

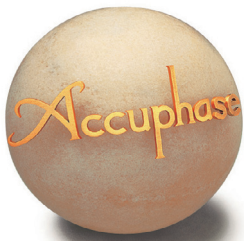
# Accuphase

STEREO CONTROL CENTER

## C-2120

- AAVA volume control for high performance and outstanding sound
- Separate power transformers for left and right channels
- Selectable preamp gain
- Fully modular construction with individual left/right amplifier units on motherboard
- Logic-controlled relays for shortest signal paths
- Independent phase selection for each input position
- Tone controls designed for optimum sound quality
- Option board slots provide additional versatility for digital input handling or analog record playback





Sound quality and expandability taken to the next level — AAVA volume control for impeccable sonic performance. Modular design of AAVA and other amplifier sections realized in a dual mono construction with separate power supplies. Preamplifier overall gain selection setting and phase selection settings for each input position stored in memory. Numeric indication of volume level. Slots for optional digital input boards with input selector and sampling frequency indication. Phono equalizer board allows playback of analog records with high sound quality.

Since being founded in 1972, Accuphase has never wavered from its philosophy of creating truly high-class audio components. A thorough dedication to quality in the interest of optimal sound reproduction has allowed the company to introduce many legendary models, highly regarded for their innovativeness, sonic excellence, and solid reliability. The Stereo Control Center C-2120, while inheriting the outstanding design approach and technology of models such as the C-3800, also represents a full model change from its predecessor C-2110, with further enhanced overall circuitry. It provides the flexibility to handle any kind of source while maximizing its inherent sound quality potential.

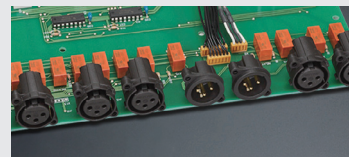
Accuphase's ground-breaking AAVA (Accuphase Analog Vari-gain Amplifier) volume control, first introduced in the model C-2800, has been continually further refined and improved. AAVA operates fully in the analog domain, but

it eliminates all potentiometers from the signal path. This has a number of advantages, such as (1) outstanding S/N ratio, (2) extremely low distortion, (3) virtually no change in frequency response and sound quality at any listening level, (4) minimal left/right level differences (tracking errors), and (5) minimal left/right crosstalk. The result is a volume control that far surpasses conventional concepts. The C-2120 features separate power supplies for left and right channel, each with a dedicated power transformer, filtering capacitors and peripheral circuitry. The various unit amplifiers are also entirely separate for the two channels, arranged on a motherboard in fully monaural construction. This prevents unwanted crosstalk and interaction both on the electrical and the physical plane. Preamplifier functionality also has been given due attention, with tone controls, a loudness compensator, recorder connection support and other convenient

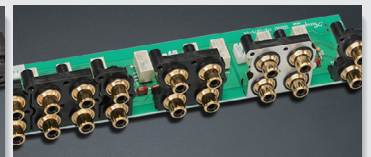
features. The phase setting can be made for each input position separately, and EXT PRE connectors offer further enhanced flexibility.

A range of sophisticated option boards opens up even more possibilities. The newly developed Digital Input Board DAC-40 features a USB port and support for high-bit, high-sampling frequency signals up to 192 kHz/24 bits. This allows reproduction for example of high-quality music library data residing on a computer. The DAC input selector button makes it easy to switch between the optical, coaxial, and USB input. For the first time in a preamplifier, the sampling frequency of a digital signal onto which the amplifier has locked can be shown as a numeric readout. The newly developed Analog Disc Input Board AD-30 is also available, ideal for high-grade reproduction of analog records using either MC or MM phono cartridges.

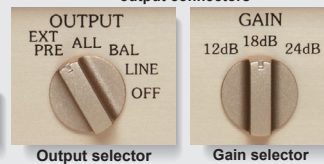
- Short and straight signal paths, along with logic-controlled relays for signal switching assure high sound quality and long-term reliability.
- Versatile arrangement of line and balanced input and output connectors.
- EXT PRE function allows use of external preamplifier.
- Selectable preamplifier gain with three settings (12 dB, 18 dB, 24 dB).
- Output phase selectable individually for each input. When INV LED is lit, output phase is inverted. When LED is out, phase is normal.
- Two rear-panel slots for separately available option boards, with support for digital input selection and sampling frequency indication.
- Dedicated headphone amplifier optimized for sound quality.
- Numeric indication of volume level.
- Tone controls using summing active filters for optimum sound quality.
- More versatile features:
  - Provisions for recording and playback with a recorder.
  - Loudness compensator enhances low end presence
  - Attenuator (-20 dB).



Logic-controlled relays and balanced input and output connectors



Logic-controlled relays and line input and output connectors



Output selector

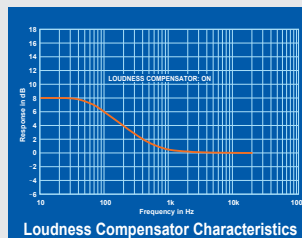
Gain selector



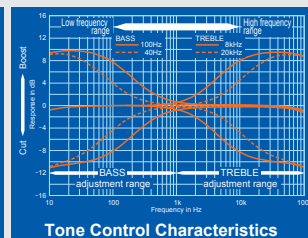
Phase selector button and LED indicator

Selectable tone control turnover  
BASS: 40 Hz/100 Hz  
TREBLE: 8 kHz/20 kHz

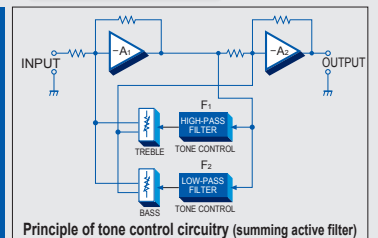
LED indicator for "EXT PRE" OUTPUT



Loudness Compensator Characteristics



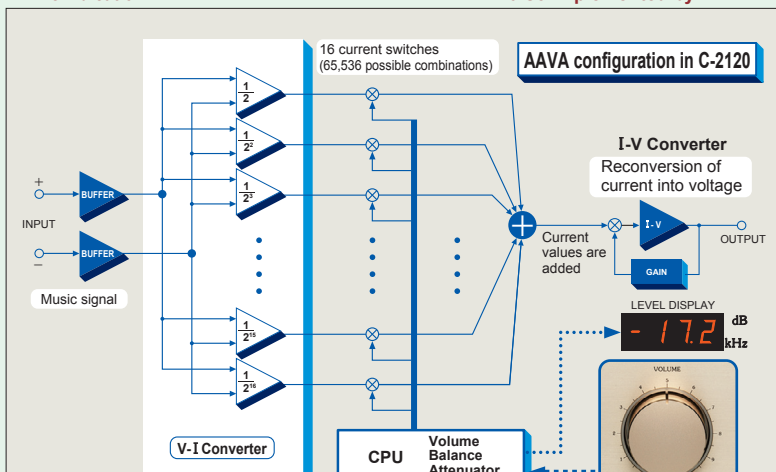
Tone Control Characteristics



Principle of tone control circuitry (summing active filter)

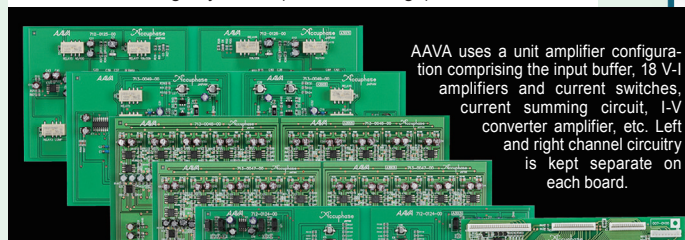
## AAVA (Accuphase Analog Vari-gain Amplifier) Volume Control

- Total of 18 V-I converter amplifiers, paralleled for upper two units. Input stage ensures powerful drive capability with two buffer amplifiers.
- No more left/right tracking differences or crosstalk.
- Amplifier display shows accurate gain as numeric indication.
- High S/N ratio, low distortion, and uniform frequency response and sound quality at any volume.
- High-resolution volume control.
- Attenuator and left/right balance control also implemented by AAVA.
- Long-term reliability for unchanged performance and sound quality.
- AAVA means processing implemented in analog domain.
- Same operation feel as a conventional high-quality volume control.



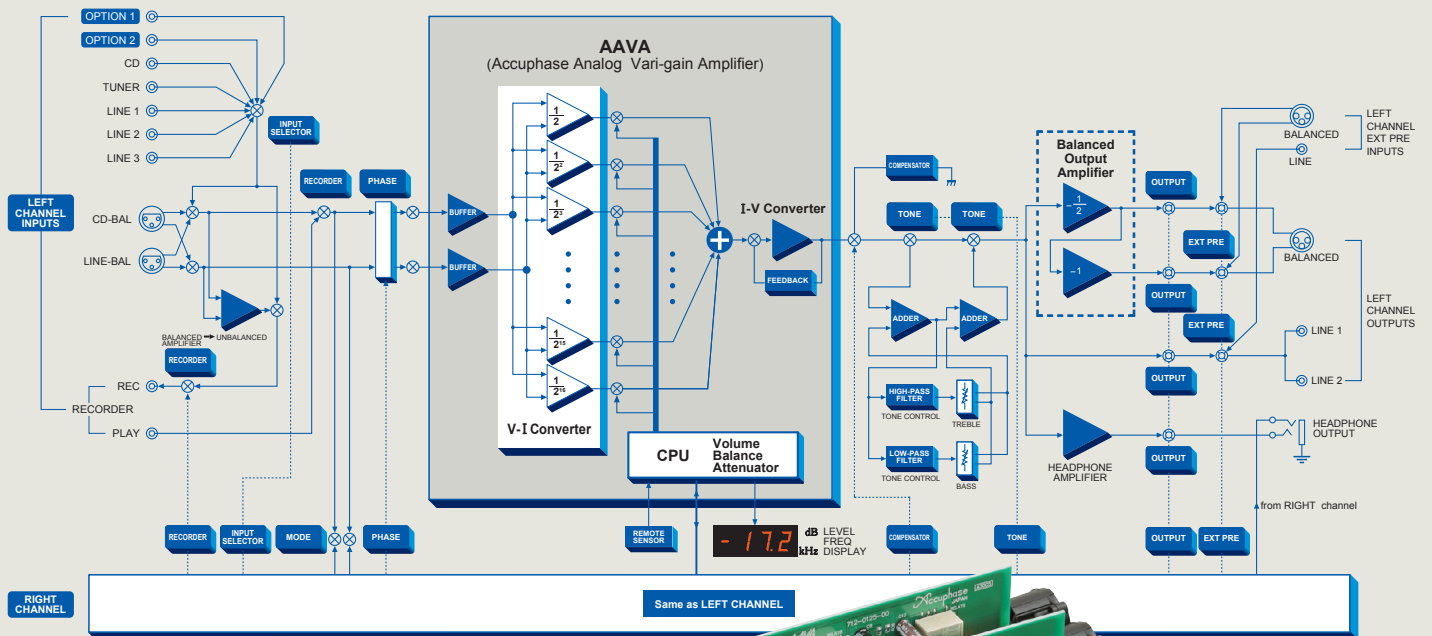
### AAVA operation principle

The music signal is converted into 16 types of weighted current by V-I (voltage - current) converting amplifiers [ $1/2$ ,  $1/2^2$ , ...  $1/2^{15}$ ,  $1/2^{16}$ ]. The 16 currents are turned on or off by 16 current switches, and the combination of switch settings determines the overall volume. The switching operation is controlled by a CPU according to the position of the volume control knob. The combined signal current forms a variable gain circuit that adjusts the volume. Finally, the combined current is converted back into a voltage by an I-V (current - voltage) converter.



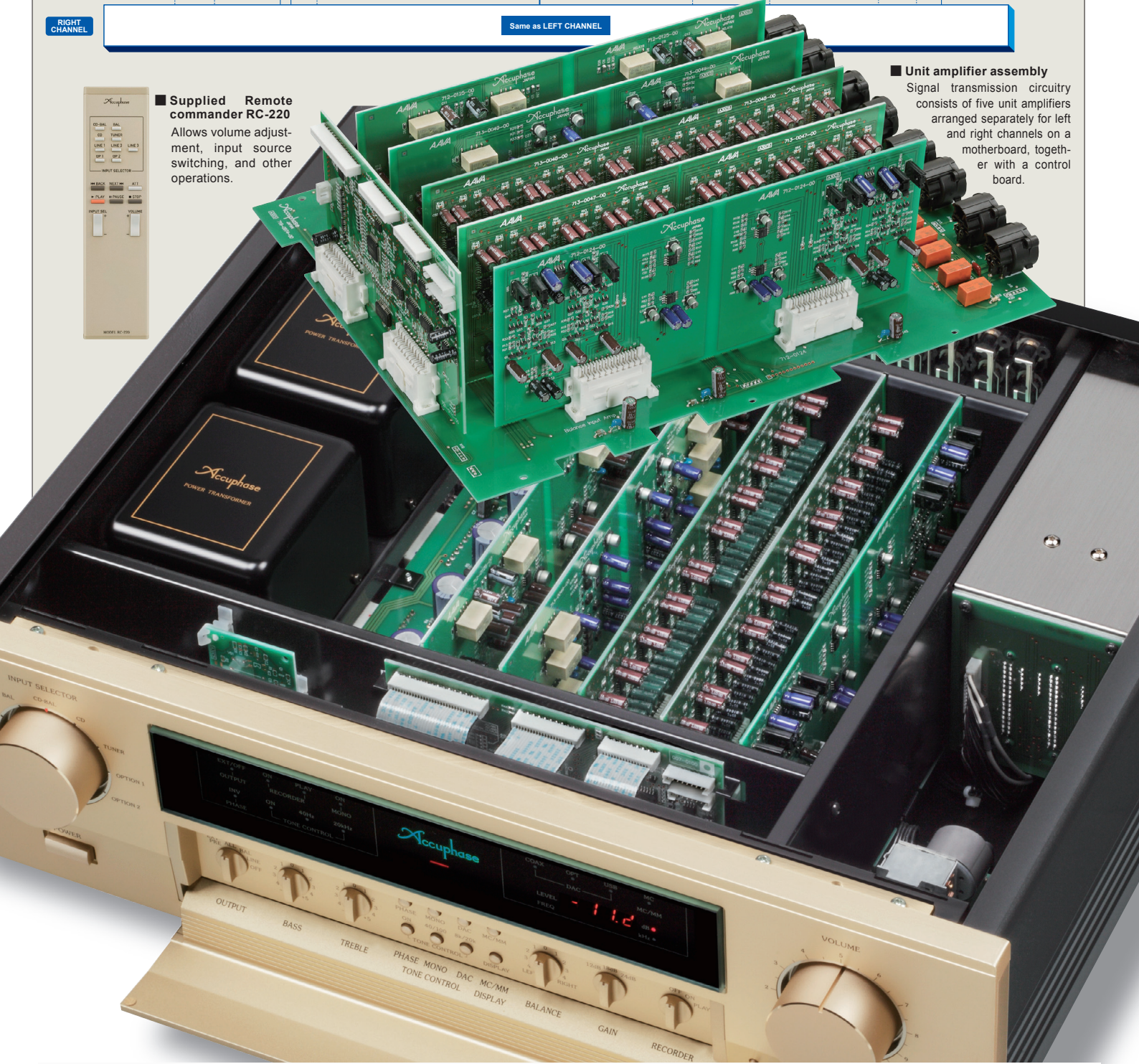
AAVA uses a unit amplifier configuration comprising the input buffer, 18 V-I amplifiers and current switches, current summing circuit, I-V converter amplifier, etc. Left and right channel circuitry is kept separate on each board.

# C-2120 Block Diagram



■ **Supplied Remote commander RC-220**  
Allows volume adjustment, input source switching, and other operations.

■ **Unit amplifier assembly**  
Signal transmission circuitry consists of five unit amplifiers arranged separately for left and right channels on a motherboard, together with a control board.



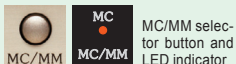
## Option Boards

Three types of option boards are available for the C-2120: Digital Input Board DAC-40, Analog Disc Input Board AD-30, and Line Input Board LINE-10. These boards can be installed in the rear-panel slots as required. (It is also possible to install two identical boards.)

■ The Digital Input Boards DAC-30/DAC-20/DAC-10, Analog Disc Input Boards AD-20/AD10/AD-9, and Line Input Board LINE-9 can also be used.

■ With the AD-30/AD-20, switching between MC and MM is possible using the selector on the front panel of the C-2120. \*1

\*1 When using the AD-10/AD-9, MC/MM switching must be performed on the board.



MC/MM selector button and LED indicator

■ The C-2120 has a DAC input selector button that allows input selection when using the Digital Input Board DAC-40 With USB Port. Display of the sampling frequency of the locked digital signal is also possible. \*2



DAC input selector button and LED indicators



Sampling frequency display example

\*2 Not supported when using DAC-30/DAC-20/DAC-10.

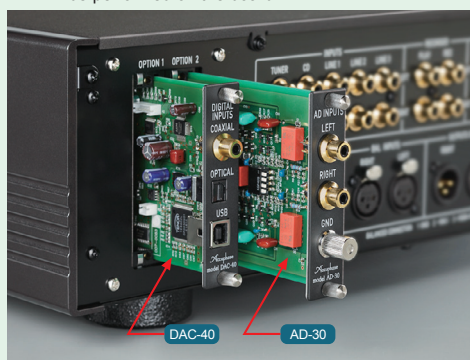
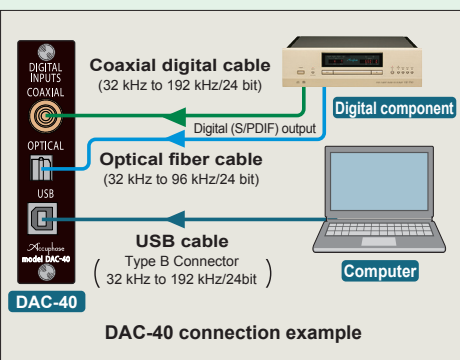


Photo shows option board installation example.



DAC-40 connection example

## Digital Input Board DAC-40

Features a high sound quality, high-performance MDS++ D/A converter. The USB port allows connection to a computer via USB cable, for reproduction of high-resolution music library data with superior sound quality.

- COAXIAL: For 75-ohm coaxial cable  
Supported sampling frequency range: 32 kHz to 192 kHz, 24-bit
- OPTICAL: For optical fiber  
Supported sampling frequency range: 32 kHz to 96 kHz, 24-bit
- USB: For USB cable (Type B connector)  
Supported sampling frequency range: 32 kHz to 192 kHz, 24-bit

## Analog Disc Input Board AD-30

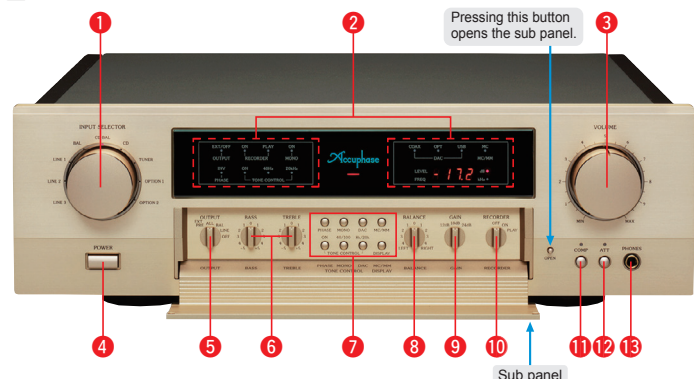
Features a high-performance, high-gain phono equalizer for playback of analog records with outstanding sound quality.

- MC/MM switching is possible on the front panel of the C-2120.
  - Internal DIP switches control MC input impedance and subsonic filter on/off.
- |    |  |
|----|--|
| MC | Gain: 66 dB<br>Input Impedance: 30/100/300 ohms (selectable) |
| MM | Gain: 40 dB<br>Input Impedance: 47 kilohms                   |

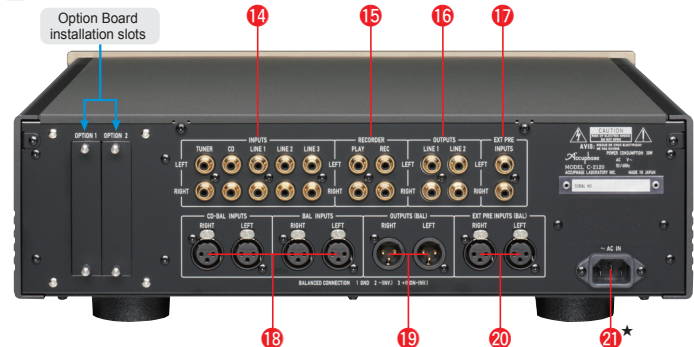
## Line Input Board LINE-10

Provides a set of line level inputs.

## Front Panel



## Rear Panel



- |  |  |
|--|--|
| <p>1 Input selector</p> <p>2 Function LED indicators</p> <p>3 Volume control</p> <p>4 Power switch</p> <p>5 Output selector<br/>EXT PRE / ALL / BAL / LINE / OFF</p> <p>6 BASS/TREBLE controls</p> <p>7 Function selector buttons<br/>Phase / Stereo/Mono / DAC input / MC/MM / Tone control On/Off / Tone control turnover 40/100 Hz, 8/20 kHz / Display mode</p> <p>8 Balance control</p> <p>9 Gain selector 12dB / 18dB / 24dB</p> <p>10 Recorder selector OFF / ON / PLAY</p> <p>11 Loudness compensator button</p> <p>12 Attenuator button</p> <p>13 Headphone jack</p> | <p>14 Line inputs TUNER / CD / LINE1, 2, 3</p> <p>15 Recorder outputs/inputs</p> <p>16 Line outputs (2 sets)</p> <p>17 "EXT PRE" inputs</p> <p>18 Balanced inputs (2 sets)</p> <p>19 Balanced outputs</p> <p>20 "EXT PRE" inputs (balanced)</p> <p>21 AC power connector *</p> |
|--|--|

### Supplied accessories

- AC power cord
- Audio cable with plugs (1 meter)
- Remote Commander RC-220

### Remarks

- ★ This product is available in versions for 120/220/230 V AC. Make sure that the voltage shown on the rear panel matches the AC line voltage in your area.
- ★ 230 V version has an Eco Mode that switches power off after 120 minutes of inactivity.
- ★ The shape of the AC inlet and plug of the supplied power cord depends on the voltage rating and destination country.

## C-2120 GUARANTEED SPECIFICATIONS

[Guaranteed specifications are measured according to EIA standard RS-490.]

- Frequency Response BALANCED/LINE INPUT  
3 - 200,000Hz +0 -3.0 dB  
20 - 20,000Hz +0 -0.2 dB
- Total Harmonic Distortion (for all inputs) 0.005%
- Input Sensitivity, Input Impedance

Input	Sensitivity		Input impedance
	For rated output	For 0.5 V output	
BALANCED	252 mV	63 mV	40 kilohms (20/20 kilohms)
LINE	252 mV	63 mV	20 kilohms

- Rated Output Voltage, Output Impedance  
BALANCED/LINE OUTPUT 2 V 50 ohms  
RECORDER REC (with AD input) 252 mV 200 ohms
- S/N Ratio, Input-converted Noise (gain selector: 18 dB)

Input	Input shorted, A-weighting	S/N ratio (EIA)
	S/N ratio at rated output	
BALANCED	109 dB	107 dB
LINE	109 dB	107 dB

- Maximum Output Level (0.005% THD, 20 - 20,000 Hz)  
BALANCED/LINE OUTPUT: 7.0 V  
RECORDER REC (with AD input): 6.0 V
- LINE Maximum Input Level BALANCED/LINE INPUT: 6.0 V
- Minimum Load Impedance BALANCED/LINE OUTPUT: 600 ohms  
RECORDER REC: 10 kilohms
- Gain (gain selector: 18 dB)  
\* Gain switchable to 12/18/24 dB  
BALANCED INPUT → BALANCED OUTPUT: 18 dB  
BALANCED INPUT → LINE OUTPUT: 18 dB  
LINE INPUT → BALANCED OUTPUT: 18 dB  
LINE INPUT → LINE OUTPUT: 18 dB

- Tone Controls Bass/Treble controls with selectable turnover frequencies  
BASS: 40/100 Hz ±10 dB  
TREBLE: 8/20 kHz ±10 dB

- Loudness Compensation +6 dB (100 Hz)
- Attenuator -20 dB
- Headphone Jack Suitable impedance: 8 ohms or higher  
Output level: 2 V (40 ohms)

- Power Requirements 120 V/220 V/230 V AC, 50/60 Hz (Voltage as indicated on rear panel)

- Power Consumption 30 W
- Maximum Dimensions Width 465 mm (18-5/16")  
Height 150 mm (5-7/8")  
Depth 405 mm (15-15/16")

- Mass 16.8 kg (42.3 lbs)  
25.0 kg (55.1 lbs) in shipping carton

