SpotFire PR5

VALVE RIAA PHONO PREAMPLIFIER | PRODUCT SPECIFICATION

The PR5 brings the character of valve amplification to vinyl reproduction without sacrificing the technical precision that good records deserve. Its passive RIAA equalisation is driven by a valve cathode follower, helping preserve accurate equalisation as valve characteristics change with age. DC valve heaters and a high-frequency power supply minimise conventional mains-hum mechanisms, while generous signal-handling capability accommodates demanding record passages.

The PR5 can accommodate moving-magnet cartridges, or low-output moving-coil cartridges through optional Lundahl step-up transformers. Carefully measured low noise, accurate equalisation and predominantly second-harmonic distortion make it a compelling partner for a high-quality turntable system.

The essentials

- Precision passive RIAA network with measured deviation within ±0.3 dB, 100 Hz–20 kHz
- 48 dB MM gain and approximately 1.2 V RMS output from a 5 mV RMS input
- 0.15% THD+N at 1 kHz, 5 mV input; second harmonic predominates
- 71.6 dB unweighted signal-to-noise ratio, referenced to 5 mV RMS
- High headroom: 8.5 V RMS output at 1% distortion, equivalent to approximately +17 dB above nominal output
- Optional Lundahl transformer moving-coil input; DC heaters and low-impedance valve output stage

Measured audio performance — MM input

Voltage gain	**47.8 dB at 1 kHz**
Nominal signal level	5 mV RMS input → approx. 1.2 V RMS output
Total harmonic distortion + noise	0.15% at 1 kHz, 5 mV RMS input; 20 Hz–30 kHz measurement bandwidth
Harmonic spectrum	2nd: −57 dBc | 3rd: −87 dBc
Output noise	−70 dBV RMS (316 µV), 20 Hz–20 kHz, unweighted
Signal-to-noise ratio	Approx. 71.6 dB, unweighted, referenced to 5 mV RMS
Overload capability	8.5 V RMS output at 1% distortion; approx. +17 dB relative to nominal
RIAA tracking, 100 Hz–20 kHz	Within ±0.3 dB of ideal, referenced to 1 kHz
RIAA tracking, 50 Hz–20 kHz	+0.3 / −0.5 dB of ideal, referenced to 1 kHz
Low-frequency behaviour	Gradual roll-off below 50 Hz; −3.6 dB relative to ideal RIAA at 20 Hz

Connections, power and dimensions

Output stage	**12AX7 cathode follower; 2.2 µF film output coupling capacitor**
Output impedance	Less than 800 Ω at 1 kHz; less than 5 kΩ at 20 Hz
Cartridge compatibility	Moving magnet (MM); moving coil (MC) with optional Lundahl step-up transformers
DC power input	12.0–13.2 V DC; nominal 12 V / 0.8 A (approx. 10 W)
Power protection	Reverse-polarity diode and internal 3 A fuse
DC connector	5.5 × 2.1 mm barrel, centre positive
Dimensions (including knob)	154 mm W × 240 mm D × 115 mm H

Thoughtful vinyl replay

The PR5 intentionally exhibits a gentle reduction in very-low-frequency response, helping moderate record-warp and subsonic energy rather than unnecessarily amplifying it. Output back-to-back Zener-diodes in early kits were replaced by a single 47K resistor.

Measurement notes:

Figures are prototype measurements, not guaranteed limits for every unit. The latest noise reading follows removal of identified external interference.

MC performance varies with transformer configuration and is not included in the MM measurements above.

All measurements taken with standard-grade 12AX7 tubes. (Low-noise tubes may be beneficial in the input stages)