

Spendor **S5e** loudspeaker

A new Spendor that offers all the naturalness of old, but with a crispness and bass to turn heads

Spendor S5e

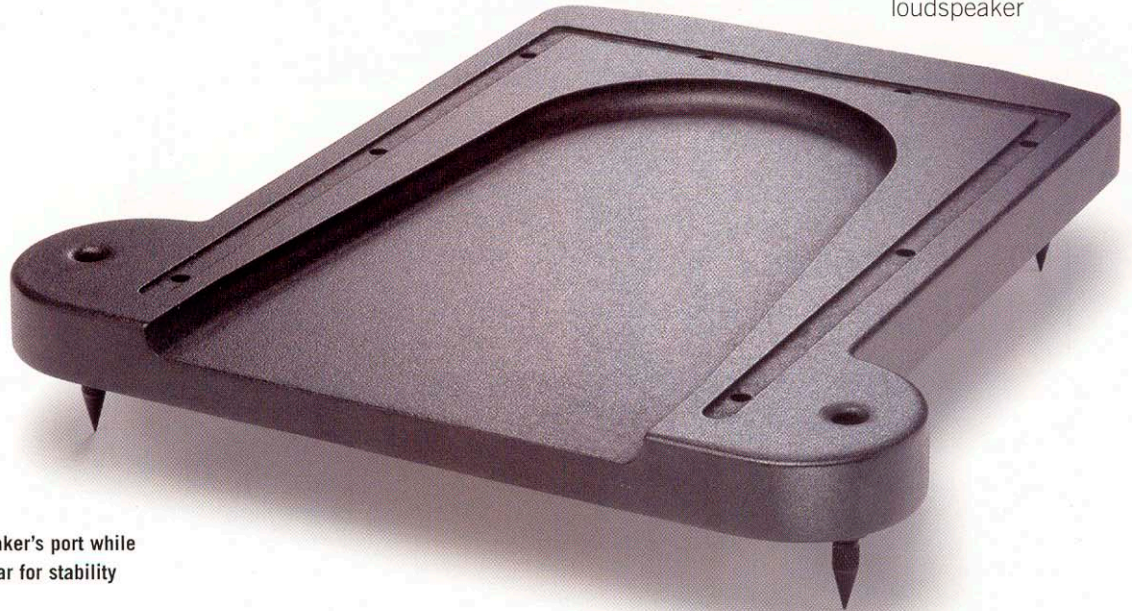
PRICE	£1095/pair
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Thirty odd years ago, Spendor was a byword for natural uncoloured sound in loudspeakers. Started in 1969 by Spencer Hughes and his wife Dorothy (hence Spen Dor) its designs drew heavily on research into energy storage and improved cone materials carried out by the BBC, for whom Spencer had worked.

The BBC's most creative period in loudspeaker research was through the 1950s and '60s. Cast your mind back, if you can, to a time before the massive boom in sales of hi-fi loudspeakers and systems. Commercial designs of the day all sounded very different – not just from one model to the next, but from one loudspeaker to the next! As someone once said: it's one thing to build a good loudspeaker, but another to build hundreds all sounding the same.

Of course, the BBC required consistency, so that listening to speech and music in one studio, or continuity suite, would relate directly to what was audible in another. Problems could be picked up, described and corrected far more easily than if the sound were different at each location. One





The base incorporates the speaker's port while the spikes spread out at the rear for stability

of the biggest problems at that time was inconsistency in the paper pulp cones commonly used. Another was cabinet coloration. The BBC dealt with cabinet problems by using fibre pads glued to thin ash plywood. Cone consistency and coloration were dealt with by using materials discovered or researched by the BBC such as Bextrene, critically curved and doped with a damping layer for the smoothest frequency response and low energy storage and, more recently, by the use of Polypropylene, which required little or no applied damping.

Spencer Hughes understood these techniques and set up the manufacture of loudspeakers applying them. In addition to building BBC-designed loudspeakers like the LS3/5a under license he designed his own, based on BBC

making good loudspeakers, voiced similarly to their classic models, but some might say that somewhere in this process, the brand both lost sight of its core buyers and didn't quite keep up with the audio *zeitgeist*.

SPENDOR MOVES ON

Enter Phil Swift, latterly of Audiolab, who bought Spendor in 2001 and set about updating the designs, while retaining the brand's core values, with a view to winning new customers (assisted by engineer Graham Landick, latterly of B&W, Audiolab, TAG McLaren and NXT).

They have carefully been making changes. The S5e is one of the first new Spendor models to be fully re-designed using a combination of established and newer techniques, with the aim

braces. These not only steady the drive unit chassis but also damp any vibrations either due to Newtonian reaction, or vibration of the cabinet panels and structure.

True to its heritage, Spendor aimed to achieve a natural sound with low coloration, yet also produce a more modern sound without the slow bass and chesty colorations, which the classic BBC heavy damping and thin ash ply construction

The sound of the S5e is best summed up as typically that of Spendor – but brought forwards by more than 30 years

technology. For instance, the Classic BC1 employed an 8in BBC-based woofer and Celestion HF 1300 tweeter, with an STC super tweeter similar, but not identical to, the BBC's LS3/7.

The BC1 was quite possibly the first commercial loudspeaker ever to use Bextrene as a cone material. With the full experience of the BBC's research laboratories, coupled with Spencer's voicing skills, perhaps it is no surprise that Spendor loudspeakers were at the cutting edge at that time. Indeed, the BC1 was considered by many as having the finest, least coloured midrange of any moving-coil speaker and sold very well to both the BBC (who bought more BC1s than its own design) and music lovers.

However, Spencer sadly died, the mantle of design passed to his son Derek, fashions changed and expectations shifted. Spendor left the control of the Hughes family and entered the hands of a company whose primary business was the manufacture of mixing desks. It carried on

of delivering what Spendor feels customers require of the brand today. For instance, Spendor built its reputation on designing and building its own woofers. The S5e is no exception. The S5e woofer is a completely new design, with a magnet system designed with the help of Finite Element Analysis. The cone of the upper bass unit is made from EP38 polymer, a new cone material, with a smoother roll-off and sound than before. A similar material, EP 39 polymer, with a hard machine-turned Delrin dust cap serves as the lower bass unit. The two woofers work in unison at low frequencies, leaving the upper woofer to handle the midrange on its own – often referred to as a two-and-a-half way configuration.

Spendor has gone for the more modern approach of a stiff MDF cabinet but, whereas some manufacturers leave the cabinet either free of damping or add massy pads to store more energy, Spendor has introduced lossy interfaces between the driver magnets and rigid cross



Seas tweeter, while drivers use new materials

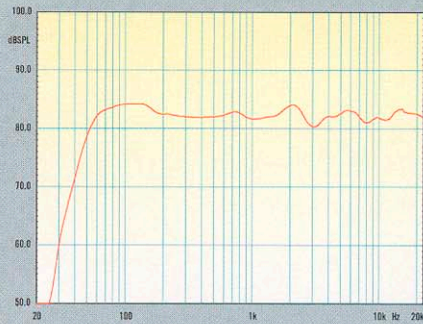


Fig 1
Composite frequency response (nearfield woofer and 1m axial) at one metre. This shows fine flatness and good bass extension (see Test Results below opposite). Sensitivity (2.83V) was 82dB to 83dB at one metre.

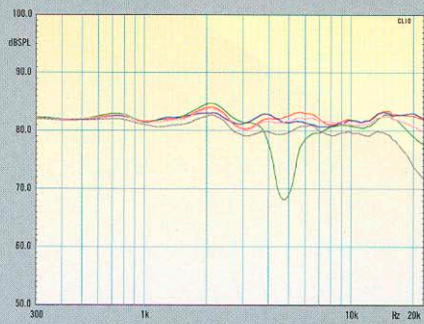


Fig 2
Off axis family showing consistency: on axis (red), 10° above (blue), 10° below (green), 15° horizontal (mauve), 30° horizontal (grey). Only at below axis (green) is there a hint of partial cancellation due to phase/time of flight

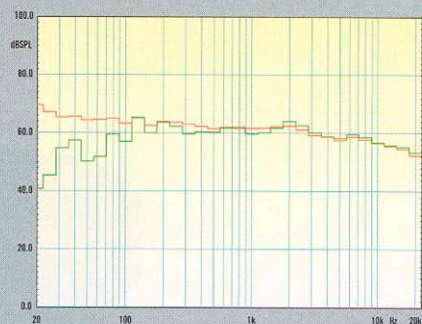


Fig 3
In-room third octave responses. At listening position (green) and 1000 point spatial average around the listening position (red).

could lead to in larger designs. Phil Swift believes their form of braced MDF construction gives them just what they were looking for – particularly in today's market, which demands a crisper, more positive bass and upper bass/lower midrange delivery than of yore. Another variation from the

cabinet being very different acoustically. The slot port encourages laminar flow thanks to a slight flare to the outside, says Spendor.

By placing the port close to the floor the radiation space is defined, and by rear-facing it, any coloration from it is directed rearwards, where

The double basses and staccato strings were presented with iron-fist-like power and clarity – there was no blurring here

traditional theme is the adoption of a slot-shaped reflex port instead of the traditional tube. The aim is to linearise air flow, reduce air velocity and help the port 'see' a similar environment at each of its ends, despite the inside and outside of the

it becomes less audible. Considering this works so well, it is surprising more designers don't do it more often. The reason is probably down to the market perception that somehow the bass gets 'lost' behind the speaker – which is plain daft because at these frequencies the bass is, of course, omni-directional. The last clever bit is to CNC machine the port into the MDF base, for ease of manufacture. Now, that's what I call neat.

The tweeter is not an in-house design, but a new SEAS 27mm dome tweeter, featuring a dome and surround made from a new Soniflex material, claimed to have low density and good internal damping. A vented centre pole and damped rear chamber help provide a low resonance frequency and minimise delayed reflections.

THE CROSSOVER

As has been the tradition at Spendor, the tweeter level is adjusted by an auto transformer (or tapped inductor if you prefer) that is part of the crossover design, to avoid the use of resistive attenuators. Spendor has moved on from the laminated iron inductor cores employed in the past, which were chosen for lower distortion in preference to the industry standard ferrites. In the S5e they have chosen a form of iron-dust core with very low loss and distortion, providing high saturation levels, combined with greater linearity and low DC resistance for good bass control and an undistorted sound. Meanwhile, polypropylene capacitors are used for their low dielectric loss and pure sound quality.

BUILD QUALITY

It's clear by looking at both the outside and inside of the S5e that this is a very well made speaker. It's quite a squat, narrow design, measuring just 790mm high, 165mm wide and 264mm deep, and boasts a very well veneered cabinet. I particularly like the stainless-steel back plate, which features bi-wireable gold-plated input terminals, supports the internal crossover and avoids the vibrations that can occur with cheaper plastic input 'cup' inserts. The crossover is



The steel backplate



The use of stiff MDF cabinets signal a modern approach

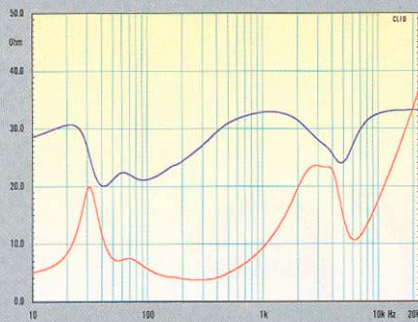


Fig 4

Impedance of the S5e. Note the phase (blue) is within a tight band and not high when the modulus (red) is low. The modulus drops to 3.7 ohms at just under 300Hz, making the S5e a 4 ohm design.

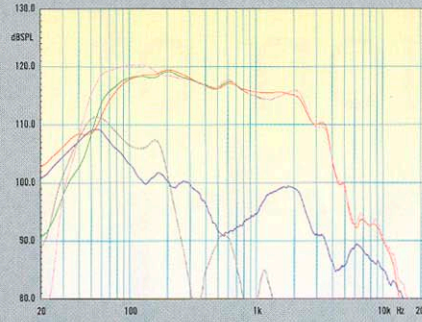


Fig 5

MLS curve showing unusually low delayed energy, which points to low coloration.

spaced from the metallic panel by a piece of MDF to avoid interaction with the inductors. The base, which incorporates the port, has sturdy large diameter inserts for adjustable spikes that are spaced outwards at the rear to improve stability. Overall, the S5e is a very pleasing package.

SOUND QUALITY

The sound of the S5e is best summed up as typically Spendor – but brought forwards by more than 30 years. Not only is the shape what

listeners desire today, but so is the style of sonic presentation – a kind of marriage of old and new. This 21st Century Spendor has all the brand's traditional hallmarks of naturalness and low coloration, plus the kind of positive bass delivery, lack of compression and distortion, and crisp but uncluttered treble that is required to deal with the wide bandwidth and dynamic range of modern programme material. The old BC1 had a lovely midrange and so does the S5e, but gone is that seminal design's woolly bass and chesty BBC

TEST RESULTS

The on-axis frequency response is commendably flat and smooth. The composite curve in Fig 1 is a blend of the near field and one metre axial curves and stays within +2.5/-1.5dB from 54Hz to above 20kHz, with bass down approximately 6dB down at 45Hz. Analysing the port and woofer outputs showed the lower woofer to be truly that. Output from this cone rolls off above 60Hz. The port is tuned to around 50Hz and has quite a broad contribution and very little in the way of spurious resonances.

Sensitivity, for 2.83V, measured at one metre, at 82.5dB, was below the modern average. Indeed, it was a little on the low side, especially considering that the S5e is really a 4 ohm loudspeaker – see later. But this is more than compensated for by the good depth of bass and clean overall sound produced.

The off-axis frequency responses are all very smooth, apart from at 10° below the main axis, (though the above-axis performance is more influential on the in-room sound than at below axis). At 30° horizontally off axis the response is smooth, through mid to treble, showing the small woofer/mid unit to have a broad dispersion across the crossover region.

The third-octave in-room measurements show a very smooth and even frequency response at my normal listening position (green curve) with no visible dip due to the floor reflection – no doubt assisted by the use of two physically spaced woofers. Across the audio band output is

exceptionally flat, with a very gentle tilt down at high frequencies and the mild 2kHz bump only just visible. The 1000 point averaged third-octave curve (taken at around the listening position) is even smoother, especially through the midrange and treble, with room gain boosting output below 100Hz. The consistency in these curves – especially between the on and on axis responses – also suggests consistency in the various listening environments.

The impedance measurement was fairly innocuous, though dipping to 3.7 ohms at around 300Hz (which strictly speaking, to IEC guidelines, makes it a 4 ohm speaker and not 8 ohms as in Spendor's specification). However, the electrical phase stays within 41° (at 21 Hz) and is never high in phase at impedance minima, so this should be an easy load for amps to drive. Curiously, only one of the normal bass reflex peaks is visible, possibly due to the effect of the two woofers.

Finally, a MLS waterfall curve, showing delayed output after the signal had ceased, was very clean. The tweeter's output has very little delayed energy and drops rapidly to 25dB down in one millisecond. This very tidy behaviour ties in very well with the clean treble from the S5e. A minor ridge at 2.2kHz associated with the woofer also drops fast – by 12dB in a millisecond and 25dB in 2 milliseconds. This all points to a sound having low overall coloration due to delayed energy.

balance. In its place are a welcome tautness and clarity which are bang up to date.

The S5e's qualities were apparent virtually from the opening bars, and it didn't really matter which kind of music I chose. For instance, James Taylor and Mark Knopfler's vocals in 'Sailing to Philadelphia' were lovely – well projected yet without unnatural projection or colour. They sounded just right. Here was a nicely rhythmic presentation with deep well-paced bass and crisp but not emphasised cymbals. Also, the reverb around both the voices and instruments was excellently reproduced.

In the Shostakovich 11th, played by the London Symphony Orchestra and conducted by Rostropovich [LSO Live LS00030] the orchestra was surprisingly convincing given that the S5e is such a small loudspeaker. The pizzicato double basses and staccato strings were presented with iron-fist-like power and clarity – no blurring here. Indeed the whole orchestral stayed clear and clean even when played loudly.

One further feature of the S5e that I found pleasing was that it also manages to sound superb when played quietly. It seems to maintain resolution and hear-through clarity at very low replay levels – something that is not that common among speaker designs these days.

But back to the Shostakovich, and the S5e was like an open window to the performance. As the music built up in tension and conflict – layer upon layer – with searing horns, xylophone glissandos and menacingly pounding drums, the S5e stayed in perfect control to the last bar. The music may have left me emotionally drained, but the S5e coped peerlessly, delivering the programme with no harshness, congestion, muddle or bass boom.

Let's take two rather less animated pieces of music – the lyrical 'Concierto de Aranjuez' and 'Fantasia para un Gentlehombre' by Rodrigo [1981 recordings by Carlos Bonnel with the Montreal Symphony Orchestra on Decca 400 054-2]. These were reproduced with a generous sense of depth and scale, a precise and articulate guitar sound, sweet sweeping strings and flowing un-accentuated bass. The S5e handled both compositions with natural tonality and as realistically as one could wish for from a pair of speakers costing £1095. Without doubt, this is an accomplishment better achieved by the S5e than many loudspeakers at this price.

I'd hate to give the impression that these are 'classical' speakers, but they do cope very well with this musical genre. They would be a fine choice for many music lovers who find it hard to find anything made today at a sensible price that delivers truly enjoyable and all-encompassing delivery of all sorts of music – including classical works. I for one could – and did – listen for hours to a wide variety of recordings. Need I say more? I think not – except to suggest that you add the Spondors to your listening list if this is the kind of sound you seek. ■

Dave Berriman