

The Cutting Edge



Wilson Benesch Eminence Loudspeaker

Towering Achievement

Robert Harley

“What does that speaker sound like?” It’s such a common question among audiophiles that we never stop to think about what it means. When asking that question, we expect a capsule description of the speaker’s strengths and weaknesses, accompanied by an assessment of its overall character and quality.

But what we are really asking is: “In what specific ways does that loudspeaker distort the musical signal, and what is our perception of that distortion?”

transparent-window model. Every loudspeaker, no matter how much it costs, fails to perfectly create an acoustic waveform that is a precise replica of the electrical input signal driving it.

These deviations from perfection can be additive or subtractive. The additive distortions include things like excessive treble, bass overhang, and harmonic distortion, to name a few. A list of subtractive distortions could include an inability to reproduce the lowermost octave, compression of dynamic peaks, and a slowing of leading-edge transients. We also call these “sins of commission” and “sins of omission.” As a rule, sins of commission are far more detrimental to musical enjoyment than sins of omission.

You can think of a speaker’s “sound” as its sonic fingerprint overlaid on every instrument on every piece of music you listen to. You hear not just the music, but the loudspeaker’s flaws inextricably woven into the music’s fabric. These distortions are integral to the music-listening experience, and thus define our perception of what a speaker “sounds like.”

Which brings me to Wilson Benesch’s new Eminence, a \$235,000 statement-level floorstander designed to compete at the highest levels of the high end. After living with this speaker for the past three months, I will say right at the outset that, with one caveat, the Eminence is in many ways the least colored and lowest distortion speaker I’ve heard. It is a step forward in realizing the ideal of a transparent window on the music. This transparency to the source isn’t limited to transparency in the

We frequently ask what a speaker “sounds like” because every speaker changes the sound in its own specific way. The ideal speaker would be a perfectly colorless, transparent window on the amplifier’s output signal. In the real world, a speaker’s “sound” is the sum total of all the ways, large and small, that the speaker deviates from this

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usual sense of the word—the “see-through” quality associated with soundstaging—but also transparency to the music’s dynamics, pitch, timing, timbre, and most importantly, expression.

This towering (literally and figuratively) achievement in loudspeaker design wasn’t realized overnight. The Eminence is the culmination of 25 years of intensive R&D, often in collaboration with world-class experts and academics in tertiary fields. It is packed with innovative engineering, including extensive use of carbon fiber in the enclosure. Wilson Benesch was the first company to successfully use carbon fiber in an audio product (a turntable, in 1991) and has since pioneered the use of that material in audio applications (see sidebar). The company makes, in-house, virtually every part of the Eminence, including the drivers, the machined aluminum parts, and even the carbon-fiber enclosure. Moreover, the fundamental design principles behind the Eminence can trace their roots back to Wilson Benesch’s first loudspeaker.

The Eminence’s strikingly different shape and unusual driver array reflect the engineering behind it. Standing six-and-a-half feet tall but with a baffle just 7.5" wide at the front and wearing an oddly shaped geometric “hat,” the Eminence stands out from the typical rectangular shape of most speakers. Adding to the idiosyncratic appearance, the four lowermost drivers on the front baffle are mounted backwards, with the magnets facing out into the room. The enclosure narrows toward the rear in a boat-tail shape, and the whole thing is bolted to a

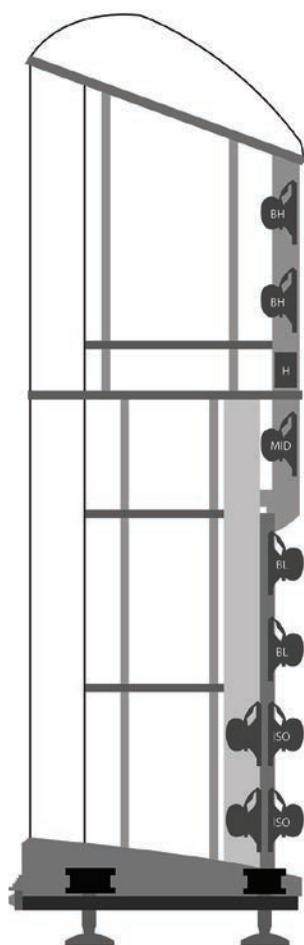


Fig. 1

massive aluminum plate that is in turn supported by four adjustable shafts that terminate in four bearing cups that rest on the floor.

The ten-driver Eminence is a two-and-a-half-way design. You can see in Fig.1 that the lower two “backward-facing” drivers in the baffle are mated to two identical 7" drivers inside the cabinet in an isobaric configuration (we’ll address this design element in more detail later). The next two drivers up the baffle handle the lower bass. Just above the upper-most backward-facing woofer is a 7" midrange, and then the tweeter. The top two 7" drivers handle the upper bass. As you can see in Fig.1, each driver array is mounted

in its own sub-enclosure within the cabinet. All the sub-enclosures are sealed, except for the one housing the isobaric woofer array, which is ported out the bottom of the cabinet. Two pairs of binding posts are provided for bi-wiring.

The Eminence bristles with technological innovation. Starting with the enclosure, it is an evolution of the A.C.T. (Advanced Composite Technology) cabinet Wilson Benesch developed in 1994 for its first speaker (which was itself based on the A.C.T. plinth for Wilson Benesch’s turntable in 1991). This latest version builds on that foundation, maintaining the curved monocoque structure built from carbon-fiber panels around a high-compression core. The new enclosure, designed with FEA (finite element analysis), features a sandwich of carbon-fiber panels around a proprietary new core material that reportedly increases the stiffness-to-damping ratio by 30% compared with the previous A.C.T. enclosure. The combination of the extremely stiff carbon-fiber panels around a highly damped inner core both resists and damps resonances so that the cabinet is an inert platform for the drivers. The cabinet’s shape is based on the curvatures found in nature, which exhibit the maximum strength for a given thickness. Wilson Benesch says that this new A.C.T. enclosure is one of the lightest, stiffest, and best damped structures ever manufactured.

The boat-tailed enclosure terminates in a thick piece of aluminum that runs vertically up the entire cabinet height, a component Wilson Benesch appropriately calls the “backbone.” The baffle is also machined from aluminum. Viscoelastic damping material couples the various cabinet parts to suppress resonances. In addition, the direction of the carbon-fiber weave directs energy down the fibers and into the viscoelastic material that connects the cabinet sections. The carbon fiber and inner core are mutually self-damping, as are the interfaces between the carbon-fiber composite and the aluminum baffle, backbone, and foot.

Inside the enclosure a series of 14mm (0.55 inch) steel rods compresses the entire structure vertically. This tensile stress acts as a damping mechanism—a technique used in other fields where damping is desired. The enclosure is bolted to a massive aluminum plate that has been artfully machined into a sculpture that suggests flowing water. The aluminum plate, which Wilson Benesch calls the “foot,” is machined from a 265-pound raw aluminum billet. Seven hours on a CNC machine turns the raw slab into the elegant finished shape. The speaker is anchored to the floor with four vertical “kinematic bearings” designed by Wilson Benesch and first used in the A.C.T. tonearm in 1991. Each bearing is composed of a finely threaded stainless-steel shaft 28mm in diameter that screws through a corresponding threaded hole in each corner of the foot. The top of this shaft is a large round hand-wheel that allows you to turn the shaft and raise or lower that foot. The other end of the shaft is the business end; it terminates in a 12.5mm steel ball that rests in the middle of three other 12.5mm steel balls that are held captive in a cup that sits on the floor. The steel ball on the shaft is held precisely between the three steel balls in the cup, eliminating any motion (see inset photo). The contact points for the speaker’s 320-pound weight are less than one square millimeter, resulting in a downward force of hundreds of tons per square inch. This design, called kinematic

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coupling, was developed by James Clerk Maxwell in 1871 and is used in a range of industries where precise alignment between two parts that can be separated is required.

At the speaker's other end is a carbon-fiber top piece whose shape is reminiscent of the creature in the movie *Alien*. This odd geometric shape is designed to reduce interference in the wave launch from the baffle, and to diffuse reflections. It was created by converting sketches into a clay model, and then laser scanning the model into a 3-D digital image that could be analyzed and manipulated in software.

The cabinet has been made as small as possible so that its sonic contribution is minimized. The smaller the cabinet, the easier it is to damp, and any resonances that remain will produce less unwanted cabinet sound. The narrow baffle and its curved shape also reduce diffraction. Despite the cabinet's relatively modest size, the internal volume is considerable, owing to the thinness of the carbon-fiber composite structure. The speaker has a very small visual presence when viewed from the listening position. I can't think of another flagship-level loudspeaker with this small an enclosure or footprint.

The drivers, and the way they are deployed, are equally innovative. All the drivers are designed and built in-house. The most salient aspect of the driver configuration is the isobaric woofer array and its backward-facing drivers. The two 7" woofers you see at the bottom of the baffle are mated to identical drivers inside the cabinet that you don't see, with their cones facing each other. Because the two drivers in the isobaric pair are driven by the same input signal, they move in unison. As the two facing drivers move together, the woofer you hear (the one you see on the baffle) doesn't have to contend with the springiness of the air inside the enclosure, as occurs with all other loading techniques. Indeed, "isobaric" means "equal pressure," and isobaric loading is technically known as a "constant-pressure chamber" configuration (the "constant pressure" referring to the air pressure in the space between the two woofer diaphragms in the isobaric

array). A woofer loaded in this way has a very low resonant frequency, allowing the system to extend very deep in the bass yet still maintain very fast transient response. The isobaric array's ability to start and stop very quickly not only results in better transient performance in the bass, but also allows the low-frequency section of the speaker to better integrate with the transient speed of the midrange and tweeter. In other words, isobaric loading prevents the common affliction of a big slow woofer lagging behind a smaller, lighter, and faster midrange driver, creating an audible discontinuity. Wilson Benesch says that the isobaric array in the Eminence has a better step response (how quickly the cone accelerates in response to a steep input signal) than the midrange driver, which is unheard of. A guiding principle at Wilson Benesch throughout its 25 years of building loudspeakers is that transient performance is of paramount importance to fidelity. The company has always deployed small woofers with very powerful magnets that can start and stop very quickly—like a 500-horsepower engine in a lightweight sports car.

Besides superior transient response and better integration with the midrange, another reason Wilson Benesch chose such diminutive woofers for its flagship is that the mounting holes in the enclosure can be smaller. Smaller holes don't compromise the cabinet's rigidity as much as larger openings. In addition, a smaller hole results in less energy from the driver's back-wave emerging through the driver and out into the room where it colors the sound.

Unusually, particularly for a large reference-class loudspeaker, the 7" midrange driver is run full-range, with no crossover components between your amplifier's output terminals and the midrange driver's voice coil. Removing inductors and capacitors from the signal path, particularly on the midrange driver, confers enormous advantages in clarity and immediacy, but places quite a burden on that driver, particularly in a large full-range system like the Eminence. The 7" driver's excursion limits will define the entire speaker's maximum output level and ability to reproduce low-bass transients. The design goal of running the midrange driver full-range likely dictated the use of a 7" cone, which is rather large for a midrange.

The tweeter is entirely new for the Eminence, but based on a classic Wilson Benesch approach that cleverly addresses the dilemma of the relative merits of soft domes and hard domes. Soft-dome tweeters don't ring like hard domes, but their break-up mode occurs within the audible spectrum, typically at 18kHz. At that frequency, the dome's motion ceases to be pistonic; parts of the dome are moving forward while other parts are moving backward. Wilson Benesch addresses this problem by mounting a strip of carbon fiber across the dome surface that strengthens the dome and shifts the first break-up mode to 30kHz. In addition, the carbon fiber helps to damp resonances in the dome. (The tweeter's voice coil also features a carbon-fiber strip to increase its rigidity.) Wilson Benesch calls this hybrid dome structure the Semisphere.

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Specs & Pricing

Two-and-a-half-way, ten-driver, floorstanding loudspeaker

Frequency response: 24Hz–30kHz +/-2dB on-axis

Impedance: 4.5 ohms nominal

Sensitivity: 89dB at 1m, 2.83V input

Minimum amplifier power: 100Wpc

Driver array: 1x 1" WB Fibonacci Hybrid Silk-Carbon tweeter; 2x 7" WB Tactic 3.0 bass high; 1x 7" WB Tactic 3.0 midrange; 2x 7" WB Tactic 3.0 bass low; 4x 7" WB Isobaric Drive System bass low

Enclosure: Carbon composite A.C.T. 3ZERO monocoque

Loading: Sealed (isobaric drive system is ported)

Dimensions: 11" x 78" x 27"

Weight: 320 pounds each, net

Price: \$235,000

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ASSOCIATED EQUIPMENT

Analog source: Basis Audio A.J. Conti Transcendence turntable with SuperArm 12.5 tonearm; Air Tight Opus cartridge; Moon 810LP phono stage

Digital sources: Aurender W20 server, Berkeley Audio Design Alpha DAC Reference Series 3 MQA DAC; Berkeley Alpha USB USB-to-AES/EBU converter; Audience Au24 USB cable; AudioQuest Wild Digital AES/EBU cable

Amplification: Constellation Altair 2 preamplifier; Constellation Hercules 2 monoblock power amplifiers

AC power: Shunyata Research Triton V3, Typhon QR, Sigma power cords; Shunyata AC outlets, five dedicated 20A lines wired with 10AWG

Support: Critical Mass Systems Olympus equipment racks and Olympus amplifier stands; CenterStage2 isolation

Cables: Shunyata Research Sigma interconnects and loudspeaker cables; AudioQuest WEL Signature interconnects

Acoustics: Acoustic Geometry Pro Room Pack 12, Studio 3D isolation door

Room: Acoustic Sciences Corporation Iso-Wall System

LP cleaning: Klaudio KD-CLN-LP200, Levin Design record brush

The Semisphere diaphragm has been coupled with a new technology that Wilson Benesch calls the Fibonacci Element. This is a tweeter faceplate formed in an intricate lattice structure (see inset photo on p. 134). The Fibonacci Element reportedly precisely controls the constructive and destructive interaction of the direct sound from the tweeter and reflections from the tweeter faceplate. The result is said to be extremely flat frequency response. According to Wilson Benesch, the typical flat tweeter faceplate introduces many small frequency-response irregularities in the treble. The Fibonacci Element is made through “additive manufacturing,” also known as 3-D printing. The tweeter is decoupled from the baffle by a damped substructure that you can see through the lattice.

The other drivers are the latest versions of Wilson Benesch’s Tactic drive unit, introduced in 2001. The Tactic name is derived from the cone material, isotactic polypropylene. Isotactic polypropylene differs from conventional polypropylene (widely used in driver diaphragms the 1970s) in that rather than being a homogeneous material it is made from woven polypropylene fibers, a technique that increases the material’s stiffness five-fold. Conventional homogeneous polypropylene has very good self-damping but lacks stiffness; the new material reportedly realizes polypropylene’s high damping while overcoming the stiffness problem. The isobaric woofers, lower-bass drivers, upper-bass drivers, and midrange all feature isotactic polypropylene cones. The two upper-bass drivers and midrange also include a Fibonacci Element dustcap.

The Eminence’s conception is decidedly different from other statement-level loudspeakers, reflecting the sonic priorities of its designer. The technology behind the speaker has been meticulously researched, and represents the culmination of 25 years of loudspeaker building. It’s worth noting that one can trace the Eminence’s fundamental design goals, and the technology that realizes them, back to Wilson Benesch’s first loudspeaker. The Eminence represents the ultimate realization of the design principles Wilson Benesch has hewed to since the company’s inception, rather than a platform for introducing entirely new concepts. Finally, the execution is exemplary; I got the impression that no corners were cut to save cost. The Eminence wasn’t built to a price point—Wilson Benesch created the speaker and let the final price fall where it may.

Because of its small footprint, the Eminence will fit in many rooms where a conventional flagship speaker would look bulky or imposing. A variety of natural wood finishes, along with different carbon-fiber colors, will also help the Eminence integrate visually with the décor.

Listening

Wilson Benesch’s Director of Marketing, Luke Milnes, and U.S. distributor, Brian Ackerman, set up the speakers in my newly constructed listening room and were happy with what they heard at the end of the set-up day. But as good as the system sounded then, as it broke in over the next few weeks it transformed into something truly remarkable.

You can read about the room’s design and construction in our previous issue, but here’s a recap. The dedicated room is 27’ by

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17' with an 11' ceiling. It was built with Acoustic Science Corporation's Iso-Wall System, which uses on the interior wall a damped resilient channel and two layers of drywall separated by a viscoelastic material. The wall forms a classic constrained-layer damping system that is allowed to flex on the resilient channel. The Iso-Wall System simultaneously prevents the wall structure from vibrating (called "wall shudder"), absorbs bass through diaphragmatic movement of the walls and ceiling, and reduces the transmission of sound inside the room to the rest of the house.

To maintain as much continuity as possible when moving into an unknown room I chose the Constellation Reference electronics, Berkeley Alpha DAC Reference Series 3 MQA, Aurender W20 music server, and Critical Mass Systems equipment racks and amplifier stands. These have all been my references for many years, and I know of no finer electronics, digital sources, or equipment supports. I also brought with me from my temporary listening room the Acoustic Geometry Pro Room Pack 12 that I reviewed in Issue 290. (See Associated Equipment for a full components list.)

Listening to music through the Eminence was a startling experience. It reproduced certain aspects of the music in a way that I've never heard from any loudspeaker—dynamic, planar, or horn-loaded. First, the Eminence exhibits astonishing transient speed and dynamic agility. This speaker fosters the impression of removing a dynamic-compression filter between you and the music. That is, the Eminence doesn't slow down transient attacks or compress their peaks. The speaker doesn't do this by exaggerating leading-edge transients, but rather by getting out of the way and allowing the music's transient nature and dynamic contrasts to be rendered without alteration. It's not just that initial transients are lightning fast, or that the decays are equally quick—which they are. That alone would have been noteworthy for a dynamic loudspeaker (this quality comes naturally to planar designs). But what puts the Eminence's dynamic performance in a class of its own is the total and utter coherence of this transient fidelity from the lowest bass to the treble. The Eminence speaks with one voice dynamically, with exactly zero discontinuity along the frequency spectrum. Frankly, the Eminence makes most other speakers sound slow and thick in the bass.

The musical consequences of this transient fidelity cannot be overstated. Intimately familiar recordings sounded as though they had been liberated, taking on a new verve, immediacy, and realism. The Eminence resolved a wealth of dynamic inflections, subtle accents, and rhythmic interplays among musicians, and reproduced the overall rhythmic flow in a way that was revelatory. For example, I hadn't fully appreciated how Dave Holland's pulsating bass line is the anchor of "Shhh/Peaceful" from Miles Davis' *In a Silent*

Way (MoFi LP), or how the rim shots halfway through Joe Pass' solo on "Contractor Blues" from *88 Basie Street* kick up the sense of swing. By realistically resolving these dynamic inflections, the Eminence more faithfully conveys the musicians' intent.

The dynamic performance was equally spectacular on high-level impacts as well as on the subtlest musical details. Snare drum had a lifelike pop that made the instrument seem to appear out of nowhere and disappear just as quickly. The best recorded drum sound I know of is on Sheffield Lab 17, *James Newton Howard and Friends*. Through the Eminence, the snare was rendered with a hair-raising realism, conveying the speed, dynamic impact, and physicality of the instrument. Again, it's not that the Eminence highlighted this aspect of music more than other loudspeakers, but rather that it lacks a form of distortion that slows down transients or changes transient fidelity as a function of frequency. It

wasn't just percussion instruments that sounded more real by virtue of the Eminence's speed. Listen to the way Roy Hargrove's trumpet fairly leaps from the soundstage on "Chasin' the Bird" from *Parker's Mood*. Through the Eminence the trumpet has a startling dynamic verve that one hears from the instrument in life. Frankly, I've never heard a loudspeaker sound as much "of a piece" dynamically as the Eminence. It sounds like a full-range planar in top-to-bottom speed and coherence, but with more weight and better bass extension.

This dynamic coherence across the frequency spectrum was mirrored in the Eminence's portrayal of instrumental texture, detail, and pitch definition. Many loudspeakers resolve instrumental timbre, inner textural detail, and subtle dynamic inflections in the lower mid-range to upper treble, but the Eminence resolves these characteristics all the way into the low bass. Alan Taffel commented at length on this



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quality in his review of Wilson Benesch's \$69,500 Resolution in the December, 2018 issue. Alan wrote, "Listening to bass, even on familiar recordings, through the Resolution is a constant journey of discovery." Simply put, I've never heard a loudspeaker that resolves bass lines like the Eminence. Reference recordings that I've listened to for decades were revealed to have a previously obscured wealth of textures, pitches, and timing cues. I could clearly hear everything the bass player was doing rather than having to infer it. Christian McBride's bass playing on the aforementioned *Parker's Mood*, particularly the very fast runs on "Steeplechase," was exquisitely articulated and resolved. Or try listening to the bass pedals on a Hammond B-3, such as organist Joey DeFrancesco's playing on his album *Part III* (or the bass pedals on "Squib Cakes" from the Sheffield Lab *Tower of Power Direct*). Other speakers tend to smear the dynamics and blur the pitch definition of the bass pedals. Through the Eminence I could more clearly hear individual pitches as well as the starts and stops of each note. The Eminence also resolved textures and timbres in low frequencies, revealing them to be richly nuanced. In addition, the bass was extremely smooth and flat, with no discernable peaks and dips. The upper bass blended seamlessly with the lower midrange with no discontinuity at the crossover points.

Another rewarding aspect of the bass was the way the Eminence didn't sound "heavy" when playing music with little lower-octave content. When a bass instrument came in, there was a sense

of surprise at the way it appeared out of nowhere. The excessive bass weight and overhang of many speakers serve as constant reminders that you're sitting in front of big woofers.

Throughout my audition, a defining character of the Eminence was the way it communicated music's rhythmic flow, timing, dynamic expression, and vibrance. It had a sense of agility and precision that made rhythmically complex music more intelligible. The speaker powerfully conveyed how the musicians locked into a groove, played off each other, and used dynamic inflections to sharpen rhythm. The Eminence revealed the tight precision of a great band in a way that was thrilling. This was as true on rock rhythms with heavy snare beats on two and four as on a hard-swinging band like the Duke Ellington Quartet (Ellington, Joe Pass, Ray Brown, and Shelley Mann) on *Duke's Big Four*.

The overall tonal balance was flat and smooth, but with what I'd call a "top down" balance, to borrow an expression from speaker designer Michael Børresen via Jonathan Valin. That term, the antithesis of "bottom up," describes a presentation that is lighter in weight and with greater focus on the midrange and treble than on the bottom-end foundation. The Eminence's tonal balance leaned toward the light side, with a slightly greater emphasis on upper harmonics rather than on fundamentals and lower harmonics. The Eminence sounded light and airy the way a full-range electrostatic speaker sounds light and airy. Instrumental timbre, though extremely resolved and vividly portrayed, was a

little less weighty on instrumental body, density of tone color, and harmonic richness. Jonathan Valin's evocative description of the sound of Audio Research electronics comes to mind: "illuminated from within." To use a wine analogy, the Eminence is like a white varietal with citrus notes rather than a full-bodied red. This effervescent character contributed to the sense of the Eminence's transparency and of getting out of the music's way, but some may prefer greater weight and timbral saturation through the upper bass and lower midrange.

Although many loudspeakers have very flat frequency response, the Eminence went a step further by combining tonal neutrality with a colorlessness that served as a blank canvas upon which instrumental timbre could be portrayed with sensational realism and vividness. The speaker didn't impose its own tincture on tone colors that would have diluted their vibrance. Not only did instrumental and vocal timbres sound more "alive"; they were also differentiated from each other more clearly. The result was that each instrument in an ensemble was its own entity, more vividly present. It was like looking at a multi-hued photograph printed on pure white, rather than slightly grey, paper. This impression was heightened by a stunning sense of openness through the midrange and top octaves. There was a gossamer-like sense of the music existing independently of the speakers, unencumbered, and with the impression that a lid had been removed from the top octave.

The midrange had an electrostat-like directness and immediacy that were sensational. Brass and woodwinds were reproduced with an unfettered dynamic life and visceral presence. Trumpets had a full measure of high-frequency energy without sounding hard, brittle, or metallic. Freddie Hubbard's instrument on his composition "Byrdlike" from the George Cables album *Cables' Vision* was richly portrayed, with just the right balance of immediacy and liquidity. Piano was particularly well-served by the Eminence's freedom from dynamic constraints, the purity and clarity of its midband, and its exquisite resolution of lower registers. I particularly enjoyed how the Eminence conveyed the way pianist Brad Mehldau's left hand creates counterpoint with his right, weaving in melodic developments with equal facility in his right and left hands (and sometimes simultaneously) and in the process seemingly improvising an entirely new composition. The colorlessness of the midrange was apparent on vocals, rendering them with outstanding clarity. The Eminence's reproduction of vocals was a bit understated spatially compared with many other speakers, presenting voices along the loudspeaker plane rather than projecting them forward. It was a more subtle and sophisticated perspective that tended to draw me in.

The Eminence's tweeter is a superb transducer. It produces a treble that is smoother and more liquid than that of most hard domes, lacking the touch of metallic glare that can plague titanium and even beryllium domes. At the same time, the Eminence's tweeter gives up nothing in resolution and speed. The result is a top end that is richly detailed and alive, yet not etched or overbearing. The treble was beautifully integrated with the rest of the spectrum, with no hint of it being a separate component riding on top of the music, rather than an extension of the same sonic fabric. Cymbals were gorgeously rendered, with just the right bal-

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ance of energy and smoothness. The top end was very clean and free from grain and glare. In addition, the tweeter was extremely adept at resolving the long decays of cymbals, richly portraying their timbre and inner detail at very low levels. This quality was no doubt aided by an inert enclosure that doesn't obscure low-level cues by radiating energy of its own. Long listening sessions didn't produce the usual feeling of aural fatigue, and the Eminence encouraged high playback levels.

Soundstaging was literally wall-to-wall, with no indication as to the source of the sound. The Eminence disappeared quite easily and without a fussy setup, a quality that can likely be attributed in part to its narrow baffle. The soundstage projected a vividness, not from images being pushed forward but by virtue of the colorlessness of the Eminence's timbre as well as its transient fidelity. How can the correct reproduction of dynamics contribute to soundstaging? By accurately rendering the individual dynamic envelopes of each instrument, those instruments are better differentiated from other instruments, and thus appear as more vivid and tangible objects in space.

In fact, the overall spatial perspective of the Eminence was slightly laid-back, much like a mid-hall perspective. It was a very natural, rather than hyped, rendering. Image outlines were well defined, and the Eminence's resolution of very fine detail

revealed the air and bloom around those outlines. Again, the Eminence's lack of enclosure resonance paid dividends in revealing very low-level spatial cues.

At the start of this review I wrote that, with one caveat, the Eminence is in many ways the least colored and lowest distortion speaker I've heard. That one caveat is this: The Eminence doesn't reproduce high-level, low-frequency impacts such as the bass drum whacks on some orchestral recordings. In fact, the bass drum can cause audible distortion as the drivers are overloaded (most likely the mid-range driver, which as you'll recall is run full-range with no crossover, is the limiting

factor). Concomitantly, the bottom two octaves, while highly resolved, lack the muscularity, power, weight, ability to pressurize the room, and sheer physicality of some other contenders at this price. The Eminence's bass was satisfyingly full, but not the last word in delivering a visceral whole-body experience.

This is neither a design flaw nor a failure of the execution to realize design goals. Rather, it's clear to me that the Eminence's designer prioritized transient speed, dynamic coherence, and resolution of pitch and texture in the bottom end over the last measure of bass extension and weight. But what are the real-world implications of these design choices? For 99% of the music I listen to, I was unaware of the Eminence's bass-impact limitations. For example, I could play rock with strong bass lines and a dynamic bottom end such as Talking Heads' *Speaking in Tongues* (MQA via Tidal) at any playback level with no sense of strain. (Incidentally, the Eminence's stunning ability to accurately convey music's timing was particularly rewarding on this album's precise and intricate rhythms.) The very high levels of very low bass on a Hammond B-3's bass pedals from the previously mentioned Joey DeFrancesco album didn't perturb the Eminence. It was only certain bass drum whacks in certain orchestral recordings, played at a loud but not unreasonable level, that revealed the Eminence's limitations with very low-frequency, high-level impacts. Whether that limitation is acceptable is something that you'll have to decide for yourself. For me, it wasn't a deal-breaker. The decision to



run the midrange driver full-range with no crossover components in the signal path sets the limit on the Eminence's bottom-octave transient performance, but that's also what gives you the gloriously transparent midrange with its startling immediacy, along with resolution of bass texture and dynamics that is simply without peer. To use an automotive analogy, is it fair to criticize a Ferrari because it's not luxurious enough? Or a Bentley because it doesn't handle well? That's the beauty of the rich diversity of flagship speakers in the market—you can match your priorities and expectations to the product.

Conclusion

The Wilson Benesch Eminence is a different kind of speaker. Its engineering is unique; its appearance is idiosyncratic; and it sounds unlike other world-class loudspeakers. In the ability to convey music's dynamic expression, rhythmic flow, and timing, the Eminence is simply unequalled. These are important, and often overlooked, qualities of musical realism. Hearing music's transient nature reproduced accurately is startling, and drives home the fact that virtually all other dynamic loudspeakers act like a dynamic filter between you and the music. Moreover, the way the Eminence resolves pitch, texture, and transient information in the bottom end is nothing short of revelatory. The price, however, for the Eminence's transient fidelity and sensational bottom-end resolution is an overall presentation that isn't the last word in bass weight, impact, and visceral muscularity.

But it's not just the transient performance and unparalleled bass resolution that make the Eminence a world-class reference. The Eminence's stunning openness and transparency through the midrange and treble foster a powerful impression of the speaker disappearing—of hearing the music unadulterated by the loudspeaker's colorations. The best way to describe the Eminence is that it's like listening to music through an open window rather than through an electro-mechanical device.

One way to judge an audio component or system is how quickly and easily you drop into “the zone,” or the feeling of total musical immersion. Another is how strongly you are compelled to listen to music, or how much you look forward to the next listening session. Or how difficult it is to turn off the system for the night. Or how much you think about exactly what music you're going to listen to during the next session. The Eminence is one of those speakers that does all of those things—in spades. Significantly, the longer I lived with the Eminence, the greater was my appreciation for its singular virtues.

If you are looking for a reference-class loudspeaker that is based on original and innovative thinking, one that goes beyond the status quo, and one that brings a sensational verve and life to music, the Wilson Benesch Eminence should be on your short list.

To circle back to the question that started this review “What does that speaker sound like?” I would have to answer that the Eminence simply sounds like music.

Inside Wilson Benesch

Founded in 1989 by husband-and-wife team, co-owners, and directors Craig and Christina Milnes, Wilson Benesch is one of audio's best-kept secrets—at least in the U.S. Only recently did I learn of the company's long history of innovation, particularly in its pioneering use of carbon fiber. Today carbon fiber is found in a range of products, but in the early 1990s the material was so expensive that it was reserved for big-bucks applications such as Formula One cars and aerospace. In 1991 Wilson Benesch co-founder (and Eminence designer) Craig Milnes discovered that the lighter and stiffer the plinth material of the turntable he was designing, the lower the material's sonic signature. After experimenting with about 30 different materials (including things like concrete encased in steel), Milnes theorized that carbon fiber would be the ideal plinth material due to its incredible stiffness and light weight.

He arranged a meeting with Advanced Composites, the leading builder in the U.K. of carbon-fiber parts for F1 cars. When Milnes described his application, the head of Advanced Composites told Milnes that he couldn't even afford to be in the meeting, much less pay for the massive cost of engineering carbon-fiber parts. As Milnes dejectedly left, an engineer who had been present took Milnes aside and told him that he would work on building Milnes' carbon-fiber plinth in his free time. That engineer ended up collaborating with Wilson Benesch for many years, designing the company's first carbon-fiber tonearm.

The carbon-fiber turntable and tonearm were a hit, putting the fledgling Wilson Benesch on the map. The company then received a grant from the British government to pursue advanced research on its own, and Wilson Benesch turned to loudspeaker development. The result was the A.C.T. 1 (for Advanced Composite Technology), a loudspeaker far ahead of its time. It featured a complex cabinet shape made from carbon fiber, an alloy baffle, and a mechanical structure that had not been seen before in loudspeakers. The enclosure was hand-assembled from “pre-preg” carbon-fiber panels on either side of a Nomex core. This type of manufacturing was unheard of in audio; as I mentioned, carbon-fiber manufacturing was then confined to aerospace and Formula 1 applications. Incidentally, the engineer who years earlier took Milnes aside after the disastrous meeting and helped create the carbon-fiber turntable plinth led the development effort on the A.C.T. enclosure.

Today's Wilson Benesch has full carbon-fiber manufacturing capability in-house, which may be unique in high-end audio. The 17-employee company also has a machine shop where it manufactures virtually all the parts in its loudspeakers, down to the driver motor housings. The company has benefited from an association with Europe's top research labs and universities, calling on the expertise of scientists and academics under the umbrella of the government's subsidy of advanced research projects. **tas**