

Focal Stellia

The French speaker company has upped its game with this de-luxe closed-back design – perhaps aimed to make a ‘mocha-ry’ of the competition? Let’s see how well it sounds
 Review: **Keith Howard & Christopher Breunig** Lab: **Keith Howard**

Hot on the heels of the Elegia [HFN Mar '19] – the first closed-back model in Focal's revamped, post-Spirit headphone range [HFN Dec '15] that launched in 2016 with the open-back Utopia [HFN Feb '17] – comes the second closed-back design, the £2799 Stellia. These two flagship models, both featuring beryllium diaphragms, effectively bookend the range, their less costly siblings being based around the same M-cone drive unit concept but with a less exotic aluminium-magnesium diaphragm.

The point of using beryllium, just as Focal does in its tweeters, of course, is to exploit its high ratio of tensile modulus to density – about 2.4x that of aluminium, magnesium or titanium. This enables a diaphragm that is both light, to aid sensitivity, and stiff to counter resonance.

In Focal's M-cone drivers – which are constructed something like miniature cone units from a loudspeaker but with only a thin annular cone section around the circumference of a central dome – this is further assisted by the use of a formerless voice coil, saving perhaps 50% on moving mass. (Although Focal was keen to specify moving mass for the Utopia, oddly it doesn't for the Stellia.) As is the case in the Elegia, coil impedance is lowered to a nominal 35ohm to increase sensitivity for use with mobile music sources.

COFFEE AND LIQUEURS

Given that all of the new Focal headphone range, now five models, share much the same exterior design, the Stellia's creators were faced with the problem of how to make this latest addition stand out from the ‘crowd’, especially given its status and price – a challenge that the Utopia escaped because it was fresh and new. Their answer was to give the Stellia a distinctive colour palette that Focal calls cognac and mocha – descriptively

RIGHT: Focal's styling choice of mocha and cognac sets these chic high-end headphones apart from anything else on the market. Everything is finished to the highest degree

a step up from mere champagne gold, and more than just descriptively. The Stellia's brown hues and quality materials make for something altogether rare: a headphone that is genuinely chic. As well as being immediately distinguishable from any other upmarket competitor – where black, grey and silver finishes predominate – it has the unintended consequence of making Focal's other flagship headphone, the Utopia, look rather dowdy in comparison.

But as journalist L J K Setright once said about cars, it only matters what they look like when you're outside them. When you're inside a headphone what matters is comfort and sound quality. In the former department the Stellia is good without being exceptional. Its two-part earpads – the half nearer the driver is fabric-covered to provide sound absorption, the outer half leather-covered – are just, but only just, large enough to accommodate most ears without

crimp or crush, and the headband is generously enough padded not to discomfort bald or thinly upholstered pates. But the headset mass is moderately high and so too is the force with which the earpads are pressed against the head – a common feature of closed-back headphones, which rely on a good seal to achieve an extended bass response. As a result the Stellia is only averagely comfortable, and the braided covering of the cable (which

continues the cognac/mocha theme) creates quite a lot of capsule noise if it rubs against clothing.

CABLE CAPERS

Talking of cables, two are supplied with the Stellia. There is the same short (1.2m) unbalanced cable as provided, alone, with the Elegia, terminated in a TRS mini-jack plug. A gold-plated, screw-on sleeve adaptor is provided to convert this for signal sources with quarter-inch sockets. The second cable is much longer at 3m, making it better suited to use within a conventional hi-fi system, but is terminated in a four-pin XLR plug to facilitate balanced connection. If your signal source doesn't provide the necessary balanced output then you'll have to buy an adapter to use this cable as one isn't provided.

Also included in the Stellia's unusually large but colour-coordinated packaging [see p69] are a zip-up hardshell carrying case with handle, just like the Elegia's only with a woven brown/black fabric finish. Inside the box within a box that contains the cables is also a thin brown leather wallet whose function is merely to contain the user manual – plug in, place on head! – and other paperwork.

An upside of the Stellia's closed-back design is that it provides good isolation from external sounds. In fact, provided you are able to ensure good earpad sealing, you are unlikely to achieve superior isolation from an over-ear headphone

'I was swept completely into the drama of the Sibelius piece'





LEFT: Padding to the ear cups and adjustable headband underside is soft but the Stellias are quite a tight fit to the head. Two cables are provided, 1.2m and 4m (with XLR plug)

unless it features active noise cancellation. While Focal's new headphones are better in this respect than the Spirit models were, there remains a slight issue of headband resonance. As usual, I tested for this subjectively by wearing the headphone during the impedance measurement, which plays pink-spectrum noise through one capsule only. Although I wasn't aware

of any coloration of the test signal, there was some low-level carry-over of sound towards the inactive capsule.

PACE APLENTY

For the listening (writes CB), analogue and digital sources were played via a DNM Series Six preamplifier, Beyerdynamic A2 headphone amp [HFN Sep '17] and

a Mytek Brooklyn DAC/amp [HFN Aug '17]. The Stellias are a considerable step up, both outwardly and in terms of tech, from the Elegias, and while it seemed appropriate to listen to some of the same test tracks, I couldn't resist mixing up my repertoire with the jolly (and jolly rowdy) Shostakovich *Festival Overture* in Andris Nelsons' new Boston Symphony Orchestra live recording [DG 483 6728; 96kHz/24-bit] – part of his Under Stalin's Shadow series.

Even connected to an iMac running Audirvana Plus music player software and the volume setting at 10 o'clock, the pacey sound suggested that even medium-powered amps should still deliver plenty of oomph. Of course, the sound quality was considerably improved with the Mytek Brooklyn pressed into service.

Turning to LP, Mia Farrow's expressive narration for Prokofiev's *Peter And The Wolf*, with the LSO under (the now late) André Previn [EMI ASD 2935] took on a new lease of life. The 'cuppiness' observed with the Elegias, and sense of boosted reverb around the voice, had vanished. Indeed, I thought this was one of the most natural speech sounds I had heard.

Mind you, in orchestral terms, the 1959 Decca Kingsway Hall version with Sargent conducting the LSO (an old favourite with KH for headphone reviews) is not far behind. With the Stellias you could hear the tympanist's stick heads going up and down on the skins while flute and bassoon were richly reproduced. There's some voice print-through on the tapes, but the musical characterisation is stronger under Sir Malcolm [Decca 433 6122; CD].

DRY AND MIGHTY

Returning to Clannad's 'Newgrange' from *Magical Ring* [RCA PL70003] the deep bass was really impressive, while my former complaints about vocal sibilants with the Elegias were banished by the Stellias' beryllium drivers. I also heard a lot of fine detail – set-back castanet sounds, for example – which was previously obscured.

Listening to some double-bass, which came courtesy of Universal's 44.1kHz/16-bit download of Seiji Ozawa's Beethoven Symphony No 9, live with the Mito Chamber Orchestra comprising mostly leading Japanese players [Decca 483 4431], the lower-strings recitatives at the start of the choral finale were cleanly focused. What's more, they were properly

CLOSING THE CAPSULE

Designing a closed-back headphone is much more complex than taking an open-back design and slapping a capsule closure on it. Whereas in the case of an open-back headphone the rear of the driver diaphragm radiates into a large volume of air, allowing the rear radiation to be ignored, in a closed-back headphone the rear radiation is contained and, as a result, is subject to resonances and reflections. The situation is analogous to that with loudspeaker enclosures except that the reflections have much shorter delays and the enclosed air resonances occur at higher frequencies. The capsule of a closed-back headphone acts as a simple pressure chamber up to around 1kHz, at which point the wavelength of sound in air – 17cm at 2kHz – begins to become comparable to the internal dimensions of the enclosure and resonances become possible. To suppress these in the Elegia and Stellia, Focal's designers have incorporated a mix of diffusion and absorption of the rear radiation within the capsule space. KH

FOCAL STELLIA



ABOVE: Appropriately lavish presentation with zip-up carrying case to match livery, accessory folder with manuals in separate leather cases

dry in tone while the general sound over the Stellias encouraged extended listening. Incidentally, and notwithstanding KH's reservations about comfort, the longer I wore these headphones the more comfortable they seemed.

The Beethoven is to my ears an affectionately detailed performance (*Gramophone* magazine thought otherwise), although Bartók's music is perhaps more Ozawa's field – his Decca 2004 live recording of *Music for Strings, Percussion and Celesta* with the Saito Kinen Orchestra [478 2358] making a better test piece.

Here the Stellias captured the cascades of celesta in the third movement well (Bartók's rather nightmarish *Adagio*) along with the antiphonal effects specified in the score. Yet there was the slightest thickening, the xylophone playing lacking the proper metallic timbre, and while this probably reflected the anomalies noted in KH's Lab Report [adjacent], it didn't stop me from listening on through to the *Concerto for Orchestra* on the same CD.

HIGH ON HENDRIX

The pungent start of *En Saga*, from a new Sibelius orchestral music cycle, with the Gothenburg Orchestra under the youthful Santtu-Matias Rouvali [44.1kHz/16-bit] gives way to soft upper string figures below the treading opening theme, and proved compellingly alive with the Stellias. This is a recording with wide dynamic range, but the outbursts of brass were accommodated without stress and soon I was swept completely into the drama of

Rouvali's reading, urged to raise the levels, which is always a positive sign with new equipment.

Taking a leaf from KK's book I also listened to some historic mono – but not for the 'lack of any concerns about spatiality'. On the contrary: played over my Quad ESL57s the wonderful Ivie Anderson's 'I Got It Bad...' from 1941, on the Duke Ellington album *In A Mellow Tone* [RCA LSA 3069], I was able to visualise where everyone was sitting. Did the Stellias replicate this? Pretty well I'd say. And what a seductive track this is! Every tiny vocal inflection in the singing registered beautifully.

I didn't think I had any Jimi Hendrix in my record collection, yet in a way I had. The Kronos Quartet recorded an arrangement of 'Purple Haze', Hendrix's 1967 hit, in a 1985 Nonesuch New York production [979 111-1]. It's delivered with affection and aplomb and the Stellias had me standing up and 'conducting' those slides and the steady rock beat. Hard to keep still really... ☹

HI-FI NEWS VERDICT

For the man about town, with his handmade tan boots and a deep trouser pocket, the matching Focal Stellias might be just the ticket. Everything the Elegias can do, the Stellias will do better – at a price. The sound balance is full and forward and swathes of detail can be heard that you may not have noticed before in your collection. If you prefer closed-back personal listening, these headphones set the benchmark.

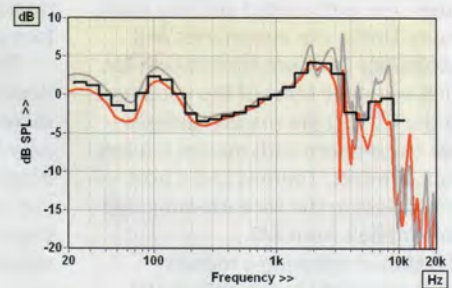
Sound Quality: 88%



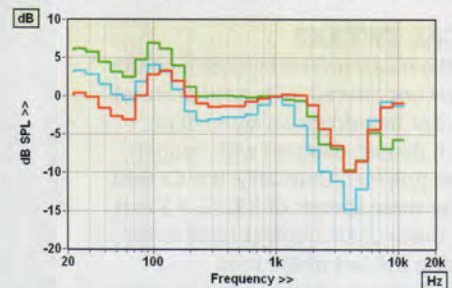
Focal's lowering of the Stellia's nominal impedance to 35ohm pays off here, as it does with the Elegia [*HFN* Mar '19]. The high voltage sensitivity of 119.6dB (re. 1V at 1kHz), averaged for the two capsules, accords well with the specified 106dB for 1mW input, which is equivalent to 120.6dB for 1V. Actually the Stellia's impedance varies quite widely, from a measured minimum of 29.8ohm to a maximum of 56.7ohm, which is sufficient to cause a 1.1dB change in frequency response with a headphone preamp that offers a source impedance of 10ohm (or 2.4dB driven from a 30ohm source impedance). So to hear the intended tonal balance, ensure that you partner the Stellia with a source having a low output impedance.

Uncorrected frequency responses, measured at the artificial ear's drum reference point, illustrate the Stellia's extended bass, but also an unusual unevenness around 100Hz and a lower peak around 3kHz than conventionally deemed necessary for a neutral tonal balance [see Graph 1, below]. In the corrected responses [Graph 2, below], these features translate into a shelved-up bass response in the diffuse-field correction [green trace] but a more neutral LF balance in the Harman correction [red trace]. Nevertheless both traces agree that there is a deep hole in perceived presence band output between 2kHz and 8kHz – a feature we see a lot in modern headphones.

The Stellia's extended bass response, which doesn't roll off significantly until below 20Hz, is critically dependent on a good seal of the earpads to the head. Repeating the response measurements with a large spectacles temple bar fitted to the artificial head and then simulated hair show that this seal is easily disrupted in normal use, with the result that 10dB in output can easily be lost below 150Hz. Measurement of acoustical crosstalk between the capsules confirms the subjective finding of some headband resonance, peaking at 120Hz. KH



ABOVE: The Stellia's unequalised responses (L/R, grey/red; averaged 3rd-octave, black) show a strong bass but some 'lumpiness' at 100Hz and loss at 3kHz



ABOVE: Third-octave freq. resp. (red = Harman corrected; cyan = FF corrected; green = DF corrected)

HI-FI NEWS SPECIFICATIONS

Sensitivity (SPL at 1kHz for 1Vrms input)	119.6dB
Impedance modulus min/max (20Hz-20kHz)	29.8ohm @ 2.27kHz 56.7ohm @ 7.3Hz
Capsule matching (40Hz-10kHz)	±7.4dB
LF extension (-6dB ref. 200Hz)	<20Hz
Distortion 100Hz/1kHz (for 90dB SPL)	0.1% / <0.1%
Weight (headset only)	428g