

# Spendor

## S8<sup>e</sup> Loudspeakers



One of the world's most famous loudspeaker research organisations once operated out of a basement at the British Broadcasting Corporation. It's a measure of the success of the BBC's rigorous methodology that even now, forty years later, the speakers it designed in that basement are still in great demand and its most famous design, the tiny LS3/5A monitor, is still in production [www.ls35a.com].

One of the boffins in that basement was the late Spencer Hughes, who went on to found Spendor. (Though I should also point out that down there with him were such loudspeaker luminaries as Jim Rogers, who went on to form Rogers Loudspeakers, Maurice Whetton, and Dudley Harwood who started Harbeth Loudspeakers.

Hughes left the BBC and in 1969 formed Spendor, which took its name from the first four letters of his name and the first three of his wife, Dorothy. The first model he built was the Spendor BC-1. This was a BBC design, though one for which Hughes had been solely responsible for all the engineering, though the theoretical design was Dudley Harwood's. When Spencer died in 1983, his son Derek took over the business to keep it in the family, and only recently sold it. The new owner is Philip Swift, formerly of Audiolab, who asked Graham Landick to design a new range, of which the S8<sup>e</sup> is a part.

### The Equipment

The Spendor S8<sup>e</sup>s look magnificent (though not all that different to the older S8s), if somewhat old-fashioned. The tall (925mm) cabinets are perfectly proportioned and sit on a plinth that's both a base with outrigger spiked feet, to ensure stability and allow accurate aiming, and also one half of a CNC-routed linear reflex port. This grandly-named '3D Linear Flow Port'—as Spendor calls it—presents as a slot measuring 175×28mm that exits at the base of the rear panel.

Despite its impressive size and appearance, the S8<sup>e</sup> is a two-way design. Not surprisingly, it uses a plastic-coned bass/midrange driver. (I say 'not surprisingly' because Spencer Hughes was a pioneer in the use of plastics for loudspeaker cones, and it's no doubt been a big factor in the unique 'Spendor sound'.) Although this driver looks similar to some earlier Spendor drivers, it's actually a completely new design for Spendor and, like most Spendor bass drivers, it is built in Spendor's own factory in Hailsham, in East Sussex.

Although rated by Spendor with a diameter of 210mm (8 inches), my ruler showed that measurement to be the overall diameter of the frame, rather than the more commonly accepted mounting-hole diameter. Of course the measurement that is most important is the effective piston

area (SD), which is derived from measuring the diameter of the cone, and adding the width of the roll surround. (A distance often referred to as the Thiele/Small diameter.) In this case, the T/S diameter is 164mm, which gives an SD of 211cm<sup>2</sup>. This in itself is impressive, but when you look at the way the driver is made, you'll be even more impressed. The basket is an enormously heavy casting that has only four narrow support struts, so that no air can be trapped between the rear of the cone and the frame. This means the energy from the rear of the cone is delivered cleanly into the cabinet, to exit through the rear slot, and there is no unwanted 'cushioning' of the cone's movement whatsoever, or reflections from the frame back through the cone. The drive magnet is vented at the rear, where a secondary magnet is also attached. Presumably this is to eliminate stray magnetic flux, but as this would only be useful on a home theatre speaker placed close to a TV screen, I can't quite see the point on the S8<sup>e</sup>, but since this same driver is used on other, smaller, Spendor designs, I guess it's not really cost-effective for a company as small as Spendor to manufacture different variants of the same driver.

The cone itself is a newly-developed polymer known as 'ep38' that, according to Swift, 'is almost completely free from

## Spendor

**Brand:** Spendor  
**Model:** S8°  
**Category:** Floorstanding Loudspeakers  
**RRP:** \$4,795  
**Warranty:** Five Years  
**Distributor:** AudioFix  
**Address:** Unit 2, 40 Production Avenue Warana  
QLD 4575  
**T:** 1300 139 552  
**T:** (07) 5437 9790  
**F:** (07) 5437 9790  
**E:** ah@audiofix.com.au  
**W:** <http://audiofix.com.au>

*resonances'* due to it combining a high stiffness-to-mass ratio with high internal damping. The synthetic rubber roll surround that suspends the cone from the frame is inversely rolled to enable a longer, more linear 'cone throw'. There is no central dust cap. Instead, a black conical pole-piece, acting as a phase plug, projects through the centre of the cone. This has the effect of improving linearity and dispersion across the midrange—and also of cooling the voice coil, to allow greater power handling capacity and improved dynamics—but like all such designs, effectively exposes the voice-coil and magnetic gap to the air in the listening room, so the S8° should always be operated with its grille in place, and in a room that is reasonably 'clean' (i.e. it would be best if there were no grit or particulate matter floating around that could stray into the gap!)

The bass/midrange driver is crossed to the 27mm coated fabric dome tweeter at 4kHz by a crossover network that is such a work of art that Spendor regularly publishes photographs of it... or perhaps they do this only to put the wind up their competitors, most of whom wouldn't dream of putting such an expensive network into a pair of speakers selling at this price. The PCB contains Clarity Cap 250V d.c. audio-grade capacitors, 17-watt cermet resistors and hand-wound, cross-mounted inductors—though as you can see, they're not air-cored. Rather than using series resistors for attenuation, Landick is using auto-transformers. And rather than fixing the PCB to a standard plastic plate, Spendor fixes it to a damped stainless steel plate. Internal wiring is by Van den Hul. The S8° can be bi-wired or bi-amped, but the speakers are supplied with the terminals bridged by heavy gold-plated busbars. These, of course, can easily be removed if required.

The 27mm tweeter is made for Spendor by Sweden's famous SEAS, to Spendor's specification. It uses a Sonolex fabric and has a sealed, damped rear chamber. This, in combination with a vented pole-piece, reduces the fundamental resonance frequency. The tweeter also has a flux-cancelling magnet to restrain the magnetic field, allowing use close to a TV monitor.

The idea behind the large rectangular port at the rear is to reduce the air velocity through it, but those familiar with Spendor

will realise that this particular port is different from those that have gone before. The internal surfaces of the S8°'s port are asymmetrical, which Spendor says is an innovation that reduces the incidence of standing waves.

### Performance

Spendor has always prided itself on the accuracy of its midrange performance, and indeed the company has gained a reputation for it. A good many reviewers say they have been unable to divest themselves of their old pair of BC-1s because the midrange still stands up, after more than 30 years. I am afraid to say I long ago parted company with my BC-1s because... well, frankly, I needed the money at the time! (That said, although I was an unashamed admirer of the midrange, I wasn't quite so enamoured with the volume levels I was able to extract from them: they were great for low-to-normal listening levels, but they really didn't 'rock', and the speakers were also extraordinarily inefficient.)

Listening to the midrange of Spendor's S8°'s was like re-discovering an old friend. It was so typically Spendor: smooth and controlled, with a wonderfully natural sound that was completely free of any sibilance whatsoever. Female voices simply soared, unfettered by any artificial restraints of technology, such that I found myself searching through my collection for long-forgotten albums (think, 'The Hissing of Summer Lawns') just to rediscover a particular voice. Even with voices that are on my regular aural diet, such as Eva Cassidy, the Spendor S8°'s brought out that tiny bit extra in their vocal quality. But it wasn't just the vocal itself: the feel of 'spaciousness' in the midrange was also remarkable, though this was clearly at its best with the cabinets positioned a metre out from the wall. But if the spaciousness was remarkable, I found the stereo imaging was stupendous. When I was listening at the sweet-spot (though this is certainly amply wide, so others will be able to share it with you) it was as if the vocalist (or instrumentalist) was right in front of me. There was no sense of 'left' and 'right' or even of 'stereo'—just the over-arching impression of a three-dimensional musical performance in a space suspended between the two speakers.

The lower midrange, trending towards



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the bass, was a surprise. I had imagined that Spendor might have tried to lift it a little, in order to make it seem as though there was more bass than there was, as well as to squeeze some more bass extension, but quite the opposite seemed to me to be the case. Leonard Cohen's voice is one of my favourites for detecting irregularities in this area, and with many speakers, he can sound overly chesty. Following his recent money troubles (he was ripped off by his financial advisor, if you didn't already know) I have been trying to help out by buying all his new CDs, even the compilations that duplicate tracks I already own, and listening to one of these ('The Essential Leonard Cohen', a double CD from Columbia that I agree does contain all the 'essential' tracks) I was struck by how beautifully the Spendor S8°'s were delivering his voice, and realised that the lower midrange was, perhaps, even just a touch leaner than 'flat', which handily ameliorated any tendencies towards chestiness in close-miked recording, as well as any resonance effects. It really works well. (And yes, I know that given so little of the retail price of a CD ever filters back to the original recording artist, I would be better off sending Cohen a cheque for a few dollars, but that really *would* seem weird, even to me!)

If it's possible to extract more bass from a two-way loudspeaker than Spendor has managed with the S8°, I haven't heard who's




managed it. It isn't just that the bass goes deeper than any two-way has any right to go, but that it does so without any sense of strain and with a deep, tuneful richness that's beautifully natural. Sendor's '3D Linear Flow Port' seems to enable a bass freedom and bounciness that eludes sealed enclosures, but does so without the excessive peakiness (and sometimes, 'boom') of a conventional bass reflex cabinet. Ultimately, however, it is a two-way design with a not-overly large driver, so the bass never plumbs subterranean depths, but so long as you don't push the volume too hard, it will comfortably accommodate the very lowest musical notes and will sound strong and authoritative all the way down to low E. It seemed to me that this is the trade-off that's been made with this design in order to deliver such great low bass: that the maximum sound pressure level you can achieve is a tad restricted. I think this is a more than acceptable compromise, because it's very simple and easy to check in a dealer's showroom (or with Sendor's unique 'home dems' if you're in a metropolitan area), whether the speakers will go loud enough to suit your tastes, whereas other, more esoteric speaker shortcomings are much more difficult to evaluate, even with the benefit of an extended listening session.

While you're checking loudness it would also be a good time to investigate amplifier matching, because I found my S8s were a little picky about the amp I used to drive them, reserving their best performances for

fairly high-powered amps (you definitely wouldn't want to drop below 80-watts per channel if you want ultimate dynamics) and most definitely thumbing their nose at both the Class-D amplifiers I tried with them, as well as—somewhat surprisingly—a couple of valve amplifiers. An audiophile-quality Class-A/B solid-state amplifier rated at somewhere around 100-watts per channel would be right on the money, in my opinion.

So far as the high frequencies were concerned, I thought that Sendor is treading a fine line in the delivery of the treble, presumably in an attempt to broaden Sendor's appeal to a wider 'world' market. It was certainly immediately evident that the SEAS tweeter is delivering a smooth and extended response to beyond audibility (20kHz) but gone is that somewhat tame, rolled-off high-frequency sound that once typified British-built monitors, here replaced by a slightly brighter and more energetic high-frequency sound. Thankfully, Sendor has not been game (or, perhaps, inclined) to copy the 'hot highs' that are *de rigour* on most US monitor speakers... or even the slight 'zing' that's favoured by European designers, but it's certainly a new treble balance for Sendor. I liked it.

### Conclusion

Sendor's new S8s are truly superior speakers. Sendor may well be under new management but if these S8s are anything to go by, I have absolutely no doubt that Sendor is now building the best-sounding loudspeakers it has ever built, under any management. 

greg borrowman

LAB  
REPORT

Readers interested in a full technical appraisal of the performance of the Sendor S8<sup>e</sup> Loudspeakers should continue on and read the LABORATORY REPORT published on the following pages. All readers should note that the results mentioned in the report, tabulated in performance charts and/or displayed using graphs and/or photographs should be construed as applying only to the specific sample tested.

### Test Results

The frequency response of the Sendor S8<sup>e</sup> shown in *Graph 1* is the speaker's response to a pink noise stimulus, in this case averaged for various different points across the normal listening window at a distance of one metre, on axis with the tweeter, rather than simply direct on-axis. The graph has not been smoothed *per se*, but the averaging process tends to have a smoothing effect, due to the essential random nature of pink noise. The response is flat and extended, particularly in the bass frequencies. On this graph, it extends from a bit below 40Hz to 15kHz  $\pm 3\text{dB}$ . There is no general 'trend' to the response, though closer analysis shows that the area between 100Hz and 250Hz is very slightly below the reference, and the area between 350Hz and 2kHz is very slightly above it. I would expect such a midrange to sound slightly forward, particularly with vocals. The response continues flat above 2kHz until 8kHz at which point there is a gradual roll-off to 20kHz.

The second graph (*Graph 2*) shows the Sendor S8<sup>e</sup>'s high-frequency response in an expanded form, to allow more detail to become visible, and using a gated sine wave as a test signal, to avoid overloading the tweeter, which often happens when testing with pink noise. You can see that between 500Hz and 9kHz, the Sendor's response is essentially flat within  $\pm 1.25\text{dB}$  and over the complete range of the graph, is 400Hz to 25kHz  $\pm 3.5\text{dB}$ . By combining the data from both graphs, I would put the Sendor's overall frequency response, as measured by *Newport Test Labs*, at 40Hz to 25kHz  $\pm 3.5\text{dB}$ .


Nearfield measurements on the bass/midrange driver and port revealed that Sendor's driver is exceptional linear, as well as its extraordinary capability at low frequencies. Its response is very flat from 60Hz up to 600Hz. The roll-off above 600Hz is primarily due to limitations in the nearfield measuring technique. There is a slight suck-out centred at 250Hz, but of only around 2dB. The roll-off below 60Hz is controlled (the glitch in the trace is some mains hum residual in the test set-up) with the null at a very low 34Hz. The port's output is off-set somewhat, indicating that the speaker has been voiced by ear rather than slavishly following the advice of a speaker design computer program. There is some minor sound leakage from the port at 600Hz, but it's so far down that it would not be audible even if the port were forward-facing, which it is not.

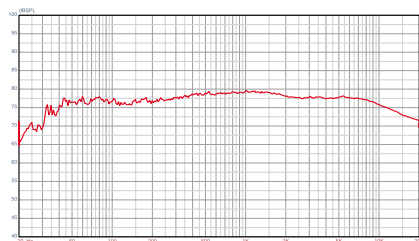
The impedance graph shows that

Spendor is using the crossover network to correct for at least one driver resonance, and possibly two more, which results in the S8<sup>e</sup>'s impedance dropping down to around 2.7 ohms at 650Hz. This is far below the 5 ohms that Spendor claims as the minimum and means the nominal impedance could not be 8 ohms according to the relevant standard that would apply (IEC 268-5). The fact that Spendor rates the S8<sup>e</sup> as 'nominally' 8 ohms is no doubt because below 300Hz, the impedance curve lies mainly above 8 ohms, which is unusually high, with the resonant peak at 56Hz reaching 45 ohms, and that the dip is very narrow. There's nothing untoward visible on the frequency response

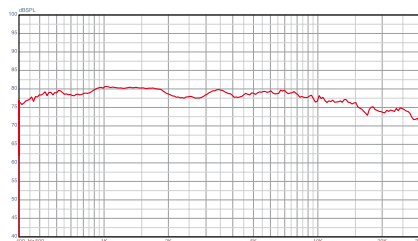
traces at 650Hz, which indicates that the dip has no effect on sound, which is significant, since it's relatively low in frequency (the E the tenth above middle C) and thus easily falls within a soprano's range, as well as the range of many popular instruments. The speaker's phase angle swings almost 120°, reflecting the heavy filtering. Overall, the S8<sup>e</sup> is not a particularly easy load, though a well-designed amplifier would have no difficulty driving it. Particularly impressive is the close correlation between the impedances of the left and right speakers, with the red (left-channel) and black (right-channel) speakers almost indistinguishable. This shows Spendor's careful matching, so I can

well believe its claim for matching pairs within ±1.0dB.

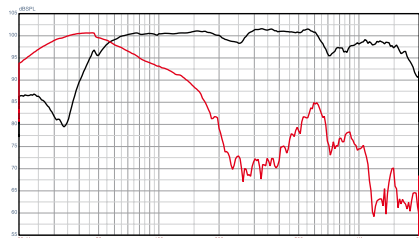
Newport Test Laboratories reported the Spendor S8<sup>e</sup>'s sensitivity at just 85.8dB SPL at one metre, using its standard test procedure. This is just over 3dB shy of Spendor's (I think rather optimistic!) specification of 89dB and no doubt reflects the fact that Spendor has sacrificed efficiency for bass extension, which is a standard loudspeaker designer's tactic. It does, however, mean you will need a moderately powerful amplifier to drive an S8<sup>e</sup> to high SPLs and given the 2.7 ohm minimum load, I'd definitely recommend you use one that is comfortable driving 2 ohm loads.  Steve Holding



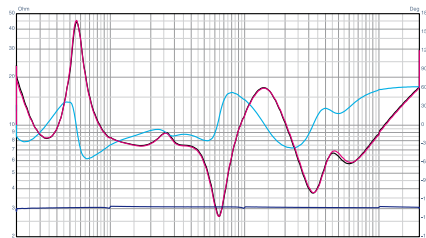
Graph 1: Pink noise frequency response (unsmoothed) at 2.83v at 3.0 metres, averaged across normal listening window.



Graph 2: Gated sine frequency response (unsmoothed) at one watt, at 1.0 metre.



Graph 3: Nearfield frequency response of bass/midrange driver and reflex port. (Note data for port has not been re-scaled to compensate for differences in radiating area.)



Graph 4: Impedance vs frequency, with both left and right speakers graphed (see copy). Trace under is that of a reference 3 ohm precision resistor, measured at the same time for calibration purposes. Blue trace shows phase angle, for degree values, refer right-hand side of graph.

#### Test Results\*

Frequency Response:	40Hz to 25kHz ±3.5dB
Nominal Impedance:	4Ω
Minimum Impedance:	2.70Ω @ 650Hz
Average SPL (@ 1metre, 1EQW† input):	85.8dB SPL
No of Drivers:	2 (1×Bass/Mid + Tweeter)
Crossover:	2-way
Crossover Frequency:	4kHz
Cabinet Type:	Bass Reflex
Port:	Rear-firing, 44Hz centre
Dimensions (HWD):	925×316×340mm (Inc Plinth)
Weight:	25kg (each)

\*Apply only to specific sample tested.

† Equivalent input watt = voltage that would deliver 2.83V across perfect resistive 8Ω load.



The crossover network is such a work of art that Spendor regularly publishes photographs of it.