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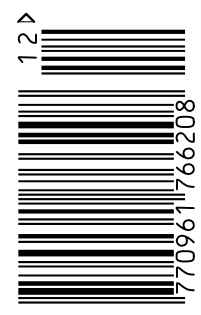


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**EVO 400**  
valve amplifier

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# Luna Power

Prima Luna's EVO 400 valve amplifier offers big power. Noel Keywood comes away impressed.



**A**h, the path to power: I reviewed the 40 Watt Evolution 300 valve amplifier in our December 2019 issue and here is its bigger brother for those who want more power – the Evolution series EVO 400 with no less than 70 Watts available on each channel, price £4999.

Bizarrely, I said in my column last month that you don't need high power to either go loud or sound good – and PrimaLuna repeat the very same sentiment in their literature for this amplifier. How to explain?

I've been pushed in the past by requests for high power to produce a 100 Watt World Audio Design power valve amplifier and know how power attracts. If you have a big room, insensitive loudspeakers or a desire to hit 1970s Rock Stadium levels in your home to hear Led Zeppelin as they blew you away long ago – at a concert you went to in your inglorious youth! – the Evo 400 may well be the perfect choice.

What you get with the 400 is double the 300: instead of four EL34 power valves there are eight – it's as simple as that. Correspondingly, the mains transformer and output transformers need to be beefed up so weight increases, the 400 coming in at a substantial 31kg (68.2lbs). It took two of us to handle this amplifier as a result. Yet

dimensionally, little has changed, PrimaLuna shoe-horning

in the new bits onto a chassis that's relatively compact, measuring 386mm (15.2in) wide, 404mm (15.9in) deep and 206mm (8.1in) high. It will fit a standard 19in wide (483mm) rack.

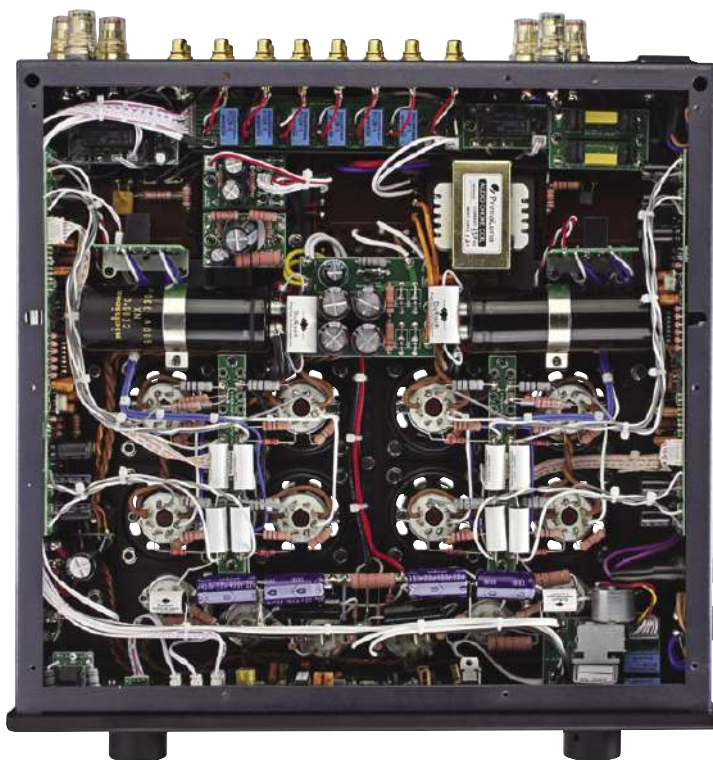
The EVO 400 is an amplifier in simple form. There are no digital inputs, but there is a moving magnet (MM) transistor phono stage slung underneath, as with the 300. PrimaLuna say that at this level it's better to buy good outboard digital sources and phono stages – and I would not disagree. Especially in a valve amplifier that is a hostile environment for low voltage transistors. There are five Aux line inputs via phono sockets, a Subwoofer output, a Tape output and a Home Theatre output that bypasses the volume control – but no balanced XLR inputs.

Loudspeaker outputs cater for 8 Ohm and 4 Ohm types in traditional fashion; nowadays most loudspeakers are rated as 6 Ohms and come with 4 Ohm bass units so technically 4 Ohm is the best match, but some feel 8 Ohm gives best sound – so best to experiment.

There's a remote control for volume and input switching, mute and the Triode/Ultralinear option, where Ultralinear gives rated power output and Triode mode gives what is



"And – oh! – what a glorious sound hit me. It's always great to hear a finely tuned valve amplifier "



**Complex interior, part hard wired, part circuit board. Visible are large black power supply smoothing capacitors (centre), a mini standby transformer (top right) and motorised Alps volume control (bottom right).**

often felt best sound quality, but with reduced power quoted as 38 Watts per channel. Volume is altered by an Alps Blue Velvet motorised potentiometer that rotates in ghostly fashion under remote control – a tried and trusted solution. There is also power on/off on a left side-mounted rocker switch. Awkwardly, to load the remote with batteries (two AAA) two rubber bands must be removed and four small Philips head screws undone, but I guess most dealers will do this.

PrimaLuna use their own adaptive auto-bias circuitry that allows the amplifier to use a range of output valve types, without need for manual bias adjustment. They quote a



**At right lie rocker switches to change bias and switch off output for headphone listening.**

wide range of types from the humble but sweet sounding 6L6, 6L6GC, 7581A, EL34, EL37, 6550, KT66, KT77, KT88, KT90, KT120 and finally KT150 that they call “monstrous”.

The EL34 is their preferred valve, fitted as standard, and it does give a lovely open sound with – as they say – airy treble. The EL34 is also inexpensive at £20 apiece (lot of variation here). I prefer the KT88 for a more solid sound, or the “monstrous” KT150 that is supremely smooth and well worth hearing (the KT90 and 120 are best avoided in my experience, whilst the 6550 is best described as ‘functional’).

Whatever, the EVO 400’s automatic bias circuits make all available for use in this amplifier (and I presume the heater supply can handle eight KT150s). Better, if a valve goes out of line, or even ‘pop’, a warning LED comes on and the output circuit goes into protection.

PrimaLuna design their mains and output transformers, as you must with valve amps, the output transformers in particular being sophisticated and difficult to build items. They are also the key to good sound quality. But fragile and in need of protection should a valve catastrophically fail – so good to see protection in this amplifier.

Internally, the EVO 400 is hard

wired and fitted with specialist components such as Takman resistors. Build quality is – as it has to be – heavy duty to carry the weight of the transformers. A protective valve cover guards against children or inquisitive cats getting burnt but is easily pulled off to put the full complement of valves on display. The standard of finish is high, all controls working smoothly.

## SOUND QUALITY

I connected the EVO 400 to our Martin Logan ESL-X hybrid electrostatic loudspeakers using Chord Company Signature Reference shielded cables. Digital sources were, alternately, an Oppo BDP-205D Universal player, and a Chord Electronics Dave DAC fed by the Oppo through a QED Quartz glass optical cable.

And – oh! – what a glorious sound hit me. It’s always great to hear a finely tuned valve amplifier with high quality components, wiring and all that, because you are immediately faced with stunning clarity and wide open sound staging – and that is



**The EL34 power output valves are arranged in push-pull pairs to achieve 80 Watts per channel.**

what I heard with the EVO 400. So generous and spacious the sound took up big presence in front of me and there was nothing to not like (well – perhaps – see later).

I fell in love immediately, being able to sit back and hear the glories of valve sound expertly wrought. Jan Ackerman singing Am I Losing You (CD) occupied a sound stage suffused with space and light, with breathtaking insight sweetly wrought. The spaciousness of a



**Large, gold plated loudspeaker sockets cater for 8 Ohm and 4 Ohm loudspeakers. A long array of solid, isolated gold plated RCA phono sockets carry inputs and outputs. An MM phono stage option is slung underneath.**

valve amplifier comes from its small component count, plus quality of components used – and here the EVO 400 immediately set out its stall, with dramatic ability. Better, it was sublimely sweet and easy on the ear in best analogue fashion – a flowing and smooth sound, like liquid water. This was using Triode mode, slightly easier and purer than Ultralinear.

I got to hear the bass power available with Josefine Cronholm's In Your Wild Garden (CD) where opening plucked lows from acoustic bass set the room going around me. Bass comes over as strong, well controlled and with subsonic threat;

there were some deep rumblings at times. But it was Josefine Cronholm's vocal that moved forward to become sensually close that I would say defined this amplifier's sheer thermionic ability. Transistors cannot do this.

As the tracks rolled by I loved listening to this amplifier, one streets ahead of most else. But it does have, as delivered with EL34s, the bright, open and airy sound of the EL34. At times I found the patina on the bright and vivid side shall I say: there are smoother if darker sounding valves than this one. KT88s of good provenance manage better and

KT150s carry more thunder but are less aggressive. So as delivered the EVO 400 is spectacular but likely capable of better – in my own valve-head opinion! Nigel Kennedy fiddling on his Stradivarius playing Vivaldi's Spring was brightly lit, that's for sure, but the liquid clarity of the 400 made a feast of his skills.

My valve talk should not detract from the basic fact that the EVO 400 offers sound quality that I revelled in: this is a proper valve amplifier. PrimaLuna like the fast and deeply detailed presentation of the EL34, its sense of airiness and space. I'd stick in a good set of KT88s in my sonic dreams but – hey ho – this is an endless thermionic debate. At least, with valve amplifiers as good as this, able to accept a wide range of valve types, the debate can be had.

**CONCLUSION**

The EVO 400 is a masterclass of valve sound finely wrought. It sets up a massively open and spacious sound stage, has liquid clarity and strong deep bass. PrimaLuna have made it resilient of valve failure with their protection circuits, and also flexible enough to accept a wide range of power valve types. With remote control and a simple MM phono stage it is an analogue power house worth hearing. A step upon from the transistor idiom.



**A rocker style power switch sits at left, along with fuses.**

**MEASURED PERFORMANCE**

Under test the EVO 400 delivered 80 Watts into 8 Ohms (1% thd) in Ultralinear mode and 40 Watts in Triode mode. The same power was delivered into a 4 Ohm load from the 4 Ohm output taps, meaning the 4 Ohm tap is efficiently coupled to deliver same power. Changing bias did not affect these figures.

As with the EVO 300, frequency response in Ultra-linear mode exhibited a +4dB bass peak at 6Hz due to feedback conditions; a reduction in open loop bandwidth usually cures this problem, something PrimaLuna should consider. Triode mode reduces the peak to a more acceptable +2dB, likely due to lower feedback. It also reduces high end extension from 44kHz (-1dB) to 34kHz, again a result of lower feedback. As I said with the 300, whichever mode is chosen the amplifier will appear to have strong low bass, especially with LP where warp signals peak at 5Hz.

Distortion in the midband measured a low 0.03% at 1 Watt and 0.2% just below full output. Distortion at high frequencies (10kHz) was low as well,

around 0.14% at 1 Watt and 1% at full output. Bass distortion was very low at 0.14% at 40Hz, 1 Watt, rising to 0.3% 12 Watts with full 80 Watts available at a 1% upper limit. This is a very clean bass performance.

Output impedance measured 2.3Ω, giving a damping factor of 3.4 in Ultralinear mode. Surprisingly, figures were a tad better in Triode mode at 2Ω and 3.8. Both are 'poorer' figures than that of transistor amplifiers, but really this is dependent upon loudspeaker acoustic damping.

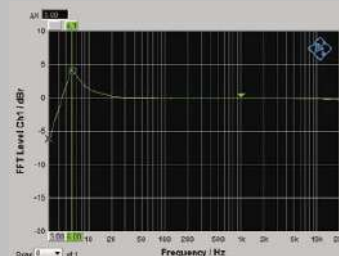
Noise measured a low -96dB, hum being all but absent.

The EVO 400 has low distortion and plenty enough power. Bandwidth is wide but the bass peak needs taming for LP use. **NK**

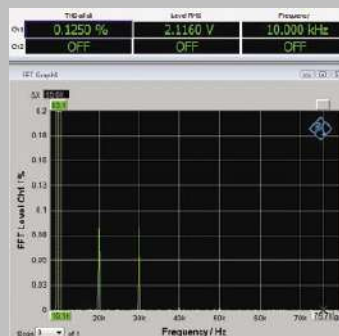
<b>Power (8 Ohms)</b>	<b>80 Watts</b>
<b>Frequency response (-1dB)</b>	<b>15Hz-44kHz</b>
<b>Separation</b>	<b>69dB</b>
<b>Noise (IEC A wtd)</b>	<b>-96dB</b>
<b>Distortion (10kHz, 1W, 4Ω)</b>	<b>0.14%</b>

<b>Sensitivity</b>	<b>0.37V</b>
<b>Damping factor</b>	<b>3.4</b>

**FREQUENCY RESPONSE**



**DISTORTION**



**PRIMALUNA EVOLUTION 400 £4999**



**OUTSTANDING - amongst the best.**

**VERDICT**  
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