

ORION / phono preamplifier


 constellation


Designed by our engineering “dream team”

Unique record EQ feature and adjustable cartridge loading

Two-stage mechanical isolation of critical phono preamp circuits

Separate power supply shielded by 8.2mm machined aluminum chassis

Easy adjustment of key parameters through front LCD screen and remote

The Orion began as a dream—a dream of our “dream team” of acclaimed engineers and industrial designers to create the finest phono preamp ever built. The basic concept was simple: Use the best possible phono preamp circuits, and give them the same incomparable mechanical and electrical isolation we use in the Reference series Altair line stage. But the dream team being who they are, they took it much further. Its advanced circuit design implements a unique adjustable record EQ that can be controlled by remote. With this design, well-mastered records achieve unprecedented musicality, and even poorly mastered vinyl becomes a pleasure for the ears.

Our team built these circuits into what is almost certainly the most advanced chassis ever designed for a phono preamp. Considering that a phono stage is the most sensitive circuit used in high-end audio

products, and that our goal was to create the ultimate phono preamp, our dream team couldn’t settle for less.

Maximum protection and isolation for highly sensitive circuits

As in the Altair II, the Orion’s sensitive phono preamp circuits mount on a “raft,” a sandwich of thick metal sheets separated by a vibration-absorbing polymer. The raft damps vibration and isolates the audio circuitry from the control circuits. But then we take it one step further, floating the raft on four highly compliant elastomeric suspension components. Our dream team even extended the circuits’ physical isolation to the cables that connect the raft to the outer chassis, which were chosen for their exceptional flexibility so they would not hinder the suspension’s operation.

The result is that even persistent ground

vibrations encountered in busy urban environments are attenuated before they can reach the audio circuits. This is especially important because phono circuits, being of such high gain, tend to be microphonic—i.e., they convert vibrations into spurious audio signals. Because of the circuits’ incomparable physical isolation, they can retrieve even the subtlest details from the finest recordings.

We further protect the audio circuitry from interference through the use of a chassis machined from a solid slab of aluminum billet. The thickness of the original billet is actually the same as the Orion’s chassis height. There are no openings or seams except where the jack panel, the front controls and the bottom access panel are fitted. The minimum thickness of the chassis is 8.2mm, enough to shield against any electromagnetic interference encountered in a residential environment, including in-

(more.)

terference from 50/60 Hz AC power lines.

Superior sound quality from every record

Not only does the Orion flawlessly reproduce modern records mastered using the industry standard RIAA curve, it also accommodates older records mastered to other standards—and its incomparably flexible EQ circuit can also be used to achieve the best possible sound from records that have been poorly mastered. For any record, the high- and low-frequency EQ can be fine-tuned through the remote control and the front-panel menu, for frequencies below 50 Hz and above 10 kHz.

The result is what vinyl enthusiasts have always dreamed of: Poorly mastered records that were once merely tolerated can now be loved and appreciated for their full artistic value.

Ultimate musicality from every cartridge

Every cartridge demands the proper loading to perform its best. For moving-coil cartridges, the Orion provides resistive loading adjustment in precise 1-ohm increments using the remote control. The manufacturer's suggested setting can be precisely achieved, or alternative settings can be explored from the listening position. For moving-magnet cartridges, the Orion offers four resistive impedance settings and three load capacitance options.

Full dual-mono balanced design

One glance at the rear panel of the Orion demonstrates our commitment to true dual-mono design. Even the input and output jacks are separated, with right-channel jacks on one side and left-channel jacks on the other. Inside the unit, each channel occupies its own half of the raft, and each preamp circuit is encased in its own aluminum shell to prevent even the slightest interaction. A dual-mono power supply ensures that the demands on one channel do not affect the other.

The audio circuitry is fully balanced from input to output, with two XLR balanced inputs for moving-coil cartridges, a balanced input for moving-magnet cartridges and balanced output. Single-ended RCA inputs and outputs are also provided.

Triple-output, ultra-clean power supply

Most moving-coil cartridges put out a signal measuring under 1 millivolt—less than 0.00001 of the strength of power from a wall socket. This is why we build the Orion's power supply into its own chassis, machined from solid aluminum billet to a minimum thickness of 8.2mm so it fully contains the energy of the transformers.

This power supply has separate R-core transformers, rectifiers, regulators and storage capacitors for each audio channel, plus a third transformer to power the control circuitry. Each of these supplies

is connected to the main chassis using a separate cable tipped with high-current Hypertronics connectors originally created for aerospace applications.

The best phono preamp in the world

The Orion begins with the best phono preamp circuits ever designed. It adds unique and flexible record EQ circuits and precise loading adjustments. It powers its circuits with regulated DC voltage from a thoroughly isolated, separate supply. It shields its audio circuits in multiple layers of thick metal, and isolates them with their own internal suspension.

In every step of the Orion's development, our dream team of engineers and designers refused to compromise. The result is what we would contend is the only truly no-compromise phono preamp—one that can deliver the ultimate in musicality from every record you play.

SPECIFICATIONS

Inputs	3 stereo XLR & 3 stereo RCA
Outputs	1 stereo XLR, 1 stereo RCA
Gain, B & UB (Balanced & Unbalanced)	65 dB max
THD+N	<0.004% 10Hz - 20kHz
Frequency response	+/-0.10db 10Hz - 20kHz
Output noise	-100 dB re 2V output, 20 Hz to 20 kHz
Load impedance, MC inputs	0Ω to 500Ω
Load impedance, MM input	10KΩ to 100KΩ
Load capacitance, MM input	100 to 400 pF, selectable
Output impedance, B & UB	< 50Ω
EQ curve	RIAA plus user-adjustable HF and LF EQ
Weight (total)	84 lbs/38.2 kg
Dimensions, phono preamp	5.53 x 17.50 x 14.82 in (hwd) 140 x 445 x 376mm (hwd)
Dimensions, power supply	2.82 x 17.50 x 14.50 in (hwd) 72 x 445 x 368mm (hwd)

Constellation reserves the right to change designs, and / or specifications


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