Hz  $+0.5$  dB,  $-1$  dB; THD  $< 0.005\%$  at 1,000 Hz; ch sep  $> 90$  dB at 1,000 Hz; dynamic range  $> 96$  dB; S/N IEC flat 98 dB, IEC A-wtd 100 dB; headphone output 0.16 V at  $-20$  dB; headphone imp 8 ohms at  $-20$  dB. 3 $\frac{1}{8}$ " W x 13 $\frac{3}{8}$ " H x 11 $\frac{1}{16}$ " D ..... \$400

## BANG & OLUFSEN

### CD50 Compact Disc Player

Drawer-loading CD player. Features three-beam laser; digital filtering (resampling frequency 88.2 kHz) programming of 34 tracks in random order; skip forward; skip back; fast forward; fast reverse; cancel; repeat track, disc, program; Full function remote control. Displays current track number, elapsed time of current track, elapsed time of disc, program stored in memory. Cues by track number, index number. Max line output 2 V; THD at 1,000 Hz 0.003% at  $-0$  dB; S/N 95 dB; sep 94 dB; FR 4-20,000 Hz  $\pm 0.3$  dB; 17.8 lbs; 16 $\frac{1}{2}$ " W x 3" H x 12 $\frac{1}{4}$ " D .. \$999

### CDX Compact Disc Player

Top-loading CD player. Features one-beam laser; digital filtering (resampling frequency 176.4 kHz) programming of 40 tracks in random order; skip forward; skip back; fast forward; fast

reverse; cancel; repeat track, disc, program. Displays current track number, elapsed time of current track, elapsed time of disc, program stored in memory. Cues by track number, time. Max line output 2 V; THD at 1,000 Hz 0.003% at  $-0$  dB; S/N 96 dB; sep 94 dB; FR 3-20,000 Hz  $\pm 0.3$  dB; 13.4 lbs; 16 $\frac{1}{2}$ " W x 3" H x 12 $\frac{1}{4}$ " D ..... \$699

## CARVER

### Digital Time Lens Compact Disc Player

Drawer-loading CD player. Features three beams; digital filtering (resampling frequency 88.2 kHz); programming of 9 tracks in random order; display of current track number, elapsed time of current track, elapsed time of disc, program stored in memory; sound audible during fast forward and fast reverse; skip forward; skip back; fast forward; fast reverse; cancel; repeat track, disc, phrase, program; cue by track number, index number. Max line output 1.9 V; THD at 1,000 Hz 0.05%; S/N 96 dB; sep 86 dB; FR 5-20,000 Hz  $\pm 0$  dB; 13 lbs; 19" W x 3 $\frac{1}{16}$ " H x 11 $\frac{1}{2}$ " D ..... \$650

## DBX

### DX 3 Compact Disc Player

Drawer-loading CD player. Features three-beam laser; digital filtering (resampling frequency 88.2 kHz); programming of 9 tracks in random order; sound audible during fast forward and fast reverse; skip forward; skip back; fast forward; fast reverse; cancel; repeat track, disc, program. Displays current track number, elapsed time of current track. Cues by track number, index number. Equipped with 3 dbx signal-processing circuits: DAIR - a 2-band design for adding impact to musical transients, compression control for background listening (has fixed threshold with variable gain below threshold and professional OverEasy compression with variable ratio above threshold), ambiance control to add or subtract L-R (out-of-phase) information in midrange and treble increasing/decreasing spaciousness of sound field. Max line output 2 V; THD  $< 0.002\%$  20-20,000 Hz, less than 0.07% with dbx processing; S/N 90 dB below 1 V A-wtd, 96 below 2 V A-wtd, 100 dB player in use, with dbx same as without processing except full compression limits max dynamic range to 60 dB while full DAIR increases dynamic range 10 dB to 106 dB; sep 90 dB; FR 10-20,000 Hz  $+5$  dB,  $-1$  dB; 10 lbs; 17 $\frac{1}{8}$ " W x 3 $\frac{1}{16}$ " H x 11 $\frac{1}{16}$ " D ..... \$599

## DENON

### DCD-1800 Compact Disc Player

Drawer-loading CD player. Features one-beam laser; sound audible during fast forward and fast reverse; skip forward; skip back; fast forward; fast reverse; cancel; repeat track, disc, phrase, program; headphone jack with adjustable level. Displays current track number, elapsed time of current track, elapsed time of disc, remaining time on disc, program stored in memory. Cues

# "CARVER CD PLAYER: SUPERB SOUND PLUS THE DIGITAL TIME LENS"

AUDIO MAGAZINE

*"Leave it to Bob Carver to come up with a CD player designed to please both those who love CDs and those who still have reservations about their sound quality."*

—Leonard Feldman  
AUDIO MAGAZINE



The Carver Compact Disc Player answers the audiophile's demand for a CD Player which provides not only the greater dynamic range and richer bass expected from compact disc technology, but also the musicality, spectral balance and spatial qualities of well executed analog high fidelity recordings.

## LOGICAL

How logical it is for a physicist dedicated to delivering music with maximum dynamic impact to offer a state-of-the-art CD player. Anyone who ever wondered why Carver makes amplifiers capable of delivering hundreds of watts of power need wonder no longer after they have heard the Carver Compact Disc Player as a sound source.

There are dozens of models of compact disc players now available, many of them demonstrating little regard for the finer points of digital playback technology. Bob Carver was in no hurry. He wanted to do digital right. And he did.

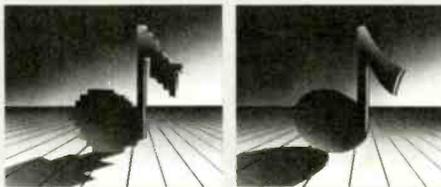
The state of the art has advanced considerably since the first players appeared several years ago. The Carver Compact Disc Player makes use of the latest **triple laser beam** pickups, **sophisticated oversampling**, **digital**

**filtering** technology and, very importantly, Carver's unique distortion reducing **dither signal** that effectively removes the low level quantization distortion existing in all other CD players.

Except for features like display and programming, the real determining factor in CD player quality is its ability to reconstruct music from digital information bits. And that is not an easy job nor one that can be effectively achieved while skimping on circuitry.

## IMPROVED TRACKING

The Carver Compact Disc Player reads discs with more precisely focused laser power than most other models, resulting in improved tracking and less chance of drop-outs when dust or smudges are encountered on a CD.



*The Digital Time Lens circuitry restores the octave-to-octave balance originally intended by the musician and recording engineer.*

## DIGITAL FILTERING

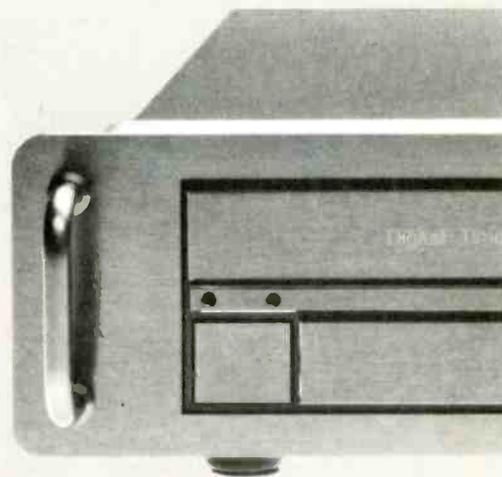
Along with a potentially audible signal ranging up to 20kHz, there are endless images of the signal at 40kHz, 80kHz and 160kHz. While they are above the range of human hearing, they must be removed from the signal to prevent harmonic problems which could turn into audible distortion. Earlier CD models placed an anti-imaging filter after the digital/analog converter stage. Carver uses **DIGITAL** filtering ahead of the D/A converter through a process called multiple oversampling. The sig-

nal is passed through a shift register which delays the samples, so that the weighted average of a large number of signals is generated. Through a complicated process, frequency bands are suppressed between 20kHz and 160kHz, eliminating harmonic distortion problems early on before the complicated D/A 16 bit translation.

The same oversampling process also distributes the same amount of noise over twice as wide a frequency range, resulting in half as much noise in the final signal. Then after translation to analog, the signal is once again filtered for a gentle roll-off above 20kHz. This yields a marvelously natural musical sound to the final output.

## ABSENCE OF PHASE ERROR

One of the important tests applied to determine the effectiveness of digital-to-analog translation circuitry is the reproduction of a square wave.



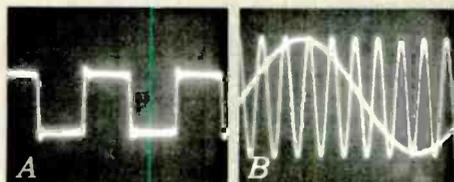
# CARVER

POWERFUL

Corporation, PO Box 1237, Lynnwood, WA 98046

*"Reproduction of a 1kHz digitally generated signal was as close to a true square wave as I have ever seen from a CD player that used digital filtering. (The Carver Digital Disc Player) shows a virtual absence of phase error."*

AUDIO MAGAZINE



- A. Square-wave reproduction, 1kHz.  
B. Two-tone phase test signal (200Hz and 2kHz) with Digital Time Lens off.

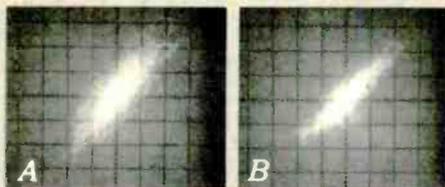
### PLUS THE DIGITAL TIME LENS

On top of this unerring ability to produce natural, real-sounding music from the CD's digital bits, the Carver Compact Disc Player has the remarkable Digital Time Lens circuit to insure your listening enjoyment.

The Carver Compact Disc Player is the world's only compact disc player to address the problem of the bright, hot, harsh sounding midrange and a lack of ambience and spatial detail characteristic of the majority of compact discs currently available.

When Bob Carver obtained his first compact disc player, he was surprised at the sound derived from most of the compact discs he purchased. The three-dimensional musical perspective which his analog system provided in lush abundance on phono discs evaporated into a flat, brittle wasteland. After extensive testing, Bob uncovered two fundamental flaws in almost all compact discs: 1) An unpleasant, harsh spectral energy balance. The overall octave-to-octave energy balance was shifted on the CD towards more midrange above 400Hz; 2) The amount of L-R signal (which carries the spacial detail of the music) on the CD was inexplicably, but substantially, reduced

when compared with the amount of L-R signal found on the corresponding analog disc.



- A. Lissajous pattern showing spatial detail (L-R)/(L+R) ratio from an LP record.  
B. The same instant of music but taken from the CD version. Note the decreased (L-R) content, as shown by the narrowed trace.

Carver's circuitry corrects the ratio of L-R to L+R by performing one extra, but important mathematical operation on the signal stream that all other CD players fail to perform. This final operation makes all the difference.

The result is a natural sound with more of the three-dimensional information that places us in the same space with performers. You won't need the Digital Time Lens on all CDs. But it is there when you need it.

In the beginning, Carver hoped, indeed he expected, that once recording artists and engineers became more experienced with CD technology fewer and fewer CDs would require the Digital Time Lens. But both laboratory and listening tests reveal that the great majority of even the most recently released CDs benefits significantly from the Digital Time Lens.

### EASY TO USE

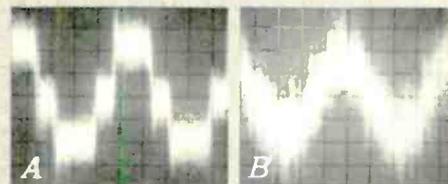
Ease of operation is a hallmark of Carver components and the Carver Compact Disc Player is no exception. A subtle but easy-to-read LCD display not only shows selection number, elapsed time and total time of the CD, but also "talks" to the user. Turn on the Carver Compact Disc Player and the display asks for a disc. When the disc tray is open, the display reminds you with an OPEN readout. When a CD has completed playing, the multi-function display reads END.

With the Carver Compact Disc Player's Programmable Random Access Playback System, track search and programming of different selections is a snap, as is automatic repeat of a previous selection or an entire CD. For classical music lovers, the Carver Compact Disc Player has complete indexing capabilities as well.

The large, easy-to-use feather-touch controls include pause, fast forward and reverse. You can even monitor music at high speed to find a certain portion of a selection.

We know you really enjoy music so, you owe it to yourself to begin your digital experience with the only full feature CD player that has the Carver touch. The only CD player that can actually improve on what is already the best playback medium ever offered.

Audition the Carver Compact Disc Player with Digital Time Lens at your Carver Dealer.

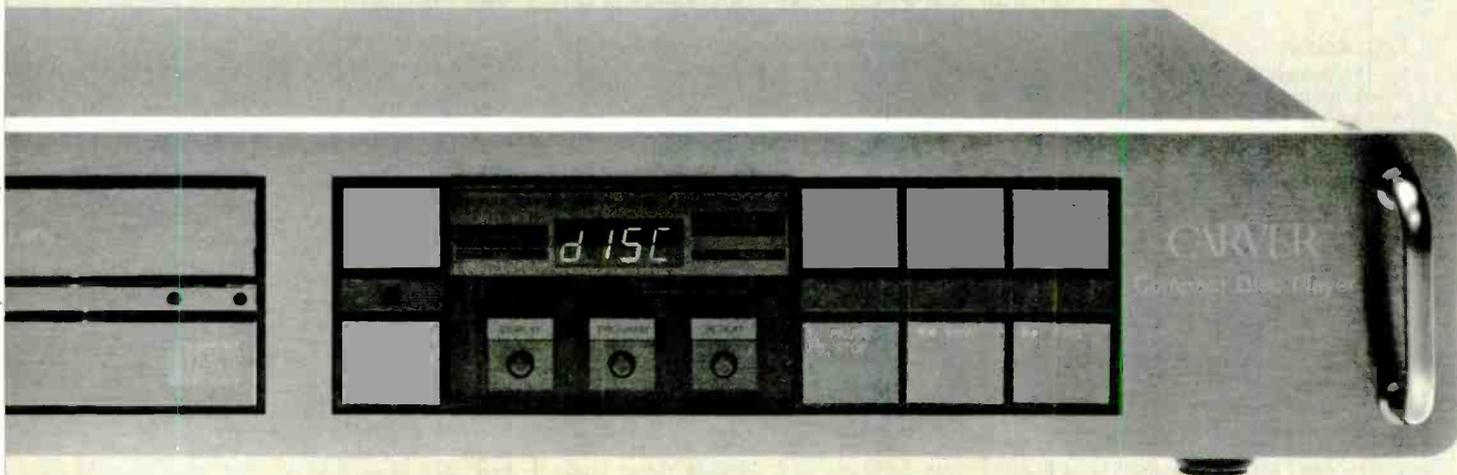


- A. Ultra-low-level (4 significant bits) 1kHz signal, as reproduced by conventional CD players.  
B. Same signal with dither added before D/A conversion by Carver CD player. Note that dither has caused the distorted step-wise approximation of the 1kHz tone virtually to vanish. Quantization distortion has been reduced to insignificance.

### IF YOU ALREADY HAVE A CD PLAYER

*By buying a CD Player you made a commitment to vastly improve your sound source, now you can go the short extra step that lets digital realize its true potential.*

*That step is the CARVER Digital Time Lens. Simply connect it between your CD player and your preamplifier or receiver.*



MUSICAL

ACCURATE

DISTRIBUTED IN CANADA BY EVOLUTION TECHNOLOGY

CIRCLE NO. 49 ON READER SERVICE CARD

# CD PLAYERS

by track number, index number, time. S/N 96 dB; sep 94 ..... \$800.

## DCD-1500 Compact Disc Player

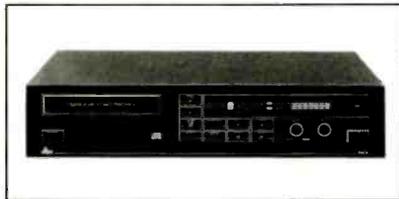
Drawer-loading CD player. Features three-beam laser; digital filtering (resampling frequency 88.2 kHz) programming of 20 tracks in random order; sound audible during fast forward and fast reverse; skip forward; skip back; fast forward; fast reverse; cancel; repeat track, disc, phrase, program; 10-function remote control; headphone jack with adjustable level. Displays current track number, elapsed time of current track, elapsed time of disc, remaining time on disc, program stored in memory. Cues by track number, index number, time. THD at 1,000 Hz 0.0025%; S/N 96 dB; sep 95 dB; FR 5-20,000 Hz  $\pm$  0.3dB ..... \$580

## DCD-1100 Compact Disc Player

Drawer-loading CD player. Features one-beam laser; programming of 9 tracks in random order; sound audible during fast forward and fast reverse; skip forward; skip back; fast forward; fast reverse; cancel; repeat track, disc, phrase, program; 9-function remote control. Displays current track number, elapsed time of current track, elapsed time of disc, remaining time on disc, program stored in memory. Cues by track number, index number, time. THD at 1,000 Hz 0.004%; S/N 95 dB; sep 90 dB; FR 5-20,000 Hz ..... \$430

## DCD-1000 Compact Disc Player

Drawer-loading CD player. Features 1-beam laser; programming of 9 tracks in random order; sound audible during FF and FR; skip forward; skip back; repeat disc. Displays current track number, elapsed time of current track, elapsed time of disc, remaining time on disc. Cues by track number, index number. THD at 1,000 Hz 0.004%; S/N 95 dB; sep 90 dB; FR 5-20,000 Hz  $\pm$  1 dB ..... \$360



dbx DX3

## EMERSON

### CD 150 Compact Disc Player

Drawer-loading CD player with 3-beam laser servo system. Features programming of 9 tracks in random order; repeat disc, track, index; skip forward and back. Displays current track, elapsed time of track, total time of disc. FR 5-20,000 Hz; S/N 98 dB; dynamic range 95 dB ..... \$449

## HARMAN KARDON

### HD500 CD Player

Drawer-loading remote-controlled Compact Disc player designed for low IMD from 0 to 100,000 Hz. Analog output section uses no negative feedback to eliminate TIM. Direct coupling from analog converter to output jacks improves low-frequency performance. Features 3-beam laser; digital filtering (resampling frequency 88.2 kHz) with gradual analog filter; programming of 15 tracks in random order; 2-speed FF and FR; sound audible during FF and FR; skip forward; skip back; repeat disc or phrase; 9-function remote control; headphone

jack with adjustable level (output level also adjustable). Displays current track number, elapsed time of current track, program stored in memory. Cues by track number, index number, time. Max line output 2.4 V; headphone output 900  $\mu$ V; THD at 1,000 Hz 0.001%; S/N 100 dB; sep 83 dB; FR 4-20,000 Hz  $\pm$  0.5 dB; 12.8 lbs; 17 $\frac{3}{8}$ " W x 4" H x 13 $\frac{1}{4}$ " D ..... \$600

## HITACHI

### DA600 Compact Disc Player

Drawer-loading CD player. Features three-beam laser; programming of 15 tracks; display of current track number, elapsed time of current track, program stored in memory; sound audible during fast forward and fast reverse; skip forward; skip back; fast forward; repeat track, disc, phrase, program; cue by track number, index number; all-function remote control; headphone jack with adjustable level. Max line output 2.5 V; THD at 1,000 Hz 0.003%; IMD 0.003%; S/N 95 dB; sep 92 dB; FR 5-20,000 Hz; 11 lbs; 17 $\frac{1}{8}$ " W x 3 $\frac{1}{4}$ " H x 10 $\frac{1}{8}$ " D ..... \$650

### DA500 Compact Disc Player

Drawer-loading CD player. Features three-beam laser; programming of 15 tracks in random order; display of current track number, elapsed time of current track; program stored in memory; sound audible during fast forward and fast reverse; skip forward; skip back; fast forward; fast reverse; repeat track, disc, phrase, program; cue by track number, index number. Max line output 2.5 V; THD at 1,000 Hz 0.003%; IMD 0.003%; S/N 95 dB; sep 92 dB; FR 5-20,000 Hz; 10 lbs; 17 $\frac{1}{8}$ " W x 3 $\frac{1}{4}$ " H x 10 $\frac{1}{8}$ " D ..... \$450

### DA400 Compact Disc Player

Drawer-loading CD player. Features three-beam laser; programming of 15 tracks in random order; display of current track number, elapsed time of current track, program stored in memory; sound audible during fast forward and fast reverse; skip forward; skip back; fast forward; fast reverse; repeat track, disc, phrase, program; cue by track number, index number. Max line output 2.5 V; THD at 1,000 Hz 0.003%; IMD 0.003%; S/N 95 dB; sep 92 dB; FR 5-20,000 Hz; 9 lbs; 12 $\frac{1}{2}$ " W x 3 $\frac{1}{4}$ " H x 12 $\frac{1}{16}$ " D ..... \$400

## JVC

### XL-V500B Compact Disc Player

Drawer-loading CD player. Features three-beam laser; digital filtering (resampling frequency 88.2 kHz) programming of 15 tracks in random order; sound audible during fast forward and fast reverse; skip forward; skip back; fast forward; fast reverse; cancel; repeat track, disc, program; full-function remote control; headphone jack with adjustable level. Displays current track number, elapsed time of current track, remaining time on disc, program stored in memory. Cues by track number, index number. Max line output 2 V; THD at 1,000 Hz 0.003%; S/N 96 dB; sep 90 dB; FR 5-20,000 Hz; 13 lbs; 17 $\frac{1}{8}$ " W x 3 $\frac{3}{8}$ " H x 11 $\frac{1}{16}$ " D ..... \$600

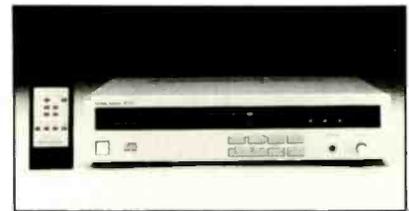
### XL-V400B Compact Disc Player

Drawer-loading CD player. Features three-beam laser; digital filtering (resampling frequency 88.2 kHz) programming of 15 tracks in random order; sound audible during fast forward and fast reverse; skip forward; skip back; fast forward; fast reverse; cancel; repeat track, disc, program; full-function remote control; headphone jack with adjustable level. Displays current track number, elapsed time of current track, remaining time on disc, program stored in memory. Cues by track number, index number. Max line output 2 V; THD at 1,000 Hz 0.003%; S/N 95

dB; sep 90 dB; FR 5-20,000 Hz; 8.8 lbs; 17 $\frac{3}{16}$ " W x 3 $\frac{1}{4}$ " H x 11 $\frac{1}{2}$ " D ..... \$440

### XL-V200B Compact Disc Player

Drawer-loading CD player. Features three-beam laser; digital filtering (resampling frequency 88.2 kHz) programming of 15 tracks in random order; sound audible during fast forward and fast reverse; skip forward; skip back; fast forward; fast reverse; cancel; repeat track, disc, program; headphone jack. Displays current track number, elapsed time of current track, remaining time on disc, program stored in memory. Max line output 2 V; THD at 1,000 Hz 0.004%; S/N 93 dB; sep 90 dB; FR 5-20,000 Hz; 8.4 lbs; 17 $\frac{1}{16}$ " W x 3 $\frac{1}{4}$ " H x 11 $\frac{1}{16}$ " D ..... \$300



Harman Kardon HD500

## KENWOOD

### DP 1100 IIB Basic Series Compact Disc Player

Drawer-loading CD player. Displays elapsed time of current track, remaining time on disc, and program in memory. Features programming of 16 tracks in random order; skip forward; skip back; repeat track, disc, and program; cue by index number; 24-function wireless remote control; linear-skate disc-loading mechanism; 16-bit linear quantizing per channel; semi-conductor laser pick-up; 16 memory presets; endless repeat play; 2 channels; audible FF and FR. Wow and flutter below measurable limit; dynamic range 95 dB; constant linear velocity 1.2-1.4 m/sec; sampling frequency 44,000 Hz; max line output 2.0 V; headphone output 31 mW/32 ohms; THD <0.0015% at 1,000 Hz; FR 20-20,000 Hz  $\pm$  0.5dB; 15 lbs; 15 $\frac{1}{16}$ " W x 3 $\frac{1}{32}$ " H x 12 $\frac{7}{32}$ " D ..... \$725

### DP-840(B) Compact Disc Player

Vertical-loading CD player. Displays elapsed time on disc and remaining time on disc. Features semi-conductor laser pick-up with optimum servo control; repeat disc and program; cue by track and index number; headphone jack with adjustable level; linear-skate disc-loading mechanism; index and track search; memory function; 16-bit linear quantizing per channel; timer play and automatic repeat; 2 channels. Wow and flutter below measurable limit; max line output 2.0 V; headphone output 25 mW/32 ohms; THD less than 0.003% at 1,000 Hz; sep 90 dB at 1,000 Hz; FR 5-20,000 Hz  $\pm$  0.5 dB; 10.5 lbs; 16 $\frac{1}{32}$ " W x 3 $\frac{1}{16}$ " H x 12 $\frac{3}{32}$ " D... \$395

## KYOCERA

### DA-910 Compact Disc Player

Compact Disc player with motorized drawer. Features three-beam laser; digital filtering (resampling frequency 176.4 kHz); programming of 24 tracks in random order; display of current track number, elapsed time of current track, remaining time on disc, program stored in memory; sound audible during fast forward and fast reverse; skip forward; skip back; cancel; repeat track, disc, phrase, program; cue by track number, index number; 8-function remote control; headphone jack (adjustable output). Max line output 8 V; THD at 1,000 Hz 0.005%; S/N 95 dB; sep 90 dB; FR 5-20,000 Hz  $\pm$  0.5 dB; 21 lbs;

# CD PLAYERS

17" W x 5 1/2" H x 13" D ..... \$1,600

## DA-810 Compact Disc Player

Compact Disc player with motorized drawer. Features one-beam laser; digital filtering (resampling frequency 176.4 kHz); programming of 24 tracks in random order; display of current track number, elapsed time of current track, remaining time on disc, program stored in memory; sound audible during fast forward and fast reverse; skip forward; skip back; cancel; repeat disc, phrase, program; cue by track number, index number; headphone jack (adjustable output). Max line output 4 V; THD at 1,000 Hz 0.008%; S/N 90 dB; sep 90 dB; FR 20-20,000 Hz  $\pm 0.5$  dB; 18 1/8" W x 4" H x 12 1/8" D ..... \$1,100

## DA-610 Compact Disc Player

Drawer-loading CD player. Features three-beam digital filtering (resampling frequency 44.1 kHz); programming of 16 tracks in random order; skip forward; skip back; fast forward; fast reverse; repeat track, disc, program; 8-function remote control; headphone jack with adjustable level; auto shut-off at end of play; 16-bit quantization; 7th-order analog pass filter. Displays current track number, elapsed time of current track. Max line output 2 V; headphone output 250 mV; THD at 1,000 Hz 0.005%; S/N 90 dB; sep 90 dB; FR 5-20,000 Hz  $\pm 0.5$  dB ..... \$550

## LUXMAN

### D-03 Compact Disc Player

Drawer-loading CD player. Features one-beam laser; programming of 20 tracks in random order; skip forward; skip back; fast forward; fast reverse; cancel; repeat track, disc, program; 7-function remote control. Displays current track number, elapsed time of current track, elapsed time of disc, remaining time on disc, program stored in memory. Cues by track number, index number, time. Max line output 2 V; THD at 1,000 Hz 0.003% at -1 dB; S/N 97 dB; FR 5-20,000 Hz  $-0.5$  dB; 18.7 lbs; 17 1/16" W x 3 1/16" H x 12 1/16" D ..... \$1,500

### D-408 Compact Disc Player

Drawer-loading CD player. Features one-beam laser; sound audible during fast forward and fast reverse; skip forward; skip back; fast forward; fast reverse; cancel; repeat track, disc, program; 22-function remote control; headphone jack with adjustable level. Displays current track number, elapsed time of current track, program stored in memory. Cues by track number, index number, time. Max line output 2 V; THD at 1,000 Hz 0.003% at -1 dB; S/N 96 dB; sep 90 dB; FR 5-20,000 Hz  $-0.5$  dB; 34.7 lbs; 16 7/16" W x 6 5/8" H x 17 5/8" D ..... \$1,300

### D-405 Compact Disc Player

Drawer-loading CD player. Features one-beam laser; skip forward; skip back; cancel; repeat track, disc. Max line output 2 V; THD at 1,000 Hz 0.003% at -1 dB; S/N 96 dB; sep 90 dB; FR 5-20,000 Hz  $-0.5$  dB; 13.2 lbs; 17 1/16" W x 3 1/16" H x 12 1/16" D ..... \$600

### D-404 Compact Disc Player

Drawer-loading CD player. Features one-beam laser; programming of 8 tracks in random order; skip forward; skip back; fast forward; fast reverse; repeat track, disc, program; 5-function remote control; headphone jack with adjustable level. Displays current track number, elapsed time of current track, remaining time on disc, program stored in memory. Cues by track number. Max line output 2 V; THD at 1,000 Hz 0.003% at -1 dB; S/N 96 dB; sep 90 dB; FR 5-20,000 Hz  $-0.5$  dB; 13.2 lbs; 17 1/16" W x 3 1/16" H x 12 1/16" D ..... \$500

## MADRIGAL

### MCD Pro Compact Disc Player

Compact Disc player developed from Philips 101 chassis with additional electronics located below unit. Integrator and analog filtering stage, and absolute phase correction system are separated from digital and servo systems and powered by separate transformer and regulated power supply. Features master oscillator; play, pause, stop, select store, cancel repeat functions ..... \$1,400



Magnavox FD1051 BK

## MAGNAVOX

### FD3040 Compact Disc Player

Tray-loading CD player. Features digital filtering (resampling frequency 176.4 kHz); programming of 24 tracks in random order; fast forward and fast reverse; skip forward; skip back; fast forward; fast reverse; cancel; repeat track, disc, phrase, program; 9-function remote control; headphone jack with adjustable level; output jack with adjustable level. Displays current track number, elapsed time of current track, remaining time on disc, program stored in memory. Cues by track number, index number, time. Max line output 2 V; THD at 1,000 Hz 0.003% at -0 dB; IMD 86 dB below 0 dB level; S/N 96 dB; sep 94 dB; FR 20-20,000 Hz  $\pm 0.15$  dB; dynamic range 96 dB; 21 lbs; 16 1/2" W x 3 1/4" H x 11 3/4" D ..... \$570

### FD2040 Compact Disc Player

Tray-loading CD player. Features digital filtering (resampling frequency 176.4 kHz); programming of 20 tracks in random order; skip forward; skip back; fast forward; fast reverse; repeat track, disc, program. Displays current track number, elapsed time of current track, time on disc, program stored in memory. Cues by track number. Max line output 2 V; THD at 1,000 Hz 0.003% at -0 dB; IMD 86 dB below 0 dB level; S/N 96 dB; sep 94 dB; FR 20-20,000 Hz  $\pm 0.15$  dB; 16 1/2" W x 3" H x 11 3/4" D ..... \$390

### FD1051 BK Compact Disc Player

Tray-loading CD player. Features digital filtering (resampling frequency 176.4 kHz); programming of 20 tracks in random order; sound audible during fast forward and fast reverse; skip forward; skip back; fast forward; fast reverse; cancel; repeat track; 10-function remote control. Displays current track number, elapsed time of current track, time on disc, program stored in memory. Cues by track number. Max line output 2 V; THD at 1,000 Hz 0.003% at -0 dB; IMD 86 dB below 0 dB level; S/N 96 dB; sep 94 dB; FR 20-20,000 Hz  $\pm 0.15$  dB; 12 1/2" W x 3 1/2" H x 11 3/4" D ..... \$349

### FD2041 SL Compact Disc Player

Tray-loading CD player. Features digital filtering (resampling frequency 176.4 kHz) programming of 20 tracks in random order; sound audible during fast forward and fast reverse; skip forward; skip back; fast forward; fast reverse; cancel; repeat track; 10-function remote control (optional); headphone jack with adjustable level. Displays current track number, elapsed time

of current track, time on disc, program stored in memory. Cues by track number. Max line output 2 V; THD at 1,000 Hz 0.003% at -0 dB; IMD 86 dB below 0 dB level; S/N 96 dB; sep 94 dB; FR 20-20,000 Hz  $\pm 0.15$  dB; 16 1/2" W x 3 1/2" H x 11 3/4" D ..... \$299

## MARANTZ

### CD 74 Compact Disc Player

Drawer-loading CD player. Features one-beam laser; digital filtering (resampling frequency 176.4 kHz); programming of 24 tracks in random order; display of current track number, elapsed time of current, program stored in memory; sound audible during fast forward and fast reverse; skip forward; skip back; repeat track, disc, phrase, program; cue by track number. Max line output 2 V; THD at 1,000 Hz 0.005%; S/N 96 dB; sep 90 dB; 14.3 lbs; 16 1/2" W x 4 3/8" H x 13 1/8" D ..... \$600

### CD 150 Compact Disc Player

Drawer-loading CD player. Features one-beam laser; digital filtering (resampling frequency 176.4 kHz) programming of 16 tracks in random order; display of current track number, elapsed time of current track, program stored in memory; sound audible during fast forward and fast reverse; skip forward; skip back; repeat track, disc, phrase, program; cue by track number. Max line output 2 V; THD at 1,000 Hz 0.005%; S/N 96 dB; sep 90 dB; 9.5 lbs; 16 1/2" W x 4" H x 11 3/8" D ..... \$400

## MCINTOSH

### MCD 7000 Remote-Controlled CD Player

Remote-controlled Compact Disc player with single-beam laser and ERCO error-correction system. Programs up to 20 tracks in random order. Controls for power, scan, store, program, cancel, skip back in program, skip forward in program, stop, time, track, back track, next track, play, fast reverse, fast forward, repeat, pause, output level, headphone volume. Remote controls pause, scan, stop, cancel, store, program forward and back, back track, play, next track, fast reverse, fast forward, repeat. Indicator for damaged disc or mute error. Features 16-bit equivalent D/A conversion through quadruple oversampling with digital filtering and 14-bit D/A conversion; CIRC error correction; EF modulation; 3-speed search. FR 2-20,000 Hz  $\pm 0.3$  dB; dynamic range and S/N 96 dB; ch sep 94 dB at 1,000 Hz; THD 0.003% at 1,000 Hz; W&F quartz-crystal precision; output level 2 V ..... \$1,399



Marantz CD 74

## MERIDIAN

### MCD Compact Disc Player

Top-loading CD player. Features one-beam laser; digital filtering (resampling frequency 176.4 kHz) programming of 15 tracks in random order; skip forward; skip back; cancel; repeat track, disc; displays current track number, program stored in memory. Max line output 2.0 V; THD at 1,000 Hz 0.005% at -0 dB; IMD 0.005%; S/N >90 dB; sep >86 dB; FR 20-20,000 Hz  $\pm 0.3$  dB; 11 lbs; 12.5" W x 3" H x 10.5" D ..... \$699

# CD PLAYERS

**MCD PRO.** With additional circuitry in deeper case ..... \$1,400



NEC CD-607

## MISSION ELECTRONICS

### DAD7000 Compact Disc Player

Drawer-loading CD player. Features one-beam laser; programming of 20 tracks in random order; skip forward; skip back; fast forward; fast reverse; cancel; repeat track, disc, program; Displays current track number, elapsed time of current track. Cues by track number, index number. Max line output 2 V; THD at 1,000 Hz 0.004% at -0 dB; IMD <-86 dB; sep 90 dB; FR 20-20,000 Hz  $\pm 0.3$  dB; 15 lbs; 13" W x 3" H x 11" D ..... \$649

**DAD700R.** same as above but with remote control ..... \$749

## MITSUBISHI

### DP107 Compact Disc Player

Drawer-loading CD player. Features three-beam laser; programming of 9 tracks in random order; sound audible during fast forward and fast reverse; skip forward; skip back; fast forward; fast reverse; repeat program; displays current track number. Max line output 2 V; headphone output 0.16 V; THD at 1,000 Hz 0.003%; sep +90 dB; FR 5-20,000 Hz  $\pm 0.5$ , -1.0 dB ..... \$280

## NAD

### 5355 Compact Disc Player

Drawer-loading Compact Disc player. Features three-beam laser; display of current track number, elapsed time in track, remaining time on disc; sound audible during fast forward and fast reverse; skip forward; skip back; repeat disc; fast forward; fast reverse; repeat disc, program; cue by track number, display of program in memory; 9-function remote. Max line output 2.0 V; THD at 1,000 Hz 0.003% at 0 dB; S/N 98 dB de-emphasis on; sep 90 dB at 1,000 Hz; FR 5-20,000 Hz  $\pm 0.5$  dB ..... \$498

## NAKAMICHI

### OMS-7 Compact Disc Player

Drawer-loading CD player. Features one-beam laser; digital filtering (resampling frequency 176.4 kHz) programming of 24 tracks in random order; display of current track number, elapsed time of current track, remaining time on disc, program stored in memory; sound audible during fast forward and fast reverse; skip forward; skip back; fast forward; fast reverse; cancel; repeat disc, program; cue by track number, index number; 7-function remote control; headphone jack with adjustable level. Max line output 2 V; headphone output 20 mW; THD at 1,000 Hz 0.003%; S/N better than 92 dB; sep better than 92 dB; FR 5-20,000 Hz  $\pm 0.5$  dB; 16 lbs, 9 oz; 17 $\frac{1}{8}$ " W x 3 $\frac{1}{16}$ " H x 12 $\frac{1}{8}$ " D ..... \$1,295

**OMS-5.** Similar to OMS-7 without remote and programming functions ..... \$995

## NEC

### CD-705 Compact Disc Player

Drawer-loading Compact Disc player. Features one-beam laser; digital filtering (resampling frequency 88.2 kHz); non-delay digital filter with

5-pole active low pass; programming of 15 tracks in random/sequential order; display of current track number, elapsed time of current track, elapsed time of disc, remaining time on disc, program stored in memory; sound audible during fast forward and fast reverse; skip forward; skip back; cancel; repeat track, disc, repeat program; cue by track number, index number, time; dockable full-function remote control; max line output 2.5 V; headphone output 1.5 V; THD at 1,000 Hz 0.005%, at 5-20,000 Hz 0.01%; IMD 0.01%; S/N 95 dB at 1,000 Hz; sep 70 dB at 5-20,000 Hz, 90 dB at 1,000 Hz; FR 5-20,000 Hz  $\pm 0.5$  dB; 23 lbs; 16 $\frac{1}{16}$ " W x 4 $\frac{23}{32}$ " H x 14 $\frac{1}{16}$ " D ..... \$749

### CD-607 Compact Disc Player

Drawer-loading CD player. Features three-beam laser; digital filtering (resampling frequency 88.2 kHz) programming of 15 tracks in random/sequential order; sound audible during fast forward and fast reverse; skip forward; skip back; fast forward; fast reverse; cancel; repeat track, disc, program; remote control; 5-pole active low pass filter; high-speed CMOS D/A switching circuit. Displays current track number, elapsed time of current track, elapsed time of disc, remaining time on disc, program stored in memory. Cues by track number. Max line output 2.5 V; THD at 1,000 Hz 0.005%; S/N 95 dB; sep 90 dB at 1,000 Hz; FR 5-20,000 Hz  $\pm 0.5$  dB; 14.77 lbs; 16 $\frac{3}{32}$ " W x 3 $\frac{1}{32}$ " H x 12 $\frac{1}{8}$ " D ..... \$599

### CD-509E Compact Disc Player

Drawer-loading CD player. Features three-beam laser; digital filtering (resampling frequency 88.2 kHz) programming of 15 tracks in random order; sound audible during fast forward and fast reverse; skip forward; skip back; fast forward; fast reverse; repeat track, disc, phrase, program; headphone jack; non-delay digital filter with 5-pole active low pass. Displays current track number, elapsed time of current track, program stored in memory. Cues by track number. Max line output 2.5 V; THD at 1,000 Hz 0.005%; S/N 95 dB; sep 90 dB; FR 5-20,000 Hz  $\pm 0.5$  dB; 14.77 lbs; 16 $\frac{1}{16}$ " W x 3 $\frac{1}{2}$ " H x 12 $\frac{1}{8}$ " D \$449

## NIKKO

### NCD-200 Compact Disc Player

Drawer-loading CD player. Features three-beam laser; programming of 9 tracks in random order; skip forward; skip back; fast forward; fast reverse; repeat track, disc, phrase, program; headphone jack with adjustable level. Displays current track number, elapsed time of disc. Max line output 7 V; headphone output 180 mV; THD at 1,000 Hz 0.03% at -0 dB; IMD 0.05%; S/N 92 dB; sep 90 dB; FR 10-18,000 Hz  $\pm 0$  dB; 10 lbs; 17 $\frac{3}{8}$ " W x 3 $\frac{3}{8}$ " H x 11 $\frac{3}{8}$ " D ..... \$700

### NCD-100 Compact Disc Player

Drawer-loading CD player. Features one-beam 4-section laser; programming of 2 tracks in sequential order; skip forward; skip back; fast forward; fast reverse; repeat disc; headphone jack with adjustable level. Displays current track number, elapsed time of disc, remaining time on disc ..... \$600

## ONKYO

### DX-200 Integra Compact Disc Player

Drawer-loading CD player. Features one-beam laser; digital filtering (resampling frequency 88.2 kHz); programming of 16 tracks in random order; skip forward; skip back; fast forward; fast reverse; cancel; repeat track, disc, phrase, program; full-function remote control; headphone

jack with adjustable level; Polysorb Suspension System; dynamic super-servo analog section; 3 power supplies. Displays current track number, elapsed time of current track, remaining time on disc, program stored in memory. Cues by track number, index number. Max line output 1.5 V; THD at 1,000 Hz 0.003%; S/N 96 dB; sep 93 dB; FR 2-20,000 Hz  $\pm 5$  dB; 13 lbs; 17 $\frac{1}{8}$ " W x 4" H x 13 $\frac{3}{4}$ " D ..... \$600

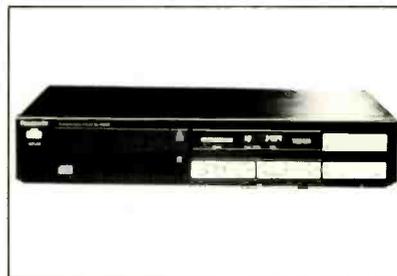
### DX-150 Compact Disc Player

Drawer-loading CD player. Features one-beam laser; digital filtering (resampling frequency 88.2 kHz) programming of 16 tracks in random order; skip forward; skip back; fast forward; fast reverse; cancel; repeat track, disc, program; Displays current track number, elapsed time of current track, program stored in memory. Cues by track number. THD at 1,000 Hz 0.005%; S/N 93 dB; sep 87 dB; FR 10-20,000 Hz  $\pm 2$  dB; 11 lbs; 17 $\frac{1}{8}$ " W x 3 $\frac{3}{8}$ " H x 13 $\frac{3}{4}$ " D ..... \$370

## PANASONIC

### SL-P3610 Compact Disc Player

Drawer-loading CD player. Features three-beam laser; programming of 15 tracks in random order; skip forward; skip back; repeat track, disc, program; motor-driven slide-out compartment. Displays current track number, elapsed time of current track, elapsed time of disc. Max line output 2 V; THD at 1,000 Hz <0.003% at -0 dB; S/N >96 dB; sep >100 dB; FR 4-20,000 Hz  $\pm 0.5$  dB; 11.2 lbs; 15 $\frac{1}{16}$ " W x 3 $\frac{1}{32}$ " H x 12 $\frac{1}{16}$ " D ..... \$375



Panasonic SL-P3610

## PARASOUND

### CDP-900 Compact Disc Player

Drawer-loading CD player. Features three-beam laser; digital filtering (resampling frequency 88.2 kHz); sound audible during fast forward and fast reverse; skip forward; skip back; fast forward; fast reverse; repeat disc; headphone jack with adjustable level. Displays current track number, elapsed time of disc, remaining time on disc. Max line output 2 V; headphone output 1.5 V; THD at 1,000 Hz 0.003% at -70 dB; IMD 0.002%; S/N 102 dB; sep 95 dB; FR 20-20,000 Hz  $\pm 0.2$  dB; 14 lbs; 17 $\frac{1}{4}$ " W x 4" H x 10" D ..... \$350

## PIONEER

### CLD-900 Compact Disc/LaserDisc Player

Drawer-loading player for Compact Discs and LaserVision videodiscs. Features 3-beam laser; programming of 1 track; sound audible during fast forward and fast reverse; skip forward; skip back; fast forward; fast reverse; repeat track, disc, phrase; remote control; headphone jack with adjustable level. Displays current track number, elapsed time of current track, remaining time on disc. Cues by track number, index number, time; 6 separate servo systems including tilt servo to compensate for warped discs; 83-mm disc damper for added playback stabil-

# Digital Precision

The precision of digital electronics has revolutionized the art of music reproduction. A signal-to-noise ratio of 90 dB. Perfectly flat frequency response throughout the audible spectrum. Wow and flutter so low it defies measurement. And over 90dB of dynamic range to widen your music horizons. Akai has made the dream of musical purity a reality with Compact Disc players that everyone will enjoy.



Better still, we've also created the most easily programmed CD player you can buy. The Akai CD-A70. Its Natural Logic operation and the appropriate track numbers are all it takes to produce one great performance after another. So audition an Akai CD player soon. Nobody makes CD technology easier to enjoy.

# AKAI

# CD PLAYERS

ity. THD at 1,000 Hz 0.003% at -0 dB; S/N 96 dB; sep 94 dB; FR 5-20,000 Hz  $\pm$  0.5 dB; 34 lbs, 7 oz; 16 $\frac{1}{16}$ " W x 6 $\frac{3}{8}$ " H x 17 $\frac{3}{8}$ " D ..... \$1,200

## P-DX700 Compact Disc Player

Drawer-loading CD player. Features 3-beam laser; programming of 10 tracks in random order; display of current track number, remaining time on disc; sound audible during FF and FR; skip forward; skip back; repeat track, disc, phrase, program; cue by track number. Max line output 200 mV; THD at 1,000 Hz 0.0045% at -0 dB; S/N 95 dB; sep 93 dB; FR 5-20,000 Hz  $\pm$  0.5 dB; 12 $\frac{3}{8}$ " W x 3 $\frac{3}{8}$ " H x 10 $\frac{1}{4}$ " D ..... \$540

## PD-7010 Compact Disc Player

Drawer-loading CD player. Features 3-beam laser; digital filtering (resampling frequency 176.4 kHz); programming of 32 tracks in random order; sound audible during fast forward and fast reverse; skip forward; skip back; fast forward; fast reverse; cancel; repeat track, disc, program; remote control; headphone jack with adjustable level. Displays current track number, elapsed time of current track, remaining time on disc, program stored in memory. Cues by track and index number. Max line output 2 V; THD at 1,000 Hz 0.0015% at -0 dB; S/N 96 dB; sep 93 dB; FR 2-20,000 Hz  $\pm$  0.5 dB; 10 lbs, 6 oz; 16 $\frac{1}{16}$ " W x 3 $\frac{1}{16}$ " H x 12 $\frac{1}{16}$ " D ..... \$460

## PD-6010 Compact Disc Player

Drawer-loading CD player with 3-beam laser; digital filtering (resampling frequency 176.4 kHz); programming of 27 tracks in random order; sound audible during FF and FR; skip forward; skip back; cancel; repeat track, disc, program; 9-function remote control; headphone jack with adjustable level. Displays current track number. Cues by track number, time. Max line output 2 V; THD at 1,000 Hz 0.002% at -0 dB; S/N 96 dB; sep 93 dB; FR 2-2,000 Hz  $\pm$  0.5 dB; 16 $\frac{1}{2}$ " W x 3 $\frac{3}{4}$ " H x 12 $\frac{1}{4}$ " D ..... \$350

## PD-5010 Compact Disc Player

Drawer-loading CD player with 3-beam laser; digital filtering (resampling frequency 176.4 kHz); programming of 27 tracks in random order; sound audible during FF and FR; skip forward; skip back; cancel; repeat track, disc, program; headphone jack with adjustable level. Displays current track number, elapsed time of current track. Cues by track number, time. Max line output 2 V; THD at 1,000 Hz 0.002% at -0 dB; S/N 96 dB; sep 93 dB; FR 2-20,000 Hz  $\pm$  0.5 dB; 10 lbs, 6 oz; 16 $\frac{1}{16}$ " W x 3 $\frac{1}{16}$ " H x 12 $\frac{1}{16}$ " D ..... \$300



Revox B 225

## QUASAR

### CD8975YE Compact Disc Player

Drawer-loading CD player. Features three-beam laser; programming of 15 tracks in random order; sound audible during fast forward and fast reverse; skip forward; skip back; fast forward; fast reverse; repeat track, disc, displays current track number, elapsed time of current track.

Cues by track number, index number. Max line output 2 V; THD at 1,000 Hz 0.003% at 0 dB; S/N +96 dB; sep +90 dB; FR 4-20,000 Hz  $\pm$  0.5 dB; 11.2 lbs; 8 $\frac{3}{32}$ " W x 4 $\frac{1}{8}$ " H x 12 $\frac{1}{16}$ " D ..... \$400-\$500

## RCA

### MCD-140 Dimensia Compact Disc Player

Drawer-loading CD player. Features three-beam laser; programming of 16 tracks in random order; sound audible during fast forward and fast reverse; skip forward; skip back; fast forward; fast reverse; cancel; repeat track, disc, program; Dimensia 256-function remote control. Displays current track number, elapsed time of current track, elapsed time of disc, program stored in memory. Cues by track number. Max line output 2 V; THD at 1,000 Hz 0.003% at -0 dB; S/N 95 dB; sep 90 dB; FR 5-20,000 Hz  $\pm$  0.5 dB; 10.8 lbs; 17 $\frac{1}{8}$ " W x 3 $\frac{3}{8}$ " H x 11 $\frac{1}{8}$ " D ..... \$600

### MCD-145 Dimensia Compact Disc Player

Drawer-loading CD player. Features three-beam laser; programming of 15 tracks in random order; sound audible during fast forward and fast reverse; skip forward; skip back; fast forward; fast reverse; cancel; repeat track, disc, program; full-function remote control; headphone jack with adjustable level; automatic status indication and switching; local or remote programming; display of all functions on Dimensia monitor; use of standard or system link cabling. Displays current track number, elapsed time of current track. Cues by track number, index number. Max line output 1.8 V; THD at 1,000 Hz > or equal to 0.005% at -0 dB; S/N > or equal to 90 dB; sep > or equal to 80 dB; FR 20-20,000 Hz  $\pm$  1 dB; 17 $\frac{1}{8}$ " W x 3 $\frac{3}{8}$ " H x 11 $\frac{1}{8}$ " D ..... \$400

### MCD Digital Command Compact Disc Player

Drawer-loading CD player. Features three-beam laser; programming of 15 tracks in random order; sound audible during fast forward and fast reverse; skip forward; skip back; fast forward; fast reverse; cancel; repeat track, disc, program; full-function remote control. Displays current track number, elapsed time of current track. Cues by track number, index number. Max line output 1.8 V; THD at 1,000 Hz > or equal to 0.005% at -0 dB; S/N > or equal to 90 dB; sep > or equal to 80 dB; FR 20-20,000 Hz  $\pm$  1 dB; 17 $\frac{1}{8}$ " W x 3 $\frac{3}{8}$ " H x 11 $\frac{1}{8}$ " D; approx. .... \$300

## REALISTIC

### CD-1200 Compact Disc Player

Drawer-loading Compact Disc player programs 16 tracks in random playback; auto-search music system; track number; index number; elapsed time; remaining time; current mode; forward; reverse; high-speed audible search; FR 5-20,000 Hz +0.5, -1 dB; dynamic range >90 dB; ch sep >90 dB at 1,000 Hz; output 2 V; 2 $\frac{1}{8}$ " x 14" x 10 $\frac{1}{2}$ " ..... \$300

### CD-2000 Compact Disc Player

Drawer-loading Compact Disc player programs 15 tracks for random playback; displays time elapsed since start of track; displays current track and index number; pushbutton replay of entire disc or preselected tracks; auto-search music system; high-speed audible search. FR 5-20,000 Hz +0.5, -1 dB; dynamic range 90 dB; S/N 88 dB; ch sep >90 dB at 1,000 Hz; HD 0.004% at 1,000 Hz ..... \$259

## REVOX

### B 225 Compact Disc Player

Drawer-loading Compact Disc player with in-

frared or wired remote; 1,000-Hz calibration tone corresponding to max output level. Features 1-beam laser; digital filtering (resampling frequency 176.4 kHz); programming of 19 tracks; display of current track number, elapsed time of current track, elapsed time of disc, program stored in memory; skip forward; skip back; fast forward; fast reverse; cancel; repeat track, disc, phrase, program; cue by track number, index number, time; 7-function remote control; headphone jack (adjustable output). Access time 3 seconds or less. Max line output 2 V; headphone output 13 V (600 ohms); THD 0.006% at 1,000 Hz at rated output; S/N 96 dB; sep 90 dB; FR 20-20,000 Hz +0, -0.6 dB; 25 lbs; 17.7" W x 4.3" H x 13" D ..... \$1,150



Sansui PC-V750

## SANSUI

### SL1000 Laser-Disc/CD Player

Combination laser-disc video player/Compact Disc audio player with top-loading feature. Features one-beam laser; CX NR; microcomputer connection for character generator; skip forward; skip back; fast forward; fast reverse; repeat phrase, program; 7-function remote control; headphone jack with adjustable level. Displays current track number and elapsed time on disc. THD at 1,000 Hz 0.003%; S/N 96 dB; FR 5-20,000 Hz; 34.4 lbs; 16 $\frac{1}{16}$ " W x 6 $\frac{3}{8}$ " H x 17 $\frac{1}{8}$ " D ..... \$1199

### PC-V750 Compact Disc Player

Drawer-loading CD player. Features three-beam; digital filtering (resampling frequency 176.4 kHz); programming of 8 tracks in random order; skip forward; skip back; fast forward; fast reverse; repeat track. Displays current track number, elapsed time of current track, elapsed time of disc, remaining time on disc, program stored in memory. Max output 2 V; THD at 1,000 Hz 0.003%; sep 90 dB; FR 5-20,000 Hz; 10.7 lbs; 16 $\frac{1}{16}$ " W x 3 $\frac{3}{32}$ " H x 12 $\frac{1}{32}$ " D ..... \$350

### PC-V100 Compact Disc Player

Drawer-loading CD player. Features three-beam laser; digital filtering (resampling frequency 176.4 kHz); programming of 9 tracks in random order; skip forward; skip back; fast forward; fast reverse; repeat track, disc, program. Displays current track number, elapsed time of disc, remaining time on disc, program stored in memory. Max line output 2 V; THD at 1,000 Hz 0.003%; sep 90 dB; FR 5-20,000 Hz; 7.9 lbs; 13 $\frac{3}{8}$ " W x 3 $\frac{3}{8}$ " H x 11 $\frac{3}{8}$ " D ..... \$350

## SANYO

### CP660 Compact Disc Player

Drawer-loading CD player. Features 1-beam laser; display of current track number, remaining time on disc; skip forward; skip back; cancel; repeat disc. Max line output 2 V, 11 kohms; THD at 1,000 Hz 0.0025%; sep 92 dB (1,000 Hz); FR 5-20,000 Hz; 7 lbs, 4 oz; 16 $\frac{1}{4}$ " W x 3" H x 10 $\frac{1}{8}$ " D ..... \$300

# CD PLAYERS

## SCOTT

### 959 DA Compact Disc Player

Drawer-loading CD player. Features three-beam laser; digital filtering (resampling frequency 88.2 kHz); programming of 99 tracks in random order; sound audible during fast forward and fast reverse; skip forward; skip back; fast forward; fast reverse; cancel; repeat track, disc, program; headphone jack with adjustable level; wireless remote control; timer play. Displays current track number, elapsed time of current track, elapsed time of disc, remaining time on disc, program stored in memory. Cues by track number, index number. Headphone output 0.16 V; THD at 1,000 Hz 0.002%; S/N 98 dB IEC flat; sep 90 dB; FR 3-20,000 Hz  $\pm 0.5$ ,  $-1$  dB; 10 lbs ..... \$500

### 949DA Compact Disc Player

Drawer-loading CD player. Features one-beam laser; digital filtering (resampling frequency 44.1 kHz); programming of 23 tracks in random order; skip forward; skip back; fast forward; fast reverse; cancel; repeat track; timer play. Displays current track number, elapsed time of current track. Cues by track number, index number. THD 0.003%; S/N 95 dB; FR 5-20,000 Hz  $\pm 0.5$  dB; 9 lbs ..... \$400

## SHARP

### DX-100 Compact Disc Player

Horizontal, drawer-loading CD player with DC servo amplifier. 15 selections may be programmed for playback in any order. Features auto program locate device; auto program search system; repeat function; LED display; time counter; headphone jack; aluminum die-cast chassis ..... \$399

## SHERWOOD

### CDP200 Compact Disc Player

Drawer-loading CD player. Features three-beam laser; digital filtering (resampling frequency 88.2 kHz); programming of 9 tracks in random order; motorized disc loading; automatic initialization; 2-speed forward/backward scan; display of current track number, elapsed time of current track, elapsed time of disc; sound audible during fast forward and fast reverse; fast forward; fast reverse; cancel; repeat A, B, disc, phrase, programmable repeat, index scan; cue by track number, index number; headphone jack with adjustable level. Max line output 2 V; headphone output 160 V; S/N 100 dB; sep 90 dB; FR 6-20,000 Hz  $\pm 0.5$  dB; 9 $\frac{1}{10}$  lbs; 17 $\frac{3}{8}$ " W x 3 $\frac{1}{16}$ " H x 11 $\frac{3}{4}$ " D ..... \$399



Sony CDP-102

## SONY

### CDP-650ESD Compact Disc Player

Drawer-loading CD player. Features 3-beam laser; digital filtering (resampling frequency 88.2 kHz); programming of 20 tracks in random order; sound audible during FF and FR; skip forward; skip back; cancel; repeat track, disc,

phrase, program; 20-function remote control; headphone jack with adjustable level; digital output stage; auto-delay; shuffle play. Displays current track number, elapsed time of current track, elapsed time of disc, remaining time on disc, program stored in memory. Cues by track number, index number. Max line output 2 V; THD at 1,000 Hz 0.0025%; IMD 0.0025%; S/N 96 dB; sep 96 dB; FR 2-20,000 Hz  $\pm 0.3$  dB; 20 lbs; 17" W x 3 $\frac{1}{8}$ " H x 14" D ..... \$1300

### CDP-620ES Compact Disc Player

Drawer-loading CD player. Features 3-beam laser; digital filtering (resampling frequency 88.2 kHz); programming of 20 tracks in random order; sound audible during FF and FR; skip forward; skip back; FF; FR; cancel; repeat track, disc, phrase, program; 20-function remote control; headphone jack with adjustable level; auto delay; shuffle play. Displays current track number, elapsed time of current track, elapsed time of disc, remaining time on disc, program stored in memory. Cues by track number, index number. Max line output 2 V; THD at 1,000 Hz 0.0025%; S/N 96 dB; sep 96 dB; FR 2-20,000 Hz  $\pm 0.3$  dB; 20 lbs; 17" W x 3 $\frac{1}{8}$ " H x 14" D ..... \$950

### CDP-520ES Compact Disc Player

Drawer-loading CD player. Features 3-beam laser; digital filtering (resampling frequency 88.2 kHz); programming of 16 tracks in random order; sound audible during FF and FR; skip forward; skip back; FF; FR; cancel; repeat track, disc, phrase, program; 15-function remote control; headphone jack with adjustable level. Displays current track number, elapsed time of current track, remaining time on disc, program stored in memory. Cues by track number, index number, time. Max line output 2 V; THD at 1,000 Hz 0.003%; IMD 0.003%; S/N 96 dB; sep 96 dB; FR 2-20,000 Hz  $\pm 0.3$  dB; 15 lbs; 17" W x 3 $\frac{1}{8}$ " H x 13 $\frac{1}{4}$ " D ..... \$600

### CDP-302 Compact Disc Player

Drawer-loading CD player. Features 3-beam laser; digital filtering (resampling frequency 88.2 kHz); programming of 16 tracks in random order; sound audible during FF and FR; skip forward; skip back; FF; FR; cancel; repeat track, disc, phrase, program; 15-function remote control; headphone jack with adjustable level. Displays current track number, elapsed time of current track, remaining time on disc, program stored in memory. Cues by track number, index number. Max line output 2 V; THD at 1,000 Hz 0.003%; IMD 0.003%; S/N 96 dB; sep 95 dB; FR 2-20,000 Hz  $\pm 0.5$  dB; 15 lbs; 17" W x 3 $\frac{1}{8}$ " H x 13 $\frac{1}{4}$ " D ..... \$550

### CDP-102 Compact Disc Player

Drawer-loading CD player. Features 3-beam laser; digital filtering (resampling frequency 88.2 kHz); sound audible during FF and FR; skip forward; skip back; FF; FR; cancel; repeat track, disc, phrase, 15-function remote control; headphone jack with adjustable level. Displays current track number, elapsed time of current track, remaining time on disc. Cues by track number, index number. Max line output 2 V; THD at 1,000 Hz 0.003%; IMD 0.003%; S/N 96 dB; sep 95 dB; FR 2-20,000 Hz  $\pm 0.5$  dB; 13 lbs; 14" W x 3 $\frac{1}{4}$ " H x 13 $\frac{1}{4}$ " D ..... \$450

### CDP-70 Compact Disc Player

Drawer-loading CD player. Features 3-beam laser; programming of 16 tracks in random order; sound audible during FF and FR; skip forward; skip back; FF; FR; cancel; repeat track, disc, program; 4-function remote control; headphone jack with adjustable level. Displays current

track number, elapsed time of current track, remaining time on disc, program stored in memory. Cues by track number. Max line output 2 V; THD at 1,000 Hz 0.004%; IMD 0.004%; S/N 90 dB; sep 90 dB; FR 2-20,000 Hz  $\pm 0.5$  dB; 9 lbs; 17" W x 2 $\frac{7}{8}$ " H x 11" D ..... \$350



Sony CDP-520ES

### CDP-7F Compact Disc Player

Top-loading CD player. Features 3-beam laser; programming of 16 tracks in random order; sound audible during FF and FR; skip forward; skip back; FF; FR; cancel; repeat track, disc, program; 4-function remote control; headphone jack with adjustable level. Displays current track number, elapsed time of current track, remaining time on disc, program stored in memory. Cues by track number. Max line output 2 V; THD at 1,000 Hz 0.004%; IMD 0.004%; S/N 90 dB; sep 90 dB; FR 2-20,000 Hz  $\pm 0.5$  dB; 8 $\frac{1}{2}$ " W x 3 $\frac{1}{8}$ " H x 12" D ..... \$300

### D-5 Portable CD Player

Comes with AC adaptor for home use; optional battery pack. Features 3-beam laser; sound audible during FF and FR; skip forward; skip back; repeat track, headphone jack with adjustable level. Displays current track number, elapsed time of current track, remaining time on disc. Cues by track number. THD at 1,000 Hz 0.008%; IMD 0.008%; S/N 85 dB; sep 85 dB; FR 5-20,000 Hz  $\pm 1$  dB; 1 lb, 5 oz; 5" W x 1 $\frac{1}{2}$ " H x 5 $\frac{1}{4}$ " D ..... \$300

## SYLVANIA

### FDD304 Compact Disc Player

Tray-loading CD player. Features digital filtering (resampling frequency 176.4 kHz); programming of 24 tracks in random order; skip forward; skip back; fast forward; fast reverse; cancel; repeat track, disc, phrase, program; 9-function remote control; headphone jack. Displays current track number, elapsed time of current track, remaining time on disc, program stored in memory. Cues by track number, index number, time. Max line output 2 V; THD at 1,000 Hz 0.003% at  $-0$  dB; IMD 86 dB below 0 dB level; S/N 96 dB; sep 94 dB; FR 20-20,000 Hz  $\pm 0.15$  dB; 21 lbs; 16 $\frac{1}{2}$ " W x 3 $\frac{1}{4}$ " H x 11 $\frac{1}{4}$ " D ..... \$600

### FDD104 Compact Disc Player

Tray-loading CD player. Features digital filtering (resampling frequency 176.4 kHz); programming of 20 tracks in random order; skip forward; skip back; fast forward; fast reverse; repeat track, disc, program. Displays current track number, elapsed time of current track, time on disc, program stored in memory. Cues by track number. Max line output 2 V; THD at 1,000 Hz 0.003% at  $-0$  dB; IMD 86 dB below 0 dB level; S/N 96 dB; sep 94 dB; FR 20-20,000 Hz  $\pm 0.15$  dB; 17 lbs; 12 $\frac{1}{2}$ " W x 3" H x 11 $\frac{1}{4}$ " D ..... \$500

## TEAC

### LV-5000DS LaserMate CD/LV Player

Remote-controlled player for Compact Discs and LaserVision videodiscs. Plays digital soundtracks of videodiscs so encoded, analog sound if not. CX NR switched in automatically

# CD PLAYERS

for CX-encoded discs. Video display of track, index numbers and elapsed, remaining, and total time of CDs; for LVs, chapter, frame, time. CD functions: repeat of track, phrase, disc; index search; track search; scan; etc. LV functions: variable-speed slow motion; triple-speed play; freeze frame; step-slow phrase repeat; chapter, number, time search. Features headphone output with adjustable volume; 8-pin DIN port for connecting personal computer; 3-beam laser; oxygen-free-copper power cables; gold-plated audio-out jacks; independent spindle motors; die-cast aluminum chassis; auto disc-type detector. Video output: level 1 V p-p nominal, negative sync, terminated; imp 75 ohms unbalanced. VHF output: switchable for 3 or 4; imp 75 ohm unbalanced. Audio terminal 1 (LV and CD): FR 5-20,000 Hz  $\pm 0.5$  dB; S/N 90 dB at 1,000 Hz; dynamic range 96 dB at 1,000 Hz. Audio terminal 2 (analog output): S/N 70 dB with CX; dynamic range 70 dB. Analog output level 260 mV RMS (1,000 Hz, 40%); digital out 269 V RMS (1,000 Hz,  $-20$  dB). 35.2 lbs; 16 $\frac{1}{16}$ " W x 6 $\frac{3}{8}$ " H x 17 $\frac{3}{8}$ " D ..... \$1,295

## PD-500 Compact Disc Player

Drawer-loading CD player with 3-beam laser; digital filtering (resampling frequency 88.2 kHz); programming of 12 tracks in random order; sound audible during FF and FR; skip forward; skip back; cancel; repeat track, disc, phrase, program; remote control; headphone jack with adjustable level. Displays current track number, elapsed time of current track, remaining time on disc, program stored in memory. Cues by track number, index number. 16-bit linear D/A converter; switchable auto space function adds 3-sec blank space between tracks. Max line output 2.0 V; headphone output 2.0 V; THD at 1,000 Hz 0.0015% at  $-0$  dB; S/N 96 dB; sep 95 dB; FR 3-20,000 Hz  $\pm 0.5$  dB; 4.8 kg; 435 mm W x 93 mm H x 290 mm D ... \$599

## PD-11 Compact Disc Player

Drawer-loading 3-beam-laser CD player with programming of 23 tracks. Features display of current track number; display of elapsed time of current track; display of elapsed time or remaining time on disc; display of program in memory; sound audible during FF and FR; skip forward; skip back; cancel; repeat track, disc, phrase, program; cue by track number; cue by index number; multi-function remote; headphone jack with adjustable level. Max line output 2 V RMS; THD  $<0.0015\%$ ; S/N  $>95$  dB; ch sep  $>90$  dB; FR 5-20,000 Hz  $\pm 0.5$  dB; 8 $\frac{1}{16}$  lbs; 13 $\frac{1}{8}$ " W x 3 $\frac{1}{16}$ " H x 11 $\frac{1}{2}$ " D ..... \$599



Technics SL-XP7

## TECHNICS

### SL-P3K Compact Disc Player

Drawer-loading CD player with 24-function (including volume) remote control. Features 3-beam laser; programming of 15 tracks in random order; sound audible during fast forward and fast reverse; skip forward; skip back; fast forward; fast reverse; cancel; repeat track, disc,

and program; headphone jack with adjustable level. Displays current track number, elapsed time of current track, elapsed time of disc, remaining time on disc, and program stored in memory. Cues by track number and index number. Max line output 2 V; headphone output 80 mW; THD at 1,000 Hz 0.003% at  $-0$  dB; S/N  $>96$  dB; sep  $>90$  dB; FR 4-20,000 Hz  $\pm 0.5$  dB; 11.5 lbs; 16 $\frac{1}{16}$ " W x 3 $\frac{3}{32}$ " H x 13 $\frac{3}{32}$ " D ..... \$600

### SL-P2/P2K Compact Disc Player

Drawer-loading CD player with 22-function remote control. Features 3-beam laser; programming of 15 tracks in random order; sound audible during fast forward and fast reverse; skip forward; skip back; fast forward; fast reverse; cancel; repeat track, disc, and program; headphone jack with adjustable level. Cues by track number and index number. Displays current track number, elapsed time of current track, elapsed time of disc, remaining time on disc, and program stored in memory. Max line output 2 V; headphone output 80 mW; THD at 1,000 Hz 0.003% at  $-0$  dB; S/N  $>96$  dB; sep  $>90$  dB; FR 4-20,000 Hz  $\pm 0.5$  dB; 11.5 lbs; 16 $\frac{1}{16}$ " W x 3 $\frac{3}{32}$ " H x 13 $\frac{3}{32}$ " D ..... \$500

### SL-P1/P1K Compact Disc Player

Drawer-loading CD player. Features 3-beam laser; programming of 15 tracks in random order; sound audible during fast forward and fast reverse; skip forward; skip back; fast forward; fast reverse; skip forward; skip back; fast forward; fast reverse; cancel; repeat track, disc, and program; headphone jack with adjustable level. Displays current track number and elapsed time of current track. Cues by track, index number. Max line output 2 V; headphone output 80 mW; THD at 1,000 Hz 0.003% at  $-0$  dB; S/N  $>96$  dB; sep  $>90$  dB; FR 4-20,000 Hz  $\pm 0.5$  dB; 11.2 lbs; 16 $\frac{1}{16}$ " W x 3 $\frac{3}{32}$ " H x 13 $\frac{3}{32}$ " D ..... \$400

### SL-PJ1 Compact Disc Player

Drawer-loading CD player. Features 3-beam laser; programming of 15 tracks in random order; sound audible during FR and FR; skip forward; skip back; cancel; repeat track, disc, and program. Displays current track number, elapsed time of current track, remaining time on disc. Max line output 2 V; headphone output 80 mW; THD at 1,000 Hz 0.003% at  $-0$  dB; S/N  $>96$  dB; sep  $>90$  dB; FR 4-20,000 Hz  $\pm 0.5$  dB; 9.9 lbs; 12 $\frac{1}{32}$ " W x 3 $\frac{3}{32}$ " H x 12 $\frac{1}{32}$ " D ..... \$300

### SL-XP7 Portable Compact Disc Player

Top-loading CD player can be used with home stereo system or, with optional carrying case and headphones, as portable. Features 1-beam laser; programming of 15 tracks in random order; sound audible during FF and FR; skip forward; skip back; cancel; repeat of disc or program; headphone jack with adjustable level. Displays current track number, elapsed time of current track, elapsed time of disc, remaining time on disc, or program stored in memory. Includes AC adaptor and cables for use with home stereo system. Max line output 2 V; headphone output 80 mW; THD at 1,000 Hz 0.006% at  $-0$  dB; S/N  $>90$  dB; sep  $>90$  dB; FR 4-20,000 Hz  $\pm 0.5/-1.0$  dB; 1.3 lbs; 4 $\frac{3}{32}$ " W x 1 $\frac{1}{4}$ " H x 4 $\frac{1}{32}$ " D ..... \$300

## TOSHIBA

### XR 40 Compact Disc Player

Drawer-loading CD player. Features three-beam laser; digital filtering (resampling frequency 88.2 kHz); programming of 8 tracks in random order; sound audible during fast forward and fast reverse; skip forward; skip back; fast forward; fast reverse; repeat track, program; headphone jack with adjustable level. Displays current

track number, elapsed time of current track, elapsed time of disc, remaining time on disc, program stored in memory. Cues by track number. Max line output 2.0 V; headphone output 0-5 V; THD at 1,000 Hz 0.003%; S/N 96 dB; sep 90 dB; FR 20-20,000 Hz  $\pm 1.0$  dB; 10.6 lbs; 16 $\frac{1}{16}$ " W x 3 $\frac{1}{16}$ " H x 12 $\frac{1}{8}$ " D ..... \$499

## ULTRX

### CP400 Compact Disc Player

Drawer-loading Compact Disc player with full-function infrared remote control. Features 2-motor disc rotation and tracking system with full-logic microcomputer control; display of elapsed and remaining time, current track, next 2 tracks; programming of up to 10 tracks in random order; intro scan; repeat of any track; skip forward and back; fast forward and reverse; headphone jack with adjustable output. ... \$600



Ultrix CP400

## VECTOR RESEARCH

### VCD-800 Compact Disc Player

Drawer-loading CD player. Features three-beam laser; programming of 15 tracks in random order; sound audible during fast forward and fast reverse; skip forward; skip back; fast forward; fast reverse; cancel; repeat track, disc, phrase, program; displays current track number, elapsed time of current track, program stored in memory. Cues by track number, index number. Max line output 2 V; THD at 1,000 Hz 0.01%; S/N 90 dB; sep 80 dB; FR 5-20,000 Hz  $\pm 0.5$  dB; 11 lbs; 17" W x 3 $\frac{1}{2}$ " H x 12 $\frac{1}{2}$ " D ..... \$350

## YAMAHA

### CD-2 Compact Disc Player

Drawer-loading CD player with 3-beam laser; digital filtering (resampling frequency 88.2 kHz); programming of 12 tracks in random order; display of current track number, elapsed time of current track, elapsed time of disc, remaining time on disc, program stored in memory; sound audible during FF and FR; skip forward; skip back; cancel; repeat track, disc, phrase, program; cue by track number, index number; infrared remote control. Max line output 2 V; THD at 1,000 Hz 0.0015% at  $-0$  dB; IMD 0.0015%; S/N 95 dB; sep 90 dB; FR 3-20,000 Hz  $\pm 0.5$  dB; 11 lbs; 17 $\frac{1}{8}$ " W x 3 $\frac{3}{8}$ " H x 11 $\frac{3}{8}$ " D, black or silver finish ..... \$599

### CD-3 Compact Disc Player

Drawer-loading CD player with 3-beam laser; digital filtering (resampling frequency 88.2 kHz); programming of 9 tracks in random order; display of current track number, elapsed time of disc, program stored in memory; sound audible during FF and FR; skip forward; skip back; cancel; repeat track, disc, phrase, program; cue by track number, index number; 12-function remote control; headphone jack with adjustable level. Max line output 2 V; headphone output 0.16 V; THD at 1,000 Hz  $<0.002\%$  at  $-0$  dB; S/N 100 dB; sep  $>90$  dB; FR 3-20,000 Hz  $\pm 0.5/-1.0$  dB; 9 lbs, 11 oz; 17 $\frac{1}{8}$ " W x 3 $\frac{3}{8}$ " H x 11 $\frac{3}{8}$ " D ..... \$499

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**ADC (Division of dbx)**, 71 Chapel St., Newton, MA 02195.  
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**ADS**, One Progress Way, Wilmington, MA 01887.  
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**Audio-Technica**, 1221 Commerce Dr., Stow, OH 44224.  
**Azden**, 147 New Hyde Park Road, Franklin Square, NY 11010.  
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**Bose**, 100 The Mountain Rd., Framingham, MA 01701.  
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**Bozak**, 68 Holmes Rd., Newington, CT 06111.  
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**Canton North America**, 254 First Ave. N., Minneapolis, MN 55401.  
**Carver**, P.O. Box 1237, 19210 33rd Ave. W., Lynnwood, WA 98036.  
**Celestion Industries**, Box 521, Kuniholm Dr., Holliston, MA 01746.  
**Cerwin-Vega**, 12250 Montague St., Arleta, CA 91331.  
**Counterpoint Electronic Systems**, 10635 Roselle St., San Diego, CA 92121-1399.  
**Crown International**, 1718 W. Mishawaka Rd., Elkhart, IN 46514.  
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**Dahlquist**, 601 Old Willets Path, Hauppauge, NY 11787.

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**DCM**, 670 Airport Blvd., Ann Arbor, MI 48104.  
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**Empire Scientific**, P.O. Box 486, 55 Bloomingdale Rd., Hicksville, NY 11802.  
**Energy Division of Audio Products International**, 135 Torbay Rd., Markham, Ontario L3R 1G7.  
**Epicure Products (EPI)**, 25 Hale St., Newburyport, MA 01950.  
**Epoch by Stanton**, Terminal Drive, Plainview, NY 11803.  
**ESS**, 9613 Oates Dr., Sacramento, CA 95827.  
**Fisher**, 21314 Lassen St., Chatsworth, CA 91311.  
**General Electric**, Electronics Park, Syracuse, NY 13221.  
**Genesis Physics**, Newington Park, Newington, NH 03801.  
**Grado Laboratories**, 4614 Seventh Ave., Brooklyn, NY 11220.  
**Hafler**, 5910 Crescent Blvd., Pennsauken, NJ 08109.  
**Harman Kardon**, 240 Crossways Dr. West, Woodbury, NY 11797.  
**Health Company**, Benton Harbor, MI 49022.  
**Hitachi Sales**, 401 W. Artesia Blvd., Compton, CA 90220.  
**Induced Magnet Systems**, 115 Henry St., Freeport, NY 11520.  
**Infinity Systems**, 7930 Deering Ave., Canoga Park, CA 91304.  
**Interaudio by Bose**, 100 The Mountain Road, Framingham, MA 01701.  
**Jamo Hi-Fi**, 425 Huehl Rd. Bldg 3A, Northbrook, IL 60062.  
**JBL**, 8500 Balboa Blvd., Northridge, CA 91329.  
**Jensen Sound Labs**, 4136 N. United Pkwy., Schiller Park, IL 60176.  
**JSE**, 519 East Middle Turnpike, Manchester, CT 06040.  
**JVC Corp. of America**, 71 Slater Dr., Elmwood Park, NJ 07407.  
**KEF**, 695 Oak Grove, Menlo Park, CA 94025.  
**Kenwood Electronics**, 1315 E. Watsoncenter Rd., Carson, CA 90745.  
**Klipsch & Associates**, P.O. Box 688, Hope, AR 71801.  
**Koss**, 4129 N. Port Washington Ave., Milwaukee, WI 53212.  
**Kyocera International**, 7 Powder Horn Dr., Warren, NJ 07060.  
**Linn Products (Audiophile Systems)**, 6842 Hawthorne Park Dr., Indianapolis, IN 46250.  
**Luxman (Alpine Electronics of America)**, 19145 Gramercy Place, Torrance, CA 90501.  
**Madrigal**, P.O. Box 781, Middletown, CT 06457.

**Magnavox (North American Philips)**, I-140 & Straw Plains Pike, Knoxville, TN 37914.  
**Magnepan**, 1645 9th St., White Bear Lake, MN 55110.  
**Marantz**, 20525 Nordhoff St., Chatsworth, CA 93111.  
**Mark Levinson Audio**, PO Box 781, Middletown, CT 06457.  
**Martin-Logan**, Box 741, 320 NE Industrial Ln., Lawrence, KS 66044.  
**McIntosh Laboratory**, 2 Chambers St., Binghamton, NY 13903.  
**Meridian by Madrigal**, P.O. Box 781, Middletown, CT 06457.  
**Micro Seiki USA**, P.O. Box 3883, Thousand Oaks, CA 91359-0882.  
**Mirage Acoustics**, 850 Rear Providence Hwy., Dedham, MA 02026.  
**Mission Electronics**, 5985 Atlantic Dr., Unit 6, Mississauga, Ontario L4W 1S4.  
**Mitsubishi Sales America**, 3030 E. Victoria St., Compton, CA 90221.  
**Monster Cable**, 101 Townsend St., San Francisco, CA 94107.  
**M & K (Miller & Kreisel Sound)**, 10391 Jefferson Blvd., Culver City, CA 90230.  
**NAD (USA)**, 675 Canton St., Norwood, MA 02062.  
**Nagatronics**, 115 Henry St., Freeport, NY 11520.  
**Naiad Products, Inc.**, P.O. Box 1250, Falls Sta., Niagara Falls, NY 14303-0260.  
**Nakamichi USA**, 19701 S. Vermont, Torrance, CA 90502.  
**NEC Home Electronics**, 1401 W. Estes Ave., Elk Grove Village, IL 60007.  
**Nikko Electric**, 5830 S. Triangle, Commerce, CA 90040.  
**Ohm Acoustics**, 241 Taffe Pl., Brooklyn, NY 11205.  
**Onkyo USA**, 200 Williams Dr., Ramsey, NJ 07446.  
**Ortofon**, 122 Dupont St., Plainview, NY 11803.  
**Panasonic**, One Panasonic Way, Secaucus, NJ 07094.  
**Parasound**, Wharfside, 680 Beach St., 400, San Francisco, CA 94109.  
**Perreux**, 875 Merrick Ave., Westbury, NY 11590.  
**Pickering & Company**, 101 Sunnyside Blvd., Plainview, NY 11803.  
**Pioneer Electronics**, 5000 Airport Plaza Drive, Long Beach, CA 90815.  
**Polk Audio**, 1915 Annapolis Rd., Baltimore, MD 21230.  
**Proton**, 737 W. Artesia Blvd., Compton, CA 90220.  
**Quad**, 695 Oak Grove, Menlo Park, CA 94025.  
**Quasar**, 9401 W. Grand Ave., Franklin Park, IL 60131.  
**RCA**, 600 North Sherman Dr., Indianapolis, IN 46201.  
**Realistic by Radio Shack (Division of Tandy Corp.)**, 1300 One Tandy Center, Fort Worth, TX 76102.  
**Recoton**, 46-23 Crane St., Long Island City, NY 11101.  
**Revox**, 1425 Elm Hill Pike, Nashville, TN 37210.  
**Rich Acoustic Labs, Inc.**, 2401 Ross Clark Circle, Dothan, AL 36301.  
**Rotel Audio of America**, P.O. Box 653, Buffalo, NY 14240.

**SAE**, 701 E. Macy St., Los Angeles, CA 90012.  
**Sansui Electronics**, 1250 Valley Brook Ave., Lyndhurst, NJ 07071.  
**Sanyo Electric**, 1200 Artesia Blvd., Compton, CA 90220.  
**Sawafuji America**, 23440 Hawthorn Blvd., Torrance, CA 90505.  
**H. H. Scott, Inc.**, 20 Commerce Way, Woburn, MA 01888.  
**Sennheiser**, 48 W. 38th St., New York, NY 10018.  
**Sharp Electronics**, 10 Keystone Pl., Paramus, NJ 07652.  
**Sherwood (Division of Inkel Corp.)**, 17107 Kingsview Ave., Carson, CA 90746.  
**Shure Brothers**, 222 Hartrey Ave., Evanston, IL 60204.  
**Signet**, 4701 Hudson Dr., Stow, OH 44224.  
**Snell Acoustics**, 143 Essex St., Haverhill, MA 01830.  
**Sonab by AudioSource**, 1185 Chess Dr., Ste. G, Foster City, CA 94404.  
**Sonic Research, Inc.**, 27 Sugar Hollow Rd., Danbury, CT, 06810.  
**Sony**, Sony Drive, Park Ridge, NJ 07656.  
**Sota Industries**, P.O. Box 7075, Berkeley, CA 94707.  
**Soundcraftsmen**, 2200 S. Ritchey, Santa Ana, CA 92705.  
**Souther Engineering**, 429 York St., Canton, MA 02021.  
**Speakerlab**, 735 N. Northlake Way, Seattle, WA 98103.  
**Stanton Magnetics**, Terminal Dr., Plainview, NY 11803.  
**Stax Kogyo**, 940 East Dominguez, Carson, CA 90746.  
**Sumiko**, P.O. Box 5046, Berkeley, CA 94705.  
**Sylvania (North American Philips)**, Interstate 40 & Straw Plains Pike, P.O. Box 6950, Knoxville, TN 37914.  
**Tandberg of America, Inc.**, Labriola Court, Armonk, NY 10504.  
**Tannoy by Crown Associates**, 97 Victoria St. North, Kitchener, Ontario N2H 5C1.  
**Teac Corp. of America**, 7733 Telegraph Rd., Montebello, CA 90640.  
**Technics (Division of Panasonic)**, One Panasonic Way, Secaucus, NJ 07094.  
**Thiel Audio**, 1042 Nandino Blvd., Lexington, KY 40511.  
**Thorens (EPI Products, Inc.)**, 25 Hale St., Newburyport, MA 01950.  
**Threshold**, 1832 Tribute Rd., Ste E, Sacramento, CA 95815.  
**Toshiba America, Inc.**, 82 Totowa Rd., Wayne, N.J. 07470.  
**Triad Design**, 1629 East Delovos Way, Carbondale, CO 81623.  
**Uher of America**, 7067 Vineland Ave., North Hollywood, CA 91605.  
**Ultrax**, 1200 West Artesia Blvd., Compton, CA 90220.  
**Vector Research**, 20600 Nordhoff St., Chatsworth, CA 91311.  
**VSP Labs**, 670 Airport Rd., Ste. 1, Ann Arbor, MI 48104.  
**The Well-Tempered Lab**, 3108 McKinley Way, Costa Mesa, CA 92626.  
**Wharfedale**, 700 Billings St., Suite E, Aurora, CO 80011.  
**Yamaha Electronics**, 6600 Orangethorpe Ave., Buena Park, CA 90620.

**PRICE SLASHED**

List price was \$999

DAK sold it for \$689

**NOW JUST \$599**

Use Order No. 4313 plus (\$11 P&H)



# Daddy's Pride And Joy

*I had a meeting that I just couldn't miss. And, my son was giving his first speech. What's a father to do?*

## And Now, Much Much More

- For Real Estate
- For Tennis
- For Golf
- For Sales Training

- For Actors
- For Parties
- For Copying Cassettes
- For Private Pilots

- For Factory Tours
- For Equipment Demonstrations
- For Family Memories
- For Video Christmas Cards

SPECIAL NOTE By Drew Kaplan

It was amazing. Last summer, we offered a portable video system complete with color camera for just \$689.

I, and actually my whole family, tested the equipment before I wrote the ad that follows. But, it was really only after I printed the catalog that I started using the system regularly.

And, as you'll see, use it I did. My older son, Chris, and I took it on a roller coaster. Wow, just turn the page (and maybe your stomach) to see the results.

You'll see the tennis and golf swings of two DAK pros. (I still don't have time to play myself.) What's really interesting, is what Chris said when I asked him (he takes tennis lessons), what he thought of my neat tennis pictures.

He said, "The guy's feet shouldn't have left the ground and he shouldn't crouch so much." I wanted him to critique my neat pictures, not the swing. But, it does prove the value of using video to analyze any games you play.

And the best thing about this system, besides the new \$599 price, is that it is so incredibly easy to use. Just turn it on and record. There are no fancy complicated controls.

There's virtually nothing to learn. You'll be recording 15 minutes from the time that you open the box.

Below you'll find an expanded version of my original story. I've added pictures as well as lots of new uses, some suggested by DAK customers.

You can be sure that I would never have thought that plastic surgeons would use a video system. Or, that bull riders at a rodeo would want to record their feats.

By the way, I unfortunately can't reproduce moving video pictures in this catalog, so I had to use conventional cameras along side the video camera

for the pictures in this ad.

The video is much more exciting, but you'll have to see that for yourself. Here's my expanded ad.

### Daddy's Pride And Joy Expanded

By Drew Kaplan

"Where's the Unicorn?", was the title of my son's speech. And, I was going to miss it.

I had also missed the trip to Knotts Berry Farm where he had won the Unicorn. He was especially proud because neither his older brother nor any of the adults had been able to win anything.

#### POSSIBLE DIVORCE?

Everyone in the family thought I should skip the meeting, and they were probably right. But I had an idea.

I called Emerson and asked to borrow one of their portable video machines with a camera that would 1) be light enough for my wife to easily carry, and 2) wouldn't require any training.



The next day we received the system you see above. I didn't plan to sell it (I told Emerson that at \$999 it was too expensive), but I really needed it for that day.

Well, not only did this system save my marriage, but we've had a heck of a lot of

fun. Yes, I've seen the Unicorn Speech many times, as have all the grandparents. But that was just the beginning.

The very first night we unpacked the recorder, the kids turned into 'hams'. And by the way, the speech was probably much better because we used the video recorder over and over again to practice.

So, whether you're a movie star, a model, an extra or simply giving a speech at school or at work, you can practice and evaluate your presentation as often as you like.

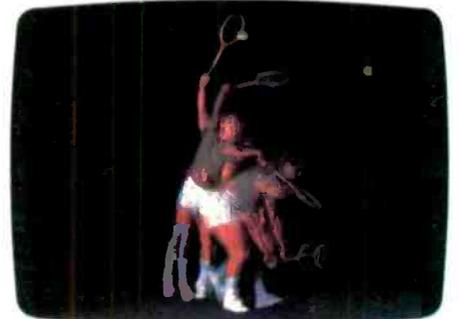
If you're like me, speaking in public is awesome. I want to know what I look like, what I sound like and how I make my points before I go live.

#### SUPER EASY TO USE

Inside and out, (yes it came right out of the box with everything, including an AC power supply and a rechargeable battery) we really put this thing to use.

Just plug the camera into the recorder. Then insert the rechargeable battery or the AC power supply. Finally insert a standard VHS cassette and away you go.

Cables are included to connect this recorder to any TV inputs from 75 ohm cable to 300 ohm flat wire to direct video for a monitor or another recorder.



Next page please. . .

Daddy's Pride And Joy Continued. . . Everything you need is included.

### LOTS OF USES

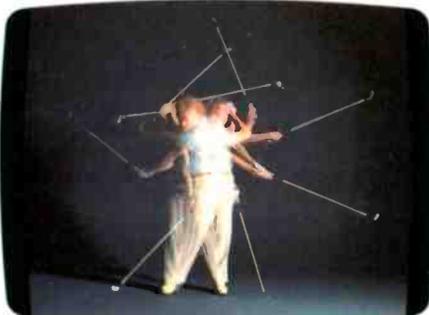
My older son is taking tennis lessons. Making recordings of your swing out on the court is an ideal way to improve. He can really study his wrist and arm action.

Here are some pictures of our resident DAK tennis pro doing his thing for my cameras. Do you think his swing is good? (See previous page.) Of course, you can freeze the action at any point to really study your swing.



It's also terrific out on the golf course for improving your golf swing. In fact, it's such a powerful method of game improvement that they sell video cassettes showing you how to improve your game.

Here's our resident DAK golf pro demonstrating his skill for my cameras. On the video tape you could freeze the action frame by frame. (He asked me to tell you that he only looks fat in the picture because of the effect of the number of exposures I needed to show his full swing.)



With this system you can really refine your game. I can't personally attest to improving your tennis or golf games, because I'm too busy writing catalogs to take time off to play.

And anyway, when I was growing up, playing ping pong seemed to be an extravagant sport to me.

### GOOD FOR WORK TOO

It's easy to see how many pleasurable uses it has. But, wait till you see what it can do for you at work. Here are just a few of the many types of work that can be enhanced by using this video system.

**For Communication.** I've already mentioned public speaking, but look at this. If you have salesmen in the field, wouldn't it be great to be able to send out a personal video description.

It can be of your newest products, automated equipment, or a message from the president about what the sales force should know about the company's future plans. It's great for morale.

With over 30% of households in the U.S. already having video recorders, you probably won't even have to supply a recorder. And, think how powerful the presentations of your sales force will be when they can show live videos of your products **IN ACTION** instead of boring price list pictures.

**For Real Estate.** It's already happening. Just imagine walking in to a prospective buyer's home with tours of 5 or 6 homes ready to show on their TV. All you have to do is walk through a home to show the view, amenities, and give a true feeling of the home.

You'll save hours. Your clients will appreciate the time you save them and you'll only take them to see the homes they'll be likely to buy.

Some agencies even have the 'sign planters' tape the houses so all the brokers in the office can get an easy look.

And, no matter what, you should have a stock tape showing the schools, the churches, the stores and any other assets of the community that are likely to help with the sale.

**For The Factory.** Why teach each new employee how to run the same machine. Sit them down in front of a TV and let the video tape do the work. You'll always know for sure exactly what the new employee has been told and they can watch the tape several times if they wish.



When you do bring them out 'on the line', you'll find the fine tuning is really easy and you'll have saved hours of repetitive teaching. Making the tapes is easy and it can really pay off.

**There's Lots More.** The power of a plant tour or equipment demonstration on tape shown to a prospective out of town customer is awesome. It can make the ultimate difference.

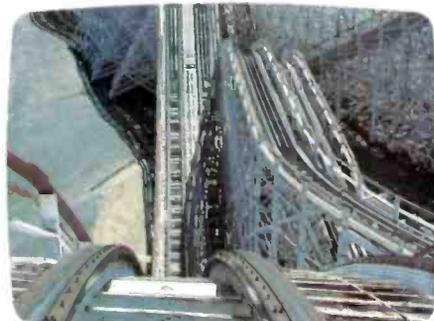
Why not have an introduction to your company in the personnel office for all new employees. And, providing live, up to the minute information for your sales force is simply priceless.

### LIVING CHRISTMAS CARDS

With video cassettes costing as little as \$5, why not send one to an old friend who lives across the country. Wow, what a great way to revive old friendships.

As many as 30% of all households are estimated to have VHS recorders. So, there's a good chance your old friends already have recorders.

My wife is planning to send out about 6 copies of a tape about us to her old 'best' friends in Akron, Ohio and Denver, Colorado and Phoenix, Arizona.



Here's the view from a twin engine island hopper we took to visit DAK's retired controller while we were in Hawaii. Unfortunately I'm not a private pilot, but just think of all the great moments you've had in the air that you can show on the ground.



If you look at the picture below, you'll see my son heading for a soccer ball. If you're into comedy, you'd have to see the video to see him not only miss the ball, but end up flat on the ground. (He was fine as usual.)



### REALLY EASY

Touch the trigger on the camera. The tape will start. Touch the trigger again and the tape will stop.

You'll have easy TTL (through the lens) viewing. There's a focus control and a 3X zoom lens. A green LED shows you that you're recording and a red LED shows you if there's not enough light.

But don't worry about light. You need only 35 lux, which is about normal room light for perfect recordings.

A 4-position switch lets you optimize the camera for standard incandescent light bulbs, fluorescent bulbs, full sun, or cloudy days. It's easy; it's quick, and you'll be amazed at the results.

A unidirectional electret condenser mike mounted on the camera picks up the sound with astonishing clarity.

You'll have loads of features, including speed search, still frame, audio dubbing, and automatic fine editing.

You'll particularly like the remote control because it allows you to freeze frame, advance frame by frame, and activate fast forward or reverse visual scan.

### A FRANK COMPARISON OF CAMCORDERS AND SEPARATES

There are two types of video systems on the market, and a dizzying array of formats. Let's look at formats first.

Camcorders use 8 millimeter cassettes, mini VHS, Beta or full size VHS. Obviously, standard VHS cassettes with their 100% compatibility with all VHS home units and their 6 hour recording capability are our choice.

The problem is that while a few of the smaller format cameras with 20 minute recording capability can weigh somewhat less than 5 pounds, VHS camcorders can weigh over 8 pounds.

Emerson's system has a camera that only weighs 1.54 pounds. Holding up 8 pounds to your eye can be a real pain.



Of course, when you add Emerson's recorder at 10.6 pounds, it weighs more overall. But, the 10.6 pound recorder is supported by a comfortable shoulder strap. So, you only hold the 1.54 pound camera up to your eye.

And, with separates, you can take the recorder without the camera for dubbing or playing tapes.

It's impossible to say which format will eventually win the contest. But, whether it's separates like the Emerson, or full size VHS camcorders, your tapes will be 100% compatible.

### AT HOME TOO

You'll get a TV tuner that turns this recorder into a standard home video recorder. You can record off the air VHF 2-13 and UHF 14-83.

The recorder has both VHF channel 3 and 4 output capability, so you can connect the recorder to any TV.

It also has 'video' inputs and outputs, so you can connect it directly to a TV monitor or to any other video recorder.

Just use normal 'audio' type RCA patch cords for really clean copies of cassettes. So, it's a portable dubbing machine.

There's an adjustable shoulder strap. And, it's backed by a limited warranty.

### CAPTURE YOUR FAMILY OR BUSINESS RISK FREE

It's not like using expensive film that has to be processed. With six hours costing about \$5, you'll have a ball.

If you're not 100% satisfied, or even if you don't like to watch your family on TV, simply return the system in its original box within 30 days for a courteous refund.

To order your Emerson Videc System (Emerson's camera is by Konica), risk free with your credit card, call toll free, or send your check for only ~~\$699~~ plus \$11 P&H. Order No. 4313. CA res add tax.

You've got to try this! Take the camera in the car and drive around your block or to your office with someone holding the camera out of the window. Wait till you see the results. It's like a roller coaster.

In fact, we rode a roller coaster 4 times to get the pictures on the previous page. It's really hard holding on for your life while you try to shoot pictures. But, the tape sure is a blast to watch.

### UNNECESSARY OPTIONS

Basically the system comes with everything you need. But, here are a few extras.

You can order extra rechargeable batteries. Each charge (2½ to 4 hours) gives you about an hour of recording. So, if you want to record more than an hour without recharging, an extra battery is just \$24.95 (\$2 P&H) Order No. 4363.

You can operate this system from your car, boat or plane's 12V cigarette lighter. The cable is just \$9.95 (\$1 P&H) Order No. 4364.

What if you're alone and you want to record yourself. We have a tripod for the camera. (Yes, there's a standard tripod mount on the camera.) You absolutely do not need this to hold the camera steady when you're recording on the move. But, if you're working alone, it's just \$39 (\$4 P&H). Order No. 4365.

Finally, if you're out in the bushes where you don't have access to a TV and you'd like to show off your tapes, we've got an AC/DC black and white (D cells not included) 5" TV for just \$69 (\$5 P&H) Order No. 4366.

Or, you can go in style with an AC/DC 5" color set (D cells not included) for just \$199 (\$7 P&H). Order No. 4367.

Of course, any TV anywhere will work perfectly with this system, so chances are you don't need any of the optional accessories. This is not just a 'starter system'. This is a complete video system just the way it comes out of the box.

## PRICE SLASHED

List price was \$999

DAK sold it for \$689

## NOW JUST \$599

Use Order No. 4313 plus (\$11 P&H)



**DAK**

INDUSTRIES INCORPORATED

Dept. SR16

TOLL-FREE ORDER LINE

For credit card orders call 24 hours a day 7 days a week  
CALL TOLL-FREE. . . 1-800-325-0800  
820C Remmet Ave., Canoga Park, CA 91304

# BSR's Endangered Colossus

Prepare for bone jarring bass and dramatically clear highs from these newly developed 15" 3-way 5 speaker systems that nearly missed their chance to charm an audiophile's ear. BSR moved its dbx and ADC divisions into one facility and these speakers almost became orphans. So now, they're yours at a close-out price.

By Drew Kaplan

It's a shame. But, it's also a great opportunity to get a pair of 15" audiophile loudspeakers with the newest in stereo imaging at a market-breaking price.

Imagine a precisely matched mirror image pair of top-of-the-line BSR speakers that can effortlessly recreate the cataclysmic impact of a full orchestral crescendo at full volume and yet offer flawlessly subtle sound detail to 21,500hz.

You'll thrill to thunderous bass all the way down to 26hz. Incredibly rich, full, vibrant sound at low volume will explode with life as you increase the volume.

But before we examine the front speaker complement, the twin overlapping crossovers and the top mounted sonic placement and ambiance speakers, let's see why they were almost orphaned.

You see, BSR, the half billion dollar electronics giant, is the parent company of two of the best names in up-scale audio, dbx and ADC.

Last year dbx developed a new multi-thousand dollar speaker system called the Soundfield One which lets you sit virtually anywhere in your room and have full stereo imaging and terrific sound.

BSR decided to consolidate ADC and dbx into one building (still 2 companies) and put all its speaker efforts into dbx.

## POOR JACK

Well, while dbx's engineers were off designing their multi-thousand dollar masterpieces, BSR's Senior Acoustical Engineer (he had been Fisher's Chief Engineer for 10 years during its top end component stereo days), was designing BSR's radically new speaker line.

The revolutionary top of the line 15" stereo imaging pair pictured above will let you enjoy superb stereo imaging without sitting directly in front of your speakers.

But unfortunately, in the consolidation move, BSR's speakers went by the wayside, and so did Jack.

Enter DAK. After a few fearful negotiations and considering the engineering costs BSR had already expended, they agreed to make the speakers just for DAK.

Because there's virtually no BSR overhead left on these speakers, and the R&D was all but complete, we've gotten these speakers for virtually the component costs plus a little BSR labor.

And don't worry about Jack. BSR had him finish the engineering (they really are great people) and they'll pay him a royalty on each speaker we sell. Besides, by the time you read this, Jack is sure to be snapped up as the Chief Engineer at another esoteric audio company.

## WHAT'S STEREO IMAGING?

Stereo imagery is the logical separation and interaction between channels. It's the successful creation of a panoramic wall or stage of music rather than the confined, easily located 2 speaker sound. **IT'S WHAT'S INSIDE THAT COUNTS**

Imagine the full thunder of a kettle drum, or the pluck of a string bass being explosively recreated in your living room. BSR's 15" sub-bass acoustic suspension driver will revolutionize your concept of low clean bass.



Its magnetic structure weighs a thundering 48 ounces. But that's not all. The magnetic field is developed by the rare earth metal Strontium for state of the art massive but flawlessly controlled bass.

A 38mm voice coil with a 200° centigrade temperature capacity, will handle the most demanding digital or analog recordings. And, a new super rigid cabinet design virtually eliminates coloration due to uncontrolled cabinet resonance.

At low volume, the bass will fill in and envelope you. At high volume, your room, your walls and your neighbors will shake. This is definitely not a speaker system for apartment dwellers.



## MATCHED PAIRS

The mid-range and high end of BSR's speakers are truly unique. Front mounted 8" polypropylene mid-range drivers provide rich sound while top mounted 5" polypropylene mid-range drivers provide an open, lifelike ambiance.

Front mounted exponential horn tweeters provide awesome brilliance to 21,500

hz, while top mounted tweeters enhance separation because they are mounted to the outside edge of each speaker.

So, this system has a specific left and a specific right speaker. You'll find wide, but interactive separation that will vastly widen your ideal listening area.

The imagery will give the illusion of musicians actually playing in front of you. Your music will take on a three dimensional quality. You'll enjoy superb stereo imagery regardless of each speaker's specific placement in your room.

## MORE SPECIFICS

The exponential horn tweeters, both in front and on the top of these systems, employ 25mm rigid phenol diaphragms for stability and accurate response.

Polyamid-imid binders and ferro-fluid coolant allow for a 300% increase in heat dissipation so you can drive the voice coils up to 200° centigrade.

**Now, the mid-range.** Both the 8" front firing and the 5" top firing polypropylene drivers reproduce the mid-range frequencies like no ordinary speakers.

It's amazing that so many speaker manufacturers simply slap in 5" paper mid-ranges to reproduce what's really the major portion of the sound spectrum.

BSR's 8" and 5" polypropylene mid-ranges are rigid, exacting drivers that deliver incredibly pure uncolored sound.

They have matched 25mm voice coils, also protected by ferro-fluid and polyamid-imid to 200° centigrade. They are driven by powerful barium ferrite magnetic fields.

## NOT QUITE FINISHED YET

To prevent phase shift and cancellation, two totally separate crossover networks are employed in these speakers.

Next page please. . .

### BSR's Colossus Continued

All frequencies below 800 hz are directed to the 15" woofer. The front system routes frequencies above 800hz to the 8" mid-range to take full advantage of its superb reproduction capabilities. Frequencies above 3400hz are routed to the horn tweeter.

The top mounted system routes only frequencies above 1200hz to the 5" polypropylene ambient mid-range driver, and frequencies above 3400hz are routed to the top sonic placement tweeter.

There are level controls for both the top and front mounted speakers so that you can voice the speakers to match your musical taste and environment.

Note: Only the top tweeters are mounted at the the edges. The front mounted tweeters are conventionally mounted

for acoustical symmetry.

Each speaker is fuse protected for up to 200 watts peak, 150 watts continuous power. You can operate these super efficient speakers with as little as 20 watts.

#### AND OH WHAT A PRETTY FACE

The speaker systems are 30" tall, 19 1/4" wide and 10 1/2" deep. Their lovely oak wood-grain appearance is enhanced by the dark removable grill cloths that beautifully contrast with the rich wood-grain tones. They're a statement of audio elegance when placed in any room. They're backed by BSR's 2 year limited warranty.

#### A COLOSSAL DREAM COMES TRUE RISK FREE

You'll hear depth of sound at low levels that was previously unobtainable. And yes, when you crank up the volume, your music will explode with realism and drama.

Try these speakers in your own system. Then compare them at any Hi-Fi Store with any pair of speakers up to \$1000. If they don't beat all the competition hands down, simply return them to DAK in their original boxes within 30 days for a courteous refund.

To order your matched pair of BSR top-of-the-line 15" 3-way 5 speaker systems with unique stereo imaging risk free with your credit card, call toll free or send your check for DAK's market-breaking price of just \$298 for the MATCHED PAIR plus \$22 for Postage and Handling. Order No. 4352. CA res add tax.

It's a dream system for an audiophile. Sonically pure, thunderously powerful, these BSR speakers will make your future listening years an on-going fabulous, if not earthshaking experience.



**So, your spouse or neighbors aren't into thunder and paint peeling audio. Don't worry, BSR has developed two smaller but still mighty versions of the colossus that use the same basic components, at incredible prices.**

Don't despair. You won't be relegated to 'little sound' by these more sane versions of the Colossus. After all, a 15" 3-way system is usually a distant dream of only the most ardent audiophile.

#### 10" 3-WAY SANE COLOSSUS

You will experience the same dramatic highs to 21,500hz produced by the identical exponential horn tweeters with the same rigid phenol diaphragms. There's even a variable brightness control.

And, don't look for any cheap paper mid-range speakers. You'll thrill to rich, full, incredibly pure music from a 5" rigid polypropylene mid-range driver.

The 10" woofers utilize a massive Strontium magnetic structure and can reproduce dramatically clean, massive bass down to 32hz. Unless you actually set these speakers next to the Colossus, you'd think the bass is incomparable.

The crossover points are at 1200hz and 3400hz. The speakers are rated for 90 watts peak and 45 watts continuous power and require at least 15 watts.

If you're a normal audio person, you'll be thrilled with these as main speaker systems for your stereo. But, if you're a slightly crazy DAK-type audiophile, the big Colossus Systems add a thrill to your music that goes far beyond printed specs.

These speakers are 23 3/4" tall, 13 3/4" wide, and 8 3/4" deep. Their rich oak wood-grain appearance which surrounds the contrasting dark grill cloth, will be an elegant addition to any room.

#### 8" BOOKSHELF COLOSSUS

Where space is a consideration, your music need not suffer. BSR's newest 2-way 8" systems provide an astounding level of musical fullness.

BSR's exponential horn tweeter produces superb highs to 21,500hz. The 8" woofer/mid-range produces bass down to a very respectable 38hz and powerfully clean mid-range up to 2500hz.

On the floor or in a bookcase, these speakers will give you years of full rich beautiful sound. They are just 19 1/4" tall, 11 1/4" wide and 8 3/4" deep. Their rich oak wood-grain appearance which surrounds the contrasting grill will be a beautiful addition to any room.

All BSR speaker systems are fuse protected and backed by BSR's standard 2 year limited warranty.

#### TRY RICH DRAMATIC SOUND RISK FREE

These smaller versions of the Colossus may have a hard time competing with the awe inspiring sonic violence of their bigger brother. But, compared with tra-

ditional speakers, you'll find they've gained greatly by their genetic origin.

If you're not 100% satisfied, simply return them to DAK within 30 days in their original boxes for a refund.

To order the 10" 3-way Sane Colossus with its horn tweeter, polypropylene mid-range and 10" Strontium woofer risk free with your credit card, call toll free, or send your check for DAK's breakthrough price of just \$69 each plus \$9 P&H each. (2 required for stereo). Order No. 4348.

To order the 8" 2-way Bookshelf Colossus with its exponential horn tweeter and 8" Strontium woofer/mid-range risk free with your credit card, call toll free, or send your check for DAK's breakthrough price of just \$44 each plus \$6.50 P&H each. (2 required for stereo). Or. No. 4347.

These speakers have gained a great deal from their big brothers. They'll bring you years of superb musical sound and add truly elegant visual appeal to any room.



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# The Missing Link Plus

*Squeeze the acoustics of an intimate club or a concert hall into your favorite stereo listening area without affecting your speakers. And then, expand the acoustics of your car or personal stereo at a breakthrough price.*

By Drew Kaplan

Electricity's in the air. There's the roar of the crowd. There's the feedback between the performers and the audience. Live performances are exciting.

But, it's the sound. It really seems to be different. It's more alive. It seems to crackle with energy. And, it sounds fuller.

Your home stereo, even with terrific specs, just can't seem to reproduce the 3-dimensional effect that you experience at a live performance. And, even with the finest car or portable stereo, while the sound may be technically perfect, the excitement is likely to be missing.

## THE FLAW

Interestingly, when you listen to music at home, you're probably listening to better equipment than at a live concert.

At most concerts you really don't hear a singer or the instruments. What you do hear is the auditorium's PA system.

While PA systems have lots of power, they simply aren't made to deliver the frequency response and dynamic range of today's quality home stereo equipment.

**So, what's the big difference?** Simple, you need to listen to your stereo in a full size concert hall. And, now, you can have a new electronic full size concert hall or an intimate club in your own home.

The real secret to the dramatic dimension of sound you hear at a live performance is the acoustics of the hall.

The acoustics of a hall consist of reflectivity and tambour. Or in English, the amount and types of echo and the number and delay of the echo components.

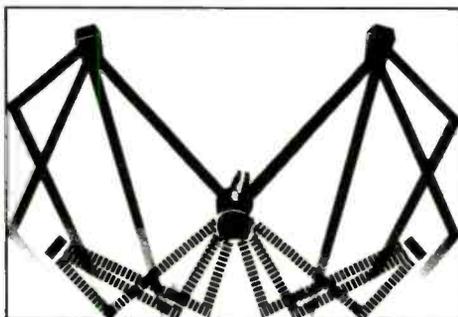
## THE SOLUTION

Architects charge hundreds of thousands of dollars to design buildings where the acoustics will be dramatic.

ADC has developed a digital delay system that in effect does for your listening room's acoustics what architects do for concert halls.

After all, no matter how good your stereo system is, an 80 piece orchestra doesn't belong in a ten by twelve room.

**Your stereo's speakers are 100% unaffected**, unless you want them to be. The ADC digital delay system consists of a preamp, twin built-in amplifiers and a pair of full-range ambiance speakers.



The ADC Digital Delay System provides all the delay you'll need to turn your favorite listening room into a full size concert hall. Just aim the two supplied speakers at the back or side of your room as shown, and you'll hear realism like never before. The sound will open up with incredible realism.

Earlier, we had sold Kenwood's digital delay which mixed its delayed signals through your main speakers.

It wasn't a match for the Koss unit. **But, it had one big advantage.** You could record the combination of normal and delayed signal onto your cassettes.

So, you could have a vastly expanded acoustic experience in your car, with your boom box or with your personal stereo.

ADC's is the ultimate system. You'll have all the separate ambiance only obtainable with extra speakers.

Plus, you can add time delay to your front speakers (if you desire), and you can record the effect on cassettes. Now you can enjoy the exhilaration of concert hall sound even with headphones.



Just grasp the controls, close your eyes and prepare for an adventure. You'll feel the room grow or shrink around you.

## TOTAL CONTROL

ADC's digital system gives you multiple path echoes which you can tailor into an infinite variety of environments.

The 'Direct Signal' control is simply the

input level. The 'Delayed Signal' feeds the amount of delay selected with the 'Delay Time' knob to the front speakers.

The 'Delay Time' knob lets you select from a 4 millisecond delay up to 1024 milliseconds. But one delay is much too simple. On the back panel are 'Second' and 'Third Order Delay' controls. So, each delay on the front panel has a second and third transient response.

The back panel controls come preset, but you can adjust them if you desire. Besides, there's a 'Feedback Control' that lets you throw some of the existing echoes into the main inputs of this unit so they can interact with the main signal and add more realism.



There's a 'Sub Channel' level control for the rear speakers. Now, you can make virtually any room sound hard or soft, or large or small.

Finally, there are both tape inputs and outputs, so when you hook this unit into your tape monitor loop (patch cords included), you don't lose the use of your tape deck. And of course you can use it with an equalizer or any other enhancer.

The change in sound quality will be enormous. It has a frequency response from 10hz to 100,000hz  $\pm$  1db, and a dynamic range of 110db. It's backed by ADC's standard limited warranty.

## ENLARGE YOUR HOME RISK FREE

Listen to your two front speakers and then switch in a concert hall or club. Wow! Then make a tape using the echo. Wait till you hear your car grow.

If you aren't 100% satisfied, simply return it to DAK in its original boxes within 30 days for a courteous refund.

To order your ADC Digital Delay System complete with a pair of Ambiance Speakers risk free with your credit card, call toll free, or send your check for DAK's breakthrough price of just \$199. (\$11 P&H) Order No. 4314. CA add tax.

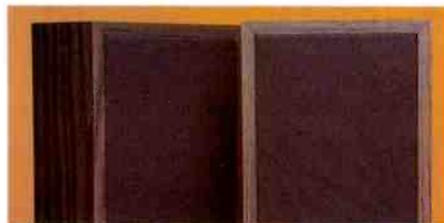
Listen to romantic vocals in a small club and Wagnerian opera in a large auditorium. Now you can electronically add the ideal listening room to your home.



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You'll have a phenomenal range of controls to electronically adjust the acoustics of your listening room.

# A Rose By Any Other Name

*It's the sweetest phone that this writer has ever used. From its elegant good looks to its elegant sounding speakerphone, it's a class act. And, it remembers and dials up to 200 numbers by THE NAME of the person you want to call. Plus you can use it on 1 or 2 lines.*

By Drew Kaplan

It's not red. And it has no aroma. But not only is it not just a rose amongst the thorns, Mura's all new name dialing 2-line conferencing speakerphone is the rose amongst roses.

As president of DAK, I've tested hundreds of phones. Some are very good and you will find them in DAK's catalog. But, I've never used a better sounding, more useful phone, at home or at the office, than the phone pictured above. Let me tell you some of the reasons why.



## FIRST, IT DIALS BY NAME

I hate having to remember phone numbers. With this phone, all I do is push the 'H' button when I want to dial Home. The 'M' button dials Mura (this phone's manufacturer). And, the 'I' button dials my insurance broker. It's really great at home.

Where I have more than one name that begins with the same letter, I can scroll through the names before it dials, or enter just the first 3 letters. So, if I want to dial Howard instead of home, I push 'H', 'O', 'W'.



It's quick, it's easy and you'll never have to remember or look up and dial anyone's number again. Each memory location can hold up to 32 digits and you can store up to 200 different names. It has a memory capacity of 4096 digits.

You can store your Sprint and MCI codes with the person's name, in a separate location that the phone automatically accesses as it dials, or totally separately so that you can automatically access the service and then dial a number manually.



And speaking of manual dialing, you don't even have to push the speakerphone button to dial. When you touch the first number, the phone automatically seizes the line, turns on its speaker, and you have on-hook dialing.

So, you never have to lift the receiver or activate the speakerphone unless someone answers the line.

## FORGOTTEN HANDSET

This phone has the latest K2 handset. It gives you traditional Phone Company fit and feel, yet, I find it even more comfortable to use.

But, you'll probably never use it. The speakerphone is so powerful, so clean, and so easy to use, you'll never pick up the handset unless you need privacy.

I've used good speakerphones before, but this speakerphone's sound quality rivals an in-person conversation, not a phone call. How's that for a description



of a phone you can try on a 30 day risk free trial?

## 2-LINE MASTERPIECE

This is a two-line phone, but even if you only have one line, I'd plug it in and forget about its two-line capabilities.

You can select Line 1 or Line 2. And, you can push Conference to combine both lines for convenient business conferences or friendly group calls with friends. There are LEDs that show which line is 'In Use', 'On Hold', or which line is 'Ringing'. And, there are different rings for each line.

**Installation is a breeze.** It simply plugs into one standard modular 2 line jack or two modular 1 line jacks. Nothing could be simpler.

## PAGES OF HELPFUL FEATURES

The list of features would have to be microfilmed to fit on this page. There's a large LCD display that shows you the name you want to call and the number.

An automatic timer tells you exactly how long you've been talking. And, a clock appears on the display whenever you hang up.

Every conceivable feature from Mute to Tone/Pulse switching, to Pause, to Flash, to battery backup (2 C batteries not included), to three direct Emergency Access Memory Keys and a lot more is included.

There's even Automatic Redial which will redial a busy number for you every 30 seconds.

## YUPPIE POWER

I'm anything but a yuppie, even though I just turned 39, but when you look at the sleek, swept back, silver-blue HiTec appearance, and when you examine its complete computer keyboard, you'll understand why it would warm a yuppie's heart. My heart is warmed by what it

does, but I must admit it is impressive.

It's made by Mura and here's one reason why the phone sounds so great. Mura is a division of TIE/communications, Inc., which just happens to be one of the largest inter-connect (big business phone systems) companies in the world. In fact, they're listed on the Stock Exchange.

The phone is about 9" wide, and it's backed by Mura's limited warranty.

## PUT A ROSE ON YOUR LINE RISK FREE

It's the best sounding speakerphone I've ever heard. Dialing by names instead of numbers is a quantum leap in both technology and convenience.

If you are not 100% convinced, as I am, that this is the best sounding, most convenient phone you have ever used, simply return it in its original box within 30 days for a courteous refund.

To order your Mura Name Dialing 2-Line Speakerphone with God only knows how many features risk free with your credit card, call toll free or send your check for DAK's introductory price of just \$129 plus \$4 for postage and handling. Order No. 4335. CA res add tax.

**Note:** Order today for September delivery. We will ship on a first come first served basis. Your credit card won't be charged until shipment is made.

In DAK's electronic world, where a new best is achieved almost every day, this phone stands out as the 'best' best I've ever had the pleasure of introducing.



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# 1200 Baud Smart Duck

If it walks like a duck, sounds like a duck, and looks like a duck, it darn well better act like a duck. And ADC's new Hayes Compatible 1200 baud auto-answer/auto-dial modem is one heck of a duck. And, it's a market buster at just \$169.

By Drew Kaplan

Hats off to Hayes. They've just about written the book on specs and protocol for the 1200 baud modem market.

Every professional modem bills itself as 'Hayes Compatible'. But the big question is, how much does it really cost to make a top-of-the-line 1200 baud modem? Or, who's getting rich?

ADC's modem is made in the same factory by the same people as one of Hayes's biggest competitors. And, ADC is a division of BSR, the enormous half-billion dollar electronics giant.

So for \$169, you'll not only be getting a duck that quacks properly to Hayes modems, but sings like a nightingale to your pocketbook and can save you a fortune in time with its extra features.

## DUCK SOUP

Any computer with an RS232 standard serial port, will work flawlessly with this modem. And, virtually any modem or terminal software that's compatible with Hayes, will be compatible with ADC.

We've even got intelligent programs, cables, and interfaces (if you need them) to activate your IBM PC or Clone, and your Apple IIE or IIC.

I've owned a Hayes 1200 baud modem for about 2 years. I just unplugged it and plugged in ADC's to operate my Hewlett-Packard dumb terminal which I use at home to monitor DAK's computer.

The only differences I noted were improved monitor sound, more screen displays and a help menu. And oh yes, one last extra. I use a few local data bases whose phone lines are always busy.

Well, ADC's intelligent modem recognizes a busy signal, hangs up and keeps retrying the number every 30 seconds.

There are less important (to me) extras like day, date and time, an extra phone jack and auto tone/pulse switching. So, you'll love it for discount services.

## DO YOU NEED TO KNOW?

Just think, you can transform your PC into a terminal that can interact with main-frames. You can download information from your main office computer and run Lotus, Wordstar or you name it. It's all possible with your PC and modem.

You can exchange information with other computers. Say you're a writer, you can send a chapter from your home or office in Los Angeles to New York, have it edited and sent back to you.

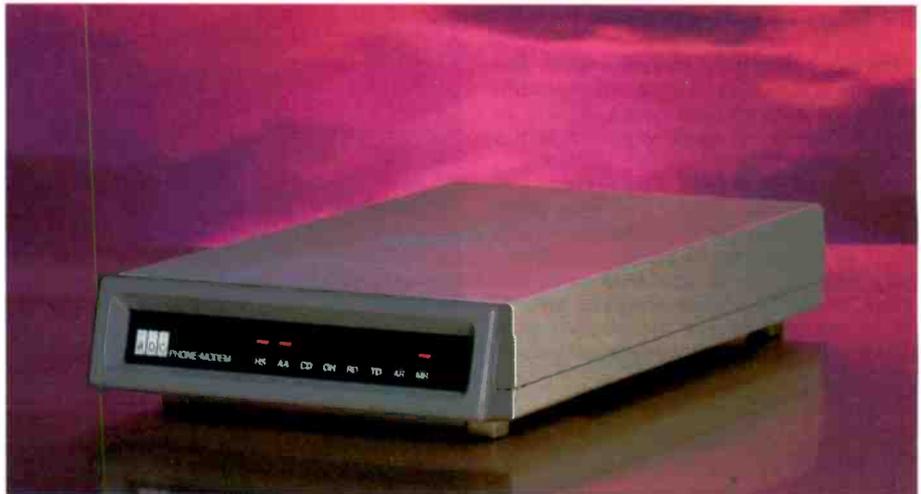
You can even send it directly to typesetters and have a book or a newsletter prepared from your transmitted file.

It's really great when drafts of contracts are flying back and forth. Why retype everything over and over again?

Electronic mail lets you type in your message and you won't have to worry about playing telephone tag any longer.

You can get the weather in Baltimore, get the latest quote on your company's stock, or even reserve a seat on the next flight to Las Vegas. You can upload public domain software (there's an enormous amount of free software) or sample the newest programs before you buy.

There are pay data bases like Com-



puServe and The Source that have information about anything, and thousands of free bulletin boards about everything from Ham Radio to Parapsychology.

There's even a new book that lists and describes such diverse data bases as one with 6500 references about coffee, to one with 2,000,000 on agriculture.

Of course, economics, medicine, law and computers are all well represented.

## THE TECHNICAL SIDE OR, WHY 1200 BAUD?

The ADC Modem will communicate at 1200 baud (about 120 characters per second) or 300 baud (about 30 characters per second) automatically, depending on the link at the other end.

So, it's clearly a decision of money and time. 1200 baud is roughly 400% faster than 300 baud, so if you transfer data across the country you save 400% on your phone bill. And think of the time \$169 can save you!

If you download material from pay data bases, even though some charge more for 1200 baud, you still come out way ahead because of the amount of information you get per dollar.

It comes with a modular phone cord that you simply connect to any standard modular jack and it uses standard Bell 103 and 212A protocols. It operates in half or full duplex.

Its built-in microprocessors let you automatically answer in-coming data calls and act on all Hayes commands.

It even waits for dial tones and phone network tones during auto-dial. The modem is 9½" X 5½" X 2". It's backed by ADC's standard 1 year limited warranty.

## HOOKING IT UP MADE EASY

All you need is a serial output, a cable and a modem program. All our modem programs on disk let you save, upload and download files. Look how easy it is.

If you own an IBM PC or a clone, usually you'll find an RS232 serial port already built-in. All you need is our cable and modem program on disk which we've packaged together for just \$29 plus \$3 P&H. But, before you order your cable, you may need a short sex education course.

Sex Education 1A. You need to determine whether your computer's RS232 connector is male or female.

If you look at the picture below this paragraph, you will note that the connector has holes going in. It's a female. If it had copper pins sticking out, it would be a male. Now wasn't that simple?



So, if yours is female, order our male cable and modem program Or. No. 4353. If you have male pins sticking out, order our female cable, Order No. 4354.

If you don't have an RS232 port, we have a serial interface card for your IBM or Clone complete with cable and modem program for \$99 (\$4 P&H) Or. No. 4355.

For your Apple IIC, your serial interface is built-in. All you need is our cable and modem program on disk. They are just \$29.90 (\$3 P&H) Order No. 4356.

For your Apple IIE, you'll need a serial interface with an RS232 port, a cable and a modem program. It's all yours for just \$89 (\$4 P&H) Order No. 4357.

## 1200 BAUD SMART DUCK RISK FREE

For business or pleasure, you'll communicate, gather information and save time. If you aren't 100% satisfied, simply return it in its original box to DAK within 30 days for a courteous refund.

To Order Your ADC 1200 Baud Intelligent Modem risk free with your credit card, call toll free, or send your check for DAK's market busting price of just \$169 plus \$6 P&H. Order No. 4334.

The OnLine Directory of over 1,100 Data bases, complete with descriptions is just \$14.95 (\$2 P&H) Order No. 4358.

The ducks will sure to be quacking up a storm when they see BSR's factory direct, through DAK, price on this state-of-the-art 1200 baud intelligent modem.

Hayes, Lotus, Wordstar, IBM, and Apple IIE & IIC are registered trademarks of Hayes Microcomputer Products, Lotus Development, MicroPro, International Business Machines and Apple Computer.



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# Answering Attack Phone

Let's vanquish the problem of bulky complicated answering machines. And let's conquer the problem of lost beepers. Now when you're out, just the sound of your voice is all you need to retrieve your messages.

Stamp out beepers. Here's a microprocessor controlled answering machine that's so smart it will give you your messages without using a beeper.

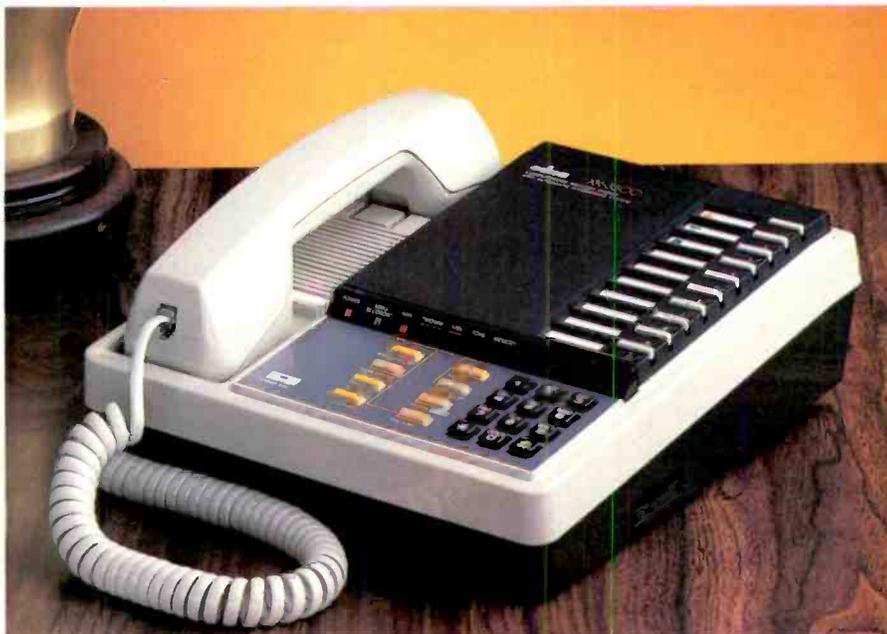
But, before we explore just how easy it is to use and all of its sophisticated features, such as, toll saver, 2-way record, and remote saving or erasing of messages, let's take a look at the phone.

Like the answering machine, the phone has attacked wasted motion, complicated commands and uncomfortable fit with the latest in technology.

Here's a phone that will dial any of your 10 most frequently called numbers with the touch of a single button. Just touch another electronic button and the phone will operate in Tone or Pulse.

Another button gives you instant redial. And, as for comfort, well just wait till you cradle the great sounding Phone Company style handset on your shoulder.

This phone which can be desk or wall mounted, is no larger than a conventional feature phone. It's just 9" deep and 8½" wide. And, a standard instantly changeable audio cassette (included) is concealed just to the right of the handset.



## TOLL SAVER, OR THE 4TH RING

If you're across town or out of town, why invest a dime or pay for a toll call if you have no messages?

Each time you reset your machine, it will answer the first call on the 4th ring. After it's taken its first message, it automatically starts answering on the second ring. So, when you call in, just hang up if you get to the third ring. You'll automatically know that you have no messages.

If you do have messages, just give the machine a special signal with your own voice, and you'll receive your messages. Then you can have the machine save or erase the messages that you have heard.

## MISSILE GUIDANCE

This machine is so smart that it electronically marks each message's location. It knows precisely where your outgoing announcement as well as each message that has been left is located.

The action is fascinating to watch. First, it plays your outgoing announcement. Then, it sounds a tone as it zips to the end of the last message it took.

It then beeps and starts taking the new message. Finally, it rewinds back to the precise start of your outgoing announcement, prepared to start again.

and you'll have a record of the call.

Everything is automated. Just touch one of the full logic controlled buttons and this computer answers with a confirming beep and jumps into action.

To play back messages at home, just touch the 'Message Report' Button. A flashing message light even tells you at a glance if you've received any messages while you were out.

## EASY INSTALLATION

Just plug in the modular phone jack and the included AC adaptor. Then, just record your announcement.

The Answerer Attack Phone is ready to take messages or act as your super automated office or home telephone. It's made by Unitech and backed by their standard limited warranty.

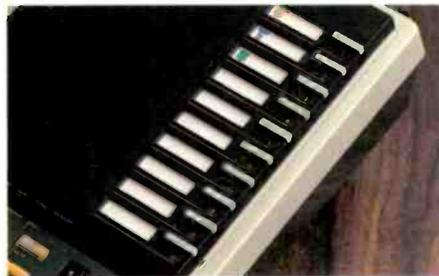
## THE ANSWERER ATTACK PHONE RISK FREE

It's new. And, it will set you free. From its Phone Company feel handset to its electronic convenience extras to its state of the art answerer, you'll have incredible convenience and simply great sound.

If you're not 100% thrilled, simply return it to DAK within 30 days in its original box for a courteous refund.

To order your Unitech Answerer Attack Phone with totally automated telephone features and easy to use answering machine risk free with your credit card, call toll free or send your check for DAK's breakthrough price of just \$99 plus \$7 P&H. Order No. 4359. CA res add tax.

Wait till you hear the phone. Wait till you use the 1 touch dialing. And, wait till you hear the sound quality and enjoy the convenience of this answering machine.



## VANQUISH THE REST

Easy to use. Forget cumbersome 'fixed time' outgoing announcements. Most machines make you fill a 20 second continuous loop cassette.

If you've ever tried to do this, you know just what a pain it is to make your message just the right length. With the Attack Answerer, just push 'Record Announcement' and talk into the built-in microphone from 2 seconds to 50 seconds.

After you've recorded your announcement, the machine will automatically play it back for your approval.

When you get your first call, it will be answered on the 4th ring. (Read on to see why.) If you're at home, you'll hear the message being left by the caller over the built-in speaker if you desire.

If you wish to talk to the person, just pick up the receiver and start talking. If you don't, you've just experienced the privacy protection called 'call screening', which lets you hear who's calling before you decide to answer.

This machine will let your caller leave any length message up to one minute long. If they hang up in 20 seconds, that's how long the message will be.

If they don't choose to leave a message, the machine will ignore the call. So, when you play back your messages, all you'll hear are messages, no dead space. And of course, you won't have to listen to your own announcement between each message you receive.



## MORE SMARTS

If you want to record both sides of a call, just touch the 2-way record button

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## Future Perfect.

**M**any speakers today are supposed to be digital ready. But what happens if there's something beyond digital?

The original Bose 901<sup>®</sup> Direct/Reflecting<sup>™</sup> speaker was ready for digital back in 1968, because it reproduced music with realism and impact never before heard from a speaker. Today's Bose 901 Series V adds some 350 design improvements to the original's legendary performance. Unlimited power handling and very high efficiency make the Series V speaker ideal for listening to the best that audio presently has to offer—the digital compact disc. And while no one can predict exactly what the future has in store, one thing is certain: it will sound better on the Bose 901 system. Audition the complete line of Bose speakers at your authorized Bose dealer. For more information, write: Bose Corporation, Dept. SR, 10 Speen Street, Framingham, MA 01701.

**BOSE**<sup>™</sup>  
Better sound through research.

*Stereo Review's critics choose the outstanding current releases*

## ELIAHU INBAL'S ARDENT, SOARING MAHLER SECOND

CHANCES would seem remote that a new recording of Mahler's *Resurrection* Symphony could challenge those by the likes of Tennstedt, Solti, Bernstein, Kubelik, Walter, and Klemperer for preference among the fourteen available versions (five on Compact Disc). But I am rash enough to draw just that conclusion about the performance conducted by Eliahu Inbal on two Denon CD's. For soaring vitality and ardor, I would rank it very near the top of the heap.

I have followed the recordings of this Israeli-born conductor, now fifty, from his early work for Philips to the Bruckner symphonies he did for

*Inbal: intelligence and musicality*



Teldec. He has shown himself to be a conductor of keen intelligence and musicality, and those qualities are certainly evident in his new Mahler Second with the Frankfurt Radio Symphony.

The opening movement strikes a convincing compromise between the stately-funereal and the fiery Promethean. The *Ländler*-style second movement, leisurely without being heavyhanded, has a nice lilt, and Inbal gives a sense of urgency to the contrasting sections while taking great care to achieve clear linear textures. The ironic elements of the scherzo are communicated with more than the usual effectiveness, and contralto Doris Soffel sings the lovely *Urlicht* solo as well as or even better than she did for Tennstedt on Angel.

The apocalyptic finale is a real blockbuster in this recording, not simply in terms of sonic volume but by virtue of the ardor, both mystical and fearful, with which Inbal and his vast choral-orchestral forces infuse it. Soffel and soprano Helen Donath are clearly miked separately, but it is done with discretion and great effectiveness; they neither get lost in the choral mass nor stand out obtrusively. The choruses show a fine command of dynamic nuance and have an excellent balance between female and male voices, giving unusual body and tonal richness to the sound, as in the unaccompanied exclamation, "*Berreihe dich!*," just before the final apotheosis.

The orchestral playing under Inbal's direction is superb throughout, but it is the *spirit* of this performance that makes it special. The recording itself is extremely wide in both frequency range and dynamics, and it is blessed with the acoustic surround of Frankfurt's Alte Oper, which contains the sound magnificently yet allows the full range of overtones needed to provide the luminosity basic to a full realization of this score. *David Hall*

**MAHLER: *Symphony No. 2, in C Minor ("Resurrection")*.** Helen Donath (soprano); Doris Soffel (contralto); Chorus of the Norddeutscher Rundfunk, Hamburg; Dale Warland Singers; Frankfurt Radio Symphony Orchestra, Eliahu Inbal cond. DENON © 60C37-7603/4 two CD's no list price.

## THE JUDDS CROSS OVER ON THEIR OWN TERMS

FROM Naomi and Wynonna Judd's first mini-album, released in 1984, it was clear both that this mother-daughter duo was unusually talented and that their influences were diverse and eclectic, ranging from individual artists, such as Bonnie Raitt and



*Wynonna and Naomi Judd: unique*

Joni Mitchell, to entire genres, including folk, urban and Mississippi blues, commercial pop, rock-and-roll, Western swing, gospel, and bebop. But their music clearly showed that their hearts were in country and that they had amalgamated all their influences into a personal style, an utterly unique vocal approach that made them—especially daughter Wynonna, with her lusty, drop-dead pipes—sound like no one else on earth.

Aside from the songs on the Judds' earlier albums that stressed their country origins, there were ballads, blues, and faster-tempo songs that set the stage for an LP that would move them into a wider spotlight, and their new "Rockin' with the Rhythm" does just that. What it does not do is tamper with their unique style or with the distinctive acoustic-guitar framework of their sound, which was crafted by Don Potter, affectionately known as "the third Judd."

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The main difference is that there are no country-oriented lyrics here, no John Deere tractors on *this* new farm. The structure of the songs is somewhat more sophisticated as well, with a predominance of cross-over, hybrid rhythms, again incorporating all of the Judds' wide influences. There is one tune that finds a child asking grandpa about the good ol' days, but *Working in the Coal Mine* turns out to be the jive, 1966 Lee Dorsey pop hit, not the kind of gnawing, affecting story-song one might expect from Kentuckians with close ties to the land. That song and the opening cut, *Have Mercy*, left me feeling slightly manipulated, but they are the only two low points on the album.

"Rockin' with the Rhythm" has a world of wonderful things going on simultaneously. The instrumental work is, as usual from this outfit, above reproach, and producer Brent Maher has a brilliant feel for the interplay between the acoustic lead guitar and the women's voices. Above all, it is those voices that make this album a mandatory addition to any record collection.

As she demonstrates on the slow ballad, *Tears for You*, twenty-one-year-old Wynonna Judd is probably the most important new female country voice of the last twenty years. And there are moments, particularly on that song and on the jaunty *I Wish She Wouldn't Treat You That Way*, when her mother's harmony singing will demolish you.

Whether you are a city or a country dweller, I cannot imagine your not liking this record. Good music, no matter what name you want to put on it, will always sound sweet.

Alanna Nash

**THE JUDDS:** *Rockin' with the Rhythm*. The Judds (vocals); Don Potter (guitars); instrumental accompaniment. *Have Mercy*; *Grandpa (Tell Me 'Bout the Good Old Days)*; *Working in the Coal Mine*; *If I Were You*; *Rockin' with the Rhythm of the Rain*; *Tears for You*; *Cry Myself to Sleep*; *River Roll On*; *I Wish She Wouldn't Treat You That Way*; *Dream Chaser*. CURB/RCA AHL1-7042 \$8.98, © AHK1-7042 \$8.98.

## UNSURPASSABLE SCHUBERT FROM RICHARD GOODE

**P**IANIST Richard Goode's Schubert recordings have all been very appealing, but his performance of the last and greatest of the sonatas, the Sonata in B-flat Major, D. 960, on Nonesuch, goes beyond that. It leaves nothing unexplored or unsaid. It has no superior among currently available recordings of the work, and few peers among the great ones of the past. The essence of its persuasiveness is that the listener—or *this* listener, at any rate—is simply not

aware of a "great interpreter" at work, but only of the music's own incredible structural and emotional power, whose impact is stronger, perhaps, for seeming so unforced.

Goode does not take the exposition repeat in the first movement, which may trouble some listeners more than others. His approach strikes me as so proportioned that the repeat is not only not missed but would have dissipated the cumulative intensity. Every phrase rings true and seems to relate to what precedes or follows it with that sense of inevitability that so often in these valedictory works goes hand in hand with Schubert's air of inspired spontaneity.

There is room on side two for two additional pieces, the Allegretto in C Minor and the Impromptu in A-flat, both performed on the same level of Schubertian exaltation as the sonata. If Goode has provided a shining example of how to play Schubert on a modern piano, Max Wilcox, who produced and engineered the recording, has provided a no less striking example of how to reproduce the instrument's sound. In terms of perspective and suitability to the character of the works at hand, as well as overall realism, this fine analog production can hold its own with the best recent digital ones—for which it might be easily mistaken. What a treasure!

Richard Freed

**SCHUBERT:** *Piano Sonata in B-flat Major (D. 960)*; *Allegretto in C Minor (D. 915)*; *Impromptu in A-flat Major, Op. 142, No. 2 (D. 935, No. 2)*. Richard Goode (piano). NONESUCH 1-79124 \$10.98. © 4-79124 \$10.98.

## PHILIP GLASS'S POWERFUL SCORE FOR "MISHIMA"

**P**HILIP GLASS'S score for Paul Schrader's biographical film *Mishima* is much like the Japanese writer himself—alternately sensual and ascetic, martial and poetic, dramatic and introspective. Now on a Nonesuch recording, Glass's soundtrack is a series of short orchestral and cham-

Goode: playing that combines intensity with a sense of inevitability



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ber-music sketches in three basic forms, corresponding to the three perspectives from which the film views its subject. Bracketing the film are segments dealing with the last hours of Mishima's life, in which we see him make his preparations for the act of ritual suicide, *seppuku*, that was to be the ultimate expression of his philosophy of art-into-action. The music for these segments, called *November 25*, is direct, dramatic, and highly charged—steadily pulsing bass strings punctuated by snare drums

The third perspective from which Mishima's life is examined is through his work—specifically, through highly stylized stage dramatizations (no attempt is made to disguise the sets) that combine the conventions of traditional Japanese Noh theater with *film noir* brutality. Most of the music on the recording was written to accompany these scenes. Chiefly orchestral, with strings, percussion, celesta, and, in *Kyoko's House*, an eerily Fifties-sounding electric guitar, it is more characteristically repetitive but still



Mishima: sensual and ascetic, martial and poetic, dramatic and introspective

and thundering tympani. It superimposes such immense tension upon such ordinary details—Mishima's laying out his uniform, for example—that it nearly overwhelms the film.

The second perspective is presented through a series of black-and-white flashbacks on the artist's life. For these, Glass turns to the string quartet. Performed by the Kronos Quartet, a leading exponent of twentieth-century chamber music, Glass's quartet episodes are brief, subdued, and melancholy. They're also un-Glassian in their development: rather than the long, slow, subtle repetitions that are Glass's signature, the quartets are constantly changing, almost meandering explorations.

a significant departure from the cyclic work one expects from Glass, with greater variation and melodic development.

Like the film, the soundtrack cuts back and forth among the varying perspectives, being peaceful and ethereal one moment, violent the next. Yet the overall impression is one of sustained tension—you sense the inevitable resolution of Mishima's inner turmoil in every note. It's a powerful record—made more so by the brilliant digital recording and flawless Nonesuch pressing.

Mark Peel

**MISHIMA** (Philip Glass). Original-soundtrack recording. Kronos Quartet; orchestra, Michael Riesman cond. NONESUCH ● 1-79113 \$10.98, © 4-79113 \$10.98, © 2-79113 no list price.

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### POPULAR

- **ALABAMA:** *The Closer You Get*. RCA PCD1-4663. "High-gloss country-pop" (June 1983).
- **ANNIE** (Charles Strouse–Martin Charnin). Original Broadway cast. COLUMBIA CK 34712. "Genuine charm with a great big ricky-tick musical heart" (August 1977).
- **COUNT BASIE:** *Have a Nice Day*. EMARCY/POLYGRAM 824 867-2. Basie's band with solos by Al Grey, Eddie "Lockjaw" Davis, Freddie Green, others.
- **EVERLY BROTHERS:** *Reunion Concert*. MERCURY 824 479-2 (complete on one CD). Recorded live at Albert Hall, London. "Memorable" (April 1984).
- **MERLE HAGGARD:** *His Greatest and His Best*. MCA MCAD-5624. A new compilation available on CD only.
- **RICKY SKAGGS:** *Don't Cheat in Our Hometown*. EPIC 38954. "A landmark album, radiantly listenable" (Best of the Month, February 1984).
- **STEVIE WONDER:** *Innervisions*. TAMLA/MOTOWN TAMD-6152. "A stunning album" (January 1974).

### CLASSICAL

- **BEETHOVEN/MENDELSSOHN:** *Violin Concertos*. Menuhin, Furtwängler. ANGEL CDC-47119-2 (mono). Two classics from the early Fifties.
- **CANTELOUBE** (arr.): *Songs of the Auvergne, Vol. 1*. Davrath. VANGUARD K337 515. "Exquisite" (November 1966).
- **GERSHWIN:** *Porgy and Bess*. Mitchell, White; Maazel. LONDON 313 559-2 (three CD's). "The major masterpiece of one of our most beloved composers given the full operatic treatment" (April 1976).
- **MAHLER:** *Symphony No. 5*. Levine. RCA RCD1-5453 (complete on one CD). "Strong, clear, long-lined" (March 1979).
- **PUCCINI:** *La Bohème*. Caballé, Domingo, Milnes; Solti. RCA RCD2-0371. "A fine performance" (December 1974).
- **SCHUBERT:** *Symphonies Nos. 3 and 8 ("Unfinished")*. C. Kleiber. DEUTSCHE GRAMMOPHON 415 601-2. "Brilliantly provocative" (June 1980).

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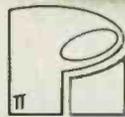
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reviewed by  
Robert Ackart  
Richard Freed  
David Hall  
Stoddard Lincoln*

**BRAHMS: *Double Concerto in A Minor, Op. 102.*** Yehudi Menuhin (violin); Paul Tortelier (cello); London Philharmonic Orchestra, Paavo Berglund cond. ANGEL ● DS-38226 \$11.98, © 4DX-38226 \$11.98.

Performance: *Committed*  
Recording: *Excellent*

Is it really possible that this is Yehudi Menuhin's first recording of the Brahms Double Concerto in his more than six decades as a performer? In any case, it finds him in good form and in very good company. Cellist Paul Tortelier's earlier recording of it on Seraphim, with Christian Ferras as his fellow soloist and Paul Kletzki conducting, was for years the choice among low-priced versions, and it is good to have a new one from him. Paavo Berglund proves to be as eloquent a Brahms conductor as he is a Sibelian. There are a few rough spots in Menuhin's playing, but in the main it is rich in the sweetness and vitality that mark his best work, as well as the commitment and integrity that have always characterized his music making. Tortelier phrases a little more freely here than in his earlier recording; his tone is like burnished gold, and there is a sense of chamber-music give and take between him, Menuhin, and Berglund—a specifically Brahmsian chamber music, with all the autumnal fire as well as the intimacy such a reference might suggest.

The recording, enhanced by DMM on the LP, puts all these elements in the very best light. Of course, the Brahms Double Concerto seems a little short-weight for an entire disc now, especially at full price. Most other recordings come with a substantial filler, and some have even been made to fit snugly on a single side. Among those that do take up an entire disc, the one with Oistrakh, Rostropovich, and Szell (Angel SF-36032) still maintains a commanding position musically even if it is not in the "showcase" class sonically. And Anne-Sophie Mutter with Antonio Meneses and Karajan (DG 410 603-1) is also



## THREE BY PREVIN

**T**HREE recent releases that feature André Previn in different roles, as conductor and as pianist, clearly show that he is not only one of the most versatile musicians before the public but a most consistently satisfying one as well.

On Telarc, Previn conducts the Royal Philharmonic in a gorgeous performance of Rachmaninoff's Second Symphony. It is perhaps no finer than his own previous account of the work for Angel—or than Ormandy's last (RCA) or Ashkenazy's (London) or Leonard Slatkin's (Vox)—but the outstanding sound quality of the Telarc recording gives this issue more than a bit of an edge. Telarc has surpassed itself as well as its competition in terms of sumptuousness, definition, and all-round realism in the sound. I have yet to hear the CD version, but, with the benefit of Direct Metal Mastering, the German-pressed LP is one of the most stunning examples to date of what can be achieved in this medium.

The other two releases find Previn at the piano rather than on the podium. One of them is not really new but a transfer to CD of the intriguing collection of ten Scott Joplin pieces arranged for violin and piano by Itzhak Perlman, Previn's performing partner. (You might suppose this to be really Perlman's show, but "partner" is very much the right term.) The new medium proves to be a considerable enhancement: the sound is altogether more life-like than on the original LP, and, for whatever reason, the music itself now strikes me as having a good deal more appeal than mere novelty.

The third release is a new recording, on Telarc again, of the Beethoven and Mozart quintets for piano and winds, on which Previn is joined by the Vienna Wind Soloists, a group of first-chair players from the Vienna Philharmonic. He has evidently made a solid connec-

tion in Vienna, having recorded with the Philharmonic for both EMI and Philips and now as a pianist with members of that orchestra. The quintet recording is first-rate music making by any standards. Perhaps it hasn't quite the degree of enlivening spontaneity that graced Vladimir Ashkenazy's recording with the London Wind Soloists on London, but that treasurable record was inexplicably withdrawn some time ago. The strongest competition now is offered on Denon by Alfons Kontarsky and members of the Berlin Philharmonic. By way of oversimplification, I might say that Kontarsky and associates find a conspicuous degree of playfulness in these works, while Previn and company tend to take a more expansive, even somewhat sober approach. Both teams, in their different ways, exude elegance, and both benefit from marvelous sonics.

*Richard Freed*

**RACHMANINOFF: *Symphony No. 2, in E Minor, Op. 27.*** Royal Philharmonic Orchestra, André Previn cond. TELARC ● DG-10113 \$12.98, © CD-80113 no list price.

**JOPLIN (arr. Itzhak Perlman): *The Easy Winners. The Rag-Time Dance; The Easy Winner; Bethena (A Concert Waltz); Magnetic Rag; The Strenuous Life (Rag-Time Two Step); The Entertainer; Elite Syncopations; Solace (A Mexican Serenade); Pine Apple Rag; Sugar Cane (A Rag-Time Classic Two-Step).*** Itzhak Perlman (violin); André Previn (piano). ANGEL © 47170-2 no list price.

**MOZART: *Quintet in E-flat Major for Piano and Winds (K. 452).*** **BEETHOVEN: *Quintet in E-flat Major for Piano and Winds, Op. 16.*** André Previn (piano); Vienna Wind Soloists. TELARC ● DG-10114 \$12.98, © CD-80114 no list price.

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enormously satisfying. But those who love the work enough to want two or three recordings of it should consider this new one too. R.F.

**DVOŘÁK: Symphonies: No. 7, in D Minor, Op. 70; No. 8, in G Major, Op. 88; No. 9, in E Minor, Op. 95 ("From the New World").** Minnesota Orchestra, Neville Marriner cond. PHILIPS © 412 542-2 two CD's no list price.

Performance: *Clear-headed*  
Recording: *Crystalline*

As with most of Neville Marriner's

readings, level-headedness and loving attention to detail characterize his treatment of the last three Dvořák symphonies. The Seventh starts off in a lean fashion and leads one to expect a performance along austere Brahmsian lines, but there is a pleasantly surprising poetic impulse and lyrical warmth in the great slow movement (kudos to the first-chair horn, by the way, for superb solo work). The *sousedská*-style scherzo has ample lift and drive, and, after a rather fast introduction, the finale is full of fire and brilliance.

The initial pages of the G Major Sym-

phony are stated in declaratory rather than the customary lyrical style, lending a more than usually militant aspect to the movement, with sharp contrasts between lyrical and dramatic elements. Exceptionally lovely woodwind playing marks the slow movement, though the agitated *minore* middle section could stand more dramatic tension. There is no lingering in the scherzo. The movement purls along with beguiling grace, and the central trio episode is a joy. The finale is taken at a driving pace and is notable for the virtuosic and tonally lovely solo flute passages and the hair-raisingly brilliant coda.

The *New World* performance is no run-of-the-mill affair. A combination of nostalgic poetry and strong declamatory rhythms characterize the introduction, and the *Swing Low, Sweet Chariot* motive in the main body of the movement receives discreet but clear emphasis. The virtues of digital recording in a favorable acoustic surround are displayed to particular advantage here, allowing Dvořák's sometimes congested climaxes to emerge with total clarity of harmonic texture. There is no sentimentality in the famous largo, but neither is there any lack of warmth. The climactic outcry before the final reprise of the main theme comes off magnificently, and the finale makes a fitting capstone, with the syncopated figures in the development, so often lost in the musical hurly-burly, properly and effectively audible.

There is strong competition on CD, interpretively and sonically, for all three of these Dvořák masterpieces, but for me the Marriner readings, with very minor reservations, stand up to the best of them. And being able to buy these works on two CD's rather than on three LP's makes the set economically attractive too. D.H.

**MAHLER: Symphony No. 2, in C Minor** (see Best of the Month, page 177)

**PROKOFIEV: Symphony No. 1, in D Major, Op. 15 ("Classical"); The Love for Three Oranges, Suite, Op. 33a; Lieutenant Kijé, Suite, Op. 60.** Orchestre National de France, Lorin Maazel cond. CBS © IM 39557, © IMT 39557, no list price

Performance: *Elegant and colorful*  
Recording: *Good studio job*

Lorin Maazel has elicited some of his best recorded performances from French orchestras, and this disc of sure-fire Prokofiev is no exception. The *Classical* Symphony is played here with an elegance that recalls the palmy days of Serge Koussevitzky and the Boston Symphony in the 1930's. There is truly classic poise in the opening movement, a beautiful sense of line in the slow movement, a Beechamesque easy gait to the gavotte, and an absolutely dazzling finale that's noteworthy for its flexibility of nuance and dynamics.

The *Love for Three Oranges* music is played for the most part with snap and



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verve, and there is effective contrast between the *tutti* passages and the chamber-music-like episodes. The Prince and the Princess slow movement shows unusual tenderness and a feel for timbral subtleties. I would have liked a more volatile scherzo, but the finale comes off with all the rowdiness one could ask.

The *Lieutenant Kijé* music is realized with style, ample humor, and requisite splashes of cinematic color, and it *does* include the delightful fourth movement, *Troika*, omitted on the sleeve but designated on the label. The recorded sound is bright and clean. *D.H.*

**ROSSINI: *Tancredi*.** Marilyn Horne (mezzo-soprano), *Tancredi*; Lella Cuberli (soprano), *Amenaide*; Ernesto Palacio (tenor), *Argirio*; Nicola Zaccaria (bass), *Orbazzano*; Bernadette Manca di Nissa (soprano), *Isaura*; others. Chorus and Orchestra of Teatro La Fenice, Venice, Ralf Weikert cond. CBS ◊ I3M 39073 three discs, © I3T 39073 three cassettes, no list price.

Performance: *Theatrical, exciting*  
Recording: *Very good*

This performance of Rossini's first *opera seria* was recorded in performance, at La Fenice in Venice, and it is one of the better live opera recordings I have heard. Applause is restricted to the conclusion of each act, which allows the home listener to feel part of the immediate excitement, and the clarity of the recorded sound is commendable.

Portraying the unfortunate lovers in this story of war, fatal misunderstanding, and chivalrous self-sacrifice are Marilyn Horne, who is in exceptionally fine voice, and Lella Cuberli, a bright-voiced soprano who takes Rossini's *fi-ratura* very much in stride. They sing the difficult duet in Act I (Scene 8) sensitively and with conviction.

In the rather thankless role of Orbazzano, Nicola Zaccaria's big, burly voice is effective for characterization, but I find his musical style rough, inflexible, and somewhat out of focus compared with the liquidity of others in the cast. Ernesto Palacio's Argirio hardly sounds like the "father" role, for he glides over the scale and assumes Rossini's high octave leaps with athletic vigor and musical mastery. The Fenice's chorus and orchestra respond nicely to Ralf Weikert's spirited conducting. *R.A.*

**SCHUBERT: *Piano Sonata in B-flat Major, D. 960*** (see Best of the Month, page 178)

**TCHAIKOVSKY: *The Nutcracker, Op. 71*.** St. Louis Symphony Orchestra, Leonard Slatkin cond. RCA ◊ ARC2-7005 two discs \$21.98, © ARK2-7005 \$21.98, © RCD2-7005 no list price.

Performance: *Affectionate*  
Recording: *Very good*

Leonard Slatkin and the St. Louis Symphony perform this complete *Nutcracker* with the greatest affection and

warmth, as evidenced by the delicacy and careful nuancing they bring to the always exquisite *Ouverture miniature* at the very beginning. But it is in the purely dance episodes that this recorded performance excels. The Christmas Tree dances in Act I are great fun, the Waltz of the Snowflakes is as magical as can be, the Arabian Dance is seductive in a manner that would do credit to Stokowski in his prime, and the celesta in the Sugar Plum Fairy episode is as luminous as digital mastering can make it.

What I find lacking here are flair and panache in the purely depictive and

mime episodes, such as the transformation scene with the Christmas Tree and even the battle with the Mouse King, which seems a bit too tame. On the other hand, the famous *Pas de deux* is a shade overblown. I think Antal Dorati still has the most accurate measure of this score in his third recording of it, on Philips with the Concertgebouw.

Even with these reservations, I'd hang on to the Slatkin performance on CD. I could do without the corny kiddie-cut-outs that RCA has provided with the LP, but even on the analog pressing the sonics are warm and clear. *D.H.*

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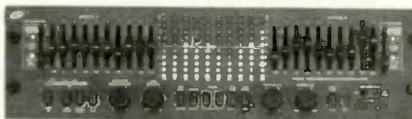
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**DC 2214.** Same as DC 2215 except equalizer filter circuits have op-amp synthesized inductors. THD and IMD <0.01% at 2 V; S/N ratio 106 dB at 10 V; boost/cut range  $\pm$  12 dB. .... \$299

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**ADAM ANT:** *Vive le rock.* Adam Ant (vocals, piano); Marco Pirroni (guitar); other musicians. *Vive le rock; Miss Thing; Razor Keen; Rip Down; Scorpio Rising; Apollo 9; Hell's Eight Acres; Mohair Lockerroom Pin-Up Boys;* and two others. EPIC BFE 40159, © BFT 40159, no list price.

Performance: *Clattery*  
 Recording: *Suitably big*

Adam Ant, who has gotten more mileage out of exposing his left nipple than any English rocker since Jeff Beck, returns here with an album sure to gladden the hearts of Ant People everywhere, assuming the breed is still extant. Ant's music seems to be evolving, to be sure. Gone are the trademark war whoops and guitar licks lifted from spaghetti westerns. In their place is a sort of wall-of-sound approach recalling Phil Spector and early Seventies glam rock, mated with lyrics that are cheerfully nonsensical and littered with film references from Jimmy Cagney to Kenneth Anger.

It all has a certain spunky *joie de vivre*, and I vastly prefer it to the sort of shameless self-mythologizing that was formerly Ant's strong suit. Unfortunately, what it really sounds like is the kind of album you or I might make while waiting around for someone to offer us a fat movie contract. Extremely underwhelming stuff. S.S.

**BAD MANNERS:** *Mental Notes.* Bad Manners (vocals and instrumentals); vocal and instrumental accompaniment. *What the Papers Say; Blue Summer; Body Talk; Tossin' in My Sleep; Tie Me Up; Bang the Drum All Day; Destination Unknown; Mountain of Love;* and two others. PORTRAIT BFR 40070, © BRT 40070, no list price.

Performance: *Jovial*  
 Recording: *A miracle of discipline*

I like to keep a good supply of Ska around the house to use as leavening.

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## THE REPLACEMENTS

**I**T may have the least exciting title in the history of rock-and-roll, but "Tim," the first major-label album by the Replacements, is a flat-out stunner. It is the most passionately felt piece of music to have emanated from an American garage band since these guys' monumental 1984 album "Let It Be" on the Twin Tone label.

The Replacements, four reprobates from the suburbs of Minneapolis, made several albums for independent labels before this Sire release. In the process they have worked their way from a fairly inauspicious brand of speed-punk into a style that now embodies all the classic rock-and-roll verities—loud guitars, concise song structures, ragged-but-right ensemble work, and a healthy respect for pop trash. Their work now manages to suggest that of nearly every genuinely great band of the last twenty years.

In "Tim" you hear influences ranging from the Rolling Stones to Buffalo Springfield and the Clash, plus lots of early-Seventies heavy-metal/glam rock. The Replacements may be the only people in the universe who can do an unselfconscious cover of a Kiss song and make you like it. Yet it all sounds as natural as breathing, as rooted and American as Woody Guthrie. They can also be very, very funny, in a kind of *Mad* magazine, teenage way, which makes them seem far more human than just about anybody on the radio at the moment. These kids are for real.

What really sets the Replacements apart is leader Paul Westerberg. He has genuine soul, and, even more important, he has a terrific ear for the insecur-

ities and adolescent confusions of a generation of kids for whom the Reagan era has proved less than thrilling. Westerberg really knows what it feels like to be a working-class misfit in the Age of the Yuppie, and as a result his songs pack a wallop unlike anything in rock history. There's no more emotionally compelling noise in pop music at the moment than Westerberg produces trying to get the lyrics across, over the gloriously raucous din his band is making behind him, in something like *Bastards of Young*.

The standard rap on garage bands these days—and the Replacements are proudly, even defiantly, a garage band—is that they work too hard at sounding sloppy and half-baked. That's often true, but what "Tim" suggests is quite the opposite, that in 1985 the only genuinely believable music in America is to be found in garages. In a weird way, this is actually a folk record, the unadorned expression of four people with something to say and the guts and passion to say it honestly. The Replacements may be what we used to refer to as *schlemiehls*, but I think they're heroic *schlemiehls*, and "Tim" is a great piece of work. If you buy no other rock record this year, buy this one. Steve Simels

**THE REPLACEMENTS:** *Tim.* The Replacements (vocals and instrumentals). *Hold My Life; I'll Buy; Kiss Me on the Bus; Dose of Thunder; Waitress in the Sky; Swingin' Party; Bastards of Young; Lay It Down Clown; Left of the Dial; Little Mascara; Here Comes a Regular.* SIRE/WARNER BROS. 1-25330 \$8.98, © 4-25330 \$8.98.

DEBORAH TEINGOLD/SIRE RECORDS

No other form of music I know of can both pacify a roomful of criminally insane guests *and* inject energy into a dance floor of smug yuppies sedated by Wham! Last year, Bad Manners' "Forging Ahead" knocked Madness off my turntable with killer cuts like *Got No Brains* and a steaming cover of the theme from the movie *Exodus*. "Mental Notes" doesn't scale quite the same heights of inspired insanity, but it's good to have around in case a party of Skinheads drops in unannounced.

The seamless horn arrangements and rock-steady rhythm section swing with a bit more restraint this time—but they *do* swing. I was afraid Bad Manners might be going the Madness route, tempering their outrageousness to reach the U.S. market. But, thank goodness, Buster Bloodvessel (240-pound lead vocalist Doug Trendle) is still the same imposing edifice of appetite-made-flesh. When Buster sings (a charitable word for his bloodcurdling emanations) "Tie me up—I'm in love" or "I don't want to work, I just want to bang on the drum all day," fears that Bad Manners may be succumbing to civilization are assuaged. *M.P.*

**DELIA BELL AND BILL GRANT:** *The Cheer of the Home Fires*. Delia Bell (vocals, guitar); Bill Grant (vocals, mandolin); the Johnson Mountain Boys

(harmony vocals, guitar, mandolin, fiddle, banjo, bass, dobro). *Field of Flowers; Where Did We Go Wrong; Thinking of the Old Days; Sad Situation; It'll Be Me; Heartbreak Express; There'll Be No Teardrops Tonight; Shadows of My Mind*; and four others. **ROUNDER 0187 \$8.98, © 0187 \$8.98.**

Performance: *Hangin' in there*  
Recording: *Very good*

Before Emmylou Harris plucked her out of Oklahoma for a much-lauded solo album in 1983, Delia Bell had been performing with singer/songwriter/mandolinist Bill Grant for twenty-three years. As invigorating as the Harris-produced record was, nobody much bought it, and Bell was let go from her Warner Brothers contract. Now she is back on disc, along with Grant, with whom she has recorded thirteen previous albums, mostly bluegrass.

Like Bell's solo album, however, "The Cheer of the Home Fires" is not really bluegrass but rather the same sort of fusion that sped Ricky Skaggs to stardom: good ol' hard-country music played with bluegrass stylings and underpinnings. The vocals, with Bell and Grant trading off the leads, are aggressive, straightforward, and plaintive in the "high lonesome" way, although they lack that sure spark of excitement that Harris infused into Bell's work.

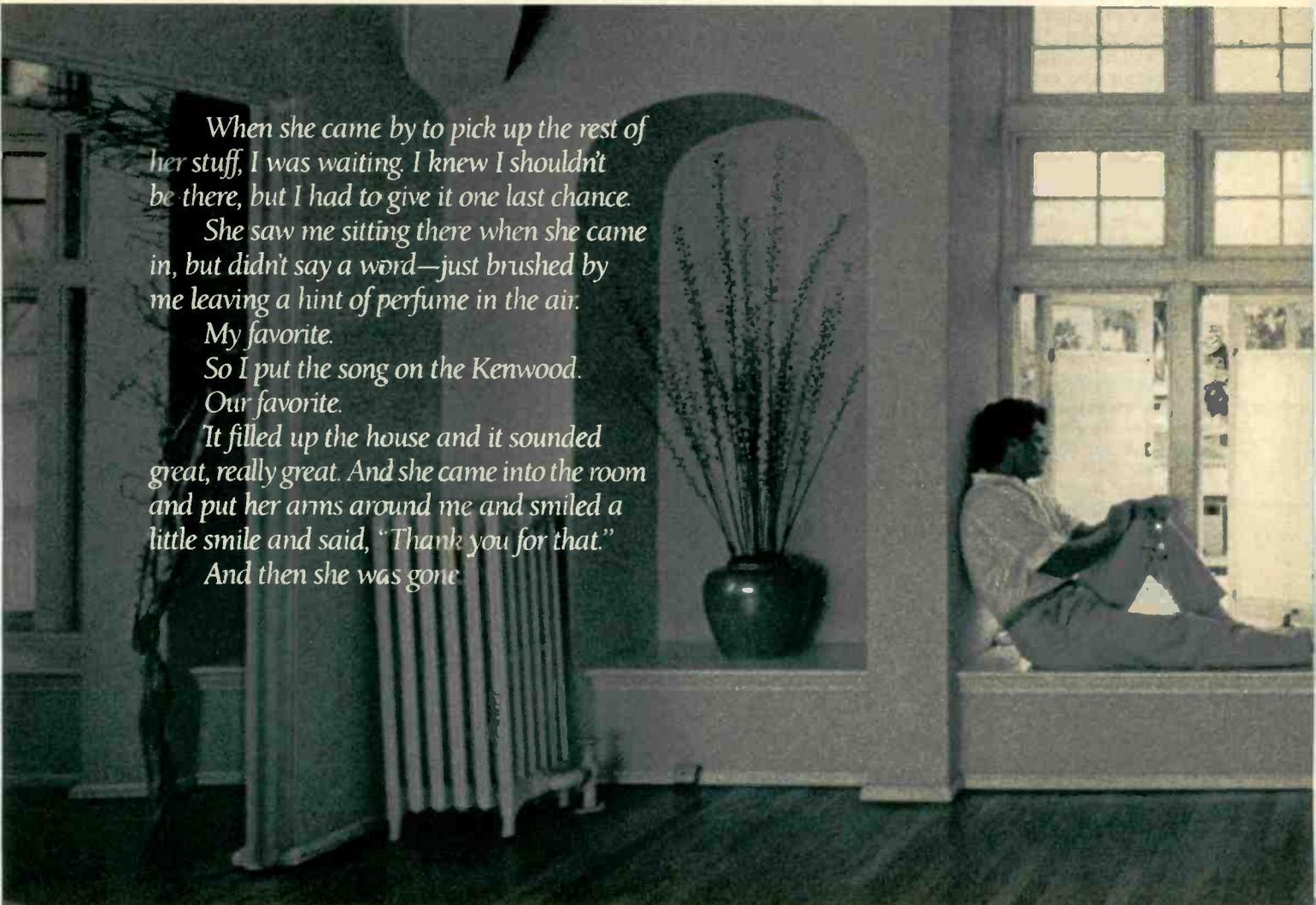
Judging from several other Bell-Grant duet albums, this is the first to feature Grant's singing so prominently. As adept a bluegrass vocalist as Grant is, the star is still Bell, whose classic, unforgettable roadhouse voice alternately thrills and sets one's teeth on edge. If you're like me, the songs on which she tries a slow glissando up to pitch—and just barely makes it—will have you holding onto the rail . . . and praying for more.

The faint of heart, or warmed-over Urban Cowboys, be forewarned: this is the real stuff, pure and unadorned. No Nashville formula, no orchestral overdubs, just the sweet, welcome whine of mountain soul. *A.N.*

**GEORGE JONES:** *Who's Gonna Fill Their Shoes*. George Jones (vocals); vocal and instrumental accompaniment. *Who's Gonna Fill Their Shoes; The One I Loved Back Then (The Corvette Song); Somebody Wants Me Out of the Way; Call the Wrecker for My Heart*; and six others. **EPIC FE 39598, © FET 39598, no list price.**

Performance: *Vintage Jones*  
Recording: *Okay*

One of my favorite moments of "Farm Aid" occurred when George Jones stopped between songs to give the TV audience the toll-free phone number,



When she came by to pick up the rest of her stuff, I was waiting. I knew I shouldn't be there, but I had to give it one last chance.

She saw me sitting there when she came in, but didn't say a word—just brushed by me leaving a hint of perfume in the air.

My favorite.

So I put the song on the Kenwood.

Our favorite.

It filled up the house and it sounded great, really great. And she came into the room and put her arms around me and smiled a little smile and said, "Thank you for that."

And then she was gone.

made up of the letters of the event itself. "If you'd like to make one of your nice donations," Jones said, "it's 1-800 F-A-R-M . . . (long pause) . . . well, I done forgot how to spell, but it's 'Farm Aid!'"

It's not just anybody who can display such bumpkinism and come up a winner, but then you'd be hard pressed to find anyone as ingenuous as George Jones. That's half the reason Jones can take such a grossly sentimental song as *Who's Gonna Fill Their Shoes*, or such a tiresomely simple song as *Call the Wrecker for My Heart*, and pull out affecting nuggets of emotion. Nothing is too corny, too silly, or too embarrassing for Jones not to find the essential kernel inside, and then go on to communicate it on a gut level.

"You know this ol' world is full of singers/But just a few are chosen/To tear your heart out when they sing," Jones croons in the title song. Surely Jones is one of the chosen, and even if he can't *spell* "aid," he administers a little of it each time he sings. *A.N.*

**THE JUDDS:** *Rockin' with the Rhythm* (see Best of the Month, page 177)

**KISS:** *Asylum*. Kiss (vocals and instrumentals). *Who Wants to Be Lonely*; *Secretly Cruel*; *Love's a Deadly Weapon*; *Tears Are Falling*; *Uh! All Night*;

and five others. POLYGRAM 826 099-1 \$8.98, © 826 099-4 \$8.98.

Performance: *Deafening*  
Recording: *Poor*

Why can the Rolling Stones play basic, hard-driving rock-and-roll that's melodic, even subtle at times, thereby appealing to several generations? And why does Kiss, even after twenty—count 'em, twenty—albums, play basic, hard-driving rock-and-roll that has yet to progress past the wall of noise that appeals mainly to pubescent headbangers? It's hard to believe these heavy-metal princes are still stuck in the same atonal groove. Their new "Asylum" album is not even particularly well mixed. On *Who Wants to Be Lonely*, for instance, the loud, grating guitars sometimes override Paul Stanley's screechy vocals, which are then turned up to be heard over the instruments. The lyrics are more cheap seduction scenarios, and the band hasn't even put a new twist on them. By now, Gene Simmons's supposedly autobiographical verses in *Secretly Cruel*, about a groupie with "long hair and thigh-high snake-skin boots," are downright boring. For pre-teens only. *Ann Ferrar*

**PATTI LABELLE:** *Patti*. Patti LaBelle (vocals); vocal and instrumental accompaniment. *Living Double*; *Where I*

*Wanna Be*; *Shy*; *Look to the Rainbow*; and four others. PHILADELPHIA INTERNATIONAL FZ 40020, © FZT 40020, no list price.

Performance: *Varied*  
Recording: *Very good*

Having seen and heard Patti LaBelle in the film *A Soldier's Story*, I wonder why she doesn't sing the blues more often. Certainly she has the voice for it—high, wide, and essentially sassy—and her performance skills can hold the listener's attention through just about anything she chooses to sing. "Just about anything," unfortunately, describes much of this album, which ranges from a raucous but danceable song called *Love Symphony*, by Cecil and Linda Womack, to an oddly straight rendition of *Look to the Rainbow*.

The best selections are *Living Double*, a Walter and James Sigler original that gets an appealing reading, and the last cut, Gamble and Huff's rouser *If You Don't Know Me by Now*. Backed by male singers and with the stimulus of a live audience, Patti here lets all the stops out. She achieves the eloquence of a Gladys Knight as she raps and sings her way through a dramatic presentation that exploits all her talents. It's such a marvelous finale that the shortcomings of the rest of the album can be forgiven. *P.G.*

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**MIREILLE MATHIEU:** *Chanter*. Mireille Mathieu (vocals); orchestra. *Va sans moi; Un prince en Avignon; Allo; Laisse ta main*; and five others. POLYDOR 2424 251 \$8.98.

Performance: *Wonderful*  
Recording: *Good*

Several years ago Mireille Mathieu was one of those overnight sensations who are often totally forgotten by Tuesday. She's hung in there, however, and still belts, sobs, and emotes relentlessly while singing to a steady hurdy-gurdy beat. On a few things here, such as

*Laisse ta main* or *Chanter*, her style is reasonably effective, but a whole album of this kind of heavy musical breathing is definitely *de trop*. P.R.

**MELODY MAKERS:** *Play the Game Right*. Melody Makers (vocals and instrumentals). *Naah Leggo; What a Plot; Reggae Is Now; Aiding and Abetting*; and six others. EMI AMERICA ST-17165 \$8.98, © 4XW-17165 \$8.98.

Performance: *Zesty*  
Recording: *Good*

Most of the material on this album was written by David "Ziggy" Marley, who also sings lead vocals and plays percussion and acoustic guitar. Ziggy Marley is the son of the late reggae idol Bob Marley. Three other young Marleys are among the fifteen Melody Makers.

While Ziggy and his colleagues may lack the charisma of his father, they perform with admirable zest, and Bob Marley's influence is apparent in the thrust of the arrangements and the lyrics laced with a local patois. Not surprisingly, the finest song is the one Bob Marley track, *Children Playing in the Street*, but young Ziggy's *Reggae Is Now* runs a close second. Altogether, an easy listen. P.G.

**MISHIMA** (see Best of the Month, page 178)

**WILLIE NELSON:** *Half Nelson*. Willie Nelson (vocals, guitar); Ray Charles, Lacy J. Dalton, Merle Haggard, Julio Iglesias, George Jones, Leon Russell, Carlos Santana, Mel Tillis, Hank Williams, Neil Young (duet vocals); vocal and instrumental accompaniment. *Pancho and Lefty; Are There Any More Real Cowboys; I Told a Lie to My Heart; Seven Spanish Angels; Honky Tonk Women; They All Went Down to Mexico*; and four others. COLUMBIA FC 39990, © FCT 39990, no list price.

Performance: *Nice pairs*  
Recording: *Varies*

Well, it's finally happened—Willie Nelson has run out of live people to sing with, so he's started picking on the dead. Smack dab in the middle of this otherwise decent sampler of Nelson duets, Hank Williams Sr. pops up out of the grave to warble one of his old demo tracks, *I Told a Lie to My Heart*.

As for the other tracks, most of them have appeared on other albums, but almost all of them are worth reprising. Two other cuts are "previously unreleased," as they like to say: *Honky Tonk Women*, which was recorded for, but left out of, Nelson's duet album with Leon Russell, and *Half a Man*, with George Jones, which didn't make it onto Possum's "My Very Special Guests" LP. The Russell cut sounds

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perfunctory, but *Half a Man*, where both Jones and Nelson are in exemplary honky-tonk form, rates among the best performances on the album. *A.N.*

**TODD RUNDGREN: *A Cappella*.** Todd Rundgren (vocals). *Blue Orpheus; Johnee Jingo; Pretending to Care; Hodja; Lost Horizon;* and five others. WARNER BROS. 25128-1 \$8.98, © 25128-4 \$8.98.

Performance: *Appealing*  
Recording: *Good*

Todd Rundgren checks in with one of the strangest albums of the year. And one of the most appealing. "A Cappella" isn't so much a *cappella* as a *computer*, with synthesized background vocals and percussion and synthesized voice-percussion and voice-bass. Rundgren manages to produce some pretty interesting effects, including the rounded, bell-like tones of the backing vocals on *Lost Horizon* and the frantic, horror-show barking and burping sounds of *Lockjaw*. But the amazing thing about "A Cappella" is the way Rundgren's human voice comes through all the bizarre interference.

Stylistically, the album is all over the place, from the reggae beat of *Johnee Jingo* to the Near Eastern droning of *Miracle in the Bazaar*, from the rustic, Appalachian hymn *Honest Work* to the

street-corner soul of the Spinners' *Mighty Love* and Rundgren's own *Hodja*, which leaps about with the energy of a whirling dervish and a break dancer rolled into one. If "A Cappella" doesn't always work, it works more often than anyone could reasonably expect. *M.P.*

**SUGARFOOT: *Sugar Kiss*.** Sugarfoot (vocals, guitar); other musicians. *Kiss; I'm Your Sugar; Call Me; You Better Love Somebody; Fire "85";* and four others. WARNER BROS. 25168-1 \$8.98, © 25168-4 \$8.98.

Performance: *Mellow*  
Recording: *Good*

Remember the Ohio Players? One of the most popular soul groups of the early Seventies, they were known for a flamboyant style and skillfully clustered vocal-instrumental harmonies. They often chewed out syllables of their lyrics in a fashion later carried to its height by Maurice White and Earth, Wind & Fire. If you were an Ohio Players fan, you'll recall the group's leader, Sugarfoot, a guitarist and Sly Stone lookalike who added a lot of pizzazz to their performances.

After more than eight years of working as a session player for other artists, Sugarfoot has now emerged on his own with "Sugar Kiss." It's good to have him back, for unlike most soul singers

today, he gives more emphasis to musical texture than to sheer volume of sound. On side one most of the songs are moderately paced, with ample time for athletic scat singing and sizzling guitar work. On the flip side, the material reflects more of today's hyperkinetic mode. Nonetheless, Sugarfoot here pays tribute to the past with an update of the Ohio Players' big hit, *Fire*, now called *Fire "85."* All told, singing his way through selections tinged with more than a little sweetness, Sugarfoot remains true to his name. *P.G.*

**JAMES TAYLOR: *That's Why I'm Here*.** James Taylor (vocals); Joni Mitchell, Don Henley, Graham Nash, Deniece Williams, Peter Asher, Rosemary Butler (background vocals); vocal and instrumental accompaniment. *That's Why I'm Here; Song for You Far Away; Only a Dream in Rio; Going Around One More Time; Everyday; Limousine Driver;* and four others. COLUMBIA FC 40052 \$8.98, © FCT 40052 \$8.98, no list price.

Performance: *Nearly catatonic*  
Recording: *Nice*

I've always rather liked James Taylor, and I wanted to get excited about this record. But there's not much to grab hold of here, just snatches of seemingly unfinished, stream-of-consciousness

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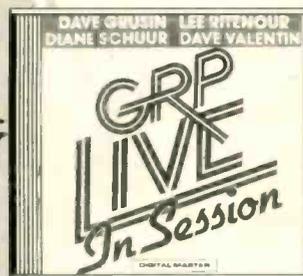
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songs that drag on without resolve. Things haven't turned out well for Taylor in a long while, and if there is a recurring theme at work here, it is the importance of friendship, the need for someone to depend on, and the fragility and ephemerality of life and love. All of those are credible themes, of course, but about all he does with them is mope, and as pleasant as Taylor's meanderings are, none of the songs really go anywhere. Through most of the album, in fact, you'll wonder if Sweet Baby James is about to lose it again. By the time you get to the ninth cut, where he sings a love song to a dead pig, you'll think you've found your answer. *A.N.*

**THE THREE O'CLOCK: Arrive Without Travelling.** The Three O'Clock (vocals and instrumentals). *Her Head's Revolving; Each and Every Lonely Heart; Underwater; Mrs. Green; Hand in Hand;* and six others. IRS IRS-5591 \$8.98, © IRSC-5591 \$8.98.

Performance: *Dayglo redux*  
Recording: *Excellent*

As you should be able to guess from the name, this is one of those currently fashionable Psychedelic Revival bands. Though the music doesn't particularly blow me away, I must concede these guys do have a knack for period song titles. *Her Head's Revolving* and *Mrs. Green*, for example are tags that would have brought smiles to the lips of such lysergic Sixties titans as the Electric Prunes or the Charging Tyrannosaurus of Despair (an actual San Francisco band). What do the songs *sound* like? Vaguely like the Beatles (lead singer Michael Quercio could pass for one of those McCartney imitators like Emmit Rhodes) but more often like an unconscious emulation of Todd Rundgren's first band, the Naz. The whole business is a little effete for my taste, but there is intelligence here, and I'll probably listen to "Arrive Without Travelling" again. *S.S.*

**STEVIE RAY VAUGHAN AND DOUBLE TROUBLE: Soul to Soul.** Stevie Ray Vaughan and Double Trouble (vocals and instrumentals). *Say What!; Lookin' Out the Window; Ain't Gone 'n' Give Up on Love; Change It; You'll Be Mine; Life Without You;* and four others. EPIC FE 40036, © FET 40036, no list price.

Performance: *Posturing*  
Recording: *Good*

On his third album, Texas guitar sorcerer Stevie Ray Vaughan demonstrates a stronger, more confident vocal style, and shows, particularly in *Life Without You*, that he can write a decent rock-blues song, no matter how derivative. "Soul to Soul" is also his first album with keyboardist Reese Wynans, who beefs up the Power Trio voltage nicely. But—dare I say it?—Vaughan has started to bore me. Yes, he can play with more mind-numbing flash than any other contemporary rock-blues gui-

tarist. Yes, he can duplicate all the Hendrix licks and trademarks—play with his ax on his back, even. And, yes, this time the songs have gotten a bit shorter, with Vaughan trimming the seemingly endless instrumental jams of his previous albums.

But why does Stevie Ray always sound as though he's just imitating his idols? Getting your fingers on all the right notes does not really constitute great artistry, and mouthing the lyrics of Willie Dixon and Hank Ballard without your own emotional input makes for a pretty superficial performance. To a certain degree, Vaughan's much-ballyhooed reputation is a musical version of the Emperor's New Clothes, Eighties style. Nobody wants to say it, but for all his technical expertise, Vaughan plays a very hollow song indeed. *A.N.*

**PAUL WINTER: Canyon.** Paul Winter (soprano saxophone); instrumental accompaniment. *Grand Canyon Sunrise; Morning Echoes; Bright Angel; Raven Dance; Bedrock Cathedral;* and five others. LIVING MUSIC LMR-6 \$8.98.

Performance: *"Natural"*  
Recording: *Spacious*

Paul Winter is one of the founding fathers of New Age music, the quasi-jazz form that is to real jazz what a white-wine cooler is to Wild Turkey. Winter is as well known for the environmental causes he supports as for his music—dangerous for a musician, I think—and "Canyon" is his attempt to find a musical way of expressing perhaps our most magnificent display of nature, the Grand Canyon.

Winter traveled to the Grand Canyon four times in three years, once hiking into some of its most remote terrain and setting up camp for two months, to seek inspiration as well as the right acoustic conditions for this music, half of which was recorded on location. (The remaining half was recorded in Manhattan's answer to the Grand Canyon, the Cathedral of St. John the Divine.) Unfortunately, since there's nothing for the music to bounce back from, it tends to dissipate, giving "Canyon" a thin quality. But the real problem is that Winter's concept of nature carries over into his music. It's all *sound* and very little invention. Winter's long soprano-sax glissandos, the drawn-out cello of David Darling, and Paul McCandless's fluttering oboe seem like the soundtrack to a *Nova* documentary. You might be hearing a twittering bird or a racing stream, but you're not hearing much of a musical conversation. You get the feeling that an intricate melody or some lively counterpoint would be about as welcome here as a hydroelectric dam—which is why, while "Canyon" is pleasant enough, it's never gripping.

Music *isn't* natural—it's contrived, artificial, an unnatural arrangement of man-made sounds. The proof is in the album's best track, *Air*, with a melody by that master of invention, Johann Sebastian Bach. *M.P.*

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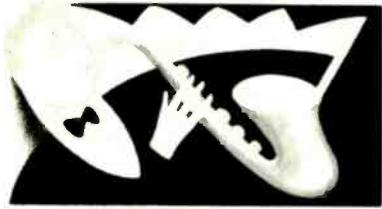
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# JAZZ



**HERB ALPERT: *Wild Romance*.** Herb Alpert (trumpet, trumpet emulator, vocals); other musicians. *Dancing in the Light; Catch Me; Lady Love; You Are the One; No Time for Time*; and four others. A&M SP-5082 \$8.98, © CS-5082 \$8.98.

Performance: *Limp*  
Recording: *Very good*

There was never much substance to Herb Alpert's music, but some of his romps with the Tijuana Brass were fun to listen to, and I took full advantage of them in my disc-jockey days. "Wild Romance," Alpert's latest album, is no fun at all, just—with one exception—plodding rhythm patterns with trite trumpet pokes. The exception is *Catch Me*, which could easily catch you out on the dance floor. It is the single bright spot in a very tedious set. *C.A.*

**CHARLIE MARIANO: *Jyothi*.** Charlie Mariano and the Karnataka College of Percussion (instrumentals); R. A. Ramamani (vocals, tamboura). *Kartik; Bhajan; Saptarshi*; and six others. ECM/PSI ◊ ECM-1256 \$10.98.

Performance: *Excellent*  
Recording: *Excellent*

Charlie Mariano was once one of Charlie Parker's disciples, but there is little evidence of that in "Jyothi," a 1983 ECM album recently brought in from Germany by PolyGram Special Imports. Here Mariano is heard (though barely) with the Karnataka College of Percussion, featuring an engaging East Indian vocalist named R. A. Ramamani. We have heard such comfortable and idiomatic East-meets-West blends before, so it is not at all surprising to find that the combination works, and works superbly. But the real star is Ramamani, who can match Ella Fitzgerald, Sarah Vaughan, and Mel Tormé scat for scat. *C.A.*

**MAXINE SULLIVAN: *The Great Songs from the Cotton Club by Harold Arlen and Ted Koehler*.** Maxine Sullivan (vocals); instrumental accompaniment. *Happy As the Day Is Long; As Long As I Live; Stormy Weather; Harlem Holiday; Raisin' the Rent; Primitive Prima Donna; Get Yourself a New*

*Broom; 'Neath the Pale Cuban Moon; You Gave Me Everything But Love; I've Got the World on a String*; and five others. STASH ST-244 \$8.98.

Performance: *Super*  
Recording: *Very good*

The songs are by Harold Arlen and Ted Koehler, and so are most of the liner notes, but it is Maxine Sullivan who makes this album a gem. Sure, there are some great songs here, but Sullivan elevates them to new heights with a voice and delivery that belie her age. She is a true professional, and the years have only improved her. Listen to some of her old hits, like the 1937 Claude Thornhill arrangement of *Loch Lomond*, and then listen to this album made last November, and you will hear how much better Sullivan sings today. I don't predict that any of these fifteen renditions will become as successful as *Loch Lomond* was, but that is only because times have changed the way most people hear music.

On this album Maxine Sullivan gives us the fruit of her fifty years of artistic experience, and I am glad that producers Ken Bloom, Bill Rudman, and Keith Ingham had the good sense to make it happen. Pianist Ingham also leads the accompaniments, which fit singer and songs like a well-tailored suit. *C.A.*

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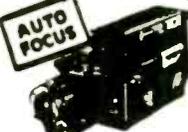
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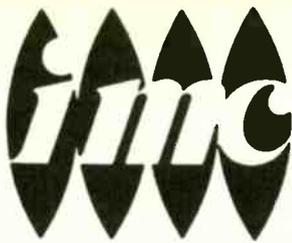
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**D**o the strains of *Tumbling Tumbleweeds* take you back to the Saturday matinees of your youth? Do you periodically check to see if your Cisco Kid drinking cup is still safe on the pantry shelf? And sometimes, for no reason at all, does Hopalong Cassidy come riding across the silver screen of your memory?

If so, toss your lariat 'round Riders in the Sky, a Nashville-based quartet following in the hoofmarks of the great western bands of yesteryear. Since the Riders' first album, "Three on the Trail," a collection of cowboy standards and originals in the style of the great cowboy classics, was released in 1980 on Rounder Records, the group has acquired something of a cult following. Rounder has just released the Riders' sixth album, "Saddle Pals," which, like its predecessors, is an equal blend of music, humor, and theatrics.

Led by "Ranger" Doug Green, whose smooth, matinee-idol baritone, authentic yodel, and masterly guitar playing earned the praise of his idol, the late Bob Nolan (founder of the Sons of the Pioneers), the Riders include Woody ("King of the Cowboy Fiddlers") Paul, who holds a Ph.D. in physics from M.I.T., bassist Fred ("Too Slim") La-Bour, and a new pardner identified only as Side Meat. All of the members contribute to the intricate western-harmony vocals, with Paul and Green handling most of the leads.

What makes the Riders so appealing to a vast cross-section of fans (including children, who watch their western-movie program on a cable TV network) is that the quartet cleverly weds fine musicianship with witty comedic setups and routines. Many of the routines involve the Riders' mythical Triple X

Ranch, where the moon is made of tin-foil and old, bleached horse skulls have frequently been known to talk.

In the occasional feature called *Riders Theatre*, the group performs fifteen-minute original skits in the form of old-time radio shows (*Riders Have a Baby*, *The Cowboy Who Hated Christmas*), complete with commercials for such products as Deadwood Darlene's Natural Rope Wax with Organic Stiffeners. Then there's the story of how the yodel was born—when a bronc and a rider went up in the air and "met at the point of the saddle horn."

But while the Riders wear cavalry bib shirts, tin stars, and western garb that looks straight out of Republic Pictures' wardrobe, they manage to give their music a more-than-campy twist without ever demeaning it. "There are people who think the whole thing's a big joke," says Doug Green. "I'm sorry if they do, because these songs mean as much to us as any we've ever sung. It's great music. We just happen to give it to people in an entertaining way."

That they do. And for Riders in the Sky, the sweet-grass country is just over the next horizon. Happy trails, Saddle Pals.

Alanna Nash

**RIDERS IN THE SKY: *Saddle Pals*.** Riders in the Sky (vocals and instrumentals); vocal and instrumental accompaniment. *Yippie-Yi-Yo and Away We Go; The Old Chisholm Trail; Get Along Little Dogies; Biscuit Blues; Sweet Betsy from Pike; There's a Great Big Candy Roundup; I'm Going to Leave Old Texas Now; The Cowboy's ABC; Clementine; "One, Two, Three" Said the Miner; Fiddle Medley; Down the Lullabye Trail.* ROUNDER 8011 \$8.98, © C-8011 \$8.98.

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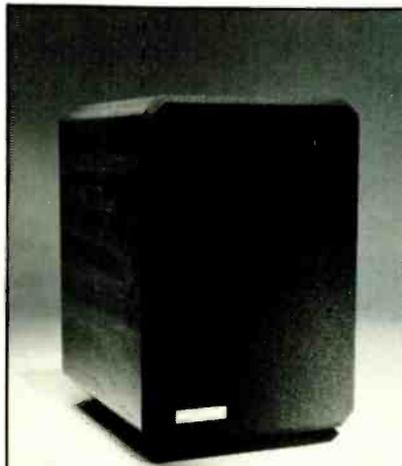
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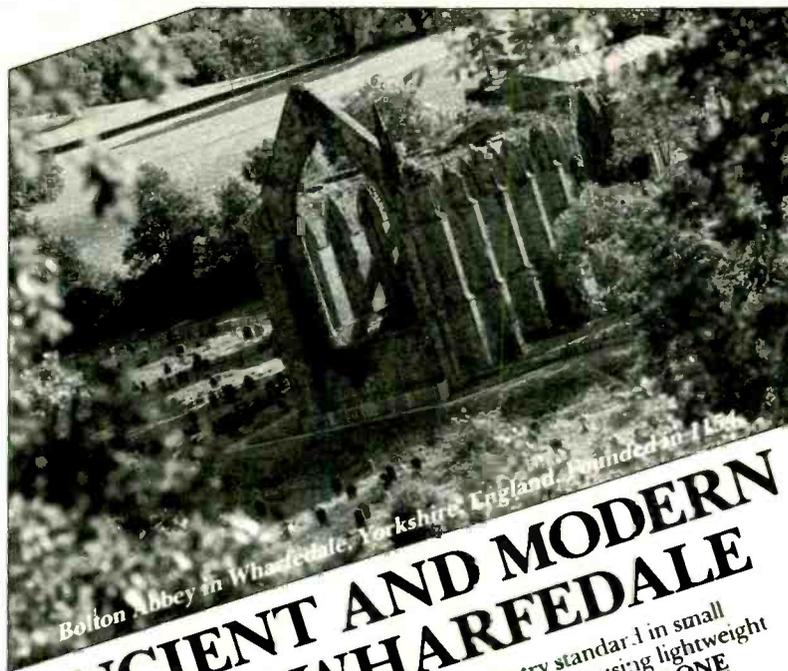
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**FEBRUARY**

by Ralph Hodges



## Digital Artifacts

IT is clear that there persists among serious listeners a fair amount of mental uneasiness, or worse, concerning digital audio. Much of it probably stems from the unappealing idea of manufacturing music from square waves, but a good part of it also stems from simple discomfort with the unknown. We've learned, or are learning, many things about the sound of good old analog distortions, and we have even acquired an intuitive feel for their causative mechanisms. But what, precisely, does a wrong number—a digital artifact—*sound* like? How can we tell by ear when a digital system is making a mistake?

Answers to these good questions were at hand for attendees of the recent Audio Engineering Society convention in New York. Stanley Lipshitz and John Vanderkooy, both of Canada's University of Waterloo, demonstrated a digital PCM system with adjustable sampling frequency and number of bits, and filters that could be switched in and out, and proceeded to let it embarrass itself in every possible way to the edification of a rapt audience. A CRT display of the bit architecture, revealing how many bits were involved in the processing of the signal at any given moment, accompanied the audible playback.

Of things that have a real and disagreeable effect on the digital listening experience, *aliasing* probably heads the list. Aliasing results when signals too high in frequency to be properly sampled by the analog-to-digital (A/D) converter somehow get into the works, and it manifests itself as spurious tones whose frequency is the difference between the sampling frequency and the frequency of the unwelcome intruder. If this sounds a bit like the mechanism for classic intermodulation (IM) distortion, there *are* parallels, and aliasing does quite literally "sound" like IM in many cases.

Lipshitz demonstrated aliasing in two ways: by reducing the sampling rate to the point of inadequacy for the bandwidth of the program input, and by disabling the input filter that is supposed to keep that bandwidth safely limited in the first place. Effects ranged from a twangy, buzzing quality on piano to a twittering accompaniment on other material—"birdies," for those who remember those frequent disfigurements of radio broadcasts back when tuners weren't all that good. Speech acquired lower-pitched birdies as a result of its high-frequency, high-energy sibilance content, and when the sampling rate was progressively lowered in the face of a rising musical figure, spurious descending tones swept down through the spectrum as the music swept up.

In my experience, gross aliasing isn't heard in digital recordings very often, probably because it tends to be masked by the program material. The reason it occurs at all is evidently because nonlinearities in converters will tend to generate the very sort of excessively high frequencies the input filter tries to keep out of the system. *Quantization distortion*, however, is a regular guest at the digital banquet, especially in older recordings. It occurs most audibly when the music is very low in level—usually fading down into silence—and can exhibit a character so weird and yet so fleeting that it is probably, more than any other artifact, responsible for the feeling amongst disaffected listeners that digital is somehow alien and apart.

Quantization distortion occurs in PCM recordings when the signal

level is so low that only one bit—the least significant bit—is occupied in handling it. A one-bit PCM system is capable only of a square-wave output, and although, as Lipshitz demonstrated, the result can come surprisingly close to intelligibility on speech, it is far too distorted to have any musical value. When a sixteen-bit PCM system effectively turns into a one-bit system because the signal level is very low, you truly get the chopped-meat effect that common sense suggests to many people that digital audio should exhibit all the time. Worse, as the signal level gets lower, the distortion gets louder, because the squaring off of the waveform causes the rms value to approach the peak value. The distortion sounds very much like hard clipping, but it takes place in the quietest passages, when clipping would be least likely.

Fortunately, quantization distortion of this sort succumbs readily to a technique called *dither*, which is the injection of a trickle of white noise to keep the changes in the least-significant bit sufficiently random to cause the distorted character of the output to disappear (this explanation is terribly oversimplified, but space permits no better one). Lipshitz showed that even a one-bit system, adequately dithered, is audibly distortion free. Noisy, yes, but distorted, no. Of course, many engineers have found the idea of deliberately introducing noise into a presumably noise-free medium such as digital audio intolerable, but it doesn't take a listener long to decide that the noise is preferable to the distortion.

So much for a brief look at the major digital artifacts and their audible qualities. It turns out they are not so different after all from many analog disturbances, and they also tend to occur at what could be thought of as times of system stress—although stress for a digital system is far different from that for an analog one. And one thing that is comforting, and which the AES presentation ably showed, is how much a digital system has to be corrupted before it goes wrong in an audibly serious way. There really is some headroom in this technology; it isn't operating on the hairy edge of the barely acceptable. □



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