Test Bench

BY Thomas J. Norton

Focal Electra 1028 Be Speaker System

PRICE: $21,480 **AT A GLANCE:** Highs to die for, uncolored midrange, tight bass • Cinematic soundstage • Flawless build quality

Going for the Beryllium

Focal first became a household audio name in the 1980s. Located in Saint-Etienne, France, the company furnished driver units for a number of well-known speaker manufacturers, among them Wilson Audio Specialties. Wilson continues to use an exclusive version of a Focal inverted titanium-dome tweeter. With that exception, Focal has long since kept all of its driver production in-house for its own complete lineup of loudspeakers for the consumer, professional, automotive, and multimedia markets.

In 2002, after an extended R&D effort, Focal introduced a major renovation of its premier Utopia speaker range. A key ingredient in that redesign was a new tweeter with an inverted dome of pure beryllium. One of the stiffest and lightest materials known, beryllium promised a significant leap in performance, but at a cost. The Utopia range was priced deep into most audiophiles' sticker-shock range.

It wasn't long before a beryllium tweeter found its way into Focal's somewhat more affordable Electra models. Now, with the second generation of both Utopia and Electra 1000 Be speakers, Focal has further refined these models, including upgrades to the beryllium tweeter itself.

All That Glitters Is Not Beryllium

There's a lot more than beryllium tweeters in the Electra DNA, but we may as well start with that marquee attraction. Many of today's high-end speakers are designed to extend their response to well above 20 kilohertz, including these Focals. While humans can't hear much above that (and few can hear even that high), Focal argues that extension into the ultrasonic region can have a positive effect on a speaker's audible transient response.

To achieve such extended response, it helps to use a material that's extremely light and rigid. Pure beryllium (not alloyed or vapor-deposited) has a density 2.5 times lower than titanium and rigidity three times higher. For optimizing crossover design, the tweeter's bottom-end extension is also significant. To that end, Focal loads the back of the tweeter into a damped rear chamber, which Focal calls IAL (Infinite Acoustic Loading).

Beryllium is not just expensive relative to other diaphragm materials; it's also toxic, particularly in dust form. While this demands considerable care in manufacture, it's not something the consumer needs to be concerned about as long as the finished tweeter remains intact and toddlers don't confuse it with a lollypop. Focal provides detailed information about the proper disposal of a damaged dome.

The bass and midrange drivers all employ Focal's W cones, which consist of woven glass tissue bonded to both sides of a thin foam core. Focal claims that this sandwich is far more rigid than other widely used cone materials.

The Electras are manufactured in France. Solidly built, they are available in a range of standard and optional finishes so silky smooth in both feel and appearance that at first touch they don't seem quite real.

Getting It Together

Two 6.5-inch, W-cone drivers provide the bass in the Electra 1028 Be, assisted by ports that fire out the rear and bottom. Focal includes foam bungs to block the rear port if the bass sounds excessive, but I didn't need them. Above 350 hertz, a 6.5-inch midrange driver takes over. The beryllium tweeter, which operates above 2.2 kHz, is mounted below the midrange on a solid, curved aluminum billet to minimize

• Two 6.5-inch woofers provide the bass in the 1028 Be freestanding speaker.

• The center channel's tweeter and midrange driver are flanked by a 6.5-inch woofer on each side.

SPECS

SPEAKER:	1028 BE	CC 1008 BE	1008 BE
TYPE:	Three-way floorstander	Three-way center	Two-way monitor
TWEETER (SIZE IN INCHES, TYPE):	1, beryllium	1, beryllium	1, beryllium
MIDRANGE (SIZE IN INCHES, TYPE):	6.5, composite	3, composite	
WOOFER (SIZE IN INCHES, TYPE):	6.5, composite (2)	6.5, composite (2)	6.5, composite
NOMINAL IMPEDANCE (OHMS):	4	4	4
RECOMMENDED AMP POWER (WATTS):	40–300	40–200	25–150
AVAILABLE FINISHES (ALL):	Basalt, champagne, Slate Gray sides; Slate Gray front, top, and back		
DIMENSIONS (W X H X D, INCHES):	10.4 x 43.7 x 13.75	24 x 9.25 x 13.75	10.4 x 15.2 x 13.75
WEIGHT (POUNDS):	72.6	41.8	33
PRICE:	$8,495/pair	$3,495	$4,995/pair

vibration. The crossovers in the 1028 Be and the other full-range models are all fourth order.

A single set of high-quality five-way binding posts is located on the rear. The cabinet may also be used with provided spikes. I tried them, but they only made a small difference in my setup, possibly because Focal's spikes were too wide to punch through my carpet to any useful depth.

The CC 1008 Be center is a three-way design, its midrange and tweeter mounted vertically between two woofers that appear similar to those in the 1028 Be. The midrange is 3 inches in diameter and likely the cutest W cone in the Focal stable. It covers just a smidge more than the two octaves above 500 Hz, while the beryllium tweeter takes over above 2.2 kHz. The center's input terminal shares the back panel with a rectangular port.

The 1008 Be bookshelf speaker, which I used for surround duties, is a two-way design, also ported in the rear. The moving bits are a woofer similar to the midrange in the 1028 Be and a beryllium tweeter. Focal offers an optional stand for this model ($895 per pair—eek). For my setup, I used a pair of older, less deluxe, but strong and serviceable 24-inch stands.

Two other members of the Electra Be II family were not reviewed here. The SR 1000 Be surround ($5,495 per pair) can be used in a number of different configurations, including bipolar. A taller tower speaker, the 1038 Be ($12,495 per pair), adds a third 6.5-inch woofer. But that price spread from the 1028 Be will nearly pay for the Focal sub. The 1038 Be makes more sense in a subwoofer-free, two-channel music system. Focal also offers a similar, somewhat less expensive line of Electra speakers with aluminum/magnesium tweeter domes.

The Electra SW 1000 Be subwoofer offers the usual features and some not-so-usual ones, most of them implemented by DSP. There's a 13-inch, W-cone woofer, ported on the bottom and driven by a 600-watt (RMS) BASH amplifier. From its Low Pass stereo inputs, an active digital crossover implements a 24-decibel-per-octave, low-pass filter, selectable in 5-Hz steps from 50 Hz to 150 Hz. A single LFE input drives the sub with no low-pass filter. A Subsonic Mode provides a high-pass filter, adjustable from 0 (Off) to 45 Hz in 10-Hz steps, at 48 dB per octave. You can use this to reduce deep bass to minimize room issues or, dare I say, the remote possibility of subwoofer overload. The sub's phase control is adjustable from 0 to 180 degrees in 30-degree steps, and a Boost mode offers an increase in bass level from 0 to +6 dB at 30, 40, or 50 Hz. The subwoofer also has coaxial digital input and output connections that can link more than one SW 1000 Be together.

You can save three different setups using variations on the above controls in memory. All of the controls are accessible via a credit-card-sized remote; the settings are visible in a small window on the subwoofer's front. Don't lose the remote; there are no controls on the subwoofer apart from an Off switch. On one occasion during my tests, the subwoofer refused to respond to the remote. I powered it off, then on again, and that cleared the problem.

Setup

I set up the Electras in my usual 26-by-15.5-by-8-foot home theater studio. I placed the 1028 Be speakers about 9 feet apart to the left and right of my projection screen and toed them in toward the main listening position (I retract the projection screen for serious music listening). I positioned the center speaker on a low stand below the screen, the surrounds on 24-inch stands behind the listening location, and the subwoofer in the front right corner of the room (Focal recommends corner subwoofer placement).

I used a Parasound Halo A51 power amp and an Integra DTC-9.8 surround processor to drive the speakers. Sources included a variety of Blu-ray players and a Cambridge Audio Azur 840C CD player. Audio cables included designs from Monster Cable, Cardas, and Kimber Kable.

For movies, the Integra performed all crossover duties and directed all of the main-channel bass to the subwoofer's LFE input. I turned off the sub's Subsonic filter. I did all of my music-only listening in two-channel mode with no subwoofer.

All of the drivers are covered with grilles or, in the case of the tweeters, acoustically transparent screens. The thin beryllium domes are extremely fragile—physically, that is, not sonically. Focal recommends that you leave the tweeter grilles in place at all

HT Labs Measures

FOCAL ELECTRA 1028 BE SPEAKER SYSTEM

L/R Sensitivity:
91 dB from 500 Hz to 2 kHz

Center Sensitivity:
90.5 dB from 500 Hz to 2 kHz

Surround Sensitivity:
88 dB from 500 Hz to 2 kHz

Visit our Website for a detailed explanation of our testing regimen, plus a list of our reference gear.

on the web

This graph shows the quasi-anechoic (employing close-miking of all woofers) frequency response of the 1028 Be L/R (purple trace), CC1008 Be center channel (green trace), 1008 Be surround (red trace), and SW 1000 Be subwoofer (blue trace). All passive loudspeakers were measured with grilles at a distance of 1 meter with a 2.83-volt input and scaled for display purposes.

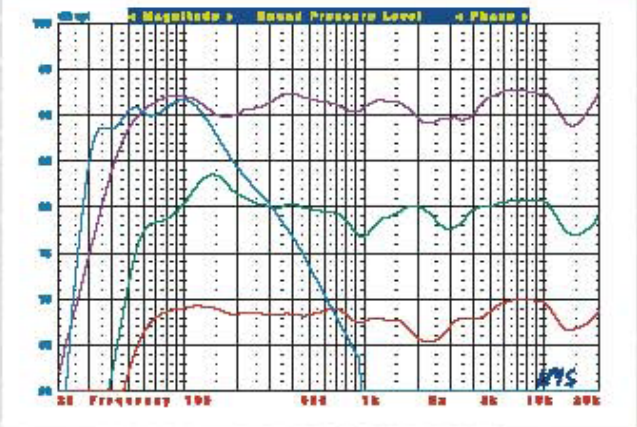
The 1028 Be's listening-window response (a five-point average of axial and +/–15-degree horizontal and vertical responses) measures +1.75/–1.84 decibels from 200 hertz to 10 kilohertz. The –3-dB point is at 48 Hz, and the –6-dB point is at 41 Hz. Impedance reaches a minimum of 3.72 ohms at 403 Hz and a phase angle of +48.30 degrees at 812 Hz.

The CC1008 Be's listening-window response measures +1.98/–2.71 dB from 200 Hz to 10 kHz. An average of axial and +/–15-degree horizontal responses measures +2.06/–2.75 dB from 200 Hz to 10 kHz. The –3-dB point is at 57 Hz, and the –6-dB point is at 51 Hz. Impedance reaches a minimum of 3.60 ohms at 152 Hz and a phase angle of –68.71 degrees at 96 Hz.

The 1008 Be's listening-window response measures +2.06/–2.58 dB from 200 Hz to 10 kHz. The –3-dB point is at 55 Hz, and the –6-dB point is at 49 Hz. Impedance reaches a minimum of 4.66 ohms at 200 Hz and a phase angle of –58.93 degrees at 93 Hz.

The SW 1000 Be's close-miked response, normalized to the level at 80 Hz, indicates that the lower –3-dB point is at 31 Hz and the –6-dB point is at 29 Hz. The upper –3-dB point is at 161 Hz using the LFE input and the 50-Hz Boost set to +4 dB.—MJP

FOCAL ELECTRA 1028 BE SPEAKER SYSTEM



SPECS ELECTRA SW 1000 BE SUBWOOFER

ENCLOSURE TYPE: Vented **WOOFER (SIZE IN INCHES, TYPE):** 13, composite **RATED POWER (WATTS):** 600 **CONNECTIONS:** Line-level LFE and stereo in, digital coaxial in/out **CROSSOVER BYPASS:** Yes **AVAILABLE FINISHES:** Basalt, Champagne, Slate Gray **DIMENSIONS (W X H X D, INCHES):** 19.7 x 21.1 x 17 **WEIGHT (POUNDS):** 92.4 **PRICE:** $4,495

times but has made them easy to remove (they attach magnetically). If there's significant household traffic in and out of your home theater room and/or an aggressive duster or curious child in the house, I'd recommend that you leave the tweeter screens on at all times except for your most serious listening sessions. Use extra care when you remove and replace them. I removed all of the grilles and screens for my auditioning. The speakers sound more open without them, but not dramatically so.

Music: Morning Becomes Electra

And afternoon and evening, as well. With the Electras at the pointy end of your system, you just might find yourself spending a lot more time listening to music and movies than you have before.

The Focal's small remote gives you access to three presets, as well as volume control.

Even located well away from adjoining walls, the unassisted pair of 1028 Be speakers served up a surprisingly taut and powerful low end. The bass turned a little soft in some music passages, but that's true of any speaker system in most rooms. More often, the Focals' bass was strong and deep from the mid-30-Hz region up. The midbass, in particular, was tight and detailed. A few challenging passages, mostly organ- and synth-based, needed the power and weight of a subwoofer for a full serving of weight and drama. Otherwise, I was perfectly happy to listen to music on the 1028 Be speakers by themselves. I never sensed that anything was missing.

There's little to say about the Focals' midrange. Quite simply, it was as uncolored and real sounding as any I've heard in my listening room. The 1028 Be speakers also imaged like a champ (that's typical of my room and setup) and provided all the depth I could wish for.

And that beryllium tweeter? It's up there with the best in the business. The top end combined crystal clarity with an easy naturalness that most speakers shoot for and miss. The Focals' highs were so pristine that they clearly revealed the Integra processor's slight loss of high-frequency transparency when it switches from Direct (with no subwoofer crossovers engaged by its processing) to Stereo (which dials in the high- and low-pass filters). The Electras' top end wasn't particularly forgiving of overly bright source material, but the speakers didn't exaggerate its flaws, either.

My in-room-response measurements indicate relatively smooth system response at the prime listening position (about 10 feet from the plane of the speakers). There were some minor bass irregularities, but these are common in the room responses of nearly all speakers, regardless of price. There was a slight saddle dip in the 1028 Be's response (2 to 3 dB relative to 1.2 kHz) centered around 2.5 kHz, a return to the 1.2-kHz level by 5 kHz, and a typical listening-position rolloff above 10 kHz. The bass without the sub was strong to 40 Hz but dropped off rapidly below that point (the sub extended the response to below 25 Hz). The CC 1008 Be had a more pronounced emphasis

between 80 and 160 Hz, likely encouraged by its near-floor location and consistent with the listening observations (see *HT* Labs Measures).

Movies: Electra-fying

Some speakers shine on music but less so on films. More often, speakers ace movie playback but leave something to be desired when it comes to music. The Focal Electras were…um… electrifying on both music and movies. Interestingly, though, they exhibited a slightly different complexion on soundtracks than their crisp, highly detailed, and just slightly lean quality on music. On movies, they were more full-bodied and richly balanced, with an immense, deep, and enveloping soundstage. But when high-frequency detail was present, there was no mistaking it, whether it brought with it the delicacy of the best Dolby TrueHD and DTS-HD Master Audio soundtracks on Blu-ray Disc or the edginess typical of many lossy audio tracks on DVD.

Initially, the CC 1008 Be center sounded a little too warm and rich, particularly on male dialogue. This isn't the first time I've experienced this issue; the center speaker's unavoidable, near-floor location below the screen in my setup makes it difficult to avoid. To compensate, I raised the crossover frequency to the center channel and reduced the center-channel tone control. This minimized the problem but didn't eliminate it completely. Not all AVRs or surround processors offer these options. Equalization is also possible with my Integra surround processor (and most new surround processors and A/V receivers), but I avoid using EQ in speaker reviews.

Many people consider *Deep Impact* (Blu-ray Disc, Dolby TrueHD) to be the best of the big-rock-from-space-destroys-earth, film-at-11 movies. There's plenty to like in this film's soundtrack, and the Electras didn't let me down on any of it. The bass was room shaking if a bit less gutsy and foundation-threatening than the Revel B15 that's a frequent resident in my system. The soundstage was rich and full-bodied, the surrounds never sounded out of balance with the rest of the system, and the superb dynamics never turned edgy or fizzy at any volume suitable for human consumption.

While we're still in outer space, the pilot episode of the recent *Battlestar Galactica* (Blu-ray Disc, DTS-HD Master Audio) television series sounded better here than it ever has either in its broadcast or DVD incarnations. The pounding bass of the battles, not to mention the superb, percussion-heavy music score, were all of near-feature-film quality, which the Electras made abundantly clear.

The same was true for the music on *The Phantom of the Opera* (Blu-ray Disc, but oddly only ordinary Dolby Digital) and the immense dynamic punch of the opening scenes of *Bolt*. Even the post-apocalyptic downer, *The Road*, was made tolerable by the way the Focals handled the quietly delicate details that fill its superbly subtle soundtrack.

Conclusions

The sound of the Focal Electra 1028 Be speaker system is one I won't easily forget. No speaker system I've had in my current listening room (that's for 10 years) has produced a more consistently enjoyable performance on both music and movies, and few have equaled it. I would never recommend that anyone buy speakers sound unheard, particularly a system that sells for five figures. But if you're shopping in this price range, you need to hear this one.

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