

HIFI CRITIC



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Very Neat Indeed

NEAT'S NEW ULTIMATUM XLS IS A HUGELY IMPRESSIVE STAND-MOUNT, AS MARTIN COLLOMS DISCOVERED



Just occasionally a product is encountered at a show that one would really like to hear again. One such example was an early sample of the Neat *Ultimatum XLS*, shown at the Bristol Sound and Vision show last February. This compact stand mount loudspeaker played bass, and the rest, at a sound level belying its size; moreover it was well balanced too. While first impressions at a show can sometimes subsequently prove false, this Neat is no disappointment now that it's installed.

Succeeding the *Ultimatum MFS* (which cost £2,995 per pair plus £495/pair for its matching stands in 2003), the £4,495/pair *Ultimatum XLS* features a new tweeter, crossover network and other detail changes. It looks initially like yet another two-driver, two-way bass reflex design. However, that's far from the truth, as it's actually a five-driver system. The main new 25 mm SEAS *Sonomex XL* series soft dome tweeter and a 165mm cast frame custom design bass/mid driver on the front panel are augmented by two 'ambient drive' *EMIT* foil diaphragm supertweeters on the top panel. And the main bass/mid driver is isobarically back-loaded by a second close-coupled bass/mid unit that vents into the bulk of the enclosure volume, which in turn is reflex-loaded by a generous

gas-flowed rear port. The bass/mid driver has a phase correcting open pole, and a selected lightweight pulp composition cone with some critical surface damping.

With internal bracing and further sub chambers for the treble units, the enclosure design mixes Baltic plywood with MDF panels for the best overall coloration distribution. The speaker is available in a variety of claddings: the usual birch, oak, walnut, black ash and rosenut veneers, plus three interesting mirror gloss 'piano' finishes at a £1,000 premium.

Power handling is suggested at 25-200W per channel program, which seems fair enough. At 87dB/W sensitivity, a stereo pair should be able to deliver a substantial 103 dB in an average room. It weighs 15kg, is 38cm tall, a skinny 22cm wide, and 37cm deep. The matching accessory stands are a four pillar 60cm design, with a slate base, a low resonance top plate of *Antiphon* laminated steel, and cost an additional £950/pair.

Sound Quality

The *XLS*s proved that they could happily insinuate themselves into my reference 'high end' system, substituting for the Wilson *Sophias*, but were also very happy driven by a Naim *Hi-Cap/Supernait* combo and a Naim *DAC* fed from a spare Philips *CDM4* drive mechanism. There was sufficient transparency to show up even minor errors in system set up, which is a good indicator of high resolution.

First tried *via* the lower terminal pair using a single run of Transparent *XL MM2* cable, it was certainly promising overall but I thought the midrange sounded a little full, the upper mid slightly 'ringing', and the treble slightly dull. Moving the connection to the upper terminals fixed all this, to a point where the *XLS*s were now easy to position in the normal locations in my room and sounded just fine – indeed so fine that I could hardly criticise them at all. (Neat favours bi-wiring and also recommends bi-amping.)

Small speakers with powerful extended bass can sound boomy, with slowed timing and frequently a discernible and complex variation in bass quality with loudness. Not so the *XLS*, which not only sounded like a much larger speaker, but could play loud in the bass with substantial consistency and fine timing.

Indeed, to single out the most impressive achievement of this severally gifted design, the rhythm and timing captures the attention, allowing the music to define the pace, and delivering satisfying long term listener involvement. After they were installed I had to carry out prolonged and arduous comparative listening tests on a great heap of quality electronics, and found that this work could happily continue using these Neats. To allow this evaluation without

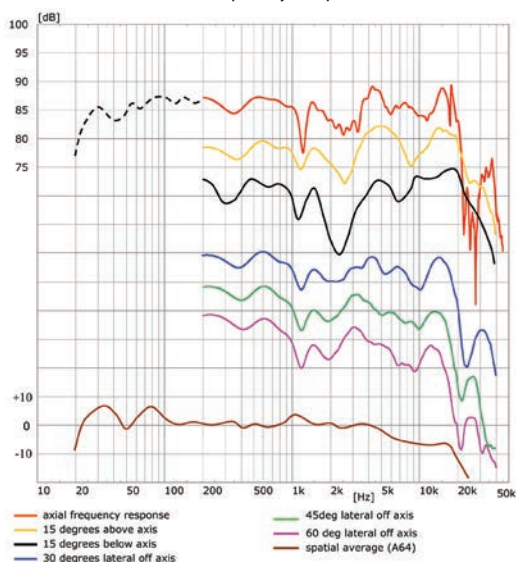
having one's conscious attention drawn to these relatively compact speakers constitutes an exceptional achievement, showing the XLS is truly a high end speaker in miniature.

I played a number of what I term micro-balanced tracks: awkward and subtly introspective recordings, where the character of the performer and the precise perspectives can alter rapidly with small errors in voicing. The *Ultimatum XLS* sailed through all of these and with near excellent transparency, just falling behind some of the best £10,000+ speakers in this respect. At moderate loudness I was reminded of the exceptional inner tonal balance and poise and monitor quality of the best BBC *LS3/5as*, yet this Neat could play some four times louder without distress.

Said to be 'inaudible to the human ear' – but not quite, if you put your ear to them when quiet music is playing – I checked the effect of those top-mounted supertweeters by using lightweight sound occluding pads. A very subtle increase in the sense of air and lightness in the high treble, and a very small lift in image height were heard when the speaker was returned to its intended and indeed preferred normal operation.

One can listen for hours to this excellently blended design. While dynamics are understandably a little muted compared with larger loudspeakers, dynamic contrasts are nonetheless well proportioned, while the fine timing and consistent rendition of subtle detail delivers high quality entertainment. Coloration is particularly low right across the frequency range. It plays bass tunes well with punch and depth, and the midrange sounds neutral. The treble is sweet, informative, quite self effacing as a distinguishable component, and as excellently blended as it should be (and so rarely is). Further comment is unnecessary.

Neat Ultimatum XLS Frequency Responses



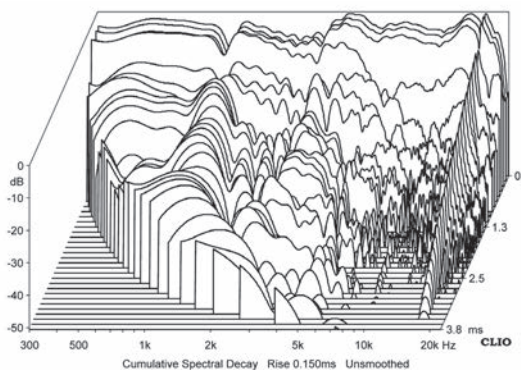
Lab report

Axial sensitivity for a 2.83V (ie 1W/8ohm) input was close to spec at 86.5dB, with better than average bass extension. However, the latter was achieved at some cost to amplifier loading, which showed 3ohm minima at 40Hz and 190Hz (albeit averaging 7ohm elsewhere). The driving amplifier therefore needs to be 4ohm-capable to deliver good bass clout, though in its favour the reactive content is low and the phase angle is held to about +/-40degrees. Ostensibly the +/-5dB reference frequency response looks rather ragged but it shows a commendable overall frequency balance, with bass extension to a low 30Hz (as it sounded). The third-octave averaged results look more palatable of course, but the lateral off-axis data is pretty good with the important 15 degree off-axis measurement holding within +/-2.6dB from 40Hz to 18kHz, which is a fair reflection of how neutral the speaker actually sounded. However, slouching too low in a seat will result in the duller (black 15degrees below axis) response.

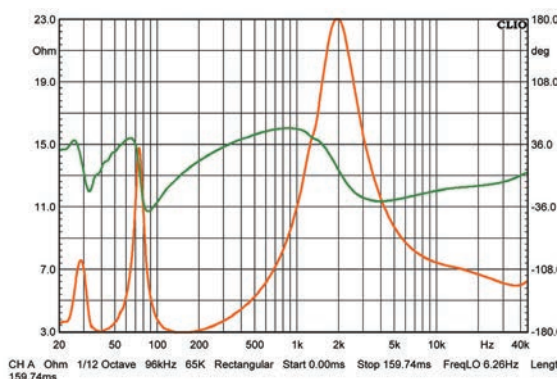
That said, this speaker is well 'joined up', as the fine room-averaged response shows. An indication of the smooth energy trend the speaker generates in the room, this is a particularly good result, characteristic of a natural tonal balance. One listener commented on a hint of 1kHz prominence, which may just be seen, but this was no longer a concern when he moved his seat a foot or so further back.

Continued over...

Neat Ultimatum XLS Waterfall of Energy Decay with Frequency



Neat XLS Impedance and Phase



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Bits and Pieces

SHORT REVIEWS ON INTERESTING PRODUCTS

Synergistic Research MIGs

EFFECTIVE EQUIPMENT SUPPORTS

No relation to the well known Russian military aircraft maker, MIG here stands for Mechanical Interface Grounding, and consists of polished steel cups with elongated shoulders that sell for about £150 for a set of three.

These simple looking devices may be placed under equipment, either 'cups up', 'cups down' or combinations with some up and some down. They would take a ton or two of loading before deformation, and larger speaker versions are on their way. I balked at the price until I heard them, since for me they have had a greater effect on the sound of familiar electronics than any similar device I've tried previously.

I agree with the claims that placing most or all 'cups up' enhance the presence and provide incisive



definition, the reverse provides greater stereo depth and clearer ambience. They worked under DACs, power supplies and CD players. And under my Audio Research *Reference 3* pre-amp I also heard significantly better bass timing, definition and extension, a happy bonus, and so obviously better than the standard polymer feet. I put two, cups up at the front corners under the two power transformers and the other cup or crown downwards under the terminals, centre rear. The simple fact that I do not wish to remove them indicates a *HIFICRITIC* recommendation. *MC*

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RECOMMENDED PRODUCT
www.hificritic.com

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Neat Continued

Good clarity and clean transients are associated with a fine energy decay, and this waterfall graph for transient decay with frequency is certainly a good result. Those axial response peaks are not resonances after all; the speaker is close to linear phase in this range, and has desirably fast decay save for the minor tweeter dome breakup at 19kHz.

While those two supertweeters have almost no effect on the main measured responses, even at extreme angles, by sealing off the main tweeter it was possible to plot their output, which rises slowly from about -30dB at 5kHz to level off at 17kHz, where the main tweeter is becoming directional.

They then continue quite smoothly to at least 40kHz. While rather subtle in effect they are supertweeters after all. I also checked the output from the port and found it dominant at a low 30Hz with only a minor -20dB resonant breakthrough in the lower midrange, which is considered harmless.

Conclusions

The Neat *Ultimatum XLS* might have barely average sensitivity and poorer than average amplifier loading, but its power response uniformity is way better than average, as is the low coloration, extended bass and fine transparency. Transients were very good, matching the fine energy decay result.

Confirming those early impressions experienced under unfamiliar show conditions, it has been a pleasure to experience this larger than life compact, which holds true to the messages in the music and almost never gets in the way. It exemplifies capable and painstaking design where a proper understanding of the values expressed in music has been applied. Furthermore, the fine timing is a rare gift that's not at all easy to pin down during a speaker's development.

Though unquestionably costly, the *Ultimatum XLS* played well beyond any expectations that its modest physical dimensions might suggest. It proved easy to locate, and is so fundamentally accurate and friendly to the ears that a confident recommendation is assured.

HIFICRITIC LOUDSPEAKER RESULTS

Make	Neat Acoustics
Model	Ultimatum XLS
Price per pair	From £4,495, plus stands £910
Finishes	five veneers plus premium gloss finishes
Size (WxHxD), weight	22x38x37cm, 15kg
Type	Essentially 2-way; 5 drivers in toto; isobaric, reflex loaded bass
Sensitivity for 2.83V	86.5dB measured
Amplifier loading	5ohms typical, 3ohm min: average minus
Frequency response, axial	27Hz to 21kHz +/-5 dB (listener axis) (see text)
Frequency Response, off-axis	Very good power response, see graphs and room response
Bass extension	35Hz for -6dB, (30Hz in room)
Max Loudness, in room	102dBa for a stereo pair
Power rating (max, min)	25-200W
Placement, floor standing,	Spike coupled 60cm stands, near free space location

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RECOMMENDED PRODUCT
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