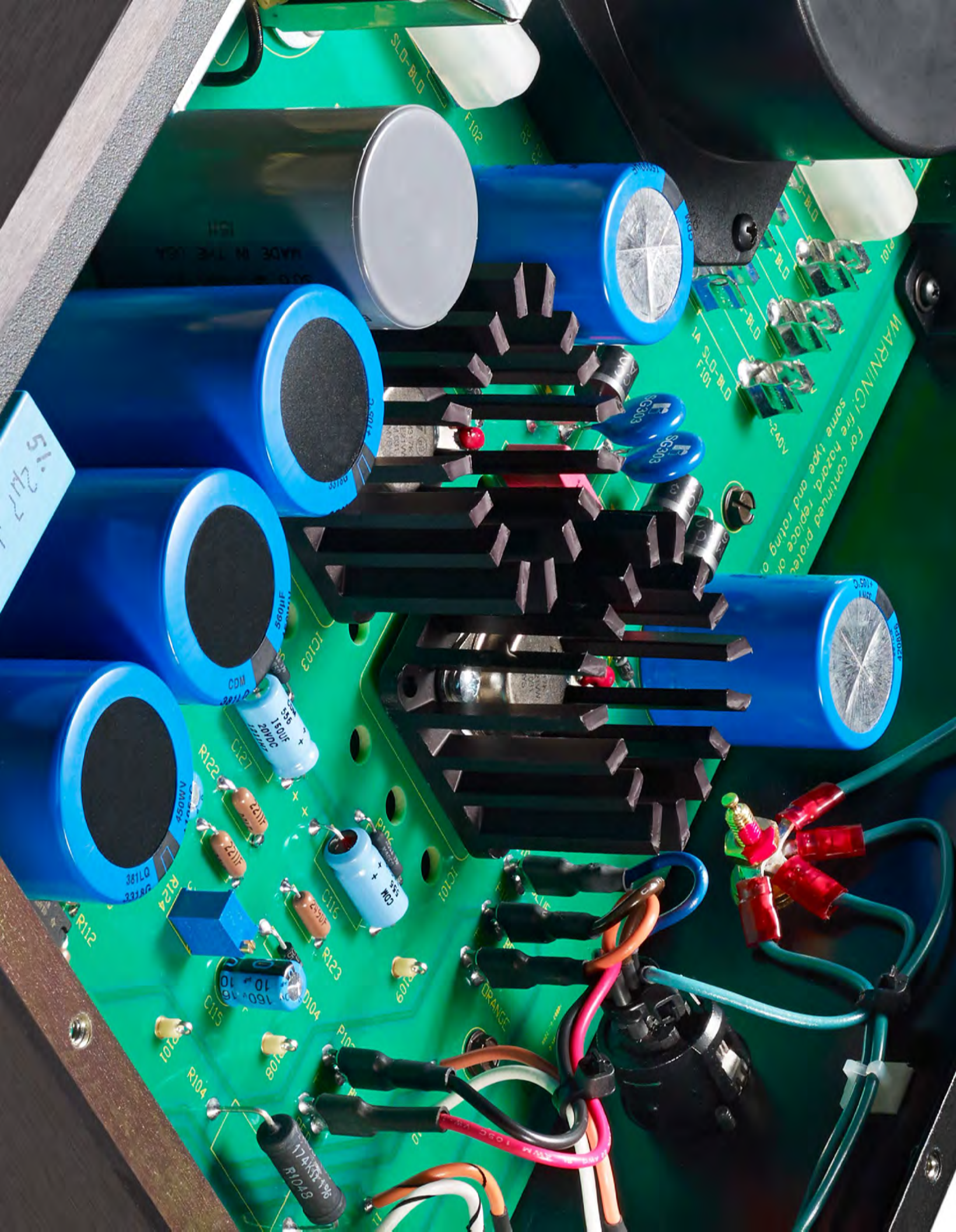


LAMM INDUSTRIES, INC.



The LL1.1 *Signature*
line level preamplifier





WARNING: For continued protection, replace with same type and rating.

512412

MADE IN THE USA

174K5% 1% R1043

100K R104

100K R104

100K R124

100K R123

100K R122

100K R121

100K R120

100K R119

100K R118

100K R117

100K R116

100K R115

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100K R112

100K R111

100K R110

100K R109

100K R108

100K R107

100K R106

100K R105

100K R104

100K R103

100K R102

100K R101

100K R100

LL1.1 *Signature* preamplifier



The monaural line level preamplifier model LL1.1 *Signature* is a direct replacement of the LL1 *Signature* which has been the ultimate statement of perfection among the line level LAMM preamplifiers since its introduction in 2010. The LL1.1 proudly continues this tradition.

Although the LL1 *Signature* integrated everything its designer had at his disposal to make it the best-sounding preamp, a true creator never rests on his laurels. There is always a yearning to do better even though it seems unrealistic at the time. The LL1.1 *Signature* is an end result of this yearning.

In a nutshell, the LL1.1 *Signature* includes the following upgrades and modifications as compared to the LL1 *Signature*:

- increased immunity to unwanted radio frequency interferences propagated via both radiation and conduction over signal lines & AC power systems
- increased amount of energy storage in the power supply
- certain modifications in protection and time delay circuitries
- improved signal/noise ratio
- replacement of a number of critical components with newly available types of better quality
- utilization of a technologically new type of pc-boards of superior quality, with **gold-plated** traces and thru-holes.

Considering that the LL1 *Signature* was practically a flawless design, it was difficult to make that next step to the near perfection. When all technical issues for proper reproduction of the entire frequency range have been solved, the potential improvements shift to a different sphere – the one where the measuring criteria of the sound quality is its degree of approximation to the sound of live concert and the depth of its effect on the listener.

The modifications catapulted the LL1.1 *Signature* precisely into that sphere -- with this preamplifier in the all-*Signature* Lamm system the discerning listener can't help but get pulled right into the essence of music. The experience is almost shockingly involving and it is also an incredible chance to experience a different reality which may otherwise be nearly out of our reach.

While the LL1.1 *Signature* had been designed to complement the ML3 *Signature* amplifier to show what a sonic "match made in heaven" is like, the LL1.1 *Signature* will perform magic with any other appropriate power amplifier.

The LL1.1 *Signature* features a topology that brings out the most natural sound performance in the audio path. In principle, it is a single-stage unit that basically represents the shortest possible signal path.

The preamplifier contains four very linear low impedance triodes paralleled into a single **inverting** gain stage.

The LL1.1 *Signature* employs a pure single-ended class A operation, with no overall feedback applied. Also featured are specially selected high-transconductance dual triodes 6N30P-EB/ 6H30П-EB in the signal path and TKD stepped potentiometers for volume control -- the best available on today's market.

The preamplifier's audibly neutral power supply features a full-wave vacuum rectifier. This rectifier, together with a choke-containing filter, allows to practically get rid of the hum and buzz and, in the end, to ensure the verity of dynamic range without coloration. Two solid-state analog voltage regulators supply dc voltage to the tube filaments (heaters).

Other features include 3 inputs, one tape/HT processor loop, attenuator (-12 dB) switch, output 1/output 2 switches, protection circuitry designed to enable manual muting of the output signal, and built-in remote on/off for LAMM power amplifiers.

The main distinction of the LL1.1 *Signature* from any other comparable type of preamplifiers is its practically inaudible sonic signature. When connected to an appropriate type of power amplifiers, especially LAMM power amplifiers, it assures the extraordinary transparency of perceived sound and recreation of a three-dimensional soundstage in the home, recording studio, etc., without boundaries and limitations.

Each preamplifier is handcrafted of the finest materials and top quality parts like military-grade DALE metal-film resistors, RCD wire-wound resistors, BOURNS multi-turn potentiometers, VISHAY electrolytic capacitors, ELECTROCUBE, ELCON and KEMET/RIFA film capacitors; HAMMOND chokes, gold-plated NEUTRIC connectors, and military-grade low-noise long-life vacuum tubes.

A custom-designed massive damping panel installed in the preamplifier unit significantly reduces all types of mechanical vibrations which, in turn, leads to a more extended, coherent and natural bass reproduction.

The LL1.1 *Signature* features a custom-designed super-low noise power transformer.

The LL1.1 *Signature* works on all world AC line voltages (100/120/220/230/240V).



LL1.1 *Signature* preamplifier

SPECIFICATIONS

- **RATED OUTPUT VOLTAGE**
from 20Hz-20KHz into 41-KOhm load: 1 Volt RMS.
- **VOLTAGE GAIN** 7.43 \pm 2% or 17.43 \pm 0.2dB.
- **ATTENUATION** 3.98 \pm 2% or 12 \pm 0.17dB.
- **ABSOLUTE PHASE** Inverting.
- **FREQUENCY RESPONSE**
from 1-50 Volts RMS into 41-KOhm load: (-0.1dB) 20Hz-20KHz.
(-3dB) 2Hz-450KHz.
- **SLEW RATE**
Vout=36 Volts peak-to-peak of
square-wave signal, F=10KHz;
into 41-KOhm load 47 Volts per microsecond.
- **RISE TIME**
Vout=36 Volts peak-to-peak of
square-wave signal, F=10KHz;
into 41-KOhm load 0.61 microsecond.
- **TOTAL HARMONIC DISTORTION**
from 20Hz-20KHz:

Vout=1 Volt RMS into 41-KOhm load no more than 0.03%
Vout=50 Volts RMS into 41-KOhm load no more than 1%

Vout=1 Volt RMS into instrument load no more than 0.03%
Vout=50 Volts RMS into instrument load no more than 1%

Vout=1 Volt RMS into IHF load no more than 0.03%
Vout=30 Volts RMS into IHF load no more than 1%

- **IM DISTORTION**
(60Hz:7KHz 4:1) SMPTE:

V_{out}=1 Volt RMS into 41-KOhm load	no more than 0.09%
V_{out}=10 Volts RMS into 41-KOhm load	no more than 1%
V_{out}=1 Volt RMS into instrument load	no more than 0.09%
V_{out}=10 Volts RMS into instrument load	no more than 1%
V_{out}=1 Volt RMS into IHF load	no more than 0.09%
V_{out}=10 Volts RMS into IHF load	no more than 1%

- **INPUTS**
Unbalanced: gold plated, single-ended RCA connectors.

- **INPUT SENSITIVITY**
V_{out}=1 Volt RMS into 41-KOhm load 0.135 Volts RMS±2%.

- **INPUT IMPEDANCE**
F=1KHz typically 16.5 KOhms.

- **OUTPUTS**
Unbalanced: gold plated, single-ended RCA connectors.

Pseudo-balanced: 3-pin gold plated XLR connectors.
Pin assignment:
pin 1 = signal ground;
pin 2 = signal output;
pin 3 = not connected.

- **CORRECTED OUTPUT IMPEDANCE**
F=1KHz typically 200 Ohms

- **NOISE**

signal-to-noise ratio, below 2 Volts RMS output, unweighted	typically 88 dB.
signal-to-noise ratio, below 2 Volts RMS output, 22Hz – 22 KHz	typically 96 dB.
signal-to-noise ratio, below 2 Volts RMS output, A-weighted	typically 105 dB.

- **OPERATING TEMPERATURE** -4 to +104 degrees Fahrenheit
(-20 to +40 degrees Celsius) ambient.

- **POWER SUPPLY**

Nominal line voltage:

100-240 Volts, 50/60Hz.

Input voltage range:

±10%.

One power transformer, two vacuum tube rectifiers, five filter chokes, one high voltage (350 vdc) high energy power supply, two solid-state analog non-switching voltage regulators.

AC voltage intensively filtered by special RFI power line filter.

- **POWER SUPPLY ENERGY STORAGE**

Approximately 257 Joules

- **FRONT PANEL CONTROLS**

Preamplifier:

LED control.

OUTPUT LEVEL control.

SELECTOR switches.

MONITOR switch.

ATTENUATOR (-12dB) switch.

MUTING switch.

OUTPUT 1 switch.

OUTPUT 2 switch.

- **REAR PANEL CONNECTORS AND CONTROLS**

Preamplifier:

Four INPUT CONNECTORS RCA for line inputs and TAPE (play).

One OUTPUT CONNECTOR RCA for TAPE (record).

Three OUTPUT CONNECTORS RCA (single-ended outputs).

Three gold-plated XLR CONNECTORS (pseudo-balanced outputs).

One XLR CONNECTOR (6 pins, gold-plated) for connecting the power supply cable.

- **FRONT PANEL CONTROLS**

Power supply:

POWER switch.

OUTLETS switch.

REMOTE 1 turn-on/off switch for LAMM power amplifiers

REMOTE 2 turn-on/off switch for LAMM power amplifiers

Four LED controls.

- **REAR PANEL CONNECTORS AND CONTROLS**

Power supply:

IEC 320 POWER INLET (3 lug).
Two AC OUTLETS, switched.
One XLR CONNECTOR (6 pins, gold-plated)
for connecting the power supply cable.
Two REMOTE CONTROL plugs.
EARTHING POST (gold-plated).

- **FEATURES**

Pure class A, single-stage zero feedback design, providing the shortest signal path possible.

Four low internal impedance (about 800 Ohms per triode!) very linear medium-mu duo triodes are connected in parallel, thus minimizing the internal noise of the preamplifier and ensuring the unprecedentedly low output impedance for this type of topology.

High-current drive capability, in combination with unique single-ended class A circuitry, assure the preamplifier's capability to drive any cable and any real world load while maintaining its practically inaudible sonic signature.

Specially designed damping panel installed in the LL1.1 *Signature* preamplifier effectively isolates all sensitive electronic components from any induced resonances.

Absolutely outstanding signal-to-noise ratio makes the LL1.1 *Signature* one of the quietest line-stage preamplifiers available on the market.

This design is unique to Lamm Industries, Inc.

AC voltage selector

100/120/220/230/240 Volts, internally switchable.

Remote control

Special built-in circuit enables the remote turn-on/off of LAMM power amplifiers.

Available remote link cable coordinates the remote functions of two or more amplifiers.

- **SAFETY FEATURES**

Unique electronic protection circuit enables muting of the outputs until the preamplifier is stabilized after a turn-on, as well as functioning of the preamplifier in a "muting" mode during operation and automatic switching to muting in case the AC line drops or is interrupted.

Plate voltage overload protection:
0.3 Amp slo-blo fuse, internally mounted.

AC voltage fuses:
2 Amps slo-blo for 100/120 Volts,
1 Amp slo-blo for 220/230/240 Volts,
internally mounted.
- **POWER CONSUMPTION**

Typically 96 Watts.
- **BURN-IN TIME AT FACTORY**

Minimum 72 hours.
- **RECOMMENDED BURN-IN TIME IN
END-USER'S SYSTEM**

Minimum 80 hours.
- **WARM-UP TIME**

Minimum 25 minutes.
- **DIMENSIONS**
(preamplifier and power supply have
the same dimensions)

4.5"(11.43cm)H x 19"(48.26cm)W x
13.875"(35.24cm)D
[add 1.375"(3.5cm) of depth for front handles].
- **WEIGHT, UNIT ONLY**
Preamplifier
Power supply

35.8 Lbs (16.2 Kg).
21.2 Lbs (9.6 Kg).
- **SHIPPING WEIGHT**
Preamplifier
Power supply

53.8 Lbs (24.4Kg).
39.2 Lbs (17.8Kg).

- **TUBE COMPLEMENT**
Preamplifier

**V101, V102, V103, V104 - 6N30P-EB / 6H30Π-EB,
first (single) amplification stage.**

Power supply

V101, V102 – 6X4, rectifier tubes

- SUBSTITUTION TUBE TYPES**
Preamplifier

6N30P-EB / 6H30II-EB:
no substitution, matched tubes available
factory-direct from LAMM only.

Power supply

6X4: 6X4W, 6X4WA, 6202, EZ90, CV4005.

• **ACCESSORIES SUPPLIED**

- One Operating Manual.**
- One power cord.**
- One power supply cable.**
- Eight 0.75" silicone tube dampers.**
- One hex screwdriver, 7/64".**
- One pair of handling gloves.**

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