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Furutech ADL H128

Building on the distinctive H118 model, with its triangular-shaped capsules and earpads, ADL's H128 is intended to add some extra oomph to its predecessor's civility
 Review & Lab: **Keith Howard**

If the Alpha Design Labs (ADL) brand is new to you, as it was to me before the arrival of the H128 for review, let me paint in a little background. Sister to Furutech, it functions as an entry-level adjunct to its more up-market sibling, with a range which encompasses earphones, headphone amplifier/DACs (portable and static) and cables as well as headphones.

Priced at just below £300, the H128 is a development of the previous H118 model, which remains available. According to ADL the design goal was to retain the H118's smoothness but ally it to improved dynamics 'and recreate the same "punch" that you hear during live performances'.

In most respects the H128 is a pretty conventional closed-back headphone but it does depart from the norm in the shaping of its capsules and earpads. ADL calls them, rather grandly, 'Alpha Triform Contour Earcups' – its way of saying that the cavity for your ears is triangular rather than rectangular or circular. Two justifications are offered for this: first, it improves the earpads' seal to the head, thereby assuring more consistent bass response. Second, the lack of parallel surfaces reduces standing waves within the volumes of air enclosed by each capsule.

A QUESTION OF COMFORT

Certainly the area immediately below and behind the ear, crossing the jaw line, presents a challenge to earpad sealing, albeit one which some headphone users have more of a problem with than others. ADL is not alone in seeking to address this but our standard ten response measurements per capsule on the artificial ear recorded nothing like the outstanding bass consistency demonstrated by the D-shaped Sound Sealing earpads of the AKG K812 [HFN Dec '14], for instance, particularly for the right capsule [see Lab Report]. Moreover, the H128's capsules

could never be called capacious and its head clamping force is on the high side, so I found it to be less than ideally comfortable to wear: the earpads bent my pinnae and their grip was rather too vice-like. The contrast with, say, the (sadly) discontinued Sony MDR-MA900 [HFN Oct '12] – which, in addition to having large, circular capsules, is also significantly lighter – was palpably obvious.

While we are talking physical design, I should also mention that the H128's headband suffers a low-frequency

resonance that can clearly be heard as a carry-over of bass sound from one capsule to the other on single-channel pink noise and which is suppressed if you reach up

and grasp the headband to damp it. Exactly what effect this will have in terms of imaging and perceived coloration is difficult to say but obviously it would be better were the resonance eliminated.

'In its mildly understated way the H128 is an informative listen'

Although it's supplied with a short (1.3m) as well as a long (3.0m) connecting cable and a zip-up hard-shell carrying case, the H128 isn't best adapted to listening on the move because, while the capsules do turn flat, they don't fold up into the substantial leatherette-covered headband. As a result the carrying case (about 235x235x70mm) is much too large to sit in a normal coat or jacket pocket and will take up what may be an unwelcome amount of space even in a briefcase.

SHARED GROUND CONNECTION

To accommodate the two different-length cables ADL has used mini-XLR connectors to join them to the left capsule but arguably has missed a trick in making them three-pin, with a shared ground connection for both channels. This precludes the H128 ever being used with the balanced outputs appearing on an increasing number of headphone amplifiers.

The shared earth line impedance – a common feature of headphones having conventional, unbalanced connections – also introduces some interchannel crosstalk, albeit at a low level.

Within each capsule is a 40mm driver featuring a diaphragm formed from PEEK (polyether ether ketone: a robust semicrystalline thermoplastic), a neodymium magnet system and copper-coated aluminium wire in the voice coil to reduce moving mass. Ohno continuous casting wiring is used and Furutech's Alpha-Process – 'a low-temperature two-stage cryogenic and anti-magnetic process' – is



RIGHT: Most notable feature of the H128 is its triangular-shaped capsules (blue version here), intended to improve the seal of the earpads to the head and suppress internal resonances

applied to the driver metal parts as well as to the wiring and mini-XLR connector [see boxout]. Three external colour options are available: silver/black and, less understatedly, silver/brown or dark blue.

A BOOSTED BASS

Headphone amplifiers used for the listening were the Aurorasound Heada [see p56] and the Teac HA-501 [HFN Apr '14]. Both were fed analogue signals from a Chord Electronics QuteHD DAC, itself fed S/PDIF from a TC Electronic Impact Twin FireWire audio interface. A second-generation Mac mini running Windows XP and JRiver Media Center v19 played as music server.

As regular readers of our headphone reviews will know, headphone tonal balance has become a controversial issue. For many years it was widely accepted that the response at the eardrum should be the same as for a flat-spectrum diffuse sound field (where sound intensity is the same whatever the direction of arrival). However, recently two teams of researchers – at NRC in Canada and Harman in the US – have concluded that, while the diffuse field goal is fine at higher frequencies, below about 200Hz the output should start to be shelved up in order to provide the same tonal balance as a good pair of (floorstanding) loudspeakers in a well-behaved room.

Either you buy into the new target response with its boosted bass or – despite the flurry of Audio Engineering Society



LEFT: Three colour options are available: silver/brown as pictured here, dark blue (see p60) and, more conventionally, silver/black

clear from the diffuse-field corrected average response (and confirmed by listening) that ADL has chosen the boosted bass route.

Compared to some exponents the boost is moderate but it nevertheless gives a distinct cast to the H128's sound. Even with music that lacks strong bass content the tonal balance is warmer than I consider neutral and textures are thickened as a result. On programme with generous bass content the lowest three octaves or so are plainly dominant. If you're to live happily with the H128 then this is a part of its character that you must relish, or at the very least accept.

A LOT TO ENJOY

If it sounds from this as if I'm lining up the H128 for a lukewarm review then that isn't so. Because, if you accept its tonal weighting towards LF, the H128 has a lot to like about it. It's not quite as hear-though as I like, principally because of its tonal hue, but in its mildly understated way the H128 is an informative and enjoyable listen.

Take two quite different examples: the 88.2kHz/24-bit download of Daft Punk's ballad 'Within' and the 44.1kHz/16-bit version of the third movement of Mozart's Divertimento in E flat, K375, from the SCO Wind Soloists [Linn Records CKD 479 – also a recently monthly sampler download track from Hyperion].

Yes, the left hand of the piano intro to 'Within' was a little dominant, as was the bass proper later in the track, but the textures of the vocodered vocal and the detail in the cymbals were well preserved, retaining the freshness and distinctness of this departure from *Random Access Memories'* up-tempo content [Sony 88883716862].

On the Mozart, delicacy and fidelity of instrumental timbre are the key requisites for doing this genuinely diverting, playful music full justice. While the H128 fattened the textures somewhat and didn't quite have the 'air' to render the full expanse of the recording acoustic, the skill and 

papers on the subject from Harman – your listening experience tells you that the idea is misguided. As someone who abhors bass excess whatever the circumstance, I'm in the latter camp.

Although on test the H128 delivered rather different low frequency response from its left and right capsules, it is

THE ALPHA PROCESS

Furutech's Alpha-Process – applied to the metal parts of the H128's 40mm drive unit and to the OCC internal wiring and connecting cable's mini-XLR socket – is a two-stage cryogenic and anti-magnetic process said to improve significantly 'every facet of audio performance'. While the details of Furutech's process are proprietary, deep cryogenic treatment – which involves cooling components to very low temperatures, typically around –196°C (the boiling point of liquid nitrogen), and then slowly warming them back to room temperature – has a long and controversial history in high-quality audio. A process more widely associated with improving the life of tool steels and enhancing the mechanical properties of metals used in Formula One and aerospace applications, it was first used in an audio context by Ed Meitner – then of Museatex – as long ago as the early '90s on components as varied as cables, CDs, circuit boards and speaker voice coils.

FURUTECH ADL H128

ADL claims a sensitivity for the H128 of just 98dB SPL for 1mW input, equivalent to 109.7dB SPL for 1Vrms at the nominal impedance of 68ohm. According to our measurements this is a significant underestimate as we recorded 115.0dB for 1V input at 1kHz, averaged for the two capsules – a typical figure for a modern headphone. The nominal impedance is also understated somewhat, for here we measured a minimum of 71.6ohm and a maximum of 83.7ohm within the audible range (20Hz-20kHz) a variation which introduces frequency response errors of just 0.2dB and 0.4dB for source resistances of 10ohm and 30ohm, respectively. The headphone was worn during the impedance measurement, not only to ensure appropriate acoustical loading but to check whether there is any audible carry-over from the active to the inactive capsule. Indeed, low-frequency carry-over could be heard and eliminated by reaching up to grasp and thereby damp the headphone assembly, indicating that the H128 has an appreciable headband resonance [see Investigation, *HFN* Jun '14].

Uncorrected frequency responses for the two capsules shows a notable shelf up in bass output at <300Hz via the left capsule [red trace, Graph 1], reaching a maximum of about 5dB, whereas the right capsule [blue trace] lacks this feature, perhaps because it sealed less well to the artificial ear. Even so the averaged response of the two capsules when diffuse-field correction is applied [green trace, Graph 2] still shows an uplift below 1kHz, consistent with the subjective assessment of the H128's tonal balance. Above 1kHz there is also some shortfall in presence band output which will increase the sense of rich, darkened timbres. Capsule matching of ± 4.5 dB is better than many headphones achieve and largely represents different interactions with the left/right artificial pinnae which, like most real ears, are somewhat differently shaped. KH



enjoyment that the SCO soloists bring to this programme remained abundantly obvious. If the sheer pleasure of eavesdropping in on their fun was mildly blunted, it was only *mildly*.

EXTRAORDINARY STRINGS

If you are a DSD aficionado you will probably know about Native DSD (www.nativedsd.com) and already have expended a large chunk of your monthly download allowance acquiring the tracks from the *Just Listen 1* compilation available from the website free. Some of the tracks are offered in DSD64, DSD128, DSD256 and DXD format, allowing for some interesting comparisons, and multichannel versions are available as well as stereo.

If you'd rather cherry-pick than download the lot – a time-consuming and data-eating exercise – then I recommend the 'Heiliger Dankgesang' movement from Beethoven's String Quartet Op.132, played by a Boston string orchestra [*Dreams & Prayers*, Crier Records CR 1401], which is available in both DSD64 and DSD128 formats. There's also a binaural version yet I've found the standard stereo version to sound significantly more spacious replayed over headphones!

This recording is extraordinary and (even if you convert the DSF files to 88.2kHz/24-bit PCM as I did) the difference between the DSD64 and DSD128 versions is plainly audible: in favour of the latter, as you'd suppose. What makes this recording so special is the gargantuan size and sheer presence of the stereo image – characteristics which test the mettle of any headphone.

It's a challenge to which the H128 stood up well. Its generous bass subdued the sense of presence and 'air' somewhat but the big-boned beauty of both the music and

ABOVE: Two lead lengths are provided: 1.3m for use with personal players and 3.0m for static systems

the recording still shone through. Once the track had started playing it would have been a wrench to stop it prematurely.

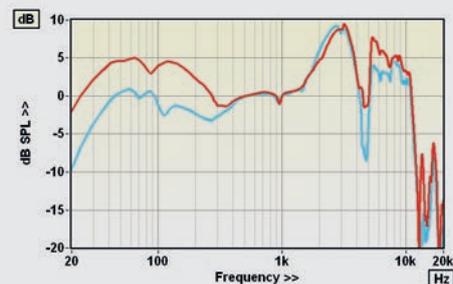
In going from this to a 44.1kHz/16-bit rip of Cameo's 'Word Up!' [Club JABHC17] I risk being accused of trading the sublime for the ridiculous but, let's face it, Larry Blackmon's most famous tune does get inside your head – all the more so if you watch the original music video on YouTube. As you'd anticipate of a mid-'80s pop recording it doesn't win any audiophile prizes but is the sort of bread and butter rock/pop material that any hi-fi system ought to handle with aplomb if it's going to win lots of friends and not restrict its owner to a circumscribed musical diet.

Yes, I'm going to continue griping about the H128 spreading its bass too thickly but on this material I guess not many people would complain. Especially as 'Word Up!' remained quirky and fun – and that's the point, right? ☺

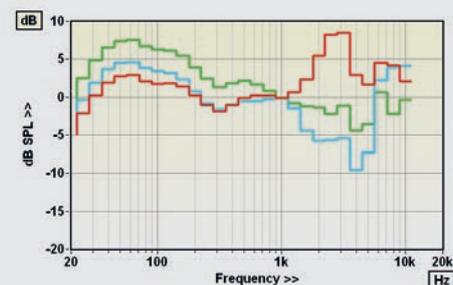
HI-FI NEWS VERDICT

While I can't commend this headphone for its comfort, so far as sound quality goes it merits adding to the shortlist of anyone looking for a standout £300 model. Its bass is shelved up, like many of its competitors, but not so much so as to obscure its inherent resolution and musicality, qualities which make the H128 an enjoyable headphone to listen to across a gratifyingly wide range of genres.

Sound Quality: 81%



ABOVE: Our left capsule (red trace) showed a stronger sub-300Hz bass lift than the right, but the overall balance is still 'rich' [see also green trace, below]



ABOVE: 3rd-octave freq. resp. (red = uncorrected; cyan = FF corrected; green = DF corrected)

HI-FI NEWS SPECIFICATIONS

Sensitivity (SPL at 1kHz for 1Vrms input)	115.0dB
Impedance modulus min/max (20Hz-20kHz)	71.6ohm @ 20Hz 83.7ohm @ 76Hz
Capsule matching (40Hz-10kHz)	± 4.5 dB
LF extension (-6dB ref. 200Hz)	19Hz
Distortion 100Hz/1kHz (for 90dB SPL)	1.3% / <0.1%
Weight (inc cable)	336g