

TEST REPORT

DANIEL KUMIN



Infinity

Beta Home Theater Speaker System

Back in hi-fi's golden age, there used to be hot debates over "East Coast" vs. "West Coast" sound — no doubt a tame forerunner of the hip-hop wars of the '90s. East Coast speakers were thought to be smooth and mellow, with "concert-hall" sound best suited to classical music and jazz. West Coast models were bright and punchy — just the ticket for loud rock & roll.

Of course, this was largely bunk. There were plenty of "hot" speakers made back east and lots of smooth California models. For its part, Infinity Systems of Chatsworth, California, always avoided the labels and got on with the business of simply making

excellent speakers, including some of the more innovative (and expensive) designs ever sold.

Infinity's new Beta speaker line is priced squarely in home theater's upper-middle-class. The suite we put together included the larger of two bookshelf models, the Beta 20, for the front left/right positions, the Beta C250 center speaker, a pair of Beta ES250 surround speakers, and the unusually powerful and compact CSW-10 subwoofer.

For this report, I placed the Beta 20s on stands, the C250 atop my 30-inch wide-screen HDTV, and the ES250s on my usual high, side-wall shelves — the same positions normally occupied by my reference

speakers. I put the CSW-10 in my tried-and-true subwoofer spot, a bit to the left and behind the left front speaker.

Though small in size, the CSW-10 is a big part of this system's story. Inside this modest but surprisingly heavy cube are a single 10-inch driver, a 650-watt BASH amp (one of today's super-efficient "smart" amplifier topologies), and Infinity's Room Adaptive Bass Optimization System (RABOS). Besides the three knob controls on the sub itself, RABOS comprises a test CD, a sound-level meter, some "audio-log" graph paper, and a special ruler to help you calibrate the system. All of this is intended to help you get the best possible sound in your room. Here's how it works: ➤

TEST REPORT



Heard over the Infinity Beta system, the horse-race sequences in *Seabiscuit* thundered by in a way that put me in the grandstand.

With the meter at your listening position, you balance speaker levels, then play test tones on the CD and plot the meter readings on the graph paper. The result is a graph of the subwoofer's frequency response. Then you overlay the ruler on the graph to find how to set the sub's Level, Width, and Frequency controls for optimal bass performance.

Once set up and tweaked, the Beta system proved to be a solid performer. With stereo music, the Beta 20s (played alone) had a notably extended, detailed, yet smooth treble — in a word, they sounded “sweet.” The midrange was scrupulously defined and clean, though with a touch of leanness through the male vocal regions.

These small speakers also put out enough bass to keep me happy with most music.

In my standard movie-sound torture tests, the complete system played loud, with enough bass impact for any soundtrack. *Seabiscuit* is one of those films whose soundtrack, though unspectacular, serves its story well with its wide range of voices, music, and sound effects. Its horse-race sequences thundered by in a way that put me at the track — had there been a \$2 window, I'd have placed a bet.

The C250 center speaker delivered even, clear response on the full range of dialogue and TV-announcer voices, with very little coloration. And I heard less change in the midrange tones as I moved off-center than with many other horizontally oriented two-way center speakers. However, I also discovered that the Infinity center's tweeter has a fairly tightly controlled spread. If I moved more than a little to either side — to the far end of a sofa, say — I noticed some falloff in snap and sparkle, even to the extent that some voices sounded smoother than at dead center.

The Infinity array vaulted my multichannel music hurdles with unified, clean playback from the best recordings. For example, James Taylor's SACD *October Road* is a sparkling six-channel studio production, and the Betas let me hear every bit of it.

fast facts

	Beta 20 (front L/R)	Beta C250 (center)	Beta ES250 (surround)	CSW-10 (subwoofer)
TWEETER	1-inch dome	1-inch dome	two 1-inch domes	—
WOOFER	6½-inch cone	two 5-inch cones	two 5-inch cones	10-inch cone
ENCLOSURE	ported	sealed	sealed	ported
POWER	—	—	—	650 watts
INPUTS, OUTPUTS, AND CONTROLS	multiway binding posts	multiway binding posts	multiway binding posts; dual driver arrays can be individually wired	dual RCA line-level inputs; level, crossover controls; normal/bypass and phase-invert switches; RABOS defeat, Frequency, Level, and Width controls
DIMENSIONS (WxHxD) and WEIGHT	8⅞ x 13¾ x 13 inches; 21 pounds	17 x 6¾ x 8⅞ inches; 16 pounds	11¾ x 13¾ x 6⅞ inches; 12½ pounds	13¼ x 14 x 15⅞ inches; 52 pounds
FINISH	cherry, beech, black woodgrain	cherry, beech, black woodgrain	black or white	black or cherry woodgrain
PRICE Total: \$2,344	\$398 a pair	\$249	\$698 a pair	\$999
MANUFACTURER	Infinity Systems, www.infinitysystems.com, 516-674-4463			

PLUS

Very accurate, well-balanced sound.
Deep bass from a small sub.
RABOS improves bass performance.
Highly flexible surround speakers.

MINUS

Center speaker loses some treble snap and sparkle when heard off to the sides.

Tracks like “Raised Up Family” maintained all the superb clarity and instrumental definition I expected, and the disc was an excellent test of the ES250 surround speakers' three different modes.

A three-way toggle switch on the middle panel of the trapezoidal cabinet selects bipole, dipole, or monopole mode. In bipole mode, the ES250's dual driver arrays, each with a woofer and a tweeter, operate together, in phase. Dipole mode throws them out of phase (one set pulling inward as the other pushes out), producing a “null” directly in front, which enhances ambience and reduces the ear's ability to locate the speaker. Monopole mode silences one array altogether, yielding a simple two-way speaker.

Monopole mode provided the smoothest tonal match with the front speakers, especially on multichannel discs like the Taylor SACD, lending the most believability to the horn-stabs and percussion flourishes in the surround channels. Bipole mode added low-midrange oomph, but it was on the heavy side. I preferred the Dipole mode for movie soundtracks because it dramatically improved envelopment, but it sounded a bit hollow on this kind of music recording.

Unfortunately, as with nearly all such designs, you have to switch each speaker manually to change operating modes. Die-hard surround enthusiasts will be pleased



to know that the ES250's two driver arrays can be individually wired, so you can use a single speaker as a back surround and feed it both left and right back surround signals in a 7.1-channel setup.

The CSW-10 sub's RABOS controls include a defeat switch, so once you have them set, you can easily turn the system on and off to judge its effects. With it engaged, the bass was subtly fuller on a lot of music and sounded slightly more powerful in the lowest octave, but without the added pounding that would come from simply raising the volume. For example, the thunder of thoroughbred hooves in the race sequence from Chapter 19 in *Seabiscuit* was a shade thuddier with RABOS engaged without sounding boomy.

In the final analysis, **the Infinity Beta is a well-balanced and excellent-sounding system** that neatly splits the difference between "speakers for music" and "speakers for movies." That leaves one unanswered question: with corporate headquarters now in New York but its design center in California, is Infinity a West Coast or an East Coast brand?

SV

in the lab

Sensitivity (SPL at 1 meter with 2.8 volts of pink-noise input)	
front left/right86 dB
center86 dB
surround81 dB
Impedance (minimum/nominal)	
front left/right	5/14 ohms
center	4.1/10 ohms
surround	3.8/10 ohms

All of the response curves in the graph are weighted to reflect how sound arrives at a listener's ears with normal speaker placement. The Infinity Beta 20 front left/right speaker had a small (2-dB) elevation between 600 Hz and 2 kHz, with tightly controlled directivity. The Beta C250 center speaker began "lobing" by 15° off-axis, and lobing became severe at wider radiating angles. The Beta ES250 surround had a generally rising character, with a wide peak between 700 Hz and 1.7 kHz.

The bass limits for the CSW-10 subwoofer were measured with it placed in the optimal corner of a 7,500-cubic-foot room. In a smaller room users can expect 2 to 3 Hz deeper extension and up to 3 dB higher sound-pressure level (SPL). The sub had moderate SPL capability but extraordinarily uniform dynamic capability, as indicated by its 98% bandwidth uniformity.

The sub's RABOS module is essentially a single-band parametric filter intended to reduce the peaking response that plagues virtually every subwoofer to some degree. **It quickly fixed a 6-dB peak at 70 Hz at one position in my listening room. Additional measurements**

Bass limits (lowest frequency/maximum SPL, 10% distortion limit at 2 meters in a large room)	
front left/right40 Hz at 69 dB SPL
center80 Hz at 90 dB SPL
surround80 Hz at 83 dB SPL
subwoofer20 Hz at 79 dB SPL
98 dB average SPL from 25 to 62 Hz	
100.2 dB maximum SPL at 32 Hz	
Bandwidth uniformity 98%	

confirmed that the controls worked as intended.

The click-stop knobs are much easier to use than the screwdriver slots/holes found on earlier RABOS subs. The crossover frequencies closely matched the marked frequencies at each end of the dial, and there was a moderate (2-dB) level interaction over the full range. The overload-protection circuitry, while limiting extreme volumes, kept the sub from ever being driven into audible distortion. — *Tom Nouseine*

