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RATING

JL Audio Fathom IWS-SYS-1 In-Wall Subwoofer System

Performance ★★★★½
Features ★★★★½
Build Quality ★★★★★
Value ★★★★☆

By Darryl Wilkinson

JL Audio Fathom IWS-SYS-1 In-Wall Subwoofer System

PRICE $4,500 (plus installation)

AT A GLANCE

Plus

- Enclosure designed for walls with standard 2 x 4 construction
- 13.5-inch low-profile driver
- 1,000-watt external amp with Automatic Room Optimization

Minus

- Retrofit install can be difficult
- Expensive

IF I NEEDED ADDITIONAL PROOF of how much Rob Sabin, our esteemed editor-in-chief (and part-time male stripper for the visually impaired) dislikes me, this would be it. He asks me the other day if I'd want to review another JL Audio subwoofer, one similar to the company's ginormous Fathom f212, which I reviewed in 2012. I have fond memories of, bruises from, and a partial hernia caused by that 220-pound behemoth.

Still, without asking my doctor or checking my health insurance, I enthusiastically answer my favorite boss in the affirmative. (It's the only answer he accepts, so it isn't much of a stretch.) "Awesome," he says, breaking in before I've gotten to the end of the word *yes*, "and since you never turn in anything on time, your due date is today. That means you're already late." Then, as if it's barely worth mentioning, he adds, "Oh, by the way, this one's an in-*wall* subwoofer. JL says it can be used in new construction or installed in an existing wall. Sounds like just the thing for you." Without affording me the chance to stutter indignantly or negotiate a higher pay rate, he cuts me off again. "Sorry, buddy, got to go. Doing a show at the nursing home in 30 minutes. Good luck on that in-wall thing." *Click.*

To be honest, that's not exactly how things went down. (I might—*might*—have made up the part about Rob being a stripper.) But it is true that the logistics of reviewing JL Audio's Fathom IWS-SYS-1 in-wall powered subwoofer system were dramatically different from those of reviewing the in-room f212. A giant in-room sub gets manhandled into position, and that's the end of the manual labor. You don't need a two-wheeled dolly to plop boxes next to a wall for an installation inside the wall. That, however, was just the beginning of the manual labor required for this new Fathom. Fortunately (unless you happen to be the one reviewing the "in-wall thing"), there are professional installers for that.

Double Bass Bonus

Of course, paying a professional to install an in-wall subwoofer costs, well, money (unless you convince your brother-in-law to do the work in trade for a 24-pack of cheap beer). I can hear your inner frugality whispering, "So, why bother?" Here's the most obvious answer: to get rid of that ugly, black-box sub taking up floor space in your room. The f212, for instance, is about the size of a large dorm-room refrigerator, making it impossible to disguise. But even smaller subs are hard to conceal or, at the very least, to get out of the way of the "living" aspect of a living room. Unless the gear itself is something you're extremely passionate about, an in-room sub almost always becomes the acoustic elephant in the room. Nobody likes seeing a sub sitting there; yet nobody says anything because, well, what can you do about it? (Hint: Get an in-wall sub.)

Even if you're lucky enough to have the perfect hiding spot for an in-room sub, you'll inevitably encounter Butterworth's Third Law of Subwoofers: "There is an inverse relationship between the performance of a subwoofer and the convenience of its location in the room." In other words, find the most livable spot in the room for a sub, and the universe will ensure that the sub will sound its worst at that position. The inverse—the best sound quality will be at the absolutely most inconvenient square footage of floor space—holds true as well. If sound quality is more important to you than hide-ability (which it should be, by the way), here's a pleasantly surprising fact about in-wall subs: They can skirt Butterworth's Third Law because nearly all installation locations are convenient. Unless you live in a glass house, have walls

● JL's in-wall subs are made to be suspended inside your wall cavity.

THE VERDICT

This subwoofer system does the seemingly impossible in an impossibly seeming way by hiding an amazingly shallow, high-excursion 13.5-inch woofer, along with the 70-inch-tall cabinet it requires, inside a wall having standard 2 x 4 construction, with only a driver-hiding grille screen as evidence—and it does this surprising feat without causing excessive wall vibrations. Even better, it does all that while performing like a top-end in-room sub.

SUBWOOFER

JL AUDIO FATHOM IWS-SYS-1 IN-WALL SUBWOOFER SYSTEM
PRICE: $4,500 (plus installation)
JL Audio • (954) 443-1100 • jlaudio.com

covered with large picture frames extending to the floor, or are hemmed in by shelves holding memorial urns with the cremated remains of deceased pets, you're bound to find a great-sounding spot that's also totally and very conveniently out of the way.

JL Audi—Who?

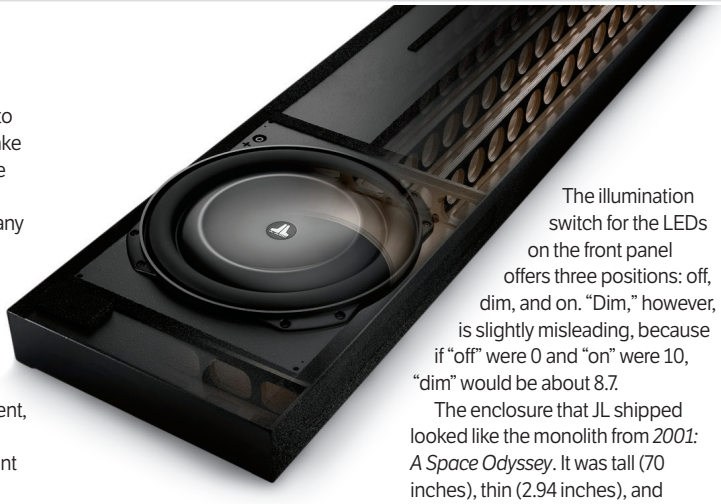
JL Audio has been around since the mid-1970s, and the company's first products were subwoofers for car audio—a market that was (and still is, to some extent) big on boom but small on space. They became known for building high-excursion/small-volume-enclosure woofers, as well as a line of custom-fit, car-specific Stealthbox subwoofer systems (and, eventually, marine audio gear). In 2004, the factory began cranking out its first home audio products, the highly impressive Fathom and Gotham in-room subs.

Word is that in 2010, after a long day "evaluating" marine speakers in JL's special "floating test facility" (wryly named the Bass Boat) off the southern Florida coast, two engineers got into a beer-soaked bet over who could come up with a way of stuffing a Fathom into a wall without the butt-half of the enclosure sticking out into the next room. Or they were attempting to cure Bass Deficiency Syndrome (BDS), which often plagues "spatially challenged" people. (It might have been some other reason, but if so, I don't remember what they told me.)

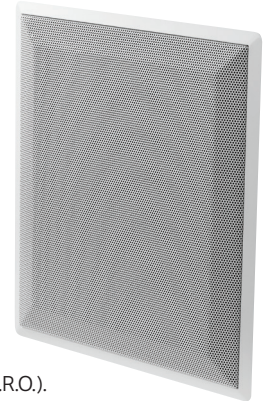
It might be a good time for me to point out that JL Audio doesn't make cheap stuff. (Spoiler alert: possible sticker shock ahead.) The least expensive in-room sub the company currently makes, the Dominion d108-ASH, is $800. That hellaciously awesome Fathom f212 I reviewed sold at the time for $6,300. Its replacement, the Fathom f212v2, is $7,000. And if you want JL's very best, there's the Gotham g213v2 for $15,000. Considering that the Fathom IWS in-wall subs are meant to perform as well as their Fathom in-room siblings, it's not surprising that the prices for the two IWS models are equally stout. For instance, the Fathom IWS-SYS-2—which includes an amp and two in-wall enclosures with a single woofer in each, making it roughly equivalent to the Fathom f212v2—commands a cool $7,500.

Gravity Not Included

For this review, JL Audio sent the Fathom IWS-SYS-1 in-wall subwoofer system, the single-driver, single-enclosure version, priced at $4,500. The system consists of three main components: a 1,000-watt, 35-pound, "purpose-tuned" amplifier, the woofer enclosure, and an amazingly shallow—and amazingly heavy—13.5-inch driver. (There's the grille, too, plus the mounting hardware, but I'll get to that later.)



The amp's black-texture-coated top panel, massive heatsinks (on the left and right sides of the chassis), and brushed-aluminum front panel combine to make for a visually stunning piece of hardware—which, sadly or fortunately (depending on your perspective), is likely going to be rack-mounted or stacked on a shelf in an A/V cabinet, to live a life of anonymity. JL says the amp is designed to be "built-in" friendly, and they certainly hit the mark on that count. All of the most-used controls (master level, low-pass frequency, low-pass filter, phase, polarity, and "e.l.f. trim" extreme low frequency) are located on the front panel. Furthermore, the amp ships ready to be rack-mounted but includes hardware (rubber feet and rack-ear covers) for placing it on a shelf, where the hefty, side-mounted heatsinks will help keep the amp cool even in a tightly packed stack of gear. And there's a calibration microphone input with Defeat and Calibrate buttons for JL's built-in Automatic Room Optimization (A.R.O.).



The illumination switch for the LEDs on the front panel offers three positions: off, dim, and on. "Dim," however, is slightly misleading, because if "off" were 0 and "on" were 10, "dim" would be about 8.7.

The enclosure that JL shipped looked like the monolith from *2001: A Space Odyssey*. It was tall (70 inches), thin (2.94 inches), and modest in width (13.75 inches). That's the perfect size to fit the cavity space between the 2 x 4 (1.5 x 3.5-inch) studs in a normal 16-inch-on-center interior house wall (like mine). Since not all walls are the same, JL offers the IWS-SYS enclosures in various depths for walls with 2 x 4 and 2 x 6 stud variants, to eliminate the need for modifications to the studs. The enclosure is made (in the U.S., by the way) from CNC-cut, cabinet-grade, Baltic birch plywood, and its internal bracing can withstand a magnitude 9.3 earthquake. (That's just a rough estimate, though.)

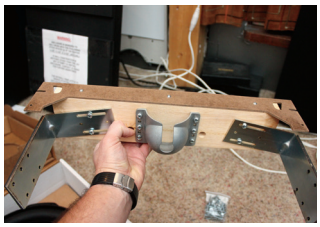
In a retrofit installation (like mine), it's extremely important to inspect the wall cavity and take accurate measurements because of the unique way the sub's enclosure will reside there. You don't hurriedly bolt it to the studs and let the sheetrock hide whatever MacGyver-ish modifications you did to hold it in place. The top of this enclosure is designed to hang (JL uses the word *suspend*) from a single anchor point straddling the wall cavity. That means the rest of the enclosure doesn't rely on anything else to

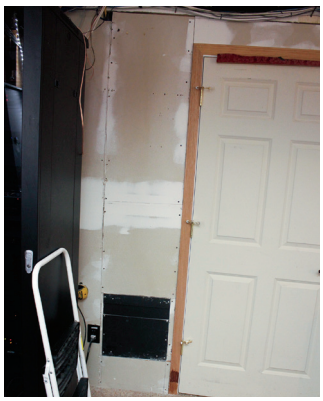
● The amp has an attractive brushed-aluminum front panel.

The IWS-SYS-1's enclosure is the perfect size to fit the cavity space between 2x4 studs.

● **Below left: A specially designed rod and the force of gravity are used to hang the cabinet in the wall.**

● **Darryl's DIY photos show the installation of the cabinet (left) and the low-profile driver.**





SPECS

Subwoofer: 13.5 in mica-filled polypropylene cone woofer; sealed enclosure • **Dimensions (WxHxD, Inches):** 13.75 x 70 x 2.94 (enclosure), 17.14 x 17.64 (WxH, primer white paintable grille) • **Weight (Pounds):** 43 • **Amplifier: Rated Power (Watts):** 1,000 RMS short-term • **Connections:** Line-level, XLR (2), RCA (2); speaker-level, binding posts (2) • **Crossover Bypass:** Switchable • **Available Finishes:** Silver brushed aluminum (faceplate), black (chassis) • **Dimensions (WxHxD, Inches):** 17.4 x 3.5 x 17.9 • **Weight (Pounds):** 35

support its weight—not the front or back wallboards, the studs, or even the floor.

After the installer secures an included adjustable mounting assembly between the left and right studs at 90.5 inches from the floor, the half-sphere on one end of an 11.25-inch-long "hanging rod" (26.25 inches for shorter/deeper enclosure variants) is inserted into a cup-like bracket attached to the mounting assembly. There's a half-sphere on the other end of the rod and a similar bracket on the top end of the enclosure. The installer lifts the enclosure, slides the free end of the rod into the enclosure's bracket, and steps back to admire his work. Each end of the hanging rod can swivel somewhat in its respective cup mount—which means that gravity is ultimately what holds the enclosure in place. (At this point, JL doesn't have plans for including a supply of gravity with the system, claiming, "It's the customer's responsibility.")

Strategically placed spacers and padding on the exterior surfaces of the enclosure help prevent any hard contact between the enclosure and the wall structure. And the installation hardware includes a huge roll of "energy-absorbing foam gasket strip." The installer applies this to the front edges of the studs and the mounting bracket to further minimize transfer of vibrations, something that's particularly helpful with walls containing metal studs.

A Heavy-Mass Woofer

The subwoofer driver is JL Audio's 13TW5v2. The fact that the diameter is 13.5 inches is unusual, but it pales in comparison to the amazing fact that the driver requires a mere 2.63 inches of mounting depth. JL calls the technology "Concentric Tube Suspension," but it's simpler to say it's just a molded concentric tube structure that's used to support both the spider and the driver's large-diameter voice coil. (Well, maybe not so simple to say.) Basically, JL took a 7-inch-diameter voice coil—yes, 7 frickin' inches!—and slid the magnet *inside* it rather than wrapping the magnet around the outside, as is found in typical loudspeaker drivers. The benefit is that, even though the overall depth is very shallow, the cone still has a great deal of excursion. It's heavy and built like a tank—and although I'm not usually a fan of staring at drivers, I admit I was sad when I mounted this beautiful piece of audio engineering in the wall and put a grille over it.

Despite the laudable lengths JL Audio went to in order to minimize enclosure/wall vibrations, I expected that a resonating Achilles' heel would be where the woofer met the wall. Ah, but this is where those extra install parts come in. After the enclosure is installed, the wallboard is replaced. A wooden template attached to the enclosure provides a guide for the wallboard guys to leave a square opening in the wall at precisely the location where the driver will hang in the enclosure behind the wall. It's absolutely, excruciatingly important that the size, shape, and position of the opening are correct. Otherwise, the two parts of the grille assembly—the removable, paintable grille itself and the "grille tray unit"—won't line up properly. They most definitely need to line up, too, because the grille assembly is the last bastion against vibration in the design of this subwoofer. As a matter of fact, alignment and placement are so important that JL makes three different grille models, with depths to fit wallboards ranging from a half-inch to 1 9/16 inches thick.

I've never encountered anything quite like JL's grille-assembly mounting system. The grille frame screws directly to the wall studs (through the wallboard)—not to the enclosure, as you might think. The grille tray unit includes a short, flexible sleeve that attaches to the grille frame on the *outer* side of the wall and extends *inward*, where, once the woofer is installed, it gets squeezed between the woofer's flange and the enclosure. It's like a sonic shock absorber that keeps the woofer/enclosure combo from touching the wall, and it acoustically seals the woofer itself from the in-wall cavity.

If you've got the money, and you've got a wall, this sub's for you.

● **JL supplies a mic for its A.R.O. room correction.**

While the sub was burning in, I took advantage of the repetitive playback of a heavy bass track to check out these various isolation techniques. I had installed the sub in a normal, ordinary interior wall separating my home theater and a hallway, so while the sub was playing, I walked out into the hall. Not surprisingly, I could hear muffled bass coming from the room, and the wall was vibrating slightly—but nothing an in-room sub wouldn't have also caused. The amazing thing was this: When I ran my hand along the wall of the hallway, spanning multiple studs, it was nearly impossible to tell where the sub was installed. Even more astonishing: As far as I could tell, there was a nearly equal amount of vibration along the wall on the left side of the door as there was on the right side, where the sub was installed. Those results made it well worth the time and effort involved in the installation.

Straight as an A.R.O.

Setting the acoustic parameters for the IWS-SYS-1 was almost a letdown. Everything stayed the same in my Onkyo TX-NR3030 A/V receiver except for the sub level, which I reset to 0, and all other tone controls and EQ functions were defeated. Then I plugged one end of the microphone cable into the mini-XLR jack on the front of the sub's amplifier. After tripping once or twice over the cable, I attached the calibrated mic to the cable and set it up at my main listening position. The most difficult part was pressing the Calibrate button, waiting five seconds, and then enduring three minutes of a static-noise sequence. After that, I had to pack up the mic and watch a movie. (Exhausting, right?)

Unlike the room correction technologies from Audyssey and a few other companies, JL Audio's A.R.O. calibrates only for the main listening position, not the entire room. (Nor does it affect audio coming from any of the other speakers in your system.) Want to judge the result against the sub's sound without the optimization processing engaged? The Defeat button on the front of the amp makes it easy to do this. The changes that A.R.O. made in my room weren't subtle. They were more of the significant, "welcome to the big leagues" kind of improvement. A.R.O. clarified the bass output, both taming it in the range from 40 to 50 hertz (where it had gotten out of hand pre-calibration) and giving it a kick in the butt in the low 20-Hz region. In short, pre-calibration, the sub sounded good—but not good enough to warrant $4,500 plus installation. It gave hints every now and then of greatness, but nothing sustainable over time. Post-calibration, on the other hand, the sub turned into a bad-ass bully of a bass beast—and I mean that in the best of all possible ways.

By the Bass of God

Now that you've read the previous paragraph, the results of my listening sessions won't be too surprising. JL Audio's IWS-SYS-1 sidles up behind you, begins whispering sweet bass love into your ears, and then morphs into a full-fledged bass-pumping Goliath (sorry, I mean, Fathom…er, giant thing…) that's amazingly emotionally satisfying because, despite all the obvious power, the sub never loses control. The alt-metal beat of Disturbed's "Indestructible" (along with the surreal battlefield soundscape at the beginning of the track) was made even more heavy metal because of the extreme low frequencies the sub could generate. The Decemberists' "This Is Why We Fight" features a more agile drumming throughout the cut, and the sub easily kept up and stayed tight. My favorite track for the IWS-SYS-1 soon became "Big Shot" from Dr. John's Grammy-winning *Locked Down*. The combination of Dr. John's gravelly voice with the drums and bass—and damn well everything else in the track—was underpinned perfectly by the in-wall sub, which stayed as warm and as full as the music demanded without ever becoming boomy.

It's somewhat ironic that the people who devised the audio for *Deepwater Horizon* were so meticulous in their work—acoustically re-creating the catastrophic results of what happened after some potentially disastrous work wasn't done quite so meticulously. The IWS-SYS-1 handled the rig explosions exceptionally well, but I think what impressed me the most about the system while watching this movie wasn't the depth of the bass output—although that was definitely impressive. It was the agility of the sub, especially the quick hits and thumps of the oil-drenched seabird as it frantically flopped around the inside of the control cabin, as well as the snap of the shrapnel that cuts through multiple scenes.

Although I had promised myself I wouldn't watch *Independence Day: Resurgence* because the first movie was so stupid, I found myself sticking around for the whole thing because the IWS-SYS-1 was so compelling in its re-creation of the ominous mass of the alien mothership. This was quite spectacular during scenes where the ship begins drilling through the ocean floor. Similarly impressive was the sub's ease in instantly going from nothing to seriously extreme bass any time the fusion drive was engaged. It seems silly to say, but the sub never sounded like it was *in* the room (or in the wall, for that matter). The bass was just another part of the experience, not unlike the couch I was sitting on, or the air I was breathing. It was seamless, yes, but that's an easy word to use. It's harder to describe the emotional and physical sensation created by the near-perfect entanglement of low frequencies, the listener, and everything else in the room. That engrossing interaction made the abrupt cuts between dialogue and blasts of heavy rap beats in *War Dogs* all the more intense, and it drew me into that movie much more than I had expected.

Conclusion

JL Audio's $4,500 in-wall subwoofer system isn't for everyone. There are some people who can peacefully coexist with the largest species of in-room subs. There are certainly plenty of people who can't afford a $450 subwoofer, let alone one that costs 10 times that much. It's hard to believe, but there are even human beings who don't care about sound quality. Yet, for the demographic that has the financial means, desires the convenience of a nearly invisible subwoofer, and is serious about sound quality, the IWS-SYS-1 is an awesome choice. It's a sub that makes no acoustic compromises, nor does it force you to make the lifestyle compromises that a typical in-room sub would. In some ways, it's a shame that all the cool technology here is hidden from view—but, when you think about it, *not* seeing anything of this system is the coolest part of all. If you've got the money, and you've got a wall, this sub's for you. ◆

● **The amp features balanced or unbalanced inputs.**