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Audio **phile**

THE HIGH END MAGAZINE 1/2012

PERFECT FORM

Sonus Faber Aida: The elegant sculpture with acoustical room adaption

THE WORLD OF TUBES

- Tube rolling: Measurably better sound
- T+A: Triodes with solid state power
- OTL-Principle: Strong without transformer



Audio **phile** THE HIGH END MAGAZINE 1/2012 ASR, ATC, Audioquest, Bose, Canton, Clearaudio, Dynaudio, Eterna! Arts, Hegel, Octave, Restek, Sonus Faber, T+A, TAD, Vienna Ac., Vincent

Perfect Wave

Sonus Faber from Italy builds sonic sculptures, not loudspeakers. Aida's elegance, however, is not an end in itself but, also from an acoustical viewpoint, the perfect form. Never before has a loudspeaker blended power and ease, beauty and tone in such an accomplished manner

Sonus faber





By: Malte Ruhnke

What is it that actually coaxes manufacturers of top-notch loudspeakers to give them their often boring names? Numbered model ranges or columns of figures combining diameters and chassis tallies radiate little high-end charm. Sonus Faber has always been more creative in this respect: Many loudspeakers were named after the most notable violin makers or their home town, Cremona. And now for the first time after an opera: Aida. Of course, there was also a good deal of patriotism involved – after all this may well be the most prominent Italian opera. Soon the musical world will be celebrating Verdi's 200th birthday, and Sonus Faber's 30th anniversary is yet another occasion to cast the company philosophy into a new outstanding product with an adequate charisma.

And it was also precisely 30 years ago when I heard Verdi's "Aida" live for the first time. I was instantly hooked, and by no means only because of the catchy music. It was also the protagonist herself, possibly one of the most consummate character profiles in the history of opera. A woman who is loving her enemy, a slave, a vulnerable woman who can nonetheless be strong. The control and completion of contrasts – this was certainly the force behind the development of the Sonus Faber, too: A loudspeaker which may bear that name should be female and elegant. Dressed in the finest of materials such as genuine leather, just as you would expect it in this price cate-

gory and from Sonus Faber. And it ought to bring along the sonic virtues of a compact 2-way monitor. Hence the upper section was designed just like that: The 6.5" midrange driver with its air-dried diaphragm of various natural fibres like kapok and kenaf works in a basket design which is cut from solid and consists of two different metals (aluminium and red brass) – this construction would also fit in well with the finest compact loudspeakers. Add to this an ultra lightweight textile dome tweeter with a heavily dampened diaphragm in an aluminium baffle board – and you're set.

To achieve an optimally balanced sound dispersion, the entire front is covered with genuine leather and has a curved form which results in considerably lower edge reflexions and diffraction effects. The two real wood side panels coated with a superior piano lacquer finish are modelled for an even more effective damping of these unwanted effects. They are by no means a design element, but due to their conical shape and extra damping material they can effectively absorb baffle diffracted waves. Thus all undesired backward and lateral sound portions were eliminated – but so were those which were indeed desired. Since the rear directed sound is shadowed and dampened more strongly than with a compact monitor, the Italian engineers headed by Paolo Tezzon built a second unit for the rear side which can be activated by a multi-level switch. This way the omnidirectional behaviour is harmonised in a

The narrow back panel houses the 2-way diffuse radiator, the finetuning controls (centre), various reflex ports and the tri-wiring terminal.

frequency neutral fashion and the upper frequencies, which would otherwise be underrepresented in the room, are lifted to the midrange level in the diffuse sound portion as well. The engineers call this the "Sound Field Shaper" and since the control thus serves the perception of the spatial depth, it is simply labelled "Depth".

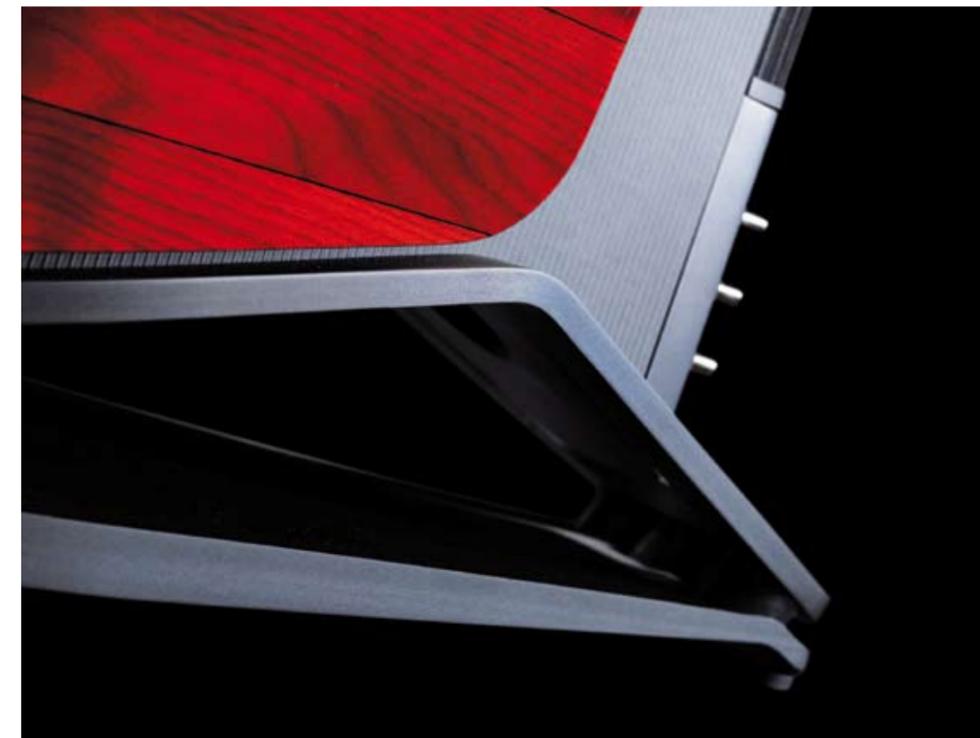
In order to give the Aida sufficient power reserves in the bass and fundamental range, the front panel dyad is even supported by two 8" chassis. Designed in a similar way as the midrange speaker, their sandwich diaphragm of cellulose and hightech foam material makes them much more rigid, and due to a larger voice coil they are perfectly tailored to their original function – the bass frequencies down to 55 hertz. But are two 8" chassis and a cutoff frequency of 55 Hz not a little scanty for the ultimate loudspeaker?

It is. After all, a loudspeaker of this class is supposed to deliver a decent punch on demand. Therefore a large 12" woofer should be the way to go. However, this will neither comply with the required elegance nor with sonic homogeneity, and above all it wouldn't have fitted on Aida's slim, gently curved baffle. You can literally hear all loudspeaker designers of this world sigh because of this dilemma. Yet the Sonus Faber engineers came up with a solution: Why not build a loudspeaker with a roughly circular footprint and tuck away the subwoofer in the bottom panel where it can perform its day (or night) work out of sight? The sheer con-

cept is tricky, but the huge effort the Italians had to make inside the cabinet for this purpose is hardly comparable to any other loudspeaker on the planet. Let's have a look at the overall construction first: the basic design resembles that of a lyre tapering backward. This systematically avoids parallel walls and thus standing waves inside the cabinet, but also serves to perfectly stabilise the walls. The top and bottom sections are made of aluminium (on top with a glass panel) which keep the cabinet walls together from above and below like a huge clasp.

Two additional aluminium shelves are to further stabilise the whole structure, similar to a non-suspended turntable. And if that weren't enough, there are metal damping weights inside the loudspeaker both on top and bottom, connected via a heavy metal rod.

The idea here is simple and was already put into practice successfully with the



The alu/glass top section of the Aida is slanted and emulates the form of a lyre – the perfect combination against resonances and vibrations



The 12-inch woofer works in secrecy. You don't see it, you (almost) won't hear it – but feel it.



construction of skyscrapers in earthquake-prone areas: As soon as a part of the cabinet begins to move after a bass transient, the rod and mass damping elements will produce a counter movement with a minimum excursion. Ideally the transients will completely cancel out themselves and the structure remains quiet. Woofers and sub unit work in a ported mode, with specially lined bass reflex tubes to eliminate unwanted frequencies. The midrange chamber, too, was given its own ventilation. Not to increase the volume level of the midrange chassis, but to have it work under optimum pressure conditions without the influence of an air cushion.

To cut a long story short: They have thought of everything with this loudspeaker. Trying to describe its quality of craftsmanship one will inevitably fail. I can only recommend every high-end fan to take a close look at the Aida in real life: The perfection with which all works were carried out, how the single pieces and materials fit together, how they blend in with each other, this opens up a new dimension in loudspeaker design. As regards this discipline, Sonus Faber will be the future standard for a whole industry.

Hence it's not easy to proceed to inner, i.e. sonic values. Even the most seasoned hifi reviewers will give in to the temptation of letting outward associations seep into their sound verdict. In the light of such a mighty physique and its not exactly modest demeanour, some people might be expecting a big, bass-heavy and gimmicky character. But the Aida is gorgeously different from other super loudspeakers. Yes, it even thwarts those clichés somewhat. First I treated it with some jazzy stuff: Angelo Badalamenti's soundtrack from "Fire Walk With Me"... and was easily reminded of the world's best compact monitors. With nimble-footed agility and dreamlike homogeneity and neutrality it was unfolding a perfectly coherent sound stage before me in the listening room. Not a hint of fat lows; everything had a powerful, yet markedly casual and swift nature. Add to this a superbly exact placement of the individual instruments as I only know it from the world's best coaxial loudspeakers. A

similar picture in the classical department: Rachmaninoff's 2nd Piano Concerto (Lang Lang, Gergiev) was sounding wonderfully fast and sparkling, nicely staggered and incredibly homogeneous. I was able to follow with ease the finest of details in the piano runs as in the orchestra accompaniment. On the other hand the Aida was tracing the dynamic shades, mobilising boisterous power when needed – and restrained herself stately in quieter passages.

But wait! Something was missing. I was listening to Mahler's Rückert-Lieder in the setting for chamber orchestra (Mutare Ensemble). The performance was perfect in the dimensions of a nearfield monitor, with a gentle reproduction of the string section, an emphatic piano and the voice of Klaus Mertens wandering in a wonderful way through its entire range. The dimensions of the stage, however, the voice being surrounded by space and the illumination of the same: Other loudspeakers of that class had been proffering me this more impressively.

Now came the moment when I brought Aida's back panel sound options into play. With "Depth=0" the rear transducer group had remained silent so far, now I turned them up fully. With an amazing result: The room became only slightly deeper, the locatability of the voice didn't practically change at all. I had been afraid of the latter since many omnidirectional and rear directional loudspeakers show this characteristic. But with the Sonus Faber the Depth control only produced an extension of the acoustic room to the rear and upward! What had sounded intimate and reduced before, was now opening into all directions, becoming more natural.

Time to put on the right record: Verdi's "Aida" featuring Riccardo Muti. Small loudspeaker, large loudspeaker? Dynamic or smooth? Solid bass or lean? Precisely locatable or spatial? The Aida does away with these alleged antagonisms, reconciling the seemingly irreconcilable in a peerless manner that makes even silences the die-hard reviewer in me. Only Mrs. Caballé is singing, and I'm sitting in awe until the final chord like the little boy of old at the opera house. Fascinating. <



Classic: The high/mid section works like a 2-way monitor, both chassis move closely together. The plug in front of the dome has a minimal, yet important acoustical function.

Sonus Faber Aida

List price: €90,000
Warranty period: 5 years
Weight: 165 kg
Dimensions (W x H x D):
48 x 172,5 x 78 cm
Surfaces: Walnut, Violin Red, others on request

Sales:
Audio Reference
Alsterkrugchaussee 435
D-22335 Hamburg
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The controls allow to adjust the bass and treble levels and also the proportion of the rear diffuse radiator (Depth) which is silent in the 0 setting.



Test-LP Verdi – Aida

Riccardo Muti was scintillating in 1973 with agile conducting and juvenile voices (Caballé/Domingo). Also a technical milestone: one of the first operas in surround (4.0 then), it also sounds great in stereo.



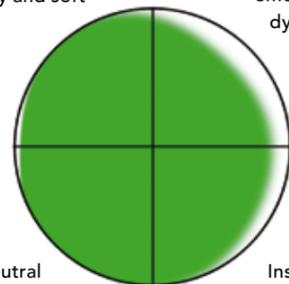
The Author Malte Ruhnke

mostly listens in stereo on the job, but usually in multi-channel at home, of all available sound media. Hardly a flea market or second hand shop nearby that's not browsed for SACDs, DVD-Audio discs and even quadrophonic LPs.

AUDIOphile character

Effortlessly airy and soft

Grippingly emotional dynamic



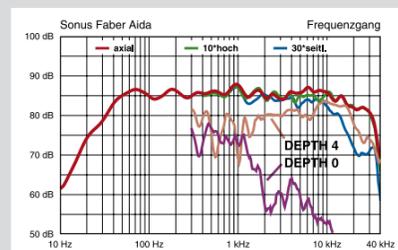
AUDIOphile potential



AUDIOphile recommendation

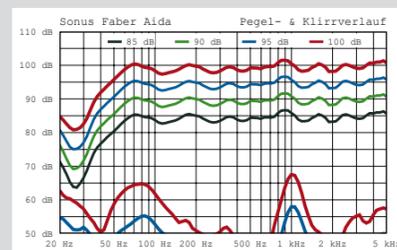
So extrovert visually, so easy-care is the Aida in combination with different rooms and amps: It fits almost everywhere.

Frequency response



Despite the long chassis-to-chassis distances and the 3.5-way design, the Sonus Faber proves to be perfectly neutral with a wide dispersion angle. With "Depth" on 0, the loudspeaker radiates very low levels backward above 1.5kHz, with full depth the directivity index decreases to about 3-4 decibels.

Distortion



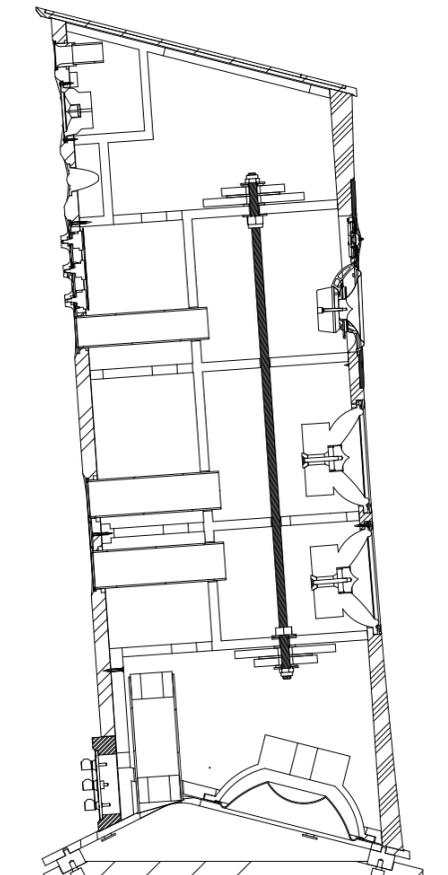
Very low distortion and clean, impressive reserves notably in the bass range. The tiny distortion peak around 1 kHz is due to a resonance, but inaudible. With 109 decibels the Aida has also a very high power handling, the more so as it can unleash still greater reserves in the sub and kick bass range.

Sonus inside

The Sonus Faber plant in Vicenza is one of the world's state-of-the-art loudspeaker factories. The vertical range of manufacture is amazing – after all, the Aida requires technical versatility and perfection in the making of the wooden cabinet, but also in the aluminium processing, the covering of baffle and rear panel with finest genuine leather, and of course in the art of varnishing and

polishing. Sonus Faber's hallmark has always been perfect piano lacquer on real wood: This must be applied, sanded, polished and applied again up to 20 times. With the Aida only the side panels were given this treatment; for acoustical reasons head designer Tezzon prefers aluminium, leather or special damping synthetics elsewhere. The secret lies in the mix

The construction of the Aida cabinet is one of the most complex on the market. The internal wood structure is pressure-glued as a whole (top). The cutaway view (below) shows the locations of the chassis, the reflex tubes and the mass damping rod.



1 For a mirror finish the piano lacquer of the side panels must be applied and polished many times.

2 The genuine leather is put on baffle and rear panel with special glue.

3 Midrange chassis and tweeter are screwed on their alu plate from behind.

4 The upper mass weight of the internal damping structure plus rod.

5 Top and bottom section are milled from solid aluminium.

6 The lower alu sheet will later house the 12" woofer.



Head developer Paolo Tezzon optimises crossovers and finetunes the tonality during the live listening check.

