

SPENDOR S100 MONITOR

For the first time in many years, Spendor has launched a completely new full-size three-way monitor loudspeaker, which could set a new standard in its class

New models from Spendor are rare. This long-established small company has been producing neutral, medium-level loudspeaker systems for monitoring for many years; in fact their first model, the two-way 40 litre BC1 (dating from the late 1960s), is still in limited production and was widely adopted for use by the BBC.

The new S100 offers good power-handling, and is capable of driving bigger-than-average rooms to realistic sound levels on wide-range programme. As a true monitor with a standard of tonal accuracy and coloration traceable to live sound sources, it is not intended for the highest level monitoring of rock programme. A pair will deliver upwards of 112dBA at a studio desk listening position, but monitors for pop work are generally capable of a mind-bending 120dBA!

Presented in a superbly veneered enclosure, this speaker measures 70x37x43cm (hwd), the depth dimension being quite considerable. A 35-40cm high stand seems ideal for domestic use, ideally some kind of rigid box-frame of the same perimeter as the S100's bass-cones upwards and spiked to the floor. Stands with an upper mounting area too small for the S100 will result in impaired upper-bass definition due to flexure of the speaker's bottom panel. As so often happens, a suitable stand was not available for the review, but Spendor is currently working on an appropriate veneered stand built of heavy MDF sections.

What could have been an overbearing expanse of grille has been broken up by a horizontal dividing bar finished in matt-black. On stands, these speakers reach to 1.1m and would undoubtedly tend to dominate smaller listening rooms. Once in place they are none too easy to move and are really a two-man lift. Optimum placement is achieved when spaced from side and rear walls by approximately 1.1 and 0.8m respectively (from centre of the front panel). The S100 contrasts with the BC3 and SA3 in that the latter had free-field bass, uncompensated for local boundaries, while this is a compensated design that will deliver nearly flat bass in sensible locations and listening rooms.

Responding to market demand, the S100 comes equipped with three sets of input binding-posts/4mm sockets. Strap together terminals of the same colour and the speaker may be conventionally wired, but leave them separate and two combinations of bi-wiring may be utilised: bass and mid strapped with tweeter separated, or bass separate with mid and treble linked. Optimum speaker cable performance is achieved by using the full tri-wired mode. The more enthusiastic may ice the cake by using the bi- or even tri-amped arrangement, ideally with three centrally mounted stereo amplifiers of appropriate quality.

Sound quality

The S100 benefited from inclusion in a series of blind auditions, with an experienced panel of six men and women listening via a chain of top-quality components. Many of its immediate competitors were to hand, allowing an unusually precise view of its capabilities: the chain including a Krell KIMA160 and a customised MVX pre-amplifier. Custom silver cables and the Goldmund Studio T4-Koetsu 'R' Signature LP source were employed, plus a special CD decoder working from a Sony 33", optically coupled.

There could be no doubt as to the high calibre of this speaker. There was a close order of agreement between the listeners, while the score achieved was very high, more than commensurate with the price. Indeed, in absolute terms it was rather closer to such exotics as the Caliper Signature than to most box models at this and adjacent price levels. Among the various questions which we hoped the S100 addressed, the following appeared the most important: (1) are the three 'ways' well blended to form a coherent whole? (2) does it meet broadcast monitor standards for frequency balance and low coloration? (3) does it have the dynamics and clarity, demanded of modern high fidelity systems? (4) is it free from big speaker 'boom'? (5) will it play loud?

The quickest way to characterise the S100 overall is to describe it as a bigger and better sounding SP2, but the individual questions were answered as follows: (1) blending proved to be very successful, aided by a skilful choice of cross-over points selected to improve consistency of the off-axis responses. (2) is simply satisfied by 'yes!', while the answer to (3) will become apparent as the listening report progresses. As regards (4) this speaker definitely does *not* boom, and yes, in reply to (5), it *does* have the ability to play loudly. Some 150W of unclipped carefully used rock programme did not appear to tax it unduly, at which point genuinely high domestic sound levels were achieved -more than sufficient to need a detached house, or at the very least a listening room clear of a party wall!

The listening panel was consistent in its approval of the S100 noting the dry, clean, extended bass, the smooth yet open character, the particularly good vocals, and the overall accuracy and neutrality. Rock dynamics verged on 'very good', while fine stereo focus and depth were specifically noted. The only negative comment concerned a mild 'boxiness' in the lower mid, coupled with a hint of congestion in this region, perhaps 200-400Hz. On the 5100 day, the panel session included the Quad, the Caliper Signature, the Spica Angelus, and several other worthy performers, so the Spendor was not allowed to rule the roost.

As I listen to this new speaker I am reminded of the power and scale of the BC3, and also the signature of a large BBC style carcass, a mildly 'woody', classical-monitor flavour. Yet the S100 is comparatively 'unboxy', and cabinet coloration in the normal sense is held to low levels. The sound of the Spendor carcass when tapped is lower pitched and kinder-sounding

than some of the competition, with their harder, less well damped enclosures. The S100 box sound is more like a mild version of the body resonance of a double-bass or a piano than that of the plastic veneered chipboard used in much of today's mass-produced furniture.

On piano, perhaps the S100's weakest area (but only a minor weakness), the sound was not quite neutral - a small degree richer and more resonant than the original. A mild 'tube'-like emphasis was present, with a clouding of definition in the lower mid-range, this effect actually appearing in the upper working range of the bass driver. On full orchestra the results were more impressive. Sounding fully in command, the speaker remained well focused and high in resolution over a wide dynamic range, this performance being one of the main reasons for taking on the expense and complexity of a three-way design. However, a key aspect of the S100 is that it never sounds 'big and slow'. When not called upon to deliver low-end grunt, the S100 bided its time, sounding agile and sure-footed indeed, more like some of the great low-coloration miniatures than any big box speaker I know.

The broad mid-range verged on excellent. High in transparency and resolution, it was so consistently uniform in perceived frequency response and tonal balance that there were no unwelcome surprises over a whole range of musical inputs. Very low in 'cone' type coloration, and transition to the treble seemed virtually seamless. A fine silk-string-tone has been achieved without wiriness, glare or nasality, yet the treble remains open, airy-and finely drawn. The treble also achieved the right degree of articulation on voice, without a trace of lipiness of 'sizzle'. The HF sounded notably smooth and extended, audibly reaching higher up the range than most 25mm metal-dome speakers. Whatever problems this soft-dome unit may have, they are singularly well disguised. With clean sources it was hard to place any characterisation on the treble, so well integrated was the sound.

The bass requires some detailed comment. It was not as rich or subjectively extended as the TDL Monitor's, as crisp as the Yamaha NS1000's, as dynamic as the Apogee Caliper's, nor as solid as the Isobarik's. Conversely, it was the best yet from Spendor, and an order of magnitude superior to that from the gamut of smaller monitor class systems when judged on dynamic quality, speed, articulation and tunefulness. I judged it to be 'dry' in my listening room, but know only too well that in other rooms with walls and floor of more typical 'rigidity', the lowest octave or so will correctly assume greater weight. The S100 had bass which in a monitor system such as this has a very good chance of satisfying rock and classical tastes equally well. In fact, I found it to be consistently even-handed with these two classes of programme.

A thread which has consistently run through all Spendor designs is a superior level of clarity and transparency, and the S100 proved no exception to this. Listening on a fine chain, the clarity was almost effortless, reaching fairly close to the standards achieved by big planar models such as the Magneplanar 2.5 and the Caliper Signature. This fine definition and clarity was particularly evident in the tri-wired mode. In this respect the S100 is a true contender for inclusion in the audiophile high-end category. A fitting partner for those ARC Classic triode amplifiers perhaps?

Stereo images were very good. The amazing pair-matching clearly going a long way to make up for the reduced level of focus normally typical of larger box enclosures. In fact, when given an extra metre of listener-to-speaker spacing, the S100 was felt to focus very well. Its presentation of depth was also of a high calibre: not falsely distant. Near-field sources were correctly 'present'. While the front-to-back stage ratio was fine. On 40cm stands the soundstage was nicely presented, with good width and a natural sense of height and scale. No false height effects were noted.

As listening continued, the S100 demonstrated a generous nature. One imbued with considerable musical honesty but also well controlled and generally it seemed to take a back-stage position and allowed the programme to speak for itself. As befits a broadcast monitor, its vocal quality was first-rate: articulate. Naturally balanced, low in coloration. and essentially free from the usual chestiness. This is no mean achievement for a 3-way system with a 330mm bass unit. Such was its mid-treble uniformity that in practice this speaker could indeed be used for judging the sound quality of recording microphones.

On coloration grounds alone, the S100 withstood direct comparison with the Quad 63, while its bass performance and power-handling place it in quite a different class. In my opinion, the level of accuracy achieved for a speaker of this size and power rating puts the S100 in a new class, allowing orchestral perspectives to be properly defined at decent volume levels.

Design and build

With a vertically oriented driver line-up, the units fall on the centre-line, with the tweeter placed between mid and bass on a decent area of unobstructed panel. Providing the foundation for the system. the LF range is handled by a new high-sensitivity- version of Spendor's massive 330mm Bextrene cone bass driver -massive because both the sand-cast aluminum chassis and the magnet assembly are built on a heroic scale. This driver has a 44mm motor-coil and offers good power-handling, while the flared cone is hand-doped with Plastiflex (or its equivalent) to damp resonances. Eight bolts secure this unit to the thick MDF driver panel. with the driver fitted from the inside.

A cast alloy frame is used for the mid-range unit, with an active diameter of 125mm and built on a 177mm frame. Like the bass unit, this too is secured by using eight bolts, but this time it is flush-mounted from the front to ensure a smooth response. Based on the SA1 driver, this mid unit now uses a polypropylene mixed polymer cone, again coated by hand to achieve the smoothest response. The Spendor version of the Scan tweeter - now an established product - has been adjusted to maximize detail and response smoothness. This 19mm soft-dome unit employs a suspension of unusually good linearity, with ferro-fluid cooling/damping at the magnet gap.

The system design has been tailored towards attaining a superior directivity for such a large enclosure. with crossover points placed at approximately 650Hz and 4.3kHz to suit the driver characteristics. Hard-wired in normal standard cable, the crossover is of professional 'quality', using selected transformer core inductors and plastic-film capacitors. In general the crossover conforms to a 2nd-order alignment (3rd-order for the treble), with response shaping built in for overall linearisation. The acoustic slopes are nearer 3rd-order. No fuses or other protection systems are present. with the three crossover input sections - bass, mid and treble - brought out directly to the rear panel on 4mm socket binding-posts.

Estimated at 70 litres for the bass enclosure out of a total volume of 85 litres, the 330mm driver is reflex-loaded by a pair of flared-exit ducted ports. 200mm long by 62mm overall diameter. lined with a layer of highly absorbent foam to control duct modes. By tuning to a low 30Hz, a system response down to the 25Hz region is possible. Built of MDF, the enclosure walls are damped by high density bitumen cladding, well secured. A separate enclosure is formed for the mid unit by means of an angled partition in the upper section of the enclosure, this also providing beneficial symmetrical bracing. A cross-beam ties the cabinet sides together, while the centre region of the driver baffle is reinforced horizontally by a red cedar beam of massive 45 x 100mm section. The 15mm thick MDF back panel is removable, and is fixed to soft-wood battens by 18 screws.

Lab report

At the reference 1m distance the S100 reached a comfortable 89.5dB/W sensitivity without significant compromise to the amplifier load factor, the latter rated at 6.5ohms with a typical value of 8 above 300Hz. The minimum value of 5.5ohms appears at 180Hz (Graph 1c). All this makes the S100 a 'good' load, suitable for a wide range of amplifiers.

So flat is the axial frequency response (Graph 1a) that a minor 2dB bump at 300Hz constitutes a noticeable disfigurement! From 400Hz to beyond 20kHz this speaker measured a remarkable +2dB and even this does not adequately describe the Hertz-by-Hertz uniformity. Only 1/3-octave equivalent averaging can do this, resulting in the laudable solid line on the 2-metre forward response group (Graph 1b). Notice the smooth tapered rolloff in the bass; in the anechoic response the output is falling below 80Hz, yet did not reach -10dB until 30Hz. These results were indicative of a good room match and explain the 'dry', clean but extended bass heard.

Above axis (15°) the treble dips a little in the 6kHz region, so the speaker should be mounted high enough to lift the mid driver to the height of the listener's ears. Mid and bass are well integrated on the vertical axis, and fine results are also shown at 30° in the horizontal plane. The 45° curve is poorer than for many smaller systems, but is tidy enough and well above average for the size. No nasty surprises here! Pair-matching was excellent to 0.2dB overall, while the grille had little effect on the response and can safely be left in place.

At 86dB sound level, 1m, the S100 gives fine results for distortion (Graph 1d), averaging 0.4% of 3rd-harmonic (but a little higher in the mid-range), while above 500Hz the 2nd-harmonic is typically 0.2% or less. At 96dB the 2nd and 3rd-harmonic distortions reach near equality at a typical 0.8%, which is unexceptional for the sensitivity over the upper frequency range. Conversely, the distortion below 100Hz is rather better than average, thanks to the large bass driver. Wide-band peak inputs up to 150W were sustained without 'cracking' or significant compression. With a maximum peak-programme input of 150W per channel, a pair of S100s can provide generous sound levels of 110dBA in a larger domestic lounge, while as little as 15W will produce 96dBA - due to the high sensitivity.

As predicted, this speaker showed no loss of output down to 25Hz in-room, while the rise of 4dB at 30Hz (Graph 2) is rather less than usual for such an LF response extension. On this room-averaged response the drop in the upper bass (100Hz) is not as serious as it looks, and was partly a result of the speaker's size and the stand height used for the measurement. Above 200Hz the output is smooth and well balanced, though not as uniform as for some of the smaller boxes. In this integrated room measurement the 'energy' content reveals something of the S100's three-way nature, with a modest mid-range plateau visible. This suggests that some room 'sensitivity' is to be expected with this model, both with regard to room size and also the treatment of side walls - for example, whether plain or (as in my case) lined with bookcases.

Conclusion

In the Spendor S100 we have an up-to-date version of the classic three-way monitor system. In contrast to its predecessor and many rivals, this compensated design endows the speaker with fast, articulate, dry and boom-free bass in a domestic location. Imbued with a substantial degree of drive and energy, the system sounded consistently clear and informative over a wide bandwidth, with the mildly congested lower mid-range quickly forgotten in the context of its overall success in conveying a big, deep sound-stage with very good focus 'stability'. A Spendor hallmark, clarity and tonal balance were maintained over a wide range of listening levels.

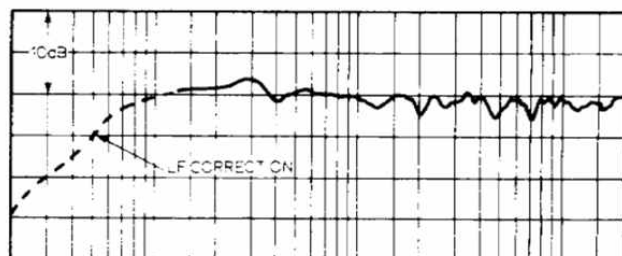
Built with real craftsmanship, the S100's more like a musical instrument than a factory engineered transducer, and the high build 'quality' extends to the superior real-veneer exterior. On an appropriate stand the S100s a substantial system - a piece of furniture it would be impossible to disguise. Like a grand piano, the S100 deserves an appropriate setting, but once properly located they can be left to do their job, the accurate reproduction of music without emphasis or fuss.

The sound 'quality' was exceptional, with elements of the better parts of many great speakers - for example, the mid of the Quad, the bass of the Yamaha NS1000 and the scale and dynamics of the Apogee Caliper Signature -, yet not quite reaching the specific excellence of these models in their best areas. The S100 strength lies in its overall balance of performance, one which brings the speaker into the audiophile class and makes it worthy of considerable care in the choice of the supporting system - if you can afford it.

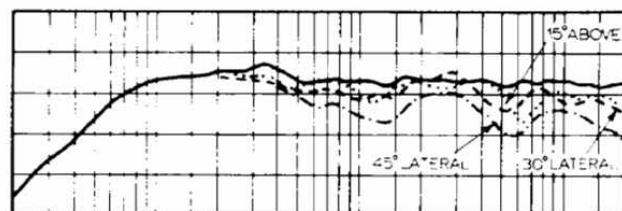
I strongly recommend this speaker, and in view of the considerable engineering and hand-tuning involved in its manufacture consider it to offer surprisingly good value at £1100.

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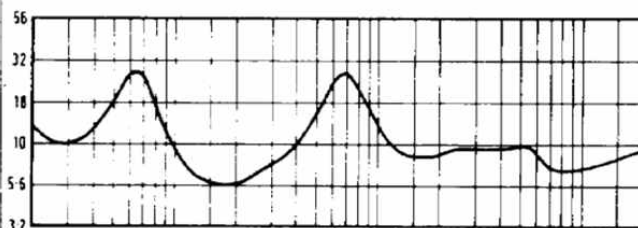
Graph 1a. Spondor S100: on-axis response at 1m



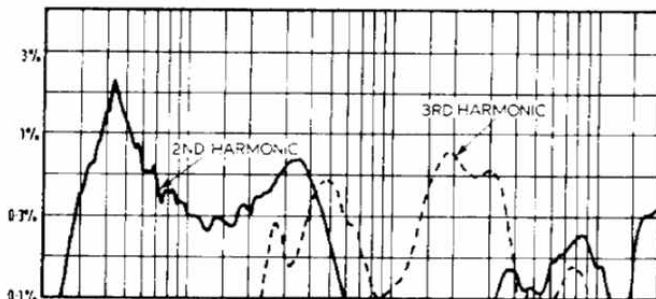
Graph 1b. Spondor S100: one-third octave response family at 2m



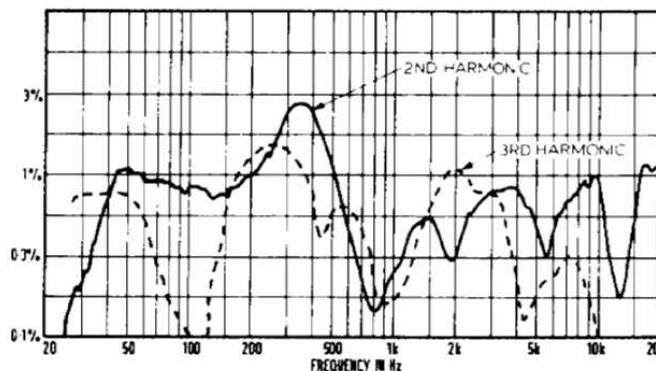
Graph 1c. Spondor S100: modulus of impedance, ohms



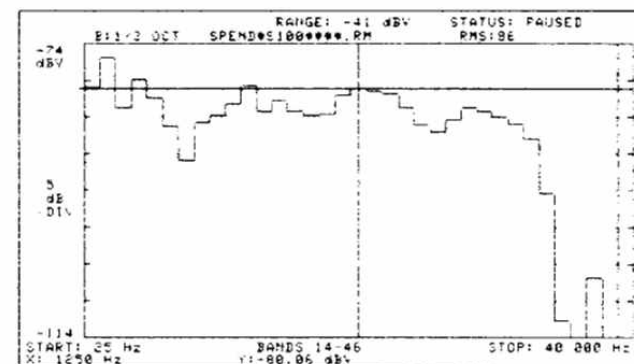
Graph 1d. Spondor S100: distortion at 86dB spl



Graph 1e. Spondor S100: distortion at 96dB spl



Graph 2. Spondor S100: room-averaged response (RAR)



Test results

Size (height × width × depth, cm)	70 × 37 × 43
Recommended amplifier power per channel	15-150W
Recommended placement	On 40cm full-size stand, free space (but see text)
Frequency response within ±2½dB (2m)	60Hz-20kHz
LF rolloff (-6dB) at 1m	45Hz
Bass frequency extension (typical in-room)	25Hz
Voltage sensitivity (ref 2.83V* at 1m)	89.5dB/W
Approximate maximum sound level (pair at 2m)	110dBA
Impedance characteristics (ease of drive)	Good
Forward response uniformity	Very good
Typical price per pair (inc VAT)	£1100

*ie, 1W into 8ohms

Supplier:

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