

Red Gem

A ruby cantilever distinguishes the Charisma Audio Reference One moving coil cartridge. Noel Keywood thinks it's a gem.

Charisma Audio are a Canadian distribution company from whom we received a Reference One moving coil (MC) cartridge, June 2016. Under test it fell short of what is expected from a high quality cartridge at this price so we rejected it. Apparently, the generator assembly was out of alignment; here is a review of its replacement.

The Reference One has quite an ambitious specification and apparently it comes from a specialist manufacturer, I'd guess Ikeda of Japan by its body shape. The materials are different to those Ikeda use however, the Reference One using a ruby cantilever, no less, and the generator assembly is mounted in a resonance-free Amboyna burl wood body.

Sounds like it might be heavy then, but the Reference One weighs in at a relatively light 7.1gms – right in the middle of the 5-10gm weight range all arms can accommodate – so no incompatibility problems here.

Recommended tracking force is 2gms and the generator is quoted as 14 Ohms, suiting 100 Ohms loads or

more – most MC inputs are 100 Ohms. The stylus is quoted as a super fine line nude diamond.

In all then, this is a nicely balanced MC cartridge design wise, suiting all arms and all MC preamp inputs. Like most MCs it suits a medium mass arm, which means around 12gms effective mass. I used it in an SME309 that meets this spec.

The unit comes in a small wooden case, with three pairs of hex screws, short to long, a screwdriver and a bubble level gauge. The body has captive nuts so fitting is easy and connection is straightforward since the pins are colour coded. Charisma Audio recommend a 50 hour run in, which is about right; all cartridges need this before they loosen up and smooth out.

The measured performance of our second sample was superb. This is not the first time I've encountered variability in cartridges, especially micro-engineered specialist MCs. However, being hand built they should be hand tested afterward, in this case on a Clearaudio Trackability test disc where the Reference One should clear the 80µm track (7) as quoted in its spec. – our first sample would not. I can only hope then that in practice the units sold will be working to spec, and a dealer may have to ensure this for any purchaser. The reason I say all this is because the Reference One, in spite of initial problems, is a very good cartridge and is worth consideration; our problem may have been a one off; it is impossible to know.



A clear shot of the red ruby cantilever, sitting within a generator assembly supported by Amboyna wood body.

SOUND QUALITY

After measuring the Reference One I was expecting to be impressed – and was. Spinning a new remaster LP, direct from analogue master tapes, of Neil Young's classic *After The Goldrush*, *Tell Me Why* spread wide in a big panorama between the electrostatic XStat panels of our Martin Logan ESL-X loudspeakers, driven by an Icon Audio Stereo 30SE single ended valve amplifier and Icon Audio PS3 valve phono stage, with MC input transformers. Neil Young's plaintive voice sat within a glassy clear space, completely free of colour or taint. Strummed acoustic guitar cut out of the speakers hard – and fast.

From this opening track I was aware the Charisma Audio Reference One is fast and quite lacerative: I could hear that treble lifts noticeably, but not to a degree that bothered me. Also, cartridges first wear in – then wear out. As they do so they get dull, so best to start a little bright like this. There was tremendous separation between strings and a lovely dry resonant thrum from the



Gold plated, colour coded pins facilitate connection. The long, thin ruby cantilever and nude stylus are also visible here.

body of the guitar. The Charisma has no softness or bloat in its sound, it delivers fantastic speed and insight, coming over as dry and forensic in the way it teases music from the grooves.

There's a smoothness too and I noticed that, in spite of the treble rise, very little in the way of surface noise or ticks and pops, especially apparent when playing a glorious new Decca re-mastered LP from Pro-Ject of Mozart Symphonies: OK it is a new LP on modern vinyl, but it does show how suitable LP is for classical music. The Weiner Philharmoniker was presented in a deliciously clear rainbow of sound before me, again with a sense of glassy clarity and with almost perfect background silence.

What the Charisma Audio Reference One does not have is the slight colour that metal cantilevers inject into the sound, in particular lacking the slightly hard 'clatter' of boron cantilevers. Having said that, the ruby cantilever is not at all forgiving; this is not a euphonically enhanced transducer by any means, unlike my beloved Ortofon Cadenza Bronze, that has a touch of honey in its sound, for example. Not so here, Jackie Leven almost shouted at me on the opening of Young Male Suicide Blessed by Invisible Woman, the reverb of the invisible woman tailing away clearly into the distance.

Down at the bass end this cartridge is dry and tight again, as you might expect. Hand drum strikes on Some Ancient Misty Morning (Jackie Leven, Tales of the Dying West) had a stabbing dynamism to them, but were come and gone in a blink. I had to spin a few 12in 45s to see what the Reference One was doing at the low end and Carol Kenyon's Dance

With Me summarised the sound. It didn't have the slamming low end weight of the Cadenza Bronze, but it was vividly fast and a tad more detailed and insightful. Lack of slur or overhang complemented the rock steady speed of our Timestep Evo modified Technics SL-1210 Mk2 Direct Drive turntable, with SME309 arm. The synthesised disco drum beat in Dance With Me was seemingly better controlled in its timing than you hear from CD and breathtaking to hear. But the Charisma Audio Reference One didn't underpin the track with bass weight, it is fast, dry and controlled in its bass delivery, rather than fulsome or heavy.

CONCLUSION

The Reference One is a glassily clear and deeply analytical sounding MC cartridge. Hearing it was almost a shock; MCs like this make you re-think what LP is capable of. It isn't quite for everyone, being a surgical knife in its precision, but at the same

time it has clarity and insight few MCs can match – and those that do have other problems. On the matter of bass, the Reference One has insight and control, rather than brute strength. It didn't alter my final view that the Reference One is an excellent MC cartridge, especially at the price. I loved listening to it and you may too.



The Reference One comes in a small wooden box, with a set of hex key attachment screws and driver, a bubble level gauge for turntable levelling and a brief instruction sheet.

MEASURED PERFORMANCE

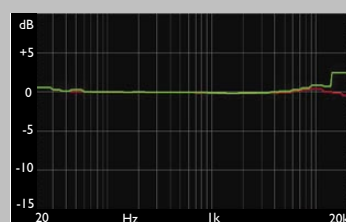
This new correctly working sample of the Charisma Audio Reference One had a very good tracking performance, clearing all test bands on CBS STR-110 test disc, only the top torture track (90µm peak amplitude, 300Hz) being marginal. In the important midband it stayed in the groove at 25cms/sec, the torture test on B&K QR2010 – a very good result. Some cartridges jump out of the groove on this band.

Distortion levels were a tad above the norm. measuring 2% lateral and 4% vertical (mod slant angle corrected) at 45µm on CBS STR-110. Comprising second and third order harmonics this isn't a big issue sonically.

Output measured 0.5mV at 3.54 cms/sec rms (Shure TTR-109), low but respectable for a quality MC. Channel separation was a high at 32dB, few cartridges getting past 30dB.

Vertical tracking angle measured

FREQUENCY RESPONSE



26degrees (DIN 45-542 test disc) which is a good compromise between tracking height and cantilever length.

Frequency response (JVC TRS-1007 test disc) measured ruler flat across the audio band, treble rising above 6kHz to measure +2dB at 10kHz and +5dB at 20kHz our analysis shows. On inner grooves, tracing loss reduced this to a totally flat response (red trace). On balance then the cartridge is tonally accurate but with some treble zest. It will not sound overtly bright, but neither will it sound warm or 'smoothed'.

The second sample of Charisma's Audio Reference One measured very well and to do this its generator system and component parts have to be excellent. The promise is of good sound quality. **NK**

Tracking force	2gms
Weight	7gms
Vertical tracking angle	26 degrees
Frequency response	20Hz - 15kHz
Channel separation	32dB
Tracking ability (300Hz)	
lateral	80µm
vertical	45µm
lateral (1kHz)	25cms/sec.
Distortion (45µm)	
lateral	2%
vertical	4%
Output (5cms/sec rms)	0.5mV

CHARISMA AUDIO REFERENCE ONE MC £1,650



OUTSTANDING - amongst the best.

VERDICT

An impressively analytical MC cartridge, for the aficionados. High tension listening.

FOR

- fast, analytical sound
- compatibility
- easy to fit

AGAINST

- lacks bass weight

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