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1980 Edition

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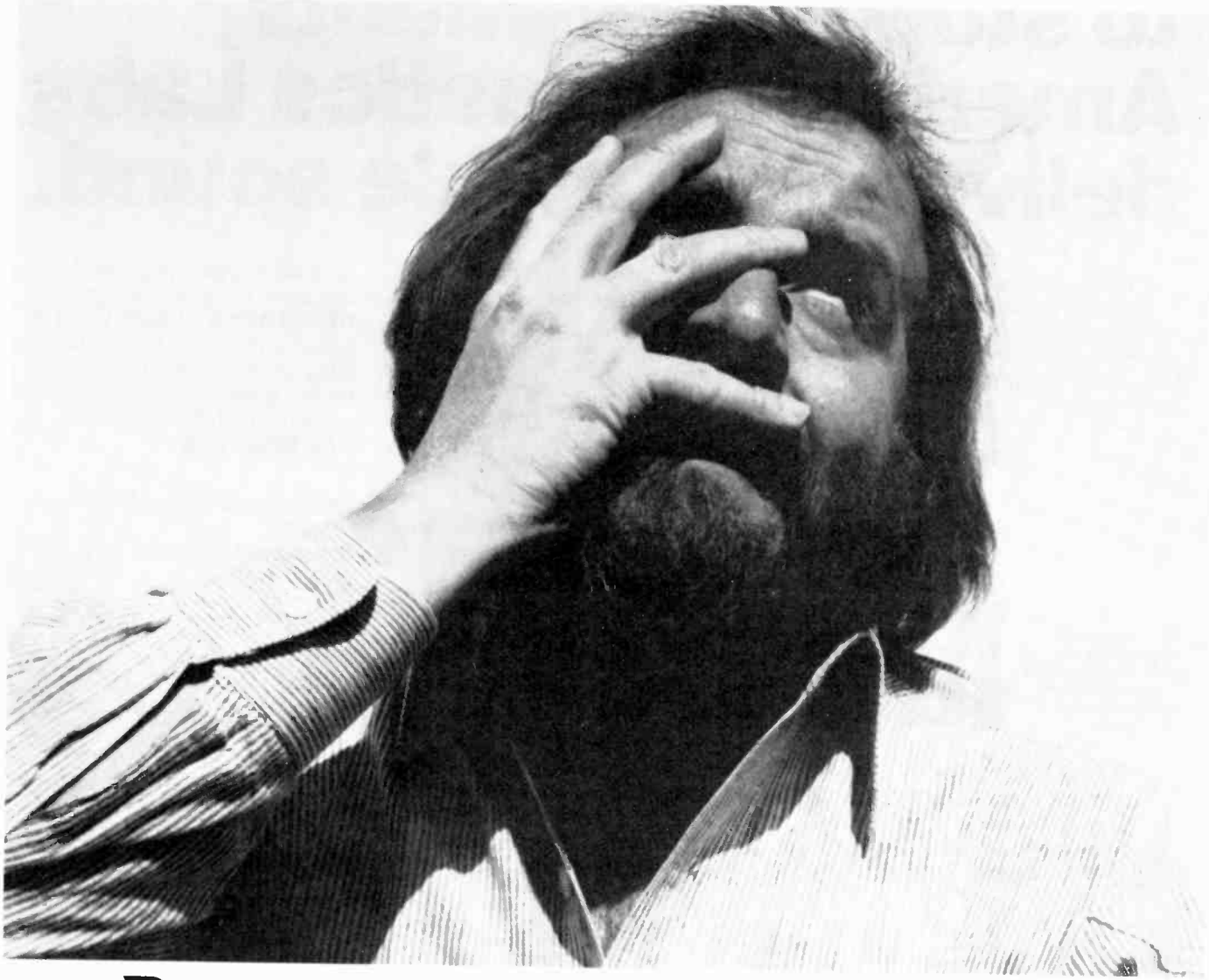
CIRCLE 3 ON READER-SERVICE CARD

Bought expensive speakers?



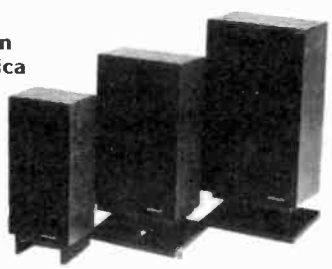
Better not listen to ours!

However, if you're looking for incredible sounding speakers at an affordable price, by all means do! You will find that for less money than you planned on spending you can get much better sounding speakers than you dreamed you could ever afford. Polk Audio loudspeakers have received worldwide praise because people recognize that they offer remarkable value. Critical acclaim such as the following makes it clear why Polk speakers have become famous for offering the best possible sound for the money.

"Polk Audio is a small, Maryland-based company whose speakers enjoy an enviable reputation among audiophiles who would prefer to own such exotica as the Beveridge System 2SW-1 ($7000 per pair) or Pyramid Metronome ($5200 per pair) but don't have the golden wallets to match their golden ears!" ***The Complete Buyer's Guide to Stereo/Hi-Fi Equipment***

"Audio experts know that the price of a speaker is not always directly proportional to its quality. Nowhere at CES was that fact more dramatically demonstrated than in room 900 of the Pick Congress where the folks from Polk Audio of Baltimore were demonstrating their speaker line..." ***High Fidelity Trade News***

"They (Polk 10's) are a high definition speaker system deserving the very best associated electronics. And at their price, they are simply a steal!" ***Audio Advisor-Audiogram***



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Polk Audio loudspeakers, starting around $125 each, are available at the world's finest hi-fi stores. Write us for complete information on our products and the location of the Polk Audio dealer nearest you.
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CIRCLE 28 ON READER-SERVICE CARD

HIGH FIDELITY'S

Buying Guide to Speaker Systems®

–1980 Edition

Buying Guide to more than 1,200 Home and Car Speakers

Here it is. The buying guide you've been waiting for. Manufacturers' specs on more than 1,200 speakers, all in one place and all in an easy-to-read format that allows you to easily compare such specs as design, frequency response, minimum and maximum power requirements, impedance, controls, size, and, of course, price. Car speaker listings include recommended mounting location(s).

Ohm's Law 9:

It is possible to make a loudspeaker that gets loud and still sounds good.

Ohm introduces another new loudspeaker that defies the traditional laws of loudspeaker design. The new Ohm I.

It used to be, if you liked listening to music as loud as life in your home, you had a tough choice to make. You could buy high efficiency "monster" systems, and put up with the boom and shriek. If you wanted something smoother (with really deep bass), you could buy low efficiency systems, but then you'd need an amplifier big enough to power Toledo.

The Ohm I solves the problem. It can achieve concert hall levels in your home effortlessly, with *no* sacrifice in bandwidth, linearity, or imaging abilities. While the Ohm I gets amazingly loud with as little as 10 watts input, it can handle 1000 watts comfortably.

It's the world's first *good and loud* loudspeaker.

Inside the Ohm I, you'll find everything we've learned about multi-driver dynamic loudspeaker design. It uses a total of five drivers, including a 12-inch, optimally-vented subwoofer with an incredible 72 ounce magnet. Voice coils are cooled by magnetic fluid to increase power handling. The Ohm I's beautifully-finished, floor-standing enclosure is compact enough to fit gracefully into any home.

The new Ohm I's are already earning rave reviews from stereo critics. After listening to them, **The Complete Buyer's Guide to Stereo/Hifi Equipment** says, "The volume level was approaching the threshold of pain, but the speakers were showing no sign of strain. The response, regardless of level, was smooth and free from annoying colorations...Too often a loud loudspeaker is deficient in many other areas. Fortunately, this is not the case with the Ohm I...."

According to **Hifi Stereo Buyer's Guide** (8/79), the new Ohm I has "...a combination of efficiency and power handling that, as far as we know, is unmatched." They continue: "(The Ohm I) is one of the finest speakers we've ever heard. There is nothing it couldn't do and do it superbly...it thundered out the lowest pipe-organ pedal notes in a way that made us feel we were in a great cathedral...When appropriate, the bass was discreet. It was all there, without saying 'Here I am'.... The treble filled the room with a spacious sweetness that seemed...downright seductive...(The Ohm I) will bring out the best from any program material and will also do justice to the coming glories of digital recording... this is a speaker with a future – for the future."

For a listening experience you've never enjoyed before except at a live performance, visit your local Ohm dealer. Ask to hear the world's first good and loud loudspeaker: the new Ohm I.

For 16 complete reviews, and full specifications, please write us at: Ohm Acoustics Corp., 241 Taaffe Place, Brooklyn, N.Y. 11205.

We make loudspeakers correctly.

CIRCLE 26 ON READER-SERVICE CARD

Editorial

You Can't Hear the Forest for the Trees

So many different models of speakers are available today that you could literally compare them at the rate of 10 per day and not be finished for more than 4 months—when another several hundred new models would probably be available. There must be a better way to choose a speaker.

There is: It takes time and planning, but not necessarily that much money. An important factor is knowing what to listen for and what to listen to. Essentially it's a learning process that requires you to audition a number of speaker systems under specific conditions. Bennett Evans, in "Pick the Speaker that Suits You Best," draws on his extensive experience in audio to point out time-tested ways to sort the wheat from the chaff.

Besides choosing from hundreds of models, you're also faced with selecting among many designs. Each is said to have its particular advantages. In "Is One Design Superior?," Edward J. Foster, head of Diversified Science Laboratories, details the pros and cons of eight of the most popular speaker system designs. As you'll discover, each design tries to accomplish something the others don't, but the ultimate speaker has yet to be designed.

Speakers that sound good at the audio salon sometimes are less exciting once you've placed them in your listening room. Often it's because a critical component in the audio chain—the listening room—has been overlooked. For example, the room may not have the flat frequency response it should. How you can optimize the performance of any speaker system by altering room acoustics is covered by Alan Fielding in "The Most Critical Component."

More and more speakers are being designed specifically for installation in cars and vans, and the increasing choice is bewildering. If you're planning to replace the factory-installed speaker in your car or to upgrade your current car system, you'll find timely advice in Robert Angus' "Good-bye Squawk-Box Speaker!"

To give you a headstart on finding out what's available in both home and car stereo speakers, we've included an extensive buying guide section that lists more than 1,200 speakers. Complete specs and prices are given on most of them, and all information is presented in an easy-to-read format that makes comparing models (in terms of manufacturers' specs) a breeze.

Overall, our 5th annual edition of HIGH FIDELITY'S BUYING GUIDE TO SPEAKER SYSTEMS offers a compact and comprehensive reference guide that can save you time and money when you're shopping for speakers. —WT

Cover equipment (clockwise from left): C.C.L. Modular Acoustics 3200 speaker; Epicure 3.0 speaker; Wharfedale E-90 speaker; ESTranslator 310 speaker; Thorens HP-360 speaker; Belles Model 1 speaker; 3A Triphonic subwoofer; on subwoofer, clockwise from left: Avid Model Ten car stereo speaker; Mitsubishi SX-30SA car stereo speaker; Visonik AS-1 car stereo subwoofer.

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Cover design: Bob Maddocks

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Pick the Speaker that Suits You Best

by Bennett Evans


Photo by Robert Curtis

Discover what to listen for . . . and what to listen to

You can do a pretty good job of comparing amplifiers, tape decks, tuners, and other components on the basis of their spec sheets. You *can't* do that with speakers. The only way to buy speakers intelligently is to listen to them. And that doesn't mean just listening casually; it means learning to listen analytically, learning what to listen for and what to listen to.

Before heading for the showrooms, you can do some homework that will save you time and listening fatigue. Begin by narrowing down your list of prospects. More than 1,200 different speaker models are available, almost a quarter of which have been introduced during the past six months. Use this process of elimination to lop off unsuitable speakers from your list.

Speakers that won't fit your room are obviously unsuitable. Study your listening room. Are there any other locations where the speakers might be placed other than the spot where your present speakers are? Spec sheets are useful for determining the dimensions of various speakers. A speaker that won't squeeze into that space between the doorway and the built-in bookcase, or that won't fit on the only shelf that's suitable, should be dismissed, no matter how good it may sound.

Size isn't the only hurdle you'll confront. Placement can be equally troublesome. I couldn't use a Klipschorn, for example, because it requires a straight, 90-degree corner, and the corners of my room all have archways or pillars in them. I couldn't use AR-9s, because my left-channel speaker has to sit between two record cabinets, which would block the AR-9's side-mounted woofers. I couldn't use Bose 901s, because they must sit out from the wall, and in my house that placement would obstruct the main flow of traffic to or from the living room.

Your household's habits may eliminate some speakers too; for example, I couldn't use Linn Isobariks, because they have topfiring tweeters—and I know that sooner or later (probably sooner), I'd lay a stack of papers on top of the speaker cabinet, muffling their sound. You, for example, might have to use bookshelf speakers because your cats scratch up the grilles of floor-models, or be forced into floor-mounting speakers because your library has already usurped all the bookshelves.

How much you plan to spend will also eliminate a lot of speakers from

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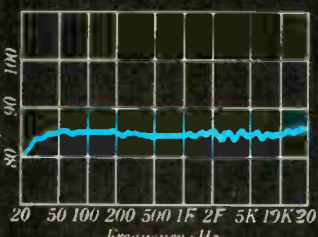

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And that's the sound we demand in every speaker in our line. JBL speakers are designed to match the music as played. Clear and lifelike.

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We could go into more technical detail but we want to keep our message short and sweet. The reason so many stars, studios and professional installations prefer our speakers is JBL accuracy. Their living depends on how good they sound. So if you question your own ears, trust theirs.

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FIRST WITH THE PROS.

*Billboard Disco Survey, 1978.
**Recording Institute of America Survey.

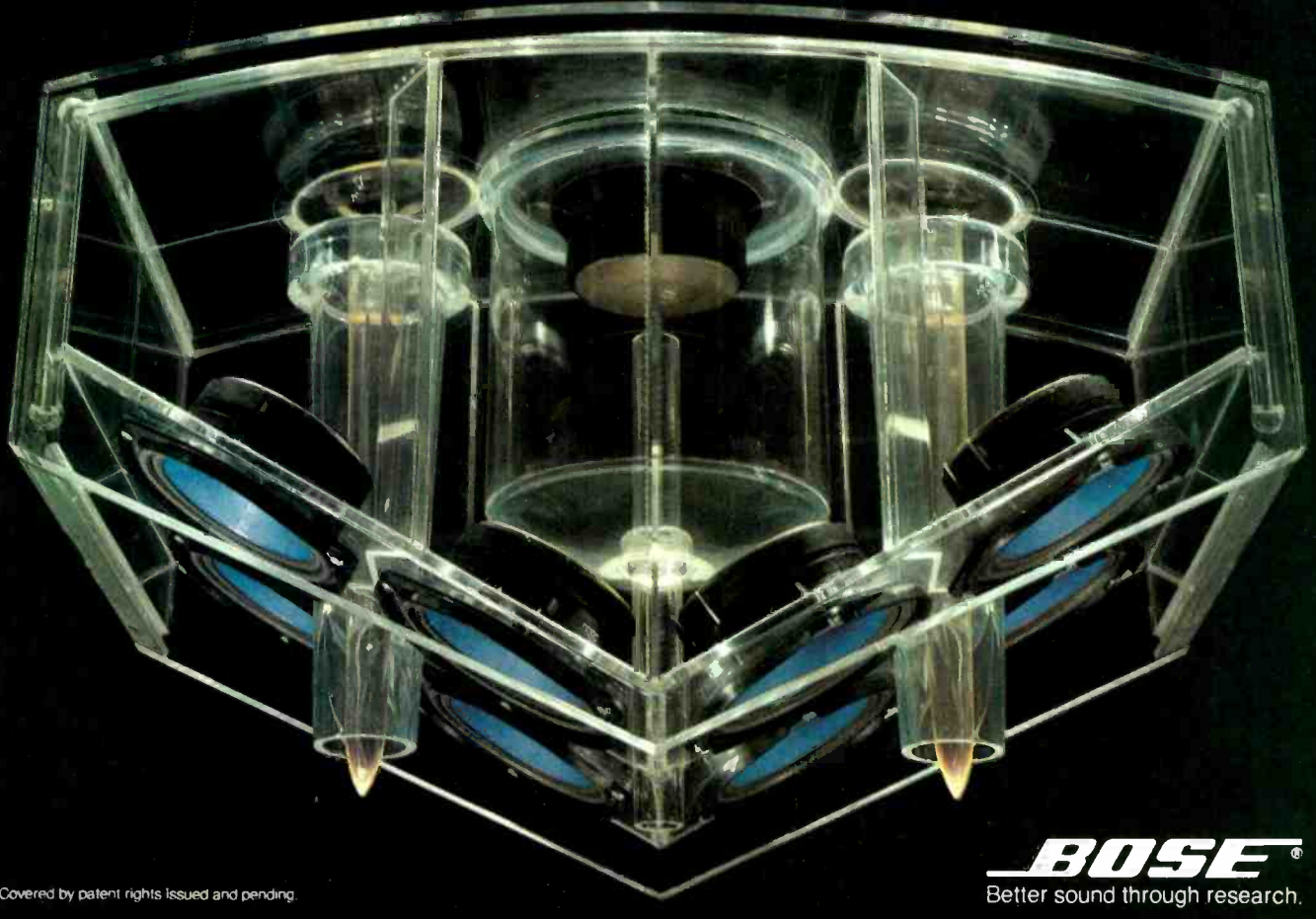
CIRCLE 17 ON READER-SERVICE CARD

The Bose® 901® – past, present, future.

Past The first Bose 901 Direct/Reflecting® speaker was introduced in 1968. It was the result of research started twelve years before at M.I.T. under the direction of Dr. Bose. This speaker introduced the fundamental advances of a balance of reflected and direct sound, nine matched, full-range speakers, active equalization and uniform power response — all very controversial concepts at the time. But the performance produced by this new technology soon earned for the 901 speaker its international reputation as the most highly reviewed loudspeaker regardless of size or price.

Present The founders of Bose, all from the field of science, decided that Bose would reinvest 100% of its profits back into the company to maintain the research that was responsible for the birth of the 901 loudspeaker. The unprecedented success of the Bose® 901® in world markets, coupled with this 100% reinvestment policy, has created what we believe is by far the best research team in the industry. This team has made over 300 design improvements in the 901 speaker since its introduction — including such basic developments as the Acoustic Matrix™ Enclosure (illustrated), the helical, low impedance voice coil and the advanced full-range precision drivers. And the new concept of controlling the spatial properties of the 901 speaker has just been introduced via the unique Bose Spatial Control™ Receiver.

Future At Bose we have decided that "901" will continue to be the designation of the product that represents the state-of-the-art of our technology — whatever size, shape or form that product may take. In our research we continue to look at any and all technologies and product concepts that might hold possibilities for better sound reproduction. Consistent with the past, we will introduce new technology into the 901 speaker as it is developed — often without announcement. This is our dedication to the goal that whenever you invest in the Bose® 901® system you will receive the latest technology and the best in music reproduction.



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Better sound through research.

the list: not just those you can't afford, but those that are so far *below* your price range that they're unlikely to be worthy of notice. Speaker values can vary surprisingly, though, so don't be rigid about the cutoff points. Speakers listing for as little as 60% of your maximum price are likely to satisfy you. If everyone is raving about some speaker selling for even less, listen to it too. At worst, you'll waste a few minutes. At best, you'll save a few hundred dollars.

Speakers nominally priced a bit above your range may be affordable if discounts are available in your area. (In any county big enough to support two or three audio dealers, you're bound to find at least one shop that will give you a discount.) So if your limit is $300, don't automatically scratch $350 speakers from your list.

Test reports can prove a useful guide, but only that. They can't substitute for what you hear yourself. They can make you a more astute listener, however. Reviewers listen to endless speakers and have a vocabulary to describe what they hear. Find reviews of models that are carried by your local dealer and compare what he has heard with what you hear. Do this a few times for any given review source (HIGH FIDELITY's TEST REPORTS, for example) and learn to correlate the descriptions with the way the speaker will sound to you. (The reviews will also tell you useful details not found on spec sheets: optimum placement, etc.)

Listening analytically will become second nature and eventually you will understand what a reviewer means when he says that a speaker has "a forwardness and exciting sense of immediacy," or has "some indication of low-frequency resonance . . . that added a roundness." Once you've heard what's being described, the audio vocabulary loses its mystery.

Test reports can prove a useful guide, but only that.

A manufacturer's specs will often be useful in comparing performance between speakers in his line, but not so useful comparing performance with speakers built by a competitor. Even within one manufacturer's line there may be inconsistencies. A reputable maker won't exaggerate the specs of his most expensive speaker, but he may shave the specs of his lower-priced models to exaggerate the difference between the top and bottom of his line. For example, the high-end response from a given tweeter may be shown as lower when it's in the least expensive system than when it's in the flagship model.

A given reviewer's measurements will yield meaningful comparisons between different speaker makes—but comparisons with other speakers, tested by a different magazine, will not be meaningful.

Two other factors to consider prior to listening tests are sensitivity (or efficiency) and appearance.

How a speaker looks won't affect its sound. But since speakers are probably the most visible component of a stereo system, you should avoid one that sounds good but doesn't appeal to you visually.

Sensitivity is usually given as output in decibels of sound-pressure level (dB SPL) for 1 watt of input, measured at a distance of 1 meter. Theoretically, a speaker with a sensitivity of 97 dB will need only half the amplifier power of one with a 94 dB sensitivity to produce the same sound level. (To put it another way, an increase of 3 dB—raising 94 dB to 97 dB—would require double the power.) In practice, it's less clear-cut. These measurements are usually made with a 1 kHz sine-wave signal; those taken over a period of time with a musical signal might differ, as would any measurements made with broad-band pink noise. But it's safe to assume that a 97 dB speaker requires somewhat less power than a 94 dB one. And the bigger the difference, the more significant it becomes in practice.

Sensitivity is an indirect guide to a speaker's power requirement. More direct are the speaker's amplifier power spec, and its rated maximum

First Chair

That's the Jensen Separates car stereo speaker system. That's the thrill of being there.

First Chair. What better way to describe the Jensen Separates?

The finest, most accomplished car speaker system to date. With a revolutionary design that makes your car seat the best seat in the house.

It's a total departure from conventional car speaker design. Because acoustically, the interior of your car is nothing like your living room.

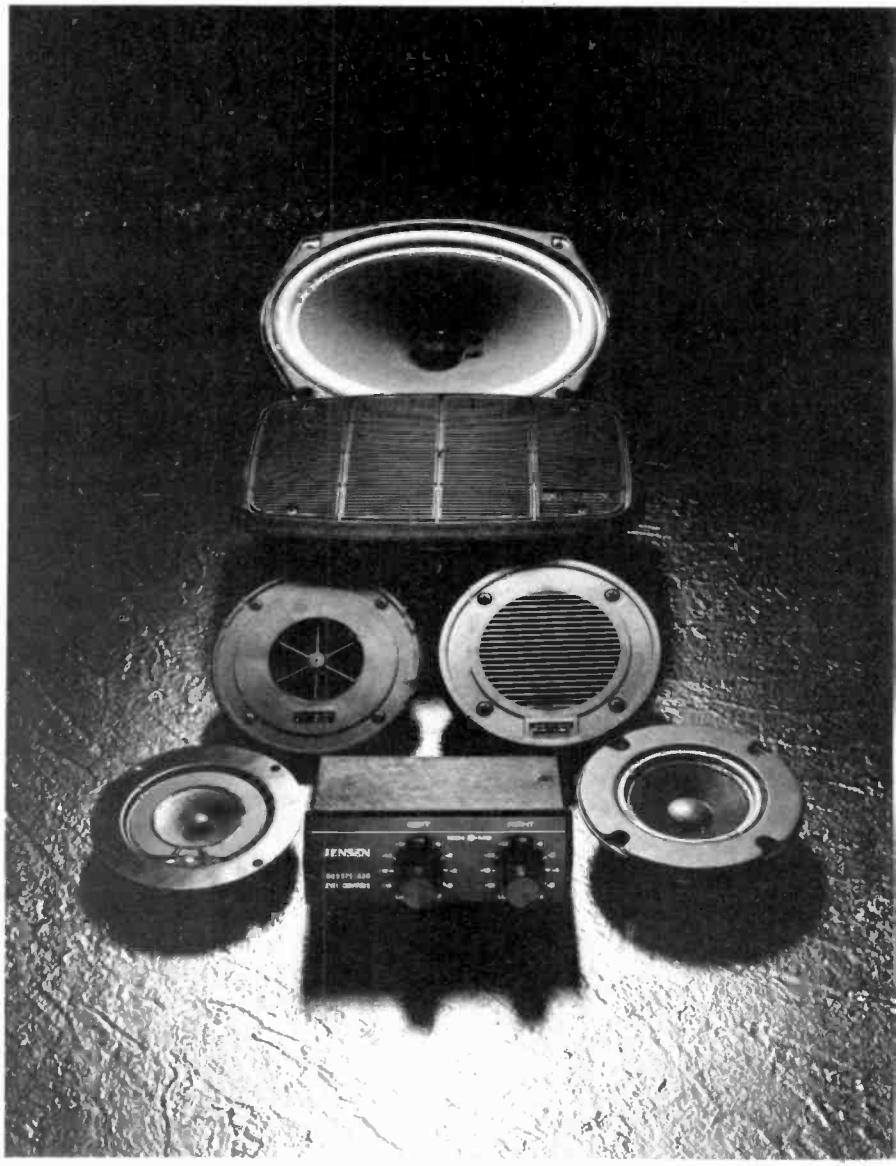
The Separates include two 6" x 9" woofers to be mounted in your car's rear deck. In this manner they utilize the large volume of the trunk to provide solid, deep bass response.

Two 2" phenolic ring tweeters mount high in the front doors to give you precise, transparent high frequencies. Two 3½" mid-ranges beneath the tweeters let you enjoy all of the subtle-yet-important middle frequencies.

The Jensen Separates even come with an under-dash control/crossover unit with individual controls for each tweeter and each mid-range. This speaker system is also ideally suited for the advanced function of bi-amplification.

The Jensen Separates. The undisputed master of car stereo sound reproduction.

Artful, ever-faithful music. That's the thrill of being there. That's the Jensen Separates.



JENSEN
The thrill of being there.

For more information, write Jensen Sound Laboratories, Division of Pemcor, Inc., 4136 N. United Parkway, Schiller Park, Illinois 60176.

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power-handling capacity.

What constitutes recommended minimum and maximum power levels varies among speaker manufacturers. One might list the minimum amplifier power for undistorted background listening level, and the maximum the speaker can take without disintegrating. Another might quote the minimum power that can produce reasonably high levels without amplifier clipping distortion, and as maximum power the most the speaker can take before distortion increases by a specific (but unspecified) amount. Some speaker manufacturers use rms or continuous power for these specifications; others might use peak or average power.

Still, these specifications do suggest how much power a certain speaker will require. For best results, the speaker's maximum capacity and the amplifier's rated power should be about the same. Underpowered amps can cause problems; they may be driven into clipping, causing audible distortion and can burn out a tweeter.

Impedance may be a factor, too, especially if you plan to run more than one pair of speakers at a time. In that case, 8-ohm speakers are a better choice than 4-ohm ones; the latter could damage some amplifiers if driven in parallel.

The real challenge, the real work, and the real fun comes in listening. You must know what to listen for and how to insure that you can hear it.

That insurance begins with limiting your listening. Don't make a whirlwind tour of local hi-fi shops, trying to hear everything at once. Instead, listen at length to the best speakers in the shops (definitely including those you can't afford), priming your ears to recognize quality. Bring along some favorite records (if they're worn, buy new copies) with music that will place the highest demands on a speaker and use them as demo material. (Don't, however, ignore the records the dealer offers as testing material; just be sure yours are included too. Also, never use synthesized records where the stereo image has been synthesized from a mono signal: Any imaging shifts that occur may arise from the record and not the speakers.

Bring along . . . records that place the highest demands on a speaker.

Now start investigating speakers you might actually buy. Weed out those that are unsatisfactory with simple tests. Pass over any speaker that sounds bad; it's not vital to figure out what's wrong. Roughly, check frequency response with interstation noise from an FM tuner. If you can hear an identifiable pitch, or if the noise seems concentrated in one area of the spectrum, be suspicious of the speaker's balance. (You can, however, alleviate bassiness in a floor-mounted speaker by raising it a foot or so, or increase the bass of a bookshelf speaker by setting it on the floor.)

Check high-frequency dispersion by walking past the speaker while the interstation noise is playing. A gradual fall-off of high frequencies at the far edges of the speaker's sound field shows even dispersion. Peaks and dips in high-frequency response, or narrow beams, indicate a problem.

Select only those speakers that are suited to your listening room, e.g., an extra-bright speaker is better for a dead, softly-furnished room, but a bad choice for a bright, reflective one, and vice versa. Often tweeter level controls can compensate for these effects, but have the control's effect demonstrated. If possible, listen to the speakers under the same circumstances. Try for a room of similar size and similar reflectance, use an amplifier of the same power as your own, and ask to have your demo records played with the same cartridge that you normally use. (If your cartridge is mounted in a "universal" headshell, bring it with you—carefully packed to prevent stylus damage—and use it on the dealer's turntables.) You'll never get an exact match, but the closer you come, the better you'll know how your new speaker will sound at home.

Compare speaker systems two at a time, and don't bring in a third pair until there's a clear winner to the first face-off. Be absolutely sure that

Scott puts out.

Scott's unique gold warranty card. Individualized with your warranty, model and serial numbers, and expiration date. Scott's fully transferable, five-year parts and labor-limited warranty is your assurance of lasting pleasure.

SCOTT
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Warranty Number: 42531
Model: PRO-100B Speakers (2)
Serial Number: 7755823/7765624
Expiration Date: September 1, 1984

A Scott exclusive. By carefully controlling the variation of impedance over the entire listening range, Scott speakers give you maximum amplifier power output and minimum speaker distortion.

SCOTT CONTROLLED IMPEDANCE

Because Scott puts more in.

Deeper, richer lows. Crisper, clearer highs. And an accuracy across the entire tonal spectrum that's second to none. That's what you get with Scott Controlled Impedance speakers.

No matter what your listening preference, Scott speakers will make your whole sound system sound better.

At Scott, there's no such thing as an "off-the-shelf" component. Unlike many other makers, Scott custom designs and acoustically tailors every speaker component to give you accurate frequency response, high efficiency, and extra power handling capacity. After all, the sound you get out depends on what we put in.

But listen for yourself. And you'll hear just how much Scott speakers really put out.

For more information on Scott speakers, or on our entire audio line, see your nearest Scott dealer or write H.H. Scott, Inc., Corporate Headquarters, 20 Commerce Way, Dept. IS, Woburn, Massachusetts 01801. In Canada: Paco Electronics, Ltd., Quebec, Canada.

SCOTT®
The Name to listen to.®
Makers of high quality high fidelity equipment since 1947.

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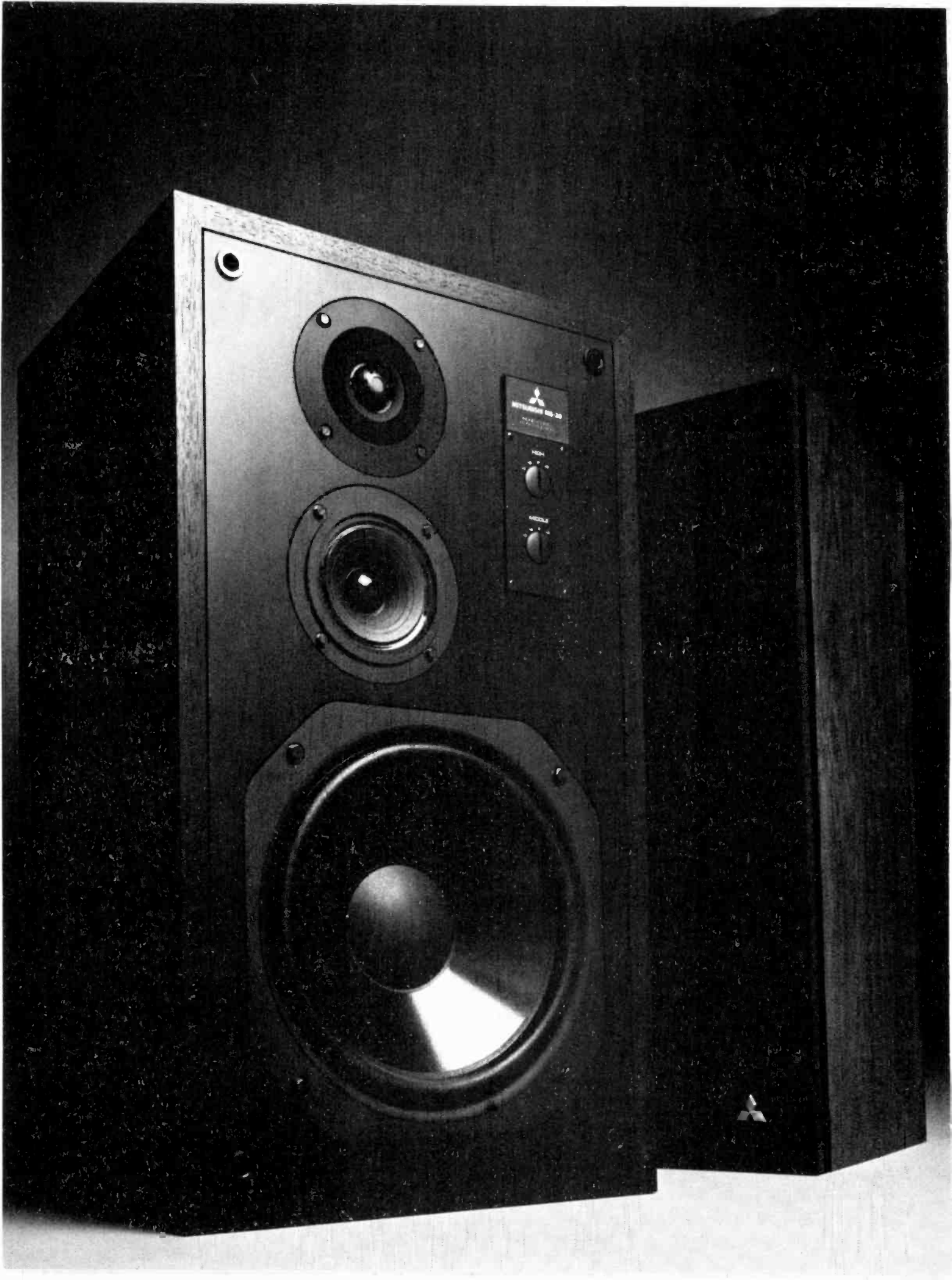


Stop Listening To Paper.

And start listening to music as you've never heard it before.

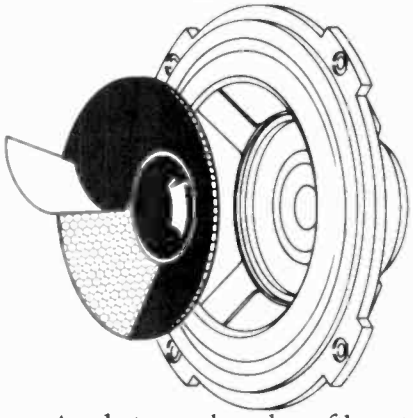
Completely free of the spurious vibrations caused by conventional paper cone speakers.

Mitsubishi has eliminated those vibrations by eliminating the paper.

Instead, we build our woofer cones with an aluminum honeycomb core in a sandwich of glass fiber.

Unlike paper cones, the honeycomb structure is rigid enough to maintain its shape, yet light enough to be exceptionally responsive.

So it can put out sound without adding to it.



And since the glass fiber is non-porous, it gives our air suspension speakers a perfect seal, and a lower resonance frequency for better bass response.

We've also added a flux normalizing ring that reduces distortion by 20dB. And automatic overload protection.

The end result is a speaker capable of a level of performance literally unheard of until now.

If our honeycomb speakers sound too good to be true, test listen to them and judge for yourself.

It's what you won't hear that will impress you.

MITSUBISHI AUDIO SYSTEMS

Mitsubishi's Honeycomb Speakers. MS-10 10" 2-Way Bookshelf. MS-20 12" 2-Way Bookshelf. MS-30 12" 3-Way Bookshelf. For more information write Melco Sales, Inc., Dept.46, 3030 East Victoria Street, Compton, California 90221.

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the sound levels are precisely matched. A speaker that's a fraction of a dB louder will sound cleaner and more open. Readjust levels from time to time too. Since speaker frequency responses differ, one speaker may sound louder on some passages and softer on others than the speaker it's being matched against.

Note overall balance and clarity. Can you hear all parts of the sound spectrum, all instruments and voices clearly? Are any of them over- or underemphasized? Beware of any speaker that makes all music sound alike—you want to hear the music, not the speaker. Actually you'll be less conscious of a better speaker—I always know I'm hearing a good speaker when I find myself asking for the order number of the record being played. Any speaker that seems to have no highs or lows—or that seems all highs or all lows—should be rejected.

No matter what a particular speaker sounds like, a musical passage probably exists somewhere that will make it sound good. Murphy's Law suggests that this passage will be the first one you play. So listen to a wide variety of instrumental textures through each of the speakers you're testing.

Most people have a natural tendency to switch speakers between passages out of respect for the music. Resist that urge. Switch in mid-passage so that the same sounds will be heard from both speakers in close sequence. Intersperse short A-B comparisons with longer periods of listening to each speaker individually and then compare how each sounds in relation to the other.

Overall balance isn't everything. Pay attention to the way each speaker handles particular types of sound. Bass should be rich and full—but only when the music's bass is. And that bass should change pitch as the music does. If it drones away at one note of its own regardless of where the music's going, that's a sign of uncontrolled bass resonance.

The bass must also be clean, so that you hear the music's fundamental frequency, not a distorted note an octave or two higher. And listen to how low that fundamental goes, while remembering that, on the average, the better the bass response, the more power the speaker will demand, and the more it will cost.

Organ records are good to test sustained bass output. But you want to

10 Loudspeaker

1. In conducting an A/B comparison test of speakers, be sure that both sets are made to play at the same level. Otherwise the louder set usually will sound better regardless of quality.

2. If the speakers you audition are a part of a display in which a great many are stacked against a wall, be sure that the candidates are in reasonably equivalent positions. A speaker at floor level will have a good deal more bass than one that is two feet off the floor.

3. Speakers that are designed to reflect off the walls probably will sound very different in the showroom, as compared with your listening room, especially if the former contains many models. Each speaker in the showroom that is not being driven sucks up acoustic power from those that are being demonstrated.

4. Bring your own records and/or tapes, preferably ones with which you are intimately familiar, to use in auditioning. If your choices are discs and you want to be really fussy, ask the dealer to play them with the cartridge model you have in your home system. An alternative is to use the cartridge model you intend to use with the new speakers.

5. If the speaker manufacturer has made specific recommendations about the positioning and installation of his product, be sure they are ob-

test bass transients too. A good swift thump from either a bass drum or tympani will do the trick—particularly on the new digitally-mastered records, which excel at bass transient response.

Bass should have a sense of power: You should be able to feel it while still hearing the notes change. The more expensive the speaker, the more you should expect this.

For an upper-bass test, tune in a male FM announcer. If one speaker makes him sound as if he is in a barrel, there's probably a resonance in the 100-Hz region. If that happens on all the speakers, he may naturally sound that way, in which case, tune in a different station. Check the announcer's voice for nasality as well (a sign of a midrange peak), and for oversibilant "S", "Z" and "F" sounds, which are signs of either distortion or treble peaks.

Speakers that make the music seem to shoot out towards you usually have a midrange peak; those that make it recede into the distance have a midrange dip.

Ignore demo records that are all brass, full of plucked string-bass notes, or other gimmicks foreign to your normal listening. Such records can make almost any speaker sound good. The material is a lot easier to reproduce than you'd think.

Choir recordings are excellent tests of midrange clarity: The better you can separate the voices from each other, the more clarity the speaker has. (But first test your choral record on the best speaker in the house; choirs are very hard to record properly.)

Piano—rock or classical, as long as it's acoustic—should have bell-like transparency, neither muted nor jangly (signs, respectively, of deficient highs or treble peakiness and distortion). Stringed instruments (especially in well-miked chamber recordings) should have a definte "bite" as the bow first bears down, yet not sound raspy. Cymbals should shimmer.

Sound-effects records sometimes make good tests. Use those sounds with which you're familiar (ice in a glass is O.K.; steam locomotives and the A-bomb, however, won't tell you as much . . . and the A-bomb cut was probably faked, anyway), and a record you know well.

Try every speaker at a variety of sound levels. The sound balance should "track," with the music sounding much the same as you raise and lower the volume; but expect to lose a noticeable amount of bass and perserved—both in the showroom and at home.

Shopping Tips

6. Unless you are sure that an FM station in your area does not limit or otherwise process its signal, avoid using FM music for speaker evaluations.

7. When you find a speaker you think you like, listen to it for a fairly long time (half an hour should do) to check for long-term fatigue effects. Better yet, try to arrange for a home trial. The more prestigious audio stores often offer this service.

8. Try to test a prospective speaker with an amplifier at least similar to the one you plan to use. The speaker's performance will avail you little if you cannot supply the power it needs. Damping factor of the test amplifier also should be similar to that with which the speakers will be driven.

9. For this reason, demonstration systems that adjust relative levels by way of attenuators between the amplifier's output and the speakers may compromise performance of the more efficient models through loss in effective damping factor. Ask your dealer whether level adjustments are made at the input or output of the amplifier; if the latter—and particularly if you hear any boominess in a relatively efficient speaker sysem—you may need to hear the speaker driven directly from the amplifier before you can assess it adequately.

10. Listen with an open mind.

haps a touch of treble at low volume levels due to the low-level insensitivity to the frequency extremes of your ears. But the speaker's sound should neither change drastically nor sputter in and out when you turn the volume down.

At high volume levels, be sure not to confuse loudness with distortion. We're so accustomed to hearing loud sounds distorting that it's possible to equate distortion with loudness. If the speaker doesn't seem "loud," but you have to shout to be heard over it, it's loud, alright—but clean.

Listen for accuracy in stereo imaging too. The more clearly you can locate instruments or performers, the better the imaging. The simpler the microphone setup used in making the recording, the more likely it will be a good test for imaging. (My own favorite image-test disc is *Die Fledermaus*, DGG 270 7088, which I've also heard used as a test and demo disk by both Infinity and B & W; it's also a good performance.) These listening checks will prove as exhausting as they are exhaustive, and you'll find that after comparing three or four pairs of speakers in sequence, your ear and brain will tire. When that happens, take a break. Go back later in the afternoon or the next day and resume your listening.

Try to label all the differences you hear, and characterize each speaker's sound verbally. It doesn't matter much whether you use your favorite reviewer's vocabulary, or one of your own, so long as you use it consistently. Take notes, for when you're through with your listening tests, you'll have heard so many speakers that you'll find it difficult to remember how each sounded.

At high volume levels . . . (don't) confuse loudness with distortion.

Beware of speakers whose sound is too memorable. Usually it's the poor but flashy speakers that reach out and grab you by the ear, due to overemphasis of some part of the frequency range.

Some speakers, due mainly to skilled design, give far better value than others. This will show up in your listening comparisons. But there are other routes to getting more for your speaker buck. Kits, closeouts, secondhand and "distressed" speakers are among those worth considering.

Kits are an obvious tradeoff: You do some of the work, and are recompensed in lower cost and in a feeling of accomplishment. On the other hand, you may not get a chance to hear the finished product until you've bought and finished it. If you know someone who's built the kit, or if the dealer has a finished unit on the floor, listen to it. You may like what you hear.

Some work may be involved in repairing the finish on speakers sold at a discount because of cabinet scratches or other non-electronic damage. But you may be able to set up your system so that the damage won't show.

When a new model supersedes an old one, some dealers close out their old stock at reduced prices. If the reduction is small, the new (and presumably improved) version may be the better buy. But if the reduction is substantial, it may give you access to a model that was above the price range you had contemplated. If the sound is as pleasing as the price, buy the speaker.

Used speakers may or may not be superseded models, but they have been secondhand. If the sound is good and the cabinet's dents or scratches are tolerable at that price, don't let them deter you from buying. Speakers are more likely to die than to deteriorate. Speakers with foam surrounds are an exception, though; examine the foam portions of these carefully for flaking, powdering, or cracking before you buy.

These are the basic tips on speaker buying. The rest is mostly a matter of keeping your ears trained. And that process can last as long as your ears do: I'm on my fifth or sixth speaker system, and already shopping for the next one. I still can't claim to know it all. But then, who likes a know-it-all? **HF**

How Audio History is made.

Mantaray Horn

Has American ingenuity taken a back seat to cheaper foreign labor? Not at Altec Lansing, where we've been inventing and building high-quality speakers for well over 42 years. Like the Model 14. It's so unique, that before we could create it, we first had to invent a whole new family of components.

Conventional beaming narrows listening area.

Mantaray expands listening sweet spot.

We began with a new type of horn. The Mantaray.™* It's the first "constant directivity" horn ever created. Conventional horns, cones and domes (including so-called omnidirectional and reflective speakers) tend to "beam," that is, narrow their angle of sound radiation at higher frequencies. This effect causes the stereo image to lose strength off the center axis and to actually wander.

Mantaray, on the other hand, delivers a clearly-defined sound wedge that keeps its strength regardless of the music's changing frequencies.

You get the full spectrum of sound and the most solid three-dimensional stereo image you've ever heard. And since the sound doesn't diminish off center axis, the Model 14 enlarges your listening area, your "stereo sweet spot."

As an extra benefit, Mantaray's precise sound focusing means your music goes in your ears—not in your drapes, walls, and ceilings. Consequently, it's more likely than other speakers to sound the same in your home as it does in your dealer's showroom.

Power Control

Then to give you even higher highs, we developed the first radial phase plug, the Tangerine®** In contrast to conventional phase plugs with two equidistant circular slots that block some frequencies, the Tangerine's tapered slots permit a free flow of high frequencies to beyond 20 KHz.

Tangerine

Equally important to all this is our new Automatic Power Control System. Unlike fuse-type devices or circuit breakers, the system keeps track of the power pumped into the speaker, lets you know with a blinking light when power exceeds safe limits, and then reduces overloads automatically, but without shutting the speaker off. It's quite a system.

In addition, the Model 14 offers you super-efficiency, highpower handling capacity and exceptional dynamic range, plus a new vented enclosure with a 12-inch bass driver for a tighter, crisper low end. So that's how audio history is made. And it's all yours at a price that means the best sound value available for your home today.

So the next time someone tries to tell you that American workmanship is taking a back seat, play your Altec Lansing speakers for them and prove how wrong they are.

For a free brochure and the name of your local dealer, write:
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Anaheim, CA
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ALTEC LANSING

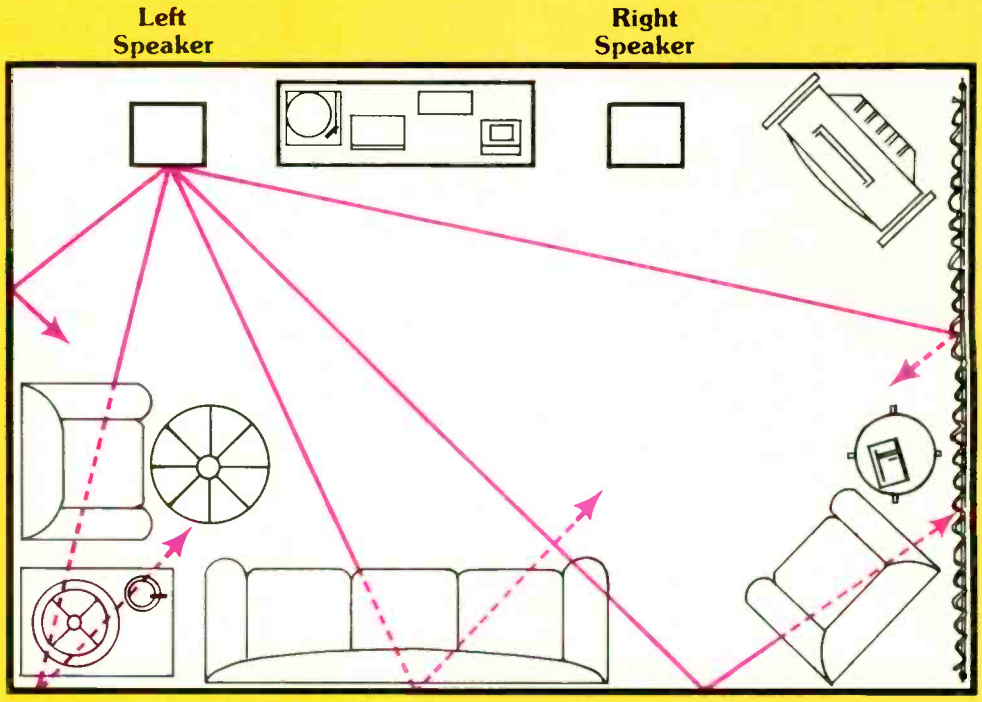
The Choice of Professionals

* U.S. and foreign patents pending
**U.S. Patent No. 4050541

The Most Critical Component

Why your listening room can be more important than the speakers you choose

by Alan Fielding



Many stereo shoppers, after giving due care to their choices, take the equipment home, plunk the receiver turntable down on some convenient flat surface, put the speakers where they are not in anyone's way, hook the whole thing up, and consider themselves "in business." They don't

Speaker design takes five steps forward. Quietly.

Inside, most speakers look pretty much the same. Drivers, baffle board and enclosure. Which is why some manufacturers make so much noise when they come up with anything new.

But in the midst of all the uproar, Kenwood's engineers have quietly developed five important design improvements you won't find anywhere else.

1. Separate front baffles. We mounted the mid and high frequency drivers on a separate baffle board. That keeps the woofer's vibrations from interfering with the mid and high frequencies. So you can get solid bass without losing any of the vocals.

2. Cross-over coil positioning. We found that two coils next to each other on a crossover network can cause signal leakage from the midrange to the woofer. By isolating the coils away from each other, we eliminated cross-talk and muddy midrange.

3. Thermal/shock cone construction. We manufacture our own wood-pulp cones by applying our exclusive heat/shock treatment. This creates a cone that is more rigid than the usual pressed type for low distortion, yet light enough to deliver much better efficiency.

4. Midrange stabilizer. To get the nasal sound out of the midrange frequencies, where most of the music is, we introduced a center support system and a 3-point cone suspension. To you that means clear sound imaging and better transient response.

5. Power linearity. The frequency response of most speakers deteriorates at high power levels. By using a computer, we designed the LS-1200 to deliver the same linear frequency response throughout its power handling range. From solo flute to full orchestra.

Listen to the LS-1200 at your Kenwood dealer and discover that, even at low listening levels, you get exceptional depth, clarity and fidelity. At high volume, it delivers the kind of tonal quality you normally expect from a live performance with a clean, punchy bass and clear, open highs.

That's one more reason the LS-1200 is simply too good to keep quiet.

Your speaker's reputation should be as good as your receiver's.

KENWOOD

For the Kenwood dealer nearest you, see your Yellow Pages, or write Kenwood, P.O. Box 6213, Carson, CA 90749.
In Canada, Magnasonic Canada, Ltd.

really think about the room or the position of the system in it—after all, what difference can it possibly make as long as nothing blocks the speakers? Besides, the way we listen has to fit the rest of our life-style, right? Well, friends, it certainly does make a difference—and a big one. If you're serious about listening to music, you'll have to face the fact that putting your stereo system in an unsuitable room is as silly as setting up a Ping-Pong table that measures 9 by 5 feet in a 10-by-8 room.

Your listening room is part of the audio chain, between the loudspeakers and your ears; every sound that reaches you must pass through it—and be altered by it. It should be no surprise, then, that the room you choose may influence the final sound more than your choice of loudspeakers. This is an inconvenient truth, since it's normally far easier to change speakers than to change rooms, but there are steps that you can take to improve less than desirable acoustics. And, of course, acoustic options are open to anyone who is building a house from scratch or heavily remodeling one.

Like any component, a listening room must have reasonably flat frequency response in order to avoid screechy highs or boomy lows. Then, too, it must be free of distortion in the form of loose panelboard or other objects free to buzz and rattle at various frequencies. And just as transient response is important to a phono cartridge or speaker, it is important to a room. If the room sound takes too long to build up—and depending on the way in which sound is delivered from the speakers to the listener within the room—sudden attacks, like those of percussion or brass, are dulled; if the sound takes too long to die away, the "hangover" garbles the sound. Finally, it is a good idea, especially in an urban setting, to soundproof your listening room as much as possible, otherwise you may not be able to play the system as loud as you like for fear of waking the kids or eliciting complaints from neighbors.

Like any component, a listening room must have reasonably flat frequency response . . .

When a loudspeaker (or any other sound source) starts to transfer its output into a closed space, the sound waves are reflected from and between the boundaries of the space. In some ways, conditions in the room resemble those in an organ pipe; the frequencies whose wavelengths "fit" most neatly into the dimensions of the space are reinforced. These are called the "natural frequencies" of the room and constitute its natural "modes" of vibration. Conversely, other frequencies, which the room reflects back to the source out of phase (zigging when the source is zagging, so to speak), at least partially cancel themselves.

To understand how to adjust the acoustics of a listening room, one must first understand how a perfectly reflective room behaves. Assume that a ray of sound leaves the source and bounces around the room, losing none of its energy in the process, finally returning to the source just in time to cancel the radiation then emerging. The net transfer of energy into the room at this frequency is now zero. But if the wave's energy is partially absorbed in the room, the cancellation cannot be complete. Thus energy will flow into the room to equal the amount absorbed. If absorption is total, the source delivers its full output. A room that is totally absorptive at all frequencies (an anechoic chamber) allows sound to propagate exactly as if no boundaries existed—as if it were outdoors.

The first natural mode of a room of normal residential dimensions is usually at a low bass frequency. For example, the first few modes of a rectangular space 23 by 13½ by 8½ feet fall at roughly 25, 43, 48, and 49 Hz. Higher modes are progressively closer in frequency, eventually overlapping to become quasi-continuous. While the broad trend of all modes in any given region of the higher frequencies affect the coloration of a

The Sound of Koss is no longer something you have to keep to yourself.

You no longer have to limit your listening to stereophones to enjoy the incredible Sound of Koss. Because now you can get the optimum loudspeaker system, and the Sound of Koss, in any Koss CM series system you choose.

KOSS CM 1010

Here's the ultimate 2-bandpass system. The Koss CM 1010 has a unique passive radiator to enhance the lower two octaves of bass. As well as a special 8-inch woofer to increase the midrange frequency response up to 3500Hz.

And with the CM 1010's 1-inch dome tweeter, you get the highest energy output, and lowest distortion, of any tweeter on the market.

KOSS CM 1020

No three bandpass loudspeaker system currently available offers the benefits of the Koss CM 1020. Its dual ports improve cabinet tuning and structural stability. And its 10-inch woofer provides a 3db gain in efficiency, as well as flat response over the lower bandpass. In addition, the CM 1020 uses a 4½-inch midrange driver to capture all the energy and presence of this critical bandpass. And the CM 1020's unique 1-inch dome tweeter produces the highest energy output and lowest distortion of any tweeter currently available. Indeed, the Koss CM 1020 is the 3-bandpass loudspeaker system you really have to hear to believe.

KOSS CM 1030

The Koss CM 1030 represents the ultimate in 4-bandpass loudspeaker systems. It includes a 10-inch woofer, mass aligned dual port system, a parallel midrange system with two 4½-inch drivers.and both a tweeter and a 1-inch treble tweeter that feature a unique acoustic transformer. Each has been carefully and specifically designed to produce the optimum spectral characteristics of their respective bandpass.

Uniting the CM 1030 into a total system that represents the ultimate in loudspeaker technology, is a unique, quasi second-order crossover network. In all, the CM 1030 is so amazing, no other 4-bandpass system even comes close in bass, midrange or high bandpass performance.

KOSS CM 530

Setting entirely new standards for bookshelf speakers is the Koss CM 530. Whether you place them horizontally or vertically, they deliver perfect mirror imaging, an incredible degree of dispersion, and the breathtaking Sound of Koss.

KOSS PRO 4/TRIPLE A

Write us, c/o Virginia Lamm for a free copy of our full-color loudspeaker catalog. And when you visit your audio dealer to hear the incredible Sound of Koss loudspeakers, take an extra moment for a private listening experience with the

world famous Koss Pro/4 Triple A. Once you've heard the Sound of Koss for yourself, you'll know why hearing is believing.

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Now a speaker system so advanced you don't need a "listening position." B·I·C introduces SoundSpan. The first loudspeaker design capable of those ideals that conventional approaches could never achieve. A design that creates a single-point sound source that is absolutely phase coherent, with totally uniform polar response at all frequencies, and perfect 360° dispersion. That's Total Power Radiation. And the result almost defies description. Walls, floor and ceiling are replaced with musical presence. Sound doesn't come "from" the speakers. It's just there, live and real—unaffected by speaker placement or listening position. For complete details simply write B·I·C|AVNET, Dept. S, Westbury, New York 11590. **The new SoundSpan™ Speaker Systems.**

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CIRCLE 6 ON READER-SERVICE CARD

room (its "brightness" or "warmth"), individual modes are of interest chiefly at low frequencies.

The number of modes to be found in a space of any given dimensions depends essentially on its volume. Thus, a nonrectangular space has about as many modes as a rectangular one of similar volume. But they are distributed in a more complex way, and the fact that they are less likely to coincide exactly (and thus doubly or triply reinforce certain frequencies) in nonrectangular rooms make spaces of this type particularly advantageous—something you should keep in mind if you're contemplating extensive remodeling or building. (For example, you could realize a major acoustic improvement by removing the floor of an unused attic to create a cathedral ceiling for a listening room below. In general, an irregular room shape creates less reinforcement at the natural frequencies; it effectively broadens the "tuning" of the room modes and makes frequencies more likely to coalesce.

We've been considering the "steady-state" response of a room—its behavior when a continuous signal is turned on for a long time and the pattern of sound waves is allowed to stabilize. Although its behavior during the initial buildup and terminal decay of the sound is considerably more complex and difficult to predict, if buildup and decay time (sometimes called reverberation time) are kept short enough, the details of such behavior are unimportant.

A good case can be made for listening rooms with fairly high sound absorption. Absorption at high frequencies is easily supplied by such normal furnishings as carpets, scatter rugs, upholstered chairs and sofas, and wall hangings. But these must be strategically placed, and part of the strategy involves the needs of your speakers. Some manufacturers state specifically what conditions are necessary for their speakers to perform best. In so-called omnidirectional designs, for example, reflection of the sound off walls and ceilings is a necessary part of the propagation "game plan" and will be inhibited by excessively absorptive surfaces or incorrect speaker placement. Conversely, the design of speakers such as the British "monitor" types are predicated on the theory that the direct speaker-to-ear wave is the important one and that the diffused and reflected ones are basically undesirable in the quest for the best possible stereo imaging and minimum coloration; too reflective a room obviously works against their design intentions. The vast majority of speakers, however, are considered to be general-purpose designs and delivered without any particular instructions for best use.

Absorptive material is far more effective when distributed randomly throughout a space . . .

Absorptive material, it turns out, is far more effective when distributed randomly throughout a space rather than concentrated in one area. Thus several small scatter rugs are likely to be as effective as a single wall-to-wall carpet—or even more so. Similarly, wall hangings are best if there are quite a few of them and if they are of moderate size. Overstuffed furniture, throw pillows, and draperies (particularly if ample enough to hang in folds) all contribute to absorption at mid and high frequencies, reducing the effect of the room on musical transients. Ceiling treatment, too, is most effective when applied in irregular patches. In a word, experiment.

Rooms with long parallel walls may be subject to flutter echo, a condition in which an impulse (such as a handclap) reflects back and forth between the walls and is stretched out into a series of rapid "slaps." This can sometimes be relieved by covering most of one of these walls with absorptive material. Flutter can also occur between floor and ceiling; carpeting normally controls the effect.

Random arrangement and shape of the absorptive and reflective sur-

faces—like irregular room shape—also contribute to the diffuseness of the reflected sound. That is, sound bouncing off the walls tends to reach the listening area approximately equally from all directions. This virtually assures that the room sound will not be able to confuse the loudspeakers' stereo image, which will be formed, as it should, by the direct radiation.

Despite the apparent advantages of making a listening area highly absorptive, the method has its price. The problem is that a stereo system playing in a highly absorptive or "dead" room will not sound nearly as loud as one playing in a reflective or "live" room, where the reverberation reinforces the direct sound from the speakers. This directly affects the amount of amplifier power you will need. For example, your best listening position for a low-powered system playing in a "dead" room probably is within 6 feet of the speakers in order to keep the sound level at the listener's ear reasonably high. The best solution, however, is to use an amplifier with enough power—and speakers with enough power-handling capacity—to produce adequate listening levels without much reinforcement from the room. This should give you the cleanest sound your system can produce. (It is, in fact, one rationale for the use of a superamp.)

Yet there are those who do not object to the acoustics of a dead room. To a certain extent, this is one of those unarguable matters of taste; but relatively heavy absorptive treatment has certain practical advantages that accrue even when the room is not being used for music: 1) The level of noise (whether generated internally or externally) is lower. 2) Less sound "leaks" out of the room to cause problems elsewhere. 3) Two or more conversations can take place with reduced aural competition. 4) The overall acoustics tend to be "intimate," favoring sounds that originate nearby over those from far away.

... Relatively heavy absorptive treatment has certain practical advantages ...

So far, we have said very little about taming the acoustic effects of the room at low frequencies. Materials suitable for low-frequency absorption are hard to come by and do not fit happily into a domestic environment. Yet the room modes at low frequencies are the farthest apart and cause the greatest unevenness in the sound. Moreover, such room modes are inevitable concomitants of the room dimensions.

But the most common problem at low frequencies—and one that can be solved to a substantial degree—involves not the room modes, but the distance between the sources of bass sound (woofer cones) and the room boundaries. The sound radiates equally in all directions, reflects from the nearest boundaries, and returns to the woofer. When the wavelength of the speaker's output equals four times the distance from the woofer to a boundary, cancellation reduces the radiated power by half; when the distance corresponds to half a wavelength, reinforcement doubles the power. This sonic behavior is not unlike that of room modes, except that here the frequencies of cancellation and reinforcement can be changed by moving the loudspeaker with respect to the room boundaries.

Some manufacturers have taken advantage of this effect by designing speaker systems so that woofers are located directly against one, two, or all three of the nearest boundaries, allowing the woofer and its reflected "images" to operate in unison at all frequencies and reinforce each other. This not only eliminates a serious source of room coloration, but also boosts the efficiency of the woofer. The only disadvantage of this technique is that the room modes associated with the boundary or boundaries with which the woofer is coupled will likely be exaggerated.

Most loudspeakers are designed in the form of a "box" with the drivers arranged on one of the long faces, and it is difficult to place them so that the woofer is in suitable proximity to, say, the floor and the nearest wall

KEF Model 304
on optional stand ULS II

KEF Model 303
on optional stand ULS I

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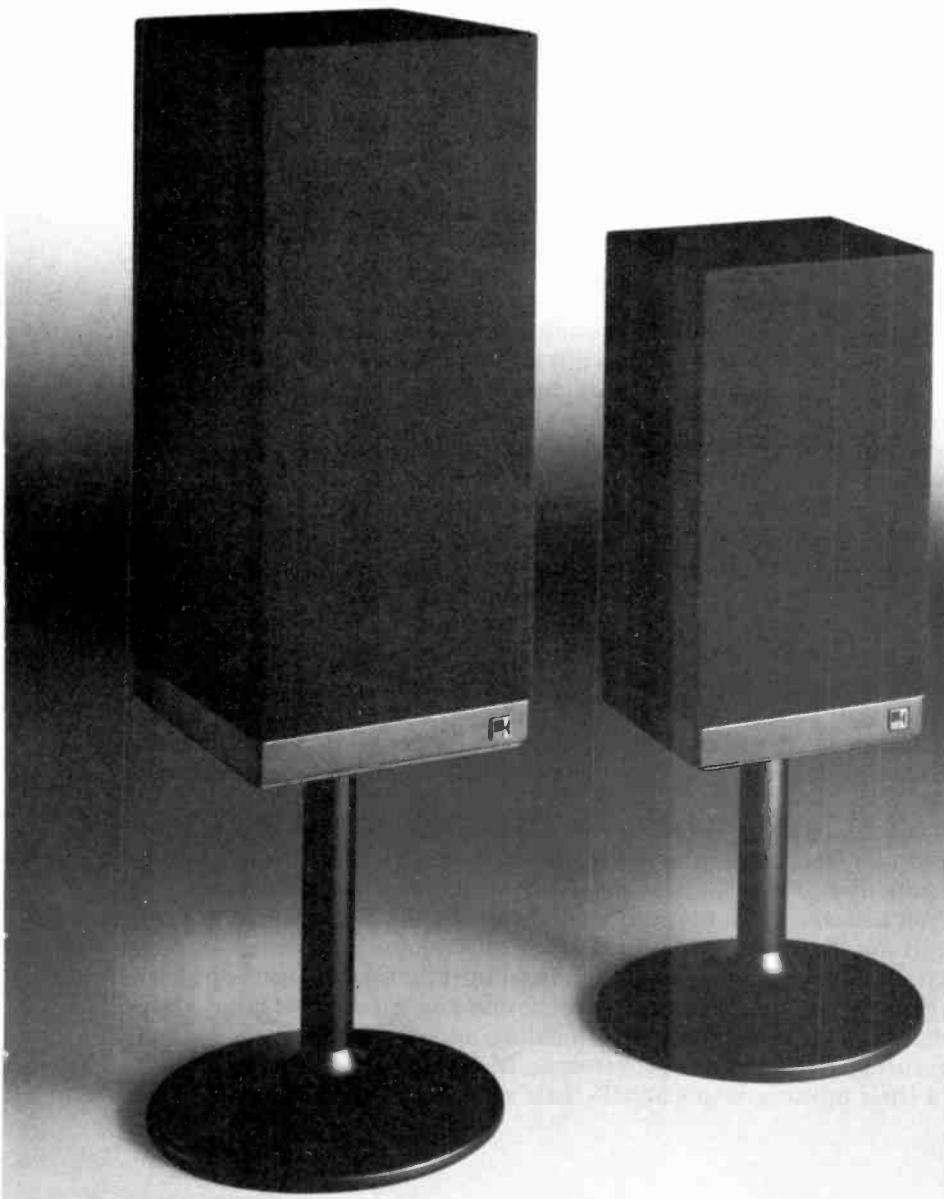

The traditional KEF accuracy in music reproduction now combined with a higher level of efficiency.....
Whether for use with amplifiers up to 100 watts or music centers as small as 10 watts, the two new KEF speakers—Model 303 and Model 304—can achieve surprisingly loud volume levels without any sacrifice of the tonal quality for which KEF is world-famous.
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In Canada: Smyth Sound Equipment, Ltd., Quebec J4H 3V7.

KEF The Speaker Engineers

without angling the more directional output of the tweeter (and midrange driver, if any) away from the listening location. Experience, backed up by a modicum of theory, has shown that such speakers perform best—that is, give the flattest frequency response—when located well away from the nearest room boundaries to increase the length of the reflective paths from the speaker to the floor and walls and thus lower the frequencies at which cancellations and reinforcements occur. It is important to remember that the speaker must be moved away from the floor (or ceiling) as well as the walls, which often necessitates placing it on a stand or suspending it. Sometimes a small speaker whose woofer gives up gracefully rather than attempting to reproduce bass tones beyond its muscle can be positioned so that the principal response anomalies created by the room boundaries are below its cutoff point.

For larger speakers whose aspirations include bass drum sounds and organ pedal tones, the situation is more difficult and calls for more elaborate strategy. One trick that has worked successfully is to place the speaker so that the distance from the woofer to the wall behind it is just about twice that between the woofer and the floor. Now a cancellation and a reinforcement coincide in frequency and nullify each other. It is important that the distance not be doubled *exactly*, for this raises the possibility that double or triple cancellations or reinforcements will occur at higher frequencies.

Often an inch or two one way or the other in location separates success from failure.

More than anything, this example serves to suggest some of the complexity of the situation and explain why the best positions for speakers usually are found by trial and error. Often an inch or two one way or the other makes the difference between success and failure. It is virtually impossible to predict where a given pair of speakers will sound their best in a room, but in all likelihood they will be on stands and several feet away from the nearest walls. Again, however, it is important that you observe any placement instructions the manufacturer provides with the speakers. A corner horn will have weak bass if it is moved out of the corner, and the sound and stereo imaging of most dipole radiators (typically, but certainly not exclusively, the full-range electrostatics) can be severely compromised by placing them too close to the wall behind them.

Minimizing reflective effects at low frequencies means sacrificing constructive reinforcement, just as it did at high frequencies. This type of positioning means the speaker will have less deep bass, but what there is will be the cleanest you can get. Here, too, the day is saved by high power capability in both the amplifiers and the speakers—which, for really high quality results, must tolerate enough bass boost to compensate for the low-frequency rolloff if it occurs at an audible frequency. And since typical absorptive materials in the home soak up more highs than lows, the bass may still predominate and require a *cut*. The use of low-frequency equalization in an attempt to compensate for room modes is, incidentally, doomed to failure; such means are effective only in correcting broad trends.

Obviously, the best listening room is one that has been designed for the purpose from scratch, and for this there is little that can substitute for competent professional services. The task of design and construction does not necessarily lie beyond the abilities of a do-it-yourselfer, but it is difficult and requires a great deal of knowledge and experience—and research. But even those of us who content ourselves with less radical tailoring of the listening environment have effective methods at hand. Careful choice and arrangement of furnishings, as well as the stereo system, can result in astounding improvements. Many listeners have never really heard their music systems at all—their rooms are in the way. **HF**

The Dahlquist DQ-10. Time...and Time again.

Critics and audiophiles agree — the listening quality of the DQ-10 is unexcelled. What accounts for its superb performance?

Time
Much credit for its smooth coherence must be given to the precisely matched transient characteristics of the five drivers. And, a good deal has been written about the DQ-10 and its extraordinary solution to the problems of time delay or phase distortion. It is not surprising that other high quality speaker designers have followed suit in offering their versions of time delay correction.

...and Time Again
The real "secret" to the unprecedented performance of the DQ-10 lies in Jon Dahlquist's patented method for reducing *diffraction*, a more audible and destructive form of *time* distortion. The separate baffle plate on which each driver is mounted is dimensioned to minimize diffraction in the frequency band in which it operates. Thus, the effect of the sound we hear is that of a driver mounted in free space, without obstructions or surfaces to distort the original sound source.

It can be said that the DQ-10 eliminates inaccurate reproduction caused by time elements — inertial time delay, and diffraction time delay — distortions that limit the performance of conventional speaker systems.

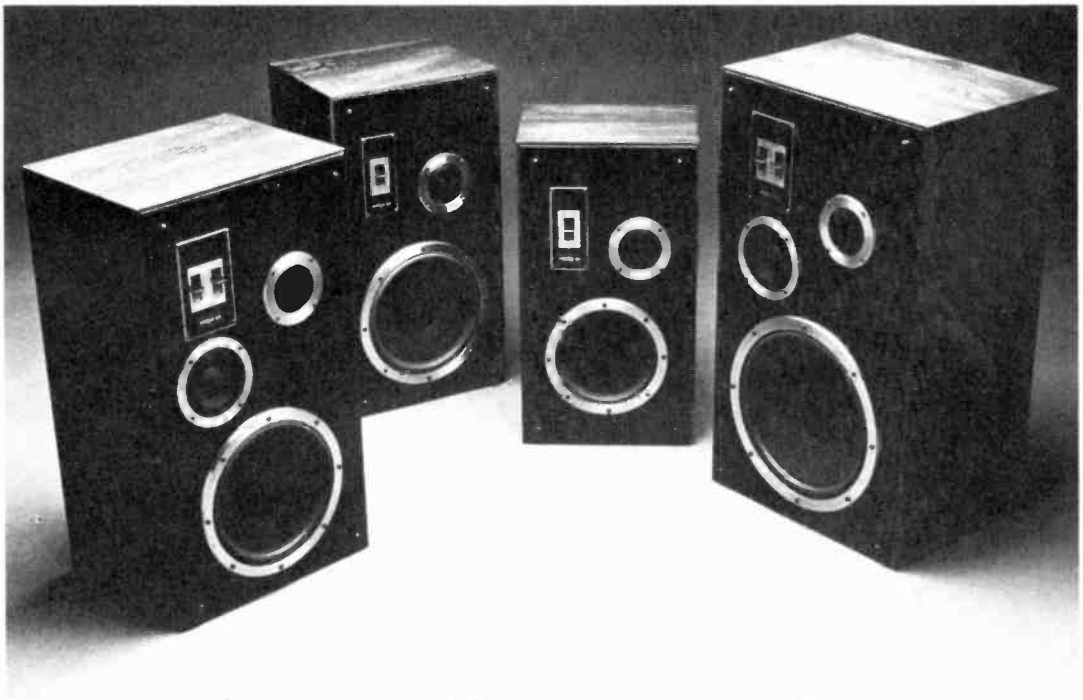
That's why the more critical listener will select the DQ-10. Time and time again.

DAHLQUIST
601 Old Willets Path
Hauppauge, N.Y. 11787

We're Mesa Electronics. Who?

Mesa Electronics, and you're going to be hearing a lot from us.

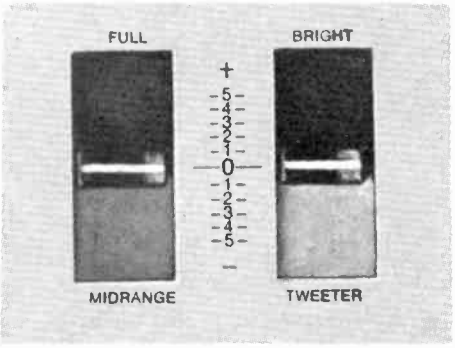
If you've ever heard our speakers, we'd need no introduction. If you've never heard them, you should. But it's entirely possible you haven't. Because we're barely two years old. But we're growing fast. So keep listening.



left to right: the Mesa 85, Mesa 65, Mesa 45 and Mesa 125.

Ordinary speakers go from wall to wall, but a Mesa goes from room to room.

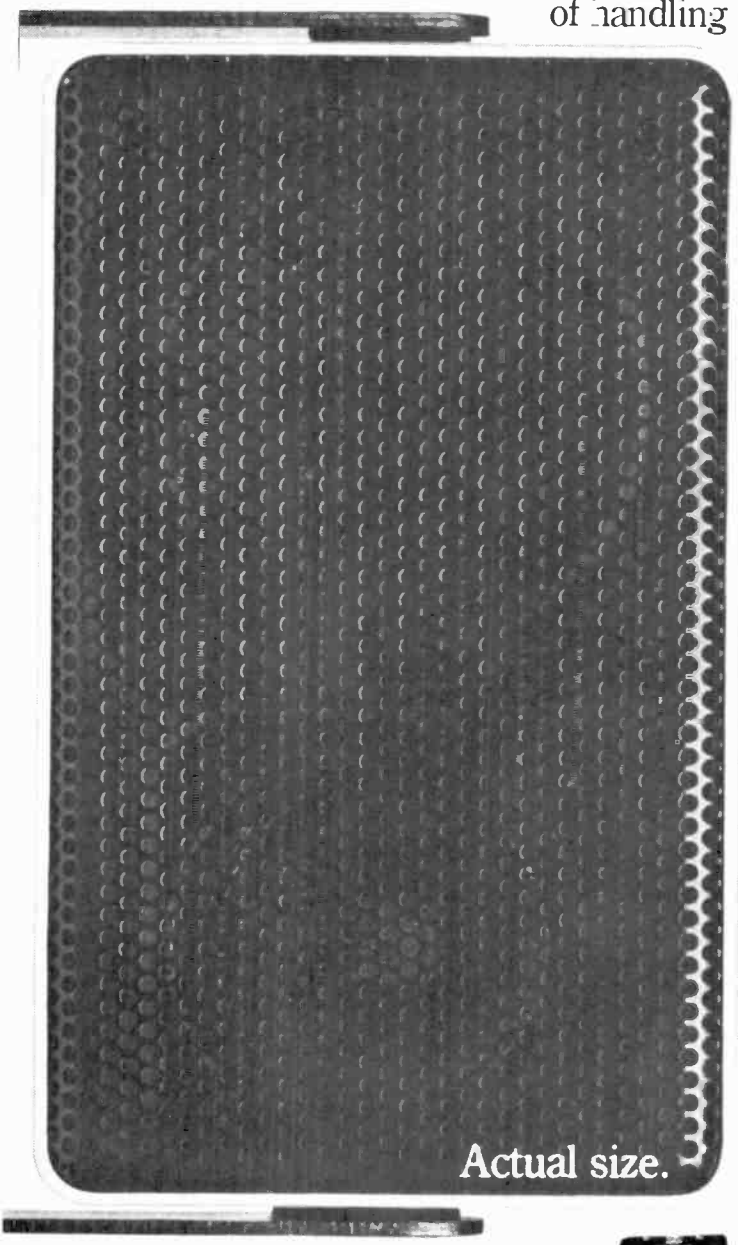
What makes Mesa special? One good example is our exclusive Vicom control switch on our line of Bass Reciprocator speakers. Ordinary speakers (no matter what they cost) are going to sound different in different rooms, simply because the environment they are in affects their sound. But with the Mesa Vicom control, you get consistently good sound anywhere, because it allows you to position your sound eleven different ways according to environmental conditions, or for different kinds of music. (That's up to eleven different ways more than the competition.)



No small achievements: Our Mini-Mesa Series.

But Mesa doesn't just make big speakers. We also make terrific little speakers. In fact, so terrific, with your eyes closed you wouldn't know they were small. There's a full line, from our super compact Mini-Mesa 15 (less than 4 inches wide and 6 inches high) perfect for your car, van, boat or plane, to the Mini-Mesa 30, an unobtrusive bookshelf speaker at less than 5″ wide and 8″ high, to our Mini-Mesa 50

3-way system complete with horn tweeter, yet only 6½" wide. We've already made a name for ourselves in the miniature speaker field, and small wonder.



Mobile speakers reach an all-time low: Mesa introduces subwoofers for cars.

For those unfortunates who didn't buy a Mesa mini speaker for their car, or those perfectionists who did and want even better sound, Mesa's new mobile Bass Boosters are guaranteed to bring you new lows in listening pleasure. Two sizes—5¼" round flush mount or 6" x 9" rear ledge mounts—work with any full range car speakers, adding the low notes and instruments the full range speakers aren't capable of handling alone. Wait until you hear what you've been missing.

Look! In the home! Under the lamp! It's an end table! No, it's a Subwoofer!

Mesa not only makes a subwoofer for your home stereo system, and makes it look like a beautiful piece of furniture

to boot, it makes it unique. The Mesa MS-80 Subwoofer is the only subwoofer you can buy with a dual level control that lets you balance satellite speaker volume. The MS-80 adds a new dimension to the sound of any stereo speaker system, and looks good while it's doing it. And since bass signals are omnidirectional, you can place it anywhere in the room—even as an end table.

If Mesa speakers sound so good, why do we stand behind them?

A lot of speakers have 90-day warranties. Some have one year warranties. A few have more. But only Mesa offers 5-year limited warranties on *all* our products. We don't do it to make you think something might go wrong with them. We do it because we know nothing will.

Don't do anything until you hear from us.

We'd like to hear from you. Write us today and we'll send you more information on our products and a list of Mesa dealers in your area. Once you get to one of them, you'll get the idea a lot faster than we can explain it.

mesa™

We're always thinking of sound ideas.

Mesa Electronics Sales Ltd.
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CIRCLE 24 ON READER-SERVICE CARD

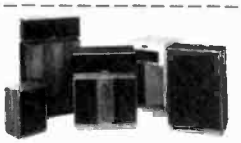
YOU HARDLY NOTICE A HERESY® UNTIL YOU TURN IT ON.

If you're cramped for space, Heresy is a loudspeaker that won't cramp your style. The Klipsch® Heresy will fit anywhere in your apartment and it will just sit there, gentle as a kitten until you turn it on. Then, watch out. Heresy roars like a lion.

Here's a small loudspeaker that has both tremendous efficiency and wide bandwidth. It uses the same tweeter and mid-range driver as the Klipschorn,® the industry standard for the past 30 years. The rugged 12" woofer is matched to the box for optimum bass performance and bandwidth.

So, just because you can tuck a Heresy in out-of-the-way places, don't underestimate its power. Your neighbors may well be calling to see how you managed to get an orchestra into your apartment. Heresy is proof positive that big sound can come in small packages.

klipsch®



Klipsch loudspeaker systems are available in a wide variety of carefully-selected domestic and exotic hardwood veneers

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CIRCLE 22 ON READER-SERVICE CARD

Buying Guide to more than 1,200 Speakers

At last count more than 1,200 different speakers are presently available. As we've pointed out elsewhere in this magazine, one of the best ways to begin selecting the model that you'll finally purchase is to first peruse the manufacturers' specs. We think this special buying guide section is an excellent place to start. Here's how to get the most out of these listings.

First, we make no claims that we have tested any of the equipment listed here, nor that the specs represent lab results. In compiling the information, we tried to compensate for the fact that not all manufacturers rate their equipment by the same methods. Since we couldn't possibly test all the speakers, the question was, how could we present it most effectively?

We used a series of guidelines and asked the companies to adhere to them when they provided performance specs on their models. If they deviated from our reference points, we asked them to state how a particular measurement had been obtained.

Guidelines for speakers—both home and car stereo—were: designate the design of the speaker system; the number and type of drivers; the system's response with reference to a certain number of dB SPL measured at 1 meter at 1 watt; the recommended minimum and maximum power in watts and dBW; the crossover points; and any special controls.

Some of these specs, such as size, type, and crossover points, are straight-forward, and where manufacturers have referenced frequency response, this too is directly comparable. Using the explanations provided in our articles, you can narrow down your selections to those that will fit in your listening area, the particular design that you prefer, and the models that will best match the power (and impedance) requirements of your amp.

As you head toward the audio store, you'll have done a good deal of the hard work—deciding which speakers are out of the question for basic reasons.

Where a particular spec does not appear, it means that the manufacturer did not supply it. N/A, or "not available," is generally reserved for new products on which complete information was unavailable at press time. Prices were supplied by the manufacturer and may vary from area to area.

Because of space limitations, not every model of every manufacturer has been fully listed. Those on which complete specifications do not appear are summarized at the end of the manufacturer's product listing.

You may want more information about specific products, in which case we suggest that you use our handy reader-service card or write to the manufacturers directly at the addresses in the directory.

Home Speaker Systems

ACCULAB
Acculab
8116 Deering Ave.
Canoga Park, Calif. 91304

440

Price $250
Dimensions 25½H x 14¼W x 11D
Weight 43 lbs.
Type Acoustic suspension
Drivers 12" woofer; 3⅝" cone midrange; 2¾" cone tweeter; 3½" solid-state supertweeter
Response 33 Hz to 30 kHz, ±4 dB re 91 dB SPL at 1 meter at 1 watt
Crossover 3.3 kHz; 7.5 kHz; 10 kHz
Impedance 8 ohms
Min. power 5 watts (7 dBW)
Max. power 50 watts (17 dBW)
Features Controlled dispersion; pushbutton speaker terminals

220

Price $150
Dimensions 22½H x 13W x 10½D
Weight 32 lbs.
Type Acoustic suspension
Drivers 10" cone woofer; 2¾"cone tweeter
Response 40 Hz to 18.5 kHz, ±4.5 dB re 90 dB SPL at 1 meter at 1 watt
Crossover 6.5 kHz
Impedance 8 ohms
Min. power 4 watts (6 dBW)
Max. power 20 watts (13 dBW)
Features Controlled dispersion

Models also available

340, $220; 320, $175

ACOUSTAT
Acoustat Corp.
3101 S.W. 1st Terrace
Ft. Lauderdale, Fla. 33315

Acoustat Monitor

Price $3,000/pr.
Dimensions 62H x 37W x 19D (pedestal); 8⅝D (top)
Weight 110 lbs.
Type Full-range electrostatic
Drivers 4 full-range electrostatic drivers per unit
Response 30 Hz to 20 kHz, ±3 dB re 110 dB SPL at 1 meter
Min. power Contains integral amplifier
Controls Overall gain and high-frequency gain (on amplifier)
Features Integral self-contained servo-charge amplifiers specially designed for high-capacitance load characteristics of electrostatic transducers

Monitor Three

Price $2,335
Dimensions 62H x 30W x 19D
Weight 85 lbs.
Type Full-range electrostatic
Drivers 3 full-range electrostatic drivers per unit
Response 30 Hz to 20 kHz, ±3 dB re 110 dB SPL at 1 meter
Controls Overall gain; high frequency gain (on amplifier)

Models also available

Monitor Four, $3,000

ACOUSTIC 626
Acoustic Control Corp.
7949 Woodley Ave.
Van Nuys, Calif. 91406

626

Price $319
Dimensions 24H x 16W x 11D
Weight 40 lbs.
Type Vented
Drivers 12" woofer; 5" midrange; 3½" dome tweeter
Response 35 Hz to 22 kHz, ±3 dB
Crossover 1.2 kHz; 6 kHz
Impedance 4 ohms
Min. power 10 watts (10 dBW)
Max. power 100 watts (20 dBW) at 8 ohms
Controls Midrange; tweeter
Features Circuit breaker protection for midrange and tweeter

Models also available

648, $749

ACOUSTICAL ENGINEERING
Acoustical Engineering
P.O. Box 60221
Sunnyvale, Calif. 94088

Mach IV

Price $995
Dimensions 41H x 42W x 30D (at sides)
Weight 150 lbs.
Type Corner horn
Drivers 15" woofer; 8" midrange; two horn tweeters
Response 16 Hz to 20 kHz, ±5 dB
Crossover 400 Hz; 2.5 kHz
Impedance 8 ohms
Min. power 10 watts (10 dBW)
Max. power 100 watts (20 dBW)
Controls L-pad
Features Walnut finish with black grille cloth

Mini Corner Horn

Price $495
Dimensions 24H x 18W x 12D (at sides)
Weight 75 lbs.
Type Corner horn
Drivers 8" woofer; 4" midrange; horn tweeter
Response 32 Hz to 18 kHz
Crossover 800 Hz; 5 kHz
Impedance 8 ohms
Min. power 10 watts (10 dBW)
Max. power 60 watts (17.75 dBW)
Controls L-pad
Features Same as Mach IV

Models also available

5, $795 (in flat black finish, $695); The "Mule", $295

ACOUSTI-PHASE
Acousti-Phase
P.O. Box 207
Proctorsville, Vt. 05153

Disco II

Price $449.95
Dimensions 29H x 18W x 15 ½D
Weight 75 lbs.
Type Bass reflex
Drivers 15" woofer; 2 midrange horns; 4 super horn tweeters
Response 28 Hz to 30 kHz, ±3 dB
Crossover 900 Hz; 3 kHz
Impedance 4 ohms
Min. power 20 watts (13 dBW)
Max. power 200 watts (23 dBW)
Features High-gloss black finish; side-mount carrying handles; slide casters; accepts ¼" phone plug connection

PHASE III+

Price $309.95
Dimensions 25H x 15W x 14D
Weight 47 lbs.
Type Bass reflex
Drivers 12" woofer; 5" midrange; 1" Mylar dome tweeter
Response 32 Hz to 20 kHz, ±3 dB
Crossover 700 Hz; 4.5 kHz
Impedance 4 to 8 ohms
Min. power 10 watts (10 dBW) continuous
Max. power 100 watts (20 dBW)
Controls Tweeter
Features Circuit breaker; also available in solid-wood butcher-block cabinet for $359.95

Microphase

Price $99.95
Dimensions 17½H x 10½W x 8D
Weight 19 lbs.
Type Bass reflex
Drivers 6½" woofer; 1" Mylar dome tweeter
Response 48 Hz to 20 kHz, ±4.5 dB
Crossover 1.6 kHz
Impedance 4 to 8 ohms
Min. power 5 watts (7 dBW)
Max. power 30 watts (14.75 dBW)

Models also available

Phase II, $229.95; Phase Monitor, $189.95; Phase I, $139.95

ACOUSTIQUE 3A
Acoustique 3A International, Inc.
871 Montée de Liesse, St. Laurent
Montreal, P.Q., Canada

TRIPHONIC SYSTEMS

Reference

Price	$2,900
Dimensions	47H x 13W x 13D
Weight	110 lbs.
Type	Acoustic pressure feedback biamplified
Drivers	Two 11" special woofers; 8" cone and 2" dome midrange; Equiphase flat ribbon tweeter
Response	20 Hz to 40 kHz, ±3 dB re 94 dB SPL at 1 meter at 1 watt
Crossover	150 Hz; 1.8 kHz; 6 kHz
Impedance	100 ohms
Controls	Room-control adjustment
Features	Preamplifier required; anechoic response supplied with speaker

TR-1000 Bass Module

Price	$1,800
Dimensions	47H x 27W x 12D
Weight	220 lbs.
Type	Acoustic pressure feedback
Drivers	Three 11" feedback woofers
Response	30 Hz to 100 kHz, ±1.5 dB
Crossover	100 Hz
Impedance	400 ohms
Controls	Rock/linear switch; efficiency adjustment
Features	Unit is in coffee-table configuration; includes 150-watt (21.75 dBW) built-in amplifier, microphone, and VU meter

TR-800 Bass Module

Price	$1,300
Dimensions	30H x 27W x 12D
Weight	180 lbs.
Type	Acoustic pressure feedback
Drivers	Two 11" special woofers
Response	30 Hz to 100 kHz, ±1.5 dB
Crossover	100 Hz
Impedance	400 ohms
Controls	Rock/linear switch; efficiency adjustment
Features	Unit is in coffee-table configuration; includes 150-watt (21.75 dBW) built-in amplifier, microphone, and VU meter

Atom 2 Triphonic Satellite

Price	$600/pr.
Dimensions	19H x 9W x 3D
Weight	10 lbs.
Type	Peripheral laminar decompression
Drivers	8" midrange; flat-ribbon tweeter
Response	100 Hz to 40 kHz, ±2 dB
Crossover	6 kHz
Impedance	8 ohms
Min. power	20 watts (13 dBW)
Max. power	150 watts (21.75 dBW)
Features	Time-aligned; laminated back wave through flat tunnel

Andante Master Control

Price	$1,000
Dimensions	18H x 12W x 7D
Weight	50 lbs.
Type	Acoustic pressure feedback
Drivers	Flat ribbon tweeter; dome midrange; 11" special woofer
Response	25 Hz to 40 kHz, ±3 dB re 93 dB SPL at 1 meter at 1 watt
Crossover	400 Hz; 6 kHz
Impedance	8 ohms
Min. power	5 watts (7 dBW)
Max. power	100 watts (20 dBW)
Controls	Room control; 4-position equalizer
Features	125 watt (21 dBW) built-in amplifier; anechoic response supplied with speaker

Allegro

Price	$539
Dimensions	37H x 13W x 13D
Weight	100 lbs.
Type	Acoustic doublet (3A patent)
Drivers	Two 11" woofers; 6 ¾" cone midrange; 2 horn tweeters
Response	50 Hz to 20 kHz, ±3 dB re 94 dB SPL at 1 meter at 1 watt
Crossover	800 Hz; 6 kHz
Impedance	8 ohms
Min. power	5 watts (7 dBW)
Max. power	150 watts (21.75 dBW)
Features	High efficiency; anechoic response supplied with speaker

Prelude

Price	$499
Dimensions	18H x 12W x 8D
Weight	44 lbs.
Type	Acoustic pressure feedback
Drivers	11" special woofer; 4" cone midrange; ¾" ferrofluid tweeter
Response	40 Hz to 30 kHz, ±3 dB re 92 dB SPL at 1 meter at 1 watt
Crossover	800 Hz; 6 kHz
Impedance	8 ohms
Min. power	5 watts (7 dBW)
Max. power	80 watts (19 dBW)
Controls	Room-control adjustment
Features	Anechoic response supplied with speaker

Allegretto Mk II

Price	$375
Dimensions	31H x 12W x 12D
Weight	34 lbs.
Type	Bass reflex
Drivers	Woofer; 10" horn midrange; horn tweeter
Response	55 Hz to 22 kHz, ±3 dB re 94 dB SPL at 1 meter at 1 watt
Crossover	1.5 kHz; 6 kHz
Impedance	8 ohms
Min. power	5 watts (7 dBW)
Max. power	80 watts (19 dBW)
Controls	Midrange
Features	Controlled damping; anechoic response supplied with speaker

Alto

Price	$219
Dimensions	30H x 11W x 11D
Weight	35 lbs.
Type	Acoustic doublet (3A patent)
Drivers	8" woofer; 8" midrange; piezoelectric tweeter
Response	50 Hz to 30 kHz, ±3 dB re 95 dB SPL at 1 meter at 1 watt
Crossover	6 kHz
Impedance	8 ohms
Min. power	5 watts (7 dBW)
Max. power	60 watts (17.75 dBW)
Features	High efficiency; anechoic response supplied with speaker

Models also available

TR-1200 Bass Module, $1,665; Atom 3 Triphonic Satellite, $660/pr.; Andante Linear, $679; Adagio, $559; Apogee Monitor, $449; Auditorat, $299; Apogee Mk II, $249; Alphase, $179

ACUSTA CRAFT
Acusta Craft
P.O. Box 12030
Shawnee Mission, Kans. 66212

CV-19

Price	$285 (kit); $345 (assembled)
Dimensions	44H x 16½W x 12¾D
Weight	95 lbs.
Type	Vented
Drivers	12" woofer; two 6" midrange drivers; horn tweeter
Response	42 Hz to 15 kHz, ±3 dB re 96 dB SPL at 1 meter at 1 watt
Crossover	400 Hz; 4 kHz
Impedance	4 ohms
Min. power	20 watts (13 dBW)
Max. power	200 watts (23 dBW)
Controls	None
Features	Constant-voltage crossover networks

CVW-10 Bass Module

Price	$259 (kit); $325 (assembled)
Dimensions	21½H x 21W x 21D
Weight	70 lbs.
Type	Vented
Drivers	Two 10" woofers
Response	50 Hz to 100 Hz, ±3 dB re 91 dB SPL at 1 meter at 1 watt
Crossover	100 Hz
Impedance	8 ohms
Min. power	20 watts (13 dBW)
Max. power	250 watts (24 dBW)
Controls	None
Features	Constant-voltage crossover

CVS-3 Satellite Panel

Price	$245 (kit); $310 (assembled)
Dimensions	42H x 17W x 5½D
Weight	55 lbs.
Type	Acoustic suspension
Drivers	10" woofer; 6" midrange; horn tweeter
Response	65 Hz to 15 kHz, ±3 dB re 91 dB SPL at 1 meter at 1 watt
Crossover	400 Hz; 4 kHz
Impedance	8 ohms
Min. power	20 watts (13 dBW)
Max. power	175 watts (22 dBW)
Controls	None
Features	Constant-voltage crossover networks; slimline panel styling

CV-15

Price	$175 (vinyl kit); $199 (walnut kit); $239 (walnut assembled)
Dimensions	30H x 16½W x 11⅞D
Weight	60 lbs.
Type	Vented
Drivers	10" woofer; 6" midrange; horn tweeter
Response	42 Hz to 15 kHz, ±3 dB re 91 dB SPL at 1 meter at 1 watt
Crossover	400 Hz; 4 kHz
Impedance	8 ohms
Min. power	20 watts (13 dBW)
Max. power	175 watts (22.5 dBW)
Controls	None
Features	Constant-voltage crossover networks

CV-12

Price	$95 (vinyl kit); $115 (walnut kit); $140 (walnut assembled)
Dimensions	23⅜H x 15¼W x 11⅞D
Weight	49 lbs.
Type	Vented
Drivers	10" woofer/midrange; 1" dome tweeter

Response	50 Hz to 20 kHz, ±3 dB re 91 dB SPL at 1 meter at 1 watt
Crossover	1.5 kHz
Impedance	8 ohms
Min. power	15 watts (11.75 dBW)
Max. power	100 watts (20 dBW)
Controls	None
Features	Constant-voltage crossover network

CVS-1 Satellite Panel

Price	$75 (kit); $99 (assembled)
Dimensions	12H x 8W x 5½D
Weight	12 lbs.
Type	Acoustic suspension
Drivers	6" woofer/midrange; 1" dome tweeter
Response	105 Hz to 20 kHz, ±3 dB re 91 dB SPL at 1 meter at 1 watt
Crossover	2.5 kHz
Impedance	8 ohms
Min. power	10 watts (10 dBW)
Max. power	50 watts (17 dBW)
Controls	None
Features	Constant-voltage crossover network; slimline panel styling

Models also available

CV-18, $285 (kit); $345 (assembled); CVW-12 Bass Module, $198 (kit); $265 (assembled); CV-14, $129 (vinyl kit); $149 (walnut kit); $179 (walnut assembled); CVS-2 Satellite Panel, $139 (kit); $169 (assembled); Model 10, $69 (vinyl kit); $80 (walnut kit); $105 (walnut assembled); Model 6, $65 (kit); $95 (assembled)

ADCOM
Adcom Co.
11A Jules Lane
New Brunswick, N.J. 08901

GFW-1 Subwoofer

Price	$229.95 (vinyl); $289.95 (walnut)
Dimensions	15 ½H x 17 ½W x 17 ½D
Weight	36 lbs.
Type	Infinite baffle
Drivers	10" long-throw woofer
Response	22 Hz to 150 Hz, ±3 dB re 86 dB SPL at 1 meter at 1 watt
Crossover	150 Hz
Impedance	4 ohms
Min. power	20 watts (13 dBW)
Max. power	120 watts (20.75 dBW)
Features	Two-way passive crossover built in; terminals for input from amp and output to satellites; a phasing switch provided to increase installation flexibility; compact, end-table styled

ADS
Analog & Digital Systems, Inc.
One Progress Way
Wilmington, Mass. 01887

L-630

Price	$285
Dimensions	25⅝H x 14 13/16W x 11¾D
Weight	42 lbs.
Type	Acoustic suspension
Drivers	1" soft-dome tweeter; 1½ soft-dome midrange; 10" woofer
Response	22 Hz to 22 kHz, ±5 dB re 91 dB SPL at 1 meter at 1 watt
Crossover	650 Hz; 4 kHz
Impedance	8 ohms nominal, 6 ohms minimum
Min. power	20 watts (13 dBW)
Max. power	200 watts (23 dBW)
Features	Optional black metal base

520

Price	$150
Dimensions	21¾H x 12¼W x 10¼D
Weight	30 lbs.
Type	Acoustic suspension
Drivers	8" woofer; 1" soft-dome tweeter
Response	26 Hz to 22 kHz, ±5 dB re 91 dB SPL at 1 meter at 1 watt
Crossover	1.5 kHz
Impedance	8 ohms
Min. power	10 watts (10 dBW)
Max. power	100 watts (20 dBW)
Features	Fused tweeter; drivers flush-mounted

SERIES II

ADS 810

Price	$370
Dimensions	25½H x 14⅛W x 11¾D
Weight	46 lbs. 8 oz.
Type	Acoustic suspension
Drivers	Two 8" woofers; 2" soft-dome midrange; ¾" soft-dome tweeter
Response	35 Hz to 23 kHz, ±3 dB; 20 Hz to 30 kHz, ±5 dB
Crossover	550 Hz; 4 kHz
Impedance	6 ohms
Min. power	20 watts (13 dBW)
Max. power	200 watts (23 dBW)
Features	Optional speaker stand; drivers flush-mounted for minimum diffraction

ADS 2002

Price	$470/pr.
Dimensions	6¾H x 4¼W x 5½D
Weight	4 lbs. 8 oz.
Type	Acoustic suspension
Drivers	4" woofer; 1" soft-dome tweeter
Response	85 Hz to 17 kHz, ±3 dB; 55 Hz to 20 kHz, ±5 dB
Crossover	2.5 kHz (electronic)
Impedance	47K ohms
Min. power	25 watts (14 dBW) continuous for woofer; 5 watts (7 dBW) continuous for tweeter
Controls	Tweeter level
Features	Biamplified miniature speaker for 12V operation (car) or home use with optional power supply (2002PS)

300C

Price	$150
Dimensions	8½H x 5¾W x 5¼D
Weight	7 lbs.
Type	Acoustic suspension
Drivers	5¼" woofer; 1" soft-dome tweeter
Response	40 Hz to 23 kHz, ±5 dB re 90 dB SPL at 1 meter at 1 watt
Crossover	2.5 kHz
Impedance	4 ohms
Min. power	5 watts (7 dBW)
Max. power	75 watts (18.75 dBW)
Features	Solid-aluminum miniature speakers with swivel brackets for car installation

200C

Price	$118
Dimensions	6¾H x 4¼W x 4½D
Weight	4 lbs. 8 oz.
Type	Acoustic suspension
Drivers	4" woofer; 1" soft-dome tweeter
Response	85 Hz to 20 kHz, ±3 dB; 55 Hz to 22 kHz, ±5 dB
Crossover	2.5 kHz
Impedance	4 ohms
Min. power	5 watts (7 dBW)
Max. power	50 watts (17 dBW)
Features	Solid-aluminum miniature speakers with swivel brackets for car installation; optional flush-mount kit (FMK)

420

Price	$115
Dimensions	20H x 11¼W x 8½D
Weight	24 lbs.
Type	Acoustic suspension
Drivers	7" woofer; 1" soft-dome tweeter
Response	30 Hz to 22 kHz, ±5 dB re 91 dB SPL at 1 meter at 1 watt
Crossover	1.5 kHz
Impedance	8 ohms
Min. power	15 watts (11.75 dBW)
Max. power	75 watts (18.75 dBW)
Features	Fused tweeter; drivers flush-mounted

Models also available

620, $200; ADS 910, $720; ADS 2001, $599/pr.; ADS 710, $285; 300, $145; ADS 200, $113

ADVENT
Advent Corp.
195 Albany St.
Cambridge, Mass. 02139

Powered Advent

Price	$499
Dimensions	28⅜H x 14⅛W x 13D
Weight	70 lbs.
Type	Biamplified acoustic suspension
Drivers	10" woofer; 1⅜" dome tweeter
Crossover	1.5 kHz
Controls	Input sensitivity; bass boost (below 100 Hz); treble boost and cut (above 3 kHz)
Features	Integral amplifier with infrasonic filter

New Advent

Price	$179 (wood cabinet); $155 (vinyl-clad utility cabinet)
Dimensions	25⅝H x 14¼W x 11½D
Weight	44 lbs.
Type	Acoustic suspension
Drivers	10" woofer; 1⅜" dome tweeter
Response	30 Hz to 15 kHz, ±3 dB re 89 dB SPL at 1 meter at 1 watt
Crossover	1.5 kHz
Min. power	15 watts (11.75 dBW) continuous
Max. power	Available upon request
Controls	3-way high-frequency balance switch

Advent/4 System

Price	$178 to $188/pr.
Dimensions	18½H x 11W x 8D
Weight	17 lbs. 9 oz.
Type	Acoustic suspension
Drivers	8" woofer; 1⅝" tweeter
Response	55 Hz to 25 kHz, ±3.5 dB re 89 dB SPL at 1 meter at 1 watt
Crossover	2.8 kHz
Impedance	8 ohms
Min. power	10 watts (10 dBW)
Max. power	80 watts (19 dBW)
Features	Symmetrical offset tweeters; packaged in pairs

Advent/2

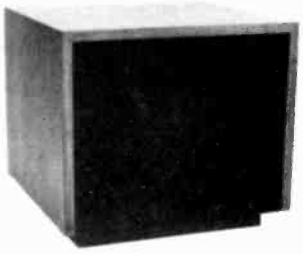
Price	$89
Dimensions	19½H x 11¼W x 7½D
Weight	18 lbs. 4 oz.
Type	Acoustic suspension
Drivers	9" woofer; two 1⅝" cone tweeters
Response	40 Hz to 15 kHz, ±5 dB re 88 dB SPL at 1 meter at 1 watt
Crossover	1.5 kHz
Impedance	8 ohms
Min. power	10 watts (10 dBW)
Max. power	Available upon request

Acculab Model 440

Powered Advent Loudspeaker

Acoustic Model 626

Richard Allan Monitor 80



Adcom GFW-1

Models also available

Advent/1, $120; (wood cabinet, $135); Advent/3, $65; 400, $35

AKAI
Akai America, Ltd.
2139 E. Del Amo Blvd.
P.O. Box 6010
Compton, Calif. 90224

SW-177 II

Price	$395
Dimensions	27¼H x 17¼W x 12¼D
Weight	46 lbs.
Type	Dynamic
Drivers	15" woofer; 5¼" midrange; two 1¾" tweeters
Response	25 Hz to 20 kHz, ±3 dB
Crossover	700 Hz; 5 kHz
Impedance	8 ohms
Min. power	40 watts (16 dBW)
Max. power	100 watts (20 dBW)
Controls	Midrange; tweeter

SW-137 II

Price	$200
Dimensions	23¼H x 13½W x 11¾D
Weight	26 lbs.
Type	Dynamic
Drivers	10" woofer; 5" midrange; 1¾" tweeter
Response	40 Hz to 20 kHz, ±3 dB
Crossover	1.2 kHz; 5 kHz
Impedance	8 ohms
Min. power	20 watts (13 dBW)
Max. power	40 watts (16 dBW)
Controls	Midrange

SW-7

Price	$160/pr.
Dimensions	8¾H x 5½W x 5½D
Weight	11 lbs./pr.
Drivers	5" woofer; 2" horn tweeter
Response	55 Hz to 22 kHz
Crossover	10 kHz
Impedance	4 ohms
Max. power	40 watts (16 dBW)

Models also available

SW-157 II, $295; SW-127, $125; S-82, $90/pr.

RICHARD ALLAN
RCS Audio International, Inc.
1314 34th St., N.W.
Washington, D.C. 20007

Monitor 80

Price	$375
Dimensions	26H x 12W x 11¼D
Weight	31 lbs.
Type	Acoustic suspension
Drivers	10" Richard Allan woofer; 5" Richard Allan midrange; 1" Richard Allan dome tweeter
Response	40 Hz to 20 kHz, ±3 dB
Crossover	1 kHz; 6 kHz
Impedance	8 ohms
Min. power	25 watts (14 dBW)
Max. power	80 watts (19 dBW)
Features	Walnut-veneer cabinet

Models also available

RA-8, $150

ALLISON
Allison Acoustics, Inc.
7 Tech Circle
Natick, Mass. 01760

Allison: One

Price	$420
Dimensions	40H x 19W x 10¾D
Weight	67 lbs.
Type	Dynamic; acoustic suspension
Drivers	Two 10" woofers; two 3½" midrange units; two 1" tweeters
Response	Complete specifications available on request
Crossover	350 Hz; 3.75 kHz
Impedance	8 ohms
Min. power	30 watts (14.75 dBW) per channel for 100 dB SPL
Max. power	Depends on program material; 400 watts (26 dBW)/channel amps may be used with music input
Controls	Combined mid/high frequency balance switch
Features	Stabilized Radiation Loading* enclosure design; convex diaphragm mid and tweeter units; full warranty for five years (*covered by U.S. and foreign patents)

The Electronic Subwoofer®

Price	$290
Dimensions	2H x 14¼W x 4⅜D
Features	Three low-frequency boost curves with turnover (+3 dB) points at 35.5 Hz, 41 Hz, and 48 Hz; infrasonic and ultrasonic filters slope at 18 dB/octave below 20 Hz and above 20 kHz; A-weighted S/N is better than 100 dB

Allison: Four

Price	$195
Dimensions	11H x 19⅜W x 10D
Weight	23 lbs., 8 oz.
Type	Dynamic, acoustic suspension
Drivers	8" woofer; two 1" tweeters
Response	Complete specifications available on request
Crossover	2 kHz
Impedance	8 ohms
Min. power	30 watts (14.75 dBW) per channel for 100 dB SPL
Max. power	Depends on program material; 200 watts (23 dBW)/channel amps may be used with music input
Controls	Combined mid/high-frequency balance switch
Features	Stabilized Radiation Loading* enclosure design; convex diaphragm tweeters; full warranty for five years (*covered by U.S. and foreign patents)

Allison: Six

Price	$125
Dimensions	11¼H x 11¼W x 11¼D
Weight	17 lbs.
Type	Dynamic; acoustic suspension
Drivers	8" woofer, 1" tweeter
Response	Complete specifications available on request
Crossover	2 kHz
Impedance	4 ohms
Min. power	15 watts (11.75 dBW) per channel re 97 dB SPL
Max. power	150 watts (21.75 dBW)
Controls	High-frequency balance switch
Features	Stabilized Radiation Loading* enclosure design; convex diaphragm tweeter; full warranty for five years (*covered by U.S. and foreign patents)

Models also available

Allison: Two, $350; Allison: Three, $290; Allison: Five, $160

ALTEC LANSING
Altec Corp.
1515 S. Manchester Ave.
Anaheim, Calif. 92803

Nineteen

Price	$899.95
Dimensions	39H x 30W x 21D
Weight	143 lbs.
Type	Bass reflex; vented
Drivers	15" bass; compression driver mounted to sectoral horn with the new Tangerine® Radial phase plug
Response	30 Hz to 20 kHz
Crossover	1.2 kHz
Impedance	8 ohms
Min. power	10 watts (10 dBW)
Max. power	65 watts (18 dBW)

Controls High/mid-frequency attenuator
Features Hand-rubbed oiled walnut or oak

LF-2 Universal Subwoofer
Price $800 (approx.)
Drivers 12" bass driver
Crossover 40 Hz; 60 Hz; 80 Hz
Features Electronic crossover; high-power amplifier; new power control system: red light warns when power input is too high; power is automatically reduced

Fourteen
Price $499.95
Dimensions 30H x 21W x 16½D
Weight 77 lbs.
Type Bass reflex; vented
Drivers 12" bass driver with radial phase plug; compression driver mounted to Mantaray constant-directivity horn
Response 35 Hz to 20 kHz
Crossover 1.5 kHz
Impedance 8 ohms
Min. power 10 watts (10 dBW)
Max. power 75 watts (18.75 dBW)
Controls High/mid-frequency attenuator
Features Hand-rubbed oiled walnut, acoustically transparent black knit grille; automatic power control to 200 watts (23 dBW)

Nine Series II
Price $379.95
Dimensions 26½H x 17½W x 15D
Weight 56 lbs.
Type Bass reflex; vented
Drivers 12" bass; 5" cone tweeter; 6½" mid-frequency
Response 40 Hz to 20 kHz re 93 dB SPL at 1 meter at 1 watt
Crossover 800 Hz; 7 kHz
Impedance 8 ohms
Min. power 12 watts (10.75 dBW)
Max. power 60 watts (17.75 dBW) continuous
Controls High/mid-frequency attenuator
Features Hand-rubbed oiled oak

Santana II
Price $329.95
Dimensions 19W x 25⅝H x 16D
Weight 57 lbs.
Type Bass reflex; vented
Drivers 12" bass; 5" frame cone tweeter
Response 40 Hz to 20 kHz
Crossover 2.5 kHz
Impedance 8 ohms
Min. power 12 watts (10.75 dBW)
Max. power 45 watts (16.5 dBW)
Controls High-frequency attenuator
Features Hand-rubbed oiled walnut with composition slate top

One Series II
Price $129.95
Dimensions 21½H 12W x 11D
Weight 26 lbs.
Type Acoustic suspension; sealed
Drivers 8" bass; 4" cone tweeter
Response 50 Hz to 20 kHz, re 89 dB SPL at 1 meter at 1 watt
Crossover 3.5 kHz
Impedance 8 ohms
Min. power 10 watts (10 dBW)
Max. power 30 watts (14.75 dBW)
Controls High-frequency attenuator
Features Hand-rubbed oiled walnut

Models also available
Eighteen, $899.95; LF-1 Universal Subwoofer, $500 (approx.); Seven Series II, $279.95; Five Series II, $239.95; Three Series II, $189.95

AMERICAN ACOUSTICS LAB
AAL Speaker Systems
629 W. Cermak Road
Chicago, Ill. 60616

APOLLO SERIES

Apollo 8853
Price $169
Dimensions 37H x 13W x 11D
Weight 39 lbs.
Type Ported
Drivers Two 8" foam surround woofers; 2" cone phenolic ring
Response 25 Hz to 22 kHz
Crossover 1 kHz; 5 kHz
Impedance 16 ohms
Min. power 5 watts (7 dBW)
Max. power 55 watts (17.5 dBW)

Apollo 2712
Price $139
Dimensions 27H x 16W x 11D
Weight 36 lbs.
Type Vented
Drivers 12" foam surround woofer; 5¼" cone midrange; 2" cone phenolic ring tweeter
Response 25 Hz to 22 kHz
Crossover 1 kHz; 5 kHz
Impedance 8 ohms
Min. power 5 watts (7 dBW)
Max. power 40 watts (16 dBW)
Features Acoustiload Porting System

CLASSIC SERIES

Classic 120
Price $369
Dimensions 35H x 14W x 11D
Weight 58 lbs.
Type Acoustic suspension
Drivers Two 10" foam surround woofers; 5" cone midrange; 3" cone tweeter
Response 25 Hz to 20 kHz
Crossover 1 kHz; 7 kHz
Impedance 16 ohms
Min. power 10 watts (10 dBW)
Max. power 120 watts (20.75 dBW)
Controls Front-mounted midrange and tweeter controls for infinite tonal balance
Features Walnut veneer cabinet; see-through grilles; white cones with molded frames

Classic 110
Price $239
Dimensions 23H x 14W x 11D
Weight 34 lbs.
Type Acoustic suspension
Drivers 10" foam surround woofer; 5" cone midrange; 3" cone tweeter
Response 30 Hz to 20 kHz
Crossover 1 kHz; 7 kHz
Impedance 8 ohms
Min. power 10 watts (10 dBW)
Max. power 55 watts (17.5 dBW)
Controls Front-mounted midrange and tweeter controls for infinite tonal balance
Features Walnut veneer cabinet; see-through grilles; white cones with molded frames

DISCO SERIES

Super Jock
Price $625
Dimensions 57H x 24W x 28D
Weight 205 lbs.
Type Horn labyrinth
Drivers 15" accordion surround woofer; 8 x 18 radial horn w/60 wt. compression driver; four 3-inch solid-state piezoelectric tweeters
Response 30 Hz to 25 kHz
Crossover 1.2 kHz; 7 kHz
Impedance 8 ohms
Min. power 20 watts (13 dBW)
Max. power 300 watts (24.75 dBW)
Features Vinyl-covered cabinet with front latched cover

PRO SERIES

PRO RH-9040
Price $900
Dimensions 41H x 19W x 32D
Weight 83 lbs.
Type Direct radiating
Response 400 Hz to 10 kHz
Impedance 8 ohms
Max. power 100 watts (20 dBW)

PRO W-212
Price $640
Dimensions 28H x 48W x 20D
Weight 140 lbs.
Type Horn loaded
Drivers Two 12" accordion surround woofers
Response 40 Hz to 5 kHz
Impedance 4 ohms
Max. power 200 watts (23 dBW)

PRO MT-70
Price $450
Dimensions 11¼H x 30W x 11¾D
Weight 45 lbs.
Type Direct radiating
Response 1.2 kHz to 25 kHz
Impedance 8 ohms
Max. power 60 watts (17.75 dBW)

Pro MA-14
Price $325
Dimensions 11¼H x 30W x 11¾D
Weight 38 lbs.
Type Direct radiating
Drivers Fourteen solid-state tweeters
Response 7 kHz to 25 kHz
Max. power 250 watts (24 dBW)

Pro MS-12
Price $210
Dimensions 23H x 16W x 16D
Weight 35 lbs.
Type Direct radiating
Drivers 12" accordion surround woofer; 3" solid-state piezoelectric tweeter
Response 100 Hz to 20 kHz
Crossover 5 kHz
Impedance 8 ohms
Min. power 25 watts (14 dBW)
Max. power 100 watts (20 dBW)

STUDIO SERIES

Studio 400
Price $269
Dimensions 35H x 14½W x 11½D
Weight 48 lbs.
Type Acoustic suspension
Drivers Two 10" foam surround woofers; 5¼" cone midrange; 3" solid-state piezoelectric supertweeter
Response 25 Hz to 25 kHz
Crossover 1 kHz; 5 kHz
Impedance 4 ohms

Min. power	10 watts (10 dBW)
Max. power	75 watts (18.75 dBW)
Controls	Front-mounted midrange and tweeter controls for infinite tonal balance

Studio 200

Price	$169

Studio 100

Price	$139
Dimensions	22½H x 12½W x 9D
Weight	23 lbs.
Type	Acoustic suspension
Drivers	8" foam surround woofer; 3" solid-state piezoelectric supertweeter
Response	35 Hz to 25 kHz
Crossover	4 kHz
Impedance	8 ohms
Min. power	5 watts (7 dBW)
Max. power	35 watts (15.5 dBW)
Controls	Front-mounted tweeter control for infinite tonal balance

Models also available

Apollo 2915, $179; Apollo 830, $69; Classic 112, $329; CLASSIC 108, $169; Disco Tower, Series II, $450; PRO W-215, $875; PRO BH-15, $510; Pro MS-212, $370; Pro SC-410, $320; Studio 500, $289; Studio 300, $219; Studio 50, $109

AR
Acoustic Research
10 American Drive
Norwood, Mass. 02062

AR-14

Price	$180
Dimensions	25H x 14W x 10¾D
Weight	35 lbs.
Type	Acoustic suspension
Drivers	10" woofer; 1" soft-dome tweeter
Response	44 Hz to 22 kHz, ±2 dB re 86 dB SPL at 1 meter at 1 watt
Crossover	1.3 kHz
Impedance	8 ohms
Min. power	15 watts (11.75 dBW) for 100 dB SPL in average 1,500-cu.-ft. room
Max. power	Safe on normal speech and music with amplifiers of up to 100 watts (20 dBW) continuous power per channel
Controls	3-position tweeter
Features	Full 5-year warranty on performance

VERTICAL SERIES

AR-90

Price	$550
Dimensions	43⅜H x 14½W x 15 13/16D
Weight	82 lbs.
Type	Acoustic suspension
Drivers	Two 10" woofers facing sideways; 8" lower midrange; 1½" upper midrange; ¾" tweeter
Response	32 Hz to 25 kHz, ±2 dB re 87 dB SPL at 1 meter at 1 watt
Crossover	200 Hz; 1.2 kHz; 7.0 kHz
Impedance	4 ohms
Min. power	Safe on normal speech and music on amplifiers of up to 400 watts (26 dBW) continuous power per channel
Max. power	Safe on normal speech and music on amplifiers of up to 300 watts (25 dBW) continuous power per channel
Controls	Lower midrange; upper midrange; high range (3-position controls)
Features	Full 5-year warranty on performance; designed with AR Acoustic Blanket™ to prevent sound interference caused by cabinet reflections

AR-91

Price	$400
Dimensions	31½H x 14W x 11 7/16D
Weight	53 lbs.
Type	Acoustic suspension
Drivers	12" woofer; 1½" midrange; ¾" tweeter
Response	35 Hz to 25 kHz, ±2 dB re 87 dB SPL at 1 meter at 1 watt
Crossover	700 Hz; 7.5 kHz
Impedance	4 ohms
Min. power	Safe on normal speech and music on amplifiers of up to 400 watts (26 dBW) continuous power per channel
Max. power	Safe on normal speech and music on amplifiers of up to 200 watts (23 dBW) continuous power per channel
Controls	Two 3-position switches for midrange and high-range control
Features	Full 5-year warranty on performance; designed with AR Acoustic Blanket™ to prevent sound interference caused by cabinet reflections

Models also available

AR-25, $220/pr.; AR-18, $78 ea. (sold only in pairs); AR-9, $750; AR-92, $300

ARMSTRONG
Armstrong Audio (U.S.A.) Inc.
Sindell Organization
11046 Santa Monica Blvd.
Los Angeles, Calif. 90025

602

Price	$300 (walnut); $325 (teak); $350 (rosewood)
Dimensions	24H x 10W x 12D
Weight	25 lbs.
Type	Resistive-loaded
Drivers	Cone woofer; dome midrange; dome tweeter
Response	55 Hz to 20 kHz, ±2 dB
Crossover	2.3 kHz; 7.5 kHz
Impedance	8 ohms
Min. power	25 watts (14 dBW)
Max. power	100 watts (20 dBW)
Features	Phase-corrected crossover network

Models also available

620, $250

AUDICO
Audico, Inc.
8900 Research Blvd.
Austin, Tex. 78758

SW-B Monolith TL Subwoofer

Price	$1,100
Dimensions	58H x 25W x 20D
Weight	250 lbs.
Type	Transmission line
Drivers	Two 10" woofers
Response	14 Hz to 200 Hz, ±2 dB re 93 dB SPL at 1 meter at 1 watt
Crossover	120 Hz
Impedance	6 ohms
Min. power	15 watts (11.75 dBW)
Max. power	400 watts (26 dBW)
Features	Hand-tuned for optimum response; hand-rubbed wood veneer

A-10W

Price	$265
Dimensions	28H x 14W x 15D
Weight	60 lbs.
Type	Vented
Drivers	10" woofer; 1½" midrange dome; 1" soft-dome tweeter
Response	39 Hz to 20 kHz, ±3.0 dB re 90 dB SPL at 1 meter at 1 watt
Crossover	1.2 kHz; 6 kHz
Impedance	8 ohms
Min. power	15 watts (11.75 dBW)
Max. power	125 watts (21 dBW)
Controls	Midrange; tweeter
Features	Mirror-image pairs; Mylar capacitors; hand-rubbed wood veneer

A-10U

Price	$225
Dimensions	28H x 14W x 15D
Weight	60 lbs.
Type	Vented
Drivers	10" woofer; 1½" midrange dome; 1" soft-dome tweeter
Response	39 Hz to 20 kHz, ±3.0 dB re 90 dB SPL at 1 meter at 1 watt
Crossover	1.2 kHz; 6 kHz
Impedance	8 ohms
Min. power	15 watts (11.75 dBW)
Max. power	125 watts (21 dBW)
Controls	Midrange; tweeter
Features	Mirror-image pairs; Mylar capacitors; utility finish

LF-B

Price	$161
Dimensions	22H x 13½W x 9¾D
Weight	40 lbs.
Type	Vented
Drivers	8" bass/midrange driver; 1" soft-dome tweeter
Response	37 Hz to 20 kHz, ±2 dB re 89 dB SPL at 1 meter at 1 watt
Crossover	2.8 kHz
Impedance	8 ohms
Min. power	15 watts (11.75 dBW)
Max. power	80 watts (19 dBW)
Controls	Tweeter
Features	Mirror-image pairs; Mylar capacitors; stand included; hand-rubbed wood veneer; optional integrated stand

Models also available

TDC-210, $449; TDC-110, $259; A-10SA, $219; LF-A, $99

AudioPlate
Barcus Berry, Inc.
15461 Springdale St.
Huntington Beach, Calif. 92649

Model 36 Add-on Tweeter

Price	$200/pr.
Dimensions	7H x 7W x 3½D
Weight	4 lbs. 8 oz.
Type	Non-inertial plate
Drivers	Dual Barcus-Berry Audio Plate® drivers
Response	2 kHz to 20 kHz
Impedance	8 ohms

Min. power 0.5 watt (–3 dBW)
Max. power 100 watts (20 dBW)
Controls Attenuation
Features Wide-area dispersion of high frequencies; designed to supplement or replace tweeter in existing speaker systems; can be added to speaker system in minutes; no soldering or special tools needed; furnished in solid-walnut cabinet

AUDIO LAB CONSORT
Unitronex Corp.
1171 Landmeier Road
Elk Grove Village, Ill. 60007

AL-60
Price $359
Dimensions 26 4/5H x 17 3/10W x 12 3/5D
Weight 61 lbs. 11 oz.
Type Acoustic suspension
Drivers 12" cone woofer; 7" cone midrange; 1" wide dispersion phenolic dome tweeter
Response 32 Hz to 20 kHz
Crossover 300 Hz; 7 kHz
Impedance 8 ohms
Min. power 10 watts (10 dBW)
Max. power 140 watts (21.5) dBW
Controls Treble; midrange (3-position switch for normal or ±3 dB)
Features Same as Model AL-40

AL-20
Price $129
Dimensions 21 3/10H x 11 3/5W x 9 1/10D
Weight 21 lbs.
Type Acoustic suspension
Drivers 8" woofer; 1" wide-dispersion phenolic dome tweeter
Response 60 Hz to 20 kHz
Impedance 8 ohms (nominal)
Min. power 10 watts (10 dBW)
Max. power 50 watts (17 dBW)
Controls Treble (3-position switch for normal ±3 dB)

Models also available
AL-40, $259; AL-30, $159

AUDIO PRO
Intersearch, Inc.
4720-Q Boston Way
Lanham, Md. 20801

A4-14
Price $1,600/pr.
Dimensions 20¼H x 12⅛W x 10½D
Weight 35 lbs.
Type Biamplified, with built-in subwoofer
Drivers Two 5" bass drivers; 4½" midrange; 1" dome tweeter
Response 30 Hz to 20 kHz, ±3 dB re 96 dB SPL at 1 meter at 1 watt
Crossover 300 Hz; 2.5 kHz
Impedance 10K ohms
Min. power 1 μ (–60 dBW)
Controls Volume; bass; bass blend; treble
Features Automatic on/off

B2-50
Price $795
Dimensions 21⅛H x 18 3/16W x 17 7/16D
Weight 64 lbs.
Type Subwoofer with built-in amplifier and variable crossover filters
Drivers Two 6½"
Response 20 Hz to 0.2 kHz, +0, –3 dB re 96 dB SPL at 1 meter at 1 watt
Impedance 10K ohms
Min. power 0.25 microwatts (–6 dBW)
Controls Volume
Features Separate crossover frequency for subwoofer and satellites

AUDIO PULSE
Audio Pulse Electronics, Inc.
4323 North Arden Drive
El Monte, Calif. 91731

AP-52
Price $129/pr.
Dimensions 19½H x 11W x 7D
Weight 15 lbs.
Type Two-way ducted port
Drivers 6" high-excursion woofer/midrange; cone tweeter
Response 80 Hz to 20 kHz
Impedance 8 ohms
Min. power 10 watts (10 dBW)
Max. power 25 watts (14 dBW)
Features Tilted components

Models also available
AP-102, $350/pr.

AUDIOANALYST
Audioanalyst, Inc.
South Main Street
P.O. Box 33
Terryville, Conn. 06786

Phase Matrix M-12
Price $800
Dimensions 40H x 13½W x 16½D
Weight 115 lbs.
Type Acoustic suspension
Drivers Two 10" woofers; three 4½" midrange drivers; three 1" soft-dome tweeters; two ½" phase-match ultra-high frequency drivers
Response 24 Hz to 25 kHz, ±3 dB re 91 dB SPL at 1 meter at 1 watt
Crossover 200 Hz; 2 kHz; 15 kHz
Impedance 4 ohms
Min. power 15 watts (11.75 dBW)
Max. power 200 watts (23 dBW)
Controls Midrange; tweeter
Features Fused; incorporates Ambient Phase Recovery System, a totally passive image enhancer, adjustable for near and far field listening conditions; defeatable

Anthem Array
Price $599
Dimensions 44H x 15W x 15D
Weight 92 lbs.
Type Staggered acoustic suspension
Drivers 10" subwoofer; 10" woofer; 4½" midrange; 1" dome tweeter; 3" piezoelectric tweeter
Response 30 Hz to 20 kHz, ±3 dB re 87 dB at 1 meter at 1 watt
Crossover 120 Hz; 450 Hz; 3 kHz; 12 kHz
Impedance 8 ohms
Min. power 20 watts (13 dBW)
Max. power 250 watts (24 dBW)
Controls Midrange; tweeter
Features Midrange fuse; tweeter fuse; piezoelectric output variable; uniform polar response at significant frequencies

M-8
Price $399
Dimensions 27½H x 15½W x 11¾D
Weight 56 lbs.
Type Acoustic suspension
Drivers 12" woofer; 4½" midrange driver; 1" soft-dome tweeter; ½" phase-match high frequency
Response 27 Hz re 88 dB at 1 meter at 1 watt
Crossover 600 Hz; 2 kHz; 15 kHz
Impedance 8 ohms
Min. power 15 watts (11.75 dBW)
Max. power 200 watts (23 dBW)
Controls Midrange; tweeter
Features Fused

Phase Matrix B-1 subwoofer
Price $279
Dimensions 27½H x 15½W x 11¾D
Weight 50 lbs.
Type Vented
Drivers 12" woofer
Response 22 Hz to 120 Hz, +3 dB re 89 dB SPL at 1 meter at 1 watt
Crossover 120 Hz
Impedance 4 ohms
Min. power 10 watts (10 dBW)
Max. power 200 watts (23 dBW)
Features Built-in crossover with direct-coupled bass matrix and level-compensating high-pass filter for upper speaker system

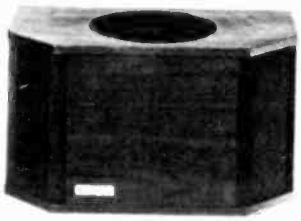
A-100XL
Price $207
Dimensions 24⅜H x 13¾W x 12D
Weight 41 lbs.
Type Vented
Drivers 10" woofer; 2" midrange; 1½" tweeter
Response 40 Hz to 20 kHz, ±3 dB re 90.5 dB at 1 meter at 1 watt
Crossover 1.5 kHz; 7.5 kHz
Impedance 8 ohms
Min. power 10 watts (10 dBW)
Max. power 150 watts (21.75 dBW)
Controls Midrange; tweeter

M-2
Price $149
Dimensions 9⅝H x 6W x 7D
Weight 8 lbs.
Type Acoustic suspension
Drivers 5" woofer; 1" soft-dome tweeter
Response 46 Hz to 20 kHz, ±4 dB re 89 dB at 1 meter at 1 watt
Crossover 2 kHz
Impedance 4 ohms
Min. power 10 watts (10 dBW)
Max. power 50 watts (17 dBW)
Features Fused; adaptable for mobile use

Models also available
A-400XL, $359.95; A-200X, $339.95; M-6, $299; Phase Matrix M-5, $189; M-4V-II, $139; A-76XL, $117.95

AUDIOMARKETING
Audiomarketing, Ltd.
652 Glenbrook Road
Stamford, Conn. 06906

Super Red Studio Monitor
Price $1,115
Dimensions 47H x 30W x 17¾D
Weight 170 lbs.
Type Infinite baffle
Drivers 15" woofer with coaxial horn tweeter; 15" subwoofer
Response 40 Hz to 17 kHz, ±2 dB re 101 dB SPL at 1 meter at 1 watt
Crossover 100 Hz; 3 kHz
Impedance 16 ohms



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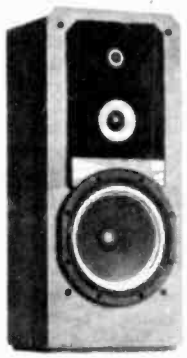
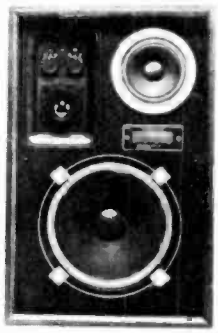
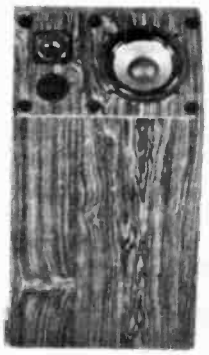


Acoustic Research AR-91



Audio Lab Consort AL-60



Audio Pulse AP-52

BES SM-260

Min. power	5 watts (7 dBW)
Max. power	160 watts (22 dBW)
Controls	2 kHz shelving; 8 kHz shelving
Features	Mastering-lab frequency-dividing network

Little Red Studio Monitor

Price	$220
Dimensions	24H x 16W x 12D
Weight	45 lbs.
Type	Acoustic suspension
Drivers	12" woofer; ⅝" dome/cone tweeter
Response	40 Hz to 18 kHz, ±2 dB re 92 dB SPL at 1 meter at 1 watt
Crossover	2 kHz
Impedance	8 ohms
Min. power	10 watts (10 dBW)
Max. power	50 watts (17 dBW)
Controls	2 kHz peak/dip; 8 kHz shelving
Features	Frequency-dividing network

Models also available

Big Red Studio Monitor, $816

AUDIONICS
Audionics, Inc.
10950 S.W. 5th Ave.
Beaverton, Ore. 97005

LO-2 Foundation Bass

Price	$600
Dimensions	25H x 18W x 31D
Weight	110 lbs.
Type	Vented
Drivers	Two 10" push-pull
Response	32 Hz to 400 Hz, ±3 dB re 89 dB SPL at 1 meter at 1 watt
Crossover	125 Hz
Impedance	7 ohms
Min. power	70 watts (18.5 dBW)
Max. power	400 watts (26 dBW)
Controls	Crossover bypass
Features	Push-pull woofers cancel dynamic IM and harmonic distortion; interchangeable vents for Bessel, QB 3, and B6 alignments (B6: f3=18 Hz)

LO-2 Vanishing Point

Price	$350
Dimensions	14H x 9W x 9D
Weight	25 lbs.
Type	Acoustic suspension
Drivers	6½" polymer-saturated cone; 1" damped dome
Response	75 Hz to 20 kHz, ±1.5 dB re 88 dB SPL at 1 meter at 1 watt
Crossover	3 kHz
Impedance	7 ohms
Min. power	35 watts (15.5 dBW)
Max. power	200 watts (23 dBW)
Controls	Tweeter L-pad; midwoofer L-pad controls level and Q of bass (.7 to 1.4)
Features	Minimum time and space spread; Mylar/air-core crossover; resistive load at ultrasonic frequencies for low amp TIM

AUDIOTEX
GC Electronics
400 South Wyman St.
Rockford, Ill. 61101

94-1400

Price	$100
Dimensions	24H x 15W x 9⅝D
Weight	29 lbs.
Type	Acoustic suspension
Drivers	12" woofer; 1¾" tweeter; 4½" midrange
Response	35 Hz to 20 kHz
Crossover	2.5 kHz; 5 kHz
Impedance	8 ohms
Min. power	8 watts (9 dBW)
Max. power	45 watts (16.5 dBW)
Features	Aluminum voice coil; multi-roll foam surround

94-1200

Price	$60
Dimensions	18⅝H x 11¼W x 7D
Weight	14 lbs.
Type	Acoustic suspension
Drivers	8" woofer; 1¾" tweeter
Response	45 Hz to 20 kHz
Crossover	5 kHz
Impedance	8 ohms
Min. power	2 watts (3 dBW)
Max. power	25 watts (14 dBW)
Features	Aluminum voice coil; multi-roll foam surround

Models also available

94-1350, $90; 94-1300, $70

AVID
Avid Corp.
10 Tripps Lane
East Providence, R.I. 02914

330

Price	$400
Dimensions	30¼H x 17W x 10¼D
Weight	66 lbs.
Type	Acoustic suspension
Drivers	12" woofer; 2" dome midrange; 2" dome tweeter
Response	35 Hz to 20 kHz, ±3 dB re 88 dB SPL at 1 meter at 1 watt
Crossover	575 Hz; 5 kHz
Impedance	8 ohms
Min. power	15 watts (11.75 dBW)
Max. power	250 watts (24 dBW)
Controls	Midrange; tweeter
Features	Auto-reset overload protective circuit; full 5-year warranty; Minimum Diffraction Loudspeaker® design; magnetic fluids for midrange and tweeter

102a

Price	$165
Dimensions	25H x 15W x 9⅝D
Weight	38 lbs.
Type	Acoustic suspension
Drivers	10" woofer; 1" dome tweeter
Response	44 Hz to 18 kHz, ±3 dB
Crossover	2.2 kHz
Impedance	8 ohms
Min. power	15 watts (11.75 dBW)
Max. power	100 watts (20 dBW)
Controls	Tweeter control
Features	Fused tweeter; full 5-year warranty; Minimum Diffraction Loudspeaker® design

80a

Price	$95
Dimensions	19½H x 12W x 8½D
Weight	18 lbs.
Type	Acoustic suspension
Drivers	8" woofer; 1¾" cone tweeter
Response	55 Hz to 17 kHz, ±3.5 dB re 89 dB SPL at 1 meter at 1 watt
Crossover	3 kHz
Impedance	8 ohms nominal; 7 ohms minimum
Min. power	8 watts (9 dBW)
Max. power	60 watts (17.75 dBW)
Features	Full 5-year warranty; Minimum Diffraction Loudspeaker® design

Models also available

230, $225; 110, $135

BANG & OLUFSEN
Bang & Olufsen
515 Busse Road
Elk Grove Village, Ill. 60007

Beovox Phase-Link M100-2

Price	$1,400/pr. (including stands)
Dimensions	29⅝H x 15⅝W x 12D
Weight	60 lbs. 8 oz.
Type	Vented

Drivers	12" bass; 4" phase-link filler driver; 2½" dome midrange; 1½" dome tweeter; ¾" dome supertweeter
Response	35 Hz to 22 kHz, ±4 dB
Crossover	500 Hz; 2.5 kHz; 8 kHz
Impedance	4 ohms
Min. power	20 watts (13 dBW)
Max. power	100 watts (20 dBW) continuous
Controls	Tilt angle and height
Features	Electronic protection circuit; linear phase response; rosewood veneer finish

Beovox Phase-Link S-75

Price	$570/pr.
Dimensions	23⅛H x 21½W x 9¾D
Weight	24 lbs. 3 oz.
Type	Pressure chamber
Drivers	10" woofer; 5" phase-link filler; 2" dome midrange; 1" dome tweeter
Response	42 Hz to 20 kHz, ±4 dB
Crossover	700 Hz; 4 kHz
Impedance	4 ohms
Min. power	20 watts (13 dBW)
Max. power	75 watts (18.75 dBW) continuous
Features	Optional floor stands and wall-mount brackets; linear phase response/ rosewood finish standard, oak, teak, or white optional

Beovox C-75

Price	$395/pr.
Dimensions	12 3/16H x 4 3/16W x 7 13/16D
Weight	11 lbs.
Type	Log line loading
Drivers	Two 4" woofers; 1" dome tweeter
Response	75 Hz to 20 kHz, ±4 dB
Crossover	2.5 kHz
Impedance	6 ohms
Min. power	10 watts (10 dBW)
Max. power	70 watts (18.5 dBW)
Features	Log line loading to minimize environmentally caused acoustic problems from small rooms; linear phase response; black or brushed aluminum finish

Phase-Link P-30

Price	$330/pr.
Dimensions	21¼H x 11½W x 4¼D
Weight	11 lbs.
Type	Pressure chamber
Drivers	6½" bass; 1" dome tweeter
Response	58 Hz to 20 kHz, ±4 dB
Crossover	3 kHz
Impedance	4 ohms
Min. power	10 watts (10 dBW) continuous
Max. power	30 watts (14.75 dBW) continuous
Features	Wall-mounting panel speaker; linear phase response; rosewood finish standard, white or oak optional

Beovox Phase-Link S-40

Price	$200/pr.
Dimensions	18¾H x 10¼W x 7¾D
Weight	13 lbs. 3 oz.
Type	Pressure chamber
Drivers	8" woofer; 1" dome tweeter
Response	49 Hz to 20 kHz, ±4 dB
Crossover	3 kHz
Impedance	4 ohms
Min. power	10 watts (10 dBW)
Max. power	40 watts (16 dBW) continuous
Features	Bookshelf or wall mount; linear phase response; rosewood veneer finish

Models also available

Beovox Phase-Link M-75, $980/pr. (including stands); Phase-Link P-45, $450/pr.; Phase-Link S-45/2, $338/pr., Beovox C-40, $295/pr.

A Note on Prices

Prices shown in these pages are manufacturers' or importers' nationally advertised values, updated as is feasible by press time.

BELLES RESEARCH
Belles Research Corp.
A-1 Country Club Rd.
P.O. Box 65
East Rochester, N.Y. 14445

Belles 1

Price	$445
Dimensions	33¾H x 15W x 17¼D
Weight	69 lbs.
Type	Free Field System
Drivers	8" cone woofer; 10" cone passive radiator; dome tweeter
Response	30 Hz to 20 kHz
Crossover	2.7 kHz (18 dB/octave)
Impedance	8 ohms
Min. power	40 watts (16 dBW)
Max. power	200 watts (23 dBW)
Controls	L-pad for high-frequency attenuation
Features	Chamfered-edge baffle board for low diffraction; free-field suspended tweeter; rear-mounted passive radiator; binding post input terminals; system protection fuse walnut stand included

B.E.S. GEOSTATIC
Bertagni Electroacoustic Systems, Inc.
345 Fischer St.
Costa Mesa, Calif. 92626

D-190W

Price	$649
Dimensions	40½H x 26W x 3¾D
Weight	60 lbs.
Type	Two low-mass, polymer diaphragms activated by drivers containing acoustic hammers
Drivers	Five (two with ferrous oil)
Response	35 Hz to 20 kHz
Crossover	1 kHz; 4 kHz; 10 kHz
Impedance	4 ohms
Min. power	30 watts (14.75 dBW)
Max. power	250 watts (24 dBW)
Controls	Mid- and high-frequency
Features	Total radiating surface of 1,700 sq. in.; dual modules framed in aluminum and wood housing

SM-270

Price	$339
Dimensions	27 11/64H 21 11/64 x 6D
Weight	41 lbs.
Type	Single pulsating plane diaphragm
Drivers	Two permanent magnet/voice coil drivers; piezoelectric tweeter
Response	32 Hz to 22 kHz re 91 dB SPL at 1 meter at 1 watt
Crossover	800 Hz; 10 kHz
Impedance	8 ohms
Min. power	10 watts (10 dBW)
Max. power	200 watts (23 dBW)
Controls	Midrange; tweeter
Features	360 degree omnipolar dispersion; 850-sq. in. radiating surface; resettable circuit protector

SM-260

Price	$249
Dimensions	26 7/32H x 20 7/32W x 5D
Weight	35 lbs.
Type	Single pulsating plane diaphragm
Drivers	Two permanent magnet/voice coil drivers; piezoelectric tweeter
Response	38 Hz to 22 kHz re 88 dB SPL at 1 meter at 1 watt
Crossover	800 Hz; 10 kHz
Impedance	8 ohms
Min. power	5 watts (7 dBW)
Max. power	150 watts (21.75 dBW)
Controls	Midrange; tweeter
Features	360-degree omnipolar dispersion; 850-sq. in. radiating surface; resettable circuit protector

Models also available

D-280W, $997; D-120W, $599; SM-250, $169

BEVERIDGE ELECTROSTATIC SPEAKER SYSTEMS
Harold Beveridge, Inc.
505 E. Montecito St.
Santa Barbara, Calif. 93103

System 2SW-2

Price	$7,000/pr. (including direct-drive tube amplifiers for electrostatics, electronic crossovers, and solid-state amplifiers for subwoofers)
Dimensions	78H x 24W x 16D (electrostatic loudspeakers); 26H x 16½W x 22D (subwoofers)
Weight	360 lbs.
Type	Electrostatic and dynamic subwoofer
Drivers	Electrostatic above 100 Hz; dynamic below 100 Hz
Response	20 Hz to 20 kHz, ±3 dB
Crossover	100 Hz
Controls	Beveridge control module; spectrum slope; bass environmental and lateral controls
Features	Cylindrical sound emission from a single line source, 100 Hz to 18 kHz; subwoofers, one with each electrostatic loudspeaker, operating below 100 Hz

Models also available

System 3, $3,500

B.I.C.
B.I.C./Avnet
South Service Road
Westbury, N.Y. 11590

TPR-600

Price	$369.95
Dimensions	41½H x 15¼W x 15¼D
Weight	67 lbs.
Type	Venturi loaded
Drivers	12" subwoofer; 1½" compression midrange; piezoelectric tweeter
Response	93 dB SPL at 1 meter at 1 watt
Impedance	6 to 8 ohms
Min. power	3 watts (4.75 dBW)
Max. power	130 watts (21 dBW)
Features	Total Power Radiation; non-critical speaker placement; finished on all four sides; see-through black grille supplied

B66

Price	$269
Dimensions	26¼H x 15¾W x 13½D
Weight	53 lbs. 8 oz.
Type	Venturi loaded
Drivers	12" woofer; 5" cone midrange; two 1½" dome tweeters
Response	93 dB SPL at 1 meter at 1 watt
Crossover	400 Hz; 10 kHz
Impedance	6 ohms
Min. power	3 watts (4.75 dBW)
Max. power	100 watts (20 dBW)
Controls	Tonal balance

Features Each driver individually fused; non-reflective, totally sound-transparent grille; furniture-grade walnut finish

TPR-200

Price $219.95
Dimensions 32¾H x 11¼W x 11¼D
Weight 37 lbs.
Type Venturi loaded
Drivers 8" subwoofer; 1½" compression midrange; piezoelectric tweeter
Response 90 dB SPL at 1 meter at 1 watt
Impedance 8 ohms
Min. power 5 watts (7 dBW)
Max. power 75 watts (18.75 dBW)
Features Total Power Radiation; non-critical speaker placement; finished on all four sides; see-through black grille supplied

B11

Price $85
Dimensions 18½H x 11W x 9D
Weight 19 lbs.
Type Venturi loaded
Drivers 8" woofer; 2" dome tweeter
Response 87 dB SPL at 1 meter at 1 watt
Crossover 2 kHz
Impedance 8 ohms
Min. power 10 watts (10 dBW)
Max. power 45 watts (16.5 dBW)
Features Each driver individually fused; non-reflective, totally sound transparent grille; scuff resistant walnut-grain finish

Models also available

TPR-400, $299.95; B44, $179.95; B22, $135

BLACK BOX®
Matrecs Industries
805 Woodman Ave.
Winslow, Ill. 61089

MA-BB

Price $125
Dimensions 9H x 6W x 5D
Weight 5 lbs. 8 oz.
Type Acoustic suspension
Drivers 4½" woofer; 2½" piezoelectric tweeter
Response 50 Hz to 22 kHz
Crossover 2.5 kHz
Impedance 4 ohms
Min. power 2 watts (3 dBW)
Max. power 50 watts (17 dBW)
Features Real wood enclosure

BML
BML Electronics, Inc.
5305 N. Ravenswood Ave.
Chicago, Ill. 60640

Sound Odyssey/Tracer 2001

Price $879
Dimensions 64H x 26W x 8D
Weight 140 lbs.
Type Combination dual-phase coupling/7th order Butterworth
Drivers 8½" woofer with two 5½" bass radiators; two solid-state tweeters
Response 35 Hz to 20 kHz, +3 dB re 93 dB SPL at 1 meter at 1 watt
Crossover 450 Hz; 1.5 kHz; 4.5 kHz
Impedance 5/4 ohms
Min. power 40 watts (16 dBW)
Max. power 350 watts (25.5 dBW)
Features Planar column design; fuse-protected; 9' terminated transmission line; 7 tuned chambers

Model Ten

Price $120
Dimensions 22H x 11W x 8D
Weight 24 lbs.
Type Tuned port
Drivers 8" woofer; 2½" VHF tweeter
Response 53 Hz to 20 kHz, ±5 dB re 94 dB SPL at 1 meter at 1 watt
Crossover 3.5 kHz
Impedance 5 or 6 ohms
Min. power 5 watts (7 dBW)
Max. power 100 watts (20 dBW)

Models also available

Sound Window/Tracer 1001, $349; Model Eleven, $199

BOSE
Bose Corp.
100 The Mountain Road
Framingham, Mass. 01701

901 Series IV

Price $859/pr. (includes equalizer)
Dimensions 12⅜H x 21W x 13D
Weight 45 lbs. 8 oz.
Type Acoustic Matrix®
Drivers 9 full-range drivers with helical voice coils
Impedance 8 ohms
Min. power 10 watts (10 dBW)
Max. power No limitation for non-commercial applications
Controls Active equalizer for low- and high-frequency compensation controls
Features Direct/Reflecting™ design; active equalization

501

Price $424/pr.
Dimensions 24H x 14½W x 14½D
Weight 42 lbs.
Type Acoustic suspension
Drivers Two 3½" cone tweeters; 10" woofer
Crossover 1.5 kHz; 3 kHz
Impedance 4 ohms
Min. power 15 watts (11.75 dBW) continuous
Max. power 100 watts (20 dBW) continuous
Controls Direct energy control adjusts ratio of reflected to direct sound for greater spatial balance
Features Floor-standing Direct/Reflecting™ speaker; uses a direct-radiating woofer and two tweeters for rear and side sound radiation; utilizes asymmetrical design

Interaudio Model 1

Price $168/pr.
Dimensions 14H x 9W x 7D
Weight 14 lbs. 8 oz.
Type Ported
Drivers 6" woofer; 2" tweeter
Crossover 2.2 kHz
Impedance 8 ohms
Min. power 10 watts (10 dBW)
Max. power 60 watts (17.75 dBW)
Features Compact bookshelf designed for flat total power radiation, clarity, and detail

Models also available

601, $599/pr.; 301 Bookshelf Speaker, $242/pr.

BOSTON ACOUSTICS
Boston Acoustics, Inc.
130 Condor St.
E. Boston, Mass. 02128

A-200

Price $350
Dimensions 41½H x 21W x 6⅜D
Weight 58 lbs.
Type Acoustic suspension
Drivers Woofer; midrange; tweeter
Crossover 450 Hz; 3 kHz
Impedance 8 ohms
Min. power 16 watts (12 dBW)
Max. power 150 watts (21.75 dBW)
Features Designed to operate as part of a room by integrating with the wall and floor with simple and convenient placement; relatively flat impedence curve makes it an easy load to drive

BOZAK
Bozak, Inc.
587 Connecticut Ave.
Norwalk, Conn. 06854

CS-310B Concert Grand

Price Contemporary cabinet; $1,260; classic cabinet (CS-410CL); $1,350; Moorish cabinet (CS-410M), $1,375
Dimensions 52H x 36W x 19D
Weight 225 lbs.
Type Infinite baffle
Drivers Four 12" woofers; two 6½" midrange; eight 2" tweeters
Response 28 Hz to 20 kHz
Crossover 400 Hz; 2.5 kHz
Impedance 8 ohms (nominal)
Min. power 60 watts (17.75 dBW)
Max. power 150 watts (21.25 dBW)
Features Factory-equipped for conventional or biamp operation

CS-4000A Symphony No. 1

Price Modern cabinet, $750; classic cabinet, $860; moorish cabinet, $890
Dimensions 44½H x 26¼W x 15⅝D
Weight 165 lbs.
Type Infinite baffle
Drivers Two 12" variable density woofers; 6½" aluminum-cone midrange; eight 2" aluminum-cone tweeters
Response 35 Hz to 20 kHz
Crossover 400 Hz; 2.5 kHz
Impedance 8 ohms
Min. power 50 watts (17 dBW)
Max. power 100 watts (20 dBW)
Features Factory equipped for conventional or biamp operation

CS-501A Concerto 7

Price $450
Dimensions 32H x 19¾W x 16D
Weight 95 lbs.
Type Infinite baffle
Drivers 12" variable density woofer; 6½" aluminum-cone midrange; three 2" aluminum-cone tweeters
Response 35 Hz to 20 kHz
Crossover 800 Hz; 2.5 kHz
Min. power 20 watts (13 dBW)
Max. power 75 watts (18.75 dBW)
Controls Tweeter

B-1002 Bard

Price $159
Dimensions 21H x 12W x 18 diameter
Weight 25 lbs.
Type Infinite baffle
Drivers 8" aluminum-cone bass/midrange; 2" aluminum-cone tweeter
Response 50 Hz to 20 kHz
Crossover 1.8 kHz
Impedance 8 ohms (nominal)

Min. power 12 watts (10.75 dBW)
Max. power 60 watts (17.75 dBW)
Features Completely weatherproofed; also suitable for indoor use

Models also available

CS-4005A Symphony No. 2, Century cabinet, $750; LS-400A, $300; LS-250A, $195; LS-70A, $195

BRAUN
Adcom Co.
11A Jules Lane
New Brunswick, N.J. 08901

LW-1 Subwoofer
Price $700

L-1030
Price $958/pr.
Dimensions 12¼H x 27½W x 10¼D
Weight 42 lbs. ea.
Type Acoustic suspension
Drivers 10" high-compliance, long-throw woofer; 2" mid-hemispherical dome; ¾" hemispherical wide-dispersion dome tweeter
Response 20 Hz to 25 kHz
Crossover 500 Hz; 3 kHz
Impedance 8 ohms
Min. power 25 watts (14 dBW)
Max. power 100/140 watts (20/21.5 dBW)
Features Genuine walnut veneer with black aluminum grille curved corners on cabinet; highly sophisticated, computer-designed crossover; winner of 1978 CES Design and Engineering Award

SM-1004
Price $379

SM-1003
Price $339

SM-1002
Price $578/pr.

Output C
Price $249/pr.
Dimensions 6¾H x 4¼W x 4⅜D
Weight 14 lbs.
Type Acoustic suspension minispeaker
Drivers 4" long-throw high-compliance woofer; 1" hemispherical wide-dispersion dome tweeter
Response 50 Hz to 25 kHz, 90 dB SPL at 1 meter at 1 watt
Crossover 1.5 kHz
Impedance 8 ohms
Min. power 10 watts (10 dBW)
Max. power 35/50 watts (15.5/17 dBW)
Features Aluminum cabinet; computer-designed filter network

Models also available

L-300, $429/pr.; L-200, $289/pr.

B & W
Anglo-American Audio
Box 653
Buffalo, N.Y. 14240

801
Price $1,275
Dimensions 37 9/10H x 17 3/10W x 22 2/5D
Weight 97 lbs.
Type Acoustic suspension
Drivers Bass; midrange; tweeter
Response 45 Hz to 20 kHz, ±2 dB re 85 dB SPL at 1 meter at 1 watt
Min. power 50 watts (17 dBW)
Controls Mid for 1 to 3 kHz; high for over 3 kHz
Features Electron overload protect circuit

DM-7
Price $635
Dimensions 35 7/16H x 10 11/16W x 15D
Weight 64 lbs.
Type Passive radiator
Drivers Woofer; tweeter
Response 30 Hz to 25 kHz, ±2 dB re 40 dB at 2 meters
Crossover 3 kHz
Impedance 8 ohms
Min. power 50 watts (17 dBW)
Max. power 200 watts (23 dBW) continuous
Controls Bass; midrange; tweeter
Features Linear-phase stepped positioning of drivers; third-order Butterworth high- and low-pass characteristics in crossover

DM-4
Price $275
Dimensions 21H x 10W x 10D
Weight 24 lbs. 8 oz.
Type Vented
Drivers Woofer/midrange; tweeter; supertweeter
Response 80 Hz to 20 kHz, ±5 dB
Crossover 2.5 kHz; 14 kHz
Impedance 8 ohms
Min. power 10 watts (10 dBW)
Max. power 50 watts (17 dBW)
Features Fused

Models also available

DM-6, $735; DM2/II, $485; DM-5, $186

CANTON
Adcom Co.
11A Jules Lane
New Brunswick, N.J. 08901

GLE-100
Price $450

GLE-70
Price $319

Gamma 800L
Price $299

GLE-60
Price $259

GLE-45
Price $165

GLE-40
Price $250/pr.
Dimensions 7 1/5H x 10 3/5W x 6D
Weight 9 lbs.
Type Acoustic suspension
Drivers 6 3/10" long-throw woofer in light metal die-cast basket; ¾" dome tweeter
Response 42 Hz to 30 kHz
Crossover 1.4 kHz
Impedance 4 to 8 ohms
Min. power 10 watts (10 dBW)
Max. power 45/60 watts (16.5/17.75 dBW)

Models also available

GLE-50, $195

C.C.L.
C.C.L. Enterprises, Inc.
30682 San Antonio St.
Haywood, Calif. 94544

3800
Price $499.50
Dimensions 42½H x 23¼W x 12¼D
Weight 60 lbs.
Type Infinite baffle
Drivers Two 10" woofers; 8" mid bass; 2" soft-dome midrange; 1" textile dome tweeter
Response 22 Hz to 20 kHz, 91 dB SPL at 1 meter at 1 watt
Crossover 125 Hz; 700 Hz; 5 kHz
Impedance 4 ohms
Min. power 30 watts (14.75 dBW)
Max. power 300 watts (24.75 dBW)
Controls Midrange; tweeter
Features Roll-away casters

2000 Subwoofer
Price $289.50
Dimensions 22¼H x 25½W x 15¼D
Weight 45 lbs.
Type Infinite baffle
Drivers Two 10" woofers
Response 22 Hz to 150 kHz, 90 dB SPL at 1 meter at 1 watt
Crossover 150 Hz
Impedance 8 ohms
Min. power 25 watts (14 dBW)
Max. power 300 watts (24.75 dBW)

2200 Satellite
Price $104.50
Dimensions 13H x 8W x 6D
Weight 10 lbs.
Type Air suspension
Drivers 5" woofer; 1" textile dome
Response 65 Hz to 20 kHz, 90 dB SPL at 1 meter at 1 watt
Crossover 2.2 kHz
Impedance 8 ohms
Min. power 10 watts (10 dBW)
Max. power 50 watts (17 dBW)

Models also available

3400, $349.50; 3200, $294.50; 2800, $124.50

CELESTION
Celestion Industries, Inc.
Kuniholm Drive, Box 521
Holliston, Mass. 01746

Ditton 662
Price $749.50
Dimensions 41⅝H x 15¾W x 11 13/16D
Weight 74 lbs. 13 oz.
Type Passive radiator
Drivers 12" woofer; 2" dome midrange; 1" dome tweeter
Response 38 Hz to 20 kHz, ±3 dB re 90 dB SPL at 1 meter at 2.9 watts
Crossover 700 Hz; 4.5 kHz
Impedance 8 ohms
Min. power 20 watts (13 dBW)
Max. power 160 watts (22 dBW)
Features Fused tweeter; mirror imaged

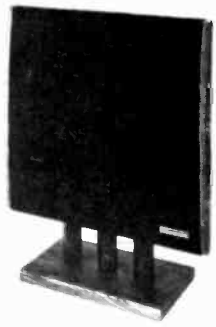
Ditton 442
Price $449.50
Dimensions 30H x 15⅜W x 11 7/16D
Weight 52 lbs. 13 oz.
Type Acoustic suspension

Beveridge 2SW

Boston Acoustics A-200

Cerwin-Vega 12TR

Custom Craft Mk-XII



Dahlquist DQ-10

Drivers	12" woofer; 6" cone midrange; 1" dome tweeter
Response	45 Hz to 20 kHz, ±3 dB re 90 dB SPL at 1 meter at 2.95 watts
Crossover	600 Hz; 4.5 kHz
Impedance	8 ohms
Min. power	20 watts (13 dBW)
Max. power	120 watts (20.75 dBW)
Features	Fused; mirror-imaged pairs

Ditton 44

Price	$359.50
Dimensions	30H x 14½W x 10D
Weight	44 lbs. 14 oz.
Type	Acoustic suspension
Drivers	12" woofer; 6" cone midrange; 1" dome tweeter
Response	25 Hz to 40 kHz
Crossover	500 Hz; 5 kHz
Impedance	4 to 8 ohms
Min. power	10 watts (10 dBW)
Max. power	100 watts (20 dBW)

Ditton 15XR

Price	$189.50
Dimensions	21H x 9½W x 9¼D
Weight	16 lbs. 11 oz.
Type	Passive radiator
Drivers	8" woofer; 1.25" pressure tweeter
Response	30 Hz to 15 kHz
Crossover	2.5 kHz
Impedance	4 to 8 ohms
Min. power	10 watts (10 dBW)
Max. power	60 watts (17.75 dBW)

Models also available

Ditton 551, $499.50; Ditton 332, $369.50; Ditton 33, $299.50; UL-6, $234.50

CENTREX
Pioneer Electronics of America
1925 East Dominguez St.
Long Beach, Calif. 90810

CL-100

Price	$259.95/pr.
Dimensions	25H x 15½W x 12 4/5D
Weight	80 lbs. 8 oz./pr.
Type	Bass reflex
Drivers	12" woofer; 4" midrange; 2½" tweeter
Response	40 Hz to 20 kHz re 92 dB SPL at 1 meter at 1 watt
Impedance	8 ohms
Max. power	70 watts (18.5 dBW)
Features	Removable, acoustically transparent knit grille; walnut cabinet

MCL-3

Price	$219.95/pr.
Dimensions	15H x 8¾W x 8⅛D
Weight	28 lb. 10 oz./pr.
Type	Bass reflex
Drivers	6½" woofer; 1" dome tweeter
Response	60 Hz to 20 kHz re 90 dB SPL at 1 meter at 1 watt
Impedance	6.3 ohms
Max. power	50 watts (17 dBW)
Features	Mini-sized; rosewood grained cabinet

Models also available

CL-70, $179.95/pr.; CL-40, $129.95/pr.

CENTURY
General Audio Corp.
3504 Hillcroft
Houston, Texas 77008

Century 670

Price	$299.95
Dimensions	25½H x 20W x 17½D
Weight	55 lbs.
Type	Ducted tuned port, bass reflex
Drivers	15" bass driver; 4½" frame cone driver; two 3½" phenolic ring tweeter
Response	20 Hz to 20 kHz
Crossover	900 Hz; 4 kHz; 6 kHz
Impedance	8 ohms
Min. power	10 watts (10 dBW)
Max. power	80 watts (19 dBW)

Century 370

Price	$199.95
Dimensions	23H x 14W x 10D
Weight	29 lbs.
Type	Ducted tuned port, bass reflex
Drivers	10" bass driver; 4½" frame cone driver; 3½" phenolic ring tweeter
Response	25 Hz to 20 kHz
Crossover	1 kHz; 3.5 kHz
Impedance	8 ohms
Min. power	10 watts (10 dBW)
Max. power	40 watts (16 dBW)

Models also available

Century 470, $229.95

CERWIN-VEGA
Cerwin-Vega
12250 Montague St.
Arleta, Calif. 91331

18SW

Price	$600
Type	Ported reflex
Drivers	18" stroker bass driver
Response	25 Hz to 250 Hz, ±4 dB re 100 dB SPL at 1 meter at 1 watt
Impedance	4 ohms
Min. power	5 watts (7 dBW)
Max. power	300 watts (24.75 dBW)
Features	Subwoofer with high output

12TR

Price	$470
Dimensions	40H x 13 ½W x 13½D
Weight	75 lbs.
Type	Ported reflex
Drivers	12" woofer; 6½" cone midrange; rear reflecting horn-tweeter; super-Dhorm tweeter
Response	28 Hz to 20 kHz, ±4 dB re 102 dB at 1 meter at 1 watt
Crossover	250 Hz; 4 kHz
Impedance	8 ohms
Min. power	5 watts (7 dBW)
Max. power	100 watts (20 dBW) continuous
Controls	Midrange; tweeter; rear horn
Features	Tower-style speaker with rear reflecting horn

15SW

Price	$380
Type	Ported reflex
Drivers	15" cone bass
Response	30 Hz to 250 Hz, ±4 dB re 100 dB SPL at 1 meter at 1 watt
Impedance	8 ohms
Min. power	5 watts (7 dBW)
Max. power	150 watts (21.75 dBW)
Features	Subwoofer system

A-123

Price	$310
Dimensions	25H x 14½W x 11½D
Weight	50 lbs.
Type	Ported reflex
Drivers	12" cone bass; 6" cone midrange; 1 1/10" voice-coil Dhorm tweeter
Response	38 Hz to 20 kHz, ±4 dB re 97 dB SPL at 1 meter at 1 watt
Crossover	500 Hz; 5 kHz
Impedance	8 ohms
Min. power	5 watts (7 dBW)
Max. power	100 watts (20 dBW)
Controls	Midrange level; high-frequency level
Features	Circuit breaker protection for high frequency driver; black walnut veneer finish

Models also available

316R, $499; S-1, $435; 313, $330; A-10, $189

Chartwell
Reference Monitor
International, Inc.
2380 C Camino Vida Roble
Carlsbad, Calif. 92008

PM-450 (Passive)

Price $2,600/pr.
Dimensions 30H x 18W x 16¼D
Weight 70 lbs.
Type Bass reflex
Drivers 12" polypropylene woofer; 1" soft-dome tweeter
Response 40 Hz to 20 kHz, ±3 dB
Crossover 2 kHz
Impedance 8 ohms
Min. power 30 watts (14.75 dBW)
Max. power 350 watts (25.5 dBW)
Features Utilizes new low-coloration polypropylene cones

LS3/5A

Price $560/pr.
Dimensions 12H x 7½W x 6¼D
Weight 11 lbs. 8 oz.
Type Acoustic suspension
Drivers 4½" bass/midrange; dome tweeter
Response 60 Hz to 20 kHz, ±4 dB
Crossover 3 kHz
Impedance 15 ohms
Min. power 25 watts (14 dBW)
Max. power 25 watts (14 dBW)
Features Designed by British Broadcasting Corp.

PM-110

Price $530/pr.
Dimensions 18H x 9½W x 8D
Weight 17 lbs.
Type Bass reflex
Drivers 6½" bass/midrange; polypropylene bass/midrange; 1" tweeter
Response 65 Hz to 20 kHz, ±3 dB
Crossover 2.5 kHz
Impedance 8 ohms
Min. power 10 watts (10 dBW)
Max. power 80 watts (16 dBW)
Features Utilizes new low-coloration polypropylene cones

Models also available

PM-410, $1,600/pr.; PM-210, $900/pr.

CIZEK
Cizek Audio Systems, Inc.
15 Stevens St.
Andover, Mass. 01810

MG-27

Price $295
Dimensions 29H x 17¾W x 12½D
Weight 80 lbs.
Type Acoustic suspension
Drivers Two 10" acoustic suspension, bass drivers
Response 27 Hz to 200 Hz, ±3 dB re 86 dB SPL at 1 meter at 1 watt
Crossover 200 Hz
Impedance 4 ohms
Min. power 25 watts (14 dBW)
Max. power 600 watts (27.75 dBW)
Features Direct connection to Cizek Models 1, 2, or 3, or provision for biamping

1

Price $219
Dimensions 25H x 15½W x 9½D
Weight 45 lbs. 14 oz.
Type Dynamic
Drivers 10" acoustic suspension woofer; 1" hemispherical dome tweeter
Response 35 Hz to 17 kHz, +1.5, 2 dB re 88 dB SPL at 1 meter
Crossover 1.5 kHz
Impedance 4.25 ohms, ±0.20 ohms from 100 Hz to 15 kHz with controls in "flat" position; with Q adjustment in 0.6 position; with Q in the 1 position, impedance is 7.25 ohms
Min. power 15 watts (11.75 dBW) continuous
Max. power 150 watts (21.75 dBW)
Controls Level; contour; Q adjustment

SW-1 Sound Window

Price $159/pr.
Dimensions 12H x 12W x 3½D
Weight 20 lbs./pr.
Type Acoustic suspension
Drivers 6½" woofer; 1¾" cone tweeter
Response 100 Hz to 17 kHz, ±3 dB re 88 dB SPL at 1 meter at 1 watt
Crossover 3 kHz
Impedance 4 ohms
Min. power 15 watts (11.75 dBW)
Max. power 100 watts (20 dBW)
Features Solid Acuthane® with oak finish; acoustically transparent foam grille

Models also available

KA-1 Classic, $295; 2, $149; 3, $99

CONCEPT
Concept
1601 W. Glenlake Ave.
Chicago, Ill. 60143

CEM

Price $595
Dimensions 45H x 18W x 15½D
Weight 102 lbs.
Type Passive radiator
Drivers Heil air-motion transformer, midrange/tweeter
Response 25 Hz to 23 kHz, ±3 dB
Crossover 1.3 kHz at 18 dB
Impedance 6 ohms
Min. power 25 watts (14 dBW)
Controls Midrange; tweeter
Features Room-resonance compensation control

CE-2

Price $345
Dimensions 25½H x 14W x 14¼D
Weight 54 lbs.
Type Passive radiator
Drivers 10" cast woofer; Heil air-motion transformer
Response 35 Hz to 23 kHz, ±3 dB
Crossover 1.5 kHz at 18 dB
Impedance 6 ohms
Min. power 20 watts (13 dBW)
Controls Midrange; tweeter
Features LED power indicator

Models also available

CE-1, $445

CRITERION
Lafayette Radio Electronics
111 Jericho Turnpike
Syosset, N.Y. 11791

Criterion 2003A

Price $220
Dimensions 29½H x 17¾W x 11½D
Weight 48 lbs.
Type Vented bass reflex
Drivers 15" woofer; horn midrange; two phenolic-ring tweeters
Response 20 Hz to 20 kHz, ±10 dB
Crossover 2 kHz; 4 kHz
Impedance 8 ohms
Min. power 15 watts (11.75 dBW)
Max. power 120 watts (20.75 dBW) peak
Controls Midrange; treble
Features Circuit breaker

DS-1

Price $159.98/pr.
Dimensions 11¾H x 7½W x 6¾D
Weight 12 lbs.
Type Acoustic suspension mini speaker system
Drivers 6½" woofer; 1" soft-dome tweeter
Response 55 Hz to 20 kHz, ±10 dB
Crossover 3 kHz
Impedance 8 ohms
Min. power 5 watts (7 dBW)
Max. power 70 watts (18.5 dBW) peak
Features Genuine walnut veneer

Models also available

Criterion 2002A, $149.99; Criterion 2001A, $119.99

CUSTOM CRAFT
Custom Craft, Inc.
819 S. Kraemer Blvd.
Placentia, Calif. 92670

Dimension Lab Series

Mk-XII Subwoofer

Price $445
Dimensions 24H x 16W x 12D
Weight 50 lbs.
Type Acoustic suspension
Drivers 12" bass
Response 30 Hz to 100 Hz, ±3 dB re 92 dB SPL at 1 meter at 1 watt
Impedance 8 ohms
Min. power 25 watts (14 dBW)
Max. power 150 watts (21.75 dBW)

Mk-VIII

Price $199
Dimensions 14½H x 10W x 6½D
Weight 17 lbs.
Type Acoustic suspension
Drivers 8" woofer; 4½" midrange; 1" tweeter
Response 57 Hz to 20 kHz, ±3 dB re 94 dB SPL at 1 meter at 1 watt
Crossover 1.5 kHz; 4 kHz
Impedance 4 ohms
Min. power 10 watts (10 dBW)
Max. power 60 watts (17.75 dBW)
Features American walnut cabinet

Professional Series

PR-8

Price $79.95
Dimensions 22H x 13½W x 8⅞D
Weight 20 lbs.
Type Acoustic suspension
Drivers 8" woofer; 1¾" phenolic-ring tweeter

Response	65 Hz to 20 kHz re 94 dB SPL at 1 meter at 1 watt
Crossover	2.5 kHz
Impedance	8 ohms
Min. power	10 watts (10 dBW)
Max. power	40 watts (16 dBW)

Models also available

Mk-VI, $149; Mk-II, $110; Mk-I, $87

DAHLQUIST
Dahlquist, Inc.
601 Old Willets Path
Hauppauge, N.Y. 11787

DQ-10

Price	$435
Dimensions	31½H x 30½W x 9D
Weight	50 lbs.
Type	Phased array
Drivers	10" woofer; 5" midwoofer; 2" dome midrange; ¾" dome tweeter; piezoelectric supertweeter
Response	37 Hz to 27 kHz
Crossover	400 Hz; 1 kHz; 6 kHz; 12.5 kHz
Impedance	8 ohms
Min. power	60 watts (17.75 dBW)
Max. power	200 watts (23 dBW) with protective fuses
Controls	Continuously variable tweeter control for boost or cut
Features	Patented solutions to problems of inertial time delay and baffle edge diffraction

DQ-1W Low Bass Module

Price	$275
Dimensions	26H x 18½W x 14 4/5D
Weight	60 lbs.
Type	Acoustic suspension
Drivers	13" woofer in heavy cast frame
Response	20 to 100 Hz
Crossover	Depends upon main system to which it is crossed over (external crossover required)
Impedance	8 ohms
Min. power	60 watts (17.75 dBW)
Max. power	200 watts (23 dBW) with protective fuse
Controls	None
Features	Unit typically adds on octave of accurate low bass response to speaker systems; available with black or white grille cloth

DAYTON WRIGHT
Odin Studios Ltd.
(Distributor)
7321 Victoria Park Ave., Unit 2
Markham, Ontario, Canada L3R 2Z8

XG-10

Price	$3,399
Dimensions	42⅝H x 39W x 9½D
Weight	100 lbs.
Type	Electrostatic
Drivers	Ten electrostatic full-range cells; one modified piezoelectric tweeter
Response	40 Hz to 35 kHz, ±4 dB re 82 dB SPL at 1 meter at 1 watt
Crossover	10 kHz
Impedance	2.5 ohms to 200 ohms
Min. power	75 watts (18.75 dBW)
Max. power	100 to 600 watts (20 to 27.75 dBW)continuous; varies with frequency
Controls	Tweeter level; bias; cell upper cutoff
Features	Three modes of use: normal plus two external tweeter crossover points (3 kHz or 10 kHz)

DECCA
Rocelco, Inc.
1669 Flint Road
Downsview, Ont. M3J 2J7

Supertweeter

Price	$199.50
Dimensions	4H x 4W x 5⅛D
Weight	5 lbs.
Type	Ribbon tweeter in enclosure without horn
Drivers	Ribbon tweeter only (add-on to existing systems)
Response	7 kHz to 30 kHz
Crossover	7 kHz
Impedance	8 ohms
Max. power	30 watts (14.75 dBW)
Controls	None
Features	Driven element is ultra-light ribbon for fast transient response

Models also available

London Ribbon Tweeter, $199.50

DENNESEN
Dennesen Electrostatic, Inc.
Box 51
Beverly, Mass. 01915

ESL-203

Price	$875
Dimensions	39H x 10W x 8D
Weight	50 lbs.
Type	Electrostatic/dynamic hybrid
Drivers	Five electrostatic elements in vertical line source; 1½" dome midrange; 8" acoustic suspension bextrene woofer
Response	30 Hz to 35 kHz, ±2 dB re 88 dB SPL at 1 meter at 1 watt
Crossover	800 Hz; 3 kHz
Impedance	8 ohms
Min. power	15 watts (11.75 dBW)
Max. power	150 watts (21.75 dBW)

180 "The Voice"

Price	$220
Dimensions	21½H x 13½W x 9D
Weight	32 lbs.
Type	Dynamic/electrostatic
Drivers	8" woofer; 5 electrostatic elements
Response	32 Hz to 32 kHz, ±2 re 88 dB SPL at 1 meter at 1 watt
Crossover	1.25 kHz
Impedance	6 ohms
Min. power	15 watts (11.75 dBW)
Max. power	Unlimited
Features	Electrostatic hybrid

ST

Price	$140
Dimensions	10H x 15W x 4D
Weight	20 lbs.
Type	Tweeter array
Drivers	8 electrostatic tweeters
Response	3.5 kHz to 35 kHz, ± ½ dB
Crossover	3.5 kHz; 4.5 kHz
Impedance	8 ohms
Min. power	15 watts (11.75 dBW)
Max. power	Unlimited
Controls	Selection roll-in of 3.5 or 4.5 kHz
Features	Open-air baffle; dipole

Models also available

ESL-202, $350; ESL-110, $275

DESIGN ACOUSTICS
Design Acoustics, Inc.
2426 Amsler St.
Torrance, Calif. 90505

D-12A

Price	$750 (walnut)
Dimensions	26H x 22W x 22D (spherical)
Weight	70 lbs.
Type	Vented; acoustic suspension
Drivers	Two 8" woofers; 1½" dome midrange; two 5" cone midrange; two 1" dome tweeters; three 1½" cone tweeters
Response	30 Hz to 18 kHz, ±2 dB
Crossover	650 Hz; 2 kHz
Impedance	4 ohms
Min. power	25 watts (14 dBW)
Max. power	200 watts (23 dBW)
Controls	Woofer; midrange; tweeter; dispersion control for 180 degrees or 360 degrees
Features	Omnidirectional speaker with choice of 180- or 360-degree radiation

D-4 A

Price	$345
Dimensions	38H x 16½W x 11D
Weight	55 lbs.
Type	Acoustic suspension; vented
Drivers	Two 8" long-throw woofers; 5" midrange driver; two 1½" cone tweeters; 1" dome tweeter
Response	40 Hz to 18 kHz, ±3 dB
Crossover	700 Hz; 2 kHz
Impedance	4 ohms
Min. power	20 watts (13 dBW)
Max. power	125 watts (21 dBW)
Controls	Woofer; tweeter
Features	Drivers arranged on trapezoid for wide dispersion; conventional appearance

D-3

Price	$240
Dimensions	25H x 12W x 11½D
Weight	40 lbs.
Type	Vented; acoustic suspension
Drivers	10" woofer; 5" cone midrange; 1" dome tweeter
Response	40 Hz to 20 kHz, ±3.5 dB
Crossover	500 Hz; 2.5 kHz
Impedance	8 ohms
Min. power	30 watts (14.75 dBW)
Max. power	100 watts (20 dBW)
Features	Comes equipped with bracket on rear panel and accessory hardware to permit hanging on a wall

D-1A

Price	$125
Dimensions	20¼H x 11W x 8D
Weight	12 lbs.
Type	Vented; acoustic suspension
Drivers	8" long-throw woofer; 1½"cone
Response	50 Hz to 15 kHz, ±3.5 dB
Crossover	1.5 kHz
Impedance	6 ohms
Min. power	15 watts (11.75 dBW)
Max. power	30 watts (14.75 dBW)
Features	Same as D-1W

Models also available

D-8, $590; D-6, $390 (base included); D-2, $220; D-1W, $135

DFS
DFS, Inc.
10255 S.W. Parkway
Portland, Ore. 97204

T-5
Price $350
Dimensions 37¼H x 14⅜W x 12¼D
Weight 60 lbs.
Drivers 10" woofer; 8" woofer; 5" midrange; two 2½" tweeters
Response 40 Hz to 18 kHz, ±5 dB re 98 dB SPL at 1 meter at 1 watt

J-2
Price $160
Dimensions 24½H x 13½W x 12D
Weight 40 lbs.
Type Acoustic suspension
Drivers 10" woofer; 2½" tweeter
Response 50 Hz to 18 kHz, ±5 dB re 95 dB SPL at 1 meter at 1 watt
Features Walnut cabinet

J-1
Price $136
Dimensions 20⅜H x 12¾W x 10⅝D
Weight 35 lbs.
Drivers 8" woofer; 2½" tweeter
Response 55 Hz to 18 kHz, ±5 dB re 96 dB SPL at 1 meter at 1 watt
Min. power 15 watts (11.75 dBW)
Max. power 40 watts (16 dBW)
Features Constructed of high-density particle board and walnut veneer

Models also available
T-4, $290; J-3, $235

DWD
DWD Audio Systems
3206 N. Marks St.
Fresno, Calif. 93705

ETR 12" Tower
Price $429
Dimensions 42H x 14W x 11⅞D
Weight 61 lbs.
Type Passive radiator
Drivers 12" woofer; 5" midrange; 3" tweeter
Response 36 Hz to 20 kHz, ±4 dB re 96 dB SPL at 1 meter at 1 watt
Crossover 1.5 kHz; 7 kHz
Impedance 8 ohms
Min. power 20 watts (13 dBW)
Max. power 225 watts (23.5 dBW)
Controls Tweeter
Features Front-mounted passive radiator; ferrofluid-damped; self-resetting circuit breaker

ETR-412
Price $279
Dimensions 26H x 14½W x 11⅜D
Weight 40 lbs.
Type Passive radiator
Drivers 12" woofer; 5" midrange; 3" tweeter
Response 45 Hz to 20 kHz, ±4 dB re 94 dB SPL at 1 meter at 1 watt
Crossover 1.5 kHz; 7 kHz
Impedance 8 ohms
Min. power 15 watts (11.75 dBW)
Max. power 190 watts (22.75 dBW)
Controls Tweeter
Features Rear-mounted passive radiator; ferrofluid-damped; self-resetting circuit breaker

ETR-280
Price $129
Dimensions 20H x 11½W x 9⅛D
Weight 21 lbs.
Type Vented
Drivers 8" long-excursion woofer; 3" high-dispersion tweeter
Response 55 Hz to 20 kHz, ±4 dB re 92 dB SPL at 1 meter at 1 watt
Crossover 4.5 kHz
Impedance 8 ohms
Min. power 10 watts (10 dBW)
Max. power 90 watts (19.5 dBW)
Features Self-resetting circuit breaker

Power Panel Series

Power Panel Ten
Price $650
Dimensions 38H x 22W x 9D
Weight 85 lbs.
Type Passive radiator
Drivers Two 10" woofers; 5" lower midrange; 2" dome midrange; 1" dome tweeter; 1" supertweeter
Response 32 Hz to 20 kHz, ±3 dB re 96 dB SPL at 1 meter at 1 watt
Crossover 750 Hz; 5 kHz
Impedance 8 ohms (nominal)
Min. power 25 watts (14 dBW)
Max. power No limit
Controls Separate controls for three upper frequency drives
Features All ferrofluid components; 15" passive radiator (rear mounted); LED power input indicators

Models also available
ETR-410, $249; ETR-310, $169; Power Panel Eight, $550

DYNACO
Dynaco, Inc.
P.O. Box 612
Needham, Mass. 02195

A-350
Price $390
Dimensions 43H x 14W x 14½D
Weight 68 lbs.
Type Passive radiator
Drivers Omni directional supertweeter; 4/5" soft plastic dome tweeter; 3" cone midrange; 10" rubber-edge cone woofer
Response 35 Hz to 25 kHz, ±3 dB re 89 dB SPL at 1 meter at 1 watt
Crossover 3.5 kHz; 11.3 kHz
Impedance 8 ohms
Min. power 15 watts (11.75 dBW)
Max. power 110 watts (20.5 dBW)
Controls Tweeter (zero boost to +3 dB); midrange (zero boost to +3 dB)
Features Omni-Dyn® omnidirectional tweeter; oiled walnut veneer

A-150
Price $150
Dimensions 22H x 12¼W x 12¾D
Weight 36 lbs.
Type Acoustic suspension
Drivers 1" soft-cloth dome tweeter; 10" rubber-edge cone woofer
Response 50 Hz to 20 kHz, ±3 dB re 89 dB SPL at 1 meter at 1 watt
Crossover 2 kHz
Impedance 8 ohms
Min. power 15 watts (11.75 dBW)
Max. power 65 watts (18.25 dBW)
Controls Tweeter (+2 dB to -50 dB)
Features Walnut-grain vinyl

Models also available
A-250, $250

ELECTRO-VOICE
Electro-Voice, Inc.
656 Cecil St.
Buchanan, Mich. 49107

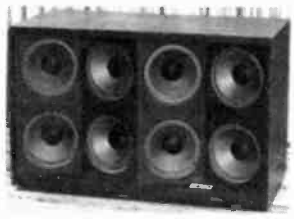
Sentry III, Series II
Price $900 (optional SEQ equalizer, $95.50)
Dimensions 28½H x 34½W x 20½D
Weight 156 lbs.
Type Vented
Drivers 15" cone low-frequency driver; 32" sectoral horn midrange; 8" sectoral horn tweeter
Response 40 Hz to 18 kHz, ±3 dB re 99 dB SPL at 1 watt at 1 meter
Crossover 600 Hz; 3.5 kHz
Min. power 1.4 watts (0 dBW)
Max. power 50 watts (17 dBW)
Controls Tweeter
Features Tweeter protection

Interface: C, Series II Series II
Price $995/pr. (includes equalizer)
Dimensions 31½H x 20W x 12½D
Weight 60 lbs.
Type Vented; equalized
Drivers 10" woofer; Super-Dome® tweeter with acoustic lens; 6½" vented midrange
Response 25 Hz to 20 kHz; 30 Hz to 18 kHz, ±2.5 dB
Crossover 42 Hz (acoustic); 400 Hz, 2.5 kHz (electrical)
Impedance 6 ohms
Min. power 2.8 watts (4.5 dBW) re 90 dB SPL
Max. power 350 watts (25.5 dBW) re 11 dB SPL
Controls High-frequency slope on equalizer
Features Walnut veneer cabinet

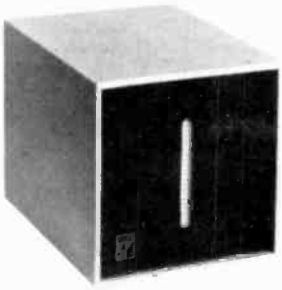
Sentry V
Price $325 (optional SEQ equalizer, $95.50)
Dimensions 28½H x 20W x 11¾D
Weight 52 lbs.
Type Vented
Drivers 10" low-frequency cone driver; 8" sectoral horn tweeter
Response 45 Hz to 18 kHz, ±3 dB re 96 DB SPL at 1 watt at 1 meter
Crossover 2 kHz
Impedance 6 ohms
Min. power 2.8 watt (4.5 dBW)
Max. power 30 watts (14.75 dBW)
Controls Tweeter
Features Tweeter overload protection

Interface: 3, Series II
Price $199
Dimensions 25¼H x 14¾W x 13⅛D
Weight 33 lbs.
Type Vent substitute
Drivers 12" low-frequency radiator; 8" midrange/woofer; 1½" Super-Dome® tweeter with acoustic lens
Response 34 Hz to 20 kHz; 40 Hz to 18 kHz, ±3 dB
Crossover 57 Hz (acoustic); 1.5 kHz (electrical)
Impedance 8 ohms
Min. power 3.6 watts (5.5 dBW) re 90 dB SPL
Max. power 250 watts (24 dBW) re 108 dB SPL
Controls High-frequency slope control
Features Walnut-grained cabinet

Interface: 2, Series II
Price $160
Dimensions 24¼H x 13¾W x 10 11/16D

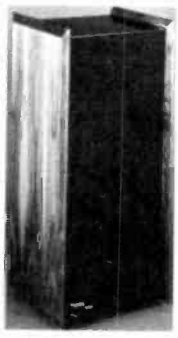


Frankmann Co Module



Decca Supertweeter

Fried Model C



Fulton Nuance

Goodmans HE-2

Weight	25 lbs.
Type	Vent substitute
Drivers	10" low-frequency radiator; 8" midrange/woofer; 1½" Super-Dome tweeter with acoustic lens
Response	39 Hz to 20 kHz; 47 Hz to 18 kHz, ±3 dB
Crossover	66 Hz (acoustic); 1.5 kHz (electrical)
Impedance	8 ohms
Min. power	3.6 watts (5.5 dBW) re 90 dB SPL
Max. power	250 watts (24 dBW) re 108 dB SPL
Controls	High-frequency slope control
Features	Walnut-grained cabinet

Models also available

Interface: D, Series II, $1,750/pr. (includes equalizer); Interface: B Series III, $735/pr. (includes equalizer); Interface: A Series III, $550/pr.; Musicaster IIA, $185.50; Interface: 1, Series II, $120

EPICURE
Epicure Products, Inc.
1 Charles St.
Newburyport, Mass. 01950

3.0 (Trilogy)

Price	$575
Dimensions	41⅜H x 8½" square (at top) x 16½" square (at bottom)
Weight	61 lbs.
Type	Acoustic suspension
Drivers	10" woofer; 6" midrange; 1" air-spring tweeter
Response	32 Hz to 20 kHz, ±3 dB
Crossover	475 Hz; 2.6 kHz
Impedance	4 ohms
Min. power	30 watts (14.75 dBW)
Max. power	100 watts (20 dBW)
Controls	Three-position L-pad tweeter attenuator
Features	Truncated pyramid cabinet for minimal diffraction; low inductance amplifier load; total system resonance control

500

Price	$400
Dimensions	14H x 12W x 36D with 3⅜" integral base
Weight	50 lbs.
Type	Passive piston bass radiator
Drivers	1" air-spring tweeter; 4" dynamic midrange; 10" woofer with focused field magnetic circuit; two 12" passive radiators
Response	45 Hz to 20 kHz, ±3 dB
Crossover	750 Hz; 3 kHz
Impedance	4 ohms
Min. power	20 watts (13 dBW)
Max. power	100 watts (20 dBW)
Features	Twin "Passive Piston" bass radiators; "Focused Field" magnetic circuit in bass driver

Fourteen

Price	$199
Dimensions	24H x 13½W x 9D
Weight	40 lbs.
Type	Passive piston bass radiator
Drivers	6" long-throw woofer; 8" passive radiator; 1" air spring tweeter
Response	28 Hz to 20 kHz, ±3 dB
Crossover	1.8 kHz
Impedance	8 ohms
Min. power	15 watts (11.75 dBW)
Max. power	80 watts (19 dBW)
Controls	Three-position tweeter control on front panel
Features	8" "Passive Piston" bass radiator with fourth order alignment; walnut veneer cabinet

Ten: V

Price	$125
Dimensions	22H x 12W x 9⅝D
Weight	33 lbs.
Type	Acoustic suspension
Drivers	1" tweeter; 8" woofer
Response	42 Hz to 20 kHz, ±3 dB
Crossover	1.8 kHz
Impedance	8 ohms
Min. power	12 watts (10.75 dBW)
Max. power	75 watts (18.75 dBW)
Controls	Tweeter
Features	Individual frequency-response graph provided with each speaker

EPI Series

M-200 C

Price	$275
Dimensions	32¾H x 17W x 11D
Weight	60 lbs.
Type	"Passive Piston" bass radiator
Drivers	8" high-efficiency woofer; 1" air spring tweeter; 12" passive radiator
Response	36 Hz to 20 kHz, ±3 dB
Crossover	1.8 kHz
Impedance	8 ohms
Min. power	15 watts (11.75 dBW) continuous
Max. power	125 watts (21 dBW)
Controls	Three-position tweeter attenuator switch on front panel
Features	Walnut veneer cabinet

100-V

Price	$125
Dimensions	21H x 11W x 9D
Weight	25 lbs.
Type	Acoustic suspension
Drivers	1" tweeter; 8" woofer
Response	45 Hz to 20 kHz, ±3 dB
Crossover	1.8 kHz
Impedance	8 ohms
Min. power	10 watts (20 dBW)
Max. power	75 watts (18.75 dBW)
Features	Available in walnut veneer as Model 100 W

Models also available

400 Plus, $450; Twenty +, $275; Eleven, $159; Five, $90; 120 C, $159; 70 C, $79

ESS
ESS, Inc.
9613 Oates Drive
Sacramento, Calif. 95827

HEIL SERIES

AMT 1B Monitor

Price	$650
Dimensions	39¼H x 15⅝W x 15⅞D
Weight	103 lbs. 8 oz.
Type	Passive radiator
Drivers	12" woofer; Heil air-motion transformer midrange/tweeter
Response	30 Hz to 23 kHz, ±3 dB re 90 dB SPL at 1 meter at 1 watt
Crossover	1 kHz
Impedance	5 ohms
Min. power	20 watts (13 dBW)
Max. power	375 watts (25.75 dBW)
Controls	Tweeter (continuously variable)
Features	Equipped with direct inputs for biamp connection; Heil square-wave rise time: 15 microseconds at 5 kHz; oiled-walnut cabinet

AMT-1B Bookshelf

Price	$456
Dimensions	24H x 14W x 14D
Weight	65 lbs.
Type	Passive radiator
Drivers	12" woofer; Heil air-motion transformer midrange/tweeter
Response	40 Hz to 23 kHz, ±3 dB re 90 dB SPL at 1 meter at 1 watt
Crossover	1 kHz
Impedance	6 ohms
Min. power	20 watts (13 dBW)
Max. power	375 watts (25.75 dBW)

Controls Tweeter (variable)
Features Genuine walnut veneer; Heil square-wave rise time: 15 microseconds at 5 kHz

TEMPEST SERIES

Bookshelf-1
Price $310
Dimensions 24H x 14W x 14D
Weight 50 lbs.
Type Passive radiator
Drivers 10" resin-impregnated cone woofer; Heil air-motion transformer midrange/tweeter
Response 38 Hz to 24 kHz, ±3 dB re 93 dB SPL at 1 meter at 1 watt
Crossover 2.4 kHz
Impedance 6 ohms
Min. power 15 watts (11.75 dBW)
Max. power 140 watts (21.5 dBW)
Controls Brilliance (variable from +1 to −60 dB over range of 3 to 23 kHz)
Features Genuine walnut veneer

PERFORMANCE SERIES

PS-4A
Price $370
Dimensions 35H x 12½W x 12 1/10D
Weight 48 lbs.
Type Passive radiator
Drivers 10" cone woofer; Heil air-motion transformer midrange/tweeter
Response 35 Hz to 24 kHz, ±3 dB re 93 dB SPL at 1 meter at 1 watt
Crossover 2 kHz
Impedance 6 ohms
Min. power 15 watts (11.75 dBW)
Max. power 160 watts (22 dBW)
Controls Brilliance (variable from 1.5 to 24 kHz)
Features Walnut-grain vinyl; pedestal model; AMT square-wave rise time: 12 microseconds at 5 kHz

PS-8A
Price $205
Dimensions 22H x 12¼W x 10 3/5D
Weight 30 lbs.
Type Passive radiator
Drivers 8" cone woofer; Heil air-motion transformer midrange/tweeter
Response 50 Hz to 20 kHz, ±3 dB re 93 dB SPL at 1 meter at 1 watt
Crossover 2.4 kHz
Impedance 6 ohms
Min. power 10 watts (10 dBW)
Max. power 100 watts (20 dBW)
Controls Brilliance (variable from 2 to 22 kHz)
Features Walnut-grain vinyl; bookshelf model; AMT square-wave rise time: 15 microseconds at 5 kHz

Models also available
AMT-1B, $507; Classic, $410; Bookshelf-2, $246; PS-5A, $270; PS-9A, $175

ESTranslator
BTM Manufacturing Co.
2005 N. Lincoln Ave.
Pasadena, Calif. 91103

Bass Console 1
Price $499

320
Price $499
Dimensions 43½H x 21⅝W x 4½D (top); 9½D (bottom)
Weight 47 lbs.
Type Electrostatic bipolar
Drivers Two 10" cone woofers
Response 30 Hz to 22 kHz
Crossover 200 Hz; 1.2 kHz
Impedance 8 ohms
Min. power 35 watts (15.5 dBW)
Controls Double diaphragms; self-energizing bias

Bass Console 2
Price $229

290
Price $139
Dimensions 21¼H x 12⅝W x 4½D (top); 7½D (bottom)
Weight 14 lbs.
Type Electrostatic bipolar
Drivers 8" cone woofer
Response 70 Hz to 22 kHz
Crossover 200 Hz; 1.2 kHz
Impedance 8 ohms
Min. power 25 watts (14 dBW)

Bass Console 3
Price $85

Models also available
310, $349; 300, $199

FISHER
Fisher Corp.
21314 Lassen St.
Chatsworth, Calif. 91311

ST-461
Price $409.95
Dimensions 29¼H x 18¼W x 14½D
Weight 53 lbs.
Type Ported bass reflex
Drivers 15" woofer; two 5" midrange drivers; 3" tweeter
Response 40 Hz to 20 kHz, ± 10 dB re 92 dB SPL at 1 meter at 1 watt
Crossover 1 Hz; 5 kHz
Impedance 8 ohms
Min. power 25 watts (14 dBW)
Max. power 130 watts (21.25 dBW)
Controls Treble; midrange
Features Circuit breaker

ST-451
Price $349.95
Dimensions 27⅛H x 17W x 13½D
Weight 44 lbs.
Type Ported bass reflex
Drivers 12" woofer; two 5" midrange drivers; 3" tweeter
Response 45 Hz to 20 kHz, ±10 dB re 91 dB SPL at 1 meter at 1 watt
Crossover 1 kHz; 5 kHz
Impedance 8 ohms
Min. power 20 watts (13 dBW)
Max. power 100 watts (20 dBW)
Controls Treble; midrange
Features Circuit breaker

XP-95B
Price $279.95
Dimensions 28H x 17½W x 12 7/8D
Weight 44 lbs.
Type Air suspension
Drivers 15" woofer; two 5" midranges; 3" flare-dome tweeter
Response 28 Hz to 20 kHz
Crossover 1 kHz; 5 kHz
Impedance 8 ohms
Min. power 8 watts (9 dBW) continuous
Max. power 75 watts (18.75 dBW) continuous
Controls Tweeter; midrange
Features Circuit breaker

ST-440
Price $259.95
Dimensions 25½H x 16W x 12¾D
Weight 36 lbs.
Type Ported bass reflex
Drivers 12" woofer; 5" midrange; 3" tweeter
Response 45 Hz to 18 kHz, ±10 dB re 90 dB SPL at 1 meter at 1 watt
Crossover 1 kHz; 5 kHz
Impedance 8 ohms
Min. power 12 watts (10.75 dBW)
Max. power 75 watts (18.75 dBW)
Controls Treble
Features Circuit breaker

XP-335
Price $180
Dimensions 25¼H x 16W x 11⅝D
Type Vented
Drivers 12" woofer; 5" midrange; 3" tweeter
Response 58 Hz to 20 kHz
Impedance 8 ohms
Max. power 70 watts (18.5 dBW)

ST-420
Price $149.95
Dimensions 21⅞H x 13⅝W x 9¼D
Weight 19 lbs.
Type Passive radiator
Drivers 8" woofer; 3" tweeter
Response 50 Hz to 16 kHz, ±10 dB re 90 dB SPL at 1 meter at 1 watt
Crossover 5 kHz
Impedance 8 ohms
Min. power 3.5 watts (5.5 dBW)
Max. power 35 watts (15.5 dBW)

XP-325
Price $140
Dimensions 21⅞H x 13⅝W x 8½D
Weight 18 lbs. 8 oz.
Type Air suspension
Drivers 10" woofer; 5" midrange; 3" tweeter
Response 65 Hz to 18 kHz
Crossover 1.5 kHz; 5 kHz
Impedance 8 ohms
Max. power 35 watts (15.5 dBW)

MS-125A
Price $90
Dimensions 21⅞H x 13⅝W x 9D
Weight 15 lbs.
Type Passive radiator
Drivers 8" woofer; 2" tweeter
Response 70 Hz to 14 kHz, ±10 dB
Crossover 6 kHz
Impedance 8 ohms
Min. power 4 watts (6 dBW)
Max. power 30 watts (14.75 dBW)

Models also available
ST-460, $389.95; ST-450, $329.95; ST-441, $279.95; ST-430, $219.95; XP-330, $160; MS-145, $140; MS-135A, $100; MS-115A, $80

FRANKMANN RESEARCH
Frankmann Research
P.O. Box 125
758 Washington Ave.
Greenville, Ohio 45331

Frankmann Reference Standard Monitor

Price	$895
Dimensions	42H x 10W x 9D
Weight	105 lbs.
Type	Infinite baffle
Drivers	Four 12" woofers (bass module C_1); two 6" midrange drivers per panel; one diffraction horn tweeter and cone tweeter per panel
Response	24 Hz to 22 kHz, ±4 dB re 96 dB SPL at 1 meter at 1 watt
Crossover	200 Hz; 5 kHz; 10 kHz
Impedance	6 ohms
Min. power	10 watts (10 dBW)
Max. power	125 watts (21 dBW)
Controls	Tweeter attenuator
Features	Three-unit system of one bass module and two mid-tweeter panels

Frankmann C_0 Module

Price	$800
Dimensions	30H x 50W x 24D
Weight	130 lbs.
Type	Infinite baffle
Drivers	Eight 12" woofers
Response	16 Hz to 200 kHz, ±4 dB re 96 dB SPL at 1 meter at 1 watt
Crossover	200 Hz
Impedance	8 ohms
Min. power	10 watts (10 dBW)
Max. power	200 watts (23 dBW)
Features	Common bass module; available in custom cabinetry

Models also available

Frankmann 8/4, $650/pr.; Frankmann C_1 Module, $500

FRAZIER
Frazier, Inc.
1930 Valley View Lane
Dallas, Texas 75234

Eleven

Price	$1,440
Dimensions	55H x 30W x 18D
Weight	250 lbs.
Type	Modified Helmholtz tuned slot
Drivers	15" woofer; 12" woofer; four 4" midranges; 2 piezoelectric tweeters
Response	16 Hz to 25 kHz, ±5 dB re 107 dB SPL at 1 meter at 1 watt
Crossover	400 Hz; 4 kHz
Impedance	4 ohms
Min. power	1 watt (0 dBW) continuous
Max. power	100 watts (20 dBW) continuous
Controls	Tweeter; midrange
Features	Reproduces the lowest organ notes

Frazier's "Thing"

Price	$1,074
Dimensions	50H x 24W x 18D
Weight	175 lbs.
Type	Modified Helmholtz tuned slot
Drivers	12" woofer; 10" woofer; 13¾" x 4½" exponential midrange horn; 2 piezoelectric tweeters
Response	20 Hz to 25 kHz, ±5 dB re 99 dB SPL at 1 meter at 1 watt
Crossover	800 Hz; 4 kHz
Impedance	4 ohms
Min. power	1 watt (0 dBW)
Max. power	80 watts (19 dBW)
Controls	Midrange; tweeter
Features	High-frequency piezoelectrics stacked for column effect; large tower

Concerto

Price	$315
Dimensions	21½H x 16W x 16D
Weight	56 lbs.
Type	Modified Helmholtz tuned slot
Drivers	10" woofer; 3" x 7" compression horn; piezoelectric tweeter
Response	35 Hz to 25 kHz, ±5 dB re 96 dB SPL at 1 meter at 1 watt
Crossover	2 kHz; 4 kHz
Impedance	8 ohms
Min. power	1 watt (0 dBW) continuous
Max. power	30 watts (14.75 dBW) continuous
Controls	Tweeter
Features	Also available in black utility finish as "Capsule Monitor"; end-table height

Super Monte Carlo

Price	$132
Dimensions	19H x 10½W x 12D
Weight	31 lbs.
Type	Modified Helmholtz tuned slot
Drivers	8" woofer; direct-coupled piezoelectric tweeter
Response	50 Hz to 25 kHz, ±5 dB re 93 dB SPL at 1 meter at 1 watt
Crossover	4 kHz
Impedance	8 ohms
Min. power	1 watt (0 dBW) continuous
Max. power	30 watts (15 dBW) continuous
Controls	None
Features	Two-way system with no crossover

Super Midget

Price	$60
Dimensions	15¾H x 6¾W x 9½D
Weight	13 lbs.
Type	Modified Helmholtz tuned slot
Drivers	4" driver
Response	50 Hz to 12 kHz, ±5 dB re 89 dB SPL at 1 meter at 1 watt
Crossover	None
Impedance	8 ohms
Min. power	1 watt (0 dBW) continuous
Max. power	10 watts (10 dBW) continuous
Controls	None
Features	May be used with car tape players

Models also available

Seven-A, $515; Mark V-A, $385; Mark IV-A, $233; CAD-1, $101

FRIED
Fried Products Co.
7616 City Line Ave.
Philadelphia, Pa. 19151

Super Monitor

Price	$5,000 (assembled); $1,200 (kit)
Dimensions	56H x 35W x 12D
Weight	164 lbs.
Type	Dynamic, transmission line
Drivers	12" high-flux plastic; 6" high-flux midrange; 1" high-flux Melinex tweeter
Response	20 Hz to 20 kHz, ±2 dB
Crossover	85 Hz; 3 kHz
Impedance	8 ohms
Min. power	25 watts (14 dBW)
Max. power	400 watts (26 dBW)
Features	C satellite or woofer (specify SMW) available separately

Model T subwoofer

Price	$1,500 (assembled); $500 (kit)
Dimensions	21H x 44W x 24D
Weight	175 lbs.
Type	Dual transmission lines
Drivers	Two 10" high-flux plastic woofers
Response	20 Hz to 300 kHz, ±2 dB
Crossover	Variable
Impedance	8 ohms
Min. power	15 watts (11.75 dBW)
Max. power	100 watts (20 dBW)
Features	Two separate inputs: one for use with B/2 (first-order crossover); one for biamplification

O Subwoofer

Price	$600 (assembled); $500 (kit)
Dimensions	30H x 24½W x 14D
Weight	66 lbs.
Type	Dynamic
Drivers	10" high-flux plastic
Response	20 Hz to 600 Hz, ±2.5 dB re 90 dB SPL at 1 meter at 1 watt
Impedance	8 ohms
Min. power	25 watts (14 dBW)
Max. power	400 watts (26 dBW)
Features	Two inputs, 1 for use with either models B/2 or C, 1 for use with biamplification

C

Price	$475 (assembled); $200 (kit)
Dimensions	13¼H x 6W (top); 10½W (bottom) x 6½D (top); 9D (bottom)
Weight	18 lbs.
Type	Vented; pyramidal shape
Drivers	6½" high-flux plastic bass driver; ⅞" Melinex treble dome unit
Response	60 Hz to 22 kHz, ±2½ dB re 90 dB SPL at 1 meter at 1 watt
Crossover	3.5 kHz
Impedance	8 ohms
Min. power	25 watts (14 dBW)
Max. power	300 watts (24.75 dBW)
Features	Optional tilt-back stand available; available either by itself, or as top of Super Monitor

B/2

Price	$300
Dimensions	12H x 8W x 7D
Weight	15 lbs.
Type	Dynamic
Drivers	5" woofer; 1" tweeter
Response	60 Hz to 30 kHz, ±2 dB
Crossover	3.5 kHz
Impedance	8 ohms
Min. power	25 watts (14 dBW)
Max. power	100 watts (20 dBW)
Features	Tilt-back stand recommended; available as an option

Q Speaker

Price	$140
Dimensions	19¾H x 11⅜W x 9¼D
Weight	23 lbs.
Type	Dynamic
Drivers	8" woofer; ¾" tweeter
Response	40 Hz to 20 kHz, ±2.5 dB
Crossover	2.5 kHz
Impedance	8 ohms
Min. power	25 watts (14 dBW)
Max. power	200 watts (23 dBW)
Controls	Impulse-perspective control
Features	Tilt-back stand recommended; available as an option

Models also available

H/2, $2,100 (assembled); $800 (kit); M/2, $950; R/III, $550; Model W, $350; Model A, $190

FULTON
Fulton Electronics
4204 Brunswick Ave. N.
Minneapolis, Minn. 55422

Premiere

Price	$4,495/pr.
Dimensions	60H x 25W x 22D
Weight	300 lbs.
Type	Dynamic
Drivers	12" woofer; 12" midwoofer; 10" upper woofer; 8" midrange; three special tweeters
Response	13 Hz to 81 kHz, ±1 dB re 82 dB SPL at 1 meter at 1 watt
Crossover	39 Hz; 122 Hz; 425 Hz; 2.4 kHz; 8 kHz; 26 kHz
Impedance	8 ohms
Min. power	50 watts (17 dBW)
Max. power	400 watts (26 dBW)
Controls	Woofer; midrange; tweeter

Nuance

Price	$495
Dimensions	34H x 14W x 13D
Weight	80 lbs.
Type	Infinite baffle
Drivers	10" woofer; 5" midrange; 2 special tweeters
Response	34 Hz to 42 kHz, ±1.5 dB
Crossover	760 Hz; 65 kHz; 15 kHz
Impedance	8 ohms
Min. power	28 watts (14.5 dBW)
Max. power	200 watts (23 dBW)
Controls	Tweeter; midrange; woofer
Features	Phase-aligned; genuine American solid and veneer cabinet; glass top; black or brown grille cloth

80

Price	$199
Dimensions	17¾H x 9⅞W x 8½D
Drivers	8" woofer; two 2½" tweeters
Response	50 Hz to 22 kHz, ±2 dB
Impedance	8 ohms
Min. power	10 watts (10 dBW)
Max. power	60 watts (17.75 dBW)
Features	Genuine American walnut veneer

Models also available

100, $279

FUNDAMENTAL RESEARCH
Fundamental Research
Success St.
Pittsburgh, Pa. 15212

"The Punch" Woofer

Price	$750
Dimensions	24H x 60W x 18D
Weight	225 lbs.
Type	Bass reflex
Drivers	Four 12" woofers
Response	25 Hz to 150 Hz
Impedance	4 or 8 ohms
Min. power	60 watts (17.75 dBW)
Max. power	400 watts (26 dBW)
Features	Fuse; system designed purely by ear

The Smaller Infrasonix Woofer

Price	$299
Dimensions	28H x 13W x 13D
Weight	55 lbs.
Type	Acoustic suspension
Drivers	10" woofer
Response	20 Hz to 200 Hz
Impedance	8 ohms
Min. power	60 watts (17.75 dBW)
Max. power	200 watts (23 dBW)
Features	Fuse; system designed purely by ear

Models also available

The Infrasonix Woofer, $450

GENESIS
Genesis Physics Corp.
Newington Park
Newington, N.H. 03801

Model 3+

Price	$389
Dimensions	37½H x 14½W x 11½D
Weight	53 lbs.
Type	Passive radiator
Drivers	8" woofer; 4" midrange; 1" tweeter
Response	28 Hz to 20 kHz, ±4 dB
Crossover	800 Hz; 3 kHz
Impedance	6 ohms
Min. power	25 watts (14 dBW)
Max. power	500 watts (27 dBW)
Controls	Midrange; tweeter
Features	Mounting bases included; magnetic ferrofluid tweeter and midrange; walnut or oak finish

Genesis Model 1+

Price	$133 (walnut); $147 (oak)
Dimensions	22H x 12½W x 9½D
Weight	28 lbs.
Type	Acoustic suspension
Drivers	8" woofer; 1" tweeter
Response	38 Hz to 20 kHz, ±4 dB
Crossover	1.8 kHz
Impedance	8 ohms
Min. power	15 watts (11.75 dBW)
Max. power	100 watts (20 dBW)
Controls	Tweeter
Features	Magnetic fluid in tweeter

Genesis V-6

Price	$105
Dimensions	18H x 10¼W x 7D
Weight	19 lbs.
Type	Vented
Drivers	6½" woofer; 1" tweeter
Response	52 Hz to 20 kHz, ±4 dB
Crossover	1.8 kHz
Impedance	8 ohms
Min. power	10 watts (10 dBW)
Max. power	75 watts (18.75 dBW)
Features	Magnetic fluid in tweeter

Models also available

Genesis 2+, $253; Genesis Model 2, $185 (walnut); $207 (oak)

GLI
GLI Integrated Sound Systems
29-50 Northern Blvd.
Long Island City, N.Y. 11101

4+

Price	$1,900
Dimensions	50H x 36W x 29D
Weight	385 lbs.
Type	Horn bass cabinet with separate mid/high array
Drivers	Two 15" woofers with two 15" passive radiators; two 12" x 22" midrange horns; 6" x 18" horn tweeter
Response	35 Hz to 20 kHz
Crossover	750 Hz; 5 kHz
Impedance	8 ohms
Min. power	10 watts (10 dBW)
Max. power	500 watts (27 dBW)
Features	Coil Guard speaker-protection circuit; heavy-duty professional construction

2+

Price	$725
Dimensions	37½H x 21½W x 22½D
Weight	135 lbs.
Type	Bass reflex plus separate mid/high array
Drivers	Two 15" woofers; eight 4½" midrange drivers; four 3½" solid-state tweeters
Response	30 Hz to 25 kHz
Crossover	350 Hz; 7 kHz
Impedance	8 ohms
Min. power	10 watts (10 dBW)
Max. power	250 watts (24 dBW)
Features	Coil Guard protection circuit; heavy-duty professional construction

The Dwarf FRA-1

Price	$800/pr.
Dimensions	20¾H x 19W x 9½D
Weight	45 lbs.
Type	Bass reflex/passive radiator
Drivers	Eight 5½" mid/low drivers with 15" passive radiator; four 3½" solid-state tweeters
Response	48 Hz to 20 kHz, ±3.5 dB
Crossover	7 kHz
Impedance	4/16 ohms
Min. power	10 watts (10 dBW)
Max. power	250 watts (24 dBW)
Features	Coil Guard protection circuit; heavy-duty professional construction

Models also available

3+, $995; 1+, $625; The Dwarf FRA-2, $250

GOODMANS
Goodmans Loudspeakers, Ltd.
Plessey Consumer Products (Distributor)
100 Commercial St.
New York, N.Y. 11802

Achromat Sigma

Price	$480
Dimensions	27H x 13W x 11D
Weight	44 lbs.
Type	Acoustic suspension with auxiliary bass radiator
Drivers	8" bass unit; 10½" auxiliary bass radiator; 1" high-frequency unit
Response	35 Hz to 23 kHz, ±5 dB re 86 dB SPL at 1 meter at 1 watt
Crossover	2.4 kHz
Impedance	8 ohms
Min. power	20 watts (13 dBW)
Max. power	95 watts (19.75 dBW)
Features	"Long throw" bass unit; pleated surround woofer; soft-dome tweeter; 12-element crossover using ferrite-cored chokes; fused for protection

HE-2

Price	$420
Dimensions	28½H x 13½W x 14D
Weight	53 lbs.
Type	Vented
Drivers	10" bass unit; 5" midrange driver; 1" ferrofluid, soft-dome tweeter
Response	60 Hz to 20 kHz, ±5 dB re 93.5 dB SPL at 1 meter at 1 watt
Crossover	1.5 kHz; 5 kHz
Impedance	8 ohms
Min. power	3.5 watts (5.5 dBW)
Max. power	65 watts (18 dBW)
Features	High-power voice coils; 9-element ferrite-cored crossovers; high-flux magnet systems; fused for protection

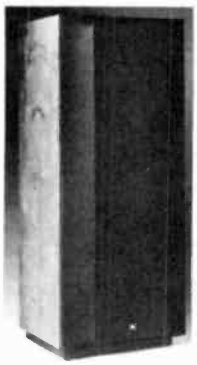
Achromat Beta

Price	$250
Dimensions	13¾H x 8¼W x 9D
Weight	18 lbs.

Heath AS-1383

Janis W-1

Janszen Z-40



JBL L-150

Innotech D-24

Type	Acoustic suspension
Drivers	6½" woofer; 1" tweeter
Response	65 Hz to 23 kHz, ±5 dB re 85 dB SPL at 1 meter at 1 watt
Crossover	3 kHz
Impedance	8 ohms
Min. power	18 watts (12.5 dBW)
Max. power	70 watts (18.5 dBW)
Features	Ten-element crossover incorporating ferrite-cored chokes to minimize loss of sensitivity; fused for protection

Models also available

HE-1, $480; Achromat Kappa, $335

GRAFYX-SP
Grafyx Audio Products, Inc.
310 Kirk Road
St. Charles, Ill. 60174

SP-Ten

Price	$209
Dimensions	28½H x 16Wx 13¼D
Weight	60 lbs.
Type	Tuned port
Drivers	10" rubber surround woofer; 1" modified hard-dome tweeter
Response	29 Hz to 20 kHz, ±3 dB re 87 dB SPL
Crossover	2 kHz
Impedance	8 ohms
Min. power	10 watts (10 dBW)
Max. power	75 watts (18¾ dBW)
Features	Impedance remains between 6 ohms and 8.5 ohms from 100 Hz to 1 MHz; tweeter voice-coil gap filled with ferrofluid

SP-Six-Cone

Price	$75
Dimensions	16H x 10W x 7½D
Weight	15 lbs.
Type	Tuned port
Drivers	6" rubber surround woofer; 2" cone tweeter
Response	50 Hz to 20 kHz, ±3 dB re 85 dB SPL
Crossover	2 kHz
Impedance	8 ohms
Min. power	10 watts (10 dBW)
Max. power	35 watts (15.5 dBW)
Features	Impedance remains between 6 ohms and 12 ohms from 100 Hz to 20 kHz

Models also available

SP-Eight, $149; SP-Six, $109

GREAT WHITE WHALE
Great White Whale Dist., Inc.
348 E. 84th St.
New York, N.Y. 10028

Point 4

Price	$900/pr.
Dimensions	42H x 19W x 11D
Weight	90 lbs.
Type	Acoustic suspension and open air
Drivers	Two 10" woofers; two 8" midbass; two 5" midranges; two 1½" dome tweeters; two 1" open-baffled supertweeters
Response	20 Hz to 20 kHz, ±2.5 dB re 89 dB SPL at 1 meter at 1 watt
Crossover	80 Hz; 300 Hz; 2.5 kHz; 8 kHz
Impedance	4 ohms
Min. power	50 watts (17 dBW)
Max. power	200 watts (23 dBW)
Controls	Midrange; tweeter (continuously variable from –3 to +3 dB)

Models also available

Point 3, $450

HARTLEY
Hartley Products Corp.
620 Island Road
Ramsey, N.J. 07446

Reference

Price	$1,725
Dimensions	50¼H x 36W x 24D
Weight	300 lbs.
Type	Magnetic suspension
Drivers	24" woofer; 10" midrange; 7" midrange/tweeter, 1" supertweeter
Response	16 Hz to 25 kHz
Crossover	250 Hz; 3 kHz; 7 kHz
Impedance	5 to 8 ohms
Min. power	25 watts (14 dBW)
Max. power	300 watts (24.75 dBW)
Features	Matched pairs

Holton Tower

Price	$495
Dimensions	49½H x 20W x 14D
Weight	105 lbs.
Type	Magnetic suspension
Drivers	Two 10" woofers; 1" tweeter
Response	20 Hz to 25 kHz
Crossover	2 kHz
Impedance	4 ohms
Min. power	15 watts (11.75 dBW)
Max. power	150 watts (21.75 dBW)
Features	Matched pairs

Zodiac 300B

Price	$275
Dimensions	25H x 23½W x 11⅝D
Weight	65 lbs.
Type	Mechanical suspension
Drivers	Two 10" woofers; 1" tweeter
Response	30 Hz to 25 kHz
Crossover	2 kHz
Impedance	4 ohms
Min. power	5 watts (7 dBW)
Max. power	100 watts (20 dBW)
Controls	None
Features	Matched pairs

Zodiac 1B

Price	$135
Dimensions	21¾H x 14⅝W x 8¾D
Weight	65 lbs./pr.
Type	Mechanical suspension
Drivers	10" woofer; 1" tweeter
Response	40 Hz to 25 kHz
Crossover	2 kHz
Impedance	8 ohms
Min. power	5 watts (7 dBW)
Max. power	100 watts (20 dBW)
Controls	None
Features	Matched pairs

Models also available

Concertmaster, $1,380; Concert Jr., $375; Zodiac '78, $180; Zodiac Jr., $96

HEATHKIT
Heath Co.
Benton Harbor, Mich. 49022

ASX-1383

Price	$600/pr. (kit)
Dimensions	36H x 13½W x 13¼D
Weight	50 lbs.
Type	Acoustic suspension
Drivers	10" critically-damped woofer; 5" linear-phase cone midrange; 1" linear-phase soft-dome tweeter
Response	40 Hz to 25 kHz, ±3 dB
Crossover	800 Hz; 45.3 kHz
Impedance	8 ohms
Min. power	10 watts (10 dBW)
Max. power	200 watts (23 dBW)
Features	Compound curved baffle to eliminate diffraction; individually fused drivers; rosewood veneer cabinet

AS-1373

Price	$170 (kit)
Dimensions	26H x 14½W x 11⅞D
Weight	47 lbs.
Type	Acoustic suspension

Drivers 10" woofer; 4½" midrange; 1" dome tweeter
Response 30 Hz to 22 kHz, +0, –10 dB; 40 Hz to 20 kHz, ±3 dB
Crossover 3 kHz
Impedance 8 ohms
Min. power 10 watts (10 dBW)
Max. power 200 watts (23 dBW)
Controls Midrange; tweeter
Features Tweeter can be installed for optimum imaging with system positioned vertically or horizontally; separate midrange subenclosure; individually fused drivers

AS-1363

Price $150 (kit)
Dimensions 23¾H x 14¼W x 11½D
Weight 40 lbs.
Type Acoustic suspension
Drivers 10" woofer; 4½" midrange; 1" dome tweeter
Response 30 Hz to 20 kHz, –10 dB
Crossover 750 Hz; 4 kHz
Impedance 8 ohms
Min. power 5 watts (7 dBW)
Max. power 130 watts (21.25 dBW)
Controls Midrange; tweeter

AS-1332

Price $58 (kit)
Dimensions 19½H x 10½W x 8D
Weight 15 lbs.
Type Infinite baffle
Drivers 8" woofer; 1¾" tweeter
Response 40 Hz to 20 kHz, +0, –10 dB; 50 Hz to 18 kHz, ±3 dB
Crossover 3.4 kHz
Impedance 8 ohms
Min. power 10 watts (10 dBW)
Max. power 50 watts (17 dBW)
Controls Tweeter
Features Individually fused drivers

Models also available

AS-1348, $330 (kit); AS-1344, $150 (kit); AS-1342, $80 (kit)

HECO
Hammond Industries, Inc.
155 Michael Drive
Syosset, N.Y. 11791

D-100

Price $499
Dimensions 31½H x 15¾W x 10¼D
Weight 75 lbs.
Type Dynamic
Drivers 14" woofer; four 4½" midranges; 2½" x 1¾" tweeter
Crossover 800 Hz; 2 kHz
Impedance 4 ohms
Max. power 200 watts (23 dBW)
Controls Biamplification

HED
Cerwin Vega, Inc.
12250 Montague St.
Arleta, Calif. 91331

U-351

Price $375
Dimensions 32H x 19W x 17¾D
Weight 105 lbs.
Type Vented
Drivers 15" cone bass; 6" cone midrange; 1" voice-coil horn tweeter
Response 32 Hz to 17 kHz, ±4 dB re 103 dB SPL at 1 meter at 1 watt
Crossover 700 Hz; 4 kHz
Impedance 8 ohms
Min. power 5 watts (7 dBW)
Max. power 100 watts (20 dBW)
Controls Midrange; tweeter
Features Circuit breaker protection for tweeter

UT-12R

Price $390
Dimensions 39½H x 15½W x 15D
Weight 75 lbs.
Type Ported reflex
Drivers 12" cone bass; two 6" cone midranges; 1" voice-coil horn tweeter
Response 32 Hz to 17 kHz, ±4 dB re 98 dB SPL at 1 meter at 1 watt
Crossover 700 Hz; 4 kHz
Impedance 8 ohms
Min. power 5 watts (7 dBW)
Max. power 80 watts (19 dBW)
Controls Midrange; rear midrange; tweeter
Features Circuit breaker protection for tweeter; rear-reflecting driver

SW-12

Price $280
Dimensions 15H x 25½W x 15½D
Weight 42 lbs.
Type Ported reflex
Drivers 12" cone bass
Response 38 Hz to 150 Hz, ±4 dB re 90 dB SPL at 1 meter at 1 watt
Impedance 8 ohms
Min. power 5 watts (7 dBW)
Max. power 100 watts (20 dBW)

U-12

Price $195
Dimensions 25H x 15½W x 11D
Weight 37 lbs.
Type Ported reflex
Drivers 12" cone bass; 1" voice-coil horn tweeter
Response 45 Hz to 17 kHz, ±4 dB re 96 dB SPL at 1 meter at 1 watt
Crossover 2 kHz
Impedance 8 ohms
Min. power 5 watts (7 dBW)
Max. power 60 watts (17.75 dBW)
Controls Tweeter
Features Circuit breaker protection for tweeter

U-6

Price $85
Dimensions 14H x 10W x 8D
Weight 12 lbs.
Type Ported reflex
Drivers 6" cone bass; 1" voice-coil Dhorm tweeter
Response 60 Hz to 20 kHz, ±4 dB re 90 dB SPL at 1 meter at 1 watt
Crossover 3 kHz
Impedance 8 ohms
Min. power 5 watts (7 dBW)
Max. power 40 watts (16 dBW)
Controls Tweeter
Features Circuit breaker protection for tweeter

Models also available

U-321, $265; U-15, $325; U-123, $215; U-10, $170

HITACHI
Hitachi Sales Corp. of America
401 W. Artesia Blvd.
Compton, Calif. 90220

HS-430

Price $399.95
Dimensions 26¼H x 14½W x 14 15/16D
Weight 46 lbs. 3 oz.
Type Vented
Drivers Woofer; midrange; tweeter
Response 35 Hz to 20 kHz, -15 dB re 92 dB SPL at 1 meter at 1 watt
Crossover 700 Hz; 4 kHz
Impedance 8 ohms
Max. power 120 watts (20.75 dBW)
Controls Dual
Features Three-way speaker system with exclusive Hitachi metal cone and patented gathered edge

HS-371

Price $199.95
Dimensions 23¾H x 14½W x 12⅝D
Weight 35 lbs. 3 oz.
Type Sealed acoustic suspension
Drivers Woofer; Midrange; tweeter
Response 45 Hz to 20 kHz, ±–15 dB re 90 dB SPL at 1 meter at 1 watt
Crossover 1.5 kHz; 6 kHz
Impedance 8 ohms
Max. power 60 watts (17.75) dBW)
Controls Tweeter (±3 dB)
Features Clean performance at all frequencies; exceptional power-handling capacity; attractive decorator-styled cabinets; easily removable matte grille cloth

HSA-3100

Price $100
Dimensions 14½H x 23½W x 11⅝D
Weight 28 lbs. 4 oz.
Type Vented
Drivers Woofer; midrange; tweeter
Response 45 Hz to 20 kHz
Impedance 8 ohms
Max. power 50 watts rms (17 dBW)
Features Same as Model HSA-3120

Models also available

HS-330, $250; HSA-3120, $150

IMPACT
Unitronex Corp.
1171 Landmeier Rd.
Elk Grove, Ill. 60007

Impact 8

Price $399
Dimensions 26 4/5H x 17 3/10W x 12 3/5D
Weight 64 lbs.
Type Balanced; ducted-port speaker system with time-aligned transducers
Drivers 12" woofer; 7" midrange; 2" x 5" horn tweeter
Response 30 Hz to 23 kHz, 105 dB SPL at 1 meter at 1 watt
Crossover 300 Hz; 7 kHz
Impedance 8 ohms (nominal)
Min. power 10 watts (10 dBW)
Max. power 150 watts (21.75 dBW)
Controls Tweeter; midrange (±3 dB)

Impact 6

Price $299

Models also available

Impact 4, $199; Impact 2, $149

INFINITY
Infinity Systems, Inc.
7930 Deering Ave.
Canoga Park, Calif. 91304

Reference Standard 4.5

Price	$3,450
Dimensions	64½H x 26½W x 14½D
Weight	190 lbs.
Drivers	Four EMIT™ tweeters; two 12" Infinity-Watkins dual drive woofers with polypropylene cone; four-electromagnetic induction EMIT™ midranges
Response	24 Hz to 32 kHz, ±3 dB
Crossover	150 Hz; 5 kHz
Impedance	4 ohms
Min. power	100 watts (20 dBW)
Max. power	500 watts (27 dBW)
Controls	Separate crossover control unit to adjust output levels of woofers and midrange
Features	Oak and oak veneer; brown grille

Reference Standard 1.5

Price	$470
Dimensions	26½H x 15W x 11D
Weight	36 lbs.
Drivers	EMIT™ tweeter; 12" Watkins-Infinity dual drive polypropylene woofer; polypropylene midrange
Response	38 Hz to 32 kHz, ±3 dB
Crossover	350 Hz; 5 kHz
Impedance	4 ohms
Min. power	60 watts (17.75 dBW)
Max. power	250 watts (24 dBW)
Features	Oak and oak veneer; dark brown grille

Quantum Jr.

Price	$299
Dimensions	25H x 14½W x 12D
Weight	50 lbs.
Type	Dynamic
Drivers	12" woofer; ½" dome midrange; Infinity EMIT™ tweeter
Response	40 Hz to 32 kHz, ±3 dB
Crossover	600 Hz; 4 kHz
Impedance	4 ohms
Min. power	25 watts (14 dBW)
Max. power	200 watts (23 dBW)
Controls	Midrange; tweeters
Features	Optional metal pedestals

Qb

Price	$207
Dimensions	25H x 14½W x 12D
Weight	43 lbs.
Type	Dynamic
Drivers	10" woofer; 4" midrange; Infinity EMIT™ tweeter
Response	42 Hz to 32 kHz, ±3 dB
Crossover	600 Hz; 4 kHz
Impedance	4 ohms
Min. power	15 watts (11.75 dBW)
Max. power	150 watts (21.75 dBW)
Controls	Midrange
Features	Optional metal pedestals

Qe

Price	$127
Dimensions	18H x 12W x 10D
Weight	22 lbs.
Type	Dynamic
Drivers	8" Q woofer (butyl surround); EMIT™ tweeter
Response	47 Hz to 32 kHz, ±3 dB
Crossover	2.5 kHz
Impedance	4 to 8 ohms
Min. power	10 watts (10 dBW)
Max. power	100 watts (20 dBW)
Features	Rotatable tweeter; automatic mirror-imaging

Models also available

Reference Standard 2.5, $836; Column II, $369; 3000B, $235; Qa, $175

INNOTECH
Innotech Audio Systems
182 Henry St.
Brooklyn, N.Y. 11201

D-24

Price	$427
Dimensions	36½H x 10½W x 15⅜D
Weight	55 lbs.
Type	Asymmetric transmission line
Drivers	Two 5" Bextrene woofers; one 1½" Mylar dome midrange; 1" Mylar dome tweeter
Response	35 Hz to 20 kHz, ±3 dB
Crossover	3.5 kHz; 7.5 kHz
Impedance	8 ohms
Min. power	35 watts (15.5 dBW)
Max. power	200 watts (23 dBW)
Controls	Fuse protection
Features	Asymmetrical geometry to eliminate creation of standing waves inside and outside of enclosure; narrow enclosure to allow full radiation of sound waves resulting in wide dispersion

JANIS
Janis Audio Associates, Inc.
2889 Roebling Ave.
Bronx, N.Y. 10461

W-1 Subwoofer

Price	$695
Dimensions	17½H x 22W x 22D (floor standing)
Weight	90 lbs.
Type	Slot-loaded
Drivers	15" dynamic
Response	30 to 100 Hz, ±1 dB re 85 dB SPL into hemispherical space
Crossover	External electronic crossover: 18 dB/octave at 100 Hz
Impedance	8 ohms
Min. power	60 watts (18 dBW) continuous
Max. power	200 watts (23 dBW) continuous; system is fused to protect against amplifier instability
Controls	Level (when used with Interphase crossover amp)
Features	Designed to extend bass response of high-quality wide-range speakers; harmonic distortion components of 1% or less; individual calibration report supplied with each speaker; to be used in biamplified mode (crossovers available)

Models also available

W-2 Subwoofer, $495

JANSZEN
Janszen Electrostatic by Soundmates
796 29th Ave., S.E.
Minneapolis, Minn. 55414

Z-40

Price	$530
Dimensions	49½H x 13¼W x 13¼D
Weight	64 lbs.
Type	Dynamic/electrostatic
Drivers	10" woofer; passive radiator; 2 mid-frequency electrostatic tweeters; 2 high-frequency electrostatic tweeters
Response	33 Hz to 2 kHz, ±3 dB re 86 dB SPL at 2 volts at 1 meter; 26 Hz to 30 kHz, ±6 dB
Crossover	800 Hz; 4 kHz
Impedance	4 ohms
Min. power	20 watts (13 dBW)
Max. power	100 watts (20 dBW)
Controls	Tweeter; midrange
Features	Low frequencies extended by 4-pole passive radiator system; bipolar radiation of mids and highs

Z-10

Price	$315
Dimensions	24H x 13¼W x 11D
Weight	41 lbs.
Type	Dynamic/electrostatic
Drivers	10" woofer; 2 electrostatic tweeters
Response	28 Hz to 30 kHz, ±3 dB re 82 dB SPL at 2 volts at 1 meter; 28 Hz to 30 kHz, ±6 dB
Crossover	800 Hz
Impedance	4 ohms
Min. power	20 watts (13 dBW)
Max. power	75 watts (18.75 dBW)
Controls	Tweeter

Models also available

Z-30, $430; Z-20, $375

JBL
James B. Lansing Sound, Inc.
8500 Balboa Blvd.
Northridge, Calif. 91329

L-212

Price	$2,000
Dimensions	38¾H x 17W x 13D
Weight	225 lbs.
Type	Dynamic
Drivers	12" cone woofer; 8" cone midrange; 5" cone midrange; 1" dome tweeter
Crossover	70 Hz; 800 Hz; 3 kHz
Impedance	8 ohms
Min. power	10 watts (10 dBW)
Max. power	300 watts (24.75 dBW)
Controls	Continously variable tweeter and midrange; ultra-bass and phase controls
Features	12" self-powered common bass loudspeaker in a third enclosure (dim.: 19¼H x 18½W x 18¼D); system sensitivity: 91 dB SPL at 1 meter at 1 watt

L-220

Price	$875
Dimensions	48¼H x 20 3/16W x 15⅜D
Weight	121 lbs.
Type	Passive radiator
Drivers	14" direct bass radiator with 15" passive radiator; 5" direct midrange radiator; ultra-high-frequency ring radiator
Crossover	800 Hz; 5 kHz
Impedance	8 ohms
Min. power	10 watts (10 dBW)
Max. power	400 watts (26 dBW)
Controls	Tweeter; midrange
Features	Sensitivity: 90 dB SPL at 1 meter at 1 watt

L-150

Price	$595
Dimensions	41½H x 17W x 13D
Weight	80 lbs.
Type	Passive radiator
Drivers	12" direct bass radiator with 12" passive radiator; 5" direct midrange radiator; 1" dome tweeter
Crossover	1 kHz; 4 kHz
Impedance	8 ohms
Min. power	10 watts (10 dBW)
Max. power	300 watts (24.75 dBW)
Controls	Tweeter; midrange

Features Sensitivity: 88 dB SPL at 1 meter at 1 watt

4311WX

Price $365
Dimensions 23½H x 14½W x 11¾D
Weight 49 lbs.
Type Bass reflex
Drivers 12" direct radiator woofer; 5" direct radiator midrange; 1½" direct radiator tweeter
Crossover 1.5 kHz; 6 kHz
Impedance 8 ohms
Min. power 10 watts (10 dBW)
Max. power 300 watts (24.75 dBW)
Controls Tweeter; midrange
Features Sensitivity: 91 dB SPL at 1 meter at 1 watt

L-40

Price $250
Dimensions 23H x 15W x 12D
Weight 44 lbs.
Type Bass reflex
Drivers 10" direct radiator woofer; 1" dome radiator tweeter
Crossover 1.8 kHz
Impedance 8 ohms
Min. power 10 watts (10 dBW)
Max. power 150 watts (21.75 dBW)
Controls Tweeter
Features Sensitivity: 88 dB SPL at 1 meter at 1 watt

RADIANCE SERIES

902

Price $219.95
Dimensions 27½H x 17⅛W x 12⅞D
Weight 44 lbs. 8 oz.
Type Bass reflex
Drivers 12" direct radiator woofer; 5" direct radiator midrange; 3" direct radiator tweeter
Crossover 600 Hz; 3 kHz
Impedance 8 ohms
Min. power 10 watts (10 dBW)
Max. power 200 watts (23 dBW)
Controls Three-position high frequency

502

Price $139.95
Dimensions 21½H x 13½W x 11 3/16D
Weight 27½ lbs. 8 oz.
Type Bass reflex
Drivers 8" direct radiator woofer; 3" direct radiator tweeter
Crossover 2 kHz
Impedance 4 ohms
Min. power 10 watts (10 dBW)
Max. power 80 watts (19 dBW)

Models also available

L-300, $1,250; L-222, $895; L-110, $410; L-50, $325; L-19, $175; 702, $179.95

JENNINGS RESEARCH
Contrara Research, Inc.
5719 South Avalon Blvd.
Los Angeles, Calif. 90011

Tri-Angle

Price $330
Dimensions 29½H x 18W x 14D
Weight 60 lbs.
Type Vented
Drivers 1" dome tweeter; 1½" dome midrange; 12" woofer
Response 89 dB SPL at 1 meter at 1 watt
Crossover 1.2 kHz; 5 kHz
Impedance 6 ohms
Min. power 15 watts (11.75 dBW)
Max. power 150 watts (21.75 dBW)
Controls Tweeter; midrange
Features Linear-phase coherency

Contrara Pedestal

Price $280
Dimensions 33H x 11½W x 11½D
Weight 40 lbs.
Type Acoustic suspension
Drivers Two 8" woofers; 1" tweeter
Response 92 dB SPL at 1 meter at 1 watt
Crossover 2.5 kHz
Impedance 8 ohms
Min. power 10 watts (10 dBW)
Max. power 100 watts (20 dBW)

Piccola Bass Cube

Price $275
Dimensions 21½H x 18W x 18D
Weight 40 lbs.
Type Acoustic suspension
Drivers 12" woofer
Response 92 dB SPL at 1 meter at 1 watt
Crossover 80 Hz
Impedance 8 ohms
Min. power 30 watts (14.75 dBW)
Max. power 200 watts (23 dBW)
Features Common bass subwoofer

Contrara Tower

Price $210
Dimensions 28½H x 11½W x 11½D
Weight 35 lbs.
Type Acoustic suspension
Drivers 10" woofer; 1" tweeter
Response 89 dB SPL at 1 meter at 1 watt
Crossover 2.5 kHz
Impedance 8 ohms
Min. power 15 watts (11.75 dBW)
Max. power 100 watts (20 dBW)
Controls Tweeter

Models also available

Vector Two, $270; Vector One, $190; Contrara Rectangle, $145; Piccola Two, $110

JENSEN
Jensen Sound Labs
4136 N. United Parkway
Schiller Park, Ill. 60176

System B

Price $549.95
Dimensions 33¾H x 16½W x 11¾D (including base)
Weight 78 lbs.
Type Vented
Drivers 12" woofer; 1¼" upper midrange; 1" main tweeter; 2" rear-firing tweeter
Response 27 Hz to 21 kHz, +2, -4 dB re 90 dB SPL at 1 meter at 1 watt
Crossover 300 Hz; 2 kHz; 8 kHz
Impedance 8 ohms
Min. power 9 watts (9.5 dBW)
Max. power 150 watts (21.75 dBW)
Controls Tweeter; upper midrange
Features Power protection circuit; optimized power response; 5-year transferable warranty; oak veneer saddle base with variable tilt vertically aligned drivers; impedance compensated crossover network

LS-5b

Price $279.95
Dimensions 26H x 15¾W x 13⅝D
Weight 50 lbs.
Type Acoustic suspension
Drivers 12" woofer; two 3½" cone midrange drivers; 1" soft-dome tweeter
Response 50 Hz to 20 kHz, ±3 dB re 90 dB SPL at 1 meter at 1 watt
Crossover 1 kHz; 4 kHz
Impedance 8 ohms nominal
Min. power 10 watts (10 dBW) continuous
Max. power 90 watts (19.5 dBW) continuous
Controls Tweeter; midrange
Features Full 5-year transferable warranty

30

Price $169.95
Dimensions 24½H x 15W x 10D
Weight 28 lbs.
Type Acoustic suspension
Drivers 10" woofer; 3½" midrange; 2" cone tweeter
Response 60 Hz to 18 kHz, ±3 dB
Crossover 1.5 kHz; 4 kHz
Impedance 8 ohms
Min. power 10 watts (10 dBW)
Max. power 50 watts (17 dBW)
Features Vertically aligned drivers; full 5-year transferable warranty

LS-2b

Price $99.95
Dimensions 18¾H x 11W x 9⅞D
Weight 18 lbs.
Type Acoustic suspension
Drivers 8" woofer; 2" cone tweeter
Response 65 Hz to 18 kHz, ±3 dB re 91 dB SPL at 1 meter at 1 watt
Crossover 4 kHz
Impedance 8 ohms nominal
Min. power 10 watts (10 dBW) continuous
Max. power 50 watts (17 dBW) continuous
Features Full 5-year transferable warranty

Models also available

LS-6b, $369.95; LS-4b, $219.95; LS-3b, $154.95; 20, $89.95

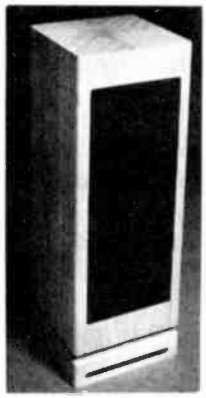
JONSON SPEAKERS
Speakers and Associated Sound, Inc.
420 Austin Place
Bronx, N.Y. 10455

3-DM-2000/WDR-2H, "The President"

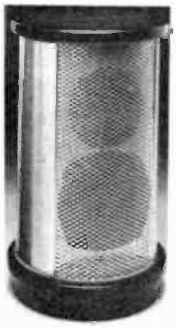
Price $799
Dimensions 42¾H x 21¾W x 20D
Weight 120 lbs.
Type Acoustic suspension
Drivers Top unit: "Pentagon": 5 midrange domes, 3 dome tweeters; bass unit: two 10" woofers
Response 25 Hz to 20 kHz, ±3 dB re 80 dB SPL at 1 meter at 1 watt
Crossover 2.1 kHz; 4 kHz
Impedance 15 ohms
Min. power 50 watts (17 dBW)
Max. power 140 watts (21.5 dBW)
Controls None
Features Pentagon: 540-degree radiation pattern; all dome drivers

3DM-1/WHS-2, "The Diplomat"

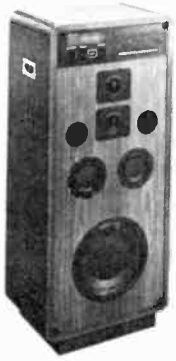
Price $450
Dimensions 27H x 24W x 18D
Weight 80 lbs.
Type Acoustic suspension
Drivers Top unit, "Pentagon Junior": 4 full-range drivers, 1 tweeter; bass unit: two 10" woofers facing downwards



Jennings Contrara Pedestal



JR Model 149



Koss CM/1030

Martin TL-6050

Leak 3090

Response	30 Hz to 20 kHz
Crossover	350 Hz; 5 kHz
Impedance	4 ohms
Max. power	70 watts (18.5 dBW)

Models also available

3-DM-2/WDR-4M, "The Statesman", $640; 3-DM-2000/WDR-1M, "The Ambassador", $605

JR LOUDSPEAKERS
H & H International
3047 W. Henrietta Road
Rochester, N.Y. 14623

JR-149

Price	$550/pr.
Dimensions	14⅝H x 9W x 9D
Weight	12 lbs.
Type	Sealed cabinet
Drivers	Bextrene cone woofer; soft-dome tweeter
Response	70 Hz to 20 kHz, ±3 dB re 90 dB SPL at 1 meter at 1 watt
Crossover	3 kHz
Impedance	16 ohms
Min. power	20 watts (13 dBW)
Max. power	100 watts (20 dBW)
Controls	None
Features	Aluminum cylinder

JR Super Woofer

Price	$395
Dimensions	20H x 13½W x 13½D
Weight	50 lbs.
Drivers	Special 8" driver
Response	30 Hz to 150 kHz
Impedance	8 ohms
Max. power	60 watts (17.75 dBW)
Controls	None
Features	Highly damped reflex electromagnetic damping

Models also available

JR-150, $825/pr.

JVC
U.S. JVC Corp.
Hi-Fi Division
58-75 Queens Midtown Expressway
Maspeth, N.Y. 11378

Zero 9

Price	$700
Dimensions	41¼H x 16 1/16W x 16⅛D
Weight	92 lbs. 6.4 oz.
Type	Bass reflex
Drivers	Two 12" cone woofers; 3 15/16" dome cone midrange; 2 1/16" x 5/16" ribbon tweeter
Response	25 Hz to 50 kHz, 92 dB SPL at 1 meter at 1 watt
Crossover	450 Hz; 5.5 kHz
Impedance	6 ohms
Max. power	150 watts (21.75 dBW)
Controls	Midrange; tweeter

Zero 3

Price	$320
Dimensions	22 13/16H x 12⅝W x 13⅜D
Weight	39 lbs. 9.6 oz.
Type	Bass reflex
Drivers	10" cone woofer; 2⅜" dome cone midrange; 2 1/16" x 5/16" ribbon tweeter
Response	40 Hz to 50 kHz, 91 dB SPL at 1 meter at 1 watt
Crossover	1.5 kHz; 7 kHz
Impedance	6 ohms
Max. power	75 watts (18.75 dBW)
Controls	Midrange; tweeter

SK-700 II

Price	$180
Dimensions	22¼H x 13½W x 13⅛D
Weight	30 lbs. 14 oz.
Type	Bass reflex
Drivers	10" cone woofer; 5" cone midrange; 1" dome tweeter
Response	35 Hz to 40 kHz, 93 dB SPL at 1 meter at 1 watt
Crossover	900 Hz; 9 kHz
Impedance	8 ohms
Max. power	70 watts (18.5 dBW)
Controls	Midrange; tweeter

SK-500 II

Price	$209.90/pr.
Dimensions	19⅝H x 12½W x 12⅛D
Weight	23 lbs. 3.2 oz.
Type	Bass reflex
Drivers	10" woofer; 2⅜" cone tweeter
Response	40 Hz to 20 kHz, 92 dB SPL at 1 meter at 1 watt
Crossover	2 kHz
Impedance	8 ohms
Max. power	50 watts (17 dBW)

S-M5

Price	$299/pr.
Dimensions	9 3/16H x 5 13/16W x 5 29/32D
Weight	9 lbs. 3 oz.
Type	Acoustic suspension
Drivers	5½" cone woofer; 1" dome tweeter
Response	45 Hz to 20 kHz, 88 dB SPL at 1 meter at 1 watt
Crossover	2.5 kHz
Impedance	8 ohms
Max. power	80 watts (19 dBW)

Models also available

Zero 5, $400; SK-1000 II, $280; SK-600 II, $240/pr.; SK-400 II, $150/pr.; S-M3, $169.90/pr.

KA/KUSTOM ACOUSTICS
Kustom Acoustics
6624 W. Irving Park Road
Chicago, Ill. 60634

Titan Labyrinth

Price	$1,995
Dimensions	54H x 30W x 18D (with base)
Weight	375 lbs.
Type	Dual, 8' double helical tapered acoustical trapezoidal line
Drivers	Two 12" rubber composition cone woofers; two 6½" plastic cone midranges; 1¼" magnet-liquid tweeters; 1" dome magnetic liquid supertweeter
Response	14 Hz to 22 kHz, ±2½ dB
Crossover	60 Hz; 2 kHz; 7.5 kHz
Impedance	4 ohms (3.2 ohms min; 9 ohms max)
Min. power	15 watts (11.75 dBW) per channel into 4 ohms
Max. power	300 watts (24.75 dBW) per channel into 4 ohms
Controls	4 level controls
Features	Complete with base and casters; may be bi- or triamped; fuse protection; phase-corrected; transducers have T-shaped pole pieces and mammoth magnet assemblies

TAS

Price	$999
Dimensions	40H x 24W x 18D
Weight	225 lbs.
Type	Dual; half wavelength tapered acoustical trapezoidal line
Drivers	Two 12" cone woofers; 5" Bextrene cone midrange; 1¼" dome midtweeter; 1" dome supertweeter
Response	25 Hz to 22 kHz, ±2.5 dB re 97 dB SPL at 1 meter at 1 watt
Crossover	350 Hz; 2.5 kHz; 7.5 kHz
Impedance	4 to 6 ohms (4 recommended; 2 ohms min; 9 ohms max)
Min. power	10 watts (10 dBW) per channel into 8 ohms
Max. power	250 watts (24 dBW) per channel into 8 ohms
Controls	3 T-pads (heavy-duty wire-wound)
Features	KA Vari-I-Vent (adjusts system resonance); may be bi- or triamped; fuse protection; phase-corrected; magnetic-liquid midtweeters

Trapezoid Subwoofer

Price	$399

Dimensions	40H x 16W x 14D
Weight	85 lbs.
Type	Tapered acoustical trapezoidal line/labyrinth
Drivers	12" long excursion woofer with synthetic composition deep cone
Response	20 Hz to 2 kHz, ±2½ dB
Crossover	40 Hz; 90 Hz; 175 Hz or no internal crossover
Impedance	8 ohms
Features	Four built-in sets of terminals in back; biamp with or without electronic crossover

Zoid

Price	$189
Dimensions	17½H x 10½W x 9D
Weight	30 lbs.
Type	Tapered acoustical trapezoidal line
Drivers	8" woofer; 1" magnet-liquid dome tweeter
Response	36 Hz to 22 kHz, ±2.5 dB re 92 dB SPL
Crossover	1.8 kHz
Impedance	6 or 8 ohms
Min. power	10 watts (10 dBW)
Max. power	100 watts (20 dBW)
Controls	Level control
Features	Fuse protection

Models also available

Amp Eater, $1,499; Labyrinth Subwoofer, $699; Impulse Subwoofer, $299

KEF
Intratec
P.O. Box 17414
Dulles International Airport
Washington, D.C. 20041

105

Price	$950
Dimensions	38H x 17 9/10W x 16 3/10D
Weight	80 lbs.
Type	Coherent phase
Drivers	12" woofer; 5" cone midrange; 1½" dome tweeter
Response	30 Hz to 25 kHz, ±2 dB
Impedance	8 ohms
Min. power	40 watts (16 dBW)
Max. power	200 watts (23 dBW)
Controls	Midrange; tweeter level
Features	LED "Listening Window" power indicator; midrange/tweeter assembly can be rotated for best stereo placement

104aB

Price	$425 (assembled); $250 (kit)
Dimensions	24 4/5H x 13Wx 10 1/5D
Weight	36 lbs.
Type	Reflex
Drivers	8" woofer; 9" x 13" drone; ¾" dome tweeter
Response	50 Hz to 20 kHz, ±2 dB
Crossover	45 Hz; 3 kHz
Impedance	8 ohms
Min. power	15 watts (11.75 dBW)
Max. power	100 watts (20 dBW)
Controls	Midrange level
Features	Walnut or teak wood cabinet

304

Price	$295
Dimensions	26 7/10H x 11W x 12 2/5D
Weight	30 lbs.
Type	Infinite baffle
Drivers	Two: 8" woofers; 1" dome tweeter
Response	60 Hz to 20 kHz, ±3 dB re 87 dB SPL at 1 meter at 1 watt
Impedance	8 ohms
Min. power	10 watts (10 dBW)
Max. power	100 watts (20 dBW)
Features	Satin black finish; optional floor stand

Corelli

Price	$215
Dimensions	18H x 8 3/5W x 11D
Weight	20 lbs.
Type	Infinite baffle
Drivers	8" woofer; ¾" dome tweeter
Response	50 Hz to 30 kHz, ±3 dB
Crossover	3.5 kHz
Impedance	8 ohms
Min. power	25 watts (14 dBW)
Max. power	50 watts (17 dBW)
Features	Walnut or teak wood cabinet

Models also available

Cantata, $625 (assembled); $395 (kit); Calinda, $350; 101, $250; 303, $175

KENWOOD
Kenwood Electronics, Inc.
75 Seaview Drive
Secaucus, N.J. 07094

Seven

Price	$1,250
Dimensions	37H x 18½W x 15D
Weight	121 lbs.
Type	Acoustic suspension
Drivers	14" woofer; 4⅛" midrange; 1½" tweeter; ¾" supertweeter
Response	20 Hz to 35 kHz, 94 dB SPL at 1 watt at 1 meter
Crossover	400 Hz; 4 kHz; 8 kHz
Impedance	8 ohms
Min. power	50 watts (21.75 dBW)
Max. power	Midrange; tweeter; supertweeter

LS-1600

Price	$550
Dimensions	27 15/16H x 15 11/32W x 12 23/32D
Weight	64 lbs. 14 oz.
Type	Vented
Drivers	13" woofer; 5⅛" midrange; high-frequency driver
Response	32 Hz to 20 kHz, 92 dB SPL at 1 meter at 1 watt
Crossover	900 Hz; 5 kHz
Impedance	8 ohms
Min. power	50 watts (17 dBW)
Max. power	120 watts (20.75 dBW)
Controls	Mid/high frequency
Features	Linear response

LS-408B

Price	$310
Dimensions	29H x 16½W x 14¼D
Weight	50 lbs.
Type	Vented
Drivers	12" woofer; 4⅜" midrange; 1¾" tweeter
Response	40 Hz to 20 kHz, 92 dB SPL at 1 watt at 1 meter
Crossover	2 kHz; 5 kHz
Impedance	8 ohms
Min. power	20 watts (13 dBW)
Max. power	160 watts (22 dBW)
Controls	Mid/high frequency

LS-405B

Price	$175
Dimensions	23½H x 13½W x 12¾D
Weight	30 lbs.
Type	Vented
Drivers	10" woofer; 1¾" tweeter
Response	50 Hz to 20 kHz, 93 dB SPL at 1 watt at 1 meter
Crossover	2.5 kHz
Impedance	8 ohms
Min. power	10 watts (10 dBW)
Max. power	100 watts (20 dBW)

Models also available

LS-1900, $1,165; LS-1200, $365; LS-407B, $245; LS-404B, $285/pr.

KINETIC AUDIO INTERNATIONAL
Kinetic Audio International, Ltd.
6624 W. Irving Park Road
Chicago, Ill. 60634

The Labyrinth

Price	$1,495
Dimensions	52H x 16W x 18D (with base)
Weight	185 lbs.
Type	9' tapered acoustical trapezoidal labyrinth
Drivers	12" synthetic composition cone woofer; 6½" plastic cone midrange; 1¼" synthetic dome transmission line midtweeter; 1" dome supertweeter
Response	18 Hz to 22 kHz, ±2.5 dB
Crossover	90 Hz; 2 kHz; 7.5 kHz
Impedance	6 ohms (5 ohms min; 11 ohms max)
Min. power	15 watts (11.75 dBW) per channel into 8 ohms
Max. power	200 watts (23 dBW) per channel into 8 ohms (program material)
Controls	3 T-pads (super duty wire-wound)
Features	May be bi- or triamped with or without electronic crossover(s) (14 terminals included for all possible connections applications); fuse protection; phase-coherent; magnetic-liquid tweeters; linear phase; mirror-matched walnut veneer and components

STAT™

Price	$399
Dimensions	17½H x 10½W x 9D
Weight	40 lbs.
Type	Tapered acoustical trapezoidal
Drivers	Two 5" Bextrene midwoofers; 1¼" synthetic dome transmission line magnetic liquid tweeter
Response	34 Hz to 22 kHz, ±3 dB re 93 dB SPL at 1 meter at 1 watt
Crossover	2.5 kHz
Impedance	4 ohms
Min. power	10 watts (10 dBW) into 8 ohms
Max. power	200 watts (23 dBW) into 8 ohms
Controls	T-pads (heavy-duty wire wound)
Features	Fuse protection; phase corrected mid/woofers have 3/4 P-P excursion and 25 oz. magnets; rack-mountable with optional ears; walnut veneer mirror-matched; components also mirror-matched; linear-phase design

IMP™

Price	$299
Dimensions	24H x 14W x 4D
Weight	60 lbs.
Type	Tapered acoustical line
Drivers	12" woofer; 1¼" magnet-liquid tweeter; (synthetic dome) 5" Bextrene midrange with T-shaped pole piece
Response	29 Hz to 20 kHz, ±3 dB re 93 dB SPL at 1 meter at 1 watt
Crossover	200 Hz; 2 kHz
Impedance	6 to 8 ohms
Min. power	10 watts (10 dBW)
Max. power	200 watts (23 dBW)
Controls	T-pads (2) wire-wound
Features	Fuse protection; mirror-matched walnut vener over 1" thick high density fiberboard; mirrored components; infinite line enclosure on tweeter

Models also available

Trapezoid™, $699; Impulse™ CRM, $499

KIRKSAETER
Kirksaeter-Saga Hi-Fi, Inc.
398 South Pickett St.
Alexandria, Va. 22304

Monitor 400
Price $1,400
Dimensions 26¾H x18⅞W x 13¾D
Weight 59 lbs. 8 oz.
Type Acoustic suspension
Drivers Four 8" long excursion woofer; four 1½"dome midranges; four 1" dome tweeters
Response 16 Hz to 25 kHz (DIN)
Crossover 650 Hz; 4.5 kHz
Impedance 4 to 8
Min. power 30 watts (14.75 dBW)
Max. power 400 watts (26 dBW)
Controls Two tweeter, 2 midrange controls adjustable from 0 to 6 dB
Features All drivers fused; designed for disco operation; speaker radiates sound from the top, both sides and front for panoramic dispersion; walnut finish

Monitor 250
Price $850
Dimensions 26¾H x 18⅞W x 9⅞D
Weight 46 lbs. 5 oz.
Type Acoustic suspension
Drivers Two 10" long excursion woofers; two 1½" dome midranges; two 1" dome tweeters
Response 18 Hz to 25 kHz (DIN)
Crossover 650 Hz; 4.5 kHz
Impedance 4 to 8
Min. power 20 watts (13 dBW)
Max. power 250 watts (24 dBW)
Controls Two tweeter, 2 midrange controls adjustable from 0 to 6 dB
Features Same as Monitor 400

Monitor 100
Price $300
Dimensions 16¼H x 10½W x 8D
Weight 18 lbs.
Type Acoustic suspension
Drivers 8" woofer; 1½" dome midrange; 1" dome tweeter
Response 28 Hz to 25 kHz (DIN)
Crossover 650 Hz; 4.5 kHz
Impedance 4 to 8 ohms
Min. power 10 watts (10 dBW)
Max. power 100 watts (20 dBW)
Controls Tweeter (adjustable 0 to 6 dB); midrange (adjustable from 0 to 6 dB)

Models also available
Monitor 150, $600; Monitor 120, $375

KLEIN & HUMMEL
Gotham Audio Corp.
741 Washington St.
New York, N.Y. 10014

0-92
Price $3,360
Dimensions 31½H x 17¼W x 11¾D
Weight 66 lbs.
Type Acoustic suspension
Drivers 4 cone
Response 50 Hz to 16 kHz, ±1.5 dB re 80 dB SPL at 1 meter at 1 watt
Crossover 500 Hz; 3 kHz
Min. power Low frequency; 120 watts (20.75 dBW); mid-frequency: 60 watts (17.75 dBW); high-frequency: 60 watts (17.75 dBW)
Max. power 240 watts (23.75 dBW) (self-powered)
Controls Woofer; tweeter
Features Plug-in compensators for room placement; 0, 1, 2, or 3 surfaces

Models also available
OY, $1,140

KLH
KLH Research & Development Corp.
145 University Ave.
Westwood, Mass. 02090

KLH-1
Price $1,100/pr. (including Analog Bass Computer™)
Dimensions 30H x 10¼W x 11D
Weight 55 lbs. ea.
Type Computer-controlled, vented sixth-order Butterworth alignment
Drivers Two 8" die-cast frame dynamic bass units, with natural polypropylene formed cones; 4½" midrange with formed cone of natural polypropylene; 1" dome tweeter with butyl-loaded synthetic soft dome
Response 30 Hz to 20 kHz, ±3 dB re 86 dB SPL at 1 meter at 1 watt
Crossover 750 Hz; 3 kHz
Impedance 4 ohms
Min. power 40 watts (16 dBW)
Max. power 250 watts (24 dBW)
Controls Position, power indicator, tape, in/out (on computer)
Features Utilizes Analog Bass Computer™ for extended bass response in conjunction with hi-flux motor system; proprietary drivers with natural polypropylene cones; includes speaker stand

KLH-3
Price $450 (including Analog Bass Computer™)
Dimensions 12½H x 8½W x 6D
Weight 25 lbs.
Type Computer-controlled, vented sixth-order Butterworth alignment
Drivers 6" die-cast frame dynamic bass unit with natural polypropylene cone; one 1" dome tweeter with butyl loaded synthetic soft dome
Response 40 Hz to 20 kHz, ±3 dB re 84 dB SPL at 1 meter at 1 watt
Crossover 2.75 kHz
Impedance 4 ohms
Min. power 40 watts (16 dBW)
Max. power 200 watts (23 dBW)
Controls Position tape, in/out (on computer)
Features Utilizes Analog Bass Computer™ for extended bass response in conjunction with hi-flux motor system; proprietary drivers with natural polypropylene cones

319B
Price $230
Dimensions 24½H x 14½W x 11¼D
Weight 40 lbs.
Type Tuned phase inverter
Drivers 12" woofer; 5¼" cone midrange; 1" soft-dome tweeter; 2½" cone tweeter on rear
Response 52.5 Hz to 22 kHz
Crossover 1.1 kHz; 3 kHz
Impedance 4 ohms
Min. power 10 watts (10 dBW)
Max. power 100 watts (20 dBW)
Controls Midrange; tweeter

327
Price $179
Dimensions 23¼H x 14W x 10¾D
Weight 29 lbs.
Type Acoustic suspension
Drivers 10" woofer; 4" cone midrange; 2½" cone tweeter
Response 55 Hz to 18 kHz
Crossover 900 Hz; 3.6 kHz
Impedance 8 ohms
Min. power 20 watts (13 dBW)
Max. power 80 watts (19 dBW)
Controls Midrange; tweeter

331B
Price $100
Dimensions 21H x 12W x 8¾D
Weight 20 lbs. 8 oz.
Type Acoustic suspension
Drivers 8" woofer; 2½" cone tweeter
Response 64 Hz to 18 kHz
Crossover 3 kHz
Impedance 8 ohms
Min. power 8 watts (9 dBW)
Max. power 50 watts (17 dBW)

Models also available
KLH-2, $660/pr. (including Analog Bass Computer™); KLH-4, $290/pr.; 337, $199; 317B, $130

KLIPSCH
Klipsch & Associates
P.O. Box 688
Hope, Ark. 71801

Klipschorn
Price $1,275 (walnut oil, walnut lacquer); $1,775 (rosewood, teak, oak, cherry); $950 (birch, raw, black); $844 (decorator model in birch, raw, black)
Dimensions 52H x 31¼W x 28½D (walnut, rosewood, teak, oak, cherry); 50½H (birch, raw, black); 49¾H (decorator model)
Weight 180 to 240 lbs., depending on style
Type Horn
Drivers 15" bass; compression midrange; compression high frequency
Response 35 Hz to 17 kHz, ±5 dB
Crossover 400 Hz; 6 kHz
Impedance 8 ohms
Min. power 1 watt (0 dBW)
Max. power 105 watts (20.25 dBW)

Belle Klipsch
Price $1,045 (walnut oil, walnut lacquer); $1,498 (rosewood, teak, oak, cherry)
Dimensions 35⅝H x 30⅛W x 18¾D
Weight 125 lbs.
Type Horn
Drivers 15" bass; compression midrange; compression high frequency
Response 45 Hz to 17 kHz, ±5 dB
Crossover 400 Hz; 6 kHz
Impedance 8 ohms
Min. power 1 watt (0 dBW)
Max. power 105 watts (20.25 dBW)

Heresy
Price $362 (walnut oil, walnut lacquer); $475 (rosewood, teak, oak, cherry); $311 (birch, raw, black)
Dimensions 21⅜H x 15½W x 13⅛D
Weight 55 lbs.
Type Dynamic
Drivers 12" bass; compression midrange; compression high frequency
Response 50 Hz to 17 kHz, ±5 dB
Crossover 700 Hz; 6 kHz
Impedance 8 ohms
Min. power 1 watt (0 dBW)
Max. power 105 watts (20.25 dBW)

Models also available
La Scala, $674 (birch, raw, black); $704 (birch lacquer); $731 (birch lacquer-stained); Cornwall, $638

(walnut oil; walnut lacquer); $813 (rosewood, teak, oak, cherry); $495 (birch, raw, black)

KOSS
Koss Corp.
4129 North Port Washington Ave.
Milwaukee, Wis. 53212

CM/1030
Price $549.95
Dimensions 39H x 16½W x 14½D
Weight 74 lbs.
Type Vented
Drivers 10" woofer; two 4½" midrange drivers; 1" tweeter; 1" supertweeter
Response 29 Hz to 19 kHz, -3 dB
Crossover 400 Hz; 2.5 kHz; 6 kHz
Impedance 7 ohms
Min. power 15 watts (11.75 dBW)
Max. power 200 watts (23 dBW)
Controls Midrange; tweeter; supertweeter

CM/530
Price $229.95
Dimensions 24H x 13¾W x 11¾D
Weight 35 lbs.
Type Passive radiator
Drivers 8" woofer; 1" tweeter
Response 36 Hz to 17 kHz, -3 dB
Crossover 3 kHz
Impedance 7/4 ohms
Min. power 15 watts (11.75 dBW)
Max. power 75 watts (18.75 dBW)
Controls Tweeter
Features Mirror-imaged pairs

Models also available
CM/1020, $449.95; CM/1010, $349.95

LAFAYETTE
Lafayette Radio Electronics
111 Jericho Turnpike
Syosset, N.Y. 11791

1009
Price $99.99
Dimensions 24H x 14½W x 10½D
Weight 40 lbs.
Type Acoustic suspension
Drivers 12" woofer; 5" midrange; 3" tweeter
Response 40 Hz to 18 kHz
Impedance 8 ohms
Min. power 5 watts (7 dBW)
Max. power 55 watts (17.25 dBW) peak
Controls Midrange; tweeter
Features Simulated birch finish

1005
Price $59.99
Dimensions 20H x 12½W x 8½D
Weight 21 lbs.
Type Acoustic suspension
Drivers 10" woofer; 2½" tweeter
Impedance 8 ohms
Min. power 5 watts (7 dBW)
Max. power 50 watts (17 dBW) peak
Features Simulated birch finish

Pip Speak
Price $60
Dimensions 7¼H x 4½W x 4½D
Weight 6 lbs.
Type Acoustic suspension mini speaker system
Drivers 4" woofer; 1" soft-dome tweeter
Response 80 Hz to 20 kHz
Crossover 2.5 kHz
Impedance 8 ohms
Min. power 12 watts (10.75 dBW)
Max. power 50 watts (17 dBW)
Features Die-cast aluminum cabinet; perforated metal grille; includes adjustable mounting brackets

Models also available
1007, $79.99; 1003, $44.99; 1001, $29.99

LANCER
Lancer Electronics
10530 Lawson River Ave.
Fountain Valley, Calif. 92708

SC-8
Price $359.50
Dimensions 28H x 18W x 13¼D
Weight 65 lbs.
Type Vented
Drivers Two 12" woofers; 5¼" dome midrange; 3½" dome tweeter
Response 20 Hz to 22 kHz, 92 dB SPL at 1 meter at 1 watt
Crossover 500 Hz; 4.5 kHz
Impedance 8 ohms
Min. power 8 watts (9 dBW)
Max. power 120 watts (20.75 dBW)
Controls Midrange; tweeter
Features Genuine walnut veneers and solids cabinet; front-mounted controls; double-knit grille

SC-9T
Price $249.50
Dimensions 38H x 12W x 12D
Weight 57 lbs.
Type Acoustic suspension
Drivers 10" woofer; 5" midrange; two dome tweeters
Response 20 Hz to 20 kHz, 89 dB SPL at 1 meter at 1 watt
Crossover 500 Hz; 4.5 kHz
Impedance 8 ohms
Min. power 10 watts (10 dBW)
Max. power 90 watts (19.5 dBW)
Controls Midrange; tweeter
Features Same as Model SC-7A

SC-11
Price $179
Dimensions 22¼H x 12½W x 10D
Weight 38 lbs.
Type Acoustic suspension
Drivers 10" woofer; 5" midrange; 2¼" tweeter
Response 20 Hz to 20 kHz, 90 dB SPL at 1 meter at 1 watt
Crossover 750 Hz; 6 kHz
Impedance 8 ohms
Min. power 10 watts (10 dBW)
Max. power 50 watts (10 dBW)
Controls midrange; tweeter
Features Same as Model SC-7A

9335-2
Price $99.50
Dimensions 25H x 14¼W x 11¾D
Weight 33 lbs.
Type Tubular; vented
Drivers 12" woofer; 2¼" tweeter
Response 30 Hz to 20 kHz, 93 dB SPL at 1 meter at 1 watt
Crossover 3 kHz
Impedance 8 ohms
Min. power 5 watts (7 dBW)
Max. power 50 watts (17 dBW)
Features Genuine oiled-walnut veneer; white, gold and brown grilles

9711
Price $54.50
Dimensions 20¼H x 10W x 9½D
Weight 19 lbs.
Type Tubular vented
Drivers 8" full-range driver
Response 45 Hz to 15 kHz, 90 dB SPL at 1 meter at 1 watt
Impedance 8 ohms
Min. power 3 watts (4.75 dBW)
Max. power 30 watts (14.75 dBW)
Features Same as Model 9535-2

Models also available
SC-7A, $299; SC-4A, $229; SC-10A, $149; 9534X, $69.50; SC-1, $34.50

LEAK
Rank Hi Fi, Inc.
20 Bushes Lane
Elmwood Park, N.J. 07407

3090
Price $960
Dimensions 47H x 20W x 15D
Weight 112 lbs.
Type Transmission line
Drivers 15" woofer; 7" x 4" midrange; isotweeter
Impedance 6 ohms
Min. power 35 watts (15.5 dBW)
Max. power 160 watts (22 dBW)
Controls Midrange; tweeter
Features Upper-mid/high section swivels for optimum dispersion

LINN PRODUCTS LTD.
Audiophile Systems
5750 Rymark Court
Indianapolis, Ind. 46250

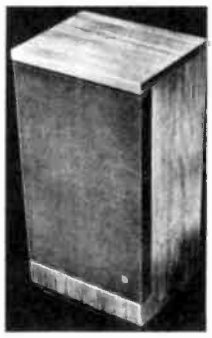
DMS Isobarik
Price $3,600/pr.
Dimensions 30H x 15W x 16D
Weight 95 lbs.
Type Isobarik loading
Drivers Two 9" x 12" woofers; two 5" midranges; two 1" dome tweeters
Response 16 Hz to 20 kHz, ±3 dB
Crossover 360 Hz; 3 kHz
Impedance 4 ohms
Min. power 50 watts (17 dBW)
Max. power 500 watts (27 dBW)
Features Instantaneous dynamic range of 54 to 56 dB

Models also available
S.A.R.A. Isobarik, $1,470/pr.

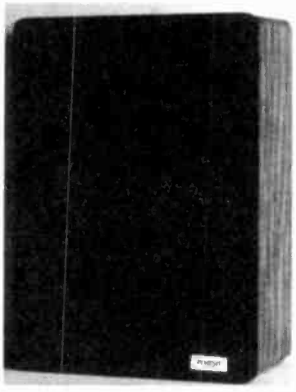
MAGNEPLANAR
Magnepan, Inc.
1645 9th St.
White Bear Lake, Minn. 55110

MG-IIA
Price $825/pr.
Dimensions 72H x 22W x 1¾D
Weight 45 lbs.
Type Magnepianar
Drivers Woofer; tweeter
Response 45 Hz to 16 kHz, ±4 dB
Crossover 2.1 kHz
Impedance 6 ohms
Min. power 30 watts (14.75 dBW)
Max. power 200 watts (23 dBW) continuous
Features Mirror-imaged matched pair; purely resistive load

MG-I
Price $495/pr.



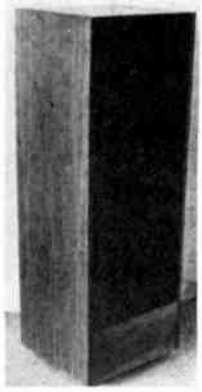
McIntosh XR-5



Mesa S-35

MCS™ 8228

Ohm I



Norman Laboratories Model 9

Dimensions	59H x 22W x 1¾D
Weight	30 lbs.
Type	Magneplanar
Drivers	Woofer; tweeter
Response	50 Hz to 16 kHz, ±4 dB
Crossover	2.4 kHz
Impedance	5 ohms
Min. power	30 watts (14.75 dBW)
Max. power	200 watts (23 dBW)
Features	Mirror-imaged matched pair; purely resistive load

MARANTZ
Superscope, Inc.
20525 Nordhoff St.
Chatsworth, Calif. 91311

HD-880

Price	$420
Dimensions	26½H x 15W x 11¾D
Weight	56 lbs. 10 oz.
Type	VARI Q™ (Infinite baffle/ported)
Drivers	12" woofer; 5" midrange; 1½" LPF dome tweeter; 1" LPF dome supertweeter
Response	30 Hz to 22 kHz, ±3 dB re 90 dB SPL at 1 meter at 1 watt
Crossover	750 Hz; 2.3 kHz; 5 kHz
Impedance	8 ohms
Min. power	10 watts (10 dBW)
Max. power	250 watts (24 dBW)
Controls	Midrange, tweeter, and supertweeter L-pad controls
Features	Low stored energy loudspeakers

HD-660

Price	$270
Dimensions	24¼H x 14⅜W x 11½D
Weight	49 lbs.
Type	VARI-Q™ (Infinite baffle/ported)
Drivers	10" woofer; 5" midrange; 1½" dome tweeter
Response	35 Hz to 20 kHz, ±3 dB re 88 dB SPL at 1 meter at 1 watt
Crossover	750 Hz; 2.5 kHz
Impedance	8 ohms
Min. power	10 watts (10 dBW)
Max. power	125 watts (21 dBW)
Controls	Midrange and tweeter L-pad controls
Features	Low stored energy loudspeakers

HD-440

Price	$110
Dimensions	19⅛H x 11¼W x 8½D
Weight	25 lbs. 5 oz.
Type	Acoustic suspension
Drivers	8" woofer; 3½" midrange; tweeter
Response	45 Hz to 18 kHz, ±3 dB re 87 dB at 1 meter at 1 watt
Crossover	2 Hz; 8 kHz
Impedance	8 ohms
Min. power	10 watts (10 dBW)
Max. power	50 watts (17 dBW)

Mk II SERIES

7 Mk II

Price	$180/pr.
Dimensions	25½H x 14¾W x 11½D
Weight	49 lbs. 5 oz.
Type	Acoustic suspension
Drivers	12" woofer; 5" midrange; 1¾" tweeter
Response	35 Hz to 20 kHz, ±3 dB re 88 dB SPL at 1 meter at 1 watt
Crossover	800 Hz; 2.5 kHz
Impedance	8 ohms
Min. power	10 watts (10 dBW)
Max. power	200 watts (23 dBW)
Controls	Midrange and tweeter L-pad controls
Features	Low stored energy loudspeakers

5 Mk II

Price	$115/pr
Dimensions	23H x 12W x 9½D
Weight	33 lbs.
Type	Acoustic suspension
Drivers	8" woofer; 1¾" tweeter
Response	40 Hz to 18 kHz, ±3 dB re 88 dB SPL at 1 meter at 1 watt
Crossover	2.5 kHz
Impedance	8 ohms
Min. power	10 watts (10 dBW)
Max. power	60 watts(18 dBW)
Controls	Tweeter L-pad
Features	Low stored energy loudspeakers

DESIGN SERIES

940

Price	$440/pr.
Dimensions	45¾H x 15W x 12D
Weight	82 lbs. 2 oz.
Type	VARI Q ™ (Infinite baffle/ported)
Drivers	12" woofer; 5" midrange; 1½" LPF dome tweeter; 1" LPF dome supertweeter
Response	30 Hz to 22 kHz, ±3 dB re 90 dB SPL at 1 meter at 1 watt
Crossover	750 Hz; 2.3 kHz; 5 kHz
Impedance	8 ohms
Min. power	10 watts (10 dBW)
Max. power	250 watts (24 dBW)
Controls	Midrange; tweeter and supertweeter; L-pad controls
Features	Low stored energy loudspeakers

920

Price	$380/pr.
Dimensions	38¼H x 15W x 12D
Weight	65 lbs.
Type	VARI Q™ (Infinite baffle/ported)
Drivers	12" woofer; 5" midrange; 1½" LPF dome tweeter
Response	33 Hz to 20 kHz, ±3 dB re 90 dB SPL at 1 meter at 1 watt
Crossover	750 Hz; 2.5 kHz
Impedance	8 ohms
Min. power	10 watts (10 dBW)
Max. power	200 watts (23 dBW)
Controls	Midrange and tweeter L-Pad controls
Features	Low stored energy loudspeakers

Models also available

HD-770, $330; HD-550, $200; 8 Mk II, $260/pr.; 6 Mk II, $140/pr.; 4 Mk II, $80/pr.; 930, $380/pr.; 900, $320/pr.

MARTIN
Eastman Sound Mfg. Co., Inc.
Rt. #295 & Harmony Road
Mickleton, N.J. 08056

TL-4050

Price	$650
Dimensions	52½H x 12½W x 11¼D
Weight	84 lbs.
Type	Dual transmission line
Drivers	Two 11" woofers; 5" cloth curvilinear midrange; 1" dome tweeter
Response	28 Hz to 22 kHz, ±4 dB re 92 dB SPL at 1 meter at 1 watt
Crossover	100 Hz; 900 kHz; 4 kHz
Impedance	8 ohms
Min. power	100 watts (20 dBW)
Max. power	300 watts (24.75 dBW)
Controls	Midrange; tweeter
Features	Newly designed enclosures, using direct-coupled highly-computed line of constant width, trimmed with port tube to better maintain basic relationship between mass of woofer cone and trimming tube

Magnificat

Price	$449
Dimensions	37½H x 18W x 14D
Weight	86 lbs.
Type	Acoustic suspension
Drivers	Two 12" woofers; 5" convex midrange; two 2" polyaxial tweeters
Response	28 Hz to 20 kHz re 92 dB SPL at 1 meter at 1 watt
Crossover	500 Hz; 4 kHz
Impedance	4 ohms
Min. power	35 watts (15.5 dBW)
Max. power	100 watts (20 dBW)
Controls	Midrange; tweeter
Features	Drivers of varied design and bandwidth cover entire audible range and beyond; each includes a large and efficient voice coil and magnet structure

TL-2050

Price	$350

Dimensions	29½H x 9½W x 10D
Weight	45 lbs.
Type	Transmission line
Drivers	8" woofer; 1" dome tweeter
Response	36 Hz to 22 kHz, ±3 dB re 90 dB SPL at 1 meter at 1 watt
Crossover	1.2 kHz
Impedance	8 ohms
Min. power	35 watts (15.5 dBW)
Max. power	100 watts (20 dBW)
Controls	None
Features	Same as model TL-4050

Gamma Gold 3000M

Price	$329
Dimensions	25¼H x 14W x 11¾D
Weight	55 lbs.
Type	Bias port
Drivers	10" heavy-duty butyl woofer; soft-dome midrange; soft-dome tweeter
Response	34 Hz to 20 kHz, ±3 dB re 90 dB SPL at 1 meter at 1 watt
Crossover	900 Hz; 4.4 kHz
Impedance	8 ohms
Min. power	35 watts (15.5 dBW)
Max. power	100 watts (20 dBW)
Controls	Midrange/tweeter

TL-1650

Price	$250
Dimensions	25½H x 8W x 11½D
Weight	65 lbs.
Type	Transmission line
Drivers	6½" woofer; 1" dome tweeter
Response	38 Hz to 20 kHz, ±3 dB re 88 dB SPL at 1 meter at 1 watt
Crossover	1.5 kHz
Impedance	8 ohms
Min. power	35 watts (15.5 dBW)
Max. power	100 watts (20 dBW)
Controls	None
Features	Same as model TL-4050

Gamma 310X

Price	$219
Dimensions	21¾H x 12¼W x 10D
Weight	37 lbs.
Type	Acoustic suspension
Drivers	10" woofer; 5" convex midrange; 2" polyaxial tweeter
Response	36 Hz to 18 kHz re 91 dB SPL at 1 meter at 1 watt
Crossover	900 Hz; 4.5 kHz
Impedance	8 ohms
Min. power	15 watts (11.75 dBW)
Max. power	60 watts (11.75 dBW)
Controls	Midrange/tweeter
Features	Handcrafted

Gamma Gold 2006M

Price	$129
Dimensions	13H x 18½W x 9D
Weight	17 lbs. 8 oz.
Type	Bias port
Drivers	6½" woofer; dome tweeter
Response	40 Hz to 20 kHz, ±4 dB re 91 dB SPL at 1 meter at 1 watt
Crossover	1.5 kHz
Impedance	8 ohms
Min. power	25 watts (14 dBW)
Max. power	75 watts (18.75 dBW)
Controls	Tweeter

Models also available

TL-3050, $550; Gamma 315X, $289; Gamma 412X, $269; Gamma Gold 2008M, $159; Gamma 308X, $139; Gamma 208X, $119; Gamma 204X, $99

MATRECS
Matrecs Industries
805 Woodman Ave.
Winslow, Ill. 61089

MA-130

Price	$179.50
Dimensions	24H x 15W x 9⅝D
Weight	37 lbs.
Type	Acoustic suspension
Drivers	12" woofer; 1" dome tweeter; 6" midrange
Response	35 Hz to 22 kHz
Crossover	1 kHz; 5 kHz
Impedance	8 ohms
Min. power	8 watts (9 dBW)
Max. power	75 watts (18.75 dBW)
Controls	6" isolated midrange/tweeter level control

MA-105

Price	$165.50
Dimensions	22H x 13⅝W x 9⅝D
Weight	30 lbs.
Type	Acoustic suspension
Drivers	10" woofer; 4½" midrange 1" dome tweeter
Response	35 Hz to 22 kHz
Crossover	2.5 kHz; 5 kHz
Impedance	8 ohms
Min. power	5 watts (7 dBW)
Max. power	50 watts (17 dBW)
Controls	Tweeter
Features	Ferrofluid in voice-coil gap dissipates heat

MA-103

Price	$65.50
Dimensions	20H x 12W x 9⅝D
Weight	18 lbs. 8 oz.
Type	Acoustic suspension
Drivers	10" woofer; 3" tweeter
Response	35 Hz to 22 kHz
Crossover	5 kHz
Impedance	8 ohms
Min. power	5 watts (7 dBW)
Max. power	35 watts (15.5 dBW)
Features	Aluminum voice coil; multi-roll foam surround

Models also available

MA-211, $173.50; MA-124, $131.50; MA-83, $48.50

McINTOSH
McIntosh Loudspeaker Division
2 Chambers St.
Binghamton, N.Y. 13903

XR-7

Price	$1,099
Dimensions	40¼H x 19½W x 14⅜D
Weight	118 lbs.
Type	Acoustic suspension
Drivers	Two 12" woofers; 8" lower midrange; two 1½" dome upper midranges; four 2⅝" coaxial supertweeters
Response	20 Hz to 20 kHz
Crossover	250 Hz; 1.4 kHz; 7 kHz
Impedance	8 ohms
Min. power	30 watts (14.75 dBW)
Max. power	300 watts (24¾ dBW) peak
Features	McIntosh environmental equalizer may be used

XR-5

Price	$599
Dimensions	30H x 15W x 12D
Weight	69 lbs.
Type	Acoustic suspension
Drivers	12" woofer; 8" lower midrange; 1½" dome upper midrange; two 2⅝" coaxial supertweeters
Response	20 Hz to 20 kHz
Crossover	250 Hz; 1.4 kHz; 7 kHz
Impedance	8 ohms
Min. power	30 watts (14.75 dBW)
Max. power	200 watts (23 dBW) peak
Features	McIntosh environmental equalizer may be used

ML-10C

Price	$319
Dimensions	25H x 12 13/16W x 12⅝D
Weight	47 lbs.
Type	Acoustic suspension
Drivers	10" woofer; 1½" dome midrange; coaxial super tweeter
Response	20 Hz to 20 kHz, 89 dB SPL at 1 meter at 1 watt
Crossover	1 kHz; 7 kHz
Impedance	8 ohms
Min. power	20 watts (13 dBW)
Max. power	100 watts (20 dBW)
Features	McIntosh environmental equalizer may be used

Models also available

XR-6, $749; XR-3, $425

MCS® SERIES
J.C. Penney
1301 Ave. of the Americas
New York, N.Y. 10019

8228

Price	$399.95
Dimensions	36½H x 16W x 10½D
Weight	100 lbs.
Type	12" woofer; two 2" soft-dome midranges; 1" soft-dome tweeter
Drivers	Air suspension
Crossover	600 Hz; 2 kHz
Impedance	8 ohms
Min. power	50 watts (17 dBW)
Max. power	150 watts (21.75 dBW)
Controls	Mid/tweeter
Features	Ferrofluid-cooled elements; built-in stand; removable grille

8330

Price	$299.95
Dimensions	26⅝H x 15W x 13D
Weight	37 lbs. 8 oz.
Type	Linear phase bass reflex
Drivers	12" cone woofer; 5" cone midrange; 2"cone tweeter
Response	29 Hz to 22 kHz, -20 dB re 93 dB SPL at 1 meter at 1 watt
Crossover	1.5 Hz; 3.8 kHz
Impedance	8 ohms
Min. power	15 watts (11.75 dBW)
Max. power	120 watts (20.75 dBW)
Controls	Midrange; tweeter
Features	Two thermal relays; integral carrying handles

8320

Price	$199.95
Dimensions	24H x 13⅜W x 12¼D
Weight	27 lbs. 8 oz.
Type	Linear phase bass reflex
Drivers	10" cone woofer; 5" cone midrange; 2" cone tweeter
Response	32 Hz to 22 kHz, -20 dB re 92.5 dB SPL at 1 meter at 1 watt
Crossover	1.7 kHz; 5.5 kHz
Impedance	8 ohms
Min. power	5 watts (7 dBW)
Max. power	75 watts (18.75 dBW)
Controls	Tweeter
Features	Two thermal relays; removable front grille

8310

Price	$119.95
Dimensions	21⅛H x 11W x 9⅞D
Weight	18 lbs. 11 oz.
Type	Linear phase bass reflex
Drivers	8" cone woofer; 2" cone tweeter
Response	37 Hz to 22 kHz, -20 dB re 92 dB

	SPL at 1 meter at 1 watt
Crossover	3.5 kHz
Impedance	8 ohms
Min. power	5 watts (7 dBW)
Max. power	50 watts (17 dBW)
Features	Thermal relay

Models also available

8227, $299.95; 8226, $199.95

MESA
Mesa Electronics Sales, Ltd.
2940 Malmo Drive
Arlington Heights, Ill. 60005

Disco-Duo

Price	$409.95
Dimensions	29⅝H x 18W x 14D (bottom); 7½H x 18W x 10D (top)
Weight	73 lbs. (bottom); 16½ lbs. (top)
Type	Bass reflex
Drivers	Two 12" woofers in bottom section; 2" x 5" piezoelectric horn; two superpiezoelectric tweeters
Response	45 Hz to 40 kHz re 100 dB SPL at 1 meter at 1 watt
Crossover	2.5 Hz; 4 kHz
Impedance	8 ohms (bottom)
Max. power	200 watts (23 dBW) (bottom)
Features	Black-vinyl cabinet; flush-mount carrying handles

MS-80 Subwoofer

Price	$249
Dimensions	16H x 18W x 16D
Weight	64 lbs.
Type	Bass reciprocator
Drivers	10" woofer; 10" bass reciprocator
Response	30 Hz to 115 kHz, ±5 dB
Crossover	200 Hz (passive)
Impedance	8 ohms
Min. power	5 watts (7 dBW)
Max. power	100 watts (10 dBW)
Features	Dual volume control for satellite speakers

600

Price	$199
Dimensions	24½H x 14W x 10¾D
Weight	34 lbs.
Type	Bass reflex
Drivers	10" woofer; 5" midrange; 3" tweeter
Response	40 Hz to 20 kHz
Crossover	2 kHz; 5.5 kHz
Impedance	8 ohms
Min. power	10 watts (10 dBW)
Max. power	60 watts (17.75 dBW)
Controls	Midrange; tweeter (±5 dB range)

500

Price	$109
Dimensions	21H x 12½W x 9D
Weight	25 lbs.
Type	Bass reflex
Drivers	8" woofer; 3" tweeter
Response	35 Hz to 20 kHz
Crossover	4.5 kHz
Impedance	8 ohms
Min. power	10 watts (10 dBW)
Max. power	50 watts (17 dBW)
Controls	Tweeter (±5 dB range)

S-35

Price	$139/pr.
Dimensions	9¼H x 6¼W x 5½D
Weight	12 lbs./pr.
Type	5" woofer with 1½" voice coil; 4⅛" soft-dome tweeter
Drivers	115 Hz to 17 kHz
Response	200 Hz (passive)
Crossover	4 to 8 ohms
Impedance	5 watts (7 dBW)
Min. power	50 watts (17 dBW)
Controls	Satellite speaker specifically designed for use with a subwoofer

Models also available

125, $279; 85, $229; 65, $169; 45, $119

MICRO-ACOUSTICS
Micro-Acoustics Corp.
8 Westchester Plaza
Elmsford, N.Y. 10523

FRM-1AX

Price	$235
Dimensions	25¾H x 15⅜W x 12¾D
Weight	40 lbs.
Type	Acoustic suspension
Drivers	Five 1¼" drivers mounted in a Penta-Axis array; one 10" woofer with heavy-duty dynamic assembly
Response	32 Hz to 18 kHz, ±4 dB
Crossover	1.7 kHz
Impedance	8 ohms
Min. power	18 watts (12.5 dBW) (at 8 ohms) continuous
Max. power	70 watts (18.5 dBW) (at 8 ohms) continuous
Controls	Tweeter (adjusts center on-axis tweeters); dispersion control (adjusts four surrounding off-axis tweeters simultaneously)
Features	Full 10-year warranty; tweeter protection circuit

MS-1

Price	$125/pr.
Dimensions	4H x 9¼W x 5¼D
Weight	21 lbs. 5 oz.
Drivers	Four 1¼" drivers
Crossover	3.5 kHz; 7 kHz
Impedance	16 ohms
Min. power	5 watts (7 dBW)
Max. power	60 watts (17.75 dBW)
Features	Full 5-year warranty

Models also available

FRM-2AX, $185; FRM-3AX, $279/pr.

MITSUBISHI
Melco Sales, Inc.
3030 E. Victoria St.
Compton, Calif. 90221

MS-40

Price	$550
Dimensions	34⅝H x 15⅜W x 15 5/16D
Weight	77 lbs.
Type	Acoustic suspension
Drivers	12" honeycomb cone woofer; 4" cone midrange; 1½" hybrid-dome tweeter
Response	25 Hz to 20 kHz re 87 dB SPL at 1 meter at 1 watt
Crossover	600 Hz; 5 kHz
Impedance	6 ohms
Min. power	30 watts (14.75 dBW)
Max. power	150 watts (21.75 dBW)
Controls	Midrange; tweeter
Features	Overload projection with LED indicator; edgeless grille and cabinet design

MS-10

Price	$165
Dimensions	22½H x 12⅝W x 11½D
Weight	32 lbs.
Type	Acoustic suspension
Drivers	10" honeycomb-cone woofer; 2" cone tweeter
Response	35 Hz to 20 kHz
Crossover	1.5 kHz
Impedance	6 ohms
Min. power	20 watts (13 dBW)
Max. power	100 watts (20 dBW)
Controls	Tweeter
Features	Overload-protection circuit; edgeless cabinet and grille

Models also available

MS-30, $395; MS-20, $275

MONITOR
General Audio Corp.
3504 Hillcroft
Houston, Tex, 77027

Monitor M-1000

Price	$500
Dimensions	57¾H x 16W x 13⅛D
Weight	65 lbs.
Type	Vented
Drivers	Two 10" bass drivers; two 4" frame-cone drivers; four 3½" phenolic-ring tweeters
Response	20 Hz to 20 kHz
Crossover	900 Hz; 1.5 kHz; 5 kHz; 6 kHz
Impedance	8 ohms
Min. power	10 watts (10 dBW)
Max. power	80 watts (19 dBW)

Monitor Mark II

Price	$209.95
Dimensions	23H x 14W x 10D
Weight	29 lbs.
Type	Vented
Drivers	10" bass driver; 4½" frame-cone driver; 3½" phenolic-ring tweeter
Response	26 Hz to 20 kHz
Crossover	1 kHz; 3.5 kHz
Impedance	8 ohms
Min. power	10 watts (10 dBW)
Max. power	35 watts (15.5 dBW)

Models also available

Monitor Mark IV, $279.95; Monitor Mark III, $239.95

MORDAUNT-SHORT
Mordaunt-Short, Inc.
1919 Middle Country Road
Centereach, N.Y. 11720

Signifer

Price	$1,480/pr. including matching stand
Dimensions	31⅞H x 15⅛W x 13¾D
Weight	64 lbs.
Type	Three-way ported bass reflex
Drivers	11 4/5" woofer; 5 3/10" midrange; 1" wide-dispersion synthetic-dome tweeter
Response	38 Hz to 25 kHz, ±2 dB
Crossover	500 Hz; 4 kHz
Impedance	8 ohms
Min. power	25 watts (14 dBW)
Max. power	250 watts (24 dBW)
Controls	Bass; treble

Carnival Series 2

Price	$275/pr.
Dimensions	15¾H x 9½W x 5¾D
Weight	11 lbs. 9 oz.
Type	Dynamic
Drivers	8" midrange; 2⅝" paper-cone tweeter
Response	85 Hz to 17 kHz, ±3 dB
Crossover	3.5 kHz
Impedance	8 ohms
Min. power	10 watts (10 dBW)
Max. power	80 watts (19 dBW)
Features	Walnut or teak wood finish

Models also available

Pageant Series 2, $495/pr.; Festival Series 2, $385/pr.

NAGRA
Nagra Magnetic Recorders, Inc.
19 W. 44th St.
New York, N.Y. 10036

DSM
Price $1,297
Dimensions 9⅜H x 10¾W x 5¼D
Weight 13 lbs. 14 oz.
Type Acoustic suspension
Drivers Two cone
Response 60 Hz to 15 kHz, ±3 dB
Crossover 2.2 kHz
Impedance 8 ohms
Features Built-in amp

NEAL-FERROGRAPH
Neal-Ferrograph
652 Glenbrook Road
Glenbrook, Conn. 06906

S-23
Price $416
Dimensions 17⅜H x 7½W x 11D
Weight 19 lbs. 8 oz.
Type Acoustic suspension with internal labyrinth
Drivers Two 4" long-throw roll surround; 1" soft dome
Response 65 Hz to 20 kHz, ±4 dB re 90 dB SPL at 1 meter at 1 watt
Impedance 6 ohms (nominal)
Min. power 10 watts (10 dBW)
Max. power 35 watts (15.5 dBW)
Features Walnut or teak veneer; crossover allows one woofer to switch over to midrange

NORDMENDE
Sterling Hi-Fidelity, Inc.
22-20 40th Ave.
Long Island City, N.Y. 11101

LB-26
Price $100/pr.
Dimensions 9H x 6W x 5D
Weight 4 lbs.
Type Dynamic
Drivers 5"; 1¾"
Response 50 Hz to 20 kHz
Impedance 4 to 8 ohms
Min. power 3 watts (4.75 dBW)
Max. power 15 watts (11.75 dBW)

Models also available
LB-25, $80/pr.

NORMAN LABORATORIES
Norman Laboratories, Inc.
2278 Industrial Blvd.
Norman, Okla. 73069

Nine
Price $470
Dimensions 45½H x 15½W x 15D
Weight 75 lbs.
Type Acoustic suspension
Drivers Three 10" woofers; three 1" tweeters
Response 35 Hz to 20 kHz, ±3 dB (1.5 kHz to 20 kHz, ±2 dB)
Crossover 1.5 kHz
Impedance 4 ohms
Min. power 30 watts (14.75 dBW)
Max. power 70 watts (18.5 dBW) continuous
Controls Tweeter; woofer
Features Rear-firing third woofer operates in either acoustic or passive radiator mode for differing bass outputs; tweeter-protection circuit breaker; magnetic damping fluid in tweeters

Eight
Price $140
Dimensions 23H x 12W x 10D
Weight 28 lbs.
Type Acoustic suspension
Drivers 10" woofer; 1" tweeter
Response 45 Hz to 20 kHz, ±4 dB (1.5 kHz to 20 kHz, ±2 dB)
Crossover 1.5 kHz
Impedance 8 ohms
Min. power 15 watts (11.75 dBW)
Max. power 35 watts (15.5 dBW) continuous
Controls Tweeter (3-position)
Features Magnetic damping fluid in tweeter

Models also available
Ten, $310; Seven, $220

OHM ACOUSTICS
OHM Acoustics Corp.
241 Taaffe Place
Brooklyn, N.Y. 11205

F
Price $950
Dimensions 44H x 17¾W x 17¾D (bottom); 13W x 13D (top)
Weight 80 lbs.
Type Walsh; sealed system
Drivers 12" Walsh driver
Response 35 Hz to 19 kHz, ±4 dB re 90 dB SPL
Impedance 4 ohms
Min. power 56 watts (17.5 dBW)
Max. power 150 watts (21.75 dBW) continuous above 1 kHz
Features Protective fused; 10 lbs. 4 oz. magnetic structures; 3" voice coil

I
Price $675
Dimensions 31H x 15½W x 16D
Weight 76 lbs.
Type Vented with subwoofer
Drivers 12" subwoofer; 8" woofer; 2" low tweeter; two 1" dome tweeters
Response 35 Hz to 19 kHz, ±3½ dB
Crossover 100 Hz; 2 kHz; 10 kHz
Impedance 8 or 4 ohms
Min. power 10 watts (10 dBW)
Max. power 1,000 watts (30 dBW)
Controls Four (1 for each tweeter and for 8" woofer)
Features Walnut, oak, teak, and black cabinets; omnidirectional response

N Subwoofer
Price $340
Dimensions 15H x 16W x 15D
Type Dual subwoofer with passive radiators
Drivers Two 8" woofers; two 12" passive radiators
Response 32 Hz to 140 kHz, ±4 dB re 89 dB SPL at 1 meter at 1 watt
Crossover 140 Hz
Impedance 8 or 4 ohms
Min. power 10 watts (10 dBW)
Max. power 100 watts (20 dBW)
Controls Level-matching
Features Built-in passive crossover for both channels in one walnut veneer enclosure

L Speaker
Price $185
Dimensions 20H x 12W x 10D
Weight 33 lbs. 8 oz.
Type Vented
Drivers 8" woofer; 2" low tweeter; 2" high tweeter
Response 42 Hz to 20 Hz, ±4 dB
Crossover 1.7 kHz; 10 kHz
Impedance 8 or 4 ohms
Min. power 8 watts (9 dBW) for approx. 100 dB SPL at 3'
Max. power 100 watts (10 dBW)
Controls Two (one for each tweeter)
Features Quasi third-order Butterworth filter; optimally vented enclosure; oiled-walnut veneer

Models also available
H, $360; C-2, $275; M, $145; E, $120

R.W. OLIVER
R.W. Oliver Electronics, Ltd.
580 E. Dobbie Ave.
Winnipeg, Manitoba R3K 1G4

Thor-II Center-Channel Subwoofer
Price $895 (dependent on finish)
Dimensions 18H x 24W x 24D
Weight 112 lbs.
Type Self-powered motional feedback subwoofer
Drivers Two 12" high-power long-throw
Response 15 Hz to 100 Hz, ±3 dB
Crossover 50 to 100 Hz (variable)
Impedance 10K ohms
Max. power 120 dB SPL (acoustic power)
Controls Continuously variable bandwidth (low frequency, 15 to 50 Hz; high frequency, 50 to 100 Hz) sensitivity control; limiter on/off
Features Integral amplification with motional feedback and limiting; summing amplifier combines left and right channels; selection of inlaid stone tops

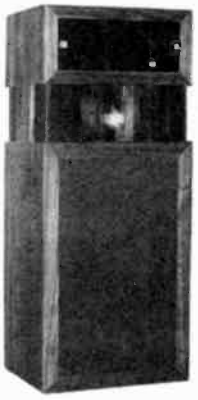
Model 7 Speaker
Price $280
Dimensions 24⅞H x 16½W x 11⅞D
Weight 45 lbs.
Type Tuned ducted port
Drivers 12" high-power woofer; 4" x 10" mid-range horn; 1" dome tweeter
Response 35 Hz to 20 kHz, ±3 dB re 100 dB SPL at one meter at one watt
Crossover 1.2 Hz; 5 kHz
Impedance 8 ohms
Min. power 10 watts (10 dBW)
Max. power 75 watts (19 dBW)
Features Walnut finish; rear baffle port loading for improved bass loading

Models also available
Model 3 Speaker, $400

OLSON
Olson Electronics
260 S. Forge St.
Akron, Ohio 44327

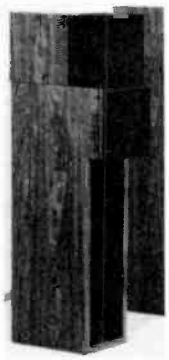
SP-580 Pedestal Tower II
Price $349.98
Dimensions 41¾H x 12⅜W x 12D
Weight 60 lbs.
Type Acoustic suspension; dynamic
Drivers Two 8" woofers; 1½" voice coil; two 5" midranges; 1" voice coil; two 2¼" tweeters
Response 50 Hz to 22 kHz
Crossover 600 Hz; 8 kHz
Impedance 8 ohms
Min. power 15 watts (11.75 dBW)
Max. power 135 watts (21.25 dBW)
Controls Tweeter; midrange
Features Two grilles; removable molded cloth; all drivers covered with steel mesh grille; cabinet is walnut-finished vinyl over ¾" thick particle board

Pederson Acoustics HF-2

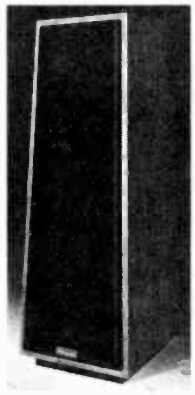


Plasmatronic Hill Type 1

Petroff Labs PL-6D



Precedent MZ-MOD II



Presage Model 4

SP-585 "Acoust Aire IV"

Price	$229.95
Dimensions	25H x 15W x 10½D
Weight	30 lbs.
Type	Acoustic suspension
Drivers	12" woofer; 2" voice coil; 5" midrange; 1" voice coil; 2¼" tweeter with silicone cooled voice coil
Response	30 Hz to 22 kHz
Crossover	800 Hz; 10 kHz
Impedance	8 ohms
Min. power	15 watts (11.75 dBW)
Max. power	125 watts (21 dBW)
Controls	Midrange; tweeter
Features	Walnut-vinyl finish over ¾" particle board; steel mesh grilles over tweeter and midrange

Models also available

FR-3, $400; SP-579 "Acoust Aire IV", $169.98

ONKYO
Onkyo U.S.A. Corp.
42-07 20th Ave.
Long Island City, N.Y. 11105

240

Price	$260
Dimensions	27H x 16½W x 13D
Weight	45 lbs.
Type	Acoustic suspension
Drivers	15" woofer; 4" carbon-fiber midrange driver; 1" titanium dome tweeter
Response	45 Hz to 20 kHz, ±5 dB re 93 dB SPL at 1 meter at 1 watt
Crossover	700 Hz; 4.5 kHz
Impedance	8 ohms
Min. power	20 watts (13 dBW)
Max. power	100 watts (20 dBW) continuous
Controls	Midrange; tweeter

Models also available

160, $175

OPTONICA
Sharp Electronics Corp.
10 Keystone Place
Paramus, N.J. 07652

CP-5151A

Price	$400
Dimensions	28H x 16W x 13⅜D
Weight	61 lbs. 8 oz.
Type	Acoustic suspension
Drivers	12" woofer; 2" dome midrange; horn-loaded ribbon tweeter
Response	30 Hz to 50 kHz
Crossover	500 Hz; 6 kHz
Impedance	8 ohms
Min. power	10 watts (10 dBW)
Max. power	90 watts (19.5 dBW)
Controls	Midrange; tweeter
Features	Crossover has switchable 30 kHz filter; speaker may be triamped

Models also available

CP-2121A, $210

PEDERSON ACOUSTICS
Pederson Acoustics
Box 47
Chestnut Hill, Mass. 02167

HF-2

Price	$7,500/pr.
Dimensions	48H x 32W x 26D
Weight	400 lbs.
Type	Direct radiator/folded horn
Drivers	Three dynamic (optional ribbon tweeter)
Response	20 Hz to 20 kHz
Crossover	200 Hz; 3 kHz
Impedance	8 ohms
Min. power	25 watts (14 dBW)
Max. power	250 watts (24 dBW)

PETROFF LABS
Petroff Labs
11436 Victoria Ave.
Los Angeles, Calif. 90066

PL-6D Dipole Panel

Price	$450/pr.
Dimensions	42H x 12W x 3½D
Weight	30 lbs.
Type	Open-back dipole radiating line source
Drivers	Four 4½" midranges; hybrid 2" cone; ¾" dome tweeter
Response	100 Hz to 20 kHz, ±1.5 dB re 90 dB SPL at 1 meter at 1 watt
Crossover	100 Hz; 5 kHz
Impedance	8 ohms
Min. power	30 watts (14.75 dBW)
Max. power	200 watts (23 dBW)
Controls	Upper mid/high frequency contour
Features	Dipole equalized crossover; must be used with PL-6D subwoofer system

PL-6D subwoofer

Price	$248
Dimensions	14H x 25½W x 15½D
Weight	50 lbs.
Type	Acoustic suspension; floor firing
Drivers	Two 10" mass-loaded woofers
Response	30 Hz to 100 kHz, ±3 dB re 90 dB SPL at 1 meter at 1 watt
Crossover	100 Hz
Impedance	8 ohms
Min. power	30 watts (14.75 dBW)
Max. power	200 watts (23 dBW)
Features	Internal air core inductor crossover networks; glass inlay top

Models also available

CP-2121A, $210

PHASE RESEARCH
Phase Research Corp.
3207 Oradell
Dallas, Texas 75220

"R"

Price	N/A
Dimensions	26H x 13W x 14D
Weight	48 lbs.
Type	Modified transmission line
Drivers	8" woofer; 1⅜" dome midrange tweeter
Response	38 Hz to 20 kHz, ±3.5 dB re 88 dB SPL at 1 meter at 1 watt
Crossover	1.8 kHz
Impedance	8 ohms
Min. power	15 watts (11.75 dBW)
Max. power	250 watts (24 dBW)
Features	Time-phased; mirror imaged; low diffraction; fiberwood construction; multiple internal bracing; high power resistors; hickory vinyl finish; 2½% tolerance level crossovers

Models also available

"RT", N/A

PHILIPS
Philips High Fidelity Laboratories, Ltd.
P.O. Box 2208
Fort Wayne, Ind. 46801

RH-545

Price	$1,500
Dimensions	25½H x 17W x 12½D
Weight	67 lbs.
Type	Acoustic suspension with triamplification
Drivers	12" high-compliance woofer; 2" dome midrange; 1" dome tweeter
Response	20 Hz to 20 kHz
Crossover	500 Hz; 3 kHz
Min. power	Can be driven from preamp
Max. power	Internal amplifiers
Controls	Bass cut/boost; treble rolloff; treble-frequency-selection switch; 3 room-correction filter switches; channel-selector switch; automatic on/off switch; input-sensitivity control
Features	Motional feedback system

RH-544

Price	$400
Dimensions	15⅜H x 11¼W x 8½D

Weight	26 lbs.
Type	Acoustic suspension with biamplification
Drivers	8" high-compliance woofer; 2" dome midrange; 1" dome tweeter
Response	35 Hz to 20 kHz
Crossover	500 Hz; 400 Hz
Min. power	Can be driven from preamp
Max. power	Internal amplifiers
Controls	High-frequency rolloff; input sensitivity; automatic on/off switch; channel-selector switch
Features	Motional feedback system

AH-476

Price	$240
Dimensions	26H x 13¾W x 11⅛D
Weight	42 lbs.
Type	Acoustic suspension
Drivers	10" high-compliance woofer; 2" dome midrange; 1" dome tweeter
Response	35 Hz to 20 kHz
Crossover	1.5 kHz; 5.5 kHz
Impedance	8 ohms
Min. power	20 watts (13 dBW)
Max. power	60 watts (17.75 dBW)
Controls	Midrange

SJ-2932

Price	$130
Dimensions	27H x 14½W x 12½D
Weight	42 lbs.
Type	Tuned port
Drivers	10" high-compliance woofer; two 5" cone midrange drivers; 1" dome tweeter
Response	46 Hz to 20 kHz
Crossover	2 kHz; 6 kHz
Impedance	8 ohms
Max. power	60 watts (17.75 dBW)

SJ-2931

Price	$100
Dimensions	24H x 13¾W x 11½D
Weight	31 lbs. 8 oz.
Type	Tuned port
Drivers	10" high-compliance woofer; 1" dome tweeter
Response	47 Hz to 20 kHz
Crossover	4 kHz
Impedance	8 ohms
Max. power	45 watts (16.5 dBW)

Models also available

RH-567, $450; AH-477, $300; RH-541, $250; AH-475, $150; SJ-2930, $150/pr.

PIONEER
U.S. Pioneer Electronics Corp.
85 Oxford Drive
Moonachie, N.J. 07074

HPM-150

Price	$550
Dimensions	38 25/32H x 17¾W x 17¾D
Weight	74 lbs. 14 oz.
Type	Bass reflex
Drivers	15¾" carbon-fiber cone woofer; 4" cone-type midrange; 1¾" cone tweeter; omnidirectional, horn-loaded, high-polymer film supertweeter
Response	25 Hz to 25 kHz
Crossover	75 Hz; 2.6 kHz; 8.5 kHz
Impedance	8 ohms
Min. power	50 watts (17 dBW)
Max. power	300 watts (24.75 dBW)
Controls	Midrange; tweeter

CS-99A

Price	$350
Dimensions	24¾H x 16½W x 11⅜D
Weight	51 lbs. 11 oz.
Type	Infinite baffle
Drivers	15" cone woofer; 5" cone midrange; 4" cone midrange; multicellular horn tweeter; 2 dome supertweeters
Response	25 Hz to 22 kHz
Crossover	800 Hz; 2 kHz; 5 kHz; 10 kHz
Impedance	8 ohms
Max. power	100 watts (20 dBW)
Controls	Midrange; tweeter

HPM-40

Price	$180
Dimensions	22½H x 12¾W x 12½D
Weight	28 lbs. 10 oz.
Type	Bass reflex
Drivers	10" carbon-fiber cone woofer; 1⅞" carbon-fiber cone tweeter; high-polymer film
Response	35 Hz to 25 kHz
Crossover	4 kHz; 10 kHz
Impedance	8 ohms
Min. power	20 watts (13 dBW)
Max. power	100 watts (20 dBW)
Controls	Tweeter

Project 80

Price	$99
Dimensions	18½H x 10½W x 8⅜D
Weight	12 lbs. 8 oz.
Type	Bass reflex/ducted port
Drivers	8" cone woofer; 1⅞" cone tweeter
Response	35 Hz to 20 kHz
Crossover	1.5 kHz
Impedance	8 ohms
Max. power	20 watts (13 dBW)

Models also available

HPM-100, $350; HPM-60, $260; Project 120, $145; Project 60A, $80

PLASMATRONIC
Plasmatronic, Inc.
2460 Alamo, S.E., Suite 101
Albuquerque, N.M. 87106

Hill Type 1 Plasma System

Price	$7,000
Dimensions	57½H x 24½W x 20D
Weight	580 lbs./pr.
Type	Plasma
Drivers	Plasma; cone midrange; cone bass
Response	18 Hz to 30 kHz, ±3 dB re 107 dB SPL at 1 meter from one plasma driver
Crossover	120 Hz; 700 Hz
Impedance	8 ohms
Controls	Plasma level; crossover point
Features	Biamped with high amp crossover; VU meters; hi-lo balancing network

POLK
Polk Audio
1205 South Carey St.
Baltimore, Md. 21230

Real Time Array Model 12

Price	$374.95
Dimensions	45H x 19W x 15D (stand, 12H)
Weight	85 lbs.
Type	Passive radiator
Drivers	Two 6½" plasticized bass/midrange; 1" soft-dome (open-mounted) tweeter; 12" passive radiator
Response	27 Hz to 20.5 kHz, ±2 dB re 96 dB SPL at 1 meter at 1 watt
Crossover	50 Hz; 2 kHz
Impedance	6 ohms
Min. power	10 watts (10 dBW)
Max. power	500 watts (27 dBW)
Controls	Factory calibrated
Features	Optional stand; choice of rosewood-vinyl or walnut-vinyl finish

5A Bookshelf Monitor

Price	$129.95
Dimensions	21½H x 10½W x 8½D
Weight	29 lbs.
Type	Passive radiator
Drivers	6½" midrange with 8" passive radiator; 1" dome tweeter
Response	40 Hz to 21 kHz, ±3 dB re 92 dB at 1 watt at 1 meter
Crossover	60 Hz; 3 kHz
Impedance	8 ohms
Min. power	10 watts (10 dBW)
Max. power	60 watts (17.75 dBW)
Controls	Factory calibrated
Features	Same as Model 10A

Mini Monitor

Price	$114.95
Dimensions	13H x 6¼W x 4½D
Weight	10 lbs.
Type	Passive radiator
Drivers	4½" bass/midrange driver with 4½" bass radiator; 1" dome tweeter
Response	60 Hz to 20.5 kHz, +2 dB re 92 dB SPL at 1 watt at 1 meter
Crossover	100 Hz; 3 kHz
Impedance	6 ohms
Min. power	5 watts (7 dBW)
Max. power	60 watts (17.75 dBW)
Features	Optional mounting kit

Models also available

10A Monitor System, $239.95; 7B Monitor System, $174.95

PRECEDENT
Precedent Audio Products, Inc.
306 E. Oliver St.
Baltimore, Md. 21202

PRECEDENT SERIES

MZ-Mod II

Price	$747.50/pr.
Dimensions	36½H x 7½W x 13D
Weight	50 lbs. ea.
Type	Transmission line 7
Drivers	5" midrange; ¾" tweeter
Response	70 Hz to 20 kHz, ±2½ dB re 88 dB SPL at 1 meter at 1 watt
Crossover	3.5 kHz
Impedance	8 ohms
Min. power	25 watts (14 dBW)
Max. power	50 watts (17 dBW)
Features	Phase and time aligned; minimized diffraction areas; modular construction allows build-up to MZ Mod III speaker system by adding on modular woofers to Mod II system and flipping switch from two-way to three-way mode

CYLINDER SERIES

Panorama

Price	$795/pr.
Dimensions	50H x 13½W x 13½D
Weight	40 lbs. ea.
Type	Dynamic
Drivers	8" woofer; 2½" midrange; 1" tweeter
Response	40 Hz to 20 kHz, ±2½ dB re 92 dB SPL at 1 meter at 1 watt
Crossover	800 Hz; 2.5 kHz
Impedance	8 ohms
Min. power	10 watts (10 dBW)
Max. power	200 watts (23 dBW)
Features	Extremely efficient and superb polar response due to unique cylinder design; high-power handling

Models also available

MZ-Mod III, $1,495/pr. (teak laminate); $1,695/pr. (walnut veneer); Vista, $380/pr.

PRESAGE
Presage Corp.
Dumaine Ave.
Nashua, N.H. 03060

Presage 4

Price	$599.95
Dimensions	42H x 15W x 15½D
Weight	65 lbs.
Type	Passive radiator
Drivers	10" woofer; 4¼ cone midrange; 1" dome tweeter
Response	25 Hz to 20 kHz, ±3 dB
Crossover	470 Hz; 3.5 kHz
Impedance	8 ohms
Min. power	25 watts (14 dBW)
Max. power	200 watts (23 dBW) continuous
Controls	Tweeter; midrange

Presage 5

Price	$349.95
Dimensions	26H x 15W x 12½D
Weight	43 lbs.
Type	Passive radiator
Drivers	8" woofer; 4½" cone midrange; 1" dome tweeter
Response	28 Hz to 20 kHz, ±3 dB
Crossover	470 Hz; 3.5 kHz
Impedance	8 ohms
Min. power	25 watts (14 dBw)
Max. power	150 watts (21.75 dBW) continuous
Controls	Tweeter; midrange

Presage 17

Price	$99.95
Dimensions	25¼H x 12½W x 12½D
Weight	23 lbs.
Type	Bass reflex
Drivers	8" foam-edge; 2" phenolic cone tweeter
Response	65 Hz to 18 kHz, ±4 dB re 92 dB SPL at 1 meter at 1 watt
Crossover	1.3 kHz
Impedance	8 ohms
Min. power	5 watts (7 dBW)
Max. power	60 watts (17.75 dBW)

Models also available

S-9, $199.95; Presage 15, $119.95 (walnut grained vinyl); $135 (oak or walnut veneer)

PSB
PSB Speakers
Box 144
St. Jacobs, Ont. NOB/2NO

Beta IIa

Price	$595
Dimensions	23H x 12W x 10½D
Weight	35 lbs.
Type	Acoustic suspension
Drivers	1" soft-cloth dome tweeter; 8" motional feedback woofer
Response	25 Hz to 20 kHz, ±2 dB
Impedance	4 ohms
Min. power	80 watts (19 dBW)
Controls	Listening level (5-position); amp-matching C (11-position)
Features	Motional feedback system using existing system amplifier; built-in infrasonic filter; fused

Summit Eleven

Price	$580

Summit Nine

Price	$445

Passif I

Price	$195
Dimensions	26H x 12W x 10¼D
Weight	30 lbs.
Type	Passive radiator
Drivers	1" textile dome tweeter; 7" woofer; 8" passive radiator
Response	50 Hz to 20 kHz, ±2 dB
Crossover	2 kHz
Impedance	8 ohms
Min. power	30 watts (14.75 dBW)
Max. power	60 watts (17.75 dBW)
Features	Real walnut veneer

Models also available

Passif IIa, $295; Avanté IIa Walnut, $170 (walnut); $145 (vinyl); Avantini II, $100

PYRAMID
Pyramid Loudspeaker Corp.
131-15 Fowler Ave.
Flushing, N.Y. 11355

Metronome 3

Price	$1,700/pr.
Dimensions	34H x 21¾W x 15¾D
Weight	105 lbs.
Type	Acoustic suspension
Drivers	Two 8" cone woofers; 4" cone midrange; ribbon tweeter .05" x 3"
Response	35 Hz to 35 kHz, ±3 dB re 90 dB SPL at 1 meter at 1 watt
Crossover	650 Hz; 3 kHz
Impedance	6 ohms
Min. power	75 watts (18.75 dBW)
Max. power	300 watts (24.75 dBW)
Controls	Switch for biamping without external crossover; tweeter
Features	Unipolar linear diffraction; radiation type

Metronome 2W Subwoofer

Price	$1,600/pr.
Dimensions	25H x 27½W x 16½D (truncated)
Weight	115 lbs.
Type	Acoustic suspension
Drivers	14"
Response	29 Hz to 90 Hz, ±3 dB re 87 dB SPL at 1 meter at 1 watt
Crossover	90 Hz
Impedance	8 ohms
Min. power	200 watts (23 dBW)
Max. power	800 watts (29 dBW)
Controls	None
Features	2W available only with Metronome 2

Models also available

Metronome 2, $1,400/pr.; T-1 Ribbon Tweeter, $1,175/pr.

QUADRAFLEX
Quadraflex Industries
1301 65th St.
Emeryville, Calif. 94608

1012B

Price	$150
Dimensions	27H x 16½W x 10½D
Weight	42 lbs.
Type	Acoustic suspension
Drivers	12" woofer; 5" midrange cone; 2½" tweeter
Response	38 Hz to 18 kHz, ±4 dB
Crossover	600 Hz; 2 kHz
Impedance	8 ohms
Min. power	5 watts (7 dBW)

QYSONIC
Qysonic Research Corp.
920 S. Placentia Ave.
Placentia, Calif. 92670

Array

Price	$479
Dimensions	47½H x 12½W x 8½D
Weight	55 lbs.
Type	Critical alignment; Laminar flow vent
Drivers	Two 8" woofers; 4½" midrange; 2" spiderless tweeter; 1" (polar) dome supertweeter
Response	28 Hz to 22 kHz, ±3 dB re 92 dB SPL at 1 meter at 1 watt
Crossover	800 Hz; 3 kHz; 8 kHz
Impedance	6 ohms
Min. power	30 watts (14.75 dBW)
Max. power	1,140 watts (30.75 dBW)
Controls	Midrange; tweeter; polar supertweeter
Features	Wood stand included

Laug Subwoofer System

Price	$229
Dimensions	33½H x 11½W x 10D
Weight	50 lbs.
Type	Critical Alignment™; bass unit
Drivers	Two 8" woofers
Response	28 Hz to 100 Hz, ±3 dB
Crossover	90 Hz
Impedance	6 ohms
Min. power	30 watts (14.75 dBW)
Max. power	250 watts (24 dBW)
Features	Built-in passive crossover for satellites with rolloff at 90 Hz; 6 dB per octave

TAD II

Price	$225
Dimensions	29H x 9W x 6½D
Weight	25 lbs.
Type	Critical Alignment™; Laminar flow vent
Drivers	Two 6" woofers; 2" spiderless tweeter; 2" supertweeter
Response	40 Hz to 25 kHz, ±3 dB re 90 dB SPL at 1 meter at 1 watt
Crossover	2 kHz; 8 kHz
Impedance	6 ohms
Min. power	15 watts (11.75 dBW)
Max. power	250 watts (24 dBW)
Controls	Tweeter
Features	Hardwood corners; optional floor base

Models also available

Spree, $139; Micro, $99

REALISTIC
Radio Shack
2617 W. 7th St.
Ft. Worth, Texas 76107

Optimus T-200

Price	$259.95
Dimensions	34H x 12½W x 12½D
Type	Acoustic suspension
Drivers	Two 10" woofers; 6½" midrange; 2" tweeter (with special horn assembly)
Response	50 Hz to 20 kHz
Impedance	8 ohms
Max. power	150 watts (21.75 dBW)
Controls	Midrange; treble
Features	Gradial slope crossovers; floor-standing tower enclosure; walnut veneer

Mach One

Price	$239.95
Dimensions	28⅜H x 17⅝W x 12D
Weight	65 lbs.
Type	Acoustic suspension
Drivers	15" woofer; midrange; horn tweeter
Response	20 Hz to 25 kHz
Crossover	1 kHz; 5 kHz
Impedance	8 ohms
Min. power	25 watts (14 dBW)
Max. power	100 watts (20 dBW) peak
Controls	Midrange; tweeter
Features	Walnut veneer cabinet

Optimus 23

Price	$99.95
Dimensions	22¼H x 12¼W x 11¾D
Type	Vented
Drivers	10" woofer; 2½" tweeter
Response	55 Hz to 20 kHz
Crossover	3.5 kHz
Impedance	8 ohms
Max. power	75 watts (18.75 dBW)
Features	Walnut veneer cabinet

Nova 6

Price	$80
Dimensions	19¼H x 11½W x 8⅞D
Weight	24 lbs. 8 oz.
Type	Acoustic suspension
Drivers	8" woofer; 3" tweeter
Response	30 Hz to 20 kHz
Impedance	7 watts (8.5 dBW)
Min. power	45 watts (16.5 dBW)
Max. power	Tweeter
Features	Walnut veneer cabinet

Minimus 7

Price	$50
Dimensions	7H x 4½W x 4¼D
Weight	4 lbs. 8 oz.
Type	Acoustic suspension
Drivers	4" high-compliance woofer; 1" extended range high-compliance dome tweeter
Response	50 Hz to 20 kHz, ±5 dB
Crossover	2.5 kHz
Impedance	8 ohms
Min. power	7 watts (8.5 dBW)
Max. power	40 watts (16 dBW) continuous
Features	Aluminum die-cast enclosure

Models also available

Optimus T-100, $179.95; Optimus 27, $149.95; Optimus 25, $139.95; Optimus 10, $140

REFERENCE
CBS Retail Stores
1301 65th St.
Emeryville, Calif. 94608

312L

Price	$279.95
Dimensions	31⅝H x 18W x 13D
Weight	48 lbs.
Type	Acoustic suspension
Drivers	12" woofer; 6½" midrange; 1" soft-dome tweeter
Response	32 Hz to 22.5 kHz, ±4 dB
Crossover	500 Hz; 4 kHz
Impedance	8 ohms
Min. power	10 watts (10 dBW)
Max. power	100 watts (20 dBW)
Controls	Preset
Features	Linear-phase design; fused tweeter

310L

Price	$179.95
Dimensions	28¾H x 16W x 11⅝D
Weight	42 lbs.
Type	Acoustic suspension
Drivers	10" woofer; 6½" midrange; 1" Mylar dome tweeter
Response	38 Hz to 20 kHz, ±4 dB
Crossover	600 Hz; 4 kHz
Impedance	8 ohms
Min. power	10 watts (10 dBW)
Max. power	80 watts (19 dBW)
Controls	Preset
Features	Linear-phase design; fused tweeter

228L

Price	$129.95
Dimensions	26⅞H x 15W x 10¼D
Weight	30 lbs.
Type	Acoustic suspension
Drivers	8" woofer; 8" passive radiator; 1" Mylar dome tweeter
Response	45 Hz to 20 kHz, ±4 dB
Crossover	3 kHz
Impedance	8 ohms
Min. power	10 watts (10 dBW)
Max. power	60 watts (17.75 dBW)
Controls	Preset
Features	Linear-phase design; fused tweeter

Models also available

115W, $239.95; 204L, $179.95; 208L, $89.95

REGA RESEARCH LTD.
Import Audio, Ltd.
13430 Clayton Road
St. Louis, MO. 63131

RTX

Price	$2,200/pr. including stands
Dimensions	36⅞H x 14⅛W x 16 9/16D (on stands)
Weight	70 lbs.
Type	Triangulated transmission line
Impedance	8 ohms
Min. power	40 watts (16 dBW)
Features	Cabinet material is laminated fiberboard coated with phenolic resin for rigidity

REVOX
Studor Revox America, Inc.
1819 Broadway
Nashville, Tenn. 37203

BX-4100

Price	$1,199
Dimensions	30 3/10H x 17 7/10W x 15 7/10D
Weight	66 lbs.
Type	Acoustic suspension
Drivers	Eight 5" woofers; ¾" dome tweeter; 7" midrange
Response	25 Hz to 25 kHz
Crossover	450 Hz; 3.2 kHz
Impedance	4 ohms
Min. power	20 watts (13 dBW)
Max. power	200 watts (23 dBW)
Controls	3-position midrange; 3-position treble
Features	Linear phase

Models also available

BX-350, $395

ROGERS
Reference Monitor International, Inc.
2380 C Camino Vida Roble
Carlsbad, Calif. 92008

XA-75/L-35B Reference Monitor System

Price	$2,300
Dimensions	32½H x 16½W x 18D
Weight	78 lbs.
Type	Acoustic suspension
Drivers	12" woofer in each cabinet
Response	20 Hz to 150 Hz, ±3 dB re 96 dB SPL at 1 meter at 1 watt (subwoofer); 45 Hz to 20 kHz, ±2 dB for L-35B
Crossover	150 Hz
Impedance	8 ohms
Min. power	50 watts (17 dBW)
Max. power	100 watts (20 dBW)
Features	XA-75 electronic crossover and bass amplifier combined for adding to LS-3/5a

LS 3/5a BBC Monitor

Price	$560/pr.
Dimensions	12H x 7½W x 6⅜D
Weight	11 lbs. 8 oz.
Type	Acoustic suspension
Drivers	4½" Bextrene bass/midrange; 1" dome tweeter
Response	70 Hz to 20 kHz, ±3 dB re 96 dB SPL at 1 meter at 1 watt
Crossover	3 kHz
Impedance	15 ohms
Min. power	25 watts (14 dBW)
Max. power	25 watts (14 dBW)
Features	Designed by BBC

Models also available

Monitor 2, $900/pr.; Campact Monitor, $660/pr.

RSL
Rogersound Labs, Inc.
8381 Canoga Ave.
Canoga Park, Calif. 91304

6600H

Price	$525
Dimensions	46H x 18W x 1D
Weight	90 lbs.
Type	Twin subenclosure, bass reflex
Drivers	Two 12" woofers; two 5" cone midranges; Electro-Voice compression horn tweeter
Response	25 Hz to 20 kHz
Crossover	800 Hz; 5 kHz
Impedance	4 ohms
Min. power	10 watts (10 dBW)
Max. power	150 watts (21.75 dBW)
Controls	Tweeters; midrange
Features	Fuse protection

Sierra

Price	$439.95
Dimensions	40⅛H x 14½W x 12½D
Weight	71 lbs.
Type	Passive radiator
Drivers	12" woofer
Response	20 Hz to 22 kHz
Crossover	800 Hz; 5 kHz (at 60 dB/octave)
Impedance	8 ohms
Min. power	10 watts (10 dBW)
Max. power	150 watts (21.75 dBW)
Controls	Mid; woofer (variable damping)

Studio 3600

Price	$299.95
Dimensions	25H x 14½W x 11½D
Weight	50 lbs.
Type	Bass reflex
Drivers	12" woofer; 5" flat-cone midrange; 4" dome tweeter
Response	35 Hz to 22 kHz
Crossover	800 Hz; 4 kHz
Impedance	8 ohms
Min. power	12 watts (10.75 dBW)
Max. power	125 watts (21 dBW)
Controls	Midrange; tweeter
Features	Fuse protection

Models also available

Grande, $750; Nevada, $450; 3300 Studio Monitor, $225 black studio-type enclosure; $265, walnut enclosure; Studio 3600 Black, $175

RTR
RTR Industries, Inc.
8116 Deering Ave.
Canoga Park, Calif. 91304

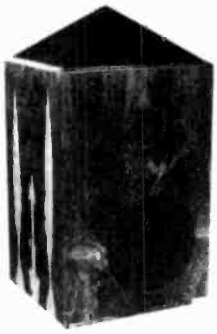
DR-1

Price	$1,495
Dimensions	49H x 16½W x 16½D

Qysonic Laug

RSL 3300 Studio Monitor

Sansui J-11



Shahinian Obelisk

Showco S-200

Weight 165 lbs.
Type Electrostatic/dynamic
Drivers 12"; two 10" woofers; 14" diameter cylindrical electrostatic radiator
Response 30 Hz to 30 kHz, ±2 dB
Crossover 325 Hz
Impedance 8 ohms
Min. power 75 watts (18.75 dBW) for woofer section
Max. power 150 watts (21.75 dBW) for woofer section
Controls Electrostatic volume; treble
Features Internally contained power amp and electronic crossover control; direct-drive electrostatic radiator (325 Hz to 30 kHz range)

600D

Price $600
Dimensions 48H x 16½W x 16½D
Weight 112 lbs.
Type Acoustic suspension
Drivers Two 12" woofers; two 1½" soft-dome midranges; two 1" soft-dome tweeters
Response 32 Hz to 20 kHz, ±2 dB re 91.5 dB SPL at 1 meter at 1 watt
Crossover 950 Hz; 10 kHz
Impedance 4 ohms
Min. power 25 watts (14 dBW)
Max. power 200 watts (23 dBW)
Controls Midrange; tweeter
Features Circuit breaker

ESR-15

Price $400
Dimensions 19½H x 16½W x 16½D
Weight 48 lbs.
Type Electrostatic tweeter array
Drivers Fifteen 3" x 6" HF-50 electrostatic panels
Response 1.25 kHz to 20 kHz, ±2 dB
Crossover 1.25 kHz
Impedance 8 ohms
Min. power 15 watts (11.75 dBW)
Max. power 100 watts (20 dBW)
Controls Tweeter; woofer
Features Circuit breaker

PS/1

Price $325
Dimensions 21⅞H x 5W (top) x 12¾W (bottom) x 8D
Weight 35 lbs.
Type Acoustic suspension
Drivers 8" woofer; 1½" soft-dome midrange; 1" soft-dome tweeter
Response 65 Hz to 20 kHz, ±2 dB re 90.5 dB SPL at 1 meter at 1 watt
Crossover 1.5 kHz; 9.5 kHz
Impedance 6 ohms
Min. power 25 watts (14 dBW)
Max. power 100 watts (20 dBW)
Controls Tweeter; high-pass filter defeat
Features Satellite speaker system; use independently or with DAC/1 subwoofer; pyramid shape

ESR-6

Price $250
Dimensions 14½H x 14½W x 12D
Weight 23 lbs.
Type Electrostatic tweeter array
Drivers Six 3" x 6" HF-50 electrostatic panels
Response 1.5 kHz to 20 kHz, ±2 dB
Crossover 1.5 kHz
Impedance 8 ohms
Min. power 15 watts (11.75 dBW)
Max. power 60 watts (17.75 dBW)
Controls Tweeter; woofer
Features Circuit breaker

G-10

Price $190
Dimensions 25½H x 14¼W x 11D
Weight 44 lbs.
Type Vented
Drivers 10" woofer; 1" dome tweeter
Response 48 Hz to 20 kHz, ±3 dB re 91 dB SPL at 1 meter at 1 watt
Crossover 2 kHz
Impedance 6 ohms
Min. power 10 watts (10 dBW)
Max. power 80 watts (19 dBW)
Controls Tweeter level; user-resettable circuit-breaker protection
Features Same as Model G-200

Models also available

DAC/1, $600; 800D, $600; 300D, $400; G-200, $270; 75D, $250; EXP 8-V, $100

SANSUI
Sansui Electronics Corp.
1250 Valley Brook Ave.
Lyndhurst, N.J. 07071

SP-L700

Price $680
Dimensions 35 1/16H x 16 15/16W x 14 13/16D
Weight 81 lbs. 8 oz.
Type Bass reflex
Drivers Two 10" cone woofers; 2¾" horn tweeter
Response 30 Hz to 25 kHz
Crossover 2 kHz
Impedance 8 ohms
Min. power 10 watts (10 dBW)
Max. power 200 watts (23 dBW)
Controls Tweeter
Features Sensitivity: 93 dB at 1 meter at 1 watt; biamp connections; genuine walnut veneer finish; casters

SP-X8700

Price $335
Dimensions 27 1/16H x 18½W x 10 5/8D
Weight 39 lbs. 3 oz.
Type Bass reflex
Drivers 17" woofer; 6½" cone midrange; 6 1/16" x 2" rectangular horn tweeter; three 2" cone supertweeters
Response 25 Hz to 23 kHz re 98 dB SPL at 1 meter at 1 watt
Impedance 8 ohms
Min. power 10 watts (10 dBW)
Max. power 220 watts (23.5 dBW)
Features Genuine carved wood grille; walnut-grain vinyl finish on particle board cabinet

SP-X6700

Price $235
Dimensions 25 3/16H x 15 5/16W x 11 1/16D
Weight 29 lbs. 11 oz.
Type Bass reflex
Drivers 13" woofer; 4" cone midrange; 6 1/16" x 2" rectangular horn tweeter; two 2" cone supertweeters
Response 30 Hz to 22 kHz re 95 dB SPL at 1 meter at 1 watt
Crossover 2 kHz; 12 kHz; 17 kHz
Impedance 8 ohms
Min. power 10 watts (10 dBW)
Max. power 130 watts (21.25 dBW)
Controls Tweeter
Features Genuine carved wood grille; walnut-grain vinyl finish on particle board enclosure

SPA-2100

Price $150
Dimensions 22 13/16H x 13 3/16W x 11¼D
Weight 26 lbs. 14 oz.
Type Acoustic suspension
Drivers 10" cone woofer; 5½" cone midrange; 2" x 5" piezoelectric tweeter
Response 40 Hz to 22 kHz
Crossover 800 Hz; 2.5 kHz
Impedance 8 ohms
Min. power 15 watts (11.75 dBW)
Max. power 45 watts (16.5 dBW)
Controls Midrange; tweeter
Features Circuit breaker; walnut-grain vinyl finish; black double-knit grille

J-11

Price $290/pr.
Dimensions 11 13/16H x 4 13/16W x 5 3/16D
Weight 6 lbs. 6 oz.
Type Bass reflex with passive radiator
Drivers 4" cone woofer; 1" dome tweeter; 4" passive radiator
Response 45 Hz to 20 kHz, re 85 dB SPL at 1 meter at 1 watt
Crossover 2.5 kHz
Impedance 5 ohms
Min. power 10 watts (10 dBW)

Max. power 60 watts (17.75 dBW)
Features Brushed aluminum finish

Models also available

SP-L800, $950; SP-X9700, $390; SP-X7700, $290; SPA-3100, $400/pr.; SPA-1100, $100; J-33, $450/pr.

SARAS
Saras of America
4150 Glencoe Ave.
Venice, Calif. 90291

ST-200

Price $550
Dimensions 42½H x 14½W x 13D
Weight 90 lbs.
Type Acoustic suspension
Drivers Two 10" woofers; 5" midrange; 1" convex tweeter
Response 30 Hz to 18 kHz, ±2.5 dB
Crossover 500 Hz; 5 kHz
Impedance 8 ohms
Max. power 150 watts (21.75 dBW)
Controls None
Features Time alignment enclosure; third-order Butterworth filters; LED power indicator; suspended grille-cloth panel

11

Price $210
Dimensions 24H x 13¾W x 11¼D
Weight 48 lbs.
Type Acoustic suspension
Drivers 10" woofer; 1" convex tweeter
Response 35 Hz to 18 kHz, ±3.5 dB re 90 dB SPL at 1 meter at 1 watt
Crossover 1.8 ohms
Controls None

Models also available

30A, $350; 22, $250

SCOTT
H. H. Scott, Inc.
20 Commerce Way
Woburn, Mass. 01801

Pro 100B

Price $550
Dimensions 29¼H x 19W x 14½D
Weight 67 lbs.
Type Air suspension
Drivers 15" woofer; two 4½" cone midranges; two 1" dome tweeters
Response 36 Hz to 20 kHz, ±4 dB re 94 dB SPL at 1 meter at 1 watt
Crossover 700 Hz; 3.5 kHz
Impedance 4 ohms
Min. power 20 watts (13 dBW)
Max. power 300 watts (24.75 dBW)
Controls Midrange; tweeter; top speaker adjustment
Features Bidirectional radiation; high-power construction woofer

S-196W

Price $280
Dimensions 25½H x 15W x 10¾D
Weight 42 lbs.
Type Air suspension
Drivers 12" woofer; 4½" midrange; 1" dome tweeter
Response 38 Hz to 20 kHz, ±4 dB re 96 dB SPL at 1 meter at 1 watt
Crossover 800 Hz; 3.5 kHz
Impedance 6 to 8 ohms
Min. power 15 watts (11.75 dBW)
Max. power 120 watts (20.75 dBW)
Controls Midrange; tweeter
Features Extra-long voice coil; high-power construction woofer; oiled-walnut veneer cabinet

S-188T

Price $230
Dimensions 33½H x 13W x 10½D
Weight 44 lbs.
Type Air suspension
Drivers 10" woofer; 4½" midrange; 1" dome tweeter
Response 38 Hz to 20 kHz, ±4 dB re 95.4 dB SPL at 1 meter at 1 watt
Crossover 900 Hz; 3.5 kHz
Impedance 6 to 8 ohms
Min. power 10 watts (10 dBW)
Max. power 100 watts (20 dBW)
Controls Midrange; tweeter
Features Extra-long voice coil; high-power construction woofer

S-177B

Price $120
Dimensions 19H x 11W x 9D
Weight 20 lbs.
Type Air suspension
Drivers 8" woofer; 5" midrange; 1¾" tweeter
Response 50 Hz to 18 kHz, ±4 dB re 94 dB SPL at 1 meter at 1 watt
Crossover 1.2 kHz; 3.5 kHz
Impedance 6 to 8 ohms
Min. power 7 watts (8.5 dBW)
Max. power 70 watts (18.5 dBW)
Features High-compliance woofer with butyl rubber annulus; phenolic-ring tweeter

S-176B

Price $90
Dimensions 18H x 10½W x 8½D
Weight 17 lbs.
Type Bass reflex with tuned port
Drivers 8" woofer; 1¾" tweeter
Response 60 Hz to 18 kHz, ±4 dB re 93.5 dB SPL at 1 meter at 1 watt
Crossover 3.5 kHz
Impedance 6 to 8 ohms
Min. power 5 watts (7 dBW)
Max. power 60 watts (17.75 dBW)
Features High-compliance woofer with butyl rubber annulus; phenolic-ring tweeter

Models also available

S197B, $280; S196B, $250; S-186B, $200; 166B, $120

SHAHINIAN
Shahinian Acoustics, Ltd.
4 Selden Court
Selden, N.Y. 11784

Obelisk

Price $400 (walnut); oak (teak, $450; rosewood, $500)
Dimensions 26¾H x 14W x 12D
Weight 50 lbs.
Type Hybrid transmission line with passive radiator
Drivers 8" woofer; 4" x 1" Mylar dome
Response 35 Hz to 18.5 kHz, +2, –3 dB re 90 dB SPL at 1 meter at 1 watt
Crossover 2 kHz
Impedance 6 ohms
Min. power 25 watts (14 dBW)
Max. power 350 watts (25.5 dBW)
Controls None
Features Forty-eight" hybrid transmission line with 10" passive radiator

SHOWCO
Showco Manufacturing Corp.
1225 Round Table Drive
Dallas, Texas 75247

1718-S

Price $1,005
Dimensions 88H x 49½W x 22¼D
Weight 300 lbs.
Type Pyramid loaded bass horn
Drivers 18" woofer
Response 20 Hz to 100 Hz, ±4 dB re 101.5 dB SPL at 1 meter at 1 watt
Crossover 100 Hz (biamplified)
Impedance 8 ohms
Min. power 50 watts (17 dBW)
Max. power 500 watts (27 dBW)
Features Tower subwoofer

Pyramid S-200

Price $399
Dimensions 42½H x 14½W x 14D
Weight 95 lbs.
Type Four-sided folded-horn midbass; acoustic suspension low bass
Drivers 8" and 12" woofers; 5" midrange; 2 dome tweeters
Response 28 Hz to 18 kHz, ±3 dB re 91.5 dB SPL at 1 meter at 1 watt
Crossover 200 Hz; 800 Hz; 5 kHz
Impedance 8 ohms
Min. power 10 watts (10 dBW)
Max. power 100 watts (20 dBW)
Controls Tweeter
Features Tower design

Models also available

Pyramid 1800, $780; Pyramid 1500, $630

SNELL ACOUSTICS
Snell Acoustics
10 Prince Place
Newburyport, Mass. 01950

Type A

Price $840
Dimensions 46½H x 23¾W x 13D
Weight 97 lbs.
Type Acoustic suspension
Drivers 10" woofer; 4" midrange; 1" dome tweeter
Response 36 Hz to 18 kHz, ±1½ dB
Crossover 275 Hz; 2.5 kHz
Impedance 4 ohms
Min. power 80 watts (19 dBW)
Features Mirror-imaged pairs; biamped drivers individually fused biamplification possible

SONIC SYSTEMS
Sonic Systems
6165 N. Rosemead Blvd.
Temple City, Calif. 91780

Tower

Price $1,100
Dimensions 39¼H x 21½W x 19D
Weight 135 lbs.
Type Radial-slot port bass reflex
Drivers 12" woofer; two compression drivers
Response 30 Hz to 20 kHz, ±3 dB re 94 dB SPL at 1 meter at 1 watt
Crossover 1.2 kHz
Impedance 8 ohms
Min. power 10 watts (10 dBW)
Max. power 350 watts (25.5 dBW)
Controls High-frequency section
Features Biplanar dispersion system; set up for biamping

Studio B-1

Price $135
Dimensions 23½H x 12½W x 11¼D
Weight 30 lbs.
Type Acoustic suspension
Drivers 8" cone woofer; 4" cone midrange; 1" soft-dome tweeter
Response 45 Hz to 20 kHz, ±3 dB
Impedance 8 ohms
Min. power 10 watts (10 dBW)

Max. power	100 watts (20 dBW)
Controls	Midrange (variable)
Features	Walnut veneer finish

Models also available

Studio B-3, $210; Studio B-2, $170

SONIKIT
1173 65th St.
Oakland, Calif. 94608

DALESFORD EXPORT SERIES

312

Price	$575 (assembled); $350 (kit)
Dimensions	36H x 15¾Wx 15¼D
Weight	90 lbs.
Type	Acoustic suspension
Drivers	12" Bextrene woofer; 6" Bextrene midrange; 1" low-mass soft-dome Audax tweeter
Response	30 Hz to 20 kHz, ±3 dB
Crossover	250 Hz; 3.5 kHz
Impedance	8 ohms
Min. power	25 watts (14 dBW)
Max. power	100 watts (20 dBW)
Features	Bituminous felt and long-fiber wool damping; diffraction-free enclosure

210

Price	$275 (assembled); $185 (kit)
Dimensions	25¾H x 12½W x 12D
Weight	35 lbs.
Type	Acoustic suspension
Drivers	10" Bextrene woofer/midrange; 1" low-mass Audax soft-dome tweeter
Response	40 Hz to 20 kHz, ±3 dB
Crossover	2.5 kHz
Impedance	8 ohms
Min. power	25 watts (14 dBW)
Max. power	100 watts (20 dBW)
Features	Same as Model 208

BSC-3 Mini (Rogers)

Price	$175 (assembled); $115 (kit)
Dimensions	13⅜H x 8⅜W x 8⅞D
Weight	19 lbs.
Type	Acoustic suspension
Drivers	5" Bextrene woofer/midrange; 1" low-mass Audax soft-dome tweeter
Response	50 Hz to 20 kHz, ±3 dB
Crossover	3.5 kHz
Impedance	8 ohms
Min. power	25 watts (14 dBW)
Max. power	50 watts (17 dBW)
Features	"Bass Tilt" circuitry; bituminous felt damping; diffraction free enclosure

FRIED SERIES

Fried Super Subwoofer

Price	$1,550 (assembled); $550 (kit)
Dimensions	36½H x 30W x 15D
Weight	120 lbs.
Type	Transmission line
Drivers	12" high-power Bextrene woofer
Response	15 Hz to 200 Hz, ±0 dB re 92 dB SPL at 1 meter at 1 watt
Crossover	75 Hz
Impedance	8 ohms
Min. power	25 watts (14 dBW)
Max. power	100 watts (20 dBW)
Features	Passive crossover; biamp inputs provided

Fried T Subwoofer

Price	$700 (assembled); $360 (kit)
Dimensions	21¼H x 12¼W x 44¼D
Weight	88 lbs.
Type	Transmission line
Drivers	10" high-power Bextrene woofer
Response	20 Hz to 200 Hz, ±0 dB re 87 dB SPL at 1 meter at 1 watt
Crossover	100 Hz
Impedance	8 ohms
Min. power	25 watts (14 dBW)
Max. power	100 watts (20 dBW)
Features	Separate transmission lines for each channel; may be used with B/2, C, or other full-range speakers; passive crossover; biamp inputs provided

Fried "C" Mini Monitors

Price	$475 (assembled); $275 (kit)
Dimensions	13½H x 10½W x 9D
Weight	20 lbs.
Type	Pressure release
Drivers	6" Bextrene bass/midrange; 1" low-mass soft-dome tweeter
Response	50 Hz to 20 kHz, ±3 dB re 92 dB SPL at 1 meter at 1 watt
Crossover	3.5 kHz
Impedance	8 ohms
Min. power	25 watts (14 dBW)
Max. power	100 watts (20 dBW)
Features	Truncated pyramid with pressure release; may be used alone or with T, D, or Super subwoofers

S.E.A.S. SERIES

603

Price	$220 (kit)
Dimensions	26H x 15¾W x 12½D
Weight	46 lbs.
Type	Ducted port
Drivers	13" plastic-doped woofer; 4½" plastic-doped midrange; 1" soft plastic dome tweeter
Response	30 Hz to 25 kHz, ±3 dB re 91 dB SPL at 1 meter at 1 watt
Crossover	600 Hz; 3 kHz
Impedance	8 ohms
Min. power	10 watts (10 dBW)
Max. power	80 watts (19 dBW)

253

Price	$120 (kit)
Dimensions	19⅛H x 11⅛W x 10⅜D
Weight	20 lbs. 8 oz.
Type	Ducted port
Drivers	8" woofer; 4" plastic-doped midrange; 1" soft plastic dome tweeter
Response	35 Hz to 25 kHz, ±3 dB re 89 dB SPL at 1 meter at 1 watt
Crossover	800 Hz; 4 kHz
Impedance	8 ohms
Min. power	10 watts (10 dBW)
Max. power	60 watts (17.75 dBW)
Features	Plastic-doped midrange; computer-aligned port; lacquered-ash enclosure

Models also available

310, $475 (assembled); $300 (kit); 208, $195 (assembled); $125 (kit); Fried Super Monitor System, $2,000 (assembled); $800 (kit); Fried H/2 Monitor System, $950 (assembled); $550 (kit); Fried D Subwoofer, $500 (assembled); $338 (kit); Fried B/2 Mini Monitors, $275 (assembled); $180 (kit); Disco 47 Monster, $354 (kit); 403, $150 (kit); 223, $85 (kit)

SONRISE
Sonrise Audio Systems
13620 N.E. 20th St., Suite A
Bellevue, Wash. 98005

The Spirit

Price	$400/pr.
Dimensions	20H x 13⅜W x 11D
Weight	38 lbs.
Type	Acoustic suspension
Drivers	10" woofer; 1" soft-dome tweeter
Response	30 Hz to 20 kHz
Crossover	1.5 kHz
Impedance	8 ohms
Min. power	15 watts (11.75 dBW)
Max. power	75 watts (18.75 dBW)
Features	Same as The Dayspring

The Charisma

Price	$975/pr.
Dimensions	36H x 16½W x 13½D
Weight	80 lbs.
Type	Acoustic suspension
Drivers	Two 10" woofers; 5" midrange; 1" soft-dome tweeter
Response	20 Hz to 20 kHz
Crossover	550 Hz; 5 kHz
Impedance	4 ohms
Min. power	30 watts (14.75 dBW)
Max. power	150 watts (21.75 dBW)
Features	Same as The Dayspring

The Revelation

Price	$1,250/pr.
Dimensions	42H x 17¼W x 15D
Weight	104 lbs.
Type	Acoustic suspension
Drivers	Two 12" woofers; two 5" midrange drivers; two 1" soft-dome tweeters
Response	20 Hz to 20 kHz
Crossover	550 Hz; 5 kHz
Impedance	4 ohms
Min. power	30 watts (14.75 dBW)
Max. power	200 watts (23 dBW)
Features	Same as The Dayspring

Models also available

The Dayspring, $258/pr.; The Trinity, $650/pr.

SONY
Sony Corp. of America
9 West 57th St.
New York, N.Y. 10019

SS-G7X

Price	$1,000
Dimensions	37H x 20W x 17½D
Weight	106 lbs.
Type	Bass reflex
Drivers	15" cone woofer; 4" midrange; 1⅜" tweeter
Response	30 Hz to 20 kHz, re 94 dB SPL at 1 meter at 1 watt
Crossover	550 Hz; 4.5 kHz (each 12 dB/octave)
Impedance	8 ohms
Min. power	25 watts (14 dBW)
Max. power	200 watts (23 dBW)
Controls	Tweeter; midrange
Features	Phase-aligned speaker management; "AG" baffer board

SS-5GX

Price	$300
Dimensions	9 5/16H x 6¼W x 8⅜D
Weight	8 lbs. 6 oz.
Type	Acoustic suspension
Drivers	5" woofer; 1" dome tweeter
Response	65 Hz to 20 kHz, +4, –8 dB
Crossover	1.5 kHz
Impedance	8 ohms
Min. power	20 watts (13 dBW)
Max. power	100 watts (20 dBW)
Features	Plumb-IM IMC drivers; thermodynamic cooling

SSU-2070

Price	$200
Dimensions	26H x 15W x 14½D
Weight	40 lbs.
Type	Acoustic suspension
Drivers	10" woofer; 3¼" midrange; 2⅜"

	tweeter
Response	35 Hz to 20 kHz re 92 dB SPL at 1 meter at 1 watt
Crossover	800 Hz; 7.5 kHz
Impedance	8 ohms
Min. power	20 watts (13 dBW)
Max. power	100 watts (20 dBW)
Controls	Tweeter; midrange
Features	IM line-driver arrangement

SSU-1270

Price	$100
Dimensions	26H x 14½W x 10¾D
Weight	25 lbs.
Type	Acoustic suspension
Drivers	10" woofer; 3¼" midrange; 2" tweeter
Response	40 Hz to 20 kHz
Crossover	2 kHz; 7 kHz
Impedance	8 ohms
Min. power	20 watts (13 dBW)
Max. power	70 watts (18.5 dBW)

Models also available

SSU-4000, $400; SSU-3000, $300; SSU-2000, $150; SSU-1070, $85

SOUND DYNAMICS
Sound Dynamics Corp.
161 Don Park Road
Markham, Ontario L3R/1C2

12S

Price	$279.50
Dimensions	26⅜H x 15⅛W x 12D
Weight	55 lbs.
Type	Computer-tuned low-resonance bass reflex
Drivers	12" long-throw woofer; 1" phenolic dome horn-loaded with 5⅜" cast-aluminum lens
Response	28 Hz to 20 kHz, ±3 dB re 101.5 dB SPL at 1 meter at 1 watt
Crossover	2 kHz
Impedance	8 ohms (nominal)
Min. power	10 watts (10 dBW)
Max. power	125 watts (21 dBW)
Controls	L-pad variable through full range
Features	Bookshelf design; hand-built component drivers; walnut-vinyl finish

120S

Price	$359.50
Dimensions	33H x 17W x 12D
Weight	70 lbs.
Type	Computer-tuned low-resonance bass reflex
Drivers	12" heavy-duty woofer with long-throw 1½" voice coil; felted cone; 1" horn loaded; 5 2/5" cast-aluminum lens
Response	26 Hz to 20 kHz, ±3 dB
Crossover	750 Hz; 3.25 kHz
Impedance	8 ohms (nominal)
Min. power	12 watts (10.75 dBW)
Max. power	150 watts (21.75 dBW)
Controls	L-pad variable through full range
Features	"Floating bass port"; phase-corrected, precisely angled, floor-standing cabinet; hand-built component drivers; walnut vinyl finish

Models also available

10S, $199.50; 6S, $149.50; 15S, $449.50

SOUNDMATES
Soundmates, Inc.
796 29th Ave., S.E.
Minneapolis, Minn. 55414

1.500

Price	$269.95
Dimensions	24½H x 14½W x 12¼D
Weight	50 lbs.
Type	Acoustic suspension
Drivers	Two 8" butyl-surround woofers; 3" direct radiator tweeter with 5-lb. magnet
Response	30 Hz to 20 kHz
Impedance	8 ohms
Min. power	10 watts (10 dBW)
Max. power	80 watts (19 dBW)
Controls	Tweeter level

.125

Price	$109.95
Dimensions	8H x 14¾W x 15½D
Weight	4 lbs. 12 oz.
Type	Acoustic suspension
Drivers	4" butyl-surround woofer with 1" voice coil; soft-dome tweeter with 1" voice coil
Response	50 Hz to 20 kHz
Impedance	8 ohms
Min. power	10 watts (10 dBW)
Max. power	50 watts (17 dBW)
Controls	Tweeter level

Models also available

1.000, $179.95

SOURCE
Sound Source
1435 Jacqueline Drive
Columbus, Ga. 31907

1240

Price	N/A
Dimensions	24½H x 15W x 12½D
Weight	40 lbs.
Type	Tube vented reflex
Drivers	12" woofer; 2" x 6" piezoelectric horn
Response	35 Hz to 40 kHz, ±3 dB
Impedance	8 ohms
Min. power	10 watts (10 dBW)
Max. power	250 watts (24 dBW)
Controls	None
Features	External fusing; genuine walnut veneer enclosure

1020

Price	N/A
Dimensions	22¾H x 13¼W x 10¼D
Weight	34 lbs.
Type	Tube vented reflex
Drivers	10" woofer; 5" (sealed environment) midrange; 2" phenolic-ring tweeter
Response	40 Hz to 20 kHz, ±3 dB
Impedance	8 ohms
Min. power	5 watts (7 dBW)
Max. power	100 watts (20 dBW)
Controls	Tweeter
Features	External fusing; genuine walnut veneer enclosure

SIGNATURE SERIES

4a

Price	$499
Dimensions	42H x 16W x 13D
Weight	95 lbs.
Type	Rear-frequency time line, acoustically damped
Drivers	12" woofer; 5" isolated midrange; 1" soft-dome tweeter
Response	20 Hz to 22 kHz, ±3 dB
Crossover	900 Hz; 6 kHz
Impedance	8 ohms
Min. power	20 watts (13 dBW)
Max. power	200 watts (23 dBW)
Controls	Tweeter; midrange

2a

Price	$279
Dimensions	26H x 13½W x 10½D
Weight	30 lbs.
Type	Vented, acoustically damped
Drivers	10" woofer; 5" isolated midrange; 1" soft-dome tweeter
Response	38 Hz to 22 kHz, ±3 dB
Crossover	1.8 Hz; 6 kHz
Impedance	8 ohms
Min. power	10 watts (10 dBW)
Max. power	100 watts (20 dBW)
Controls	Tweeter

Models also available

1220, N/A; D-12, N/A; 3a, $350; 1a, $199

SPEAKERCRAFT
Speakercraft of Oregon
P.O. Box 13460
Portland, Ore, 97213

Sylvan Monitor

Price	$489
Dimensions	46H x 16W x 14D
Weight	82 lbs.
Type	Loaded transmission line
Drivers	Four 12" passive elements; two 6½" high-compliance bass drivers, push/pull configuration; 6½" plasticized midrange; 1" soft-dome tweeter
Response	20 Hz to 28 kHz, ±3 dB re 86 dB SPL at 1 meter at 1 watt
Crossover	200 Hz; 3 kHz
Impedance	4 ohms
Min. power	35 watts (15.5 dBW)
Max. power	250 watts (24 dBW)
Controls	Tweeter (3-position)
Features	Push/pull; phase corrected; walnut veneer enclosure; floorstanding

Sylvan Standard

Price	$179
Dimensions	24H x 13W x 11D
Weight	32 lbs.
Type	Acoustic suspension
Drivers	Three 8" plasticized woofers; two 2½" spiderless cone tweeters
Response	37 Hz to 21 kHz, ±3 dB
Crossover	3 kHz
Impedance	4 ohms
Min. power	15 watts (11.75 dBW)
Max. power	100 watts (20 dBW)
Controls	Tweeter (3-position)
Features	Phase corrected; walnut veneered enclosure; bookshelf standing

Models also available

Sylvan Premier, $329

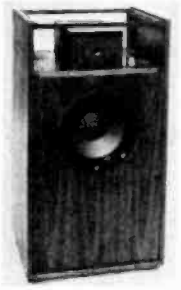
SPEAKERLAB
Speakerlab, Inc.
735 N. Northlake Way
Seattle, Wash. 98103

SK

Price	$650 (SKFW kit, $445)
Dimensions	50½H x 32¼W x 28D
Weight	220 lbs.
Type	Folded horn
Drivers	15" woofer; 17" x 6" horn midrange; 4" x 8¾" Wave Aperture™ driver
Response	101 dB SPL at 1 meter at 1 watt
Crossover	400 Hz; 5 kHz
Impedance	8 ohms
Min. power	10 watts (10 dBW)
Max. power	250 watts (24 dBW)
Controls	Midrange; tweeter
Features	Extremely wide dispersion Wave Aperture™ tweeter; tweeter and midrange fluid damped with Magnor™

S-6

Price	$360 (vinyl kit, $256)
Dimensions	27¼H x 15½W x 11⅞D

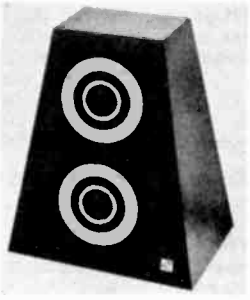


Sonic Systems Tower

Source Model 4a

Spendor SA-1 Mini Monitor

Super Sound Panel



Superex Satellite/1

Weight	70 lbs.
Type	Acoustic suspension
Drivers	12" woofer; 4¾" x 4¾" Wave Aperture® driver; 4" x 8¾" Wave Aperture® driver
Response	91 dB SPL at 1 meter at 1 watt
Crossover	1 kHz; 5 kHz
Impedance	8 ohms
Min. power	15 watts (11.75 dBW)
Max. power	200 watts (23 dBW)
Controls	Midrange; tweeter
Features	Extremely wide dispersion Wave Aperture® midrange and tweeter, fluid damped with Magnor®; Polylam®; double-layer woofer cone construction

S-4

Price	$310 (vinyl kit, $199)
Dimensions	27¼H x 15½W x 11⅞D
Weight	70 lbs.
Type	Acoustic suspension
Drivers	12" woofer; 6" midrange; 4" x 8¼" Wave Aperture® driver
Response	91 dB SPL at 1 meter at 1 watt
Crossover	600 Hz; 5 kHz
Impedance	8 ohms
Min. power	15 watts (11.75 dBW)
Max. power	200 watts (23 dBW)
Controls	Midrange; tweeter
Features	Extremely wide dispersion Wave Aperture® compression tweeter, fluid damped with Magnor®; Polylam® double-layer woofer and midrange cone construction

S-2.5

Price	$215 (vinyl kit, $139)
Dimensions	26¼H x 15¼W x 10¾D
Weight	56 lbs.
Type	Acoustic suspension
Drivers	10" woofer; 6" midrange; 1" dome tweeter
Response	91 dB SPL at 1 meter at 1 watt
Crossover	500 Hz; 3 kHz
Impedance	8 ohms
Min. power	15 watts (11.75 dBW)
Max. power	150 watts (21.75 dBW)
Controls	Midrange; tweeter
Features	Polylam® double-layer woofer and midrange cone construction

S-1

Price	$115 (vinyl kit $67)
Dimensions	20¾H x 11¾W x 8¾D
Weight	31 lbs.
Type	Acoustic suspension
Drivers	8" woofer; 1" recessed-dome tweeter
Response	92 dB SPL at 1 meter at 1 watt
Crossover	2.5 kHz
Impedance	8 ohms
Min. power	10 watts (10 dBW)
Max. power	75 watts (18.75 dBW)
Controls	Tweeter
Features	Polylam® double-layer woofer cone construction

Models also available

S-7 WA, $500 (vinyl kit, $309); S-30, $330 walnut kit (vinyl kit, $285); S-3, $275 (vinyl kit, $169); S-2, $159 (vinyl kit, $97); Speakerlab 0.1, $99 (vinyl kit, $65)

SPECKMAN
J.W.S. Acoustic Design Corp.
11407A Route 14
Harvard, Ill. 60033

S-415 Titus

Price	$1,025
Dimensions	36H x 15¼ dia.; x 18 dia., with legs
Weight	75 lbs. (approx., depending on leg style)
Type	Cylindrical Column of Air Effect® subchamber
Drivers	15" extended-range subwoofer; 4" lower midrange; two 2" dome midranges; two 1" dome tweeters
Response	19 Hz to 20 KHz, ±2 dB re 91 dB SPL at 1 meter at 1 watt
Crossover	450 Hz; 2 kHz; 6 kHz
Impedance	8 ohms
Min. power	25 watts (14 dBW)
Max. power	250 watts (24 dBW)
Features	Midnight-black flat smooth finish with interchangeable pecan legs; chain package available for hanging

S-15 Titus Subwoofer

Price	$650
Dimensions	36H x 15¼ dia.; 48H x 18 dia., with legs
Weight	75 lbs. (approx., depending on leg styles)
Type	Cylindrical Column of Air Effect® subchamber
Drivers	15" extended-range subwoofer
Response	19 Hz to 100 Hz, ±2 dB
Crossover	Passive at 100 Hz
Impedance	8 ohms
Min. power	25 watts (14 dBW)
Max. power	250 watts (24 dBW)
Features	Midnight-black flat smooth finish with interchangeable pecan legs; chain package available for hanging

S-82

Price	$129
Dimensions	19H x 8½ dia.; 24H x 10½ dia. with legs
Weight	15 lbs.
Type	Cylindrical Column of Air Effect® subchamber
Drivers	8" woofer; 1" dome tweeter
Response	70 Hz to 20 kHz, ±2 dB re 90 dB SPL at 1 meter at 1 watt
Crossover	2.5 kHz
Impedance	8 ohms
Min. power	15 watts (11.75 dBW)
Max. power	45 watts (16.5 dBW)
Features	Midnight-black flat smooth finish with interchangeable pecan legs; chain package available for hanging

Models also available

S-412 Galatian Edition, $559; S-310 Galatian Edition, $345; S-103, $195

SPENDOR
RCS Audio International, Inc.
1314 34th St., N.W.
Washington, D.C. 20007

BC-3

Price	$825 (walnut veneer); $900 (rosewood veneer)
Dimensions	31½H x 15½W x 15½D
Weight	75 lbs.
Type	Modified reflex
Drivers	12" Spendor woofer; 8" Spendor midrange driver; Celestion 1300 tweeter; Celestion 2000 tweeter
Response	30 Hz to 25 kHz (50 Hz to 14 kHz, ±2.0 dB)
Crossover	700 Hz; 3 kHz; 13 kHz
Impedance	8 ohms
Min. power	50 watts (17 dBW)
Max. power	80 watts (19 dBW)

SA-1 Mini Monitor

Price	$230 (walnut veneer); $250 (rosewood veneer)
Dimensions	12H x 9W x 9D
Weight	16 lbs.
Type	Dynamic
Drivers	6" Spendor woofer; Son Audax HD 12.8 D25 tweeter
Response	50 Hz to 20 kHz (70 Hz to 14 kHz, 3 dB)
Crossover	3 kHz
Impedance	8 ohms
Min. power	20 watts (13 dBW)
Max. power	40 watts (16 dBW)

Models also available

BC-1, $375 (walnut veneer); $415 (rosewood veneer)

STRELIOFF
Strelioff System Designs
5305 Teudilla Ave.
Woodland Hills, Calif. 91364

TS-1 Transducer System

Price	$5,500/1 pr.
Dimensions	66H x 36W x 18D
Weight	210 lbs.
Type	Acoustic suspension
Drivers	Two 10" cast-aluminum frame

	woofers; six 1½" dome midranges; six 1" dome tweeters
Response	38 Hz to 18 kHz, ±4 dB re 87 dB SPL at 1 meter at 1 watt
Crossover	800 Hz; 5 kHz
Impedance	5 ohms at 500 Hz
Min. power	100 watts (20 dBW)
Max. power	500 watts (27 dBW)
Controls	Biamp; triamp; low frequency roll-off (mode switches); 10 dB attenuation for each frequency range (rotary controls)
Features	Custom finishes available

ME-1 Monitor Bass Extender

Price	$950
Dimensions	48H x 20W x 20D
Weight	110 lbs.
Type	Acoustic suspension
Drivers	Two 10" cast-aluminum frame woofers in separate chambers
Response	38 Hz to 150 Hz, ±4 dB re 78 dB SPL at 1 meter at 1 watt
Crossover	20 Hz; 200 Hz (filter network)
Impedance	8 ohms at 70 Hz
Min. power	20 watts (13 dBW)
Max. power	200 watts(23 dBW)
Controls	None
Features	Individual input terminals for either mono or stereo applications; cabinet construction includes high-density 1½" thick walls throughout and internal bracing; custom finishes available

Models also available

TE-1 Transducer Bass Extender, $3,000/pr.; MS-1 Monitor System, $1,250/pr.

SUPER SOUND PANEL
Meteor Light & Sound Co.
155 Michael Drive
Syosset, N.Y. 11791

Super Sound Panel

Price	$949
Dimensions	39H x 51W x 6½D
Weight	130 lbs.
Type	Dynamic
Drivers	Six 12" woofers; four 6" mid/high drivers; 7¼" x 2⅞" horn-compression tweeter
Crossover	2.5 kHz; 7 kHz
Impedance	12 ohms
Min. power	80 watts (19 dBW)
Max. power	300 watts (24.75 dBW) continuous
Features	Fuse protection (spare fuse and changeover switch provided); automatic tweeter-protection unit

SUPEREX
Superex Electronics Corp.
151 Ludlow St.
Yonkers, N.Y. 10705

Satellite/1

Price	$89.95
Dimensions	10 ¼H x 8 ½W x 6D
Weight	5 lbs. 3 oz.
Type	Dynamic high-frequency augmentation
Drivers	Two 1" textile dome tweeters
Response	4 Hz to 4 kHz to 20 kHz, ±2 dB re 96 dB SPL at 1 meter at 1 watt
Crossover	4 kHz
Impedance	4 ohms
Max. power	100 watts (20 dBW)
Controls	High-frequency attenuator
Features	Slotted dispersion plate eliminates beaming; high-resolution driver design in non-resonant smoked plexiglass enclosure

SYNERGISTICS
Maybern Co.
9565 Midwest Ave.
Cleveland, Ohio 44125

S-92 Panels and Commode

Price	$2,000
Dimensions	Commode: 19 ¾H x 38W x 18D; panels: 61H x 23W x 4D
Weight	Commode: 130 lbs.; panels: 70 lbs.
Type	Acoustic suspension
Drivers	Six 4½" open-backed midrange drivers; 12" woofers; two bipolar tweeters
Response	24 Hz to 20 kHz, ±4 dB re 91 dB SPL at 1 meter at 1 watt
Crossover	140 Hz; 2.0 kHz
Impedance	8 ohms
Min. power	35 watts (15.5 dBW)
Max. power	600 watts (27.75 dBW)
Controls	Midrange and tweeter levels
Features	Circuit breakers; ¾" high-density particle board finished with genuine hand-rubbed walnut veneer; 3-piece bipolar with stereo subwoofer

S-73 Tower

Price	$575
Dimensions	46 ½H x 21 ¾W x 15D
Weight	79 lbs.
Type	Vented
Drivers	12" passive radiator; two 8" high-compliance woofers; bipolar samarium cobalt tweeter midrange
Response	30 Hz to 20 kHz, ±3 dB
Crossover	45 Hz; 2.0 kHz
Impedance	8 ohms
Min. power	15 watts (11.75 dBW)
Max. power	150 watts (21.75 dBW)
Controls	Woofer and tweeter levels
Features	¾" high-density particle board finished with genuine hand-rubbed walnut veneer; bipolar design; circuit breaker

S-51C

Price	$325
Dimensions	25 ½H x 14 ¼W x 11 ½D
Weight	41 lbs.
Type	Vented
Drivers	12" passive radiator; 8" high-compliance woofer; piezoelectric supertweeter; 2½" tweeter
Response	35 Hz to 24 kHz, ±4 dB
Crossover	45 Hz; 2.5 kHz; 12.5 kHz
Impedance	8 ohms
Min. power	6 watts (7.75 dBW)
Max. power	80 watts (19 dBW)
Controls	Tweeter level
Features	¾" high-density particle board finished with genuine hand-rubbed walnut veneer; circuit breaker

S-33

Price	$175
Dimensions	25 ½H x 14 ¼W x 11 ½D
Weight	37 lbs.
Type	Vented
Drivers	10" passive radiator; 8" woofer; 2½" tweeter
Response	40 Hz to 18 kHz, ±4 dB
Crossover	50 Hz; 2.5 kHz
Impedance	8 ohms
Min. power	6 watts (7.75 dBW)
Max. power	50 watts (17 dBW)
Controls	Tweeter level
Features	¾" high-density particle board finished in walnut-grain vinyl; circuit breaker

S-22B

Price	$130
Dimensions	23H x 12W x 9½D
Weight	29 lbs.
Type	Acoustic suspension
Drivers	8" woofer; 2½" tweeter
Response	50 Hz to 18 kHz, ±4 dB
Crossover	3.2 kHz
Impedance	8 ohms
Min. power	6 watts (7.75 dBW)
Max. power	40 watts (16 dBW)
Features	¾" high-density particle board finished in walnut-grain vinyl

Models also available

S-63 Tower, $400; S-53 Tower, $325; S-46, $250; S-23, $150; S-12B, $100

TAMON
Tamon Audio Corp. of America
P.O. Box 322
Concord, Calif. 94522

TS-707

Price	$380
Dimensions	31⅛H x 16⅞W x 11⅞D
Weight	55 lbs.
Type	Infinite baffle
Drivers	15" cone woofer; two 5" sealed-back cone midrange drivers; 3" ring-radiating tweeter; 2½" metallic supertweeter
Response	30 Hz to 35 kHz
Crossover	600 Hz; 6 kHz; 15 kHz
Impedance	8 ohms
Max. power	110 watts (20.5 dBW); 200 watts (23 dBW) peak

CRO-40L

Price	$250
Dimensions	22H x 12⅝W x 11⅜D
Weight	27 lbs. 8 oz.
Type	Infinite baffle
Drivers	10" cone woofer; 5" sealed-back cone midrange; 3" cone tweeter
Response	38 Hz to 22 kHz
Crossover	800 Hz; 3 kHz
Impedance	8 ohms
Max. power	35 watts (15.5 dBW); 60 watts (17.75 dBW) peak

TS-404

Price	$249.95
Dimensions	22½H x 12¼W x 11⅜D
Weight	27 lbs. 8 oz.
Type	Infinite baffle
Drivers	10" cone woofer; 5" sealed-back cone-midrange; 3" ring-radiating tweeter
Response	38 Hz to 35 kHz
Crossover	800 Hz; 2.5 kHz
Impedance	8 ohms
Max. power	60 watts (17.75 dBW); 100 watts (20 dBW) peak

LB-1030

Price	$229.95 (with mounting brackets)
Dimensions	7⅛H x 4½W x 4⅛D
Type	Dynamic
Drivers	4" long-throw woofer; 1" soft-dome tweeter
Response	60 Hz to 20 kHz
Min. power	15 watts (11.75 dBW)
Features	Suitable for home or auto use

CRO-30L

Price	$140
Dimensions	19H x 10½W x 8⅝D
Weight	16 lbs.
Type	Infinite baffle
Drivers	8" cone woofer; 3" cone tweeter
Response	45 Hz to 22 kHz
Crossover	3 kHz
Impedance	8 ohms
Max. power	25 watts (14 dBW); 40 watts (16 dBW) peak

Models also available

CRO-50L, $360; TS-505, $349; CRO-33L, $169; TS-303, $140

TANDBERG
Tandberg of America, Inc.
Labriola Court
Armour, N.Y. 10504

Fasetts

Price	$200/pr.

Dimensions	10½H x 11W x 8¾D
Type	Acoustic suspension
Drivers	5" woofer; 2¼" tweeter
Response	50 Hz to 20 kHz
Crossover	3.5 kHz
Impedance	8/4 ohms
Min. power	8 watts (9 dBW)
Max. power	25 watts (14 dBW)

TANNOY
Tannoy-Ortofon, Inc.
122 Dupont St.
Plainview, N.Y. 11803

Buckingham

Price	$2,250
Dimensions	46H x 24W x 18D
Weight	212 lbs.
Type	Ducted port
Drivers	Integrated phase-coherent 8" midrange/tweeter with two 12" bass drivers
Response	40 Hz to 20 kHz, ±3 dB
Crossover	350 Hz; 3.5 kHz
Impedance	8 ohms
Min. power	10 watts (10 dBW)
Max. power	150 watts (21.75 dBW) continuous
Controls	Treble rolloff; treble energy

Berkeley

Price	$655
Dimensions	33H x 21W x 12D
Weight	90 lbs.
Type	Ducted port
Drivers	15" woofer with compression high-frequency tweeter mounted on common axis
Response	45 Hz to 20 kHz, ±4 dB
Crossover	1 kHz
Impedance	8 ohms
Min. power	10 watts (10 dBW)
Max. power	150 watts (21.75 dBW) continuous
Controls	Treble energy; treble rolloff
Features	Phase-coherent integrated design

225

Price	$495
Dimensions	28H x 15W x 12D
Weight	66 lbs.
Type	Passive radiator
Drivers	10" woofer with compression high-frequency tweeter mounted on common axis
Response	45 Hz to 20 kHz, ±3 dB
Crossover	3.5 kHz
Impedance	8 ohms
Min. power	10 watts (10 dBW)
Max. power	150 watts (21.75 dBW) continuous
Controls	Treble rolloff; treble energy
Features	Glass-top floor standing speaker utilizing phase-coherence integrated design

125

Price	$228
Dimensions	24H x 12W x 10D
Weight	40 lbs.
Type	Ducted port
Drivers	10" woofer and compression high-frequency driver
Response	50 Hz to 20 kHz, ±3 dB
Crossover	5 kHz
Impedance	8 ohms
Min. power	10 watts (10 dBW)
Max. power	150 watts (21.75 dBW) continuous
Controls	Treble rolloff; treble energy

Models also available

Windsor, $1,250; Arden, $777; 185, $425

TECHNICS
Panasonic Co.
1 Panasonic Way
Secaucus, N.J. 07094

SB-7070

Price	$450
Dimensions	40¾H x 17½W x 16¼D
Weight	72 lbs. 13 oz.
Type	Bass reflex
Drivers	13¾" woofer; 6¼" mid-low; 4" mid-high; 1" dome tweeter
Response	30 Hz to 32 kHz re 92 dB SPL at 1 meter at 1 watt
Crossover	350 Hz; 1.2 kHz; 4 kHz
Impedance	8 ohms
Max. power	180 watts (22.5 dBW) (music); 120 watts (20.75 dBW) (DIN)
Controls	Midrange; tweeter
Features	Linear-phase design; individual thermal relay protection for driver

SB-L300

Price	$250
Dimensions	28⅜H x 14⅜W x 12½D
Weight	40 lbs.
Type	Bass reflex
Drivers	12" woofer; 4" midrange; radial horn tweeter
Response	39 Hz to 22 kHz re 90 dB SPL at 1 meter at 1 watt
Crossover	1.6 Hz; 4.5 kHz
Impedance	8 ohms
Max. power	130 watts (21.25 dBW) (music); 90 watts (19.5 dBW) (DIN)
Controls	Tweeter; midrange
Features	Linear-phase design; individual thermal relay protection for each driver

SB-L100

Price	$150
Dimensions	24H x 11¾W x 10⅜D
Weight	24 lbs.
Type	Vented
Drivers	10" woofer; radial horn tweeter
Response	43 Hz to 22 kHz re 89.5 dB SPL at 1 meter at 1 watt
Crossover	3.2 kHz
Impedance	8 ohms
Max. power	75 watts (18.75 dBW) (music); 50 watts (17 dBW) (DIN)
Features	Linear-phase design; individual thermal relay protection for each driver

Models also available

SB-6060, $350; SB-L200, $200; SB-P1000, $180/pr.

TECHNISOUND
Technisound, Inc.
60 E. Ida St.
Antioch, ILL. 60002

120B

Price	$250
Dimensions	27H x 16W x 11D
Weight	58 lbs.
Type	Passive radiator velocity regenerative
Drivers	10" woofer; 6" midrange driver; 3" tweeter
Response	36 Hz to 20 kHz, ±2 dB
Crossover	300 Hz; 3.5 kHz
Impedance	8 ohms
Min. power	20 watts (13 dBW)
Max. power	100 watts (20 dBW) continuous
Controls	Midrange; tweeter

1200

Price	$200
Dimensions	26H x 18W x 12D
Weight	54 lbs.
Type	Vented
Drivers	Three
Response	37 Hz to 20 kHz, ±3 dB
Crossover	475 Hz; 4 kHz
Min. power	15 watts (11.75 dBW) continuous
Max. power	60 watts (17.75 dBW) continuous
Controls	Midrange; tweeter; thermal overload reset

Models also available

80B, $90

THIEL
Thiel Audio Products Co.
4158 Georgetown Road
Lexington, Ky. 40511

04

Price	$500/pr.
Dimensions	36H x 10W x 10D
Weight	34 lbs.
Type	Passive radiator
Drivers	8" bass radiator; 6½" woofer/midrange; 1" dome tweeter
Response	40 Hz to 20 kHz, ±2 dB re 89 dB SPL at 1 meter at 1 watt
Crossover	4 kHz
Impedance	8 ohms
Min. power	20 watts (13 dBW)
Max. power	150 watts (21.75 dBW)
Features	Time and phase coherent

02

Price	$250/pr.
Dimensions	19H x 11W x 9½D
Weight	22 lbs.
Type	Ported
Drivers	6½" woofer; 1" dome tweeter
Response	45 Hz to 20 kHz, ±2 dB re 92 dB SPL at 1 meter at 1 watt
Crossover	2 kHz
Impedance	8 ohms
Min. power	10 watts (10 dBW)
Max. power	100 watts (20 dBW)

Models also available

03, $875/pr.

THORENS
Elpa Marketing Industries, Inc.
Atlantic & Thorens Aves.
New Hyde Park, N.Y. 11040

HP-380

Price	$1,000
Dimensions	47½H x 31½W x 3 1/16D
Weight	78 lbs. 5 oz.
Type	Dipole radiator
Drivers	Fifteen 6" woofers; 4" midrange; 2½" tweeter
Response	35 Hz to 22 kHz
Crossover	600 Hz; 5 kHz
Impedance	4 ohms
Min. power	80 watts (19 dBW)
Max. power	200 watts (23 dBW)

HP-360

Price	$700
Dimensions	34½H x 22½W x 3 1/16D
Weight	46 lbs. 5 oz.
Type	Dipole radiator
Drivers	Nine 6" woofers; 4" midrange; 2½" tweeter
Response	45 Hz to 22 kHz
Crossover	600 Hz; 5 kHz
Impedance	4 ohms
Min. power	80 watts (19 dBW)
Max. power	150 watts (21.75 dBW)

TRACER
BML Electronics, Inc.
5307 N. Ravenswood Ave.
Chicago, ILL. 60640

Sound Rack/Tracer 1501

Price	$499
Dimensions	51H x 20W x 5D
Weight	75 lbs.
Type	Bifurcated transmission line
Drivers	5½" mid-bass unit; 4½" acoustic bass radiator; 1¾" direct radiator tweeters

Response	32 Hz to 20 kHz, ±3 dB re 91 dB SPL at 1 meter at 1 watt
Impedance	5 ohms
Min. power	30 watts (14.75 dBW)
Max. power	200 watts (23 dBW)
Features	Fuse protection; direct coupled

Sound IEnds/Tracer 701

Price	$249
Dimensions	19 ¼H x 18 ½W x 5 ¼D
Weight	25 lbs.
Type	Vented transmission line
Drivers	4½" acoustic bass radiator; 1½" direct radiator tweeters
Response	32 Hz to 20 kHz, ±5 dB
Impedance	6 ohms
Min. power	30 watts (14.75 dBW)
Max. power	200 watts (23 dBW)
Features	Fuse protection; direct coupled

Models also available

Sound Window/Tracer 1001A, $349

TRANSAUDIO
Quadraflex Industries
130 1 65th St.
Emeryville, Calif. 94608

1011B

Price	$100
Dimensions	26H x 15½W x 10¼D
Weight	36 lbs.
Type	Acoustic suspension
Drivers	12" woofer; 2½" cone tweeter
Response	40 Hz to 18 kHz, ±4 dB
Crossover	1.8 kHz
Impedance	8 ohms
Min. power	5 watts (7 dBW)
Max. power	60 watts (17.75 dBW)

1008A

Price	$49.95
Dimensions	18H x 11½W x 8½D
Weight	25 lbs.
Type	Acoustic suspension
Drivers	8" woofer; 3" cone tweeter
Response	60 Hz to 16 kHz, ±5 dB
Crossover	2 kHz
Impedance	8 ohms
Min. power	5 watts (7 dBW)
Max. power	40 watts (16 dBW)

Models also available

1010 B, $70

TRI-DELTA
Triangle Acoustics, Inc.
12721 S.W. 68 th Lane
Miami, Fla. 33183

Tri-Delta III

Price	$398
Dimensions	29H x 34 ½W x 28 ¾D
Weight	60 lbs.
Type	Air suspension
Drivers	Two 10" cone woofers; 5" cone midrange; 4" dome tweeter
Response	20 Hz to 23 kHz, ±3 dB re 90 dB SPL at 1 meter at 1 watt
Crossover	500 Hz; 5 kHz
Impedance	8 ohms
Min. power	15 watts (11.5 dBW)
Max. power	200 watts (23 dBW)
Features	Tetrahedron design; enclosure measures 33" on an edge

Tri-Delta I

Price	$259.95
Dimensions	24½H x 28¼W x 23¼D
Weight	37 lbs.
Type	Acoustic suspension
Drivers	10" cone woofer; 5" cone midrange; 4" dome tweeter
Response	25 Hz to 22 kHz, ±3 dB re 92 dB SPL at 1 meter at 1 watt
Crossover	700 Hz; 2.5 kHz
Impedance	8 ohms
Min. power	10 watts (10 dBW)
Max. power	75 watts (18.75 dBW)
Features	Tetrahedron design; enclosure measures 27" on an edge

Models also available

Tri-Delta IIB, $350; Tri-Delta IIA, $312

TRUSONIC
Trusonic Co.
10530 Lawson River Ave.
Fountain Valley, Calif. 92708

Monitor Seven

Price	$990
Dimensions	44H x 24W x 17D
Weight	156 lbs.
Type	High-efficiency acoustic suspension
Drivers	Two 12" cast frame woofers; 6" cast frame midrange with 110 ounce magnet structure; four solid-state tweeters
Response	25 Hz to 22 kHz, ±4 dB re 94 dB SPL at 1 meter at 1 watt
Crossover	500 Hz; 400 kHz
Impedance	4 ohms
Min. power	10 watts (10 dBW)
Max. power	250 watts (24 dBW)
Controls	Midrange, ±5 dB; high range, ±5 dB
Features	Computer-assisted design: "Critical Q" oiled-oak cabinet, brown double-knit grille

ULTRALINEAR
Ultralinear Loudspeakers
3228 E. 50th St.
Los Angeles, Calif. 90058

265

Price	$419.95
Dimensions	31¼H x 18W x 16⅜D
Weight	66 lbs.
Type	Ported duct
Drivers	15" foam-edge suspension low-frequency driver with large diameter high-temperature voice coil; 6" foam-suspension midrange transducer in separate sealed enclosure; 1" high-output soft-dome high-frequency radiator; 1" ultra-high-frequency Mylar dome radiator with refractive dispersion screen
Response	25 Hz to 22.5 kHz
Crossover	700 Hz; 4 kHz; 6 kHz
Impedance	8 ohms
Min. power	12 watts (10.75 dBW)
Max. power	90 watts (19.5 dBW)
Controls	Midrange and high-frequency front-mounted level
Features	Circuit breaker protected; walnut cabinet

DW-10

Price	$249.95
Dimensions	34½H x 14½W x 12D
Weight	47 lbs.
Type	Air suspension
Drivers	Two 10" woofers; 6" midrange; two ½" tweeters
Response	29 Hz to 19 kHz
Crossover	600 Hz; 3.5 kHz
Impedance	4 ohms
Min. power	8 watts (9 dBW)
Max. power	75 watts (18.75 dBW)

S-1 Subwoofer

Price	$249.95
Dimensions	7¾H x 5⅛W x 4 ⅝D
Weight	30 lbs.
Drivers	10" woofers; 10" passive radiator
Response	29 Hz to 23 kHz
Impedance	8 ohms
Min. power	10 watts (10 dBW)
Max. power	70 watts (18.5 dBW)
Features	Bass cube of TM-116 system

128

Price	$199.95
Dimensions	24⅜H x 14½W x 12D
Weight	35 lbs.
Type	Air suspension
Drivers	12" woofer; 4½ midrange; 2½ tweeter
Response	30 Hz to 19 kHz
Crossover	1.5 kHz; 4 kHz
Impedance	8 ohms
Min. power	8 watts (9 dBW)
Max. power	50 watts (17 dBW)

77C

Price	$179.95
Dimensions	23⅛H x 11¾W x 9¼D
Weight	50 lbs.
Type	Air suspension
Drivers	10" foam-edge air-suspension low-frequency driver; 5" self-enclosed edge-treated midrange transducer; 2½" edge-treated high-frequency radiator
Response	32 Hz to 18 kHz
Crossover	1.8 kHz; 4 kHz
Impedance	8 ohms
Min. power	8 watts (9 dBW)
Max. power	50 watts (17 dBW)
Controls	Front-mounted midrange level
Features	Circuit breaker protected; walnut cabinet

100C

Price	$175
Dimensions	24⅜H x 14½W x 12D
Weight	35 lbs.
Type	Bass reflex
Drivers	12" high-compliance low-frequency driver; 4½" sealed-back midrange transducer; 2½" edge-treated high-frequency radiator
Response	32 Hz to 18 kHz
Crossover	1.5 kHz; 4 kHz
Impedance	8 ohms
Min. power	5 watts (7 dBW)
Max. power	40 watts (16 dBW)
Features	Circuit breaker protected

82

Price	$119.95
Dimensions	20⅛H x 11¾W x 9¼D
Weight	42 lbs.
Drivers	8" high-compliance woofer; 3" high-frequency radiator
Response	40 Hz to 16.5 kHz
Crossover	2.2 kHz
Impedance	8 ohms
Min. power	4 watts (6 dBW)
Max. power	35 watts (15.5 dBW)

Models also available

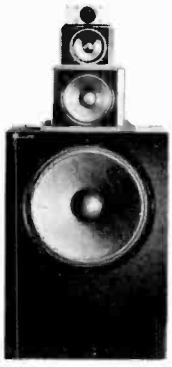
TM-116, $429.95; 228, $279.95; HPS-112, $249.95; 188, $239.95; DW-8, $179.95; 93, $149.95; 66A, $139.95

VERIT
Wald Sound, Inc.
11131 Dora St.
Sun Valley, Calif. 91352

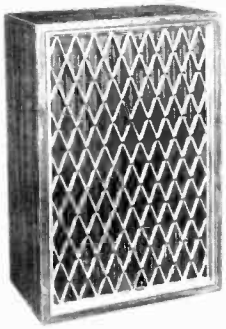
RL-X5

Price	$479
Dimensions	39H x 14½W x 14¼D
Weight	53 lbs.
Type	Mass-compliance tuned passive radiator

Tannoy Berkeley

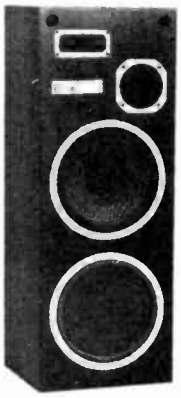


Technics SB-7070



Technisound Model 1200

Ultralinear 265 Disco Monitor



Verit Model RL-X5

Drivers	12" woofer; 5½" midrange; 2" x 5" horn tweeter
Response	25 Hz to 30 kHz, ±5 dB re 97 dB SPL at 1 meter at 1 watt
Crossover	700 Hz; 3 kHz
Impedance	8 ohms
Min. power	15 watts (11.75 dBW)
Max. power	100 watts (20 dBW)
Controls	Midrange; tweeter
Features	12" passive radiator in back; circuit breaker

RL-X3

Price	$269
Type	Mass-compliance tuned passive radiator
Drivers	10" woofer; 5½" midrange; 2" x 5" horn tweeter
Response	40 Hz to 30 kHz, ±5 dB re 96 dB SPL at 1 meter at 1 watt
Min. power	10 watts (10 dBW)
Max. power	55 watts (17.5 dBW)
Controls	Midrange; tweeter
Features	10" passive radiator in back; circuit breaker

Models also available

RL-X4, $329

VERMONT WOOD CRAFTS
Vermont Wood Crafts, Inc.
P.O. Box 206
Depot St.
Proctorsville, Vt. 05153

SL-5

Price	$199.95
Dimensions	34½H x 18½W x 12½D
Weight	45 lbs.
Type	Bass reflex
Drivers	15" woofer; 3½" midrange; two 2½" direct-radiating tweeters
Response	32 Hz to 20 kHz, ±3 dB
Crossover	1 kHz; 6 kHz
Impedance	8 ohms
Min. power	10 watts (10 dBW)
Max. power	70 watts (18.5 dBW)
Controls	Tweeter; midrange
Features	Circuit breaker; attached floor stands

SL-1

Price	$79.95
Dimensions	20H x 12W x 8D
Weight	21 lbs.
Type	Bass reflex
Drivers	8" woofer; 3" phenolic radiator tweeter
Response	40 Hz to 18 kHz, ±4 dB
Crossover	2.5 kHz
Impedance	8 ohms
Min. power	5 watts (7 dBW)
Max. power	30 watts (14.75 dBW)

Models also available

SL-4, $179.95; SL-3, $119.95; SL-2, $99.95

VISONIK HIFI
Visonik of America, Inc.
701 Heinz St.
Berkeley, Calif. 94710

David 9000

Price	$300
Dimensions	14¾H x 9¾W x 9¼D
Weight	19 lbs. 12 oz.
Type	Air suspension
Drivers	7" woofer; 1½" midrange; ¾" tweeter
Response	35 Hz to 25 kHz, +4, –8 dB re 87 dB SPL at 1 meter at 1 watt
Crossover	900 Hz; 4.5 kHz
Impedance	4 ohms
Min. power	20 watts (13 dBW)
Max. power	120 watts (20.75 dBW)

David 6000

Price	$150
Dimensions	7¾H x 5¼W x 5D
Weight	6 lbs. 12 oz.
Type	Acoustic suspension
Drivers	4" woofer; 1" soft-dome tweeter
Response	45 Hz to 25 kHz, +4, –3 dB re 84 dB SPL at 1 meter at 1 watt
Crossover	2.5 kHz
Impedance	4 ohms
Min. power	10 watts (10 dBW)
Max. power	70 watts (18.5 dBW)

D-803

Price	$250 (black); $280 (walnut)
Dimensions	12⅜H x 7¾W x 8D
Weight	19 lbs.
Type	Acoustic suspension
Drivers	7½" woofer; 1½" dome midrange; ¾" dome tweeter
Response	30 Hz to 30 kHz, +4, –8 dB
Crossover	1.1 kHz; 4.5 kHz
Impedance	4 ohms
Min. power	10 watts (10 dBW)
Max. power	120 watts (20.75 dBW)

D-602

Price	$160 (black); $170 (walnut)
Dimensions	9⅛H x 5¾W x 5¾D
Weight	9 lbs.
Type	Acoustic suspension
Drivers	5" woofer; 1" dome tweeter
Response	38 Hz to 25 kHz, +4 dB, –8 dB
Crossover	1.4 kHz
Impedance	4 ohms
Min. power	15 watts (11.75 dBW)
Max. power	80 watts (19 dBW)

D-5000

Price	$130 (optional bracket, $10)
Dimensions	6¾H x 4⅛W x 4¼D
Weight	5 lbs. 8 oz.
Type	Acoustic suspension
Drivers	4" woofer; 1" soft-dome tweeter
Response	50 Hz to 25 kHz, +4 dB, –8 dB
Crossover	2.5 kHz
Impedance	4 ohms
Min. power	10 watts (10 dBW)
Max. power	50 watts (17 dBW)
Features	Recommended for auto use with Visonik automotive amplifier

SUBWOOFER SERIES

SUB 2

Price	$300
Dimensions	19H x 14W x 11D
Weight	38 lbs.
Type	Acoustic suspension
Drivers	10" dual voice-coil woofer
Response	24 Hz to 25 kHz, +4 dB, –8 dB
Crossover	150 Hz; 2.5 kHz
Impedance	4 ohms
Min. power	40 watts (16 dBW)
Max. power	240 watts (23.75 dBW)
Features	Mini subwoofer with built-in crossover

EURO SERIES

Euro 5

Price	$200
Dimensions	19H x 11W x 9¼D
Weight	24 lbs.
Type	Acoustic suspension
Drivers	8" woofer; 1" soft-dome tweeter
Response	35 Hz to 25 kHz, +4 dB, –8 dB
Crossover	1.3 kHz
Impedance	4 ohms
Min. power	10 watts (10 dBW)
Max. power	60 watts (17.75 dBW)

Models also available

David 7000, $185; David 4000, $110; D-702, $210 (black); $240 (walnut); D-502, $120; SUB 1, $400; Euro 7, $360

DICK WAGNER
Dick Wagner
5930 Penfield Ave.
Woodland Hills, Calif. 91367

DW-1

Price	$6,000/pr.
Dimensions	63H x 48W x 20D
Weight	160 lbs.
Type	Sealed woofer; dipolar midrange
Drivers	Eight 12" woofers; sixteen 4" midrange drivers; four dome tweeters; one omni
Response	27 Hz to 19 kHz, ±5 dB re 87 dB SPL at 1 meter at 1 watt

Crossover 450 Hz; 6.5 kHz (electronically variable triamp)
Impedance 8 ohms
Min. power 100 watts (20 dBW)
Max. power 1,000 watts (30 dBW)
Controls Continuously variable triamp
Features Over 120 dB output with no distortion and breakup

WATSON
Watson Laboratories
2711 Rena Road
Mississauga, Ont. L4T 3K1, Canada

25W
Price $1,650
Dimensions 17H x 52W x 34D
Weight 130 lbs.
Type Subwoofer; inert gas suspension
Drivers 8" x 10" total voice-coil length equivalent to 16" diameter voice coil on 24" diameter woofer
Response 17 Hz to 150 kHz, ±3 dB re 93 dB SPL at 1 meter at 1 watt
Crossover 150 Hz
Impedance 4 to 8 ohms
Min. power 100 watts (20 dBW)
Max. power 500 watts (27 dBW)
Features Coffee-table styling

Model Five
Price $840/pr.
Dimensions 32H x 15W x 14⅝D
Weight 38 lbs.
Type Inert gas suspension
Drivers 10" woofer; 6" midrange; 1" soft-dome tweeter
Response 30 Hz to 20 kHz, ±3 dB re 91 dB SPL at 1 meter at 1 watt
Crossover 510 Hz; 3 kHz
Impedance 5 ohms
Min. power 50 watts (17 dBW)
Max. power 150 watts (21.75 dBW)
Controls Square-wave response capability from 150 Hz to 5 kHz
Features Free-standing midrange and tweeter units may be aligned vertically or horizontally

Models also available
Model Ten, $2,387; Model Seven, $1,417

WHARFEDALE
Rank Hi-Fi Inc.
20 Bushes Lane
Elmwood Park, N.J. 07407

E-90
Price $850
Dimensions 45⅜H x 15 3/16W x 14¾D
Weight 112 lbs.
Type Bass reflex
Drivers Two low-mass 10" woofers; two 4" high-flux cone midrange drivers; 1" compression-drive horn tweeter
Response 43 Hz to 18 kHz, ±3 dB re 95 dB SPL at 1 meter at 1 watt
Crossover 1 kHz; 5 kHz
Impedance 8 ohms
Min. power 15 watts (11.75 dBW)
Max. power 280 watts (24.5 dBW)
Features Matched-grain walnut finish; removable open-mesh black-grille cloths; casters

E-50
Price $460
Dimensions 26H x 13½W x 13½D
Weight 42 lbs.
Type Bass reflex
Drivers 10" woofer; 4" cone midrange; 1" compression drive horn-loaded tweeter
Response 55 Hz to 18 kHz, ±3 dB re 94 dB SPL at 1 meter at 1 watt
Crossover 800 Hz; 7 kHz
Impedance 8 ohms
Min. power 3 watts (4.75 dBW)
Max. power 70 watts (18.5 dBW)
Controls Low-frequency; tweeter
Features Natural walnut veneer on high-density particle board; internal cabinet damping of high hysteresis expanded polyurethane foam; matched pairs

L-300
Price $300
Dimensions 26 3/16H x 13½W x 13 13/16D
Type Acoustic suspension
Drivers 10" woofer; 4" midrange
Response 38 Hz to 26 kHz, ±3 dB re 88 dB SPL at 1 meter at 1 watt
Crossover 1 kHz; 5.5 kHz
Impedance 6 ohms
Min. power 10 watts (10 dBW)
Max. power 90 watts (19.5 dBW)
Features Hand-finished in walnut veneer; matched pairs; laser-beam holography/computer-optimization of bass drivers and cabinet size

XP-60 Linton
Price $175
Dimensions 18¾H x 10½W x 9½D
Type Acoustic suspension
Drivers 8" woofer; 4" cone midrange driver; ¾" dome tweeter
Response 60 Hz to 20 kHz, ±3 dB re 87 dB SPL at 1 meter at 1 watt
Crossover 1 kHz; 4.5 kHz
Impedance 6 ohms
Min. power 10 watts (10 dBW)
Max. power 35 watts (15.5 dBW)
Controls Low frequency; tweeter

XP-20 Denton
Price $99
Dimensions 14H x 10W x 9D
Type Acoustic suspension
Drivers 6½" woofer; 2" tweeter
Response 65 Hz to 18 kHz, ±3 dB re 88 dB SPL at 1 meter at 1 watt
Crossover 1.4 kHz; 3.5 kHz
Impedance 6 ohms
Min. power 10 watts (10 dBW)
Max. power 25 watts (14 dBW)
Features Matched pairs; brown jersey cloth grille; natural walnut-veneer finish

Models also available
E-70, $560; E-30, $340; XP-80 Glendale, $225; XP-40 Shelton, $125

YAMAHA
Yamaha International Corp.
6600 Orangethorpe
Buena Park, Calif 90620

NS-1000
Price $1,500/pr.
Dimensions 28H x 15½W x 14½D
Weight 85 lbs. 13 oz.
Type Acoustic suspension
Drivers Woofer; beryllium dome midrange; beryllium dome tweeter
Response 40 Hz to 20 kHz
Crossover 500 Hz; 6 kHz
Impedance 8 ohms
Min. power 50 watts (17 dBW)
Max. power 100 watts (20 dBW)
Controls Midrange; tweeter
Features Choice of ebony or black finish

NS-890
Price $1,060/pr.
Dimensions 19¼H x 14¾W x 12½D
Weight 68 lbs. 3 oz.
Type Sealed enclosure
Drivers 12" cone woofer; 4¾" cone mid/bass; 2" beryllium dome mid/high; 1¼" beryllium dome tweeter
Response 40 Hz to 20 kHz
Crossover 600 Hz; 2 kHz; 6 kHz
Impedance 8 ohms
Min. power 40 watts (16 dBW)
Max. power 80 watts (19 dBW)
Controls Mid/high; tweeter (continuously variable)

NS-590
Price $640/pr.
Dimensions 26 3/16H x 14 9/16W x 12 7/16D
Weight 51 lbs. 13 oz.
Type Acoustic suspension
Drivers 12" cone woofer; 4¾" cone midrange; 1 3/16" beryllium dome tweeter
Response 40 Hz to 20 kHz
Crossover 700 Hz; 6 kHz
Impedance 8 ohms
Min. power 35 watts (15.5 dBW)
Max. power 70 watts (18.5 dBW)
Controls Midrange; tweeter (continuously variable)

NS-344
Price $480/pr.
Dimensions 22H x 13W x 12D
Weight 30 lbs. 6 oz.
Type Acoustic suspension
Drivers 10" cone woofer; 5" cone midrange; 1¼" soft-dome tweeter
Response 50 Hz to 38 kHz
Crossover 700 Hz; 6 kHz
Impedance 8 ohms
Min. power 35 watts (15.5 dBW)
Max. power 70 watts (18.5 dBW)
Controls Midrange (+3dB to −∞); tweeter (+1.5dB to −∞)

NS-244
Price $340/pr.
Dimensions 21H x 12½W x 11¾D
Weight 25 lbs. 5 oz.
Type Acoustic suspension
Drivers 10" cone woofer; 1¼" soft-dome tweeter
Response 50 Hz to 38 kHz
Crossover 2 kHz
Impedance 8 ohms
Min. power 30 watts (14.75 dBW)
Max. power 60 watts (17.75 dBW)
Controls Level, +3 dB (max); −∞ (min)

NS-6
Price $260/pr.
Dimensions 23H x 13W x 10½D
Weight 35 lbs.
Type Acoustic suspension
Drivers 10" long-throw woofer; 1" soft-dome tweeter
Response 45 Hz to 20 kHz, ±3 dB
Crossover 1 kHz
Impedance 8 ohms
Min. power 10 watts (10 dBW)
Max. power 50 watts (17 dBW)

Models also available
NS-1000M, $1,120/pr.; NS-690 Mark II, $750/pr.; NS-8, $420/pr.; NS-10M, $270/pr.; NS-4, $190/pr.

Car Stereo Speakers

ADS
Analog & Digital Systems
One Progress Way
Wilmington, Mass. 01887

L-300i
Price $118
Dimensions 8½H x 5 7/10W x 3D (1½" above surface; 1½" below surface)
Configuration 2-Way
Response 50 Hz to 20 kHz, ±3 dB re 90 dB SPL at 1 meter at 1 watt
Min power 10 watts (10 dBW)
Max power 100 watts (20 dBW)
Impedance 4 ohms
Driver size 1" soft-dome tweeter; 5¼" woofer
Mounting Flush

AFS/KRIKET
Acoustic Fiber Sound Systems, Inc.
8050 Castleway Drive
Indianapolis, Ind. 46250

6099
Price $80 each
Dimensions 5¾H x 11W x 9½D
Configuration 2-way
Response 50 Hz to 20 kHz, ±5 dB re 87 dB SPL at 1 meter at 1 watt
Min power 2 watts
Max power 40 watts
Impedance 4 to 8 ohms
Driver size 5¼"
Magnet 10 oz.
Mounting Flush or surface

8974
Price $110/kit
Dimensions 6⅜H x 9W x 3⅜D
Configuration 2-Way
Response 40 Hz to 20 kHz, ±5 dB re 95 dB SPL at 1 meter at 1 watt
Min power 2 watts (3 dBW)
Max power 50 watts (17 dBW)
Impedance 4 to 8 ohms
Driver size 6" x 9"
Magnet 20 oz.
Mounting Flush

8231
Price $50/kit
Dimensions 5¼W x 2½D
Configuration Dual cone
Response 55 Hz to 15 kHz, ±5 dB re 92 dB SPL at 1 meter at 1 watt
Min power 2 watts (3 dBW)
Max power 25 watts (14 dBW)
Impedance 4 to 8 ohms
Driver size 5¼"
Magnet 10 oz.
Mounting Flush

6049
Price $40
Dimensions 5¾H x 11W x 9¾D
Configuration Dual cone
Response 60 Hz to 15 kHz, ±5 dB re 90 dB SPL at 1 meter at 1 watt
Min power 2 watts (3 dBW)
Max power 25 watts (14 dBW)
Impedance 4 to 8 ohms
Driver size 5¼"
Magnet 10 oz.
Mounting Flush or surface

8932
Price $65/kit
Dimensions 6⅛H x 9⅛W x 3¼D
Configuration Coaxial
Response 45 Hz to 18 kHz, ±5 dB re 94 dB SPL at 1 meter at 1 watt
Min power 2 watts (3 dBW)
Max power 35 watts (15.5 dBW)
Impedance 4 to 8 ohms
Driver size 6" x 9"
Magnet 10 oz.
Mounting Flush

8931
Price $55/kit
Dimensions 6⅛H x 9⅛W x 3¼D
Configuration Dual cone
Response 45 Hz to 15 kHz
Min power 2 watts (3 dBW)
Max power 35 watts (15.5 dBW)
Impedance 4 to 8 ohms
Driver size 6" x 9"
Magnet 10 oz.
Mounting Flush

8531
Price $50/kit
Dimensions 4½H x 2D
Configuration Dual cone
Response 65 Hz to 15 kHz, ±6 dB re 92 dB SPL at 1 meter at 1 watt
Min power 2 watts (3 dBW)
Max power 25 watts (14 dBW)
Impedance 8 ohms
Driver size 5"
Magnet 10 oz.
Mounting Flush

Models also available
6079, $65; 6059, $55; 5069, $50; 8972, $85/kit; 8232, $70/kit; 8032, $75/kit; 2732, $28; 7311, $9

ALTUS
Altus Corp.
6 Main St.
Melrose, Mass. 02176

SK-6696 Powersonic
Price $116.95
Configuration 3-way
Response 50 Hz to 20 kHz
Max power 50 watts (17 dBW)
Impedance 8 ohms
Driver size 6" x 9"
Magnet 20 oz.
Mounting Flush
Features Foam-roll suspension; 1½" volce coil

SK-6595 Powersonic
Price $86.95
Configuration 2-way coaxial
Response 50 Hz to 20 kHz
Max power 25 watts (14 dBW)
Impedance 8 ohms
Driver size 6" x 9"
Magnet 20 oz.
Mounting Flush
Features Foam-roll suspension

Models also available
SK-6393 Powersonic, $66.95; SK-6292 Powersonic, $59.95

AMERICAN ACOUSTICS LAB
AAL Speaker Systems
629 W. Cermak Road
Chicago, Ill. 60616

Micro 100B
Price $119
Dimensions 7⅜H x 4⅝W x 4 9/16D
Configuration 2-way
Response 50 Hz to 20 kHz re 84 dB SPL at 1 meter at 1 watt
Min power 5 watts (7 dBW)
Max power 50 watts (17 dBW)
Impedance 4 ohms
Driver size 4" woofer; 1" tweeter
Mounting Surface
Features 5-year warranty

Blaster Woofer
Price $119
Dimensions 15D

Blaster Midrange Horn
Price $119
Driver size 4 x 10 in.

Models also available
Blaster Woofer, $89; Blaster Supertweeter, $12

AUDIOTEX
GC Electronics
400 South Wyman
Rockford, Ill. 61101

30-2648
Price $91.95
Configuration 3-way
Response 70 Hz to 20 kHz
Max power 25 watts (14 dBW)
Impedance 4 to 8 ohms
Driver size 4" x 10"
Magnet 20 oz.
Mounting Flush
Features Includes 2 speakers, grilles, wiring, and hardware

30-2646
Price $53.45
Configuration Dual cone
Response 70 Hz to 16 kHz
Max power 25 watts (14 dBW)
Impedance 4 to 8 ohms
Driver size 4" x 10"
Magnet 20 oz.
Mounting Flush
Features Includes 2 speakers, grilles, wiring, and hardware

30-3072
Price $38.70
Configuration 2-way
Response 40 Hz to 18 kHz
Max power 35 watts (15.5 dBW)
Impedance 4 to 8 ohms
Driver size 6" x 9"
Magnet 25 oz.
Mounting Flush
Features Also available as 30-2654, which includes 2 speakers, grilles, wiring, and hardware

30-3071
Price $31.20
Configuration 2-way
Response 45 Hz to 18 kHz
Max power 25 watts (14 dBW)
Impedance 4 to 8 ohms
Driver size 6" x 9"
Magnet 20 oz.
Mounting Flush
Features Also available as 30-2653, which includes 2 speakers, grilles, wiring and hardware

30-3065
Price $22.10
Configuration Dual cone
Response 50 Hz to 16 kHz
Max power 25 watts (14 dBW)
Impedance 4 to 8 ohms
Driver size 5¼" (round)
Magnet 20 oz.
Mounting Flush
Features Also available as 30-2642, which includes 2 speakers, grilles, wiring, and hardware

30-3053
Price $18.60
Configuration Dual cone
Response 50 Hz to 16 kHz
Max power 20 watts (13 dBW)
Impedance 4 to 8 ohms
Driver size 6" x 9"
Magnet 10 oz.
Mounting Flush
Features Also available as 30-2650, which includes 2 speakers, grilles, wiring, and hardware

30-3064
Price $17.70
Configuration Dual cone
Response 55 Hz to 15 kHz
Max power 20 watts (13 dBW)
Impedance 4 to 8 ohms
Driver size 5¼" (round)
Magnet 10 oz.
Mounting Flush
Features Also available as 30-2641, which includes 2 speakers, grilles, wiring, and hardware

30-3063
Price $16.15
Configuration Dual cone
Response 60 Hz to 15 kHz
Max power 16 watts (12 dBW)
Impedance 4 to 8 ohms
Driver size 5¼" (round)
Magnet 5.5 oz.
Mounting Flush
Features Also available as 30-2640, which includes 2 speakers, grilles, wiring, and hardware

Models also available
30-5121, $99.50/pr.; 30-2647, $80.55; 30-3074, $39.10; 30-3066, $31.75; 30-3070, $27.40; 30-3054, $22.10; 30-3047, $17.70; 30-3056, $17.35

AVID
Avid Corp.
10 Tripps Lane
East Providence, R.I.
02914

Ten
Price $225/pr.
Dimensions 1 9/16H x 11 3/8W x 7 3/8D
Configuration 2-way (5 kHz crossover)
Response 60 Hz to 20 kHz, ±5 dB
Min power 5 watts (7 dBW)
Max power 100 watts (20 dBW)
Impedance 4 ohms
Driver size 6½" woofer; 1" soft-dome tweeter
Magnet 20 oz. (woofer); 10 oz. (tweeter)
Mounting Surface
Features Two-way rear-deck design; limited 5-year warranty; comes complete with wiring; also available as Avid Ten Plus System (RD-5) with 4½" door units, $250

RD-5
Price $40 pr.
Dimensions 5H x 5W x 2¼D
Configuration Full range
Response 100 Hz to 10 kHz
Min power 8 watts (9 dBW)
Max power 60 watts (17.75 dBW)
Impedance 8 ohms
Driver size 4½"
Magnet 12 oz.
Mounting Door
Features Protective grille and water cover

BIG ROCK
Olson Electronics
260 S. Forge St.
Akron, Ohio 44327

SP-470
Price $89.98/pr.
Dimensions 3H x 6W x 9D
Configuration 3-way
Response 80 Hz to 15 kHz
Min power 2 watts (3 dBW)
Max power 50 watts (17 dBW)
Impedance 8 ohms
Driver size 6" x 9" woofer; 2½" midrange; two 1⅝" tweeters
Magnet 30 oz.
Mounting Flush
Features Matched ABS grilles; mounting hardware and wire included; cloth roll air suspension woofer cone

SP-388
Price $34.98
Dimensions 9H x 6W x 3¼D
Configuration 2-way
Response 50 Hz to 18 kHz
Min power 3 watts (4.75 dBW)
Max power 25 watts (14 dBW)
Impedance 8 ohms
Driver size 6" x 9" (3" tweeter)
Magnet 20 oz.
Mounting Flush
Features 13" tweeter; foam roll suspension; 1¼" copper voice coil

SP-513
Price $27.98
Dimensions 10H x 4W x 2¾D
Configuration 2-way
Response 50 Hz to 17 kHz
Min power 2 watts (3 dBW)
Max power 20 watts (13 dBW)
Impedance 8 ohms
Driver size 4" x 10" (2" tweeter)
Magnet 20 oz.
Mounting Flush
Features 1" voice coil; 2" tweeter

Models also available
SP-389, $41.98; SP-516, $28.98; SP-387, $19.98

BLAUPUNKT
Robert Bosch Corp.
2800 S. 25th Ave.
Broadview, Ill. 60153

729 000
Price $85

728 000
Price $155/pr.
Dimensions 6⅜H x 9⅛W x 3¾D
Configuration 3-way
Response 40 Hz to 20 kHz
Min power 15 watts (11.75 dBW)
Max power 40 watts (16 dBW)
Impedance 4 ohms
Mounting Flush

676 000
Price $71.40
Dimensions 5½H x 8¼W x 1⅜D
Configuration 2-way
Response 70 Hz to 20 kHz
Min power 15 watts (11.75 dBW)
Max power 25 watts (14 dBW)
Impedance 4 ohms
Features Flush unique under-deck acoustic chamber

688 000
Price $134.25/pr.
Dimensions 6⅜H x 9⅛W x 3¾D
Configuration 2-way
Response 40 Hz to 16 kHz
Min power 20 watts (13 dBW)
Max power 35 watts (15.5 dBW)
Impedance 4 ohms
Mounting Flush

721 000
Price $41.40
Dimensions 6¼H x 5½W x 5¾D
Configuration Air suspension
Response 70 Hz to 15 kHz
Max power 25 watts (14 dBW)
Impedance 4 ohms
Mounting Surface

733 060
Price $62/pr.

726 000
Price $25

Models also available
731 000, $85; 639 000, $71.40; 687 000, $120/pr.; 725 060, $73.50/pr.; 724 060, $34.30; 727 000, $34.25; 736060, $44/pr.

BOMAN
Boman Industries
9300 Hall Road
Downey, Calif. 90241

SK-4000GL
Price $159.95/pr.
Min power 35 watts (15.5 dBW)
Impedance 4 ohms
Driver size 6" woofer; 3" midrange; 1" tweeter horn; 1" dome tweeter
Magnet 40 oz.
Features Built-in audio spectrum diffuser; built-in high- and mid-frequency equalizer attenuation control

SK-69TR40GL
Price $79.95/pr.
Configuration 3-way Trisonic
Min power 25 watts (14 dBW)
Impedance 4 ohms
Driver size 6" x 9" woofer; 3" midrange; 2" tweeter horn
Magnet 40 oz.
Mounting Flush
Features Built-in audio spectrum diffuser

SK-1020CX20GL
Price $59.95/pr.
Configuration Coaxial
Min power 25 watts (14 dBW)
Impedance 4 ohms
Driver size 6" woofer; 2" tweeter horn
Magnet 40 oz.

SK-69CX 20GL
Price $59.95/pr.
Configuration 2-way coaxial
Min power 25 watts (14 dBW)
Impedance 4 ohms
Driver size 6" x 9" woofer; 3" tweeter horn
Magnet 40 oz.
Mounting Flush
Features Same as Model SK-69TR40GL

SK-690N
Price $34.95/pr.
Min power 12 watts (10.75 dBW)
Impedance 4 ohms
Driver size 6" x 9" woofer; 2" tweeter
Magnet 12 oz.
Mounting Flush
Features Same as Model SK-1010N

SK-1010N
Price $32.95/pr.
Min power 10 watts (10 dBW)
Impedance 4 ohms
Driver size 5" woofer
Magnet 20 oz.
Features Audio reflective grille

SK-450N
Price $22.95/pr.
Min power 6 watts (7.75 dBW)
Impedance 4 ohms
Driver size 4" woofer
Magnet 6 oz.
Mounting Flush
Features Same as Model SK-680N

SK-550N
Price $14.95/pr.
Min power 8 watts (9 dBW)
Impedance 4 ohms
Driver size 5" woofer
Magnet 5 oz.
Mounting Flush
Features Same as Model SK-1010N

Models also available
SK-410TR40GL, $79.95/pr.; SK-525TR40GL, $74.95/pr.; SK-410CX20GL, $59.95/pr.; SK-525CX20GL, $49.95/pr.; SK-680N, $34.95/pr.; SK-660N, $26.95/pr.; SK-75N, $22.95/pr.; SK-650N, $21.95/pr.

BOSE
Bose Corp.
100 The Mountain Road
Framingham, Mass. 01701

1401 Car Stereo System
Price $328.95
Dimensions 1½H x 10W x 4½D (equalizer)
Configuration Full-range with active electronic equalizer
Min power 0.25 watts (–6 dBW)
Max power 25 watts (14 dBW)
Impedance 0.45 ohms
Driver size 4½"
Magnet 9.1 oz.
Mounting Flush
Features Speaker and booster/equalizer system; equalizer mounted under dash; output of equalizer: 50 watts (17 dBW) per channel continuous into 0.45 ohms from 40 Hz to 17 kHz with no more than 0.09% THD

BRAUN
Adcom
11A Jules Lane
New Brunswick, N.J. 08901

Output C
Price $279/pr. (with brackets)
Dimensions 6¾H x 4¼W x 4⅜D
Configuration 2-way
Response 50 Hz to 25 kHz
Min power 10 watts (10 dBW)
Max power 35/50 watts (15.5/17 dBW)
Impedance 4 ohms
Driver size 4" woofer; 1" dome tweeter
Magnet 18 oz. (woofer)
Mounting Surface
Features Original mini speaker from Braun; aluminum cabinet 5mm thick; crossover at 1.5 kHz; 12 dB/octave; employs long-throw woofer and computer-calculated crossover network; bracket allows maximum flexibility in mounting; padded rubber edging acts as cushion

CANTON
Adcom
11A Jules Lane
New Brunswick, N.J. 08901

AC-200
Price $350
Dimensions 4 2/5H x 7 3/5W x 5¾D
Configuration Powered, biamplified two-way system
Response 48 Hz to 25 kHz
Driver size 4 1/3" woofer; 9/10" dome tweeter
Mounting Surface
Features Designed to run off car stereo speaker output; can also be operated with low-level source such as a preamplifier; active crossover at 1.7 kHz; 20-watt amplifier for the woofer; 5-watt amp for the tweeter; woofer amp is a bridge-switching amp with direct coupling; S/N: 78 dB; THD: 0.03% at 20 watts, 40 Hz to 2 kHz; high-frequency amp is a single amp with S/N, 74 dB; THD 0.5% at 5 watts, 1.5 kHz to 12.5 kHz; crossover at 12 dB/octave; input voltages: 3V to 60 ohms or 300 mV to 50 ohms for full modulation; ground interference suppression: 45 dB; enclosure made of die-cast aluminum, finished in black

Models also available
HC-100, $210/pr.

CAR-FI
Car-Fi International
152 W. Cypress Ave.
Burbank, Calif. 91502

ADVERTISING INDEX

CS-4
Price $239.97
Dimensions 6H x 9W x 4D
Configuration 3-way
Response 40 Hz to 30 kHz, ±2 dB re 93 dB SPL at 1 meter at 1 watt
Min power 4 watts (6 dBW)
Max power 50 watts (17 dBW)
Impedance 4 ohms
Driver size 6" x 9"
Magnet 30 oz.
Mounting Flush or surface
Features Samarium cobalt tweeter; soft-dome midrange; biamp compatible

CS-1
Price $89.95
Dimensions 6H x 9W x 4D
Configuration Woofer
Response 40 Hz to 2 kHz, ±2 dB re 94 dB SPL at 1 meter at 1 watt
Min power 4 watts (6 dBW)
Max power 45 watts (16.5 dBW)
Impedance 4 ohms
Driver size 6" x 9"
Magnet 30 oz.
Mounting Flush or surface

Models also available
CS-3, $149.95; CS-2, $129.95

CLARION
Clarion Corp. of America
5500 Rosecrans Ave.
Laundale, Calif. 91260

SK-103
Price $174.50
Dimensions 5H x 13W x 2D
Configuration 3-way
Response 60 Hz to 20 kHz, ±3 dB
Max power 30 watts (14.75 dBW)
Impedance 8 ohms
Driver size 6" x 9"
Magnet 20 oz.
Mounting Flush

SK-106
Price $69.95
Configuration Woofer
Response 100 Hz to 16 kHz, ±5 dB re 95 dB SPL at 1 meter at 1 watt (when used with SK-105 tweeter/midrange)
Min power 50 watts (17 dBW)
Max power 100 watts (20 dBW)
Impedance 8 ohms
Driver size 6" x 9"
Magnet 20 oz.
Mounting Flush
Features To be used with SK-105 tweeter/midrange; 1½" aluminum bobbin voice coil

SK-105
Price $69.95
Dimensions 3½H x 5W x 1D
Configuration 2-way tweeter/midrange
Response 100 Hz to 16 kHz, ±5 dB re 95 dB SPL at 1 meter at 1 watt (when used with SK-106 woofer)
Min power 25 watts (14 dBW)
Max power 50 watts (17 dBW)
Impedance 8 ohms
Driver size 3" midrange; 1" tweeter
Mounting Surface
Features To be used with SK-106 woofer; adjustable level control; Mylar capacitor crossover

Models also available
SK-102, $156.50; SK-99B, $136.95

EPI
Epicure Products, Inc.
One Charles St.
Newburyport, Mass. 01950

LS-70
Price $150/pr.
Dimensions 10¼H x 7W x 3½D
Configuration 2-way
Response 70 Hz to 20 kHz, ±3 dB re 87 dB SPL at 1 meter at 1 watt
Min power 12 watts (10.75 dBW)
Max power 60 watts (17.75 dBW)
Impedance 8 ohms
Driver size 6" woofer; 1" tweeter
Magnet 24 oz. (18 oz. woofer; 6 oz. tweeter)
Mounting Flush/surface
Features Individually-run frequency-response graph supplied with each unit; can be mounted in 6" x 9" cutout or in 5" or 4" cutout with optional adapters

Companion Speaker System (CSS) LS 35 Speaker and LCS Level Control System
Price $45
Dimensions 3½W x 1¾D
Configuration Full range
Min power 15 watts (11.75 dBW)
Max power 60 watts (17.75 dBW)
Impedance 8 ohms
Driver size 3½" (5" round grille)
Mounting Flush
Features High power-handling capability; Level Control System (LCS) balances sound in the car, available for $50

FOSGATE
Fosgate Electronics, Inc.
2935 West Fairmount Ave.
Phoenix, Ariz. 85017

PRS-690
Price $120
Dimensions 6H x 9W
Configuration 2-way
Response 35 Hz to 16 kHz, ±6 dB
Min power 20 watts (13 dBW)
Max power 50 watts (17 dBW)
Impedance 4 ohms
Driver size 6" x 9"
Magnet 20 oz.
Mounting Flush

Models also available
PRS-500, $100

FULTRON
Arthur Fulmer
260 Monroe
Memphis, Tenn. 38101

15-9260
Price $149.95
Dimensions 6½D
Configuration 2-way
Max power 25 watts (14 dBW)
Impedance 4 or 8 ohms
Mounting Surface
Features Die-cast aluminium housing with brilliance control

15-9696
Price $79.95
Dimensions 6H x 9W x 3¾D
Configuration 4-way
Max power 30 watts (14.75 dBW)
Impedance 4 to 8 ohms
Magnet 30 oz.
Mounting Flush
Features Aluminium voice coil; deluxe quick-mount mesh grille

15-9590
Price $69.95
Dimensions 4H x 10W x 6½D
Configuration 3-way
Max power 20 watts (13 dBW)
Impedance 4 to 8 ohms
Magnet 20 oz.
Mounting Flush
Features Aluminum voice coil; deluxe quick-mount mesh grille

15-9670
Price $49.95
Dimensions 3½D
Max power 25 watts (14 dBW)
Impedance 4 or 8 ohms
Magnet 20 oz.
Mounting Flush
Features Aluminium voice coil; deluxe quick-mount mesh gille

15-9440
Price $26.95
Dimensions 5¼W x 2¼D
Configuration Single cone
Max power 10 watts (10 dBW)
Impedance 4 to 8 ohms
Magnet 10 oz.

15-9220
Price $14.95
Dimensions 6⅛D
Configuration Twin wedge
Max power 5 watts (7 dBW)
Impedance 4 to 8 ohms
Magnet 3 oz.
Mounting Surface

Models also available
15-9665, $99.95; 15-9690, $70; 15-9490, $60; 15-9470, $46.95; 15-9430, $24.95; 15-9240, $21.95; 15-9420, $15.95

GRUNDIG
LAS Electronics East, Inc.
85C Saratoga Blvd.
Island Park, N.Y. 11558

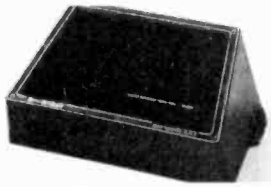
Kossack
Price $98
Max power 30 watts (14.75 dBW)
Impedance 4 ohms
Driver size 4½" woofer; 2" tweeter

HF-2040
Price $110/pr.
Dimensions 4⅞H x 9⅜W x 4½D
Configuration 2-way
Response 30 Hz to 20 kHz
Min power 20 watts (13 dBW) (nominal)
Max power 40 watts (16 dBW)
Impedance 4 ohms
Driver size 4½" woofer; 2" cone tweeter

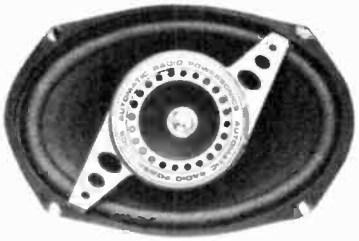
GLA-1640
Price $49.90/pr.

Models also available
HF-2025, $75/pr.; GLA-1230, $39.90/pr.

HANDIC
Handic U.S.A., Inc.
15945 N.W. 57th Ave.
Hialeah, Fla. 33014



AFS/Kriket 6099



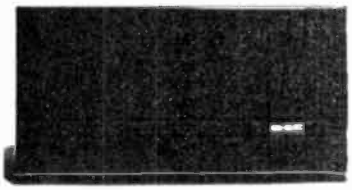
Altus SK-6595

American Acoustics Lab Micro 100

Audiotex 30-3648

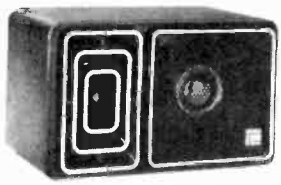
Boman SK-4000GL

Braun Output C



Grundig HF-2040

JBL A-30



Tenna HE-481

Marantz SS-569

Visonik 5000

Panasonic EAB-920

Sparkomatic SK-700V

Sound Barrier Phanton-IIIB

Jensen J-1037

Ultralinear M-16

CL-225

Price	$130
Dimensions	4½H x 9⅜W x 4⅞D
Configuration	2-way
Response	40 Hz to 20 kHz
Min power	1 watt (0 dBW)
Max power	40 watts (16 dBW)
Impedance	4 ohms
Mounting	Surface
Features	Sealed; air suspension

Models also available

CL-12, $29.95

HED
Cerwin-Vega, Inc.
12250 Montague St.
Arleta, Calif. 91331

CS-15

Price	$130/pr.
Dimensions	6½H x 9W x 3½D
Configuration	2-way
Response	40 Hz to 20 kHz, ±4 dB re 95 dB SPL at 1 meter at 1 watt
Min power	2 watts (3 dBW)
Max power	75 watts (18.75 dBW)
Impedance	4 ohms
Driver size	6" x 9"
Magnet	80 oz.
Mounting	Flush
Features	Rugged construction

CS-7

Price	$90/pr.
Dimensions	6½H x 9½W x 3D
Configuration	2-way
Response	50 Hz to 16 kHz, ±4 dB re 96 dB SPL at 1 meter at 1 watt
Min power	2 watts (3 dBW)
Max power	40 watts (16 dBW)
Impedance	4 ohms
Driver size	6" x 9"
Magnet	26 oz.
Mounting	Flush
Features	High-efficiency

Models also available

CS-10, $115/pr.

HITACHI
Hitachi Sales Corp. of America
401 W. Artesia Blvd.
Compton, Calif. 90220

HS-1M

Price	$199.95/pr
Dimensions	7¼H x 4⅝W x 4¾D
Configuration	2-way
Response	50 Hz to 20 kHz, –15 dB re 85 dB SPL at 1 meter at 1 watt
Max power	50 watts (17 dBW)
Impedance	8 ohms
Driver size	4" x 1"
Mounting	Surface
Features	Super-mini two-way speaker system; 85-dB output and 80-watt power capacity in a tiny cabinet; optional mounting brackets for car installation

INFINITY
Infinity Systems, Inc.
7930 Deering Ave.
Canoga Park, Calif. 91304

Infinitesimal

Price	$184
Dimensions	11H x 6¼W x 5¼D
Configuration	2-way
Response	65 Hz to 32 kHz, ±2 dB
Min power	15 watts (11.75 dBW)
Max power	100 watts (20 dBW)
Impedance	4 ohms
Driver size	5" Infinity-Watkins dual-drive woofer with propylene cone; EMIT tweeter
Mounting	Flush/Surface
Features	Self-contained unit

JBL
James B. Lansing Sound, Inc.
8500 Balboa Blvd.
Northridge, Calif. 91329

A-30

Price	$219.95/pr.
Configuration	2-way
Response	30 Hz to 15 kHz
Max power	40 watts (16 dBW)
Impedance	4 ohms
Driver size	6" x 9" cone
Magnet	20 oz. (cast frame)
Features	Piezoelectric tweeter

Models also available

A-15, $179.95/pr.

JENSEN
Jensen Sound Laboratories
4136 North United Parkway
Schiller Park, Ill. 60176

SERIES II

J-1130 Triax® II
Price $139.95
Dimensions 10 9/32H x 4 9/16W x 3 7/32D
Configuration 3-way
Response 65 Hz to 20 kHz
Max power 50 watts (17 dBW)
Impedance 4 ohms
Driver size 4" x 10"
Magnet 20 oz.
Mounting Flush

J-1033 Triax® II
Price $139.95
Dimensions 9½H x 6⅝W x 3¾D
Configuration 3-way
Response 45 Hz to 20 kHz
Max power 100 watts (20 dBW)
Impedance 4 ohms
Driver size 6" x 9" (woofer)
Magnet 20 oz.
Mounting Flush

J-1037 Coax II
Price $99.95
Dimensions 9½H x 6⅝W x 3¾D
Configuration 2-way
Response 45 Hz to 15 kHz
Max power 90 watts (19.5 dBW)
Impedance 4 ohms
Driver size 6" x 9"
Magnet 20 oz.
Mounting Flush

J-1126 Coax II
Price $79.95
Dimensions 4 23/32H x 4 23/32W x 12 13/32D
Configuration 2-way
Response 75 Hz to 15 kHz
Max power 50 watts (17 dBW)
Impedance 4 ohms
Driver size 4½"
Magnet 12 oz.
Mounting Flush

SERIES I

J-1001 Series I
Price $179.95
Configuration 3-way (separate speakers)
Response 35 Hz to 20 kHz (total system)
Max power 35 watts (15.5 dBW)
Impedance 8 ohms
Driver size 6" x 9" woofer; 6" x 3½" midrange; 6" x 2" tweeter
Magnet 20 oz. (woofer); 3 oz. (midrange); 3 oz. (tweeter)
Mounting Flush
Features Separate control module to control midrange driver levels

J-1174 Series I Triax®
Price $119.95
Configuration 3-way (separate tweeter and midrange unit)
Response 60 Hz to 20 kHz
Max power 50 watts (17 dBW)
Impedance 4 ohms
Driver size 5¼" woofer; 2" tweeter; 2" midrange
Magnet 20 oz.
Mounting Flush (woofer); surface (tweeter/midrange)
Features Separate tweeter/midrange module allows optimum directionality and high frequency

J-1069 Series I Coaxial
Price $74.95
Configuration 2-way
Response 40 Hz to 18 kHz
Max power 45 watts (16.5 dBW)
Impedance 4 ohms
Driver size 6" x 9"
Magnet 20 oz.
Mounting Flush

J-1113 Series I Coaxial
Price $74.95
Configuration 2-way
Response 50 Hz to 18 kHz
Max power 45 watts (16.5 dBW)
Impedance 4 ohms
Driver size 5" x 7"
Magnet 20 oz.
Mounting Flush

J-1081 Series I Coaxial
Price $67.95
Configuration 2-way
Response 60 Hz to 18 kHz
Max power 45 watts (16.5 dBW)
Impedance 4 ohms
Driver size 5¼"
Magnet 10 oz.
Mounting Flush

J-1073 Series I Dual Cone
Price $52.95
Configuration Woofer/whizzer cone
Response 40 Hz to 14 kHz
Max power 40 watts (16 dBW)
Impedance 4 ohms
Driver size 6" x 9"
Magnet 20 oz.
Mounting Flush

J-1089 Series I Dual Cone
Price $39
Configuration Woofer/whizzer cone
Response 60 Hz to 14 kHz
Max power 40 watts (16 dBW)
Impedance 4 ohms
Driver size 5¼"
Magnet 10 oz.
Mounting Flush

J-1134 Series I Dual Cone Replacement
Price $34.95
Configuration Woofer/whizzer cone
Response 70 Hz to 14 kHz
Max power 15 watts (11.75 dBW)
Impedance 4 ohms
Driver size 4" x 6" (woofer)
Magnet 5 oz.
Mounting Flush
Features Includes a pair of speakers only; no grilles, wiring, hardware, or installation instructions

Models also available
J-1124 Triax® II, $139.95; J-1041 Coax II, $89.95; J-1044, $69.95; J-1065 Series I Triax®, $100; J-1101 Series I Triax®, $100; J-1120 Series I Coax, $89.95; J-1105 Series I Coaxial, $74.95; J-1077 Series I Coaxial, $72.95; J-1093 Series I Coaxial, $64.95; J-1085 Series I Dual Cone, $49.95; J-1097 Series I Dual Cone, $42.95; J-1117 Series I Dual Cone Replacement, $29.95

KA/KUSTOM ACOUSTICS
Kustom Acoustics, Inc.
6624 W. Irving Park Road
Chicago, Ill. 60634

Initial Stat
Price $199
Dimensions 17½H x 10½W x 9D
Configuration Two mid-woofers; dome tweeter
Response 38 Hz to 22 kHz, ±2.5 dB re 95 dB SPL at 1 meter at 1 watt
Min power 5 watts (7 dBW)
Max power 80 watts (19 dBW)
Impedance 4 ohms
Driver size Two 5" ferrofluid mid/woofers (plastic laminated cone)
Magnet 25 oz. (mid/woofer); 10 oz. (tweeter)
Mounting Flush/surface
Features Rack-mountable; ferrofluid tweeter; tweeter level control; wire-wound heavy duty L-pad

KRACO
Kraco Enterprises
505 E. Euclid Ave.
Compton, Calif. 90224

TRI-469
Price $100
Dimensions 2¾H x 10¼W x 6½D
Configuration 4-speaker sound system combination
Response 70 Hz to 19 kHz, ±10 dB re 87 dB SPL at 1 meter at 1 watt
Max power 25 watts (14 dBW)
Impedance 8 ohms
Driver size 5¼"
Magnet 20 oz.
Mounting Flush
Features Acoustic foam grille; complete with speaker cord, mounting hardware, and installation instructions

CX-410-20
Price $59.95
Dimensions 3½H x 10W x 4¼D
Configuration 2-way coaxial
Response 100 Hz to 19 kHz, ±10 dB re 83 dB SPL at 1 meter at 1 watt
Max power 20 watts (13 dBW)
Impedance 8 ohms
Driver size 4" x 10"
Magnet 20 oz.
Mounting Flush
Features Air-suspension speaker with 2-inch tweeters; acoustic foam grille for tone quality; complete with speaker cord, mounting hardware, and installation instructions

Models also available
VCS-2000, $108; TRI-3-410, $89.95

LAFAYETTE
Lafayette Electronics
111 Jericho Turnpike
Syosset, N.Y. 11791

Triple Play
Price $49.99/pr.
Dimensions 6H x 9W
Configuration 3-way
Response 50 Hz to 20 kHz
Max power 30 watts (14.75 dBW)
Impedance 8 ohms
Magnet 20 oz.
Mounting Flush
Features Includes high-impact, heat-resistant grilles

LOVE SOUND
Love Sound, Inc.
2065 Martin Ave. #113
Santa Clara, Calif. 95050

LS-95
Price $170
Dimensions 8¾H x 7¼W x 3D
Configuration 2-way
Response 40 Hz to 18 kHz, ±2 dB
Min power 10 watts (10 dBW)
Max power 50 watts (17 dBW)
Impedance 4 ohms
Driver size 6½" woofer; 1" dome tweeter
Magnet 13 oz.
Mounting Flush or Surface
Features Die-cast aluminum mounting baffle; coax mounted tweeter can be removed for separate mounting, with 12 dB/octave crossover network

LS-40
Price $135
Dimensions 3H x 6W x 10¾D
Configuration 2-way
Response 45 Hz to 20 kHz, ±2 dB
Min power 10 watts (10 dBW)
Max power 30 watts (14.75 dBW) continuous
Impedance 4 ohms
Driver size 5¼" woofer; 2" tweeter
Magnet 13 oz.
Mounting Flush/surface
Features Same as Model LS-80

Models also available
LS-80, $160

MARANTZ
Marantz Co., Inc.
20525 Nordhoff St.
Chatsworth, Calif. 91311

SS-5000
Price $300/pr.
Dimensions 7 9/32H x 11 5/32W x 7 9/32D (less mounting bracket)
Configuration 2-way
Response 30 Hz to 20 kHz (DIN) re 81 dB SPL at 1 meter at 1 watt
Min power 15 watts (11.75 dBW)
Max power 250 watts (24 dBW)
Impedance 4 ohms
Driver size 6½" x 1"
Magnet 13 oz.
Mounting Surface

SS-569
Price $130
Dimensions 9⅜H x 6⅜W x 4D
Configuration 5-way
Response 40 Hz to 20 kHz
Max power 30 watts
Impedance 8 ohms
Driver size 6" x 9"
Magnet 20 oz.
Mounting Flush

SS-3469
Price $110
Dimensions 9⅜H x 6⅜W x 3⅝D
Configuration 4-way
Response 40 Hz to 18 kHz
Max power 30 watts (14.75 dBW)
Impedance 8 ohms
Driver size 6" x 9"
Magnet 20 oz.
Mounting Flush

SS-3357
Price $100/pr.
Dimensions 7¼H x 5W x 3D
Configuration 3-way
Response 90 dB SPL at 1 meter at 1 watt
Min power 10 watts (10 dBW)
Max power 20 watts (13 dBW)
Impedance 4 ohms
Driver size 5" x 7"
Magnet 10 oz.
Mounting Flush
Features Front-insertion design with snap-on grille; strontium-type magnet equivalent to 20 oz. ceramic type

SS-825
Price $90/pr.
Dimensions 6¼W x 2⅞D
Configuration 3-way
Response 50 Hz to 20 kHz
Max power 25 watts (14 dBW)
Impedance 8 ohms
Driver size 6¼"
Magnet 20 oz.
Mounting Flush

SS-269
Price $70/pr.
Dimensions 9⅜H x 6⅜W x 3⅝D
Configuration 2-way
Response 40 Hz to 15 kHz
Max power 30 watts (14.75 dBW)
Impedance 4 ohms
Driver size 6" x 9"
Magnet 20 oz.
Mounting Flush

SS-140
Price $40/pr.
Dimensions 4W x 1⅜D
Configuration Full-range
Response 60 Hz to 14 kHz
Max power 10 watts (10 dBW)
Impedance 4 ohms
Driver size 4"
Magnet 10 oz.
Mounting Flush

Models also available
SS-5100, $250/pr.; SS-3410, $80; SS-469, $110/pr.; SS-3269, $80/pr.; SS-725, $70/pr.; SS-169, $160/pr.

MATRECS
Matrecs Industries
805 Woodman Ave.
Rockford, Ill. 61101

MA-0410-20CP
Price $96.04
Configuration 2-way
Response 70 Hz to 20 kHz
Max power 25 watts (14 dBW)
Impedance 4 to 8 ohms
Driver size 4" x 10"
Magnet 20 oz.
Mounting Flush
Features Includes 2 speakers, grilles, wiring, and hardware; ferrofluid in voice-coil gap

MA-0410-020P
Price $63.70
Configuration Dual cone
Response 70 Hz to 16 kHz
Max power 25 watts (14 dBW)
Impedance 4 to 8 ohms
Driver size 4" x 10"
Magnet 20 oz.
Mounting Flush
Features Also includes 2 speakers, grilles, wiring, and hardware; ferrofluid in voice-coil gap

MA-0069-020T
Price $43.88
Configuration 3-way
Response 40 Hz to 20 kHz
Max power 30 watts (14.75 dBW)
Impedance 4 to 8 ohms
Driver size 6" x 9"
Magnet 20 oz.
Mounting Flush
Features Also available as MA-0069-20TP,which includes 2 speakers, grilles, wiring, and hardware; ferrofluid in voice-coil gap

MA-0525-020C
Price $36.56
Configuration 2-way
Response 50 Hz to 20 kHz
Max power 25 watts (14 dBW)
Impedance 4 to 8 ohms
Driver size 5¼" (round)
Magnet 20 oz.
Mounting Flush
Features Also available as MA-0525-20CP, which includes 2 speakers, grilles, wiring, and hardware; ferrofluid in voice-coil gap

MA-0069-0020
Price $23.40
Configuration Dual cone
Response 40 Hz to 16 kHz
Max power 25 watts (14 dBW)
Impedance 4 to 8 ohms
Driver size 6" x 9"
Magnet 20 oz.
Mounting Flush
Features Also available as MA0069-020P, which includes 2 speakers, grilles, wiring, and hardware; ferrofluid in voice-coil gap

MA-0069-0010
Price $20.90
Configuration Dual cone
Response 50 Hz to 16 kHz
Max power 20 watts (13 dBW)
Impedance 4 to 8 ohms
Driver size 6" x 9"
Magnet 10 oz.
Mounting Flush
Features Also available as MA0069-010P, which includes 2 speakers, grilles, wiring, and hardware; ferrofluid in voice-coil gap

MA-0525-0005
Price $16.80
Configuration Dual cone
Response 60 Hz to 15 kHz
Max power 16 watts (12 dBW)
Impedance 4 to 8 ohms
Driver size 5¼" (round)
Magnet 5.5 oz.
Mounting Flush
Features Also available as MA-0525-005P, which includes 2 speakers, grilles, wiring, and hardware; ferrofluid in voice-coil gap

Models also available
MA-0410-20TP, $109.66; MA-0069-10CP, $75.21; MA-0069-025C, $44.27; MA-0069-020C, $36.63; MA-0069-10DV, $23.79; MA-0525-0020, $22.30; MA-0410-0010, $20.38; MA-0057-0010, $20.09; MA-0525-0010, $19.18

MESA
Mesa Electronics Sales, Ltd.
2940 Malmo Drive
Arlington Heights, Ill. 60005

Mini-Mesa 50

Price	$300/pr.
Dimensions	9½H x 6½W x 4¾D
Configuration	3-way
Response	50 Hz to 25 kHz
Min power	10 watts (10 dBW)
Max power	80 watts (19 dBW)
Impedance	4 to 8 ohms
Driver size	5" foam-suspension woofer; 3" midrange; tweeter
Mounting	Self-contained; designed for home use as well

Mini-Mesa 30

Price	$238/pr.
Dimensions	7¼H x 4⅝W x 4¼D
Configuration	2-way
Response	60 Hz to 25 kHz
Min power	10 watts (10 dBW)
Max power	50 watts (17 dBW)
Impedance	4 to 8 ohms
Driver size	4" woofer; 2¼" hard-dome tweeter with 1" voice coil
Features	Self-contained

MB-5

Price	$54.95 (kit)
Dimensions	5¼ round
Configuration	Subwoofer
Response	42 Hz to 200 Hz
Min power	15 watts (11.75 dBW) (nominal)
Impedance	4 to 8 ohms
Driver size	5¼"
Magnet	40 oz.
Mounting	Flush
Features	Mobile bass booster; includes crossover network aud two 20' cables

Models also available

Mini-Mesa 15, $129.95/pr.; MB-6, $69.95 (kit)

MITSUBISHI
Mitsubishi Audio Systems
Melco Sales, Inc.
3030 E. Victoria St.
Compton, Calif. 90221

SX-30SA

Price	$149.95
Configuration	2-way
Response	80 Hz to 20 kHz, ±2 dB re 86 dB at 1 meter at 1 watt
Max power	50 watts
Impedance	4 ohms
Driver size	4" x 4"
Magnet	65 oz.
Mounting	Surface
Features	Tweeter attenuator control; aluminum die-casting baffle board enclosure

SG-69QA

Price	$119.95
Configuration	4-way
Response	65 Hz to 18 kHz, ±3 dB re 91 dB SPL at 1 meter at 1 watt
Max power	20 watts
Impedance	4 ohms
Driver size	6" x 9"
Magnet	20 oz.
Mounting	Flush

SG-20CA

Price	$99.95
Configuration	2-way
Response	60 Hz to 17 kHz, ±3 dB re 91 dB SPL at 1 meter at 1 watt
Max power	20 watts (13 dBW)
Impedance	4 ohms
Driver size	8" x 8"
Magnet	6.5 oz.
Mounting	Flush
Features	Three-position tweeter level

SG-16CA

Price	$69.95
Configuration	2-way
Response	60 Hz to 20 kHz, ±3 dB
Max power	20 watts (13 dBW)
Impedance	4 ohms
Driver size	6¼" x 6¼"
Magnet	6.5 oz.
Mounting	Flush

SG-40WA

Price	$59.95/pr.
Configuration	1-way dual cone
Response	50 Hz to 20 kHz, ±3 dB
Max power	20 watts (13 dBW)
Impedance	4 ohms
Driver size	4" x 10"
Magnet	10 oz.
Mounting	Flush

SG-16EA

Price	$49.95
Dimensions	6¼H x 6¼W x 1D
Configuration	Single cone
Response	70 Hz to 12 kHz, ±3 dB re 86 dB SPL at 1 meter at 1 watt
Max power	20 watts (13 dBW)
Impedance	4 ohms
Driver size	6¼" x 6¼"
Magnet	3.6 oz.
Mounting	Flush

SG-10WA

Price	$39.95/pr.
Configuration	1-way dual cone
Response	100 Hz to 17 kHz, ±3 dB
Max power	20 watts (13 dBW)
Impedance	4 ohms
Driver size	4"
Magnet	5.3 oz.
Mounting	Flush

Models also available

SX-10BA, $129.95; SG-69TA, $99.95; SG-69CA, $79.95/pr.; SG-40CA, $69.95; SG-69WA, $49.95/pr.; SG-13WA, $49.95; SB-2SA, $39.95

MOTOROLA
Motorola, Inc.
Automotive Products Div.
1299 E. Algonquin Rd.
Schaumburg, Ill. 60196

M41-20T

Price	$134.95
Dimensions	10H x 4W x 3⅝D
Configuration	3-way
Response	55 Hz to 16 kHz
Max power	25 watts (14 dBW)
Impedance	6 ohms
Driver size	4" x 10"
Magnet	20 oz.
Mounting	Flush
Features	1" voice coil; one-piece ceramic magnet

M69-20T

Price	$139.95/pr.

D69-20T

Price	$119.95/pr.
Dimensions	9H x 6W x 3⅞D
Configuration	3-way
Response	45 Hz to 18 kHz

Max power 25 watts (14 dBW)
Impedance 6 ohms
Driver size 6" x 9"
Magnet 20 oz.
Mounting Flush
Features 2.5" midrange; 2" tweeters; one-piece ceramic magnet

M69-20C
Price $109.95/pr.

M68-15C
Price $99.95/pr.
Dimensions 8H x 6W x 3½D
Configuration 2-way
Response 55 Hz to 15 kHz
Max power 25 watts (14 dBW)
Impedance 6 ohms
Driver size 6" x 8"
Magnet 13 oz.
Mounting Flush
Features 1" voice coil; one-piece ceramic magnet

D69-20C
Price $89.95/pr.
Dimensions 9H x 6W x 3⅞D
Configuration 2-way
Response 45 Hz to 15 kHz
Max power 25 watts (14 dBW)
Impedance 6 ohms
Driver size 6" x 9"
Magnet 20 oz.
Mounting Flush
Features 1" voice coil; 2" tweeters; one-piece ceramic magnet

D5-20C
Price $77.95/pr.
Dimensions 5¼H x 2½D
Configuration 2-way
Response 65 Hz to 14 kHz
Max power 25 watts (14 dBW)
Impedance 6 ohms
Driver size 5¼"
Magnet 20 oz.
Mounting Flush
Features Ceramic magnet; 1" voice coil; 2" tweeters

M69-10W
Price $40.95/pr.

Models also available
M68-15T, $129.95/pr.; M41-20C, $104.95/pr.; M5-20C, $94.95/pr.; M5-10C, $89.95/pr.; M4-10C, $74.95/pr.; D5-10C, $66.95/pr.; D3-5W, $25.95; M4-8C, $49.95/pr.

OROVOX
Orovox Sound
11545 Tuxford St.
Sun Valley, Calif. 91352

M-124
Price $195.80/pr.
Configuration 3-way
Response 25 Hz to 22 kHz
Max power 85 watts (19.25 dBW)
Impedance 8 ohms
Driver size 6" x 9"
Magnet 30 oz.
Mounting Flush/surface
Features Independent combined piezoelectric tweeter/midrange; 1½" aluminum voice coil

Continued on page 102

Glossary

A/B test A listening test in which two similar audio devices (or program sources) are compared by rapidly switching between them while the rest of the system is unchanged, except for relative volume adjustment if needed. A/B tests are particularly germane in evaluating loudspeakers, although they also can reveal audible differences in any sound equipment.

baffle Panel on which a loudspeaker is mounted.

crossover A frequency at which other frequencies below and above it are separated. A crossover or dividing network, for instance, separates the highs and lows in a woofer/tweeter speaker system.

directivity, speaker A tendency of some speakers to "beam" or reproduce less clearly and/or strongly off axis as frequency rises. Multidirectional or "omnidirectional" speakers represent a design effort to avoid beaming and to radiate all frequencies uniformly.

doubling A speaker's tendency to distort by producing harmonics of bass tones.

driver A loudspeaker minus its enclosure and crossover components; any moving parts in a speaker system.

efficiency A ratio, often expressed as a percentage, of output power to input power; often used to estimate the power needed to drive a loudspeaker, and, in effect, the same as the "sensitivity" of a loudspeaker.

feedback A return of an output signal to the input of the system. In disc playback, a similar form of feedback occurs when loudspeaker energy is sensed by the pickup and amplified through the system.

frequency response The measure of ability to pass signals of different frequency without affecting their relative strengths. This is shown as a graph or "curve" which assumes input signals equally strong at all frequencies, and plots their output intensities against a decibel scale. The ideal "curve" is a straight line (perfectly "flat" response). Frequency response generally is stated with specific decibel limits indicating the maximum deviations from flat response. For instance, 30 Hz to 18 kHz, ± 2 dB means that the audio device or system will not change the relative intensities of any frequencies within that range by more than 2 dB above or 2 dB below the ideal zero-dB (volume unchanged) point.

impedance Essentially, opposition to the flow of alternating current and consisting of "pure resistance" combined with inductive or capacitive reactances. Impedance values are specified for some components (such as microphones or loudspeakers) when it is important for their proper functioning that their interconnection with another component provide some specified termination or load impedance; expressed in ohms.

loudness Generally synonymous with volume, which is the intensity of perceived sound. "Loudness compensation" refers to equalization applied to a signal according to its volume in order to compensate for the ear's tendency to change frequency response at different listening levels. Loudness compensation typically boosts the bass, and sometimes the treble to a lesser degree.

phantom A signal carried by or reproduced through two sources in such a manner as to "appear" from another source. In two and four-channel stereo reproduction, sounds which "appear" to come from between the loudspeakers are said to be phantomed.

phase The characteristic of a wave that relates it to a time or to another wave with respect to time.

power output The signal produced by an amplifier into a given load when fed with a given input signal. Power, expressed in watts, should be stated with reference to several qualifying factors—the impedance of the load; the frequency at which (or the range of frequencies over which) the power is derived; the amount of distortion present for a given power output level; whether the power stated is for one channel or the sum of all channels. The most accurate and rigorously derived power figure is for the average sine-wave power (also termed "continuous" or "RMS" power).

speaker enclosure A structure or cabinet specifically designed to house a loudspeaker in order to load its output and generally aid in its response. A bass reflex system uses a critically dimensioned port (auxiliary opening) to help smooth and extend the bass response. An infinite baffle totally encloses the speaker to suppress its rear wave, thereby permitting the speaker to respond down to its inherent resonant frequency. An acoustic or air-suspension system is relatively smaller than the previous types and uses a very loosely suspended woofer whose resonance is raised to the audible range and whose diaphragm motion is controlled by air trapped within the enclosure. A folded horn adds a constantly expanding horn structure to the front and/or rear of a diaphragm to couple its output, via "acoustic transformer" action to the room. A transmission-line system (actually a variation of the former labyrinth system) loads a diaphragm with a critically dimensioned duct that smooths the response and helps extend the low-frequency range.

wavelength The distance between the beginning and the end of a complete cycle of any spatial periodic phenomenon. In acoustics it is the distance occupied by one cycle of a repetitive sound traveling through the air at a velocity of about 1,100 feet per second. A 1.1 kHz tone has a wavelength of one foot.

woofer Loudspeaker designed for low frequencies.

Learn the pros and cons of 8 popular speaker types

by Edward J. Foster

Is One Design Superior?

If one loudspeaker design were superior to *all* others in *all* respects, it would stand to reason that, after all these years, it would be the only surviving technology. You might call that statement the first corollary of the Darwinian Law of Natural Selection as applied to high fidelity. Yet *many* types of loudspeakers exist today. So we'll state flatly that no *one* design is superior to *all* others in *all* circumstances. Different technologies have different strong points (and different weaknesses); by knowing what to expect from each of them, you'll be better able to decide which one is best for you in *your* listening environment.

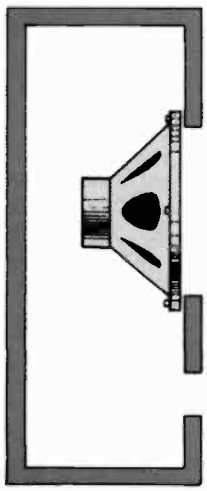
The basic problem of getting the sound of a 5-foot bass drum or a 16-foot organ pipe out of an 8-inch, 10-inch, or even 12-inch woofer has captured the imagination and certainly taxed the ingenuity of loudspeaker designers from the inception of the high-fidelity age. Whack a bass drum and lots of air moves. To create that same sound in your living room the speaker must be able to move an equivalent amount of air. Considering the difference in the cross-sectional area between a bass drum and a speaker cone, the cone must move a lot farther than the drum skin in order to yield the same sound.

There are two opposing views on this: the "bigger-is-better" school and the "do-it-right-and-you-can-get-the-same-response-out-of-a-small-cone" school. The nut of that disagreement can be cracked. As far as frequency response at relatively *low* levels goes, you *can* get bass range out of a small cone equivalent to that of a large one if you do it right. But—and it's an important "but"—you can't expect the small cone to produce

the same maximum sound level as a larger cone without an increase in distortion. Here and elsewhere in this article we're discussing what *can* be done, not necessarily what *is* done in any given design. So you can have extended bass frequency response from a small speaker but it won't play at concert-hall levels; that requires a speaker that can physically displace the requisite amount of air.

Conventional cone loudspeakers—and electrostatics too—displace the air by causing a diaphragm (cone) to move back and forth. Of course, as the diaphragm moves forward, pushing the air into the room, it is sucking air into its rear section. When the cone moves backwards, the opposite is true. If the air from the front can blow around to the back, all the cone will achieve is a sloshing action—about as effective in re-creating sound as waving a hand in a breeze.

Sound takes time to move around the cone from back to front. (The velocity of sound in air is roughly 1,100 feet per second.) If the cone vibrates rapidly enough (in response to a high-pitch tone), it reverses its direction before the sound wave from the back can reach the front and cancel the front wave. But at low frequencies (in the bass) sound wavelengths are very long, and the back wave effectively cancels the front wave if the speaker is left out in the open. Loudspeaker design—at least as far as bass reproduction goes—has concentrated on what to do with that back radiation.



Rearward radiation of sound can either be absorbed, as in an acoustic suspension system, or put to work, as in a vented system (shown). Vented systems hold up to a somewhat lower frequency than do sealed systems, but roll off more quickly below the cutoff frequency.

One thing you can do with back radiation is to ignore it. If the speaker is mounted on an infinitely long and wide panel, the sound will never cross from the rear plane to the front. A more practical alternative is to trap the back-radiated sound in a big, well-padded box to absorb it. This is an "infinite baffle" design.

Consider also that the cone of a loudspeaker has some "mass," which is held in place by a "surround" and "spider" that properly locate it and provide some restoring force so that it returns to its resting position after the signal has ceased. Thus the surround and spider serve as a "spring"—a classic case of mechanical resonance. The cone moves most easily at its "resonance frequency" and is likely to produce more sound at that frequency than at any other. At frequencies well above resonance, the cone will respond more uniformly and do what it's "told" by the signal. Below the resonance frequency, the cone responds less uniformly and bass output drops off.

As soon as the air is trapped behind the speaker, it acts as a sort of spring. When the cone moves inward, the air is compressed and tries to push the cone out. When the cone moves forward, the partial vacuum created in the cabinet tends to suck the cone back in. In the sealed box the resonance frequency of the speaker is *higher* than it is in free air. Bass response, therefore, starts to roll off at a higher frequency than it would have if the speaker had been mounted on an infinitely broad panel. The larger the box, the less internal air pressure will build up, and the less the resonance frequency will be affected.

Villchur, who founded Acoustic Research and set off a revolution in loudspeaker design, took a different approach to the problem: If the "spring effect" of the entrapped air can't be avoided, then put it to work. If the surround and spider "springs" are made very weak, the woofer that results has a natural resonance frequency that is very low. Then use the entrapped air to "suspend" the cone and provide a large part of the restoring force. Thus the term "acoustic suspension."

This technique, which swept and dominated the high-fidelity loudspeaker market for a decade, has several nifty advantages. The "box" is relatively small—it has to be to insure enough pressure build-up inside to act as a spring. Yet the system resonance frequency can be quite low for good bass-frequency response. And an air spring is inherently more

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"linear" than a mechanical one, so the restoring force acting on the cone is more precise and distortion is reduced. With a linear spring, the cone can move back and forth through a greater distance, moving more air for a given distortion level; as a consequence, the maximum bass power is augmented.

That *does* sound like getting something for nothing—smaller size, equivalent or better bass-frequency response, the same (or lower) distortion at greater (or equal) maximum power. The laws of physics, however, exact a price. In the case of the acoustic-suspension system it is *efficiency*, which is lower than that of an infinite baffle.

The thought of losing half the acoustic output power of a loudspeaker (the rear-emanating sound) has continually challenged designers: How put it to work? The solution: Cut a hole in the box and let it out. Done correctly, this has beneficial effects.

As soon as a hole is cut into the box, it becomes a "Helmholtz Resonator." The most familiar Helmholtz Resonator is the coke bottle; blow across the top, and it makes a tone. Resonance is created by the mass and compliance of the air in the neck and in the bottle. Similarly, the loudspeaker baffle can be "tuned" to augment bass response at frequencies below that at which an equivalent acoustic-suspension system might roll off. "Tuning" is achieved by cutting the right-sized hole in the right-sized box. Adding a "duct" or tube to the hole can change the box-resonance frequency.

The basic parameters—size, efficiency, and response—are traded off to get the desired compromise.

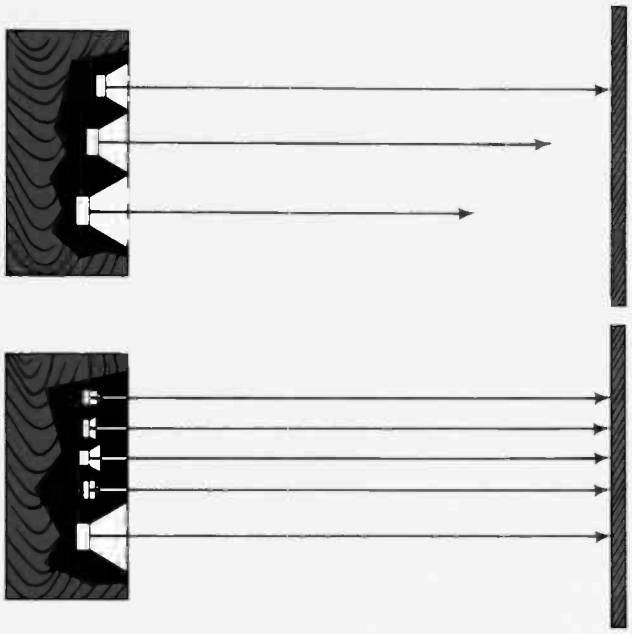
Early designs of this type, called "bass-reflex" or Helmholtz-Resonator systems, were not highly regarded. The problem was not with the *concept* but with its *implementation*. No one really knew how to design the system mathematically. It was all cut and try; some systems worked well, others "boomed" like crazy. To get "flat" bass response from a vented system requires a careful juggling of parameters. In addition to tuning the box, the Q (or damping) must be properly matched to the characteristics of the driver—the mass of the cone, the compliance of the suspension and the strength of its "motor"; i.e., the magnetic field strength and the length of the wire in the voice coil.

An Australian engineer (A. N. Thiele) saw a parallel between loudspeaker-system design and electrical-filter theory and formulated equations and tables to predict the system's performance from the characteristics of the box and the driver. For example, start off with the bass response, efficiency, and box size, and the math determines what driver characteristics you need (though they may not be possible to achieve). The basic parameters—size, efficiency, and response—are traded off to get the desired compromise. You can have good response in a small enclosure if you relinquish efficiency; or higher efficiency in that enclosure if you give up extended bass response and/or power-handling ability.

Thiele's equations apply to virtually all "direct-radiator" systems—those in which the cone vibrates the air of the room directly—including both vented systems and acoustic-suspension systems. Expanding on the original work, other engineers have designed systems using passive radiators or drone cones. These are merely speakerlike diaphragms that are driven by the air pressure within the cabinet, thus serving as vents.

The passive radiator gives the designer a "handle" on the air's mass in the vent, since it can be controlled by the cone's mass. He can use it to reduce the velocity of air through the vent and avoid the "whistle" that sometimes occurs at high volume when a small-area, high-velocity vent is used. Thiele's equations also apply to "high-order" alignments where an external electrical equalizer is used as part of the filter network. Such systems offer even more propitious tradeoffs vis-à-vis efficiency, size, and response, albeit with the added complexity of the electronic equalizer.

Now, *certainly*, we have gotten something for nothing. Not quite. Al-



When all the drivers in a speaker system are mounted on the same plane (top), soundwaves from the woofer originate at a point more distant from the listener than do those from the midrange and tweeter, and thus take longer to reach the listener. This can cause phase-coherence problems, which so-called "time-aligned" systems (bottom), which place the points of origination on the same plane are designed to solve.

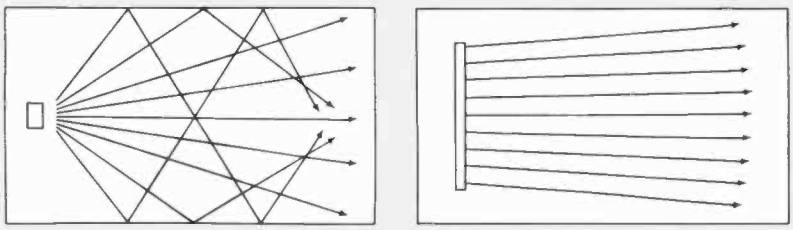
though a vented system may hold up to a somewhat lower frequency than a sealed system of the same size and/or offer greater efficiency, it rolls off much more rapidly below the cutoff frequency. (You didn't think you could let out that back wave and *never* have it cancel the front wave, did you?) And, since there is no "entrapped-air spring" to restore the cone at very low frequencies, the cone can be deflected substantially by infrasonic signals (for example, from a warped record). If the deflections become excessive, distortion may ensue; a good infrasonic filter is therefore desirable. High-order systems—those with an external equalizer—usually have one built in. Some listeners feel that the steeper bass rolloff below resonance and the attendant phase shift it creates causes vented systems to sound less tight than sealed ones, and that the higher the order, the more severe this effect is.

Whether sealed or vented, direct-radiator loudspeakers are basically inefficient in converting electrical power into acoustical output. A horn loudspeaker is much more efficient, despite the fact that almost invariably only the front driver radiation is used. (The back wave is simply trapped and dissipated.)

The "grand old horn" is, of course, the Klipschorn, whose design is one of the constants of high fidelity. Essentially, a horn is an acoustical transformer that matches the small-area cone to the large volume of air surrounding the speaker. Every horn has a cutoff frequency below which it is ineffective. For a horn to work at low frequencies it must be very long and have a large "mouth area." In the original Klipsch design, the horn was "folded," and the system required corner placement so that the walls of the room could be used as extenders.

Wide-range electrostatic panels, which are open on both sides, intentionally radiate sound to the front and rear. The front and rear waves, which are out of phase do not cancel each other out until they reach a fairly low frequency (long wavelength), because of their physical size, panels act as self-baffles. Nonetheless, cancellation does increase at low frequencies, and electronic equalization is normally used to help the bass response from diminishing. Sometimes, a conventional cone subwoofer is used to augment the electrostatic panels in the lowest octaves.

If the driver that supplied the bass sounds were equally adept at reproducing the midrange and treble, life would be simple. But such is not the



Panel speaker systems (right) tend to be phase coherent since all radiating surfaces are in the same plane, and are less influenced by room acoustics than are cabinet loudspeakers (left).

case. To produce adequate bass response and power, the woofer must be large and massive. These attributes become detriments when trying to reproduce tones of higher pitch. The woofer cone is too heavy to respond to high-frequency signals, and, when attempting to do so, "breaks up" and vibrates in sections. Frequency response becomes notably irregular. Also, when the wavelength of the signal approaches the diameter of the cone, the speaker tends to beam or focus the sound directly along its axis, rather than radiate it uniformly over a wide angle.

These problems can be solved by routing higher-frequency signals to a smaller driver; hence we have so-called two-way, three-way, and four-way systems with crossover networks—really bandpass filters—to direct the sound to the proper driver. But in each crossover region, two of the drivers are radiating; due to phase shifts in the crossover network and to the physical separation of the drivers, the two sounds may not be in phase at all frequencies and at all listening angles. So the waves may interfere and the response through the crossover region may be irregular. And since the small high-frequency drivers may not be able to handle the same power as the woofer, some designers use two or more drivers in the *same* high-frequency range, increasing the possibility of sound-wave interference.

Even ignoring possible problems in the crossover region and assuming only a single driver is used in each frequency range, there are theoretical limitations on the accuracy with which the system can duplicate a complex wave shape. The sound from the deep woofer cone comes from a point within the cabinet; that from the relatively shallow midrange and tweeter seems to come from a point closer to the mounting surface. Because the sound from the woofer must travel farther to reach the room, it arrives "late." "Time-aligned" systems, in which the woofer is placed in a more forward location than the midrange and tweeter to get its effective point of radiation in line with that of the smaller drivers, are designed to solve this problem.

When a sound wave reaches a sharp edge, it tends to "diffract" around it much the same way that light diffracts when passing through a tiny slit. Diffraction is important mainly in the high-frequency region where the wavelength is short, but when it occurs it is mathematically equivalent to having a second (phantom) sound source at the edge of the discontinuity. The sound wave from this phantom interferes with the main wave and again causes an irregular frequency response, one that varies with the angle between the listener and the speaker. Thus we see speakers with acoustic "blankets" that absorb the sound that is propagated along the front of the cabinet and prevents it from reaching the edge. We see many cabinet designs in which sharp discontinuities are avoided entirely.

Mid- and high-frequency drivers come in many shapes and forms: cones, domes, horns, and electrostatic panels—even novel Heil drivers that squeeze the air from corrugated folds in the diaphragm. Each has its staunch proponents (and opponents). None are perfect; none are entirely bad. Which is "best" depends on your point of view. Which faults are you

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most willing to accept; which virtues are most important to you? Listen and decide for yourself. This writer has heard good and bad cones, domes, horns, etc. As much seems to depend on how well the design was conceived and implemented as on the basics themselves.

Since multi-driver systems have their own problems of phase cancellation, as well as their own virtue of sharing the music among drivers most capable of reproducing it, it's not that clear whether a four-way system is better than a three-way or whether the latter is necessarily superior to a two-way. In my experience, the three-way, full-range system seems to have an edge over the two-way, although I've heard good two-way systems that outperform mediocre three-way setups. The difference between a four-way and a three-way seems less apparent to me.

Ultimately, the performance depends upon how well the designer chose his crossover frequency(ies) and how well the drivers perform in their designated range. The crossover frequency in a two-way is frequently between 1 and 3 kHz. A good-size woofer has difficulty getting up that high without cone breakup, and a small tweeter has trouble getting down that low smoothly. A midrange driver eliminates the necessity for either "outside" driver to have to perform to the limits of its range.

As much seems to depend on how well the design was conceived and implemented as on the basics themselves.

In recent years there has been a proliferation of "mini" speaker systems—as small as a shoebox, and even smaller. How well do they work? In my experience some of them are remarkably good. Ponderously deep bass—no. High-power capability—no. But for a smaller room and at modest listening levels many of them are highly competent.

Almost invariably, these speakers are two-way systems using a long-throw woofer/midrange of a 4 to 6-inch size and (usually) a dome tweeter. From, say, 150 Hz up, a good one can be virtually indistinguishable from its full-size brother. Below about 150 Hz, they run out of steam—at least as far as power-handling goes. Back to the laws of physics. A 4-inch cone can move only so much air. Even if these small systems can respond at lower frequencies, distortion increases rapidly when they're pushed too hard.

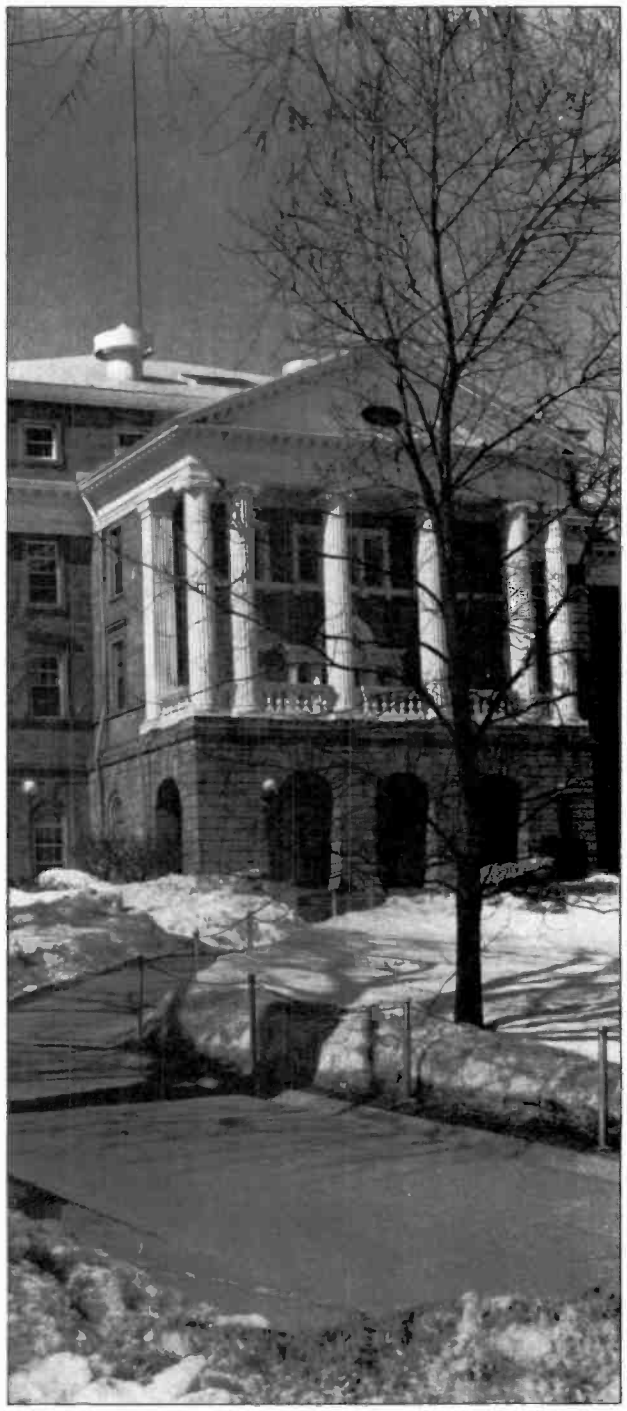
Since most of the stereo imaging is created by frequencies above 100 Hz, a subwoofer can be added to a mini system to flesh out the bass, and a single subwoofer may even serve both channels. A subwoofer is simply a loudspeaker system, in a separate enclosure, designed to serve only in the low-frequency region—from its cutoff up to, say, 100 to 200 Hz. When added to a mini system the results can be quite surprising but, ideally, the system should be selected as an ensemble. Essentially you have created a three-way system out of a two-way, even though the woofer is separately enclosed, and the crossover frequency should be chosen appropriately for that system. Obviously, the subwoofer efficiency should be matched to that of the "satellites" if the response is to remain smooth.

The value of adding a subwoofer to a full-range system is less apparent. If the response of your present goes down to, say, 40 Hz, it's not going to get much lower by adding a subwoofer. Of course this assumes that not only does your system get down that low, but that it can cleanly handle the power in the bass region. If it can't, there might be some point in handing off that excess to another speaker. Frequently, the supposed benefits of adding a subwoofer to a good full-range system are fictitious. The listener is responding to a more powerful, *exaggerated* bass, not to smoother, more *extended* bass.

If such a thing as a perfect loudspeaker—or even a truly superior design—existed, the differences among them would be purely cosmetic. Despite the advances made in recent years that put a mathematical footing under loudspeaker design, art still counts as much as science. As long as that continues to be the case, you will have to rely on your ears to guide you as to the design that's best for you. **HF**

ESS Wins...Again

U.C.L.A. experiment repeated: in comparative tests, students attending the University of Wisconsin judge ESS speakers superior to Bose, Pioneer, JBL, Infinity, AR and Cerwin Vega.

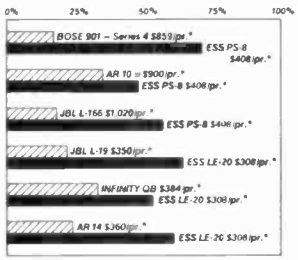


Hundreds of students participating in a series of blind listening tests at two separate universities have now judged ESS speakers superior in performance to other top brands by increasingly significant margins.

The controlled direct comparison tests, conducted under the supervision of an independent national testing laboratory, were designed to simulate home listening conditions. Loudness differences were electronically equalized, and all speakers were positioned for optimal performance.

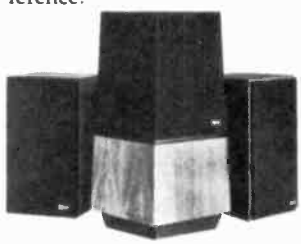
Without knowledge of speaker brands, the students listened in groups of 30 or less to the same musical material on each of the speakers. They were then asked to choose which speaker sounded best in terms of clarity, accuracy and freedom from distortion.

"Of particular significance is the fact that the pairings on the two campuses were not identical," report ESS technicians. "Even though different speaker matchings were made, the participants still chose ESS in 13 out of 14 comparison situations at both universities. And the 14th test at each campus was too close to be statistically valid." In many cases, as the graph reveals, ESS speakers were chosen over far more expensive competing loudspeakers by significant margins.



ESS speakers differ from all other conventional speakers because they alone incorporate the ESS Heil air-motion transformer midrange-tweeter (invented by Dr. Oskar Heil, creator of the FET), licensed exclusively to ESS. This unique principle of sound reproduction has been called by one reviewer "the first real breakthrough in loudspeaker design in over 50 years." By squeezing air like a bellows instead of pushing it, the Heil achieves virtually "instant acceleration." This increased velocity permits the Heil to provide a degree of clarity, spaciousness and freedom from distortion unattainable by conventional drivers.

ESS will be conducting similar comparison tests on college campuses across the nation. Watch for the dramatic results from Georgia Tech. Or better yet, visit your local ESS dealer and take the ESS Listening Test yourself. See if you can't appreciate the difference.



Take the ESS Listening Test yourself!

ESS

sound as clear as light

*Suggested Retail Price

9613 Oates Drive, Sacramento, CA 95827

CIRCLE 14 ON READER-SERVICE CARD

M-122
Price $163.50/pr.
Configuration 2-way
Response 25 Hz to 22 kHz
Max power 80 watts (19 dBW)
Impedance 8 ohms
Driver size 6" x 9"
Magnet 30 oz.
Mounting Surface
Features Separate piezoelectric tweeters in mini grilles; 1½" aluminum voice coil

M-110
Price $153/pr.
Configuration 2-way
Response 30 Hz to 22 kHz
Max power 75 watts (18.75 dBW)
Impedance 8 ohms
Driver size 5¼"
Magnet 30 oz.
Features Separate piezoelectric tweeters mounted in mini grilles; 1½" aluminum voice coil

M-142
Price $143.60/pr.
Configuration Coaxial
Driver size 6" x 9"
Features Piezoelectric tweeters

M-132/pr.
Price $135/pr.
Configuration Coaxial
Driver size 5¼"
Features Biamp capabilities

Atlas Series

A-38
Price $111.80/set
Configuration 3-way
Max power 50 watts (17 dBW)
Impedance 4 to 8 ohms
Driver size 6" x 9" woofers
Magnet 20 oz.
Mounting Flush/surface
Features Separate grilles with combined piezoelectric tweeter and midrange; available with 10-oz. magnet as A-39 for $103.80/set

A-36
Price $95/set
Configuration 2-way
Max power 50 watts (17 dBW)
Impedance 4 to 8 ohms
Driver size 6" x 9" woofers
Magnet 20 oz.
Features Piezoelectric tweeters with separate surface-mounting mini grilles; available with 10-oz. magnet as A-37 for $85/set

A-23
Price $87.75/set
Configuration 2-way coaxial
Max power 40 watts (16 dBW)
Impedance 4 to 8 ohms
Driver size 5¼"
Magnet 20 oz.
Features Piezoelectric tweeter; biamp capability; available with 10-oz. magnet as A-24 for $79.50/set

A-20
Price $58.75/set
Configuration 2-way dual cone
Max power 35 watts (15.5 dBW)
Impedance 4 to 8 ohms
Driver size 5¼"
Magnet 20 oz.
Features Includes wire and hardware; available with 10-oz. magnet as A-21 for $49.50/set

A-46
Price $40.80
Configuration Coaxial
Driver size 5¼"
Magnet 20 oz.
Features Piezoelectric tweeter; available with 10 oz. magnet as A-47 for $37

A-50
Price $28.80
Driver size 6" x 9" woofer
Magnet 20 oz.
Features Available with 10-oz. magnet as A-51 for $25

A-40
Price $25.90
Driver size 5¼" woofer
Magnet 20 oz.
Features Avallable with 10-oz. magnet as A-41 for $21.90

200 SERIES

S-210
Price $75/pr.
Mounting Flush/surface
Features Combined piezoelectric tweeter/midrange

S-201
Price $49.50/pr.
Driver size 2" x 5" piezoelectric horn tweeters

S-220
Price $37/pr.
Mounting Surface
Features Piezoelectric tweeter in mini grille

Models also available

M-112, $179.80/pr.; M-120, $159.25; M-101, $139/pr.; M-140, $119.60/pr.; M-130, $115/pr.; A-28, $105/set; A-33, $91/set; A-26, $89.40/set; A-30, $63.80/set; A-56, $45.80; A-53, $29; A-43, $27; S-207, $53/pr.; S-202, $49.50; S-205, $39.80/pr.

PANASONIC
Panasonic Auto Products
One Panasonic Way
Secaucus, N.J. 07094

EAB-752 Sound Pump II
Price $79.95/pr.
Configuration 2-way coaxial
Max power 20 watts (13 dBW)
Impedance 4 ohms
Driver size 6" x 9"
Magnet 20 oz.
Mounting Flush
Features High power, high compliance coaxials; lightweight aluminum voice coil; designed to provide excellent tone quality in a car's harsh acoustic environment

EAB-911 Thin Series
Price $34.95/pr.
Response 70 Hz to 15 kHz
Min power 10 watts (10 dBW) sustained

CIRCLE 13 ON READER-SERVICE CARD →

At least not in the showroom. Chances are they've already heard them—or at least heard all about them. From a friend. From a consumer magazine. Or perhaps from an audiophile publication. When you've sold over 1/2 million, the word gets around.

What's made the EPI 100 such a classic?

The fact that for around $110, they can give you EPI's amazing "Linear Sound." Sound that's remarkably accurate. Uncolored and that's delivered to every part of the room. Because of their unique one-inch air-spring tweeter, you get nearly hemispherical dispersion with EPI 100's.

The highs come across sharp and clear; the lows deep and smooth. And unlike nearly every speaker, you can listen for hours without suffering listening fatigue. There's virtually no distortion.

These are some of the reasons why the EPI 100 has become the industry standard for bookshelf loudspeakers.

And rest assured, while oftentimes people may not bother to listen to them in the showroom, they more than make up for it when they get them home.

EPI 100®

Escare Products Incorporated, Newburyport, MA 01950
Escare Products (Europa) GmbH, Munich, Germany
A subsidiary of Penril Corporation

MOST PEOPLE WHO BUY EPI 100's DON'T EVEN ASK TO LISTEN TO THEM.

CIRCLE 31 ON READER-SERVICE CARD

CIRCLE 10 ON READER-SERVICE CARD

Max power	20 watts (13 dBW)
Impedance	4 ohms
Driver size	5"
Magnet	7 oz.
Mounting	Flush
Features	Thin, one-piece construction with rain shield; easy two-hole mounting

Models also available

EAB-905 Hi-Power Sound Pump II, $77.95/pr.; EAB-920 Sound Pump 100, $159.95/pr.; EAB-774 Sound Pump, $59.95/pr.

PIONEER
Pioneer Electronics of America
1925 E. Dominquez St.
Long Beach, Calif. 90810

TS-X9

Price	$239.95
Configuration	2-way
Response	50 Hz to 22 kHz
Max power	40 watts (16 dBW)
Driver size	3⅝" woofer; 1" dome tweeter
Mounting	Surface

TS-W203

Price	$189.95
Configuration	Woofer
Response	28 Hz to 10 kHz
Max power	60 watts (16.5 dBW)
Driver size	8"
Magnet	20 oz.
Features	Fits 6" x 9" opening

TS-696

Price	$139.95
Configuration	2-way
Response	35 Hz to 18 kHz
Max power	40 watts (16 dBW)
Driver size	6" x 9"
Magnet	20 oz. (high efficiency)
Features	Crossover frequency at 4 kHz; 2⅝" midrange

TS-X6

Price	$124.95
Configuration	2-way
Response	80 Hz to 20 kHz
Max power	20 watts (13 dBW)
Driver size	4" woofer; 4" passive radiator; 2⅝"tweeter
Mounting	Surface

TS-167

Price	$82.95
Configuration	2-way coaxial
Response	30 Hz to 20 kHz
Max power	20 watts (13 dBW)
Impedance	4 ohms
Driver size	2" tweeter
Magnet	10 oz.
Mounting	Door
Features	Tweeter horn built into grille; high-compliance woofer

TS-692

Price	$73.95
Response	35 Hz to 16 kHz
Max power	20 watts (13 dBW)
Driver size	6" x 9"
Magnet	20 oz.

TS-T3

Price	$69.95
Configuration	Tweeter
Response	250 Hz to 20 kHz
Max power	60 watts (17.75 dBW)
Driver size	3½"
Magnet	6.5 oz
Mounting	Flush
Features	Built-in crossover network

TS-164

Price	$59.95
Configuration	2-way coaxial
Response	40 Hz to 16 kHz
Max power	20 watts (13 dBW)
Impedance	4 ohms
Driver size	2" tweeter
Magnet	10 oz.
Mounting	Door
Features	Same as Model TS-167

TS-M2

Price	$54.95
Configuration	Tweeter
Response	450 Hz to 20 kHz
Max power	20 watts (13 dBW)
Mounting	Dash
Features	Adapts to any car system; adjustable level controls

TS-35

Price	$47.95
Response	80 Hz to 13 kHz
Max power	40 watts (16 dBW)
Mounting	Flush/surface

TS-120

Price	$40.95
Response	80 Hz to 16 kHz
Max power	8 watts (9 dBW)
Impedance	4 ohms
Mounting	Door
Features	Thin design

Models also available

TS-202, $219; TS-695, $159.95; TS-168, $139.95; TS-694, $95.95; TS-693, $81.95; TS-165, $72.95; TS-691, $59.95; TS-162DX, $59.95; TS-121, $51.95; TS-160, $41.95; TS-5, $29.95

POWER DRIVE
Recoton Corp.
46-23 Crane St.
Long Island City, N.Y. 11101

CS-3690

Price	$119.95
Configuration	3-way
Response	60 Hz to 20 kHz
Max power	50 watts (17 dBW)
Impedance	8 ohms
Driver size	5¼" woofer; 3" midrange; two ¾" horn tweeters
Magnet	20 oz.
Mounting	Flush
Features	Built-in mesh grille; hardware and speaker wire included

CS-35

Price	$69.95
Configuration	3-way
Response	60 Hz to 15 kHz
Max power	20 watts (13 dBW)
Impedance	8 ohms
Driver size	5¼" (woofer)
Magnet	20 oz.

CS-105

Price	$39.95

Configuration	Super-thin flushmount door speaker
Response	80 Hz to 16 kHz
Max power	15 watts (11.75 dBW)
Impedance	8 ohms
Driver size	5½"
Magnet	3 oz.
Mounting	Flush
Features	Requires only 1" behind the panel

Models also available
CS-369, $79.95; CS-265, $64.95

PSB
PSB Speakers, Inc.
P.O. Box 144
St. Jacobs, Ontario
Canada, N0B 2N0

PSB Alpha

Price	$110
Dimensions	4H x 8W x 5D
Configuration	2-way
Response	80 Hz to 20 kHz, ±2 dB
Min power	20 watts (13 dBW)
Impedance	4 ohms
Driver size	3 9/10" woofer, 1" tweeter
Mounting	Surface
Features	Mounting bracket and hardware included; speaker shaped to fit into rear deck of car

PYRAMID
Pyramid Industries
12970 Branford St.
Arleta, Calif. 91331

PMS-5A

Price	$149.95
Configuration	3-way
Response	25 Hz to 22 kHz, ±3 dB re 114 dB SPL at 1 meter at 1 watt
Max power	40 watts (16 dBW)
Impedance	4 ohms
Driver size	6" x 9"
Magnet	20 oz.
Mounting	Flush
Features	Dual voice-coil subwoofer handles frequencies from 20 Hz to 300 Hz; two sealed-back midranges handle frequencies from 300 Hz to 4.5 kHz; multifaced tweeter for directional surface-mount applications

PMS-4A

Price	$99.95

Models also available
PMS-2A, $99.95

QUADRAFLEX
Quadraflex Industries
1301 65th St.
Emeryville, Calif. 94608

AS-87

Price	$99.95
Configuration	3-way triaxial design
Min power	2 watts (3 dBW)
Max power	30 watts (14.75 dBW)
Impedance	4 ohms
Driver size	6" x 9"
Magnet	24 oz.

Mounting Flush
Features Grilles and mounting hardware included

AS-77
Price $59.95
Configuration 2-way coaxial design
Min power 2 watts (3 dBW)
Max power 20 watts (13 dBW)
Impedance 4 ohms
Driver size 6" x 9"
Magnet 20 oz.
Mounting Flush
Features Grilles and mounting hardware included

Models also available
AS-2T, $69.95; AS-67, $44.95

REALISTIC
Radio Shack
1400 One Tandy Center
Ft. Worth, Texas 76102

12-1854
Price $79.95/pr.
Dimensions 6⅝H x 10W x 2⅜D
Configuration 3-way
Response 50 Hz to 15 kHz
Max power 20 watts (13 dBW)
Impedance 8 ohms
Driver size 5¼" woofer; 2½" midrange; 2" tweeter
Magnet 5.7 oz.
Mounting Surface

12-1848
Price $29.95/pr.
Configuration Single
Response 100 Hz to 15 kHz
Max power 15 watts (11.75 dBW)
Impedance 8 ohms
Driver size 5"
Magnet 10 oz.
Mounting Flush
Features Instant-mount retainer rings included

40-1256
Price $49.95
Configuration 2-way
Max power 60 watts (17.75 dBW)
Impedance 8 ohms
Driver size 6" x 9"
Magnet 20 oz.
Mounting Flush

Models also available
12-1853, $59.95/pr.; 12-1855, $27.95/pr.; 40-1255, $39.95

ROAD SOUNDS
Suntron
425 7th St. N.W.
Washington, D.C. 20004

RS-2000
Price $100
Configuration 2-way
Min power 10 watts (10 dBW)
Max power 50 watts (17 dBW)
Mounting Surface
Features Metal case

RS-3000
Price $70
Dimensions 6H x 9½W x 1D
Configuration 3-way
Response 80 Hz to 17 kHz
Min power 15 watts (11.75 dBW)
Max power 30 watts (14.75 dBW)
Impedance 8 ohms
Driver size 5¼" x 5¼"
Magnet 20 oz.
Mounting Surface

RS-543
Price $40
Dimensions 5¼H x 5¼W x 3D
Configuration 3-way
Max power 25 watts (14 dBW)
Impedance 8 ohms
Driver size 5¼" x 5¼"
Magnet 20 oz.
Mounting Flush

Models also available
RS-694, $50; RS-412, $50; RS-693, $40

ROYAL SOUND
Royal Sound Co., Inc.
248 Buffalo Ave.
Freeport, N.Y. 11520

RS-6100
Price $300/pr.
Dimensions 7⅞H x 4¾W x 5⅛D
Configuration 2-way

Features Basic housing and components chemically treated to inhibit corrosion; heavy-duty mounting hardware to resist extremes of temperature, humidity, vibration, and jarring; heavy-gauge wiring harness to insure full fidelity sound at full power output; screw-type speaker terminals for ease of mounting; low-frequency (automobile use), high-frequency (home use) switchable crossover networks; LED green power light; LED red signal overload light

RS-6030

Price $150/pr.
Dimensions 6H x 3⅝W x 3D
Configuration 2-way
Features Basic housing and components chemically treated to inhibit corrosion; heavy-duty mounting hardware to resist extremes of temperature, humidity, vibration, and jarring; heavy-gauge wiring harness to insure full fidelity sound at full power output; screw-type speaker terminals for ease of mounting

Models also available

RS-6045N, $200/pr.

SANYO
Sanyo Electric Co.
1200 West Artesia Blvd.
Compton, Calif. 90220

SP-795

Price $99.95/pr.
Dimensions 4⅛H x 7½W x 4⅛D
Configuration 2-way
Response 100 Hz to 20 kHz
Max power 35 watts (15.5 dBW)
Impedance 4 or 8 ohms
Driver size 4" x 7"
Magnet 20 oz. (woofer); 4.9 oz. (tweeter)
Mounting Surface
Features Black ABS cabinet; designed for use with Sanyo biamp systems or conventional hookup; separate L-C crossover system; swivel-mounting brackets included

SP-410

Price $89.95
Dimensions 4H x 10W x 3D
Configuration 3-way
Response 70 Hz to 20 kHz
Max power 25 watts (14 dBW)
Impedance 4 or 8 ohms
Driver size 4" x 10"
Magnet 15 oz. (woofer); 2.2 oz. (midrange); 0.6 oz. (tweeter)
Mounting Flush
Features Attractive metal mesh grille; removable crossover for conventional or biamp systems; perfect original equipment upgrade for cars with 4" x 10" speakers

SP-759

Price $79.95
Configuration 3-way convertible
Response 70 Hz to 20 kHz
Max power 25 watts (14 dBW)
Impedance 4 or 8 ohms
Driver size 5" x 7"
Magnet 15 oz. (woofer); 2.2 oz. (midrange); 0.6 oz. (tweeter)
Mounting Flush or Surface
Features Removable crossover for conventional or biamp system

SP-757

Price $54.95
Dimensions 5H x 7W
Configuration 2-way convertible coaxial
Response 80 Hz to 15 kHz
Max power 18 watts (12.75 dBW)
Impedance 4 or 8 ohms
Driver size 5" x 7"
Magnet 15.3 oz. (woofer); 0.5 oz. (tweeter)
Features Designed for rear-deck, door panels, under or over dash, or flush mounting when detached from convertible housing

SP-737

Price $69.95/pr.
Dimensions 6½H x 6½W x 2D
Configuration 3-way
Response 45 Hz to 20 kHz
Max power 24 watts (14 dBW)
Impedance 4 or 8 ohms
Driver size 6½"
Magnet 20 oz. (woofer); 2.2 oz. (midrange); 0.6 oz. (tweeter)
Mounting Flush
Features Removable crossover for conventional or biamp system

Models also available

SP-777, $100; SP-780, $89.95; SP-770, $80; SP-768, $69.95; SP-731, $44.95; SP-733, $59.95/pr.

SOUND BARRIER
Sound Barrier Corp.
1050 E. Dominguez, Unit P
Carson, Calif. 90746

Phantom 3B

Price	$399.80
Dimensions	5H x 8⅞W x 7⅛D
Response	50 Hz to 20 kHz, ±75 dB re 70 dB SPL at 1 meter at 1 watt
Min power	3 watts (4.75 dBW)
Max power	100 watts (20 dBW)
Impedance	4 to 8 ohms
Driver size	4"
Magnet	10 oz.
Mounting	Surface
Features	Built-in amplifier with 7-band graphic equalizer control box; die-cast aluminum flams

Phantom 3

Price	$229.95
Dimensions	5H x 8⅞W x 7⅛D
Configuration	3-way
Response	50 Hz to 22 kHz, ±8 dB re 75 dB SPL at 1 meter at 1 watt
Min power	1 watt (0 dBW)
Max power	100 watts (20 dBW)
Impedance	4 to 8 ohms
Driver size	4"
Magnet	10 oz.
Mounting	Surface
Features	Enclosure type high performance with aluminum die-cast frame; may be used as a bookshelf speaker at home

787

Price	$129.95
Dimensions	9½H x 6⅝W x 3¾D
Configuration	3-way
Response	80 Hz to 20 kHz, ± 10 dB re 75 dB SPL at 1 meter at 1 watt
Min power	1 watt (0 dBW)
Max power	200 watts (23 dBW)
Impedance	4 to 8 ohms
Driver size	6" x 9"
Magnet	20 oz.
Mounting	Flush/surface
Features	1½" voice coil

Falcon 20

Price	$69.95
Dimensions	1½H x 5½W
Configuration	2-way
Driver size	1½" tweeter with samarium cobalt magnet

Models also available

757, $249.95; 767 Compo Kit, $159.95; 777R, $115.95; Bonanza 35, $54.95; DC-8R, $37.95

SOURCE
Sound Source
1435 Jacqueline Drive
Columbus, Ga. 31907

UD-1

Price	$185/pr.
Dimensions	3H x 11½W x 7D
Configuration	2-way
Response	40 Hz to 20 kHz, ±3 dB
Min power	12.5 watts (11 dBW)
Max power	100 watts (20 dBW)
Impedance	8 ohms
Driver size	6" woofer/midrange; 1" cloth dome tweeter; two phenolic-ring ambience tweeters
Magnet	20 oz.
Features	Hot-lacquered walnut cabinet

SPARKOMATIC
Sparkomatic
Routes 6 and 209
Milford, Pa. 18337

SK-6950

Price	N/A
Configuration	4-way
Response	50 Hz to 20 kHz
Max power	100 watts (20 dBW)
Impedance	4 ohms
Driver size	6" x 9"
Magnet	20 oz.
Mounting	Deck
Features	Special magnet design with hole in center allows air cooling and directs magnetic energy to where required; 1¼" voice coil dissipates heat and allows for better power-handling capability at low frequencies; large damper for improved bass response; 2 tweeters for better power-handling capabilities at high frequencies; midrange specially designed for low resonance

SK-600

Price	N/A
Dimensions	1½D
Configuration	2-way coaxial
Response	70 Hz to 15 kHz
Min power	15 watts (11.75 dBW)
Max power	30 watts (14.75 dBW)
Impedance	4 to 8 ohms
Mounting	Door
Features	Slim enough to fit all door applications regardless of size; snap-on grille designed so it will clear all window cranks; new high-energy strontium cobalt magnet with heavy magnetic structure; cone has treated edge to assure long life; new bridge design; resonance-free performance

SK-700V

Price	$89.95
Dimensions	21H x 8W x 8D
Configuration	2-way
Response	50 Hz to 15 kHz, ±3 dB
Min power	25 watts (14 dBW)
Max power	50 watts (17 dBW)
Impedance	4 to 8 ohms
Driver size	6½" woofer; 4½" midrange/tweeter (Alnico V magnets)
Magnet	10 oz.
Mounting	Surface
Features	Designed exclusively for vans and RVs

SK-6922T

Price	$69.95
Dimensions	6¼H x 9¼W x 4D
Configuration	3-way
Response	30 Hz to 17 kHz, ±3 dB
Min power	40 watts (16 dBW)
Max power	80 watts (19 dBW)
Impedance	4 ohms
Driver size	4½" x 7⅜"
Magnet	20 oz.
Mounting	Flush
Features	6" x 9" foam-edge air-suspension woofers; direct-radiating midrange speakers; dome horn-loaded tweeters; crossover networks; Thermotest™ grilles and housings; new bridge design

SK-6920C

Price	$47.95
Dimensions	6¼H x 9¼W x 3⅝D
Configuration	2-way
Response	30 Hz to 15 kHz, ±3 dB
Min power	25 watts (14 dBW)
Max power	50 watts (17 dBW)
Impedance	4 to 8 ohms
Driver size	4⅝" x 7¼"
Magnet	20 oz.
Mounting	Flush
Features	6" x 9" foam-edge air-suspension woofers; built-in coaxial 2" tweeters; Thermotest™ grilles and housings; new bridge design; crossover networks

Models also available
SK-6900, $89.95; SK-525, $89.95; SK-522T, $59.95; SK-622T, $49.95; SK-4120C, $47.95

TENNA
Tenna Corp.
19201 Cranwood Parkway
Cleveland, Ohio 44128

CPS-69EM
Price $184.95
Configuration 2-way coaxial
Response 50 Hz to 18 kHz, ±5 dB
Max power 100 watts (20 dBW)
Impedance Universal
Driver size 6" x 9"
Magnet 10 oz.
Mounting Flush
Features Built-in power amplifiers; wire mesh grilles with removable mounting studs for ease of installation

PS-69RD
Price $153.99
Response 50 Hz to 12 kHz
Max power 100 watts (20 dBW)
Impedance Universal
Driver size 6" x 9"
Magnet 10 oz.
Mounting Flush
Features Built-in power amplifiers

HE-481
Price $139.95
Dimensions 7⅛H x 4 7/16W x 4⅝D
Configuration 2-way
Response 120 Hz to 20 kHz, ±5 dB re 90 dB SPL at 1 meter at 1 watt
Min power 60 watts (17.75 dBW)
Max power 100 watts (20 dBW)
Impedance 8 ohms
Driver size 4"
Magnet 6 oz.
Mounting Surface
Features Custom mounting brackets can be positioned vertically or horizontally; wire mesh grilles

HE-531
Price $119.95
Configuration 3-way
Response 90 Hz to 20 kHz, ±5 dB re 85 dB SPL at 1 meter at 1 watt
Min power 30 watts (14.75 dBW)
Max power 60 watts (17.75 dBW)
Impedance 8 ohms
Driver size 5¼"
Magnet 9.3 oz.
Mounting Flush
Features Hi-lo frequency switch; removable studs for easy installation; wire mesh grilles

TM-6920C
Price $87.95
Configuration 2-way
Response 60 Hz to 17 kHz, ±5 dB re 90 dB SPL at 1 meter at 1 watt
Min power 40 watts (16 dBW)
Max power 60 watts(17.75 dBW)
Impedance 8 ohms
Driver size 6" x 9"
Magnet 20 oz.
Mounting Flush
Features Aluminum voice coil for high power; wire mesh grilles

CO-620RM
Price $59.95
Configuration 2-way

Continued on page 115

5 easy ways to upgrade your present car

by Robert Angus

Good-bye Squawk-Box Speaker!

If you're disappointed with the sound of your car stereo system, one source of that dissatisfaction may be your current speaker(s). Whether you're moving from a single, factory-installed squawk-box speaker to a stereo rig, or merely upgrading your speakers, you have essentially five ways to go about it.

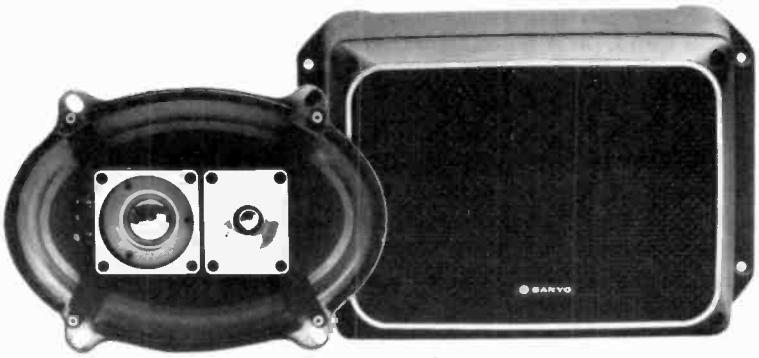
First, you can simply select a high quality replacement speaker for your current single-cone unit. If you're interested in a stereo system, you can choose between surface-mounting coaxial or triaxial units, positioning them in cutouts, putting separate woofers and tweeters at different locations, or installing one of the mini acoustic suspension systems (if your vehicle has the room).

Which way should you go? We can't emphasize enough that your choice will be limited by the vehicle in which you install the system. But some advice is generally applicable. To help you in selecting the best system, we'll look at what's available, suggest what approach is best for certain types of vehicles, set down the factors involved in matching speakers to the rest of your system, and outline what is entailed in installing speakers.

The choices available to mobile audiophiles are more varied than they have ever been, and the prospects for creativity in speaker selection and placement are almost as unlimited as in the do-it-yourself days of early audio.

True, you won't have quite as much freedom in selecting and mounting speakers in your car as those for your home. The interior volume of the passenger compartment is smaller, perhaps only one-eighth to one-tenth that of your favorite listening room; moreover, it's virtually impossible to

stereo speakers



Options for upgrading your car speakers include those represented here by Sanyo's SP-759 triaxial (left), Ultralinear's Carponent M-12 acoustic suspension system (top), and AFS/Kriket's Klassic (TM) 2821 (above), an inexpensive replacement speaker.

relocate speakers once they have been installed. Nonetheless, the new component-type car stereo speakers do offer a wide range of possibilities.

Traditional round and oval speakers now come in coaxial and triaxial designs, with improved magnets and cone and surround design. Miniaturized versions of home acoustic suspension systems utilize the trunk as a resonance chamber, or are available in their own little aluminum enclosures. Woofers, tweeters, and crossovers are increasingly common as separately-mounted custom systems in vans and cars. New mounting wrinkles include wedge and surface mounts, in-door and rear-deck flush designs.

What you drive dictates which of these options are available to you. Limited room in sub-compacts (Datsun 510s and VW beetles, for example) automatically eliminates the more exotic speaker systems and installation techniques. Vans, tractor-trailer cabs, or luxury cars offer wider choices. So before buying car speakers, study your car.

With the aid of a screwdriver and a ruler, check out where speakers might best be placed. Is there a cutout in the rear deck? You probably can locate one by examining the deck area either with the fabric cover removed, or from the trunk. Next, check the dimensions: Cutouts are designed for either 6″ x 9″ or 4″ x 10″ speakers. If there is no cutout, you or an installer may be able to make your own to hold virtually any size and shape. The rear deck is an ideal location for a woofer, and also a good place for mounting full-range acoustic suspension speakers such as EPI's LS-70s.

Then check the front-door panels. Which are the best spots for tweeters, midrange units, or round full-range speakers? Snap off the door padding with your screwdriver. Measure the distance between the door frame and the interior surface. That will determine how deep a speaker you can mount in the door. You'll also want to know how large a speaker you can mount, and approximately where you can put it. Also measure how much clearance you have with the window rolled all the way down. Generally, the remaining space will be at the bottom of the door—a location more suited to bass reproducers than to tweeters.

If neither of these locations is practical, you may have to consider some variety of surface-mount such as a pair of wedge speakers under the front

seats facing forward, or on the side walls or roof. You can surface-mount speakers just about anywhere. Make sure to anchor them firmly if you put them on the rear deck. The same applies to the self-contained acoustic suspension speakers. In more roomy vehicles these can be hung below your dashboard.

Which approach is best—surface-mount or flush, self-contained system or separate components, rear-deck or up front? It depends on your vehicle. However, there are some generalizations. Woofers reproduce bass frequencies. The sound they produce is generally nondirectional (and, incidentally, is heard to maximum advantage when the windows are closed), which means that their placement in the car is not critical. Tweeters, on the other hand, project high-frequency sound similar to the beam from a flashlight. For best results, they should be directed at the ears of listeners in the front seat. Midrange reproducers handle the sounds in between, which are more directional than deep bass, less directional than treble. Placement is less critical than that for tweeters, but they too should be aimed at the ears of front-seat listeners.

Full-range speakers and systems call for compromises. Woofer-tweeter combinations designed for rear-deck mounting (to take advantage of the car trunk as a baffle) generally bounce their high frequencies off the rear window, a less-than-ideal situation.

. . . Be certain that your new speakers are compatible with your car stereo's amplifier . . .

Generally speaking, in passenger cars separate speaker components, chosen and installed with care, represent the best possible sound. They also cost more and are expensive to install—unless you intend doing the work yourself. (They'll give you the most trouble.) As we've seen, it's necessary to find a location with good baffling possibilities for the bass, and another location in close proximity to the driver and passenger for the tweeters. Vans or boats usually have plenty of room for a mini-bookshelf system that is designed for home use.

Another generalization: The better-baffled any woofer or full-range model is, the better the sound. Flush-mounts, which use car interior paneling as a baffle, are therefore preferable to surface mounts (*unless* the speaker system in question is a fully enclosed acoustic suspension model). Flush-mounts also look better.

Are all-in-one units (woofer and tweeter on a single chassis or plate, coaxials and triaxials) better-sounding than full-range single-cone speakers? Given intelligent mounting, that's almost always the case.

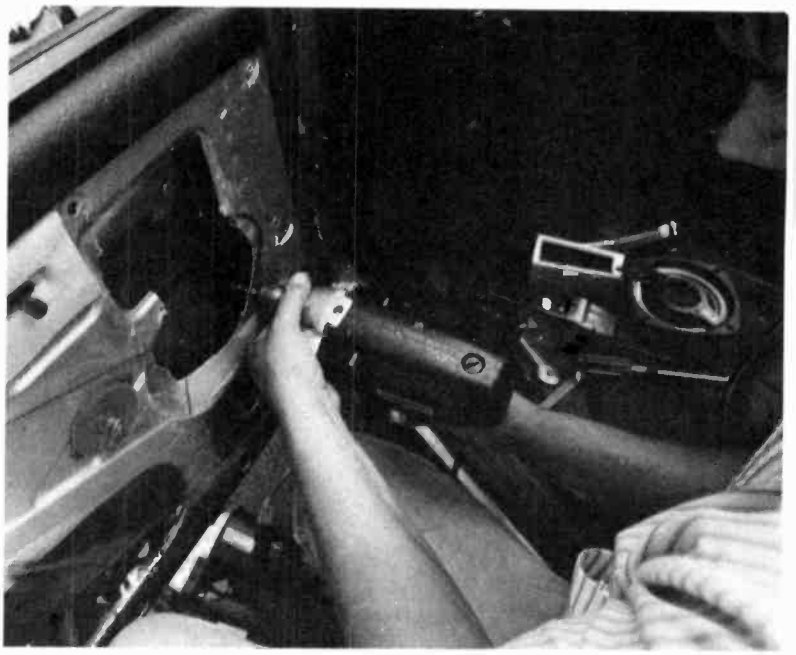
You should also be certain that your new speakers are compatible with your car stereo's amplifier in terms of power capacity. While many of the new breed of component-type loudspeakers are capable of handling 50 watts (17 dBW), some of the cheaper replacement speakers used prior to 1978 distort or fall apart when fed more than 5 watts (7 dBW). Conversely, if the amp section of your receiver/tape deck delivers only 1½ watts (1¾ dBW), don't waste your money on a good acoustic suspension speaker: There's insufficient power to deliver really good sound, the chief reason for buying an acoustic suspension speaker or system.

If you're unsure of your receiver's power output, copy down the model number and check it with your dealer *before* buying speakers. Generally, if it was made before 1978 and wasn't sold to you as a custom unit, it probably can't produce more than 1½ watts. With a separate power booster, you could increase the output 10 to 20 times.

Does the amplifier know the difference between a $5 and a $150 speaker, a single full-range model or separate components, a one-cone unit or a plate containing woofer, tweeter, and midrange? No, provided that the system is matched. If you have any doubts, consult your dealer.

As a last step prior to buying your speakers ask yourself this important question: Who will install them? If you're handy with tools, you can do the job yourself and save a bundle. The necessary technical expertise can

Photos by Robert Curtis



Installing car speakers requires a certain expertise with tools. Above, professional installer removes interior door panel (left), and then drills mounting holes. He has also cut away part of the door to accept the speaker.

be acquired from the speaker maker's literature or from a handbook on car stereo installing (for example, Tab Books' *Auto Stereo Service & Installation*, by Paul Dorweiler and Harry Hansen, $8.95), but it does require some gymnastics under the dashboard and elsewhere inside the passenger compartment.

If you choose otherwise, you must find a reliable installer. Sometimes the dealer will install the speakers. Audio salons and other stores whose business isn't primarily car stereo generally can recommend an experienced installer. They don't guarantee his work; but his reputation is on the line with the store, so he has a strong incentive to do good work. A store that installs as well as sells does guarantee its own work, which can be important in the case of a very expensive installation in a very expensive vehicle. If you buy the speakers where the price is lowest and then go shopping for an installer, you have less leverage if anything goes wrong, even though you paid less money initially.

Before hiring someone to install your auto stereo system, it is a good idea to look over one of his installations, how well the woofers and tweeters were placed, and his overall neatness. Avoid those who install mainly CB radio and hang-on speaker systems for low-wattage stereo gear. They may understand cars and do neat work, but they seldom know anything about high fidelity sound.

If you already have a set of speakers in your car, upgrading them is fairly simple. The toughest part of the job—running the wiring and making the necessary cutouts—has already been done. Simply remove the existing grille, loosen the mounting screws, pull out and disconnect the speaker leads, then reverse the process, substituting your new speaker. But be sure before you buy your new speakers that they will fit in the space where the old ones were.

What are some typical ways to improve your system? If you have a pair of single-cone ovals in the door or rear deck, why not mount a coaxial or triaxial up front and/or a three-way acoustic suspension system in the back? The results are dramatic. Or you might replace or augment the full-range speakers in your doors with a woofer in the back cutout. You could add a pair of tweeters in the dashboard or door posts to complement

Overall neatness is important. Above, the installer hides the wiring under the carpeting before attaching it to the speaker. Upgrading speakers a second time is much easier; usually no additional cutting or wiring is necessary.

the rear-deck woofer and door-mounted midranges.

For really deep bass, you might try Visonik's Sub 1 system, consisting of subwoofer and two tiny acoustic suspension systems. If there isn't room for three self-contained speakers in your vehicle, try a trunk-loaded woofer. If you do buy self-contained systems, it's important to mount them securely by bolting them to the car chassis. Don't merely anchor them to the fiberboard deck floor; they're very heavy for their size, and, in case of a sudden stop, can tear themselves free of an insecure mount and come hurtling forward. Be sure too that they don't obstruct your rear vision, a safety violation in some states.

Whether you're installing your first system or upgrading your speakers, remember that you probably won't own your present car forever. Should you install the ultimate mobile system? After all, car stereo speakers don't add to the value of your car when you trade it in—or do they? This answer depends on who buys your car.

Most used-car dealers don't know what they're looking at when they appraise the speakers in your car. Accordingly, a friend of mine, who is both a car and audio enthusiast, has kept the cheap speakers he replaced recently. When he sells his present car he plans to reinstall the cheap speakers and transfer his more expensive JBLs to his new car. "Once the holes are there, you have to fill them with something," he explained. "But no way am I going to deliver a pair of JBLs to the buyer. I'd never get my money out of them that way." (He is prepared to write off his cassette deck/tuner/amp, however—he wants more power and an equalizer next time.)

If your car contains a good stereo system, sell to a private party. You may not get a much higher price, but the car, surprisingly, will be easier to sell.

Car stereo speakers really are no more of a mystery than speakers for your living room—and thanks to some familiar brand names they're becoming just as easy for audiophiles to listen to. If your car is one of the 17 million or so with a stereo system that's more than one and a half years old, chances are you can make a significant improvement in its sound simply by upgrading your speakers. **HF**

Response	120 Hz to 17 kHz, ±5 dB re 90 dB SPL at 1 meter at 1 watt
Min power	20 watts (13 dBW)
Max power	50 watts (17 dBW)
Impedance	4 or 8 ohms
Driver size	5¼"
Magnet	20.7 oz.
Mounting	Flush
Features	Wire mesh grilles

Models also available

CPS-69EQ, N/A; TCM-6920T, $110.95; TCM-620T, $88.95; TR-6930EM, $84.95; CO-6930RM, $79.95; TM-620C, $74.95

TRIFLEX
Orovox Sound
11545 Tuxford Ave.
Sun Valley, Calif. 91352

TR-2001

Price	$63.80
Dimensions	7H x 9W x 6D
Configuration	3-way
Response	75 Hz to 19.6 kHz
Min power	6 watts (7.75 dBW)
Max power	40 watts (16 dBW)
Impedance	8 ohms
Driver size	5¼"
Magnet	20 oz.
Mounting	Surface

Models also available

TF-1000, $49.95

TRUSONIC
Trusonic
10530 Lawson River Ave.
Fountain Valley, Calif. 92708

K-6943

Price	$175
Dimensions	9¼H x 6 2/5W x 4 1/5D
Configuration	3-way
Response	25 Hz to 25 kHz, ±4 dB re 98 dB SPL at 1 meter at 1 watt
Min power	3 watts (4.75 dBW)
Max power	120 watts (20.75 dBW)
Impedance	4 ohms
Driver size	6" x 9"
Magnet	40 oz.
Mounting	Flush/surface
Features	Chromed cast frame; 1½" voice coil; biampable; waterproof construction; 5-year warranty; hardware included

K-6923

Price	$150
Dimensions	9¼H x 6 2/5W x 3 4/5D
Configuration	3-way
Response	30 Hz to 25 kHz, ±4 dB re 96 dB SPL at 1 meter at 1 watt
Min power	3 watts (4.75 dBW)
Max power	80 watts (19 dBW)
Impedance	4 ohms
Driver size	6"
Magnet	20 oz.
Mounting	Flush/Surface
Features	Chromed cast frame; 1½" voice coil; biampable; waterproof construction; 5-year warranty; hardware included

K-6942

Price	$145
Dimensions	9¼H x 6 2/5W x 4 1/5D
Configuration	2-way
Response	25 Hz to 25 kHz, ±4 dB re 98 dB SPL at 1 meter at 1 watt
Min power	3 watts (4.75 dBW)
Max power	120 watts (20.75 dBW)
Impedance	4 ohms
Driver size	6" x 9"
Magnet	40 oz.
Mounting	Flush/surface
Features	Chromed cast frame; 1½" voice coil; biampable; waterproof construction; 5-year warranty; hardware included

K-6941

Price	$120
Dimensions	9¼H x 6 2/5W x 4 1/5D
Configuration	Subwoofer
Response	25 Hz to 2 kHz, ±3 dB re 97 dB SPL at 1 meter at 1 watt
Min power	3 watts (4.75 dBW)
Max power	130 watts (21.25 dBW)
Impedance	4 ohms
Driver size	6" x 9"
Magnet	40 oz.
Mounting	Flush/surface
Features	Chromed cast frame; 1½" voice coil; waterproof construction; 5-year warranty; hardware included

K-6922

Price	$120
Dimensions	9¼H x 6 2/5W x 3 4/5D
Configuration	2-way
Response	30 Hz to 25 kHz, ±4 dB re 96 dB SPL at 1 meter at 1 watt
Min power	3 watts (4.75 dBW)
Max power	80 watts (19 dBW)
Impedance	4 ohms
Driver size	6" x 9"
Magnet	20 oz.
Mounting	Flush/Surface
Features	Chromed cast frame; 1½" voice

coil; biampable; waterproof construction; 5 year warranty; hardware included

K-6022

Price	$100
Dimensions	6½H x 6½W x 2½D
Configuration	2-way
Response	40 Hz to 25 kHz, ±4 dB re 94 dB SPL at 1 meter at 1 watt
Min power	3 watts (4.75 dBW)
Max power	80 watts (19 dBW)
Impedance	4 ohms
Driver size	6"
Magnet	20 oz.
Mounting	Flush/Surface
Features	Chromed cast frame; 1½" voice coil; biampable; waterproof construction; 5 year warranty; hardware included

K-5722

Price	$100
Dimensions	7¼H x 5W x 3½D
Configuration	2-way
Response	40 Hz to 25 kHz, ±4 dB re 94 dB SPL at 1 meter at 1 watt
Min power	3 watts (4.75 dBW)
Max power	80 watts (19 dBW)
Impedance	4 ohms
Driver size	5" x 7"
Magnet	20 oz.
Mounting	Flush/surface
Features	Chromed cast frame; 1½" voice coil; biampable; waterproof construction; 5-year warranty; hardware included

KMT-3542

Price	$100
Dimensions	3¾H x 5W x 2D
Configuration	2-way midrange/tweeter
Response	200 Hz to 25 kHz, ±4 dB re 93 dB SPL at 1 meter at 1 watt
Min power	3 watts (4.75 dBW)
Max power	130 watts (21.25 dBW)
Impedance	4 ohms
Driver size	3½"
Mounting	Surface
Features	Designed to match subwoofers K-6941, K-6921, K-6041, K-6021; protection circuit LED power indicators; built-in crossover; biampable; 5-year warranty; hardware included

K-6021

Price	$75
Dimensions	6½H x 6½W x 2 3/5D
Configuration	Subwoofer
Response	40 Hz to 2 kHz, ±3 dB re 93 dB SPL at 1 meter at 1 watt
Min power	3 watts (4.75 dBW)
Max power	90 watts (19.5 dBW)
Impedance	4 ohms
Driver size	6"
Magnet	20 oz.
Mounting	Flush/surface
Features	Chromed cast frame; 1½" voice coil; waterproof construction; 5-year warranty; hardware included

Models also available

K-6042, $125

ULTRALINEAR
Ultralinear Loudspeakers
Div. Solar Audio Products, Inc.
3228 E. 50th St.
Los Angeles, Calif. 90058

M-16

Price	$199.95
Dimensions	7¾H x 5¼W x 4 5/8D
Configuration	2-way
Response	53 Hz to 23 kHz
Min power	5 watts (7 dBW)
Max power	50 watts (17 dBW)
Impedance	4 to 8 ohms
Driver size	4½" x 1"
Magnet	24 oz.

M-12

Price	$149.95
Dimensions	7¾H x 5¼W x 4 5/8D
Configuration	2-way
Response	53 Hz to 18 kHz
Min power	3 watts (4.75 dBW)
Max power	40 watts (16 dBW)
Impedance	4 to 8 ohms
Driver size	4½" x 2½"
Magnet	24 oz.

VERIT
Wald Sound, Inc.
11131 Dora St.
P.O. Box 1085
Sun Valley, Calif. 91352

Micro-25

Price	$59
Dimensions	6H x 6W x 6D
Configuration	Full range
Response	80 Hz to 12 kHz, +5 dB re 93 dB SPL at 1 meter at 1 watt; 80 Hz to 12 kHz, ±8 dB in automobile
Min power	5 watts (5 dBW)
Max power	25 watts (14 dBW)
Impedance	4 to 8 ohms
Driver size	4½"
Magnet	10 oz.
Mounting	Surface
Features	Automotive and home speaker; 1½ wide mounting bracket; 3 knobs; push terminal "5" cup

VISONIK DAVID
Visonik of America, Inc.
701 Heinz Ave.
Berkeley, Calif. 94710

W-600

Price	$130 (with M-6 mounting kit)
Dimensions	7½H x 8¾W x 5D
Configuration	Subwoofer
Response	40 Hz to 160 kHz, –4 dB
Min power	70 watts (18.5 dBW)
Impedance	4 ohms
Driver size	7"
Magnet	67 oz.
Mounting	Flush
Features	Optional enclosure

D-5000

Price	$140 each (with bracket)
Dimensions	6¾H x 4⅛W x 4¼D
Configuration	2-way
Response	50 Hz to 25 kHz, +4, –8 dB re 85 dB SPL at 1 meter at 1 watt
Min power	10 watts (10 dBW)
Max power	50 watts (17 dBW)
Impedance	4 ohms
Driver size	4" x 1"
Mounting	Surface
Features	Recommended for use with A-301 auto amplifier or AS-1 autosub system

D-4000

Price	$110 (optional bracket, $10)
Dimensions	4⅛H x 6¾W x 4¼D
Configuration	2-way
Response	50 Hz to 22 kHz re 84 dB SPL at 1 meter at 1 watt
Min power	10 watts (10 dBW)
Max power	50 watts (17 dBW)
Impedance	4 ohms
Driver size	4" x 1"
Mounting	Surface
Features	Uniquely proportioned enclosure allows wide variety of placement possibilities

Introducing the Avid Model 110 Minimum Diffraction Loudspeaker.

The New Reference Standard Under $150.

Utilizing the innovative design techniques which have made our revolutionary line of loudspeakers so popular, Avid introduces a compact Minimum Diffraction Loudspeaker™ for less than $150.

Its performance characteristics are so superior for the price, that the Model 110 establishes a reference standard that challenges comparison.

Overall system response (48 Hz to 20 kHz ± 3 dB) is truly exceptional for a speaker in this price range, and few loudspeakers in its class offer 88 dB efficiency along with 100-watt power handling capability.

Avid builds its own drivers to meet the specific design objectives of each system, and the Model 110 is no exception.

Power handling of the 1-inch soft dome tweeter is achieved with a design incorporating magnetic fluids and a high-temperature voice coil. Avid's proprietary cone treatment techniques enable the 8-inch woofer to roll off mechanically, eliminating the need for an electronic crossover.

The Model 110 is a totally integrated design yielding a level of performance usually found only in the most expensive loudspeaker systems.

For complete technical information on the new Model 110, write Avid Corporation, 10 Tripps Lane, East Providence, RI 02914.

Unboxed Sound

AVID

The careful integration of special engineered Optimum Dispersion Couplers™ and solid front grill panels with rolled edge design significantly reduces unwanted cabinet diffraction effects.

Feedback Causes:

Feedback Cure:

DISCWASHER®

DiscFoot™

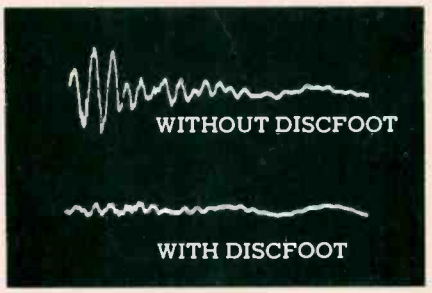
Hi-Technology Turntable Isolation System

- Works in combination with existing feet for dramatic reduction of feedback.
- Isolates better than original or "replacement" feet.

Home environments can "upset" a turntable by feeding back both speaker and footfall vibrations. Acoustic isolation of a turntable involves the complex variables of turntable weight, room/floor conditions and audio system placement. The Discwasher DiscFoot has been specifically designed to successfully isolate most turntables in the home environment.

The "Material" Solution

The major components of the Discwasher DiscFoot System are new, "totally engineered" chemical complexes that behave radically different than other plastic, rubber or spring systems. These proprietary compounds are durable and precise in behavior, although difficult and expensive to synthesize. Laboratory and real-world tests justify the use of these unusual materials in the DiscFoot System.



The Telling Test

The oscilloscope photo shows the output of two identical audio systems on the same shelf with their styli contacting the platters. The shelf is being struck by a rubber mallet. The top trace shows a turntable with absorptive "replacement" feet. The lower trace shows a DiscFoot System operating in conjunction with the existing turntable feet. Note the dramatic (tenfold) improvement in shock and feedback isolation.

The DiscFoot System contains four isolation feet, four platform caps, four furniture-protecting sheets and four special damping pads (to adapt DiscFoot units to certain turntables.) Additional single DiscFoot units are available for turntables weighing over 22 lbs. The system costs $22.

DiscFoot™

Discwasher DiscFoot can be found at audio dealers interested in preserving your music.

discwasher, inc.
1407 N. Providence Rd.
Columbia, Missouri 65201

CIRCLE 11 ON READER-SERVICE CARD