

## Sonance SUB 12-500 In-Wall Subwoofer System

**PRICE:** \$3,000 **AT A GLANCE:** Extremely rigid back-box enclosure construction • 4-inch voice-coil flat woofer • Class D amp can power one or two woofers

## Beaucoup Bass in a Box



Some days it's just better not to defy the laws of physics or other important aspects of the universe. Gravity, the speed of light in a vacuum (but not in a Dyson), entropy, and Murphy's Law are all there for good reasons. As my mother used to say (calmly petting the Schrödinger cat in her lap), "Pick another parallel universe out of the infinity of multiverses if you don't like it here."

When it comes to subwoofers, many speaker engineers and home theater owners would like to telecommute to one of the other multiverses in which subwoofers the size of a squirrel's head produce bass down to 5 hertz at levels loud enough to drown out a Boeing 787 (which, along with pigs, actually fly in that world). Unfortunately, if anyone has gone through the event horizon that separates our universe from all those not-our-universes, they've never come back—evidently, those subwoofers are just too freakin' awesome. For the rest of us, the traditional laws of physics still apply, especially with regards to much-loved yet much-hated subwoofers. We love the bass, but we hate the space they take up.

You don't need quantum mechanics to explain that low, loud bass requires moving air—lots of air—in a very controlled manner. (Insert obligatory fart joke here.) One of the simplest methods of producing copious amounts of bass involves a largish driver mounted in a largish box. In recent years, various techniques and engineering chicanery have enabled manufacturers to start

selling smaller and smaller but still powerful subwoofers to a grateful listening public. But since we haven't yet reached squirrel-head dimensions, floor space still has to be cleared for a traditional in-room subwoofer. That's where custom install—with the likes of the people at Sonance on the horse—comes riding in to save the day, taking that largish driver and largish box and hiding them in your wall so you get lots of bass without losing any floor space.

When an engineer designs an in-wall subwoofer, he must

choose between two things: the relative freedom of design that comes with building a product meant to be installed in new construction before the walls are finished; or the more constraining requirements of developing a setup that can be retrofitted into an existing home. For the Cinema SUB 12-500, Sonance decided to go the "I like the legroom in first class" route and build a sub with a back box that's as tall as I am (approximately 5 feet, 10 inches)—but narrow and shallow enough to fit in a standard 2-by-4 stud wall. This design gives the box 1.2 cubic feet of internal volume; but, obviously, it means this is not a retro-friendly product.

**Triple Play**

The Cinema SUB 12-500 comes in three pieces: the back box, the subwoofer driver, and the outboard 457-watt SUB 12-500D amp. (The amp cranks out 754



• The SUB 12-500's grille has unobtrusive fine perforation and a paintable white finish.

SONANCE SUB 12-500 IN-WALL SUBWOOFER SYSTEM  
**PERFORMANCE** ★★★★★  
**VALUE** ★★★★★  
**BUILD QUALITY** ★★★★★

watts if you decide to go all out and use two SUB 12-500 woofer/box combos with the one amp.) It's sold this way so that an installer can install one (or more) back boxes before the walls are closed without worrying about having an amplifier and subwoofer driver lying around—either on the job site or in the stockroom.

The sub's back-box enclosure isn't pretty. Of course, it's not supposed to be pretty because you're going to sheet-rock over the thing. But it's well designed and built. It's made from 0.5-inch MDF front and back panels with 1-inch side, top, and bottom panels. To further stiffen the box and keep vibrations from transferring to the wall, the inside of the box features two extruded-aluminum vertical braces with multi-layer mass-damping material on the inside of the front and back panels. Because they had a bunch of it lying around, Sonance threw in some long-strand fiberglass material as well. (Actually, they put it in there for internal damping to help dissipate standing waves.) Steel mounting rails on the outside of the box extend all the way from the top to the bottom. Essentially, once this sucker is installed, it ain't moving. On top of the box are two sets of positive and negative speaker terminals that you can use simultaneously to maximize signal transfer.

The SUB 12-500 woofer is a 12-inch laminated flat-surface driver that sandwiches aramid fiber paper between two layers of carbon fiber material. It attaches to a 4-inch voice coil and a pole piece that's held in place by dual spiders that help maximize the linear movement. A 100-ounce neodymium magnet puts that big voice coil in motion (1.5 inches of peak-to-peak travel).

The SUB 12-500D Class D amplifier measures approximately 17 by 4 by 14 inches and is rack-mountable, but it can get a bit hot. In fact, Sonance even provides a spec rating of 1,330 BTU/HR when the amp is run at full power. As a result, the company says the

amp requires 4 inches of clearance on the top and all sides. (How you get 4 inches of clearance on the sides when you rack-mount it is beyond me.) Space heaters typically start at around 10,000 BTU/HR, so you won't be able to heat the room with the SUB 12-500D's 1,330. However, Sonance says you'll need to keep your cabinet doors open or have some sort of fan ventilation to cool the cabinet when the system is in use. The amp also has standard features, such as an auto-on trigger, low-pass crossover bypass, a variable crossover frequency control, phase switch, and both line-level and speaker-level inputs. There are two sets of speaker terminals on the back so you can run one or two subs off the same amp.

### Screw This

Installation is about as straightforward as you can get. There are almost two-dozen holes along the length of the steel rails on the outside of the back box, so you can screw the box down to the studs so tight it'll never dream of moving. The box ships with a blank plate installed where the woofer will eventually go, so the drywall guys can finish the wall all the way up to the plate—although they shouldn't tape and float over the opening. Once the wall treatment has been applied (paint, wallpaper, faux adobe, gold leaf, etc.), just remove the blank plate and slide the woofer into the empty space. Twelve screws snug the woofer up against the box. (I'm telling you, this thing is built like a brick sh—, I mean, out-house.) Twenty-four small, round magnets are aligned on the outer flange of the speaker basket. These powerful little pucks grab onto the 15-inch square steel grille and just about won't let go. (In this case, being a cling-on is a good thing.) A 15-inch white square grille on your wall certainly won't be invisible, but the perforations are small and the flange is narrow so it has a classy appearance that will look fine with most décors. There's always the option of painting it to match the wall, too.

### Bolt Me Up, Zombie

You might want to install the Cinema SUB 12-500 in a plainly obvious location—and maybe put



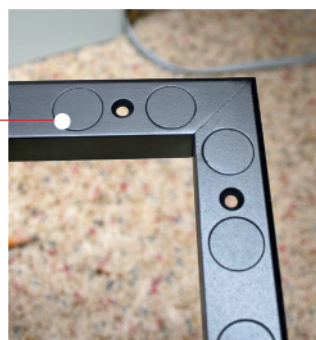
• The outboard SUB 12-500D amp has two sets of binding posts, so you can use one amp to power two SUB 12-500 subwoofers.

a sign on it that reads, "Subwoofer," because it won't be long before people start asking where all that bass is coming from. I can't say that this fine in-wall subwoofer is totally as awesome as a \$3,000 in-room sub might be, but precious few in-wall subs can match their in-room price equivalents (except for maybe the BG BGX-4850 in-wall subwoofer system, reviewed in our January 2010 issue, but that one costs about \$7,000). With the limitations imposed by the need to fit the subwoofer cabinet in a 2-by-4 opening and the desire to keep the grille size as small as possible, it's difficult to get the same performance as you would from a subwoofer with no such limitations.

Don't let the previous paragraph lead you to think that the Cinema SUB 12-500 isn't good. It's very good and more than worth the cash if you want or need an in-wall subwoofer with some hefty meat on its bones. For example, in the movie *Up*, during the scene in which Muntz's dog pack is chasing Carl, Russell, Dug, and Kevin (all toting the floating house) through the canyon, the sub reproduced the low-bass impact of the falling boulders and rock outcroppings very viscerally. The very educational movie *Zombieland*, in addition to providing plenty of good old-fashioned zombie violence, also puts the sub to the test near the end of the movie as the zombies overrun the Los Angeles theme park. Not only are the gun blasts as authentic as any

zombie-blasting gun blasts can be, but the low-bass beats that are part of this scene's musical underpinning are tight and tense. Perhaps my favorite performance by the Cinema SUB 12-500 was during the first several minutes of *Bolt* when Bolt and Penny appear in their starring roles for the first time. The pounding bass beat beneath the action never lets up, and neither did the subwoofer. (It got pleasantly warm, but I wouldn't say it ever got up to 1,330 BTU.) The sub really came into its own during the helicopter chase scene that starts on the bridge and results in much loud, destructive entertainment.

I used the subwoofer with my Legacy Harmony in-wall speakers. They're certainly large enough to run full range, but I set the crossover in my Sunfire surround processor to 80 Hz to see how the Cinema SUB 12-500 would blend with them. With



• The SUB 12-500's grille attaches to 24 ultra-strong magnets on the speaker basket's outer flange.

## HIGH END SONANCE SUB 12-500 IN-WALL SUBWOOFER SYSTEM



both movies and music, I noticed that the Sonance sub is fast and musical. I got tired of my normal musical selections, so on a lark (actually, I rode in my car), I checked with my local music store to see what music they might recommend to put a subwoofer to the test. The first disc I came home with was from a band called For Today (a Christian rock band), which the guy who helped me described thus: "It's wholesome *and* it's heavy metal" with "some serious bass drops." I'm not anti-Christian heavy metal, but I'm not a fan, either. In this case, though, the bass on several of the

songs, including one called "King," darn near made me see Jesus thanks to the Cinema SUB 12-500. While it didn't hit those 20-Hz notes that turn your internal organs to Jell-O and make the joints in your furniture come unglued, this Sonance sub will easily cause you to believe in a higher power when it comes to filling your room with bass. I cranked the system very loud for extended periods of time without pushing the sub into audible distortion

**SPECS** **SONANCE CINEMA SUB 12-500 IN-WALL SUBWOOFER SYSTEM**  
**ENCLOSURE TYPE:** Sealed **WOOFER (SIZE IN INCHES, TYPE):** 12, laminated carbon fiber cone **RATED POWER (WATTS):** 457 RMS **CONNECTIONS:** Speaker- and line-level, RCAs **CROSSOVER BYPASS:** LFE **AVAILABLE FINISHES:** White (grille)/Black (amp) **DIMENSIONS (W X H X D, INCHES):** 12.38 x 12.38 x 5.16 (sub only) **WEIGHT (POUNDS):** 28.5 **PRICE:** \$3,000

(that wasn't meant to be there). Another recommended disc was from the French duo, Justice, whose music Amazon describes as being "crazy-quilt dance-pop hybridism." The song "One Minute to Midnight," which at times seems to be one long (but surprisingly listenable) bass drop, came through strong and flawless on the Cinema SUB 12-500.

It's easy to recommend this subwoofer because Sonance has done so many things right with it. For example, they did a good job isolating the back box to minimize resonances that'll transfer to the wall. In addition, the SUB 12-500 driver itself is a serious transducer that can move some serious air. I also

think the amp's ability to run one or two subwoofers is a nice cost saver for anyone who wants to run things a little louder than the normal person or who has a larger-than-average room. Just as impressive is the fact that—unlike some subs that tend to have a bump at a particular frequency—the Sonance sub's response is free of noticeable peaks and dips.

All in all, the Sonance Cinema SUB 12-500 is an extremely impressive package that will do a heck of a job for anyone who wants to put bass into their room without compromising space or décor. The technology behind it may not be as exciting to talk about as subs that fold space and time and fit in a two-gang junction box, but I'll take good old-fashioned engineering that performs like this any day. 🍻

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