

Luscious Lux

Luxman's new valve-based EQ-500 phono stage is a purist design aimed at bringing the best out of your vinyl. Noel Keywood explains all.

The Luxman EQ-500 phono stage I am reviewing here costs £4495 and, looking inside, I almost fell backward in disbelief: it is one of the most complex and purist designs I recall seeing, brimming full of parts, as our internal shot shows.

Luxman say it is "a vacuum tube design for all stages" and looking inside I could see this is the case. It is a veritable work of art internally, extremely complicated and purist in its design approach.

The EQ-500 is big and heavy: it weighs 12.5kg when unpacked. A lot of this lies in the sheet steel cover and chassis. Thick mild steel provides good electromagnetic screening to prevent hum but Luxman have additionally used a screened internal chamber for the valve amplifying stages, with a cover of copper-plated steel. Copper plating lessens magnetically induced eddy currents and that, it has been plausibly claimed, improves the sound by not inducing

magnetic hysteresis distortions back into the circuitry.

Measuring 397mm deep, the unit needs a shelf at least 16in deep – and make that 18in when a rear protruding XLR connector is used. That's more than most turntables need. With a width of 440mm (17in) it will fit a 19in rack and the low height of 92mm means it occupies little vertical space. Having an internal mains power supply, itself well-screened, it will be usable below most turntables without inducing hum into a sensitive pick-up cartridge just above. This was the case when placed in a rack directly below our turntable (details later); our system was hum free.

The small illuminated meters give reassurance that the unit is not being overloaded due to the use of incorrect settings, overload being marked as a red sector at the top end of the scale. A meter sensitivity lever switch that can be flipped upward to High to enable music dynamics to be better seen.

Luxman offer front panel rotary selector buttons that provide a wide range of input options that must be manually selected to suit the turntable used. For MM cartridges input impedance is 47k nominal as usual, with 30k and 100k minimum and maximum (rarely needed) options. Input capacitance can set from 0pF to 300pF to tweak treble a little, the high value often being a good choice at taking the sting out of high treble whilst boosting midrange presence.

Then there are Moving Coil (MC) cartridge options: MC High (output) and MC Low. High output types have more coil turns and need a higher load, commonly 400 Ohms and this is the value quoted on the website, whilst the handbook says 40 Ohms – unusually low (see Measured Performance for more on this).

The MC Low option is set very low, to 2.5 Ohms quoted (website and handbook), where 100 Ohms is usual and 10 Ohms an absolute minimum. This is so unusual I had to



measure it to be sure there wasn't an error. It is however, technically justifiable in that for best power transfer through a transformer the load must match the generator, this giving the best signal to noise ratio, since MC cartridges typically have 1-2 Ohm generators. Luxman have used permalloy input transformers on both MC High and Low – four in all – to get optimum performance on both inputs.

Anyway, the final outcome is a massively low noise (hiss) floor, 6dB or lower than any other phono stage; with volume right up there is no hiss. The EQ-500 is then the go-to preamp if you intend to use a really esoteric, low output MC cartridge. It has massive dynamic range. However, I cannot understand why, with input transformers, Luxman did not provide balanced inputs as an option.

There is also a Phase Invert switch that some insist offers obvious improvement with 'out of phase' LPs, a Mono/Stereo selector that will reduce noise when playing mono LPs with a stereo cartridge, plus Low Cut and High Cut filters. The Low Cut is a warp filter to eliminate loudspeaker cone flap when playing warped records and the High Cut drastically cuts treble to suppress surface noise, ticks and pops. There is also an Articulation demagnetiser.

The rear panel carries balanced XLR socketed outputs, fed from expensive output transformers – not cheap chips. There are two pairs of phono socket outputs too.

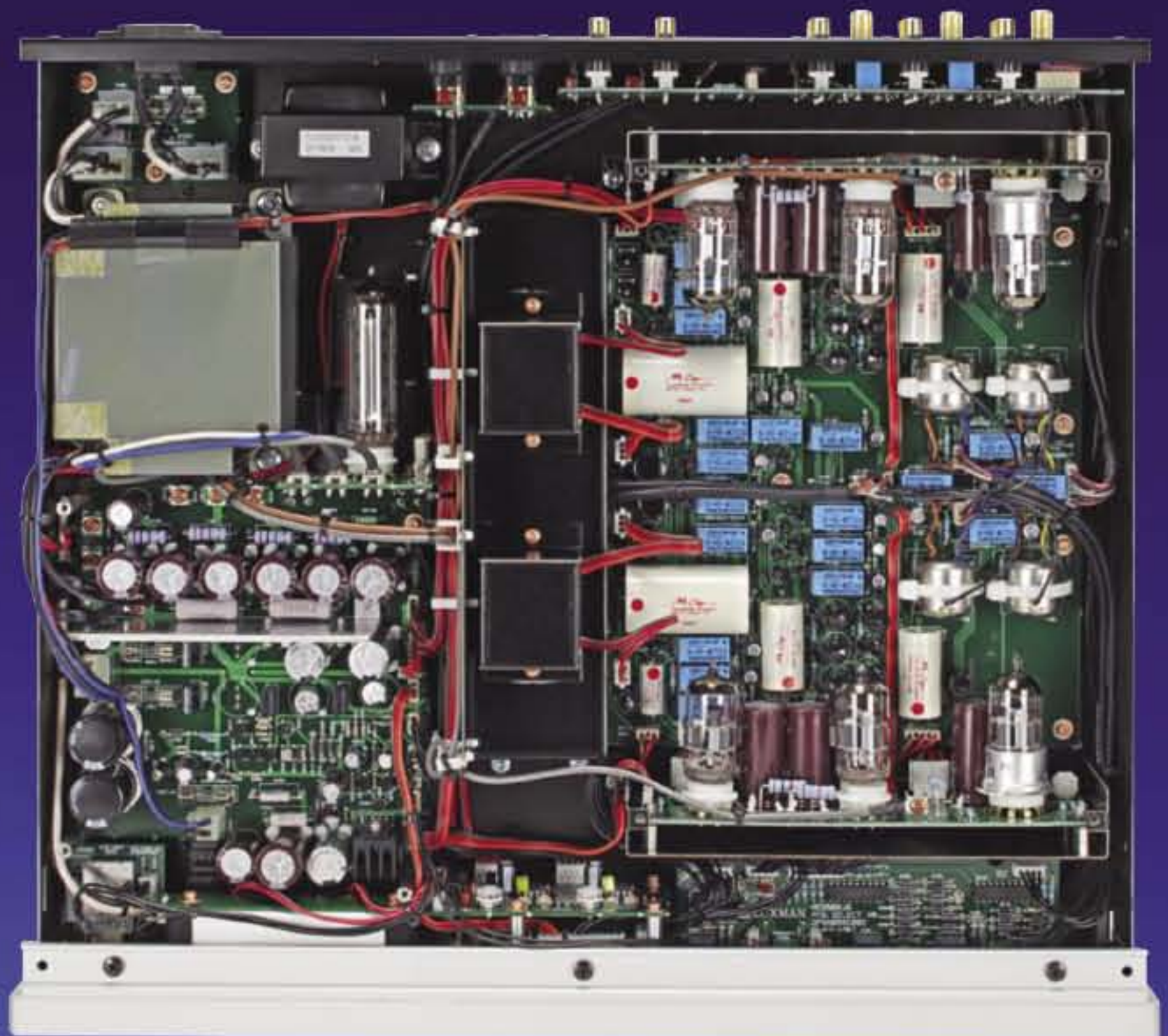
All three inputs are via phono sockets, with gold-plated earth terminals. Three turntables can be permanently connected and switched between.

A valve-rectified power supply, using an EZ81 and a choke, is fitted. Amplifying valves are four ECC83 and two ECC82 double triodes.

The EQ-500 is superbly finished in classic 1970s Japanese style but is built to much higher standards of component quality - both possible and expected today. Switch on was accompanied by a firm click of the push button power switch and a mute circuit keeps switch-on silent through the hi-fi.

SOUND QUALITY

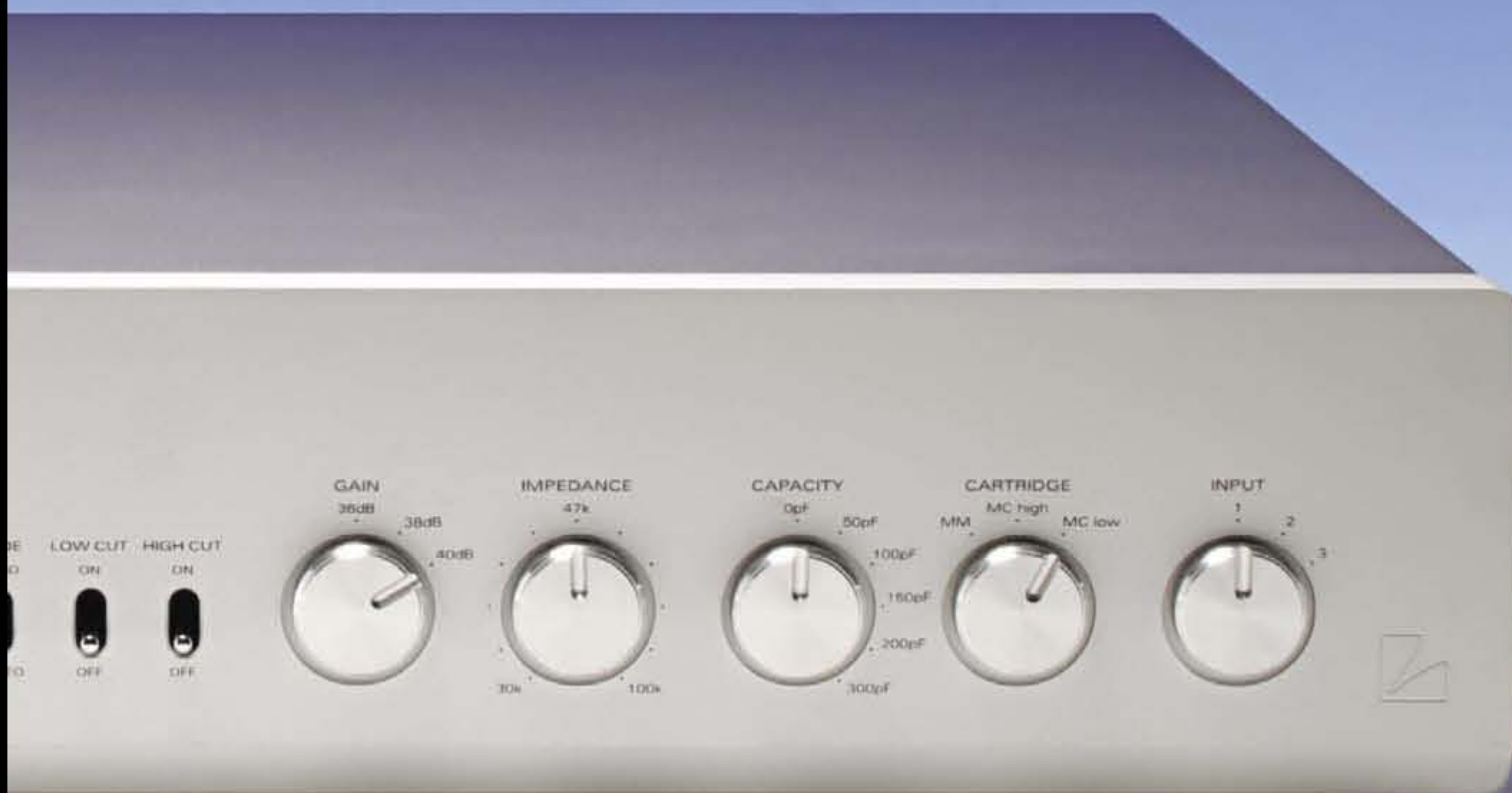
As I use valve phono stages out of choice, some distinctive properties of the EQ-500 made themselves obvious. It has a relatively dry and specific sound tonally, rather than being warm or lush. Violins in 'Mozart's Symphony No35' stood forward on the soundstage. There was a rich sense of detail within the strings, with instruments well separated from each other. The performance was expansive, stretching in a wide and densely-filled arc between the XStat panels of our Martin Logan ESL-X hybrid electrostatic loudspeakers. The Luxman doesn't have quite the sense

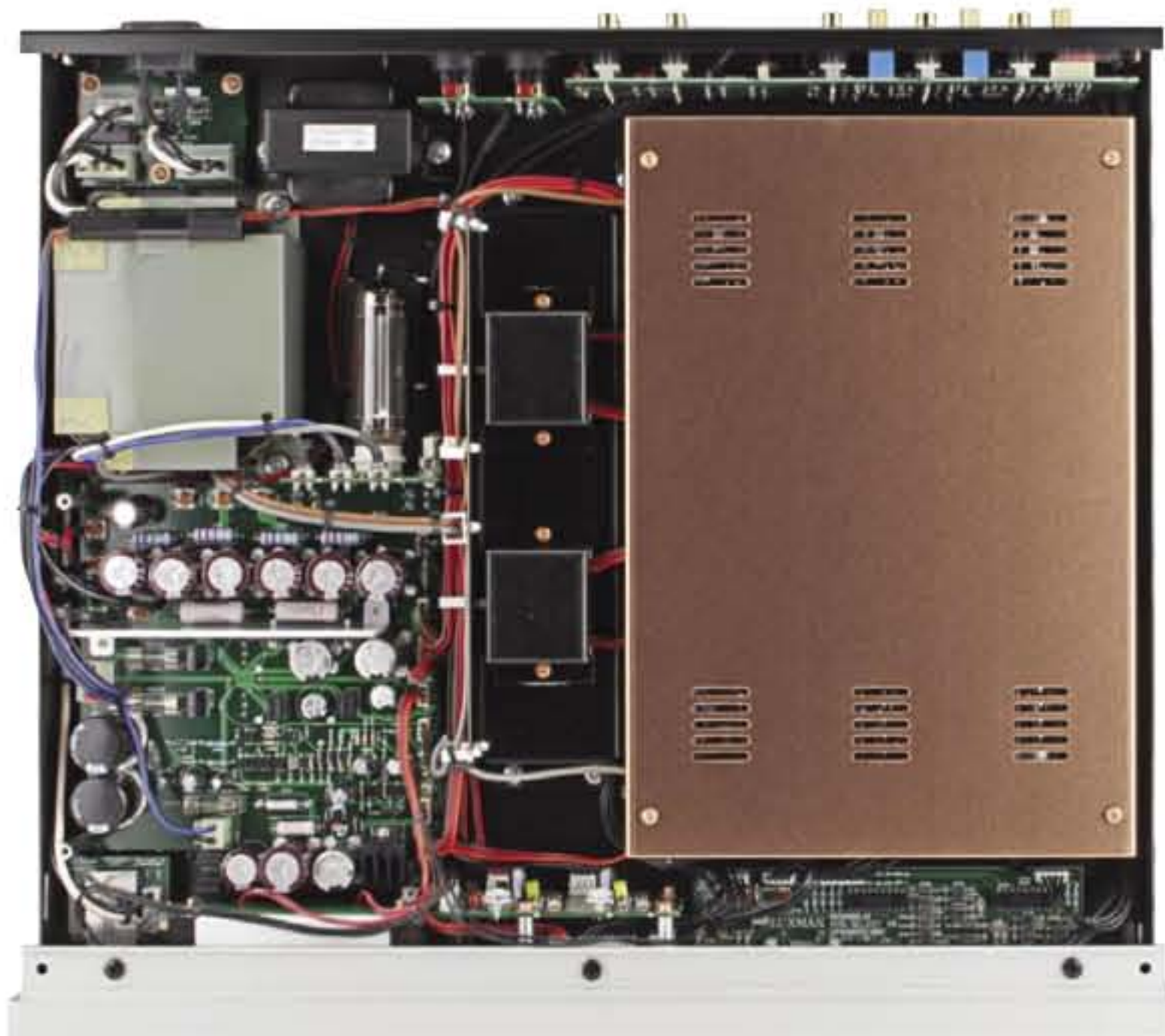


Inside an internal screened compartment sits double triode amplifying valves, lying horizontally for a low profile. At centre right are four small permalloy input transformers, for MC High and MC Low.

of depth of our Icon Audio PS3, exchanging that for a more intense sense of analysis.

The sense of tautness and control within the sound affected how this pre-amp played bass with the introductory notes in Kate Bush's 'King of the Mountain' from Aerial (180gm) being placed perfectly in pitch and power: I could clearly hear how the scale was being covered. The EQ-500 plays bass tight and clean and made more sense of our new-purchase Fleetwood Mac 'Rumours' LP that sounds like it was recorded





Inside the EQ-500 lie screened mains transformers top left and the EZ81 rectifier. At centre are the square black output transformers and at right lies a copper plated steel screening case housing the valve amplifiers.

in a cardboard shoe box (where our hi-res digital files from the master tapes do not). The dry sound of the Luxman dispersed some of the cardboard character and kept a tight grip on both Mick Fleetwood's drumming and John McVie's bass.

Amy Winehouses's 'Back to

Black' made clear just how revealing the Luxman is, putting an intense spotlight onto her vocals.

Spinning Otis Redding on 'Otis Blue', accompanying musicians Booker T and the M.G.s with The Mar-Keys playing live behind him at the Stax Studios in Memphis, 1965,

were all set out right in front of me, the Luxman mining every fine nuance and detail within the various tracks – fabulous. I felt like I was there.

With our Timestep Evo modified Technics SL-1210 turntable and SME309 arm carrying an Ortofon A-95 MC pick-up cartridge, I found the EQ-500 had barely enough gain to drive our McIntosh MC152 or Icon Audio Stereo 30SE power amps loud: it needs a preamp with gain. Lack of a volume control prevents it from running power amps direct, although I settled on our Icon Audio Stereo 30SE with volume control because it is a great match to the Martin Logan ESL-X electrostatics

CONCLUSION

Luxman's EQ-500 is a wonderfully pure phonostage in concept and design. It delivers fabulous sound and can lay claim to having a measured dynamic range above all else.

There is insight, analysis and control just about no other phono stage can match along with classic valve smoothness, time domain liquidity and good stage depth. A go-to product if you have a quality MC cartridge and want to be amazed/thrilled by LP.

MEASURED PERFORMANCE

Target gain for an MC phono stage is x1000 or 60dB, very low output designs needing 70dB. At maximum gain (MC Low, 40dB) the EQ-500 delivered x2700 (69dB), so it suits very low output MCs. Overload occurred at 13V out (1% thd), which translates back to 5mV in. The balanced XLR output delivered identical gain.

Maximum gain with MC High was x920 (59dB), overload occurring at 13V out / 15mV in – a good result.

There was a problem with input impedances. MM was correct at 47k, but MC High is quoted as 400 Ohms (about right) but measured 70 Ohms. This is lower than the common value of 100 Ohms, and far from spec.

Luxman quote MC Low as having a very low input impedance of 2.5 Ohms, but this measured 7 Ohms. The lowest advisable input impedance for MC is around 10 Ohms, but 7 Ohms is acceptable. MC High is fine for most MC cartridges, the MC Low input being for super low output types.

A direct consequence of using such a low input impedance with transformers is ultra-low noise and this the EQ-500 had, equivalent input noise (A wtd.)

being 0.04µV – 6dB quieter than the quietest MC preamps available. So in spite of using valves, which are noisier than transistors, the input transformers have been proportioned to make this the quietest MC preamp on the market.

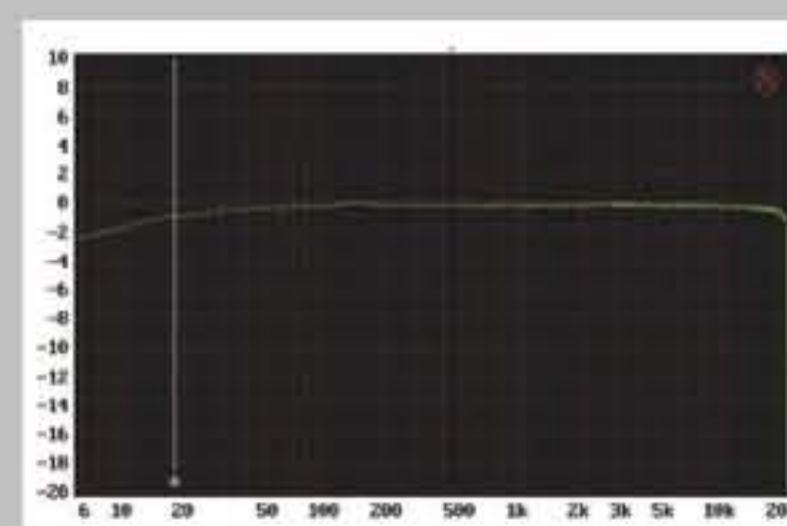
The meters, set to Low (sensitivity) indicate maximum (0dB) at 1mV, 2mV and 9mV input with MC Low, MC High and MM respectively – conservatively low values well below overload.

RIAA equalisation was accurate, giving flat frequency response across the audio band with MC and MM, although gain was running out with MC so there is a slow roll off below 50Hz. Switching in the Low Cut filter rolls down output strongly below 50Hz, producing -14dB attenuation at 6Hz where warps are strongest – a good result. The High Cut filter rolls down treble fast above 3kHz and will produce a warm sound, but certainly lessen surface noise, ticks and pops etc.

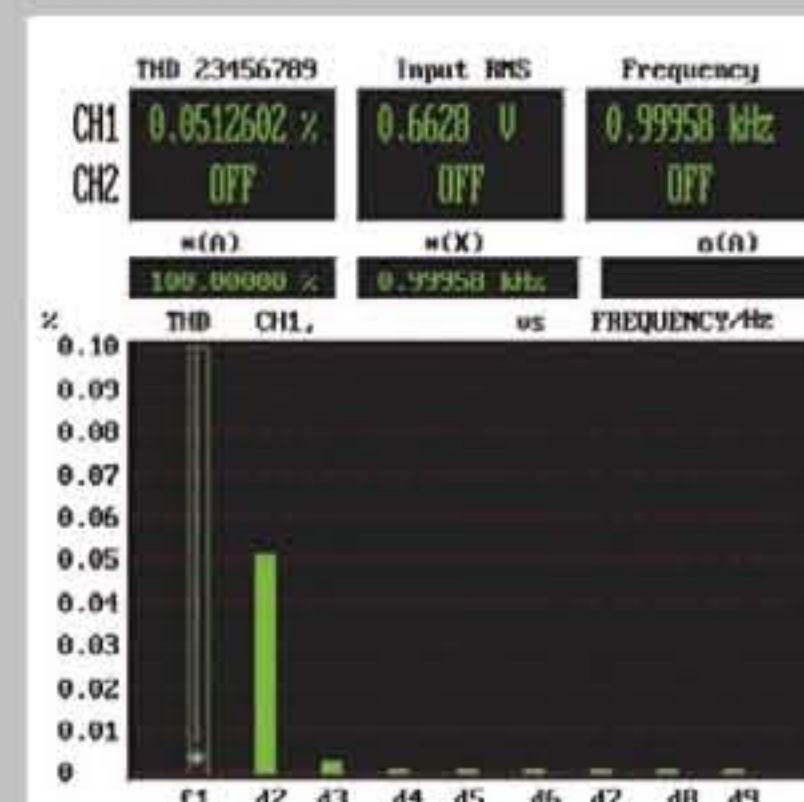
The EQ-500 offers exceptional results. With ultra low noise input transformers, all-valve amplification and balanced line output transformers it is a highly specialised design that has been well executed. **NK**

Frequency response	20Hz-20kHz
Separation	86dB
Noise (e.i.n.)	0.04µV
Distortion	0.05%
Gain (max)	x2700 (69dB)

FREQUENCY RESPONSE



DISTORTION



LUXMAN'S EQ-500
£4,495



OUTSTANDING - amongst the best.

VERDICT

A wonderful valve phono stage in its sound: taut, insightful and pure. Beautifully made too.

FOR

- analytical sound
- build and finish
- meters
- ultra low noise

AGAINST

- no balanced input
- no output level control
- needs a preamp
- big and heavy

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