

# Audio Research Reference 80S stereo power amplifier

by Alan Sircom

It's hard to think of a more iconic modern tube electronics company than Audio Research. Yes, there are rivals that make some excellent amplification, but few that make such a complete audio electronics package and have so immediately identifiable appearance as Minnesota's Audio Research Corporation.

The brand's models effectively differentiate between the lower cost Foundation range and the more up-market Reference line. The latter is larger, as it is designed to accommodate a wider range of up-scale performance parameters, but the new jumping off point for ARC's top-dollar line is the Reference 80S stereo power amplifier. This builds on the (circuit and industrial) design of the hugely popular Reference 160 S/160 M power amplifiers, effectively lowering the power output to make a more flexible and affordable Reference-class power amp.

This means you get a power amplifier that uses an almost identical arrangement of two 6H30 double-triodes in the gain stage with multiple pairs of KT150 power valves/tubes in either push-pull or triode mode with auto-biasing, adjustable fan speed, those excellent look-through 'Ghost Meters' and all the trimmings. But by using just a single pair of KT150s per side, the Reference 80S is an amplifier that went on a bit of a power diet, as it puts out

70W per channel into an eight-ohm load. This also means it is ever so slightly smaller, some 17kg lighter and several thousand cheaper than its 140W per channel Reference 160S counterpart, which uses two pairs of KT150 tubes per channel, and the Reference 140M, which also uses two pairs of KT150 tubes per channel but separates them into individual mono cases. This is clearly something of a groove that Audio Research is enjoying!

This might seem like a lot of replication at first, but in fact it's a fine way of making a 'good/better/best' set of power amplifiers, without undermining any of them in the process. The basic performance of all three is effectively identical, defined by that clever circuit, just you get more power for more demanding loudspeakers or bigger rooms as you go up the line. ▶



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► In fact, the only real downside in this comes down to reviewers trying to fill space on the page and ending up going over the same descriptions about the amp and its circuit time and time again. On the other hand, if there really is ‘nothing to see here’ it’s because the ground covered by the Reference 160 S and Reference 160 M has been so comprehensively mapped out, and that the Reference 80S continues that process. In fact, it continues the process so successfully and seamlessly that the biggest disconnects between this new stereo amp and the bigger mono and stereo models is the amount of heat each one puts out (unsurprisingly, given fewer power tubes per channel, the Reference 80S is the coolest, but not by much) and absence of a space between ‘80’ and ‘S’ in the name. No, really, that’s about it... the apple isn’t falling far from the tree here.

This ‘nothing to see here’ is a surprisingly hard task to nail, because using the same tubes in a scalable configuration is no guarantee of consistency. Somewhere along the line, one of them sounds different... and it’s often the smaller of the group, which ends up sounding bass light thanks to less transformer ‘iron’. On the other hand, scaling a circuit up and down implies different loudspeaker partners, and an amplifier intended to ‘see’ a pair of mid-sized loudspeakers in a typical small(ish) listening space has a very different sonic ‘fist’ to one that is expected to be used with full-range flagship loudspeakers in a room that could double up as an aircraft hangar. Getting it right is a balancing act that requires some very reliable ears working for the company.

For Audio Research, those ears sit behind the very large beard of Warren Gehl, Design Engineer and Aural Evaluator for Audio Research. Let’s face it,

anyone who has the words ‘Aural Evaluator’ baked into their job title is going to know how to voice an amplifier, but Warren takes this to the extreme. He’s the kind of listener those of us who get paid to listen take seriously. The real deal, and the reason why there is such consistency of sound between these three power amplifiers.

The difficulty for a reviewer who has looked at all three products is ensuring you don’t just unconsciously plagiarise yourself (because if the amps are very consistent, your words should be consistent too, and you might end up using the same descriptions) but you also don’t want to check those prior reviews in case they influence your writing.

The Reference 80S is keenly dynamic in use, both in micro and macrodynamics. If you play a large-scale piece of music [Tennstedt tearing into Mahler’s Symphony 2 ‘Resurrection’, LPO], it manages to cope with both the huge dynamic swings in this masterpiece, and the subtle cues that show this to be an orchestra of musicians playing together. ►

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► This good dynamic range is partnered with a fine sense of detail across the board from the deepest bass to the highest treble. In fact, that clean, extended treble is a bit of a key point to the Reference 80S sound; play something like ‘Because He Was a Bonny Lad’ by The Unthanks [*Here’s the Tender Coming*, Rabble Rouser]. The tight harmony of the two close-miked vocalists is extended and shows up any potential granularity in the mid and treble of an amplifier. Here, their voices are sonorous and clean right into the highest ranges and when the rest of the folk instruments kick in, there is clear sonic and spatial delineation.

Beyond this, however, there’s a sense of rhythmic ‘bounce’ to the recording that is often lost in all the detail (it’s why it was a popular demo track of Naim Audio a few years ago). What the Reference 80S shows, however, is that ‘pace’ need not be mutually exclusive with ‘detail’ or ‘dynamics range’. If you want an amplifier to deliver all the filigree soundstaging and inner detail of a recording, this is it... but the same applies if you just want to kick back and play some rock and have some fun.

Where the Reference 80S ‘shows its limitations’ is when trying to push it beyond its very wide comfort zone. It’s impressively loud and dynamic... until you hear what 140W can do instead of 70W, all other things being equal. The Reference 80S is remarkably good at not running out of puff, but once again compared to the sheer headroom of the Reference 160 S and especially 160 M, it’s clear there’s even more to offer. And yet, if the Reference 80S is all you need for room size or loudspeakers, you’ll probably never notice where it runs out of steam... because in all likelihood, it won’t run out of steam. Ever.

OK, despite claims to the contrary, I’m going to cop to some ‘cheating’ of sorts. After I collated my notes on the Reference 80S, I went looking at both my reviews of its two bigger brothers, and then looked to other reviewers work on all three amps. In truth, there’s some real consistency in all these words, as if the smaller, medium, and larger models all have the same tonal characteristics (or at least, the same tonal characteristics relative to speaker and room size considerations). We’re all barking up the same dog (or something) here... and again I’m going to point to Warren Gehl’s adroit listening skills fine tuning these amplifiers to give them such consistency.

That consistency is the joy of this amplifier. If you have a yearning for Big Boy Audio Research, but don’t want or need the additional power and the increased size, space, heat and price tag that top-end amplification requires, the Reference 80S is perfect. Making a bigger amp smaller is often a path to being disgruntled, or at least puts you some way from being ‘gruntled’. This is the first step on the Audio Research Reference power amplifier ladder, and I can’t help but feel that while it is for many the only step they’ll ever need to take, for others the excellent Reference 80S will be the first step into a world of the highest in high-end audio. +

## TECHNICAL SPECIFICATIONS

**Power output:** 70 watts continuous from 20Hz to 20kHz

**Tubes Required:** 2 matched pair KT150 (Power output V1-V4); 2 6H30 (Gain stage V5, V6)

**THD+N (@1kHz):** typically 1% at 140 watts (33 watts in Triode mode) per channel, below 0.04% at 1 watt (Note that actual power output is dependent upon both line voltage and “condition” i.e.: if power line has high distortion, maximum power will be affected adversely, although from a listening standpoint this is not critical)

**Power Bandwidth (-3dB points):** 7Hz to 68kHz

**Frequency Response:** 0.7Hz-94kHz (-3dB points at 1W)

**Input Sensitivity:** 1.4V RMS Balanced for rated output. (25.5 dB gain into 8 ohms); 0.7V RMS SE for rated output

**Input Impedance:** 300K ohms Balanced, 75K ohms Single Ended

**Output Polarity:** Non-inverting  
**Balanced input pin 2+ (IEC-268)**

**Output Taps:** 16Ω, 8Ω, 4Ω

**Output regulation:** Approximately 1.0dB 16 Ohm Load to Open Circuit  
**(Damping factor approximately 8)**

**Overall negative feedback:** 15dB

**Slew Rate:** 10 volts/microsecond

**Rise Time:** 4.0 microseconds

**Dimensions (W×H×D):** 48.3 × 26 × 47cm

**Weight:** 28.2kg

**Price:** £14,998

**Manufacturer:** Audio Research  
**URL:** [audioresearch.com](http://audioresearch.com)

**UK Distributor:** Absolute Sounds  
**URL:** [absolutesounds.com](http://absolutesounds.com)

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