



CL350



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Archiv Michael-Otto*

LUX CL 350 PRE AMPLIFIER

At last the ultimate solid state pre amplifier utilizing advanced circuit design and is the result of intensive research by the R and D Department of Lux. The unsurpassed quality and facilities will satisfy the most critical audiophile.

Concept

The phono stage is based on a 3 stage direct coupled circuit using a combination of PNP and NPN transistors. The 3rd stage with a pair of PNP and NPN transistors is operated in a push-pull system to further reduce hum. This ensures excellent linearity and results in the circuit being independent of the load condition imposed by the next stage. These extra stages together with the design parameters allow an unprecedented 13.7 volts input before the RIAA connection. The phono overload margin especially at high frequencies is well demonstrated by the

previous transistor designs. The maximum input at 1KHz is 300mV and 1.4V at 10KHz. All low level inputs (phono 1, phono 2, and microphone) have individual and independent equalizer amplifiers and the input signals are directly fed to the next stage. This enables the selection of the inputs to be made at the output stage which eliminates both the usual switching noises and the effects of low level screened cables. Tone controls are the world's famous Lux NF (negative feedback) type with 3-position switchable turnover (roll-off) frequencies for both bass and treble. Together with the switchable turnover points there is the fully variable bass and treble controls. Not only can the amount of boost on cut be varied but also the point at which the roll-off commences and individually for each channel. The entire tone control stages can be by-passed when the "default" position is selected, this also allows a quick comparison to be made of the effect of the subtle tone

adjustments possible with this system.

Both the high and the low filters have 2 cut off frequencies and the slope is 12db per octave. The 25Hz filter is designed for the direct coupled power amplifiers when they become available. The 12KHz high filter is designed to reduce the effects of tracing distortion without effecting the actual music programme.

All the 1st stages of the equalizer circuits use PNP ultra low noise silicon transistors for the best signal to noise ratio.

Performance

The low frequency trimmer is a special control only accessible when the unit is removed from its case and offers a subtle adjustment (±6db at 250Hz) of the frequency range 150 - 300Hz. This allows the response in this very critical region to be tailored to match the specific listening room e.g. any chestiness in the male voice can be effectively reduced. This con-

control is fitted after the equalizer circuits and does not affect the tape recorder output. A headphone socket is fitted on the front panel and a separate continuously variable volume control is fitted on the back panel. Standard 8-ohm headphones can be used and a direct coupled fully complementary amplifier delivering 80mV is used to drive the headphones.

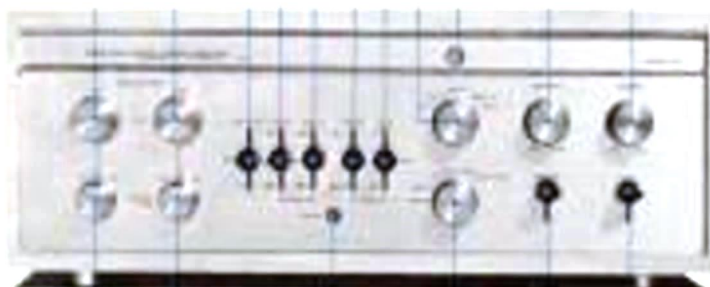
Two separate record/playback systems are provided to enable simultaneous use of 2 recorders. Dubbing from tape deck to tape deck is provided by the special switching incorporated.

The attenuator switch allows the AF amplifier to be by-passed with subsequent in gain of 15db; this can be used when there is a need for quietness e.g. telephone call etc. Both RCA and standard jack sockets are provided for microphones. The input impedance to phono 1 can be varied by the switch provided and input sockets are provided for moving coil cartridge transformers on phono 2, these can be switched out if not required.

Both the Aux 1 and Aux 2 inputs are fitted with variable volume controls to enable the matching of volumes of phono radio, cassette etc.

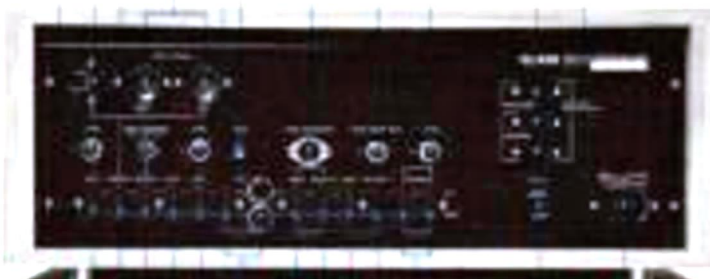
Overall Design

The beautifully finished wooden cabinet matches the elegant silver smoked front panel, the switches are positive in action and all the controls are logically arranged for ease of operation. Naturally the ultimate control amplifier looks and feels the part. All components are specially selected and matched and are fixed to the printed circuit to ensure uniformity and stability in performance.



12 13 14 15 16 17

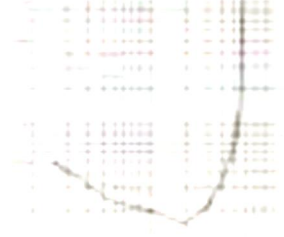
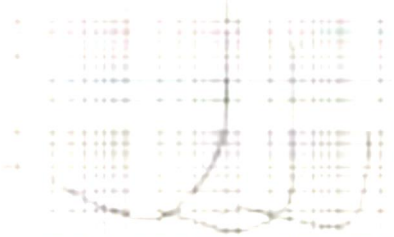
18 19 20 21 22 23 24 25 26 27 28



29 30 31 32 33 34 35 36 37 38 39 40 41

- 1 BASS LEVEL CONTROL
- 2 TREBLE LEVEL CONTROL
- 3 TONE CONTROL SWITCH
- 4 LOW CUT FILTER
- 5 HIGH CUT FILTER
- 6 MONITOR SWITCH
- 7 TAPE REPRINT SWITCH
- 8 INPUT SELECTOR
- 9 PILOT LAMP
- 10 BALANCE CONTROL
- 11 VOLUME CONTROL
- 12 BASS FREQUENCY SELECTOR
- 13 TREBLE FREQUENCY SELECTOR
- 14 HEADPHONE CONNECTOR
- 15 MODE SELECTOR
- 16 ATTENUATOR SWITCH
- 17 POWER SWITCH
- 18 AUX 1 LEVEL SET
- 19 STEP-UP TRANS SELECTOR
- 20 INPUT IMPEDANCE SELECTOR
- 21 STEP-UP TRANS INSERTION SOCKET
- 22 AUX 2 LEVEL SET
- 23 GND. TERMINAL
- 24 TAPE CONNECTOR
- 25 HEADPHONE LEVEL
- 26 OUTPUT LEVEL CONTROL
- 27 EXTRA AC OUTLET (UNSWITCHED)
- 28 EXTRA AC OUTLET (SWITCHED)
- 29 AUX 3 CONNECTOR
- 30 PHONO 2 CONNECTOR
- 31 PHONO 1 CONNECTOR
- 32 AUX 2 CONNECTOR
- 33 AUX 1 CONNECTOR
- 34 RRC CONNECTOR
- 35 TAPE 1 CONNECTOR
- 36 RRC OUT 1 CONNECTOR
- 37 TAPE 2 CONNECTOR
- 38 RRC OUT 2 CONNECTOR
- 39 OUTPUT CONNECTOR
- 40 FUSE HOLDER
- 41 AC POWER INLET

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SPECIFICATIONS

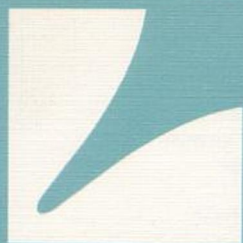
COMPONENTS:	SILICON TRANSISTORS (481) DIODES (81)
FREQUENCY RESPONSE:	50~50,000Hz, less than -10dB(AUX 1) 7V(rms) 7V(rms)
OUTPUT VOLTAGE:	PRE. OUT. 100V
OUTPUT IMPEDANCE:	PHONO 1/2: 2KΩ
INPUT SENSITIVITY:	AUX 1/2: 110mV (level adjustment) AUX 2: 110mV microphone: 2-3mV Tape 1/2: 110mV
INPUT IMPEDANCES:	PHONO 1: 100,000KΩ (selection) PHONO 2: 50KΩ AUX 1/2: 50KΩ AUX 2: 100KΩ MICROPHONE: 50KΩ TAPE 1/2: 100KΩ PHONO: 50KΩ AUX: 50KΩ
S/N RATIO:	

MICROPHONE:	50dB
TAPE:	50dB
PHONO INPUT VOLTAGE:	more than 300mV
EQUALIZER:	R1A 30~75,000Hz (L.O. 3dB)
TONE CONTROL:	LUX Type NF (broadband frequency selection) Bass frequency selection: 150, 300, 600Hz Treble frequency selection: 1.5K, 3K, 6KHz
FILTER:	LOW CUT: 25Hz, 60Hz HIGH CUT: 7KHz, 12KHz
LOW FREQUENCY TRIMMER:	±0.5dB (350Hz)
ANNEXED CONTROLS:	ATTENUATOR, HEADPHONE AMPLIFIER 50mV output TAPE REPRINT SWITCH, etc.
DIMENSIONS:	476mm(W) (18-3/4") x 244mm(D) (9-5/8") x 182mm(H) (7-3/16")
WEIGHT:	8.5kg (18.6lb)

LUX CORPORATION, JAPAN

HEAD OFFICE & FACTORY: 2-21, NAKAHASHI DOR, AISHINARI-KU, OSAKA
PHONE: 627-8031 CABLE: LUXELECT OSAKA
TELETYPE: 215104
SALES DIVISION: 1-4-1, 1-2-1, 1-3-1, YUASA BUNYOKU, TOKYO
PHONE: 831-1801 CABLE: TOKYUAMAT TOKYO

SOLID STATE STEREO CONTROL CENTRE



LUXMAN 350



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Circuit.

The phono stage is based on a 3 stage direct coupled circuit using a combination of PNP and NPN transistors. The 3rd stage with a pair of PNP and NPN transistors is operated in a push pull system to further reduce hum. This ensures excellent linearity and results in the circuit being independent of the load condition imposed by the next stage. These extra stages together with the design parameters allow an unprecedented 13.7 volts input at high level inputs. The phono overload margin especially at high frequencies is well above that obtained from

previous transistor designs. The maximum input at 1KHz is 300mV and 1.4V at 10KHz. All low level inputs (phono 1, phono 2, and microphone) have individual and independent equalizer amplifiers and the input signals are directly fed to the next stage. This enables the selection of the inputs to be made at the output stage which eliminates both the usual switching noises and the effects of low level shielded cables.

Tone controls are the world famous Lux NF (negative feedback) type with 3-position switchable turnover (roll-off) frequencies for both bass and treble. Together with the switchable turnover points there are the fully variable bass and treble controls. Not only can the amount of boost or cut be varied but also the point at which the roll-off commences is individually controlled for each channel. The entire tone control system can be by-passed when the "defeat" position is selected. This also allows a quick comparison to be made of the effect of the subtle tone

adjustments possible with this system.

Both the high and the low filters have 2 cut off frequencies and the slope is 12dB per octave. The 25Hz filter is designed for direct coupled power amplifiers when they become available. The 12KHz high filter is designed to reduce the effects of fringing distortion without effecting the actual music programme.

All the 1st stages of the equalizer circuits use PNP ultra low noise silicon transistors for the best signal to noise ratio.

Performance

The low frequency trimmer is a special control only accessible when the unit is removed from its case and offers a subtle adjustment (± 0.6 dB at 250Hz) of the frequency range 150 – 300Hz. This allows the response in this very critical region to be tailored to match the amplifier, speakers and room e.g. any chestiness in the male voice can be effectively reduced. This con-

trol is fitted after the equalizer circuits and does not effect the tape recorder output. A headphone socket is fitted on the front panel and a separate continuously variable volume control is fitted on the back panel. Standard 8-ohm headphones can be used and a direct coupled fully complementary amplifier delivering 80mv is used to drive the headphones.

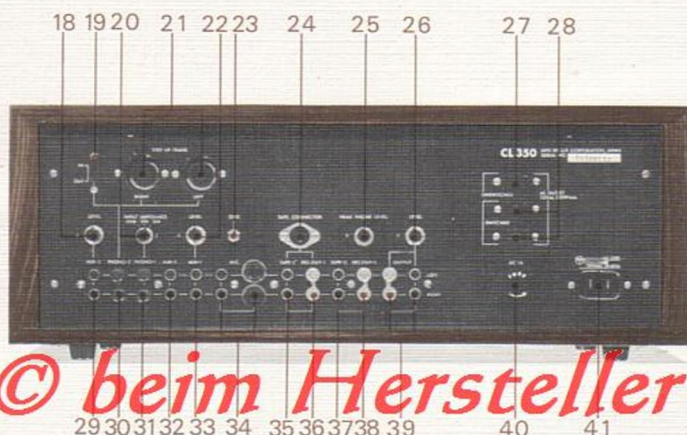
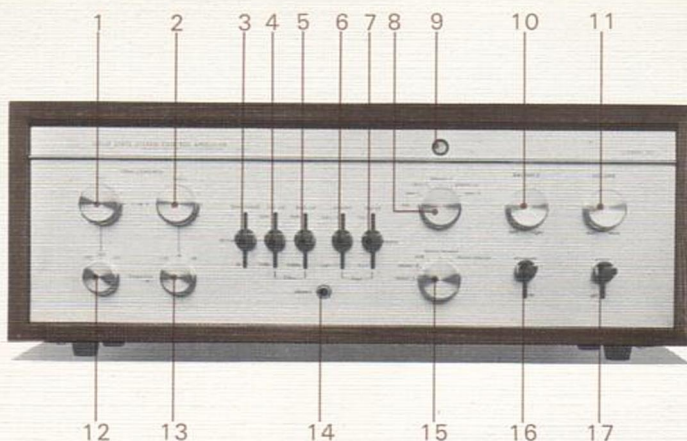
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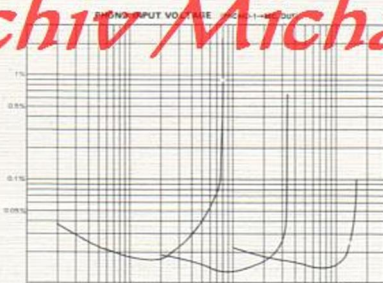
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- 6 MONITOR SWITCH
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- 9 PILOT LAMP
- 10 BALANCE CONTROL
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- 12 BASS FREQUENCY SELECTOR
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- 14 HEADPHONE CONNECTOR
- 15 MODE SELECTOR
- 16 ATTENUATOR SWITCH
- 17 POWER SWITCH
- 18 AUX-3 LEVEL SET
- 19 STEP-UP TRANS SELECTOR
- 20 INPUT IMPEDANCE SELECTOR
- 21 STEP-UP TRANS INSERTION SOCKET
- 22 AUX-1 LEVEL SET
- 23 GND. TERMINAL
- 24 TAPE CONNECTOR
- 25 HEADPHONE LEVEL
- 26 OUTPUT LEVEL CONTROL
- 27 EXTRA AC OUTLET (UNSWITCHED)
- 28 EXTRA AC OUTLET (SWITCHED)
- 29 AUX-3 CONNECTOR
- 30 PHONO-2 CONNECTOR
- 31 PHONO-1 CONNECTOR
- 32 AUX-2 CONNECTOR
- 33 AUX-1 CONNECTOR
- 34 MIC CONNECTOR
- 35 TAPE-1 CONNECTOR
- 36 REC. OUT-1 CONNECTOR
- 37 TAPE-2 CONNECTOR
- 38 REC. OUT-2 CONNECTOR
- 39 OUTPUT CONNECTOR
- 40 FUSE HOLDER
- 41 AC POWER INLET

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SPECIFICATIONS

COMPONENTS:

FREQUENCY RESPONSE: 10~50,000Hz, less than - 1dB(AUX)

OUTPUT VOLTAGE: 1v(rated) 7v(max.)

OUTPUT IMPEDANCE: PRE. OUT. 100ohms

INPUT SENSITIVITY:

PHONO-1/2: 2mV

AUX-1/3: 110mV (level adjustable)

AUX-2: 110mV

MICROPHONE: 2-3mV

TAPE-1/2: 110mV

INPUT IMPEDANCE:

PHONO-1: 100.50.30K ohms (selection)

PHONO-2: 50K ohms

AUX-1/3: 50Kohms

AUX-2: 100Kohms

MICROPHONE: 50Kohms

TAPE-1/2: 130Kohms

S/N RATIO:

PHONO: 63dB

AUX: 80dB

S/N RATIO:

MICROPHONE: 59dB

TAPE: 80dB

PHONO INPUT VOLTAGE:

more than 300mV

EQUALIZER:

RIAA 30~15,000Hz(±0.3dB)

TONE CONTROL

LUX type NF turnover frequency selection

Bass frequency selection: 150,300, 600Hz

Treble frequency selection: 1.5K, 3K, 6KHz

LOW CUT: 25Hz, 60Hz

HIGH CUT: 7KHz, 12KHz

±0.6dB (250Hz)

FILTER:

LOW FREQUENCY TRIMMER

ANNEXED CONTROLS

ATTENUATOR, HEADPHONE AMPLIFIER (80mV output)

TAPE REPRINT SWITCH, etc.

DEMENSIONS:

476mm(W) (18-3/4") x 244mm (D) (9-5/8") x 182mm (H) (7-3/16")

WEIGHT:

8.8kgs (19lbs)

LUX CORPORATION, JAPAN

HEAD OFFICE & FACTORY

1-8-31 NAGAHASHI, NISHINARI-KU, OSAKA
PHONES: 632 0031 CABLE: LUXELECT OSAKA
TELEX: J63694

Specifications and appearance design subject to possible change without notice.

Printed in Japan