

**THE** three-way, four-driver Stenheim Alumine Five Special Edition (SE) loudspeaker from Switzerland is a unique combination of new and old. At less than a foot wide, just under four feet high, and a mere foot-and-a-quarter deep, its grille-less rectangular aluminum cabinet is fashionably compact. Of course, at 220 pounds, it's a hefty little box, but its weight is proportionally no greater than that of many of today's other high-mass, ultra-high-end speakers. Indeed, the Five SE's aluminum enclosure, bulk, and squared-off good looks put one (or, at least, *this* one) in mind of earlier-gen Magicos, before Alon Wolf added curved carbon-fiber panels to the mix.

However, the Five SE's twin, slot-like, front-firing ports—one above and one below the pair of 10" woofers on the bottom half of its facade—are anything but Magico-like. Neither are the drivers themselves (the two independently ported woofers that I just mentioned, the largish 6.5" midrange, and the 1¼" dome tweeter), all of which use “old-fashioned” pulp or textile diaphragms and textile surrounds. Also very un-Magico-like is the Alumine Five SE's lofty 94dB sensitivity and stable 8-ohm impedance. This is veering close to horn-like sensitivity, certainly Wilson-like, although with an impedance curve that never dips below 3 ohms, the Five SE is a lot easier to drive than most Wilsons and is several dB more efficient, to boot. Indeed, here is a speaker that could be (and purportedly sometimes is) powered by single-ended triodes, though I haven't taken the SET leap.

In a world where carbon-fiber-, metal-, and ceramic-sandwich drivers have become the cutting-edge norm, you don't see pulp and fabric-dome diaphragms with textile surrounds as often as you used to. And outside of horns, you almost never see *very* high-sensitivity dynamic drivers in a box, especially in a new-fangled aluminum box. What's up with this odd technological mix of past and present?

Well, you can hear a large part of what's up by simply putting on a good full-range orchestral LP, such as RCA's (Decca's, actually) famous Kingsway recording of the ballet music from Gounod's *Faust* and Bizet's *Carmen Suite* [LSC 2449] with Alexander Gibson conducting the Royal Opera House Orchestra. This is a disc that has long been celebrated for its sonics (those of you who go back that far will remember that TAS' Carol B. Keasler ranked it high among the best-sounding RCAs). Whether you are lucky enough to have the original vinyl or one of the excellent reissues from Classic Records/Analogue Productions, simply give a listen to the “Habanera” on side two, and as the ROHO gradually works itself into a frenzy, ask yourself whether you can hear the plucked double basses marking the 2/4 meter with the same foot-tapping clarity and presence on *tutti* at *fortississimo* levels that you can when they are spotlighted on *mezzo forte* ones. In other words, are the double basses' timbre, contribution, and articulation preserved without losses of color, presence, and clarity when the rest of the orchestra joins in double-time at full throat?

Based on my experience with cones in boxes, my guess would be that (if you were honest with yourself) your answer would likely be “no.” With the Stenheims, however, your answer would be an unqualified “yes.” Like a superb solid-state amp, the Five SEs do not lose their “grip,” color, resolution, or composure with increases in musical complexity, dynamic range, and playback volume (given a great recording, of course). While they may look like chunky little schoolgirls, dynamically they are anything but. They are, in fact, chunky little sticks of dynamite. Moreover, they are unusually deep-reaching for ported speakers—right up there with Estelon X

Diamond IIs, which set the benchmark for ported-bass extension for me (or did until the advent of the Stenheims). No, the Five SEs won't plunge into the bottommost octave with fullest authority and linearity, but they will kiss the cusp of the 20Hz octave, with better-than-usable output into the low 30s. In other words, they deliver bass that is full enough to set off subwoofer-like temblors with music like “Mars” from the Mehta/LA Phil rendition of *The Planets* [Decca/ORG] or “Telegraph Road” from Dire Straits' *Love Over Gold* [Warner Brothers], and they do this with virtually none of the midbass boom you invariably hear from speakers with ports.

Why this should be the case in such a modestly sized transducer is a question I'm not sure I can answer, though I can make some educated guesses. First, there is that aluminum box. As I said in my Estelon review, it is far too late in the game to explain why enclosures are so fundamentally important to the sound of loudspeakers. Ideally, their stiffness, mass, and damping should prevent them from “singing along” with the drivers by selectively delaying and then re-releasing stored energy, while their exterior architecture should prevent them from diffracting, diffusing, or reflecting the soundwaves (or parts of them) emanating from the speaker's cones and domes.

When it comes to the structure of its box, Stenheim is state of the art—or close to it. Though they weigh better than a tenth of a ton per side, the 12mm-thick aluminum side panels and 20mm baffles used to form the Five SE's enclosure are relatively thin. Such immensely strong, slender, low-resonance walls have the benefit of increasing internal volume without entailing a penalty in struc-

tural stiffness, damping, and mass. As Jean-Pascal Panchard, Stenheim's owner and CEO, says in the interview printed below, his thin-walled aluminum boxes have 30-to-40% more room inside them than comparably spec'd wooden boxes. This added cubic space not only allows him to reduce the

speaker's overall footprint; it also substantially increases the amount of air that the woofers (and the other drivers) work with and against within the enclosure.

Inside their deceptively small aluminum cabinets, Panchard and the Stenheim crew (many of them Nagra and Goldmund vets) added four separate, purpose-built, internal aluminum chambers, each with its own driver-specific volume of air—a sealed one for the tweeter, another sealed one for the mid-range, and two ported ones for the woofs with independent “laminar” (as in “laminar [meaning turbulence-free] flow”) front slots.

Aside from rounded corners, there are none of the aerodynamic curves or non-parallel panels on the outside of the box that you find in current-day Magicos, Rockports, Wilsons, YGs, Vandersteens, or Estelons, *par excellence*. These are purely rectangular objects, and although Panchard makes an argument to support this old-fashioned geometry (see the sidebar), I think, as you will soon find out, that the enclosures may exact a *very* small price for their squared-off design in stage width and depth.

Of course, a speaker enclosure is basically a platform and a conveyance—ideally a neutral one—and what it supports and conveys is the sound of the drivers mounted to it. I've already shared some of what I know about those drivers. They are made by a French firm called PHL Audio that specializes in pro gear. Though PHL's diaphragms use “old-fashioned” pulp and textile materials, the cones made with them are multilayered, coated on both sides, computer-optimized in geometry, mated with very-high-excursion voice coils and extremely powerful magnets (neodymium in the midrange and tweeter), and terminated with ultra-high-compliance, double-half-roll fabric surrounds for a low Fs (free-air resonance frequency). The results of PHL's engineering choices are drivers of unusually high sensitivity and uniform impedance, capable of 112dB SPLs without breakup. While horn-loaded compression drivers can exceed these numbers, very little else can compete.

In sum, the Stenheims are built to play loud with ease. Their high-sensitivity, stable-impedance cones and domes and high-mass, non-resonant enclosures are designed to give music's dynamic power (and hence its articulation and expressiveness) free rein from top to bottom. This not only shows up in the bass—the way Panchard & Co. has enclosed, ported, and laminar-flowed the twin 10" woofers results in a low-end focus, dimensionality, resolution, extension, and impact that would delight you in a seven-foot-tall, one-thousand-pound, multi-woofed tower speaker; in a speaker of this size and price, it is simply incredible—but also in the midrange and (to a somewhat lesser extent) in the treble. Though the subject is debatable, the Five SEs certainly make a case for high sensitivity and stable impedance equating to higher dynamic range and quicker, more lifelike tracking of changes in same. And, of course, higher dynamic range means that voices and instruments shed the sluggishness of the mechanical and come more fully alive much more quickly. (There is a reason, folks, why many people still love ultra-dynamic horns.)

If astonishing bass and dynamic range were all they boasted, I probably wouldn't have fallen for the Five SEs as unreservedly as I did. Given their almost ridiculously compact size and reasonable (for the ultra-high-end)

price, I would still, of course, have been amazed by them, but I wouldn't have been fully smitten if they hadn't also excelled at the other half of the envelope. (You'll remember that that particular missive is called “the dynamic/*harmonic* envelope.”)

Like Jack Wilson, there are many speakers that are fast, fast on the draw. Unfortunately, fast is all they are. I don't think there is a transducer on earth that will wear you down and out more quickly than a speaker that is all leading-edge and little-to-no steady-state tone or decay. Such products may be detailed, all right, but without the color, weight, and body of the real thing they're also uncorrectably amusing. Fast as they are on the draw, this is not the case with the Stenheims.

As if it weren't already too much to ask of such an undersized overachiever, the Five SEs proved to be *exceptionally* robust in color and texture from the bass to the mid-treble (especially when driven by something like the magical Souolution 711 stereo amp). Nor did this natural richness of timbre result in an appealing but uniform “beautification” of the sound (though these are speakers that never sound unpleasant). The Stenheims are sufficiently chameleon-like to reproduce everything from the solid mahogany of Taj Mahal's thick, gruff baritone to the cigarette-in-the-dark glow of Julie London's sultry contralto with “fool-ya” realism—and to do this without losing superb resolution of the singers' distinctive ways of styling lyrics. Indeed, when it comes to articulation (which is, after all, not just a question of tone color but also of dynamic weight and transient clarity), the Five SEs were the first speakers to make sense of the lyrics on Taj Mahal and the Pointer Sisters' version of “Sweet Home, Chicago” [*Recycling the Blues*, Columbia/ORG]. Where I had always thought Taj was singing something like “that lemon/lime city, sweet home Chicago” (I know it doesn't parse, but that's the way it came across through every other speaker I've had), the Stenheims told me that he was actually singing something like “that living *live* city, sweet home Chicago.” (I have since discovered that a few other folks hear this same lyric as “live in line city,” but that doesn't make any more sense than “lemon/lime.”)

The Five SEs clarifying way with articulation (and with dynamics, in general) isn't confined to hard-to-decipher lyrics. On Julie London's famous rendition of her soon-to-be-husband Bobby

Troup's wonderfully spare arrangement of “Cry Me A River,” for instance, Ray Leatherwood's big-voiced, dark-toned, oh-so-smooth standup bass is not just reproduced with plum-like density of color; it is also delivered with the “rounded-off” finish that one hears from plucked acoustic basses in real life—as if each note weren't merely a rich smear of

## Stenheim Alumine Five SE Loudspeaker

color but an individual teardrop-shaped physical entity (soon followed by another teardrop of similar color and energy). This sense of physicality—of dimensionality—is closely allied to the Stenheims' way with the dynamic/harmonic envelope, which it reproduces with a neutrality or evenness that never lays an extra finger's weight on starting transients, steady-state tone, or stopping transients. As was the case with the Estelon X Diamond Mk IIs, with the Five SEs you get the whole note at a lifelike pace of presentation, and as a result you can better picture the instrument and instrumentalist in your mind's eye, facilitating that gestalt shift between recorded and real.

Downsides? Well, there are only three that I can think of, and they are ambiguous. First, the Five SEs do not throw quite as wide or deep a soundstage as something like the near-incomparable Estelon X Diamond Mk IIs. Though every bit as finely detailed as the Diamonds and quite possibly a bit fuller and more natural in color, consistently revealing little dynamic/harmonic subtleties—those transient gleams of color and energy you haven't heard as clearly before on things like the attack and sustain of the strings on Taj's banjo or steel guitar or the long, deep decay of his upright bass when he plays it *arvo* at the end of "Texas Woman Blues"—the Stenheims don't spread the Pointer Sisters backing Taj up quite as far apart or quite as far beyond the boundaries of the speakers and the backwall as the Estelons do. Whether this is a side effect of the Five SEs' rectangular enclosures or of the way the drivers are asymmetrically situated on their front panels (the Stenheims come in left/right pairs with the midrange and tweeter slightly offset toward the respective inner sides of each enclosure), I'm not sure. The difference in breadth and depth isn't tremendous—and do remember that the Estelons have some of the most inaudible cabinets I've ever heard (or not heard) in a cones-in-a-box loudspeaker—but there is a difference. On the other hand, the left/right pairing makes for superb focus at stage center, near-right, and near-left, resulting in a diorama-like presentation in which vocalists and instrumentalists seem to exist, almost visibly, in three dimensions.

The second tiny drawback, which is also a bit of a mixed blessing, is a direct result of the Stenheims' amazing dynamic range. Because the Five SEs can get loud much more quickly with much less current than low- to medium-sensitivity speakers, it is easy to drive them to levels that overload your room and, consequently, cause hard vocal or instrumental transients to ring a bit at volume settings on your preamp that would make typical loudspeakers barely come to life. This really isn't a problem with the Stenheims themselves; it is a matter of learning to properly interface these little sticks of dynamite with your preamplifier, amplifier, and room. Just be aware, particularly in smallish to medium-sized spaces (for which they are otherwise ideal), that these speakers will play very loud very fast.

As with my other two quibbles, this last one is also ambiguous. Though just as finely detailed, dimensional, and rich and natural in color as the

speaker's midrange and bass, the Stenheim's treble tends to sound a bit soft and sweet in the topmost octave. Of course, a tweeter that is soft and sweet is a lot better than one that is hard and edgy, but it still sounds as if the treble were being *very* gradually rolled off in the brilliance range and above, giving the entire presentation a slight bottom-up tonal balance. Once again, this is the smallest of demerits, if it even counts as a demerit.

Bottom line: Like the superb Estelon X Diamond Mk II, the Stenheim Five SE is not just a great speaker; it is one of high-end audio's greatest speakers. Its ability to generate truly deep, linear, powerful bass, unusually rich and lifelike tone color, near-visible three-dimensional images, and astounding detail and dynamics from such a modest enclosure is not just a surprise; it is one for the ages. For those of you looking for the high-end answer to a limited listening space, look no further. Hie thee to the nearest Stenheim dealership—pronto. In cones-in-a-box loudspeakers, you just don't find this big a gift in this small a package every day (or every decade).

### SETTING UP THE ALUMINE FIVE SES

**BECAUSE OF THEIR WEIGHT**, you're going to need help (preferably experienced dealer help) getting the Stenheims out of their crates and onto their spiked feet and thence, if you don't have thick carpet, into their indented spike-holding cups. Once mounted on spikes and cups and leveled (Stenheim provides a tool to facilitate this), they are relatively easy to slide about on wood floors, but they're still handfuls at 220 pounds per side, so go easy and slow.

Based on my experience, the Five SEs prefer to be about three-and-a-half to four feet (measured from the front panel) from rear and side-walls, though where they play best in your digs will require experimentation. They also like an inch or two of toe-in—not a lot but enough to angle them slightly toward the listening position. Remember that the Five SEs are left/right pairs, so be sure to set them up with the left speaker on your left and the right one on your right (i.e., with the offset tweeters and midranges towards the inside walls of the enclosures). Though they sounded great with high-quality tube amplification, the Five SEs sounded even better with solid-state, particularly high-speed, high-bandwidth, high-damping-factor, Swiss solid-state from Soudation or CH Precision. As I noted in the review, the Soudation 711 is a particularly good match.

As Jean-Pascal explains below, the Five SEs have bi-wire connectors (the same connectors Stenheim uses on its large, top-line Reference speakers). Though the speakers come with short, heavy-duty jumper wires to allow single-wiring, they do sound better bi-wired.

### JU INTERVIEWS JEAN-PASCAL PANCHARD, CEO AND OWNER OF STENHEIM

**To begin, why is Stenheim called “Stenheim,” and how and why did you end up buying and running the company?**

Stenheim is essentially a made-up name chosen to represent the values of the brand. It reflects a certain Swissness (three quarters of the country are native German speakers), seriousness, and elegance. The first syllable—“sten”—has a Nordic quality, which evokes precision and a certain crystalline feel. The second syllable—“heim”—is German for “home,” which lends a warmth and a feeling of comfort to the name that we hope our customers experience when listening to our products.

I bought the company as a fledgling start-up from a group of Swiss engineers, who had already embarked on the Alumine concept. These engineers were working on various projects for high-end audio companies. I believed in the concept to such an extent that I wanted to develop it into an entire business, which was not the engineers’ aim at the time. I was working for Nagra when I met them.

**The Alumine Five SE is an unusual speaker—a kind of merman of the audio deeps, with a “modern” aluminum enclosure and rather “old-fashioned” pulp-cone and fabric-dome drivers. How and why did this combination of “old” and “new” come to pass?**

This, at first sight, seeming contradiction between old and new is actually nothing of the kind. There are sound reasons for the choice of both organically derived drivers and metal enclosures.

Cellulose-based drivers are lightweight and thus fast. They provide high efficiency, which produces a natural and organic sound—musicality, in short, which is what Stenheim constantly strives to achieve.

Choosing aluminum for the cabinets confers several advantages. Aluminum allows the internal volume of the speaker to be between 30% and 40% greater than it would be if the box were made of wood for the same external dimensions. This, in turn, allows the speakers to be smaller than they otherwise would be to get the same sound, with a pay-off in aesthetic terms: They blend more easily into the average living room.

Aluminum also gives a greater stability with an absence of vibrations. In particular, the higher end of the bass spectrum and the lower mids are reproduced more cleanly. In more conventional speaker designs this is a range of the aural spectrum that can suffer from coloration. Finally, the increased stability means that the sound is better controlled at higher listening volumes; clarity is maintained.

**Your speakers are usually high in sensitivity and very stable in impedance, meaning they can be driven by anything from an SET to a relatively high-powered tube or solid-state amp. I assume that this high sensitivity and stable impedance were design aims. What do they add, sonically, to the mix?**

Quite apart from allowing Stenheims to be powered by less powerful amplifiers, there are definite sonic advantages to high sensitivity, which is why it is one of the core features of all Stenheim loudspeakers. It allows for fast reaction times, which respect the dynamics of the music. Lower sensitivities result in more ponderous performance, which we try to avoid. The high sensitivity gives the music more precision and clarity and life, where micro detail is audible. It also avoids unwanted interfering sounds.

**What things are different in the “SE” version of the Alumine Five? And what do those differences add to the sonics?**

The SE version, sold at a higher price-point than the standard Alumine Five, allows us to use even higher-grade components in the crossover, which, taken as a whole, produce an audibly better result. Even the best audiophile components from the most prestigious manufacturers are available in different ranges at different costs. In the Five SE, we have been able to select components from more expensive ranges with cost being a secondary consideration. The Five SE also borrows the binding posts from the Reference range. The internal wiring was a collaboration with a cable manufacturer to produce wiring especially for the Signature model. This Alumine Five Signature is still available on our price list and is an Alumine Five spec’d out with no regard to cost in collaboration with the sound engineer Jean-Claude Gaberel. It features a separate, external crossover. The SE is a slightly less extreme version of this, where the crossover is internal, but many of the features of the Signature are retained. Taken as a whole, you end up with an Alumine Five in which the sound is even more refined and elegant.

**The Five SE has unusually natural bass, midbass, and lower mid-range, with a power, definition, and extension that I simply haven’t heard before from a speaker the size of the Alumine. How do you get such extraordinary power, dynamic range, and definition from pulp-cone drivers in a small, ported box?**

Double half-roll fabric suspension cones contribute here, giving a speed and dynamism to the upper bass frequencies and the lower mids. Otherwise, see above for our choice of organically derived drivers. And as I mentioned above, the use of an aluminum design for our cabinets avoids coloration of the sound and more precisely renders the bass. You get more out of a smaller package with aluminum.

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Your enclosures are rectangular. Although the corners of the box are rounded, there are no other "aerodynamic" niceties about their shape, and yet they disappear quite well with little to no diffractive effects or ringing. How did you make a squared-off box so "neutral" and "invisible"?

The tweeters and midrange drivers are vertically offset deliberately to minimize diffraction. But to our ears, the question of diffraction is not as important at the distances at which the speakers are typically listened to. It is a phenomenon that is much more noticeable when one is very close to the loudspeaker. But this is not how people listen to them. Diffraction is a consideration, but there are other more important considerations to make diffraction disappear, and having an excellent crossover design is one of them.

Though the drivers you use aren't made of carbon-fiber or ceramic or beryllium or diamond/carbonite, they are audibly superior and unusually powerful. I have read where they are sourced from the French company PHL. What sets them apart sonically?

PHL creates drivers for professional usages, which are particularly demanding. They produce higher dynamics and lower distortion. They are particularly efficient, a cornerstone of the Stenheim design philosophy. These were the main considerations that drove our choice. The fact that they come from a company that speaks our language (French) is just a bonus! **tas**

### SPECS & PRICING

**Type:** Three-way floorstanding speakers

with four high-efficiency transducers

**Driver complement:** 2x 10" woofers, 1x 6.5" neodymium medium drivers, 1x 1.25" neodymium tweeter

**Enclosure:** Massive aluminum cabinet with four independent chambers, two closed (medium & tweeter) and two with laminar-flow front ports

**Crossover:** Passive three-way, using audiophile high-grade components

**Frequency response:** 28Hz–35kHz

**Sensitivity:** 94dB

**Nominal impedance:** 8 ohms

**Power handling:** 200W RMS, 400W peak  
**Features:** Special Edition SE with ultimate components (crossover, internal wiring, and bi-wiring WBT Nextgen pole terminals)

**Dimensions:** 11" x 47.2" x 15"

**Weight:** 100kg (including adjustable spikes)

**Price:** \$72,000

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#### JV's Reference System

**Loudspeakers:** MBL 101 X-treme, Estelon X Diamond Mk II, Magico M3, Børresen Acoustics 05, Voxativ 9.87, Avantgarde Zero 1, MartinLogan CLX, Magnepan 1.7 and 30.7

**Subwoofers:** JL Audio Gotham (pair)

**Linestage preamps:** Soullution 725, Aavik C-380, MBL 6010 D, Constellation Audio Altair II, Siltech SAGA System C1, Air Tight ATE-2001 Reference

**Phonostage preamps:** Soullution 755, Constellation Audio Perseus, DS Audio Grand Master

**Power amplifiers:** Soullution 711, MBL 9008 A, Aavik P-380, Constellation Audio Hercules II Stereo, Air Tight 3211, Air Tight ATM-2001, Zanden Audio Systems Model 9600, Siltech SAGA System V1/P1, Odyssey Audio Stratos, Voxativ Integrated 805

**Analog source:** Clearaudio Master Innovation, Acoustic Signature Invictus Jr./T-9000, Walker Audio Proscenium Black Diamond Mk V, TW Acoustic Black Knight/TW Raven 10.5, AMG Viella 12

**Tape deck:** United Home Audio Ultimate 4 OPS

**Phono cartridges:** DS Audio Grand Master, DS Audio Master1, Clearaudio Goldfinger Statement, Air Tight Opus 1, Ortofon MC Anna, Ortofon MC A90

**Digital source:** MSB Reference DAC, Soullution 760, Berkeley Alpha DAC 2

**Cable and interconnect:** CrystalConnect

by Crystal Cable Art Series Da Vinci,

Crystal Cable Ultimate Dream, Synergistic Research SRX, Ansuz Acoustics Diamond

**Power cords:** CrystalConnect by Crystal Cable Art Series Da Vinci, Crystal Cable Ultimate Dream, Synergistic Research SRX, Ansuz Acoustics Diamond

**Power conditioner:** AudioQuest Niagara 5000 (two), Synergistic Research Galileo UEF, Ansuz Acoustics DTC, Technical Brain Support systems, Critical Mass Systems MAXXUM and QXK equipment racks and amp stands

**Room Treatments:** Stein Music H2 Harmonizer system, Synergistic Research UEF Acoustic Panels/Atmosphere XL4/ UEF Acoustic Dot system, Synergistic Research ART system, Shakti Hallographs (6), Zanden Acoustic panels, A/V Room Services Metu acoustic panels and traps, ASC Tube Traps

**Accessories:** Critical Mass System Centerstage<sup>2M</sup>, DS Audio ION-001, SteinMusic Pi Carbon Signature record mat, Symposium Isis and Ultra equipment platforms, Symposium Rollerblocks and Fat Padz, Walker Prologue Reference equipment and amp stands, Walker Valid Points and Resonance Control discs, Clearaudio Double Matrix Professional Sonic record cleaner, Synergistic Research RED Quantum fuses, HiFi-Tuning silver/gold fuses