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# Audio Research

## DS450

*The 450 watts of the US valve stalwart's first Class D power amp prove addictive*

£7,555

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**G**iven its penchant for producing behemoths, Audio Research's launching of a Class D power amp is more than slightly surprising. While Pure Class A still sets a benchmark when the highest quality results take precedence, there are many practical drawbacks – excessive heat, large size, high price, massive power consumption – need one go on? The DS450, on the other hand, features an analogue-based Class D pulse-width modulated switching output stage. High output power, low-running temperature, low-power consumption and excellent sound quality are promised. But can such clever technology really challenge Class A's sonic supremacy?

While the DS450 is not massively heavy, it is fairly big and ungainly, so the handles are useful. The amp is quite solidly made, but we're not talking heavy 'battleship build' here. The finish is extremely good and the sculpted Audio Research logo looks cool and classy. The internal layout is very neat and the Cardas speaker binding posts are easy to use and give clean and tight connections.

ARC has given the amp a generous power supply with a large power transformer and something like 1239 Joules of energy storage – twice that of the DSi200! Hence the DS450 weighs in around 25kg (55lbs) and is somewhat front-heavy, because the power transformer is forwardly placed.

Manufactured, built, and tested in ARC's Plymouth Minnesota factory – the DS450 is not assembled from parts fabricated elsewhere, or built in the Far East. Many components are custom-made and/or designed in-house, including power transformers, filter chokes and the Litz wiring used internally.

Like most power amps, the DS450 is fairly simple. You've a choice of unbalanced/balanced inputs – via RCA/XLR sockets – and a single set of loudspeaker output terminals using Cardas binding posts. Add a mains on/off switch, plus sockets for remote on/off and that's about it.

Audio Research first used pulse-width modulation technology in its DSi200 integrated. But the DS450 ups the stakes, employing twice as many 500-watt MOSFET power devices on each side. As a result, the DS450 delivers around 450 watts per channel into eight ohms.

Many previous ARC power amps have been massively big and heavy, producing huge quantities of heat, while drawing sizeable amounts of current from the mains supply. Indeed, the company's reputation was built on no-compromise designs that sacrificed everything for sound quality. So the eco-friendly DS450 is a totally new departure. It's not just that it's solid-state, rather than tube; Class D pulse-width modulation technology is the real talking point. Given the reputation of ARC's Class A tube designs, the DS450 has a lot to live up to.

### SOUND QUALITY

The best sound is produced via the balanced inputs. To utilise these you'll need a preamp with balanced outputs. Audio Research's LS26 offers this option. With balanced you can look forward to a more spacious sound, with increased dynamics. So, investing in a set of XLR balanced cables is mandatory.

Physically, this power amplifier is almost totally silent: there's no transformer buzz and – obviously – no noise from cooling fans. The amp is quiet electrically, so those with ultra-efficient speakers should hear no residual hiss or hum – even with an ear to the drive units.

The DS450 replaced a Musical Fidelity kW-750 power amp driving Impulse H1 loudspeakers. Our preamp was a Musical Fidelity Primo (pure Class A tube) with a Musical Fidelity AMS tube CD player. The kW-750 is a powerful (750 watt) Class A/B bridged design with unbalanced inputs.

The DS450 delivers a clear, clean, open sound with tight, firm bass and crisp definition. Used with unbalanced cables (the MF does not offer balanced) the amp initially sounds very slightly 'smaller' in scale, compared with the kW-750, even after volume levels are increased.

However, after replacing the MF Primo with an Audio Research LS26 preamp (£5,499) and using balanced interconnect cables, the DS450 sounds bigger and easily

**“Those with an open mind will find much that pleases the ear”**

matches the big MF for scale and dynamics. Sonically, the LS26 and DS450 seem to go very well together – a very symbiotic partnership.

Although the LS26 is a hybrid tube/transistor design, it has a classic tube sound – open, rich, full, and very holographic, with excellent detail and dynamics. Paradoxically, the all-tube Primo produces a sharper more lucid sound – crisp, tactile and open – and to its credit the DS450 mirrors this accurately.

Partnered by the LS26, the DS450 sounds fuller, smoother, and surprisingly tube-like. The balanced interconnects definitely create a bigger/deeper soundstage, enhancing size, scale and dynamics – qualities one associates with Audio Research components. Bass has impressive power and weight.

While some Class A/tube diehards may not take the DS450 seriously because of its Class D output stage, those with an open mind will find much that pleases the ear. If you always fancied Audio Research, but were put off by things like size, weight, heat, and price, the DS450 is the answer to a prayer.

Jimmy Hughes

