

# Phase Linear



Phase Linear 2000 Preamplifier • Phase Linear 200 Power Amplifier • Phase Linear 5000 Tuner • Phase Linear 1000 Noise Reduction System • Phase Linear 4000 Preamplifier • Phase Linear 700B Power Amplifier • Phase Linear 400 Power Amplifier • Phase Linear Corporation, Lynnwood, Washington, U.S.A.





## Phase Linear Model 200

### Specifications

Power: 105 watts per channel, minimum RMS at 8Ω from 20 Hz to 20 kHz with no more than 0.25% THD

Hum and Noise: At least 95 dB below rated power

Damping Ratio: 100 : 1

Rise Time: less than 1,7 microseconds

Phase Shift: lagging 12 degrees at 20 kHz

Sensitivity: 1,5 Volts for rated power output

Input Impedance: 18 kohms

Protection: Current limiting amplifier protection (output relay electronically operated for speaker protection)

Dimensions: 19" x 5½" x 8¾" (W x H x D)

Weight: 16 pounds





## Phase Linear Model 400

### Specifications

- Solid State / Tubed Solid State
- Power 201 Watts / Channel @ 8  $\Omega$ (1)
- Power at Clipping 250 Watts / Channel @ 8  $\Omega$ (3)
- 400 Watts / Channel @ 4  $\Omega$ (3)
- 125 Watts / Channel @ 16  $\Omega$ (3)
- Recommended Load Impedance 4  $\Omega$  - 16  $\Omega$ (5)
- Frequency Response 20 Hz - 20 kHz(1)
- 0 Hz - 0.25 MHz @ 1 Watt(3)
- Power Bandwidth 5 Hz - 40 kHz(2)
- Rise Time Less than 1.7 microseconds(1)
- Phase Shift Lagging 12° at 20 kHz(1)
- Total Harmonic Distortion No more than 0.25 %(1)
- Intermodulation Distortion 0.05 %(2)
- Sensitivity 1.7 Volts(1)
- 1.75 Volts(2)
- Input Impedance PL400C: 47k  $\Omega$ (1)
- PL14A: 10k  $\Omega$ (1)
- PL14B: 39k  $\Omega$ (1)
- Hum and Noise At least 100 dB below rated power(1)
- Damping Factor 1000:1 @ 20 Hz(1)
- Dimensions (W x D x H) 19 x 10 x 7 in.(3)
- [48.26 x 25.4 x 17.78 cm]
- Weight 35 lbs.(2)
- [15.89 kg]
- Price USD \$499.00(3)
- CAD \$779.00(2)
- Walnut Cabinet: USD \$37.00(5)
- Miscellaneous No power switch- always on when plugged in(4)
- Walnut cabinet available(5)

### References:

1. Source: Phase Linear 400 Amplifier Service Information for Serial Numbers 000-000 thru 743-300 - June 1976
2. Source: 'electron' 1974 Canadian Hi-Fi Buyer's Catalogue - December 1973
3. Source: 'Stereo Directory & Buying Guide 1973' Ziff-Davis Publishing Company - c. 1972
4. Source: Webmaster's (<http://www.dnaelectronics.ca>) personal observations
5. Source: 'Stereo Review' Stereo Directory & Buying Guide 1976 - c. 1975





## Phase Linear Model 700B

### Specifications

Solid State / Tubed Solid State  
Power 345 Watts / Channel @ 8  $\Omega$ (1)  
Recommended Load Impedance 4  $\Omega$  - 16  $\Omega$ (2)  
Frequency Response 5 Hz - 25 kHz @ 1 Watt(1)  
Phase Shift Lagging 10° at 20 kHz(2)  
Total Harmonic Distortion 0.25 % (1)  
Intermodulation Distortion 0.25 %(1)  
Hum and Noise 100 dB below rated power(2)  
Sensitivity 1.14 Volts(2)  
Damping Factor 1000(1)  
Dimensions (W x D x H) 19 x 10 x 7 in.(1)  
[48.26 x 25.4 x 17.78 cm]  
Weight 45 lbs.(1)  
[20.43 kg]  
Price USD \$799.00(2)  
CAD \$1350.00(1)  
Walnut cabinet USD \$37.00(2)

### References:

1. Source: 'Audio Scene Canada' 1976 Canadian Hi-Fi Buyer's Catalogue - December 1975
2. Source: 'Stereo Review' Stereo Directory & Buying Guide 1976 - c. 1975





## Phase Linear Model 1000

### Description

The Phase Linear 1000 is a dynamic range recovery system.

Recording studios and record processing companies employ a number of necessarily evil techniques brought about by the state of the recording art.

Taken together, these techniques may be described as processes which serve to limit and restrict the dynamic range of recorded material.

Unfortunately, their use is necessary in order to put the tremendous range of live music onto the surface of modern phonograph discs and tapes.

When used properly, the Phase Linear 1000 will significantly correct these shortcomings inherent in the recording process.

### Specifications

#### Series one

Channels: 2

Input sensitivity: 3V (max)

Output level: 8V (max)

S/N improvement: 10dB

Frequency response: 20Hz to 20kHz

Total harmonic distortion: 0.25%

Semiconductors: 28 x transistors, 8 x IC,  
91 x diodes

Dimensions: 9-1/2 x 5 x 11-4/5 inches

Weight: 6lbs

#### Series Two

Channels: 2

Input sensitivity: 250mV

S/N improvement: 10dB

Frequency response: 20Hz to 20kHz

Total harmonic distortion: 0.09%

Semiconductors: 6 x transistors, 14 x  
IC, 2 x FET, 60 x diodes





## Phase Linear Model 2000

### Specifications

#### FREQUENCY RESPONSE

Phono  $\pm 5$ dB of RIAA Standard

#### TOTAL HARMONIC DISTORTION

Basically so low it is unmeasurable. Less than .1% at rated output with IHF measurement.

#### INPUT SENSITIVITY

High level input: 350mV

Low level input (Phono) 3.2mV

#### INPUT IMPEDANCE

High level input: 40k

Low level input: 47k. 290pf

#### HUM AND NOISE

20Hz to 20.000Hz inputs shorted:

High level: 88dB below 2V

Low level: 74dB below a 10mV input

#### AMBIENCE SIGNAL

(L-R)  $\rightarrow$  L & (R-L)  $\rightarrow$  R

#### GAIN

Low Level (Phono) to preamplifier output: 56dB at 1kHz

Phono to tape output: 4dB at 1kHz

High level to preamplifier output: 15dB at 1kHz

#### VOLUME CONTROL TRACKING

Less than 1dB tracking error.

#### DYNAMIC RANGE:

Phono overload 80mV

#### MAXIMUM OUTPUT LEVELS:

Rated at 2V; maximum 10 volts will source a 5k ohm load.

#### TONE CONTROLS

10 step Rotary Switch for each channel. Turnover frequencies adjustable BASS Turnover Frequency 50Hz:  $\pm 11$ dB at 20Hz

Turnover Frequency 150Hz:  $\pm 13$ dB at 20Hz

#### TREBLE

Turnover Frequency 5kHz:  $\pm 10$ dB at 20,000 Hz

Turnover Frequency 2kHz:  $\pm 14$ dB at 20,000 Hz

#### AC OUTLETS

2 switched; 1 unswitched

#### DIMENSIONS

OPTIONAL ACCESSORY Walnut Cabinet

5 1/2" H X 19" W X 6" D Weight: 9 lb. without cabinet





## Phase Linear Model 4000

### Specifications

TOTAL DISTORTION: Less than .25%.  
Typically .02%.

TOTAL NOISE: High Level: 83 dB below 2 volts.  
Phono: 72 dB below a 10 millivolt reference.

INPUT IMPEDANCE: Phono: No less than  
47k from 20 Hz to 20 kHz. High Level: 50k.

CAIN: Phono: 65 dB. High Level: 15 dB.

OUTPUT VOLTAGE: Full output 8 volts  
R.M.S. Better than 2 volts into 4.7k or greater.

FREQUENCY RESPONSE: Phono: Within  $\pm$   
1 dB of RIAA from 20 Hz to 20 kHz. High  
Level: Within  $\pm$  1 dB from 20 Hz to 20 kHz.

TONE CONTROLS: Bass: Monotonically in-  
creasing and decreasing, dual hinge points,  $\pm$  8  
dB at 20 Hz. Hinge points switch selectable  
beginning at 40 Hz or 150 Hz. Treble:

Monotonically increasing and decreasing, dual  
hinge points,  $\pm$  8 dB @ 20 kHz. Hinge points  
switch selectable beginning at 2 kHz and 8 kHz.

ACTIVE EQUALIZER: 6 dB/octave boost  
below 50 Hz.

PEAK UNLIMITER: (Nominal peak unlimit  
rate attack threshold, front panel variable) .5  
dB/micro second for + 6 dB. peak unlimit  
operation.

NOMINAL AMPLITUDE ATTACK  
THRESHOLD: .2 volts peak at input to peak  
unlimiter.

DOWNWARD EXPANDER: Downward ex-  
pansion commences at — 35 dB. Ultimate limit  
is — 41 dB. Unlimiter window is 35 dB wide,  
upper and lower thresholds are simultaneously  
variable by front panel unlimit threshold con-  
trol.

FOUR CHANNEL FACILITIES: Built in  
CBS SQ system with Phase Linear developed  
differential logic for enhanced four channel  
separation.

SEMICONDUCTOR COMPLEMENT: 45  
transistors. 9 integrated circuits, 57 diodes, 2  
zener regulators, 2 light emitting diodes.

AUTO CORRELATOR (NOISE  
REDUCTION SYSTEMS): High frequency  
noise reduction commences at 2 kHz and is 3  
dB. reaching 10 dB from 4 kHz to 20 kHz. Low  
frequency noise reduction begins at 200 Hz, ul-  
timately reaching 20 dB @ 20 Hz. Passive sub-  
sonic filter rejection of — 35 dB @ 5 Hz.  
Weighted overall noise reduction is — 10 dB  
from 20 Hz to 20 kHz.

TAPE MONITOR: Two tape switches per-  
mitting any input source to be recorded on  
either of two tape machines, play back selection  
of either machine, or copy of tape machine 2 on  
to 1 while listening to a second source.

POWER SWITCHING CAPABILITY:  
Switched outlets are capable of switching up to  
25 amperes.

POWER CONSUMPTION: Preamplifier; 40  
watts.

SIZE: 19" wide x 7" high x 10" deep.

WEIGHT: 18 pounds.





## Phase Linear Model 5000

### Features:

- Large slide rule dial;
- Variable muting 2  $\mu\text{V}$  to 100  $\mu\text{V}$ ;
- Fixed and variable outputs;
- 25  $\mu\text{Sec}$  and 75  $\mu\text{Sec}$  de-emphasis;
- 75  $\Omega$  cable connector;
- Expander with selection for 4 dB and 9 dB, tailored to "decompress" typical FM compression techniques;
- L.E.D. multipath indicator which shows instantaneous multipath distortion;
- Center tune and signal strength meters with back panel calibration adjustments;
- Panel light dimmer switch.

### Specifications

- Sensitivity: 2,0  $\mu\text{V}$
- 50 dB Quieting level: 5  $\mu\text{V}$  mono, 25  $\mu\text{V}$  stereo
- Signal-to-noise Ratio: 74 dB mono, 72 dB stereo
- Selectivity: 75 dB
- Capture Ratio: 1,7 dB
- Distortion: 1 kHz - less than 0,25% mono or stereo
- Separation: 1 kHz - greater than 40 dB
- Suppression at 1 kHz: Greater than 40 dB
- Suppression at 38 kHz: Greater than 40 dB

Go to the original heaven



# Loud and Proud

HIFIGOTEBORG.se a



*Phase Linette*

WANT TO RELAX TO BEAUTIFUL  
MUSIC

**WELCOME**

WE HAVE GOOD HIFI AT YOUR  
SERVICE

PLEASE WAIT HERE & A MEMBER  
OF OUR TEAM WILL BE WITH  
YOU SHORTLY.

Or press finger HERE