

SURROUND SPEAKER SYSTEM

Infinity Interlude IL60

Big is beautiful. The Infinity Interlude IL60 is big but not superficially beautiful. What's beautiful is that a big company like Harman International can spend millions on driver-technology R&D, build a state-of-the-art speaker like the \$10,000 Infinity Prelude MTS—a bargain itself—and then shower the considerable R&D benefits on a modestly priced speaker like the IL60. At \$2000/pair, it can hardly be described as a “poor man’s” Infinity Prelude, but considering what you get for your money, the IL60 is one of the best loud-speaker values around.

The floorstanding 4-way tower includes a 1-inch dome tweeter, a 4-inch midrange, a 6½-inch midbass driver, and a side-mounted 12-inch woofer powered by a built-in 500W amplifier. The drivers, as in every Interlude speaker, are all Ceramic Metal Matrix Diaphragms—aluminum coated on both sides with a ceramic material—designed under the watchful eye of Dr. Floyd E. Toole, Harman’s vice president of engineering, who spent years researching loudspeakers at Canada’s National Research Council in Ottawa. These stiff, lightweight, low-resonance drivers are

designed to have uniform dispersive characteristics so that direct and reflected sounds maintain similar, smooth timbral balances. Toole’s research has shown that the ear is particularly sensitive to resonant peaks, whether they’re heard from on- or off-axis. Generally, the higher the Q of the resonance (that is, the narrower in frequency width), the greater its amplitude must be for us to hear it. Toole’s research demonstrates that we can perceive low-Q resonances (ones that cover a wider frequency range) that deviate as little as 1.5dB from flat-on orchestral material and 0.3dB on

Michael Fremer

SPECIFICATIONS

Interlude IL60 4-way floorstanding tower speaker with powered subwoofer

Drivers: 1" dome tweeter, 4" midrange cone, 6½" midbass cone, 12" powered subwoofer cone

Subwoofer amplifier: 500W into 8Ω

Frequency response: 28Hz–22kHz, ±3dB (subwoofer: 20–100Hz, <0.1% THD)

Nominal impedance: 8Ω

Sensitivity: 89dB (2.83V @ 1m)

Recommended amplification: 15–175W

Dimensions: 48" × 9¼" × 17¼" (H×W×D)

Weight: 75 lbs

Price: \$2000/pair

Interlude IL36c 3-way center speaker

Drivers: 1" dome tweeter, 4" midrange cone, two 6½" cone woofers

Frequency response: 55Hz–22kHz, ±3dB

Nominal impedance: 8Ω

Sensitivity: 91dB (2.83V @ 1m)

Recommended amplification: 15–175W

Dimensions: 23" × 9" × 12½" (W×H×D)

Weight: 32 lbs

Price: \$500

Interlude IL10 2-way surround speaker

Drivers: 1" dome tweeter, 6½" cone woofer

Frequency response: 56Hz–22kHz, ±3dB

Nominal impedance: 8Ω

Sensitivity: 88dB (2.83V @ 1m)

Recommended amplification: 15–150W

Dimensions: 15½" × 8½" × 11½" (H×W×D)

Weight: 18 lbs

Price: \$400/pair

System

Drivers: all C.M.M.D. (Ceramic Metal Matrix Diaphragm)

Price: \$2900

Manufacturer

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pink noise.

The IL60 also includes the ingenious R.A.B.O.S. (Room Adaptive Bass Optimization System), a user-friendly, single-band parametric bass-equalization scheme to deal with the low-frequency “bumps” that afflict most rooms. With only two speakers, it’s possible to minimize the problem with speaker placement. But home-theater speaker placement is often dictated by where you put your monitor, making R.A.B.O.S. an even more important feature for a 5.1-channel setup.

Where did Infinity cut costs to bring the IL60’s price down to \$2000/pair? Rap the side of the cabinet and you’ll know. Or look at it closely: The overall construction quality—fit, finish, and bracing—is competent, but not in the same league as far more expensive speakers. Nonetheless, the IL60

is an amazing value that few small companies could afford to offer. And with a choice of three grillecloth colors (Warm Platinum is standard), it can be dressed up to look a bit less monolithic. (A smaller, less expensive 3-way system, the IL50, \$1298/pair, is also available.)

At 32 lbs, the four-driver, 3-way Interlude IL36c is one of the heftier center-channel speakers around. It costs \$500 and has a 1-inch dome tweeter and a 4-inch midrange, these flanked by a pair of 6½-inch bass drivers. It’s 23 inches wide and 12½ inches deep, so before you buy, make sure your monitor can accommodate it. (The smaller, lighter, three-driver IL25c is also available, for \$299.)

Infinity also sent along a pair of Interlude IL10s (\$400/pair), one of the smaller models in the Interlude line, for use as surrounds.

The IL10 is a stand-mounted 2-way featuring a 1-inch tweeter and a 6½-inch woofer.

As reviewed, the complete system cost was \$3950—a solid value. But just before press time, Infinity reduced the cost of the IL60 to \$2000/pair (from \$3000) and the IL10 to \$400/pair (from \$450). That drops the cost of the entire system to \$2900—a steal, particularly when you realize that that includes a center-channel speaker that’s not the usual top-of-the-TV afterthought, and 1000W of dual 12-inch bass power; unless you really feel the need to go below 28Hz (and I do mean *feel*), you won’t need a subwoofer.

Setup

The IL60’s rear panel includes subwoofer line-level in and out, a set of speaker-level 5-way binding posts, and switches for sub-



Interlude IL36c 3-way center speaker

On the **other hand**, if you're **musical tastes** lean toward rock, this **system** does. **Rock.**

woofer/line-level input, Lowpass Filter On, R.A.B.O.S. On, and the three associated adjustment pots. There's also a power switch and an IEC power jack. A front-mounted level control for the subwoofer glows green when a signal is present.

Five connection possibilities are outlined in the instructions, depending on associated equipment. For home-theater use with an A/V receiver, the LFE output is routed to both speakers' subwoofer line-level inputs using a Y connector, and the sub input is set to Line Level.

The well-written instructions (how many times do I get to say *that!*) advise you to turn the subwoofer levels to halfway and then listen to music. If the bass sounds thumpy, lumpy, or boomy, R.A.B.O.S. should be used. Otherwise, it can be switched out. As it turned out, there was a serious bump in my room at around 80Hz. Using the optional Infinity-supplied R.A.B.O.S. kit that includes a test CD, sound-level meter, and the Q-Finder device—which lets you correlate the Q, or width of the resonance, to a numerical value used to set the equalizer—I was able to identify the frequency, width, and amplitude of the

room bump. Then, using the three potentiometers, I was easily able to flatten the bump. Infinity recommends that you then use music to set the woofer level as you please. The whole process took about 15 minutes. Though the IL60 is a large speaker, I ran my pair as Small, sending everything below 80Hz to the powered sub section through my receiver's Subwoofer Out jack.

Listening

Listeners accustomed to the peaky outputs of lesser speakers might at first confuse the IL60's smooth, relatively flat response with a lack of transparency, air, and detail. However, the more you listen, especially to well-recorded music, the more you'll come to appreciate the IL60's subtly impressive abilities—especially if you've tamed a troublesome room bump for the first time. While you might hear less bass than you're used to, there will be better, more articulate, more tuneful bass from kick drums, and greater timbral and textural accuracy from acoustic and electric bass. With the exception of the lowest organ pipes, the IL60's low-frequency response of down to 28Hz will deliver all the musical bass information

stored on your favorite recordings—and, with R.A.B.O.S., do so without obscuring the mid-bass and midrange.

But unlike a top-shelf subwoofer, the IL60 couldn't get down to 20Hz and below. It fell slightly short of the best bass with explosive sound effects that are meant to be felt in the stomach as well as heard, and in its ability to convey a venue-size-defining low-frequency "room sound." But considering the price, it's almost as if the mids and highs are thrown in for free.

The midrange's absence of honky or hooty colorations indicated effective driver tran-

sitions. Male and female voices were reproduced (in 2-channel mode) clearly and naturally: Female voices didn't sound thick in the lower registers, and male voices weren't chesty.

There's a new JVC XRCB edition of the Takayuki Kato Trio's *Guitar Standards*, a recent Three Blind Mice release (TBM-XR-5041). This Japanese jazz label is known for its good sound, and *Guitar Standards*, recorded in analog on a 2-track Studer deck, does nothing to damage that reputation. Takayuki Kato plays a Gibson acoustic

on "Estate," accompanied by Norikatsu Koreyasu's powerful, sometimes bowed bass and Shota Koyama's dramatic percussion work. The IL60s dealt with all of this impressively, producing a credibly sized guitar image that possessed weight, transient speed, and clarity. The cymbals, struck or brushed, sounded properly crisp and metallic but not hashy or edgy, and the prominent stand-up bass was deep, powerful, and free of bloat. Switching out R.A.B.O.S. resulted in a rhythmic mess, the bass swelling and receding unnaturally.

With the EQ in, proper proportion returned, accompanied by detail and a fine sense of depth, the percussion sometimes sounding so far back it could have been in the next room.

I listen to a lot of rock, and found that the IL60 was up to that task at very high SPLs, without strain or dynamic compression. While bright, processed recordings sounded like just that, the speaker didn't add its own toxic edge to the mix, and helped to keep sonic pain to a minimum.

But good as the IL60's performance was,

MEASUREMENTS

The IL60's minimum impedance is 3.9Ω at 230Hz; a fair rating for the nominal impedance would be 7Ω. (Because the impedance of most speakers varies wildly with frequency, the nominal impedance value is always an estimate.) The phase of the speaker's impedance becomes quite capacitive at 123Hz, which often indicates a difficult load for an amplifier, particularly in the presence of a low impedance magnitude. But the IL60's impedance magnitude is a comfortably high 10Ω at this frequency. This, combined with the powered subwoofer, should make the speaker suitable for use with most competent amplifiers. The IL60's sensitivity measured about 89dB/W/m.

The pseudo-anechoic response of the IL60 at tweeter height, averaged over a 30° forward angle and combined with the nearfield responses of the woofer, is shown in **Fig. 1** (violet). This is one of the flattest speaker response curves we have ever measured. The off-axis curves are also very well controlled—another sign of a well-engineered speaker. While the vertical response curves in **Fig. 2** show a good response at or slightly above the tweeter axis, below the tweeter (an unlikely listening location for serious listening) a suckout centered at 4kHz begins to appear. The effective bass response (-10dB) extends down to 30Hz.

The IL36 center-channel's minimum impedance of 3.3Ω falls at 320Hz, and its sealed cabinet is tuned to 56Hz. A reasonable nominal impedance rating would be 5Ω. The IL36 should not be a difficult load, though the amplifier should be comfortable driving 4Ω. The IL36's sensitivity measured about 88dB/W/m.

The pseudo-anechoic response of the IL36c

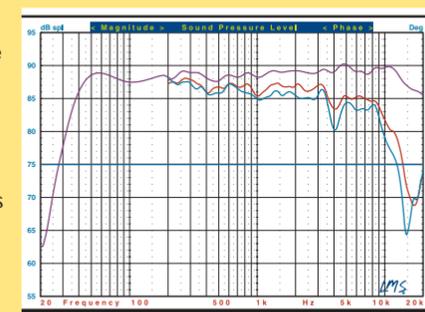


Fig. 1: Infinity IL60, pseudo-anechoic horizontal response at 45° (red) and 60° (blue) relative to tweeter axis.

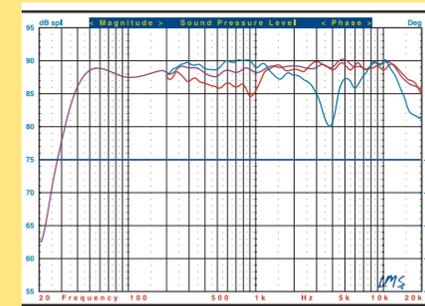


Fig. 2: Infinity IL60, pseudo-anechoic response at +15° (red) and -15° (blue) relative to tweeter axis.

at tweeter height, averaged over a 30° forward angle and combined with the nearfield response of the woofers, is shown in **Fig. 3** (violet). While not as strikingly flat as the IL60's curve, it is nevertheless a very competent result. Just as important, the off-axis curves show little sign of the sort of serious response dips common in horizontal center-channel speakers—thanks to the 3-way design and its vertically configured midrange and tweeter. The vertical

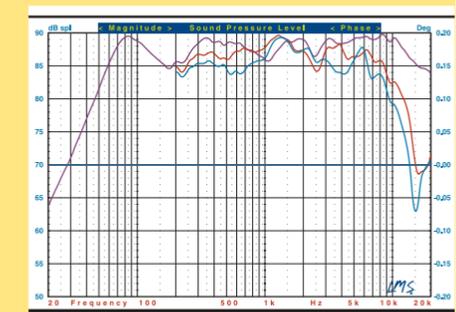


Fig. 3: Infinity IL36c, pseudo-anechoic horizontal response at 45° (red) and 60° (blue) relative to tweeter axis.

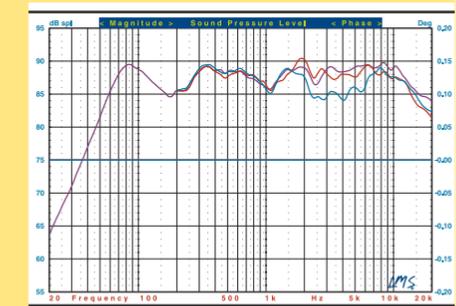


Fig. 4: Infinity IL36c, pseudo-anechoic response at +15° (red) and -15° (blue) relative to tweeter axis.

All figures: Violet: pseudo-anechoic response on tweeter axis, averaged across a 30° horizontal window, combined with the nearfield woofer response. response curves in **Fig. 4** also show a solid result, despite a small dip that develops below the tweeter axis and suggests that the IL36c should be tilted down when mounted atop a big-screen TV. The speaker's effective low-frequency limit (-10dB) is 45Hz.—Thomas J. Norton

REVIEW SYSTEM

Sources

Pioneer CLD-D606 LD player
Camelot Technologies Round Table
DVD player
RCA DTC-100 HD digital tuner

Display

Philips 55PP9701 55" HD-ready RPTV

A/V Receiver

B&K AVR307

Cables

TosLink: Kimber
Speaker: Sumiko OCOS (L/C/R, surrounds)
Video: AudioQuest S-video, component
Digital: Wireworld, Wireworld Eclipse Gold, XLO Reference

Misc.

Audio Power Industries Power Wedge
116 line conditioner
Terk Pi indoor powered FM antenna
Terk AM Advantage AM-1000 indoor AM antenna



Interlude IL60 4-way floorstanding lower speaker

don't think you're getting the \$10,000 Infinity Prelude MTS system, or even 90% of it (see "Conclusions"), for less than one-third the price. What might have been a cabinet resonance created a mild congestion in the midbass/lower midrange that reduced clarity somewhat, and the IL60's wide front baffle (compared with the Prelude's tall, slim midbass/HF tower) prevented it from imaging and "disappearing" as effectively as the Prelude.

The IL60's overall balance was somewhat forward in the upper midrange. There was also a lack of ultimate transparency and delicacy in the mid to treble region, along with less than stellar rendering of low-level detail and microdynamic expression. Add less extension and power at the very bottom and, good as the IL60 was, it was no Prelude. Hardly surprising. When I took *Guitar Standards* downstairs and played it on my pricey 2-channel system (Audio Physic Avanti III loudspeakers, Hovland HP-100 preamp, Musical Fidelity Nu-Vista 300 amp), it was another experience entirely. Also not surprising.

In 5.1 Mode

Adding the IL36c center-channel and the IL10 surrounds made the already fine-sounding 2-channel system explode, thanks mostly to the IL36c's first-class performance. It was the most impressive speaker in the system, and a genuine bargain at \$500. I can't tell you how it might mate with any other brand of L/R speaker, but it sure made a strong case for Infinity's entire IL60-based, 5.1-channel Interlude system! The efficient (91dB) IL36c sounded powerful compared to the wimpy center-channel "afterthoughts" supplied with many midpriced systems, and its handling of the human voice made dialogue easy to understand. Here, it shared the IL60's slightly forward timbral balance (which could be due to a peak or a dip in the frequency response of reproduced voices), but that only enhanced and clarified dialogue without making it sound edgy or bright. The IL36c was notably free of chestiness or boxiness, and, thanks to the tweeter's subjectively flat, smooth response, sibilants were rendered with great naturalness. Horizontal off-axis performance was exemplary, with no audible dips across a wide window, thanks to the three-way driver configuration with its vertically configured 4-inch midrange and tweeter—something you seldom see in a \$500 center-channel speaker.

Because it uses the same bass driver and tweeter as the IL36c, the IL10, used for the surrounds, proved a decent low-cost complement to the front-channel array, its similar timbral balance and overall performance helping to create the proverbial "acoustic bubble." The C.M.M.D. tweeter's smooth, non-peaky performance on- and

off-axis allowed it to fire directly at my ears without calling attention to itself. The larger, more expensive IL30 (\$598/pair) uses the same drivers in a much taller (36 vs. 15½ inches) and heavier (34 vs. 18 lbs) cabinet. It goes lower (48Hz vs. 56Hz), but because bass management sends 80Hz and below to the subwoofer, I'm not sure anything would be gained—unless you were planning to play DVD-Audio discs, which bypass your receiver's bass-management system.

It was hard to fault the 5.1-channel IL60 system's portrayal of macrodynamics, its



Interlude 10 2-way surround speaker

ability to play loud without strain, and its spatial presentation. Flanking my Philips 55PP9701 55-inch HDTV, the IL60s produced a tall, wide, weighty soundstage, its size commensurate with the picture. Pans

I have **no reservations** whatsoever about **recommending** this high-performance **system** for movie-soundtrack playback.

across the front stage were seamless, while music mixed for the front three channels was full-bodied and dynamic. There was nothing polite about this system.

Film vs. Music

The downside of placing a large powered woofer in a full-range speaker built to a moderate price point is that the cabinet—the place where most costs are cut—is prone to resonances that can cloud the sound, creating congestion and a mechanical quality. The IL60 had traces of these characteristics, though they were by no means pronounced.

serious music listening, I caution you to give the Interludes a good listen first. You might be better off spending the same amount on speakers that offer greater timbral delicacy, macrodynamic expression, and low-level resolution of detail, and that give up some bass extension—especially if you listen mostly to classical or other kinds of acoustic music. You can always add a subwoofer later. On the other hand, if your musical tastes lean toward rock, this system does. Rock.

Conclusions

I came across a classified ad on the Internet

that claimed that the \$2000/pair Infinity Interlude IL60 offers 90% of the performance of the \$10,000/pair Infinity Prelude MTS. I wish that were true. While the C.M.M.D. drivers are probably equal or close to equal in quality to the Preludes', the driver configuration, cabinets, and (probably) the crossover design are not in the same league, and shouldn't be expected to be. That aside, the IL60 is a smooth-performing, bargain-priced, low-coloration, nearly full-range speaker that does include the unique R.A.B.O.S. bass-optimization system—not available in other brands, regardless of price.

In designing such a high-performance speaker system to this price point, Infinity chose its compromises carefully. The IL60 is a dynamic, nearly full-range speaker that can play extremely loud without strain, in the process losing only a bit of transparency, delicacy, low-level resolution, and timbral richness. These are reasonable concessions, especially in the context of home theater (though some may find the speaker's styling clunky and less than living-room-friendly).

For the home-theater enthusiast with a problematic room and

few placement options, the R.A.B.O.S.-equipped IL60 might be the only solution. For others with space limitations, this relatively slim tower with a sophisticated 3-way system atop a powered subwoofer offers almost full-range performance without the need for a room-cluttering subwoofer.

Add the Interlude IL36c—among the most impressive center-channel speakers at any price—and a pair of the small but rugged Interlude 10 surround speakers, and for less than \$43000 you can have one of the best values in a high-performance home-theater speaker system.