

LUXMAN

VACUUM TUBE CONTROL AMPLIFIER
CL-1000



Technology and music in harmony

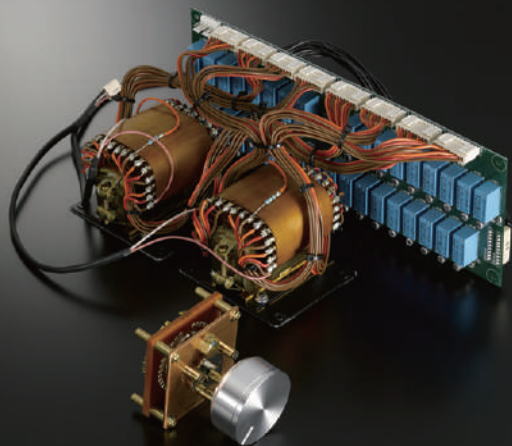


At LUXMAN, we don't consider a technology "advanced" unless it advances your ability to delight in music. That principle reaches its highest expression in the CL-1000, our flagship vacuum tube control amplifier.

Successor to the classic C-1000 released in 1975, the CL-1000 pairs beautifully with the acclaimed MQ-300 vacuum tube stereo power amplifier. Both reflect LUXMAN's singular expertise in vacuum tube audio. In the 1960s, when the audio industry moved en masse into transistor amplifiers, LUXMAN recognized the ineffable beauty of the tube music reproduction. And we've continued to build tube components without interruption.

While the CL-1000 salutes the past, it also embodies the best of today with a major step forward in sonic clarity: the transformer-assisted volume control we call LECUTA (Luxman Electronically Controlled Ultimate Transformer Attenuator). In addition, super permalloy core output transformers contribute to a vivid sound stage. Covered in natural walnut with a rosewood gloss finish, the cabinet lends a touch of warmth and refinement. All told, the CL-1000 brings advanced technology and musical refinement together in harmony.

Introducing the LECUTA transformer coupled attenuator



The LECUTA system controls volume via left and right transformers

The heart of any preamplifier is the volume control. If not executed properly, this key circuit element can cause left/right channel imbalances and introduce subtle but tangible distortions at low volume. For this reason, LUXMAN created our acclaimed LECUA attenuator system. Now we've refined the concept with LECUTA, the Luxman Electronically Controlled Ultimate Transformer Attenuator.

The front panel volume control is actually a 34-step rotary switch that triggers 34 relays located totally outside the signal path. The relays activate 34 taps on matching left and right transformers. It is these taps that adjust the volume in carefully calibrated steps. Because transformer cores can influence sound quality, we selected FINEMET® core material from Hitachi Metals, Ltd. This has a unique nanocrystal structure for high saturation flux density, high relative permeability and low core loss. So you'll enjoy rich, detailed, uncompromising sound even at low volume.



Input/output transformers

Super permalloy input / output transformers

Transformers can have a profound impact on vacuum tube sound quality. We chose independent left and right output transformers with high-permeability super permalloy cores. And we applied the same grade of transformers to the independent left and right balanced inputs. The result? Reproduction of outstanding musicality.

Exceptionally stable power supply

When the music reaches a dynamic climax, the power supply must be ready. That's why we incorporated a highly stable, extremely potent power supply. A large power transformer plus independent left- and right-channel filter capacitors provide immediate power. You get instant dynamic response, excellent left/right separation and high reliability.



Power supply

Articulator function

Our deep experience in signal path transformers has alerted us to a significant downside: residual magnetic fields in the cores. For this reason, the CL-1000 oscillates and demagnetizes the transformer cores every time you turn the power on. For an even higher degree of sonic purity, you can perform manual demagnetization using the Articulator switch.



Articulator switch

Custom capacitors

Because coupling capacitors influence the sound, we use the LUXMAN oil-impregnated capacitors originally developed for our MQ-300 vacuum tube amplifier. These help deliver rich, satisfying music reproduction. In addition, our original low-profile electrolytic capacitors can handle high current despite their small size.



LUXMAN's original oil capacitors

Classic design



Triple layer aluminum front panel

In a design reminiscent of our classic C-1000, the front panel uses the latest precision machining to superpose three thick aluminum layers into one massive, anti-resonant assembly. The aluminum provides a graceful counterpoint to the cabinet, which we cover in natural walnut with a rosewood gloss finish.

Robust vibration countermeasures

External vibration is the enemy of vacuum tube reproduction. For this reason, LUXMAN engineers built an extremely rigid box chassis reinforced by internal partitions. For added protection, brackets which hold circuit boards are isolated from the main chassis by special rubber dampers. The result is supple, nuanced music reproduction.



Highly rigid chassis

Alloy terminals and cast iron feet

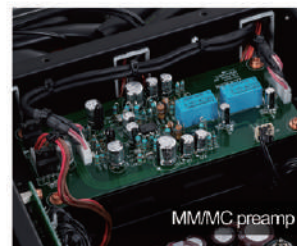
No detail was too small for LUXMAN engineers to consider. The RCA input and output terminals consist of an alloy that combines the conductivity of copper with the durability of brass. We also matched the massive, anti-resonant chassis to iron isolator feet. These feature a density gradient that diffuses shelf-borne vibration.



Terminals and feet

Vinyl playback with MM/MC phono preamp

For exceptional analog reproduction, the CL-1000 accommodates both Moving Magnet and Moving Coil cartridges with an audiophile-grade phono preamplifier. Six-position switches on the rear panel enable you to optimize impedance and capacitance.



MM/MC preamp

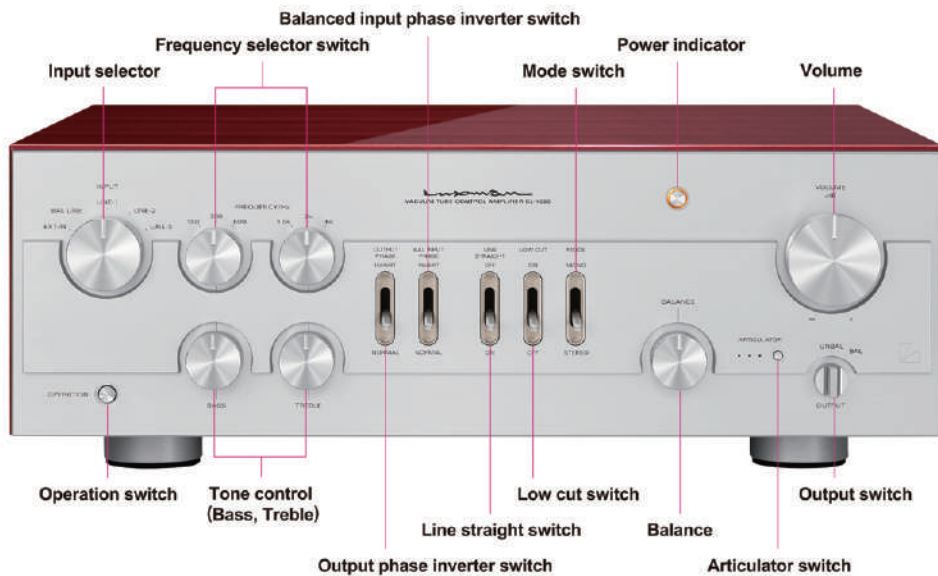
JJ Electronic E88CC dual triode vacuum tubes



E88CC dual triodes achieve high reliability and rich detail

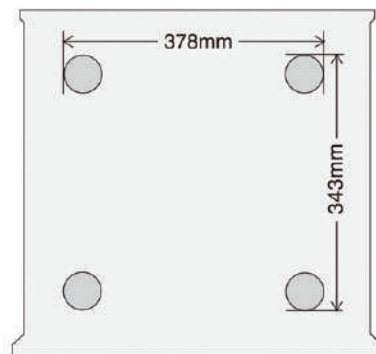
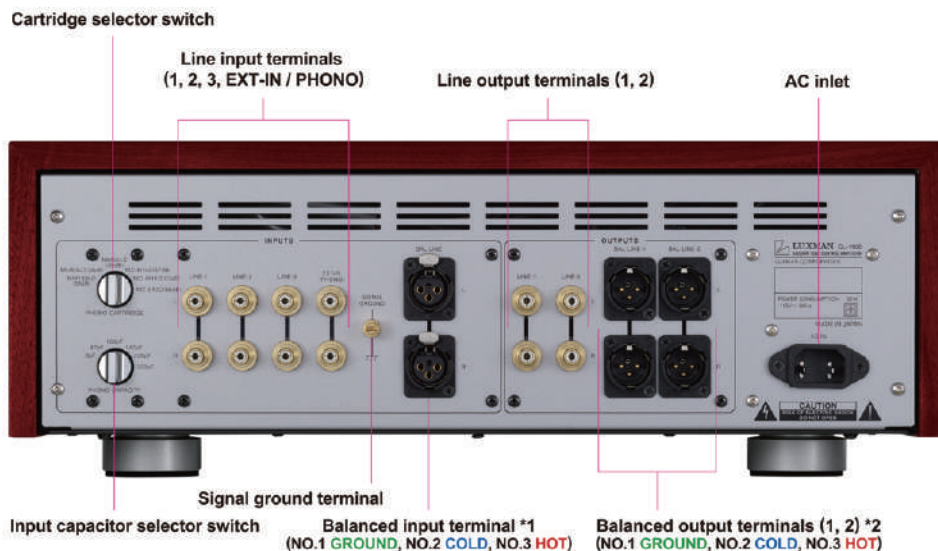
Through countless hours of listening, LUXMAN evaluated the sonic characteristics of every circuit element. We adopted two-stage P-K NF amplification. The balanced inputs incorporate super permalloy core transformers. Next, the attenuator driver amplifier achieves 6 dB of gain thanks to a JJ Electronic E88CC dual triode vacuum tube. We selected the E88CC for superb reliability, extremely low noise, attractive dynamics and a densely detailed midrange. After LECUTA volume adjustment, the output stage incorporates a second E88CC and independent left/right super permalloy output transformers. We couple the stages with our own oil capacitors, which greatly improve audio quality. And to minimize the potential degradation caused by resistors in the signal path, the Line Straight mode completely bypasses the tone controls. So audio reproduction is energetic, yet effortless.

CL-1000 VACUUM TUBE CONTROL AMPLIFIER



Internal configuration

Since we have chosen natural wood for this model's outer case, the natural color and grain of the wood yields slight individual differences from unit to unit. However, due to our strict quality control management of the cabinet making process, the user can be confident in purchasing a beautiful and uniquely finished product.



Insulator position / dimensions

SPECIFICATIONS

Input sensitivity	LINE / BAL.LINE	: 180 mV / 1 V output, 1 kHz, load 50 kΩ
	EXT-IN (PHONO)	
	MM 100 kΩ (38 dB)	: 2.2 mV / 1 V output, 1 kHz, load 50 kΩ
	MM 50 kΩ (38 dB)	: 2.2 mV / 1 V output, 1 kHz, load 50 kΩ
	MM 33 kΩ (38 dB)	: 2.2 mV / 1 V output, 1 kHz, load 50 kΩ
	MC-H 1 kΩ (57 dB)	: 0.26 mV / 1 V output, 1 kHz, load 50 kΩ
Input impedance	LINE	: 90 kΩ / 1 kHz
	BAL.LINE	: 70 kΩ / 1 kHz
	EXT-IN (PHONO)	: MM 100 kΩ, 50 kΩ, 33 kΩ : MC 1 kΩ, 40 Ω, 10 Ω
Output impedance	LINE / BAL.LINE	: 1 kΩ / 1 kHz
Frequency response	LINE / BAL.LINE	: +0.3, -0 dB / 1 V output, 20 Hz to 20 kHz, load 50 kΩ
	EXT-IN (PHONO)	: ±0.3 dB / 1 V output, 20 Hz to 20 kHz, load 50 kΩ
Total harmonic distortion	LINE / BAL.LINE	: 0.016 % / 1 V output, 1 kHz, load 50 kΩ
	EXT-IN (PHONO)	
	MM	: 0.3 % / 1 V output, 1 kHz, load 50 kΩ
	MC (H, M)	: 0.3 % / 1 V output, 1 kHz, load 50 kΩ
	MC (L)	: 0.5 % / 1 V output, 1 kHz, load 50 kΩ

S/N ratio	LINE / BAL.LINE	: 120 dB (IHF-A) / distortion 1%, 1 kHz, load 50 kΩ
	EXT-IN (PHONO)	
	MM	: 108 dB (IHF-A) / distortion 1%, 1 kHz, load 50 kΩ
	MC (H, M)	: 92 dB (IHF-A) / distortion 1%, 1 kHz, load 50 kΩ
Tone control	Max. amount of change	: ±8 dB
	Bass turnover frequency	: 150 Hz, 300 Hz, 600 Hz
Low cut	Treble turnover frequency	: 1.5 kHz, 3 kHz, 6 kHz
		: 30 Hz (-6 dB / oct.)
Circuiting system		: 2-step amplification P-K NF type, tone control P-G NF type, Phono equalizer NF type
Vacuum tube used		: 6B8CC (manufactured by JJ Electronic / reliable tube) x 6
Power supply		: 230 V~(50 Hz)/115 V~ (60 Hz)
Power consumption		: 52 W
Dimensions		: 460 (W) x 166 (H) x 454 (D) mm (including 13.5 mm front knob and 14.5 mm rear terminals)
Net weight		: 24.4kg (main unit)
Accessories		: Power cable

*1 Setting the balanced input phase inverter switch to INVERT position allows balance input terminal No 2 to change to HOT, and No. 3 to COLD.

*2 Setting the output phase inverter switch to INVERT position allows balance output terminal No. 2 to change to HOT, and No. 3 to COLD.

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Safety Cautions

To ensure correct use of this product, read the "Owner's Manual" prior to use. Failure to follow all safeguards can result in fire, electric shock, or other accidents.