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The Sonus faber

(£140,000)

We bring you an exclusive full review of Sonus faber's extraordinary new flagship loudspeaker
 Review: **Keith Howard, Ken Kessler, John Bamford & Paul Miller** Lab: **Keith Howard**

High-profile car makers have been doing it for years: creating special editions whose desirability is only sharpened by a strictly limited production run. Hi-fi manufacturers – particularly speaker makers – are picking up on the idea in increasing numbers. Cue the Sonus faber: a new flagship from the doyen of Italian speaker manufacturers, whose £140,000 asking price will be coughed by a maximum of 30 well-heeled buyers, this being the total number of pairs that are to be sold.

But hang on a minute: isn't this speaker called the Fenice (Italian for Phoenix)? When our preview of it was published in our September issue last year it was, and you'll still find many web pages referring to it thus. But in a communiqué from Italy circulated in the autumn of 2010 the name was changed to something less ambiguous: 'The Sonus faber' (which I'll abbreviate to TSF henceforth). Fenice, it seems, is a name to which someone else owns the rights.

NOVEL DESIGN

This episode will have been an unwelcome glitch in Sonus faber's lavish marketing strategy but it matters little: the former Fenice is such an extraordinary loudspeaker, and has such novel design features, that there's no mistaking it whatever its handle. And no gainsaying the sledgehammer-blow visual impact of this behemoth, which measures over 1.7m tall and weighs a staggering 305kg (yes, each).

RIGHT: The clamshell cabinet stands over 1.7m tall with substantial aluminium caps top and bottom which clamp the enclosure via an internal steel bar. Total driver complement is seven, with two behind

Let's begin our tour with the driver complement. If we ignore, for the moment, the little two-way symbiont that nestles within a niche in the TSF's back panel, there are five main drive units in a three-and-a-half-way configuration. Low down in one side panel is the largest of them, a 15in subwoofer with a sandwich cone of

woven nano-carbon skins and a Rohacell foam core, made to Sonus faber's specification by Audio Technology of Denmark. It handles only the very lowest audio frequencies below

80Hz, has an 11cm diameter voice coil whose former is part aluminium, part Kapton, and is reflex loaded by a large rectangular port that exhausts at the foot of the front baffle. Meanwhile, a three-position level control allows the subwoofer output to be adjusted to suit different rooms.

Next as we climb the frequency range are two front-mounted 10in woofers, the lower of which is slightly uptilted towards the listener, whose natural roll-off forms the high-pass element of their crossover to the sub. Also made by Audio Technology these too have sandwich cones although this time with paper skins and a syntactic foam core (a hi-tech polymer containing tiny hollow spheres called microballoons).

'Kicks, slams and thrusts never caught the Sonus faber unawares'





THE SONUS FABER EXPERIENCE

Having used Sonus fabers since their inception, I reckon I've tried 20 models and lived long-term with six. The sound has always seduced me. Sonus faber speakers came to our attention because they looked like no other. But the ethos is the same as with Italian supercars: if a Lamborghini's performance didn't match the otherworldly styling, the car would be a joke. Sonus fabers always sound as good as they look. Yes, there have been occasional *cul de sacs*, like the astonishing, but power-hungry Extrema. Or so I thought: upon hearing the new flagship, I was reminded as much of that speaker's chunky, robust bass as I was of the Stradivari's delicacy or the Guarneri's authentic midband. Rest assured: this new behemoth is pure Sonus faber, in every sense. *KK*

Again they are reflex loaded but this time by twin, rear-firing ports. They cross over in turn, quite early but gently, at 250Hz to the 6.5in midrange unit, built by Norwegian driver manufacturer SEAS using Sonus faber's own chassis design.

This incorporates three rings of aluminium and a basket made of a gunmetal alloy used for large artillery pieces in WW1. All are machined from solid, their combination acting to damp structural resonances. A paper cone was chosen for this critical frequency range because it delivers a fast, dynamic, lifelike sound.

RING TWEETER

Immediately below the midrange unit is a 25mm ring tweeter, manufactured by Scanspeak of Denmark, which unusually combines a neodymium magnet and a samarium cobalt magnet in its motor system, the latter being incorporated because it enhances sound quality.

Together the midrange driver and the tweeter are mounted on a sub-baffle that is compliantly isolated from the rest of the cabinet and equipped with a mass-damper to quell vibration.

So far, so large and lavish – but mostly conventional. There's a surprise in store round the back, though, where a little reflex-loaded two-way speaker – with

a dome tweeter and small cone driver using the same diaphragm material as the front-firing midrange driver – is recessed into the TSF's back panel. It can be rotated by 45° each way horizontally and has its output adjusted via two nearby rotary controls, one labelled 'soundstage depth' which varies the output level in five steps including off, and the second labelled 'soundstage azimuth'. This constitutes the Sound Field Shaper system [see box-out, p26] and is the subject of one of three patents filed by Sonus faber in relation to the TSF's design.

The other two patents relate, firstly, to the complex cabinet construction and the use of industrial machine experience to decouple it from the floor, via its four compliant feet. Sonus faber uses a clamshell method for building the TSF's cabinet, which is clamped between the huge, machined-from-solid aluminium cap that tops the enclosure and the two-piece aluminium base (both of which can be either hand polished or black anodised) by a tensioned steel bar that runs top to bottom.

The cabinet sides, which have a complex curvature that pays homage to the lyre (instrument of the gods), are formed from an Okoumé plywood, Okoumé being an African tropical hardwood whose properties allow the ply to be bent into the

LOUDSPEAKER

SHAPING THE SOUND FIELD

Sonus faber's Sound Field Shaping system is an attempt to allow listeners to have their cake and eat it. Specifically, it aims to provide the large soundstage of an omnidirectional speaker without sacrificing the image precision of directional designs. Conventional loudspeakers become more directional as frequency increases, because of the interaction of the wavelength of sound in air with the dimensions of the drive unit diaphragms and those of the baffle on which they are mounted. At bass frequencies sound output is equal in all directions (or has a figure-of-eight pattern in the case of a dipole speaker), whereas in the treble it is increasingly 'beamed'. The ramifications of this for sound quality have been argued over for decades because non-constant directivity introduces spectral disparities between the direct sound reaching the listener and the early reflections and reverberant sound which follow. By directing additional output backwards, Sound Field Shaping allows these disparities to be reduced under full control of the user. If you don't like what it does, you can switch it off. KH

required form. The leather-covered front baffle is CNC-machined from high density fibreboard. In fact the cabinet is really two cabinets in one, arranged Russian doll-like but with a 2mm viscoelastic layer between them to provide constrained-layer damping within an overall wall thickness of 50mm. Further vibration control is provided by a multiple tuned mass damper attached to the internal steel rod.

Last of the three patents relates to the use of a fibrous absorbent material within the reflex tubes. As well as reducing the egress of internal resonances and reflections, this allows the tube length to be reduced by 40% for the same tuning frequency and also lowers the distortion that results from turbulent flow at high air velocities within the port.

KEN KESSLER LISTENS

My latest listening session, arranged exclusively for *HFN/RR*, was not my first with these speakers – it was my third. I'd also spent time with The Sonus fabers at the Milan show and at their debut [*HFN Sep '10*]. The sessions 'didn't count', but they did prepare me for what to expect in more familiar surroundings. Armed with a handful of favourite titles, I wasted no time in savouring the moment.

Neil Diamond's covers album, *Dreams*, served a key function: a lean performance with minimalist backing allows a listener to focus on a distinctive voice. The Sonus faber reproduced his deep, gravelly tones with the precise aplomb that keeps me wedded to the relatively teensy Guarneri.

'Midnight Train To Georgia' and 'Yesterday' – how can anyone cover songs that exist in such definitive forms?

'The bass had the listening room's suspended floor literally jumping'

RIGHT: Rear-firing two-way pivots horizontally and, together with the controls above, forms the Sound Field Shaping system that allows the stereo image to be expanded to taste

Diamond delivered, and the speakers let him perform without restraint.

Textures were as authentic, the delivery as intimate as Diamond's recent TV appearances alluded to via a Skybox. I looked over at my colleagues. They were as spellbound as I was, some equally familiar with Diamond over the decades and equally as astonished at interpretations reminiscent of Johnny Cash's *American Recordings*.

But its sheer size, the 15in woofer, the plethora of mid and treble drivers – including the 'Mini-Me' at the back – begged for something with kick. Jeff Beck supplied it with *Live And Exclusive From The Grammy Museum*, contrasting 'Brush With The Blues' and 'Somewhere Over The Rainbow'.

Recorded last April, Beck was in super-slick mode, his guitar work so liquid that he might have been on pedal steel. Backed with a powerful rhythm section, he punctuated his music with kicks, slams and thrusts that

never caught the speaker unawares.

Onto much lighter fare, *Come And Get It: The Best Of Apple Records* proved to be the most revealing. I've known this stuff intimately for 40 years, but never did I hear the details on 'Those Were The Days' with such transparency, nor did I ever hear Mary Hopkin sound so ethereal.

Badfinger's three tracks? Tears in my eyes, gang, tears in my eyes.



JOHN BAMFORD LISTENS

As one erudite hi-fi blogger commented recently – with a description I considered most observant – the Sonus faber looks like something that could have been designed by the Swiss surrealist artist HR Giger (think the *Alien* movie... and the LP cover for ELP's 1973 album *Brain Salad Surgery*).

As for the sound, enjoying a selection of hi-res recordings on Blu-ray disc brought along by the Ed, the Sonus faber delivered majestic scale. A recording by NHK (Japan's public service broadcaster) of Berlioz's *Fantastique* sounded vivid and open while also deliciously smooth, highlighting just how natural and 'analogue' the best hi-res digital recordings can sound when heard through a system capable of doing them justice. Similarly a BD of Pat Metheny in concert sounded opulent and creamy with sumptuous bass. What's more, the ☺

LOUDSPEAKER



ABOVE: Sound Field Shaping is adjusted by – in addition to rear sub-speaker orientation – twin rotary controls labelled soundstage depth and soundstage azimuth, the former adjusting output level. A third control adjusts subwoofer level

acoustic space of a concert hall was rendered with truly lifelike scale. Given adequate space in which to 'disappear' they sound sensational.

Even harder-edged recordings played at SPLs bordering on the dangerous – such as Massive Attack's trip-hop 'Karmacoma (Portishead Experience)' [from the band's 'single box' collection] – remained uncommonly civilised and controlled at frequency extremes, my ears compressing before the Sonus fabers had shown even the merest sign of breaking into a sweat.

And while the balance appeared rosy and silver-tongued through the midband and treble, familiar tracks on CD used regularly for system assessment, such as Diana Krall's 'My Love Is' [*Love Scenes*, Impulse IMP12342] and 'By The Rivers Dark' by Leonard Cohen [*Ten New Songs*, Sony 5012022], were delivered with heroic, extravagant and textured bass, capable of taking your breath away. Me'Shell Ndegéocello's seismic bass guitar in 'Mary Magdalene' [*Peace Beyond Passion*, Maverick 46033] had the listening room's suspended floor literally jumping.

PAUL MILLER LISTENS

By now our reviewers will have given you more than a flavour of the faber's 'Force 10' performance. 'But are these the best big boxes we've encountered?', I hear you ask. In the confines of a traditional, albeit heavily treated room and with my favoured Devialet D-Premier amplifier fed directly and digitally from a Pioneer BD source, the answer was a resounding 'yes'. In a venue of matching proportion, these being the province of hi-fi

millionaires, I can only wonder at the lifelike scale and soundstaging waiting to be realised.

Back to the present and the haunting Gregorian Chant of the Consortium Vocale [*Exaudiam Eum*, 2L43SACD on BD] enveloped us entirely, these huge monolithic speakers displaying all the physical imposition of a wil'-o'-the-wisp. How something so huge can sound almost invisible is a neat trick, carried off in part through its fundamentally inert structure and proprietary Sound Field Shaping.

This same trick found Diana Krall's 'My Love Is' hovering in the room, the snapped fingers a precise metronome against the languid quality of the strung bass. Fabulous. Then came the Massive Attack/Portishead collaboration and that bass stretched down even further, solid bars of base metal falling to the floor as Portishead's guitars ripped through the midrange, searing and yet intricately detailed. And then the Devialet clipped... ☹

HI-FI NEWS VERDICT

The *Hi-Fi News* 'day out' with one of the world's rarest, costliest and heaviest floorstanders is not one we'll forget and the experience serves as a benchmark, alongside our exclusive reviews of other iconic marques including the KEF Muon and Cabasse La Sphère. The Sonus faber is, by any and every measure, a truly outstanding loudspeaker. Our only regret? That so few audiophiles will ever have the chance to hear them.

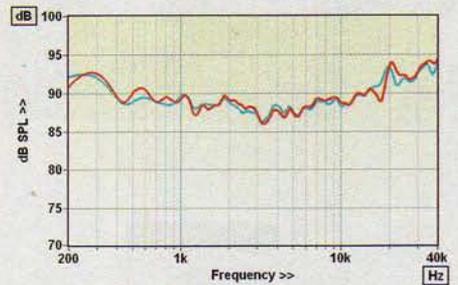
Sound Quality: 90%



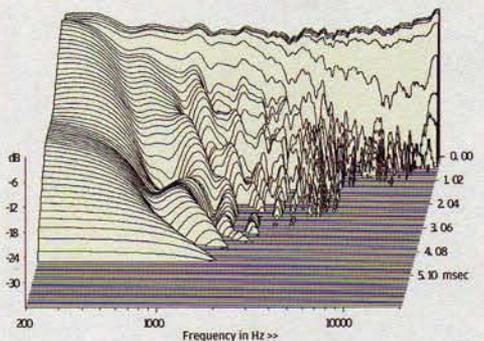
THE SONUS FABER (£140,000)

Sonus faber's claim of 92dB sensitivity for its new flagship is somewhat optimistic: our pink noise figure of 89.2dB suggests that a nominal 89dB is more realistic. Despite this the impedance is low, with a minimum modulus of only 2.8ohm – a little too low to justify the 4ohm nominal figure. But phase angles are modest, so the minimum EPDR (equivalent peak dissipation resistance) is 1.6ohm at 33Hz. Elsewhere the EPDR is generally above 2.3ohm, so overall The Sonus faber is fairly easy to drive. Its on-axis frequency response trend is notably concave, with diminished output in the presence band – a feature often associated with BBC designs [see Graph 1, below]. This can be expected to distance the stereo image somewhat and obviate any sense of 'in your face' delivery of detail.

Despite this dishing the frequency response errors, 300Hz-20kHz, are modest at ±3.8dB and ±3.5dB respectively. Pair matching error, over the same frequency range, is high at ±1.9dB but a large disparity just within the 20kHz limit is responsible for much of this. Elsewhere the error is a good, though not exceptional at ±1.1dB. Beyond 20kHz the output from the ring tweeter continues to rise to beyond 40kHz. No fewer than four drive units and three reflex ports have to be taken into account when making a near-field bass measurement. With all their outputs combined and diffraction correction applied, the -6dB rolloff (re. 200Hz) occurs at about 33Hz. Both 100Hz and 1kHz distortion figures are a little higher than expected, but only a little. The cumulative spectral decay waterfall [see Graph 2, below] shows what are probably midrange cone breakup modes in the lower treble. KH



ABOVE: The Sonus faber's response demonstrates a broad 'dish' profile but bass extension is excellent



ABOVE: Cabinet resonances are well controlled. There is just a hint of midrange cone breakup at 6-7kHz

HI-FI NEWS SPECIFICATIONS

Sensitivity (SPL/1m/2.83Vrms – Mean/IEC/Music)	89.6dB/89.2dB/88.6dB
Impedance modulus min/max (20Hz–20kHz)	2.8ohm @ 35Hz 6.0ohm @ 51Hz
Impedance phase min/max (20Hz–20kHz)	-20° @ 3.4kHz 30° @ 41Hz
Pair matching (200Hz–20kHz)	±1.9dB
LF/HF extension (-6dB ref 200Hz/10kHz)	33Hz / >40kHz/>40kHz
THD 100Hz/1kHz/10kHz (for 90dB SPL/1m)	0.5% / 0.4% / 0.2%
Dimensions (HWD)	1713x747x791mm