

EXCEPTIONAL LOUDSPEAKERS

STENHEIM ALUMINE PURE ACOUSTIC WATCHMAKING

SINCE THE 1960'S, SWITZERLAND HAS BEEN THE CRADLE OF SOME OF THE BIG NAMES OF HIGH QUALITY SOUND REPRODUCTION. FOUNDED VERY RECENTLY BY A BRILLIANT TEAM OF YOUNG PASSIONNATE ENGINEERS, THE SWISS COMPANY STENHEIM IS UNVEILING ITS ALUMINE COMPACT LOUDSPEAKER. THIS FIRST PRODUCT, A COMPLETE SUCCESS, ANNOUNCES THE ARRIVAL OF A NEW SWISS BRAND TO KEEP AN EYE ON.

HIGH-FIDELITY

reference [Written in a triangle on page 1]

The story of the Stenheim company has hardly started, yet it is quickly going to become the main topic of conversation of the audiophile community. Created by five sound and music fanatics but nevertheless engineers in their respective technical specialties, the company based near Geneva, intends to exclusively make High End products whose quality will have to be irreproachable. It is true that the résumés of these men whose average age is hardly over thirty indicates that four of them come from Goldmund and that the fifth one is experienced in precision mechanics in the Swiss watchmaking industry, the most reputable in the world. All the ingredients were there to create a product as superb as the compact Alumine loudspeaker, the first reference of a catalogue which should quickly expand in the coming months.

THE MECHANICAL DESIGN

The Alumine project has required over two years of studies, tests and adjustments. The idea was to create a reference library loudspeaker, neutral and evolutive toward a “full range” system (wide band) which should become available in the spring of 2011. The current loudspeaker can be delivered with a support leg made from two machined aluminum plates mounted on both ends of a rectangular steel tube which features an internal cavity to pass cables through and to ballast with sand. Each plate receives spikes which uncouple the loudspeaker from the leg (the spikes should shortly be replaced with aluminum ball bearings in that location) and the leg from the floor; the top plate is equipped with a bubble level to align the loudspeaker. The “full range” evolution will consist of replacing the leg with a third passive bass driver. Several requirements have governed the specifications of the Alumine. The enclosure had to be manufactured to the highest possible standard. Therefore, 10- mm-thick brushed solid aluminum plates were used for the walls and a 15-mm-thick plate for the front in order to achieve as much rigidity as possible and to inhibit sound coloration. Dimensions were calculated to minimize standing waves and the formation of internal resonance. The wall assembly has no apparent screws but around sixty screws with brackets were used inside the enclosure, with silicone joints to perfect the tightness. The precision of the adjustment of the machined walls by the Swiss subsidiary of the Alacan

company (NASA provider for various Apollo missions) is of the order of one-tenth of a millimeter. The internal absorption is achieved using bitumen and foam on each wall. The available finishes include a choice of thirty different anodized colors, and custom finishes such as leather, wood or gold-plating, to name a few, can be provided at an additional cost. As the manufacturer indicates, these custom finishes are limited only by your imagination...

THE AUDIO DESIGN

Seeking neutrality implies not distorting the signal too much during its transfer. Its trajectory must be as short as possible with components as transparent as possible. Since faults cannot be avoided, Stenheim sought to by-pass them from the start by adopting simple solutions. For instance, the bass mid-range loudspeaker and the tweeter have identical dynamic characteristics and sensitivity. This avoids multiple filter corrections which lead to a loss of definition and various distortions. Moreover, all the speakers of a pair of loudspeakers are paired based upon several parameters measured on the Audio Precision analyzer (impedance in particular). Nothing is left to chance. Each computer-simulated technological choice is tested subjectively (by ear) and objectively (measured in an anechoic chamber at the applied acoustics laboratory of Geneva) before being chosen. The 16-cm-diameter bass mid-range speaker made by the French company PHL Audio has a treated membrane mounted on a half-roll suspension. A huge ferrite magnet installed on an alloy chassis powers this transducer charged by a small volume tuned in bass reflex, with the port opening onto the front face. It is filtered on a gentle slope to preserve a good phase response and to optimize dynamics. The tweeter, made by the Norwegian company SEAS, has a soft 25-mm dome made of Sonomex. It features an elliptical elastomer wave guide which regulates the response and dispersion of extreme highs. The speakers are placed in a mirrored position along an offset vertical axis. This configuration allows the speakers to be positioned with respect to the lateral walls so that the acoustic response is optimized. The power handling is high and allows a realistic listening volume without audible dynamic compression. The filter, which implements audiophile components (air coils, dielectric polypropylene capacitors, metal-film resistor), is connected to a gold-plated double WBT terminal equipped with WBT connecting strips. Each loudspeaker is then burnt-in on a testing bench before being checked one last time and being shipped.

LISTENING

Timbres: The Alumines feature a relatively high sensitivity of 90 dB and a relatively stable nominal impedance of 8 ohms, not too constraining for an upstream amplifier. This allowed us to perform listening tests with electronics as diverse as our powerful benchmark stereo block FM Acoustics and the much less powerful integrated 300i Nagra based upon a 300B push-pull triode, both of Swiss origin... Besides, it was very tempting to implement a compact system based upon the dedicated CDP and the integrated Nagra connected to the Stenheims. This was done in the presence of three of the company founders who had come to bring us their babies and introduce them to us. In this configuration of a high esthetic refinement, the listening results were superb. Right away, one notes the Alumines do not really need much power to express themselves, at least with musical genres which are not too demanding in watts. One is amazed by the acoustic volume which has no common measures with the size of the loudspeakers, by the realism of the atmosphere, by the subtlety of the timbres across the entire audio band. On the track "Use me" (CD *Companion* by Patricia Barber), the bass range explored by the counterbass provides an extremely convincing and structured foundation without the usual vibrations from wooden walls

nor the tonics characteristic of a heavy bass reflex. The instrument takes on surprisingly credible dimensions and colors despite the logical discretion of the first octaves. The constant articulation of the message allows one to savor the smallest tonal inflexions of each score that the Stenheims analyze with a scrupulous sense of detail. However, we have noted an obvious gain in terms of contour and articulation in the high bass zone with the FM Acoustics amplifier, more responsive, more rigorous with the Alumines, than the tube integrated amplifier. The mid-range benefits from the exceptional quality of the implemented small-diameter professional loudspeaker. Its acceleration capacities and its respect of the tonal texture contribute to make the playing particularly rich in harmonic details. Then, the sounds seem very familiar and very real to us. The chosen tweeter deploys a flexible and smooth range of sharps which do not attempt to reach for the moon but provide a perfect spectral balance.

Dynamics: The Alumines do not disappoint on that criterion either. One can, at first, be dubious of their dynamic potential upon seeing the size of the loudspeaker and that of the bass mid-range unit. It is by listening to them that one quickly realizes that a book can't be judged by its cover. As a matter of fact, these Alumines were designed like genuine little monitoring loudspeakers. As an anecdote, one of the creators of the company, as well as an external consultant who has contributed to the study of these compact loudspeakers, comes from the professional world of sound recording. One thing explains another and if the Alumines effectively overflow with breathtaking vitality and energy, they nevertheless remain indicative of a modulated content, even at a very low listening level. More incisive with the powerful transistor stereo block, they astound you with the rapidity of sound and the subjective level that they reconstitute on violent transients, irregardless of the listening level and the frequency zone (piano on "Like JT" by Patricia Barber, bass drum beat on "Chill on cold" by Doug MacLeod). No loss of amplitude disturbs the serenity and the spontaneity of these seductive Swiss loudspeakers which bear a resemblance to genuine Swiss chocolate. The attack of each note sets the tone, the fundamental, the way we bite into a piece of dark or milk chocolate. The score then reveals itself as multiple harmonics enveloping the fundamental like the first flavours unfolding on our palate allowing us to differentiate dark from extra-dark chocolate, for example. Then, the note dies without any other temporal limit than that imposed by the playing support and the other links, like the pleasure of feeling the flavor of cocoa progressively receding from our taste buds. The readability is remarkable with complex messages (differentiation of the men's and women's choir scores in Mozart's *Requiem*) and will therefore turn out to be much more dependent upon the other links of the audio system.

Image: Compared to larger loudspeakers, compacts usually have the advantage of designing an acoustic scene, very precise in terms of spatial localization and stacking of acoustic planes. The narrowness of the baffle support and the nearness of the emission centers create a virtual acoustic source close to the punctual source, allowing for easy placement in the listening room. The Stenheims do not depart from that rule. Their positioning does not pose any major problems; as for us, we placed them at the top of an equilateral triangle orientated towards the listener. They delivered a surprisingly consistent spatial perspective in the three geometrical planes where each interpreter, each group of instruments, finds a perfectly located and delimited place. Air circulates around the choirs interpreting Mozart's *Requiem* conducted by Harnoncourt, precisely positioned at the back of an orchestra just as aired and well distributed from the left to the right

of the stage. The stereo image was very stable from a relatively wide sweet spot for a sofa listening experience without loss of spatial precision.

Clarity: Obviously, the technological choices made by Stenheim for its compacts also bear their fruit regarding clarity. The meticulous pairing of the loudspeakers, the perfectly optimized filtering, and the use of high quality transducers installed in sumptuous custom enclosures result in an extremely neutral and faithful reproduction. When it comes to the Alumines, it is almost a pleonasm to be speaking of high definition because these loudspeakers so deeply respect the musical message. If you are seeking the acoustic truth, this fundamentally indispensable quality will however be indicative of the personality of the other elements to which the Stenheims are associated. That was confirmed by our tests with amplifiers of different technologies. In both cases, one could note the well structured and surprising range of bass of the Alumine, but the responsiveness and articulation were improved with the transistor block.

VERDICT

For a first attempt, the Stenheim team has managed a master-stroke with its Alumines. These compact loudspeakers reconstitute music with a perfectly surprising command. The message is distilled with a well-thought-out balance of rigorous, all monitoring analysis and of audiophile flexibility. Their timbre is accurate and does not affect the reading with any notorious coloration. The dynamics modulate remarkably and the acoustic scene breathes in all circumstances. The manufacturing is impeccable, meticulous, Swiss. These loudspeakers are rather easy to drive, nevertheless they will adapt better to powerful but always neutral electronics to solidify the foundations of the music. The price can seem high for compact loudspeakers, especially considering the well-thought out but perfectible legs. Even if it is in absolute terms, it is, however, justified by an out-of-the-ordinary bouquet of qualities and awesome acoustic performance.

William Savignac

MANUFACTURING

TIMBRE

DYNAMICS

IMAGE

CLARITY

QUALITY/PRICE

Not applicable

LISTENING SYSTEM

Source: Nagra CDP

Electronics:

Nagra 300i, ATC SCA2
and FM Acoustics F30B

Cables:

Stealth Metacarbon
(connector type RCA and XLR)
Stealth Hybrid MLT V.10 (HP)

TECHNICAL DATA

Origin: Switzerland

Originally published in Haute Fidelite: <http://audioarts.co/r/hautefidelity-stenheim.pdf> (French)

Price: 9000 euros

(aluminum legs 3000 euros)

Dimensions:

230 x 330 x 275 mm

Weight:

17 kg (loudspeaker only)

Frequency response:

45 Hz to 25 kHz

Impedance: 8 ohms

Sensitivity: 90 dB/W/m

Nominal power:

90 W (200 W peak)

No cardboard box but a “flight case” for these jewels.