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# LYRA KLEOS MONO

## MC PHONO CARTRIDGE

### Introduction

*Although many MC cartridges have good performance, their sound is held back by how they are designed. The problem is, the signal coils should have the same angle as the magnetic circuit during playback, but MC cartridges are typically designed so that the opposite happens - applying normal tracking force pushes the coils out of alignment. This impairs coil sensitivity and linearity, and reduces sound quality.*

Lyra's "New Angle" technology solves this fundamental problem by compensating for how the signal coils are affected by vertical tracking forces, and optimally aligning the coils when it matters most - during playback. Introduced on Lyra's entry-level Delos, the New Angle technology enables the Delos to perform well above its price-point.

But being audiophiles, Lyra wanted to achieve the next higher level - which is the new Kleos. Building on New Angle technology, the Kleos innovates with a stronger chassis machined from aircraft-grade alloys, narrowed mounting area to improve energy transfer, and pre-stressed construction combining multiple materials with non-parallel surfaces to inhibit internal body resonances.

The fully hand-made Kleos also has a Lyra-designed line contact stylus and platinum-plated output pins, achieving an exceptionally quiet noise-floor with superior immediacy, resolution and tracking, wide dynamic range and explosive transients, plus a warmer and natural tonal balance. The

Kleos is a high-value cartridge that surpasses the sound quality of substantially more expensive cartridges. Let the Lyra Kleos show you how good a New Angle on LP reproduction can sound.

### Taking a more in-depth look

The Kleos is the lowest cost Lyra cartridge to feature the full fledged Ogura manufactured boron cantilever and coil system with Lyra original line-contact (3 x 70µm) stylus. This is similar to what is employed on even the most expensive Lyra models.

Nevertheless, the most important element of the new Kleos is it's sound. Lyra firmly believe that the Kleos is capable of extracting more information from the vinyl grooves than it's predecessors, and that the reproduction of music is both more dynamic, more detailed, and more natural than the models preceding it.

Lyra also are of the opinion that the Kleos will set a new standard for sonic performance at it's price point.

### Far greater than the sum of its parts

Today there are only a small handful of master cartridge builders in the world and Lyra's Yoshinori Mishima is certainly one of them. His assistant Akiko Ishiyama, who has undergone several years of apprenticeship, is also involved in the building process leading to each Kleos. The Kleos is not only hand made, but each cartridge is listened to extensively and "voiced" by the master cartridge builder, like the finest musical instruments.

### Special, built-to-order, version of Kleos

This is a special, built-to-order, mono version of Kleos for real mono playback of monaural/monophonic (mono) microgroove, vinyl records. It is recommended that the Kleos Mono is used with high-gain, low noise phono stages, or alternatively a step-up transformer designed for phono cartridges of 2 - 3 ohms or less.



On mono records, the vertical axis of the groove contains no musical information, but it will frequently have noise, in the form of groove damage and dirt. The Kleos Mono has therefore been designed to be completely insensitive to the vertical axis, which greatly improves the signal/noise ratio without any downside on monaural records.

The coil former is a square permeable plate oriented parallel to the record surface rather than the 45-degree angle used for most stereo cartridges, while the coils are wound so that they only generate a signal when there is horizontal movement of the stylus and cantilever when tracking a record.

Two totally separate monaural coils are used in the Kleos Mono, since most monaural cartridges are used with stereo amplifiers and stereo speakers. The separate coils also help avoid possible ground loops and hum problems that could otherwise be caused if a single coil is fed into a stereo two-channel amplification system, thereby tying the two channels together electrically.

In addition to parallel mono connection to a stereo system (two amplifiers and two speakers), it is also possible to leave one set of connections unattached for pure mono playback with a single amplifier and a single speaker. However, it is also possible to connect the two mono channels in series

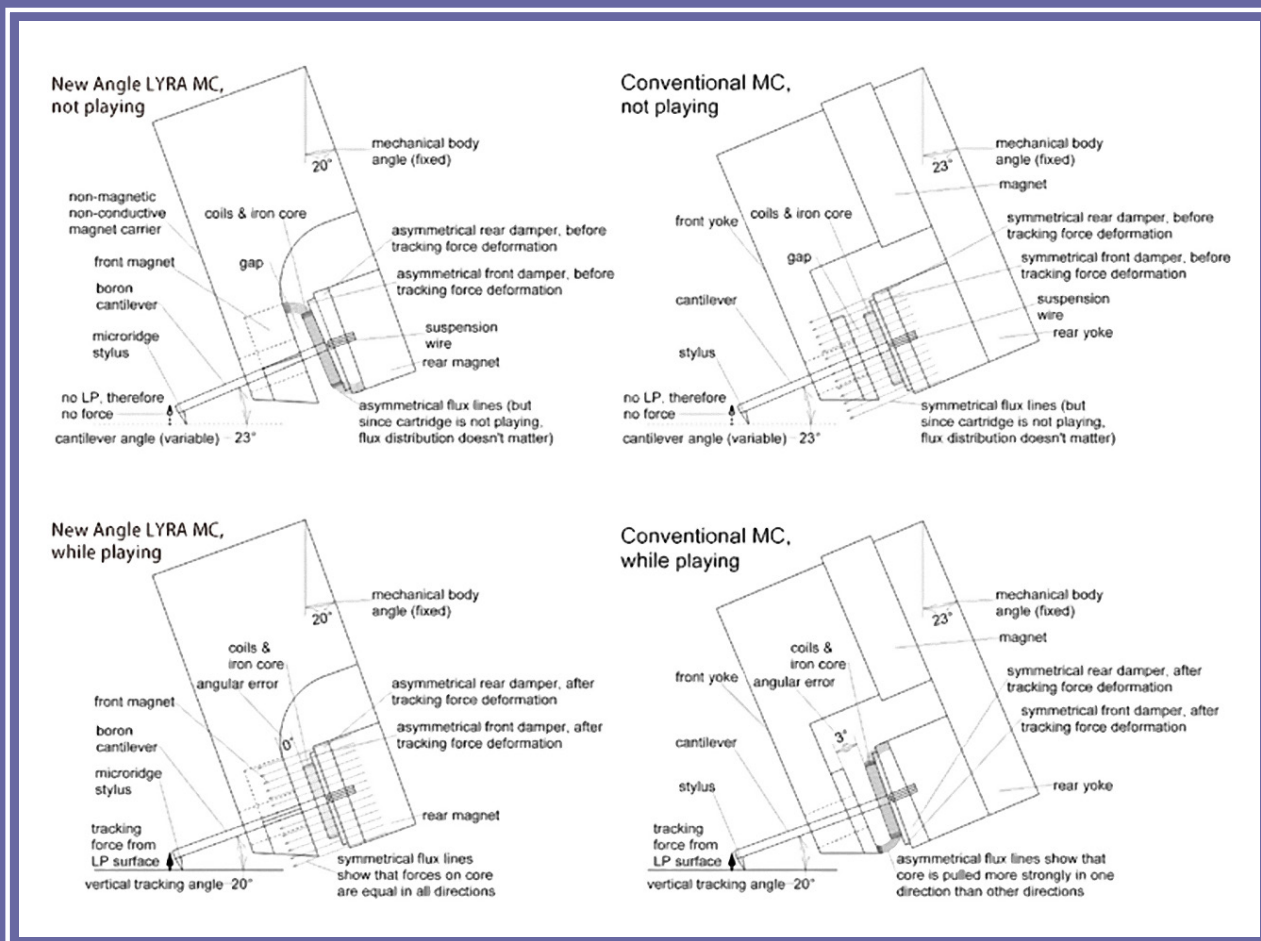
for additional output when used in a pure mono system. Use a short cartridge headshell lead wire with female pin-connectors to connect either the Kleos Mono's upper right pin with the lower left pin, or alternatively the upper left pin with the lower right pin. Then use the two remaining unused pins for connection to your single amp RIAA input (alternatively a transformer input). The two internal channels are now "chained" in serial-connection for additional output and energy when you only use a single amplifier and a single speaker.

### Setting a new benchmark in performance

Lyra offers a truly unique combination of advanced cartridge design by Jonathan Carr and expert construction by master cartridge builders Lyra's Yoshinori Mishima and his assistant Akiko Ishiyama\*. This is an elite group of individuals that are capable of crafting the highest level MC transducers on the planet.

\*only involved in the preliminary build of each Delos & Kleos cartridge

Lyra are very proud of the Kleos and when you hear it for yourself, we are sure that you will agree that it sets a new standard in performance vs price.



**MODEL**

Lyra Kleos Mono

**DESIGNER**

Jonathan Carr

**BUILDER**

Yoshinori Mishima (final build, testing)  
Akiko Ishiyama (preliminary build)

**TYPE**

Medium weight, medium compliance, low-impedance, low-output moving coil cartridge

**STYLUS**

Lyra-designed long-footprint variable-radius line-contact nude diamond (3um x 70um profile, block dimensions 0.08 x 0.12 x 0.5mm), slot-mounted

**CANTILEVER SYSTEM**

Solid boron rod with short one-point wire suspension, directly mounted into cartridge body

**COILS**

Two individually isolated monophonic/monaural 6N high-purity copper coils wound in parallel (on top of each other) on a square-shaped chemically-purified high-purity iron former with 3.0 ohms self-impedance

**OUTPUT VOLTAGE**

0.25mV@5cm/sec., 2.4μH inductance

**FREQUENCY RANGE**

10Hz ~ 50kHz

**CHANNEL SEPARATION**

35dB or better at 1kHz

**COMPLIANCE**

Approx. 12x10<sup>-6</sup>cm/dyne at 100Hz

**VERTICAL TRACKING ANGLE**

20 degrees

**CARTRIDGE BODY**

One-piece machining from solid 7075 alloy billet, with reduced-surface higher-pressure headshell contact area, partially non-parallel shaping, phase-interference resonance-controlling mechanism, and body threaded directly for mounting screws

**CARTRIDGE MOUNTING SCREWS**

2.6mm 0.45 pitch JIS standard

**DISTANCE FROM MOUNTING HOLES TO STYLUS TIP**

9.5mm

**CARTRIDGE WEIGHT (WITHOUT STYLUS COVER)**

8.8g

**RECOMMENDED TRACKING FORCE**

1.65 ~ 1.78g (1.72g recommended)

**RECOMMENDED LOAD DIRECTLY INTO MC PHONO INPUT**

Determine by listening

**RECOMMENDED LOAD VIA STEP-UP TRANSFORMER**

Use a step-up transformer designed for 2 - 3 ohms cartridge impedance. The transformer output must be connected to standard 47kohm MM-level RIAA input, preferably via short, low-capacitance cable

**RECOMMENDED TONEARMS**

High-quality pivoted or linear tangential tonearms with rigid bearing(s), adjustable anti-skating force, preferably VTA





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