

XD-rated

Cambridge Audio has upped its game with a high-end, two-box amp

PRODUCT Cambridge Audio Azur 840E and 840W

TYPE Preamp and power amplifier

PRICE (840E) £800, (840W) £1,200

KEY FEATURES (840E) Size (WxHxD): 43x11.5x36.5cm
● Weight: 8.7kg ● Inputs (8) inc. 2x XLR balanced
● 1x RCA phono ● Display can be dimmed or switched off ● (840W) Size (WxHxD): 43x14.8x36.5cm
● Weight: 19.6kg ● Power output: 200 watts stereo, 500 watts mono ● Will operate in balanced mode

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The 840E and 840W amplifiers see Cambridge Audio topping off its successful Azur range of products with a high-powered and highly flexible pre/power combination. Traditionally, Azur products have

been at the budget end of things, but these amps represent something new and hit £2k.

As well as acting as a straightforward stereo power amplifier, the 840W can be used in either a bi-amped or bridged mono configuration. When bi-amping, one 840W of the pair powers each speaker so that its tweeter and woofer each has its own dedicated amplifier channel. Alternatively, the bridged mono mode allows two 840Ws to be used with each configured as a 500-watt monoblock. With the flick of a few switches and the repositioning of a few interconnects you could have four (or more) of these economical fire-breathers configured

so that you have 500 watts on tap for every individual drive unit.

There's no doubt that there's some very clever electronics lurking within the 840W. The amplifier uses Cambridge's second generation proprietary Class XD technology (see boxout opposite), along with a new output stage that has been carefully adjusted to integrate with this novel topology.

The power amplifier, though, doesn't have any monopoly on advanced technology. The 840E preamplifier boasts its own share of sophisticated circuitry. For example, rather than use commonly available, off-the-shelf op-amps for the critical low level gain stages, Cambridge

brewed audiophile modules, called Terrapins, which it designed with the sole aim of extracting the best audio performance from the amplifier (see boxout opposite).

The 840E uses a sophisticated resistor ladder and relay-based attenuator for volume and balance control. Although this provides 1dB incremental volume adjustments, we found that much of its range seemed wasted in our system: with Mute being at -95dB and our normal listening level being around -20dB, that's 75dB of attenuation that we were never going to use. Even at our late-night-listening level of -30dB that is still a whole bunch of resistors hanging around doing nothing. Each channel features an individual array of relays

“You could have four (or more) of these economical fire breathers so that you have 500 watts for every individual drive unit.”

and resistors to enhance the preamp's stereo separation and imaging performance.

All the information the user needs is presented through a customisable front panel display, which can be dimmed or switched off when not needed. The display, which is described as user-friendly – as is every display these days – actually is and is a joy to use. Inputs can be renamed with more informative names than 'Input 1' or 'Input 2'. On that subject, the 840E provides eight line-level connections, two of which can be balanced. The preamp offers a balanced output and the power amplifier has balanced input connections, so one can run the whole

shebang in balanced mode with the flick of a few tiny switches on the rear panels.

The preamplifier also incorporates RS-232 and multiroom connections to enable it to be used in custom installations: it will integrate with multiroom entertainment systems and touch-screen control panels. Naturally, it is fully equipped for use with Cambridge Audio's Incognito system.

To conclude this section on a practical note, do be careful if you need to lift these units: the power amplifier, in particular, is uncommonly weighty for its size. Both units have substantial chassis, fascia panels and, inside, beefy transformer and heat-sink assemblies.

SOUND QUALITY

Given that the 840W, in standard mode, delivers a very respectable 200W into an eight ohm speaker, we picked a model that, while not difficult to drive in the accepted sense, readily demonstrates its disapproval of any amplifier that cannot exert strict control over it. We connected a pair of MkII Neat Petites to the 840W with bi-wire Chord Company Epic cables. The main source was a Naim CDS CD player wired to the 840E with Chord Company Indigo interconnects, which we also used to connect the pre and power.

It was obvious from the outset that this combination required a good amount of running-in from new. The sound initially was thin and ethereal with a distinct shortage of presence and solidity in the upper bass: sure, there was upper bass present, but it sounded rather fey and half-hearted. As the amplifiers played in over the course of a day's Red Hot Chilli Peppers on repeat, the presentation gradually became more evenly balanced and naturally weighted. By day three, we felt the amps had been sufficiently run-in from new for some critical listening.

When thoroughly warmed-up the system demonstrates a very composed, civilised character that seems far better suited to some discs than it does to others. The politeness, for want of a better word, doesn't do justice to the B-52's generally up-beat *Good Stuff* album: tracks such as *Is That You Mo-Dean?* come across as a little too laid back rhythmically. The same is true of Rage Against The Machine's eponymous album, which, while it is difficult to fault in hi-fi terms, doesn't generate

TERRAPIN MODULES

“The 840E is a high-end preamplifier which uses Cambridge Audio's new proprietary Terrapin™ modules for unprecedented audio fidelity...,” proclaims Cambridge in its publicity material. But what exactly is a Terrapin™?

Rather than use common op-amps for the critical low level gain stages of the 840E (and 840W) Cambridge Audio decided, instead, to design its own very low-noise and distortion amplifier modules that would outperform the usual devices. (The name began life as an internal engineering nickname, due to the 10 pins, that stuck). Two modules exist: the TPA amplifier, which is configurable for any gain and the TPB buffer, which has fixed unity gain. Both modules are optimised for their respective roles and come housed in an identical small plug-in module with an integral heat-sink. Internally, they feature individual left and right channel amplifier circuits on opposite sides of a multi-layer PCB with shielding between the layers to provide maximum channel separation.

the excitement of which the songs are capable. For example, Zack De La Rocha's vocals sound as though he's mildly peeved rather than seething with anger. Similarly Brad Wilks' drumming doesn't display its usual violent attack: even though it is physically loud its impact doesn't force you back into your seat.

Conversely, Aimee Mann's *Whatever* displays appropriate urgency and bite, probably because of the – much gentler – guitar driven nature of the music. Even so, there seems some diminution of leading-edge information evident, which reveals itself as a softened attack on cymbals and tambourines. As the CD progresses, it begins to seem that the amplifiers fare better with sparser mixes, greatly preferring the simple guitar, bass and voice intro to *Stupid Thing* to the more dense arrangement of *Fifty Years After The Fair* with its vocal layering and keyboards. We have no reservations, though, about the way this system handles Mann's superb voice: it's pitch perfect, beautifully dynamically shaded, and packed full of expression.

As the 840s appear to favour recordings with a bit of space around the elements we try Nic Jones' *Canadee-I-O* from the album *Penguin Eggs*. This outwardly straightforward guitar and voice recording shows off these amplifiers to their best advantage. They create a realistic portrayal of both Jones' guitar and his voice: furthermore, they easily convey his characterful playing, which uses techniques not usually employed by folk musicians. The 840s expose these subtleties with alacrity while imbuing his steel-strung acoustic with a vibrant tonality and vivid dynamics. In fact, after a couple ▶

XD TECHNOLOGY

XD stands for Crossover Displacement, a technology that delivers pure Class A operation at low levels before sliding into an enhanced version of Class B at higher levels. This is not the same as regular Class AB, which generates inherently greater distortion than a pure Class B design at high levels.

Class XD feeds a controlled current into the amplifier output stage actively displacing the crossover point, so that the usual Class B crossover no longer occurs at zero volume – which Cambridge argues is the worst possible position in terms of distortion – but at a significant output level. The result, according to the company, is a smooth and linear transition between the two modes of operation. To enable this, the amplifier features an oversized toroidal transformer, incorporating a silicone-steel screen, which probably explains why the courier had the devil of a time getting the box to our front door.

Q&A

We spoke with Matthew Bramble, the technical director at Cambridge Audio, about the background to the 840E and W.



HFC: How did the 840E and 840W come to be?

MB: The 840W came out of our Class XD development programme. For quite some time we've been working on this technology, refining various aspects and trying new ideas. The 840W is, in effect, a showcase for this development and uses Cambridge Audio's second generation Class XD circuits – our best yet. The 840E came about as we required a preamp of sufficient quality to match the 840W. Fortunately, we already had the Terrapin modules in development and the project all came together nicely.

Is there a particular type of customer to whom the 840 combination aims to appeal?

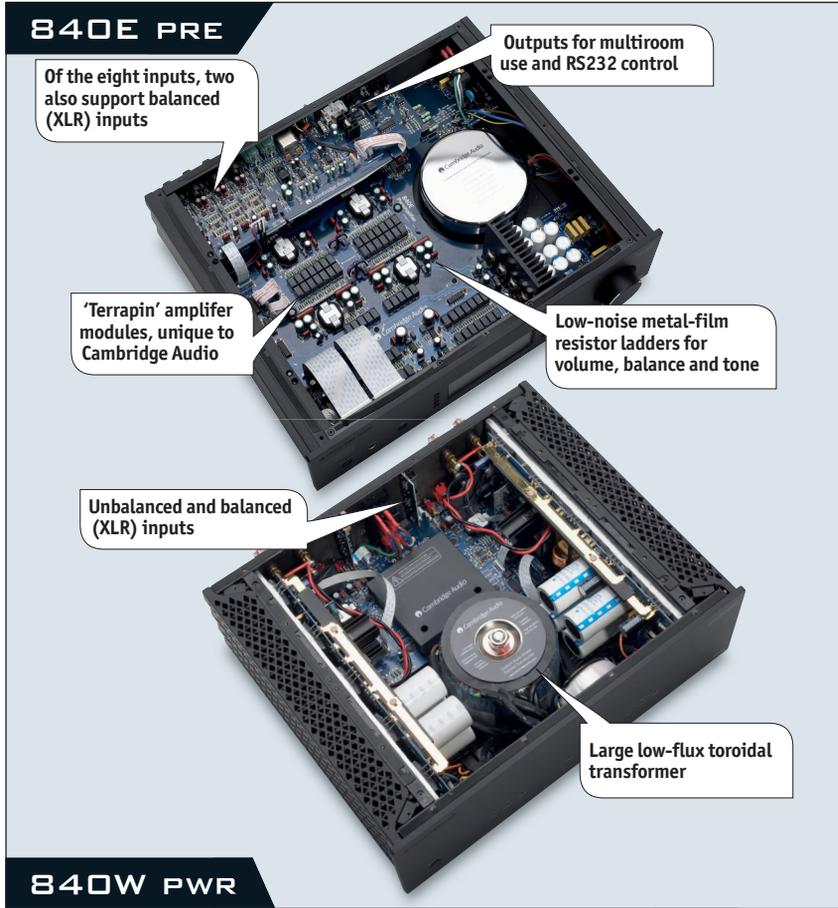
While there's no 'typical customer', we're aiming this package at what we might call the 'budget audiophile'; someone who's quite sophisticated in their taste and knowledge, but perhaps without the budget for a really expensive, big-name box of tricks. There are also a lot of savvy customers who are looking for something esoteric, but at a level before the law of diminishing returns comes into play.

Can we expect further higher-end Cambridge equipment to accompany the amplifiers: a £1,000 CD player or suchlike?

Even though we feel the step-up from an 840A V2 to an 840E/W setup is quite striking, we believe the 840C makes for an excellent front-end even at this level; hence all wear the 8 series nomenclature. That's not to say we won't ever develop an even more high-end CD player, but there are no current plans to do so.

If you had to recommend ideal speakers from West Coast reggae to classical, what would they be?

The 840W is able to drive most speakers with ease – even difficult loads – so it's largely down to personal preference. Our only advice would be that as the E/W combination is very neutrally balanced without any deliberate artifice – and doesn't tend to colour a system as much as some other products – it will react nicely to some careful fine tuning by choice of cables, interconnects and, of course, the chosen loudspeaker type.



more tracks it dawns upon us that we are actually contentedly listening and tapping our feet to traditional folk music: this Cambridge duo clearly has a rare talent!

Playing Hugh Masekela's rather busier *Stimela* from the CD *Hope*, it strikes us that the 840 pairing might appreciate better recordings and not suffer those that are less well put together. It does not simply favour uncomplicated mixes over more intricate arrangements, but it appears to relish the finer examples of the recordist's art. The Masekela disc demonstrates that the amplifier does not sound over-polite or soft on drum and cymbal strikes as it had with the Aimee Mann disc. Nor does it require a percussive or stringed instrument to produce leading edge information as Masekela's assertive horn stabs

and vocalising demonstrate on this faultlessly produced live recording.

The new 840E/W represent a new era for Cambridge Audio in terms of price and performance. Owners of the HFC Gold Award winning 840A v2 (£750) will find the duo a noticeable step-up. Audiophiles who aspire to the high end but only have modest spending power will welcome the performance per pound the duo offers, too.

Although we found the amps preferred well recorded discs, we'd encourage a lengthy audition with a wide range of music to see just what the 840E and 840W can do. **HFC**

Malcolm Steward

VERDICT	
SOUND ★★★★★	PRO Even when being worked hard the amplifier's sound retains its composure and always appears secure and in control. Always delivers clarity and solid imagery.
FEATURES ★★★★★	
BUILD ★★★★★	CON Might sound a touch too reserved for some listeners, and definitely seems to prefer recordings that are better produced and engineered.
VALUE ★★★★★	
CONCLUSION These high-end amps from Cambridge are well built, well featured and offer great value for money. Always composed and controlled, even at high volumes, there's plenty of clarity on offer here. They do prefer good-quality discs, however.	
HI-FI CHOICE OVERALL SCORE ★★★★★	