

ELAC Adante AS-61

With a concentric mid/treble and coupled-cavity bass, the smallest Adante series speaker is no ordinary standmount
 Review: **Keith Howard & Cliff Joseph** Lab: **Keith Howard**

There was a time, back in the 1980s, when much of what was novel in loudspeaker design emerged from KEF's R&D department in Maidstone, Kent. Odd as this may seem as a way of introducing a new ELAC speaker from Germany, it's doubly relevant because the £2600 Adante AS-61 – indeed, the entire three-model Adante range (not including the ASW-121 powered subwoofer) – incorporates two features associated with that golden era at KEF: one that has remained familiar, and a second that has rather declined into obscurity.

GOLDEN ERA

Before this sounds like an audiophile pub quiz, I'm talking about the cone/dome coincident driver array (Uni-Q in KEF-speak) and the bandpass enclosure, better known as coupled-cavity bass loading. Neither is classic ELAC fare but the arrival of Andrew Jones as chief engineer has acted as a conduit for them. He worked under Laurie Fincham at KEF in the 1980s, made his name at TAD (not least with the CST coaxial driver with beryllium dome and cone), and is now showing us that designing speakers for the deep of pocket is not his only talent.

ELAC has made coaxial drivers before, in the form of the X-JET and X-JET II, but these featured a planar or almost-planar annular midrange diaphragm surrounding one of ELAC's pleated-diaphragm Air Motion Transformer JET tweeters. We saw the first cone/dome coincident driver from ELAC in Jones' recent Uni-Fi series – the Adante variant is similar in that it too combines an aluminium alloy cone with a soft-dome tweeter where the dust cap would otherwise be, although here the midrange voice coil diameter is increased to 2in. The cone is flared, the flare being chosen to combine with that of the fixed ring around the tweeter, the shape of the cone surround and the continuation of the waveguide into the bonded

aluminium front baffle to achieve a smooth expansion (Jones describes it as 'a blended multi-radius profile') which delivers well-controlled responses both on- and off-axis. The first cone breakup mode occurs at about 6.5kHz, 1.7 octaves above the 2kHz crossover to the tweeter.

This lower-than-typical crossover point is partly achieved by equipping the soft dome tweeter with a large surround. A soft dome, here formed of silk fabric with a coating that optimises its vibrational behaviour, was chosen as more appropriate to this application than a metal dome. This choice in turn affected the selection of cone profile as, Jones says, 'the way a hard dome matches into a waveguide is very different from a soft dome'.

At first glance you could easily mistake the AS-61 for a conventional three-way design, although the absence of a port (front, back or exhausting through a plinth) might puzzle you – surely not a closed-box speaker in this day and age? Indeed not, for as already indicated, all the Adante models employ coupled-cavity loading at low frequencies – but with a difference.

'The clarinet glissando opened with a sweet, rich tone'

COUPLED-CAVITY

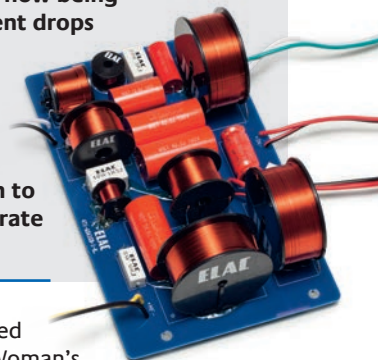
Cast your mind back to KEF's Four-Two, Three-Two, etc, models and you may recall that there was no visible bass driver, all the bass output being delivered via a large reflex port, with the bass driver(s) out of sight within the cabinet. Essentially the AS-61 is the same but for two important revisions. First, an ABR (auxiliary bass radiator) replaces the radiating port, so the bass 'driver' that you see is not a driver at all but a passive cone. The real bass driver is located within the cabinet

RIGHT: The AS-61's anodised alloy baffle hosts a 5in aluminium cone with concentric 1in silk-dome tweeter. The visible bass unit is an 8in passive ABR, driven from behind by an active bass driver and reflex port



AN ALTERNATIVE ABR

Like any ABR (Auxiliary Bass Radiator), the front-facing unit fitted to ELAC's AS-61 eliminates port noises that might otherwise result from turbulent airflow, and provides an effective block to the escape of standing wave resonances from within the enclosed air space. Because of the front chamber's low-pass response, it also reduces distortion from the bass driver and blocks any chuffing noise from the interport. Distortion is further lowered by there now being two bass frequencies at which driver displacement drops (theoretically) to zero, rather than the single null of a bass reflex design. On the downside, there are three LF peaks in the impedance versus frequency response (two with a reflex enclosure) that complicates crossover design [pictured]. 'All in all it was a very involved system to design,' says Jones, 'which required a lot of accurate modelling and simulation to get right.'



behind the ABR, with – the second revision – a reflex port connecting the enclosed volume between the driver and ABR with that behind the driver.

In effect, this arrangement resembles a conventional reflex-loaded speaker with a front-firing port, to the front of which is attached the chamber containing the ABR. Acoustically, this adds a second-order low-pass filter that increases the upper slope of the bandpass response, at 200Hz, from second (12dB per octave) to fourth-order (24dB per octave) – all achieved without electrical filtering. That is one good reason for elaborating on KEF's original layout but there are others, described in the boxout above.

From its dimensions, it's clear that the AS-61 is a standmount design, unlike the larger AF-61 floorstander. As the stand can have a significant impact on sound quality, ELAC offers its own partnering LS30 set for £520. A single-pillar design with steel top and bottom plates, its hollow aluminium column can be filled with whatever damping material you prefer (marble flour being superior to traditional sand). Finally, all ELAC's Adante models are available in walnut, gloss white or gloss black finishes.

DEPTH AND DRAMA

You'd need a fairly substantial set of bookshelves to house the Adante AS-61, so our tests in Editor PM's listening room were conducted with the aid of the ELAC LS 30 stands. Given room to breathe, these compact speakers can really deliver the goods – namely a typically decisive and well-balanced sound.

The whispered vocal on 'This Woman's Work' by Kate Bush [*The Sensual World*; EMI CDP 7950782] sounded warm and natural, and then gradually gained in power as it built towards a hard-hitting note of despair. The piano playing here has a precise, dramatic tone that drives the song towards the plaintive chorus, 'all the things I should've said...', and then the knock-out punch lands, when the Adante AS-61s gracefully caught the sudden swoop of Bush's voice, plunging right down to meet the sudden strike of the double-bass – deep, rich and dramatic. They proved very effective at revealing the intent behind the music, and the mournful sense of struggle that drives the song, presenting a depth and drama seldom found with such modestly-proportioned speakers.

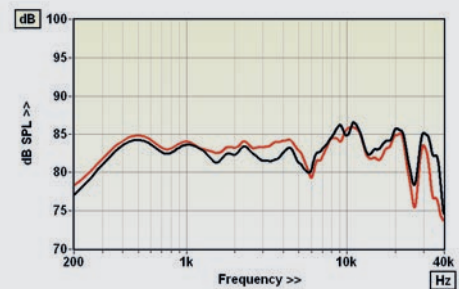
That ability was no less evident with 'The Soldier's Poem' by Muse [*Black Holes And Revelations*; Warner Bros/Helium 25646 3509-5]. One of Matthew Bellamy's occasional experiments with intricate vocal harmonies, the song proved to be in good hands with the AS-61s as they balanced the intertwining layers of vocals perfectly. The lower voices had a rich warmth that contrasted with the higher, more urgent tones that join in as the song progresses.

The AS-61s even managed to unravel some details that can get lost with less precise speakers, including Bellamy's gentle solo vocal whispering just below the three-part harmonies. It is, as Freddie Mercury once sang, 'fastidious and precise', yet the sound itself is never cold or mechanical, and the AS-61s delivered the song with the warmth and intimacy of a live performance. It was a relaxed, open sound too, and one perfectly able to fill a big room, despite the compact design. ➔

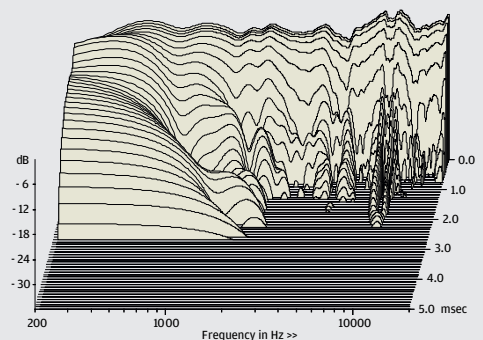
ELAC ADANTE AS-61

Coupled-cavity bass loading enjoyed a brief period of popularity after KEF introduced it in the Reference 104/2 in 1984 (also in the R107 and Two-series models) but we see it infrequently these days. Why ELAC has chosen to revive it is a moot point given that there's nothing exceptional about the Adante AS-61's bass performance – although it does save the need for some crossover components. For its size, and given its 4ohm nominal impedance, the AS-61's specified 85dB sensitivity looks fair but we couldn't match that figure, recording 83.4dB on pink noise. This is despite the AS-61 being a moderately challenging load to drive, with a minimum modulus of 3.8ohm and, as a result of quite high LF phase angles, a minimum EPDR (equivalent peak dissipation resistance) of 1.7ohm at 80Hz. Elsewhere in the audio range, though, the EPDR never dips below 3.3ohm.

The forward frequency response, measured at 1m on the axis of the coaxial tweeter shows a slight presence band dip followed by a hump around 10kHz but the response errors are modest at ± 3.3 dB for both speakers [see Graph 1, below]. (Ignore the roll-off below 400Hz which is an anomaly caused by the restricted measurement time window.) Pair matching error is poor, though, at ± 2.2 dB over the same 300Hz-20kHz frequency range. Some justification for the low sensitivity is found in the bass extension, which diffraction-corrected nearfield measurement showed to be 46Hz (-6dB re. 200Hz). But the nearfield measurement also revealed a peak of about 5dB at 170Hz, apparently due to the acoustic low-pass filter being underdamped. The cumulative spectral decay waterfall [Graph 2, below] is mostly clean but for two modes associated with the 10kHz response hump. PM



ABOVE: The AS-61's forward response is generally flat in trend save for a mild presence 'notch' and treble lift



ABOVE: Cabinet is well damped but a mild driver resonance around 10kHz correlates with the treble lift

LEFT: Dual 4mm cable terminals support bi-wiring/bi-amping while the matching stand may be filled with sand/lead shot or other powders to improve stability and damping

simple, repeated keyboard phrase underpinned by pulsing bass. The piece ends with nothing less than the heat-death of the universe where the AS-61s held on to the last lingering note, and wrung out every dying detail as it dwindled away over the final long fade-out.

LIFE IN THE CITY

In contrast, Freddy Kempf's recording of Gershwin's *Rhapsody In Blue*, with the Bergen PO/Andrew Litton [BIS SACD 1940], is full of life and vigour. The AS-61s delivered the famous opening clarinet glissando with a sweet, rich tone and a relaxed rhythm that unwound like a lazy yawn, capturing the start of the new day in bustling New York City. They revealed all the intricate detail in Kempf's piano runs, and then picked up the pace as the strident brass woke everything up, accompanied by a crystal-clear clash of cymbals.

The speakers perfectly navigated the rapid changes of pace, contrasting the horns' brash energy with Kempf's more delicate keyboard work. And again, the AS-61s captured the ideas behind the music, delivering the final crescendo with a swirl of driving piano and one final blare of horns that illustrated all the chaotic energy of city rush-hour. It was an imposing and impressive performance given the AS-61's compact design, not to mention ELAC's competitive pricing. ☺

HI-FI NEWS VERDICT

Don't be fooled by appearances because the AS-61 is a genuinely sophisticated standmount. Neither should you squeeze these boxes into a cramped 'bookshelf' set-up, so budgeting a little extra for those partnering stands is essential. These really allow the smallest Adante to stand on its own two feet, so to speak, delivering a precise and dramatic sound that genuinely belies the system's compact dimensions.

Sound Quality: 85%



Continuing with Muse, 'The 2nd Law' [*The 2nd Law*; Warner Bros/Helium 825646568789] sees the band entering full symphonic rock mode, but the AS-61s coped well with the contrasting styles contained in this near 9m epic. The opening swirl of strings was sharp and urgent, drawing the listener in as portentous, multi-layered harmonies entered the fray, adding to the sense of scale and drama. The AS-61s were not fazed, either, as the piece took its turn into rock, where the deep, electronic keyboards landed with real weight and power, the sound remaining well balanced and never overwhelming the lighter, faster percussion that skims across the surface and leads the song into its second 'movement'.

The mood here is more thoughtful, with the AS-61s once again producing that clear, precise piano sound, with the

HI-FI NEWS SPECIFICATIONS

Sensitivity (SPL/1m/2.83Vrms – Mean/IEC/Music)	83.7dB/83.4dB/83.2dB
Impedance modulus min/max (20Hz–20kHz)	3.8ohm @ 95Hz 29.3ohm @ 33Hz
Impedance phase min/max (20Hz–20kHz)	-63° @ 66Hz 40° @ 20kHz
Pair matching/Response Error (300Hz–20kHz)	± 2.2 dB/ ± 3.3 dB/ ± 3.3 dB
LF/HF extension (-6dB ref 200Hz/10kHz)	46Hz / 37.2kHz/24.6kHz
THD 100Hz/1kHz/10kHz (for 90dB SPL/1m)	0.5% / 0.2% / 0.5%
Dimensions (HWD)	484x244x402mm