



Audio-Technica Turntable Cartridge AT150MLX

Manufacturer: Audio-Technica U.S., Inc., 1221
Commerce Drive, Stow, Ohio 44224; 330-686-2600;
www.audio-technica.com

Mount: 1/2" centers
 Vector-aligned moving magnet
 Output: 4 mV at 1 kHz, 5 cm/sec
 Channel balance at 1 kHz: 0.8 dB
 Channel separation at 1 kHz: 30 dB
 Channel separation at 10 kHz: 20 dB
 Frequency response :10 Hz - 30 kHz
 Dynamic compliance (x 10⁻⁶ cm/dyne, 100 Hz):
 10.0/mN
 Static Compliance: 40x10E-6 cm/dyne
 Diamond tip type: MicroLine™
 Stylus construction: nude square shank
 Cantilever (Boron with vapor deposited gold):
 0.3mm diameter
 Tracking force: 0.75-1.75 grams
 Internal inductance: 450 mH
 Coil Impedance: 2300 ohms (1 kHz)
 Recommended load capacitance: 100-200 pF
 Recommended load resistance: 47k ohms
 List Price: \$499

Those familiar with the Shure V15-VMR will see similarities in the diamond tip and cantilever construction with the Audio-Technica cartridge. Indeed, I believe this cartridge uses the same diamond tip as the Shure's.

The cantilever is even thinner than the V15-VMR. You almost need a magnifying glass to see the cantilever. To my consternation, even though the Audio-Technica has the smallest cantilever, it provides

absolutely no reference mark as to where it is located. Be very careful when cueing at the start of a record. Thank goodness for the stylus light on the Technics. The cantilever material has recently been changed to Boron from Beryllium in the AT150MLX. Beryllium was used in the Shure V15-VMR and I was told the cartridge was discontinued because the beryllium cantilever is no longer available.

More significant are the similarities between the diamond tips. The picture of the diamond tip (as supplied by Audio-Technica) is identical to a diamond tip that appears in a patent issued to a company in Japan called Namiki Precision Jewel Co. Ltd. (Patent Number 4521877, June 1985).. A very similar picture appears in Dynavector literature where the term "Micro Ridge" is used. "Micro Ridge" is used by Shure (that's from where the MR in the name originates). Audio-Technica calls the shape MicroLine. A fourth company, Lyra, also uses the term Micro Ridge and credits Namiki as the source of the stylus.

According to Lyra, the Micro Ridge "reduces groove wear and greatly reduces the audibility of groove damage." Lyra cartridges start at \$750. Dynavector, whose cartridges with the Micro Ridge stylus start at \$650, claims the Micro Ridge "does not change the contact radius by the wear after long playing time ... at the same time this curvature has the radius of only 2 microns. Due to this small figure, the reproduction sounds have very high definition, wide dynamic range, and low distortion."

Audio-Technica asserts that the diamond tip was designed to find undamaged groove surface in worn records and I can confirm this. When comparing the stylus to others in the survey, the Audio-Technica's produced clear undistorted sound where other shapes produced less clarity and often sounded like they mistracked during louder passages. Background groove noise was also reduced in some cases. The Shure produced similar tracking results, but the AT150MLX was somewhat better at the loudest passages regardless of the record's state of wear.

It is hard to call this the clear choice for replacing the Shure V15-VMR, oft-accepted as the gold standard of cartridges, because I am no longer convinced that the Shure was ever best in class. Not only does the Audio-Technica out track it, but the Audio-Technica extracts more detail and is far more alive



than the Shure. The Audio-Technica appears to surround the instruments with slightly more air and ambiance. One difference that may tip the choice to other cartridges (besides price) is tonal balance. Audio-Technica had a tonal balance far closer to the master tape than that of the Shure. When I used vinyl discs that had been re-issued as CDs, the match to the Audio-Technica was clear and the Shure sounded dull and lifeless. Those who dislike the bright and etched sound of the CD will not be as excited by this cartridge. Later, I will explore some other cartridges that are more attuned to what audiophiles consider to be vinyl sound.

While it is easy to talk about diamond shape or cantilever mass, it must be remembered that that fixed coil structure, in the cartridge body, is idiosyncratic to each manufacture in terms of the fixed coils, the laminated core, the pole pieces, and the manner in which these items are deployed. Unique to the higher end Audio-Technica cartridges is the use of two magnets in a V configuration (Audio-Technica patents 3720796 and 3761647) to improve channel separation.

After my listening tests, I searched issues of *High Fidelity* and *Audio* for cartridge measurements. The AT150MLX was introduced after the demise of these magazines but I found reviews of the AT160 (*Audio* September 1984 and *High Fidelity* October 1984), which appears to be similar in spirit to the AT150MLX but differed in terms of its coil assembly and cantilever

materials. The reviews I worked from included the Shure V15-VMR in *Audio* April 1985 and the high end version of the Shure called the Ultra 500 in *High Fidelity* January 1986. From these reports I found that the AT160 had lower IM distortion and better channel separation below 2 kHz than the Shure V15-VMR. In other respects, such as channel balance and frequency response flatness, the magazine opined that the performance was similar. Tracking performance was similar for both cartridge except for the tracking performance done on test discs supplied by Shure (yes – they tested the Audio-Technica on the Shure disc). It is puzzling why all manufacturers do not issue proprietary test discs with exotic tracks to which their cartridges are most amenable.

Everything points to the AT150MLX as the best moving magnet design. It out tracks everything else I could get my hands on and the improvement in tracking on vintage vinyl is even more significant. Aside from tracking trouble, the other cartridges lacked alive, clean and detailed sound found on a CD transfer of an analog recording made from the master tape. The list price may put the cartridge out of the reach for some, but discounts can be found at some locations and on the web from reputable dealers authorized to sell Audio-Technica.

-David A. Rich



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