

# Lehmann Audio Silver Cube

Better known for its more affordable designs, Germany's Lehmann Audio also offers a more aspirational phono stage option, in the form of its Silver Cube  
Review: Adam Smith Lab: Paul Miller



**M**ention the name 'Lehmann Audio' to a vinyl enthusiast and, chances are, their first reaction will be to refer to the company's Black Cube range of phono stages. Any one of these models has been a first step on the ladder towards vinyl heaven for many, and deservedly so. However, what is often forgotten is that Lehmann Audio has also offered a distinctly high-end option for a number of years now, in the form of its Silver Cube.

This was first introduced in 2002 and while the circuit topology has remained largely unchanged, its flagship performance has been kept 'up to speed' with running production enhancements to the gain stages and passive components.

## AMPLE SETTING OPTIONS

Currently the main amplification duties are performed by a Burr-Brown OPA637 op-amp alongside a high precision THAT Corporation 1510P instrumentation amplifier. All other signal circuitry is discrete and the output stage is a Class A type using FETs implemented with a claimed no (overall) feedback.

In terms of compatibility, the Silver Cube scores very highly. It offers four gain settings through two switches per channel on the rear panel. One is labelled 'MM/MC' and the other 'HI/LO' and in combination they give gains of 36 and 46dB (for MMs) and 56 or 66dB (for MCs). Unfortunately, the MM/MC and HI/LO labels are both



below the switches in question, with no clue as to which position corresponds to which. Naturally, it is not difficult to work this out with music playing but I would recommend keeping your amplifier's volume low while you experiment.

Also at the rear of the unit are two rows of inline DIP switches that permit a range of input resistance and capacitance values to be selected. As standard the resistor options are 47kohm, 470ohm and 100ohm but there is an extra position on the PCB for custom-loading a particularly fussy pick-up. A further three switches select the input capacitance values of 47pF, 100pF, 220pF and 470pF.

Once again this row of switches is merely labelled 1-6 with 'Res' marked near the switch 6 end and 'Cap' near the switch 1 end. No hint is offered as to which switch selects which option so the user manual is essential when configuring the unit.

Internally the Silver Cube is beautifully laid out in a true dual mono configuration – hence the duplicate gain and loading switches. Solid WBT RCA sockets facilitate the inputs and outputs, but the lack of a

**ABOVE:** The Silver Cube is built into a milled-from-solid (rectangular) aluminium case and features 'vibration-damping' feet from SSC

balanced connection is disappointing at this price. An XLR connector is present on the rear panel but this just carries the  $\pm 18V$  rails from the standalone PSU unit. This is heavy and hardly an aesthetic match for the Cube, but the interconnection lead is lengthy so it can be hidden away.

The Silver Cube's build is, frankly, gorgeous. Machined from a single piece of aluminium, it bestows a solidity and sense of purpose, while opening up the unit and peering inside is even more of a delight. It reveals a meticulous circuit layout with the PCB itself supported on strategically-located alloy struts.

## BEAUTIFULLY CLEAN SOUNDS

I listened to the Silver Cube at both its lowest and highest gain settings using an Ortofon 2M Black MM cartridge and a Charisma Audio MC-2 MC [*HFN* Feb '15]. In both cases it was remarkable how consistent the Lehmann proved to be, offering up a sound that was beautifully clean and detailed throughout the frequency range. I was also pleased to note that the Silver Cube seemed to have no preference for MC over MM. It handled both types with aplomb, allowing the true sonic character of the cartridge in question to shine through.

Norbert Lehmann's background in circuit analysis and component selection [see boxout] is also clear to hear, as the Silver Cube has a remarkable purity to its performance. I can't help but feel that the Lehmann really does offer a sense of precision and insight that is usually the

## LEHMANN'S LEGACY

Norbert Lehmann is an audio engineer who originally studied at the Robert Schumann Hochschule in Düsseldorf. During this period, Norbert found himself comparing two amplifiers that exhibited ostensibly similar (albeit basic) measurements, but sounded very different. This in turn led to his investigations into circuit details and the components themselves. He founded Lehmann Audio in 1988, with the intention of building audio equipment that 'communicates the musician's intentions as musically and faithfully as possible'. The Black Cube phono stage was launched in 1995 and this was followed by the original incarnation of the Silver Cube in 2002 and the Linear headphone amplifier in 2004. Today, Lehmann offers a range of six phono stages and six headphone amplifiers, the latter covering domestic, studio and portable use.

## LEHMANN AUDIO SILVER CUBE



**ABOVE:** Input/outputs are via WBT Nextgen RCAs, loading via DIP switches and MM/MC gain via toggles

territory of even more expensive units. As a result, instruments are beautifully defined and it was easy to follow them in a complex mix. In fact, the Lehmann turned out to be something of a master in gently coaxing the finest details from an LP.

With Pink Floyd's recent release, *The Endless River* [Warner 825646215478], each performer occupied a well defined space between my loudspeakers. Gilad Atzmon's tenor sax on 'Anisina' was absolutely glorious in terms of atmospheric detail, and blessed with a delightful brassy rasp. The central image was perhaps a little softer than I would have liked but the Lehmann otherwise had no trouble in creating a wide soundstage.

*'The tenor sax was blessed with a delightful brassy rasp'*

At the bottom end, the Silver Cube strikes just the right balance. It does not seek to impress with a thundering bass that would become wearing but, rather, holds itself in check until required. As a result it can almost appear a little bass shy at times – right up until the point

when a proper bass note arrives and one realises that it's really missing nothing at all.

### SNAP AND PRECISION

Stanton Moore's drum strikes on DJ Shadow and Little Dragon's 'Scale It Back' from *Reconstructed – The Best Of DJ Shadow* [Island 3712862] were snappy, precise and punchy. They never overstayed their welcome

– at all times there was a real sense of purpose behind them which propelled the track along superbly. Again, though, the vocals were perhaps not as centrally

*focused* as I am used to.

Nevertheless, I played a handful of tracks that I know to offer a good sense of sonic perspective and, generally, the Lehmann took these comfortably in its stride. The instruments on Bach's Double Harpsichord Concerto with the Sarre CO under Karl Ristenpart [Nonesuch H-71019] were all neatly arranged across the soundstage. Equally, Ol' Blue Eyes' performance from *Sinatra At The Sands* [Reprise RSLP-1019/1] was first-class in terms of depth, atmosphere and detail. ☺

### HI-FI NEWS VERDICT

The Silver Cube is a fitting pinnacle to the Lehmann phono stage range, with a build quality that would embarrass some dearer designs. Sonically, it expands on the strengths of its cheaper brethren to offer a remarkably even-handed performance. Although I felt its stereo presentation might have enjoyed a sharper focus, the unit is still blessed with sound that is smooth, detailed and punchy.

Sound Quality: 78%

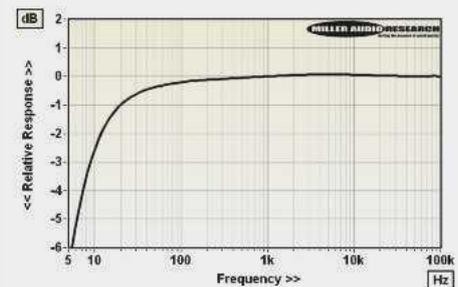


**ABOVE:** Mundorf tin foil and mica caps feature in the dual-mono eq and input amps, the latter using mic-grade op-amps

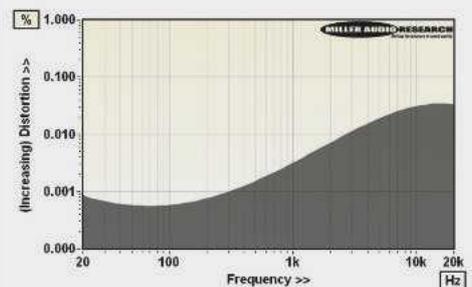
Not new but progressively improved over its decade-long life with latest-generation op-amps and passive components, the Silver Cube remains as fresh as ever. Four gain settings are offered, the lower two defined for MM pick-ups at +36dB and +46dB while the MC option adds a further +20dB to deliver +56dB and +66dB. In practice these settings are accurate to within  $\pm 0.6$ dB (the channel balance of this dual-mono design) while the A-wtd S/N ratio(s) are rather better than Lehmann suggests (to the tune of 8-9dB) at 88.8dB (MM gain settings, re. 5mV) and 77.2dB (MC gain settings, re. 500 $\mu$ V).

Your choice of gain setting should be governed by matching the output of your MM/MC against achieving the best S/N ratio without overloading the Silver Cube's input. Fortunately, in this case, input headroom scales with sensitivity so the +36dB MM setting (15.8mV input for 0dBV output) clips at 158mV; the +46dB MM setting (5.5mV) clips at 52mV; the +56dB MC setting (1.45mV) clips at 14mV and the +66dB MC option (484 $\mu$ V) has sufficient headroom for a 4.9mV input.

Distortion is also broadly consistent with gain and, unlike some recent phono stages we've tested with wholly passive RIAA networks, Lehmann's part-active eq. offers a very low <0.001% THD below 300Hz, rising gently to 0.03% above 10kHz [see Graph 2, below]. The response is also extremely extended from 100Hz-100kHz at  $\pm 0.05$ dB, with a selectable bass roll-off offering a -3dB point of 9Hz in its default position [see Graph 1]. Maximum output is a generous 9.5V but the source impedance is 53ohm, not the quoted 5ohm. Readers may view a full QC Suite test report for the Lehmann Audio Silver Cube phono preamp by navigating to [www.hifinews.co.uk](http://www.hifinews.co.uk) and clicking on the red 'Download' button. PM



**ABOVE:** RIAA-corrected frequency response via MM input from 5Hz-100kHz ('soft' LF roll-off selected)



**ABOVE:** Distortion versus frequency from 20Hz-20kHz at 1V output. THD increases gently with frequency

### HI-FI NEWS SPECIFICATIONS

Input loading	100ohm, 1kohm, 47kohm
Input sensitivity (re. 0dBV)	15.8mV/5.5mV/1.45mV/484 $\mu$ V
Input overload (re. 1% THD)	158mV/52mV/14mV/4.9mV
Max. output (re. 1% THD) / Impedance	9.5V / 53ohm
A-wtd S/N ratio (re. 0dBV, MM/MC)	88.8dB / 77.2dB
Frequency response (20Hz-20kHz)	-0.95dB to +0.02dB
Distortion (20Hz-20kHz, re. 0dBV)	0.00055-0.034%
Power consumption	13W
Dimensions (WHD)	185x50x300mm