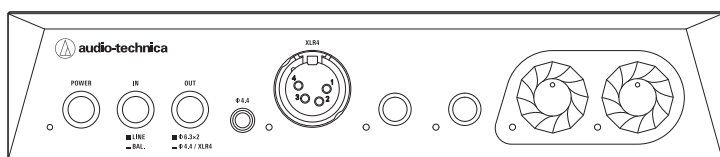




AT-BHA100

User Manual
Balanced Headphone Amplifier



Introduction

Thank you for purchasing this Audio-Technica product.

Before using this product, please read through the Quick Start Guide, as well as this user manual when necessary, to ensure that you use the product correctly.

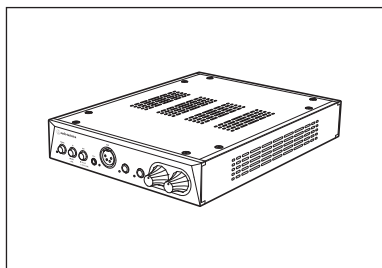
This product can only be used in the country in which it was sold.

Please confirm that the voltage and power cord plug of the product are suitable for the country in which you live.

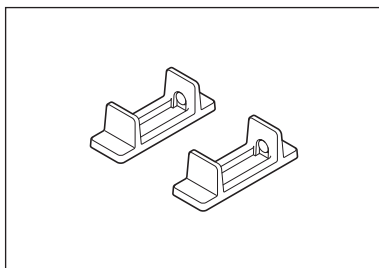
Package contents

Before using the product, confirm that all the items shown below are in the package.

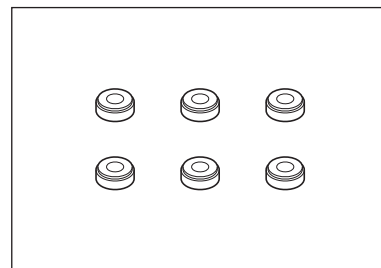
If some items are missing or damaged, contact your local Audio-Technica dealer.



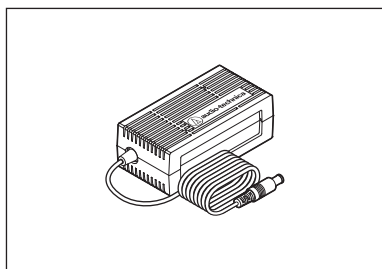
• Main unit



• Stand x 2



• Foot x 6
(2 of 6 feet are spares)



• AC adapter (approx. 1.5 m (4.9'))

- Power cord
- Quick Start Guide
- Warranty

We recommend keeping all the packaging materials together in case you store, move, or ship the product after purchase.

Safety precautions

Although this product was designed to be used safely, failing to use it correctly may result in an accident. To ensure safety, observe all warnings and cautions while using the product.

Important information

Warning:

- To prevent fire or shock hazard, do not expose this apparatus to rain or moisture.

Caution:

- Do not expose this apparatus to drips or splashes.
- To avoid electric shock, do not open the cabinet.
- Refer servicing to qualified personnel only.
- Do not expose this apparatus to excessive heat such as that generated by sunshine, fire or other heat sources.
- Do not subject this apparatus to strong impact.
- This apparatus should be located close enough to the AC outlet so that you can easily grasp the AC adapter at any time.
- In case of emergency, disconnect the AC adapter quickly.
- Do not place any objects filled with liquids, such as vases, on this apparatus.
- To prevent fire, do not place any naked flame sources (such as lighted candles) on this apparatus.
- Do not install this apparatus in a confined space such as a bookcase or similar unit.
- Install this apparatus only in the place where ventilation is good.
- To prevent fire, do not cover the ventilation of this apparatus with newspapers, tablecloths, curtains, etc.
- In order to maintain proper ventilation, do not place any objects around the rear of this apparatus. This apparatus should be placed at least 10 cm (3.94") away from a rear wall. This apparatus should not be placed near to other electrical apparatuses. Keep the top and sides of this apparatus at least 10 cm (3.94") away from any other surface if sitting on shelving, such as an audio apparatus rack. Failure to do so may cause this apparatus to overheat, which in turn may cause it or surrounding items to catch fire.
- In the case of horizontal installation, be sure to attach the included feet to the four corners of the bottom of the product (two of the six are spare feet). In case of vertical installation, be sure to attach the included stand.

For customers in the USA

FCC Notice

Warning:

This device complies with Part 15 of the FCC Rules. Operation is subject to the following two conditions: (1) This device may not cause harmful interference, and (2) this device must accept any interference received, including interference that may cause undesired operation.

Caution:

You are cautioned that any changes or modifications not expressly approved in this manual could void your authority to operate this equipment.

Note: This equipment has been tested and found to comply with the limits for a Class B digital device, pursuant to part 15 of the FCC Rules. These limits are designed to provide reasonable protection against harmful interference in a residential installation. This equipment generates, uses and can radiate radio frequency energy and, if not installed and used in accordance with the instructions, may cause harmful interference to radio communications. However, there is no guarantee that interference will not occur in a particular installation. If this equipment does cause harmful interference to radio or television reception, which can be determined by turning the equipment off and on, the user is encouraged to try to correct the interference by one or more of the following measures:

- Reorient or relocate the receiving antenna.
- Increase the separation between the equipment and receiver.
- Connect the equipment into an outlet on a circuit different from that to which the receiver is connected.
- Consult the dealer or an experienced radio/TV technician for help.

Contact:

Responsible Company: Audio-Technica U.S., Inc.
Address: 1221 Commerce Drive, Stow, Ohio 44224, USA
Tel: 330-686-2600

For customers in Canada

IC statement:

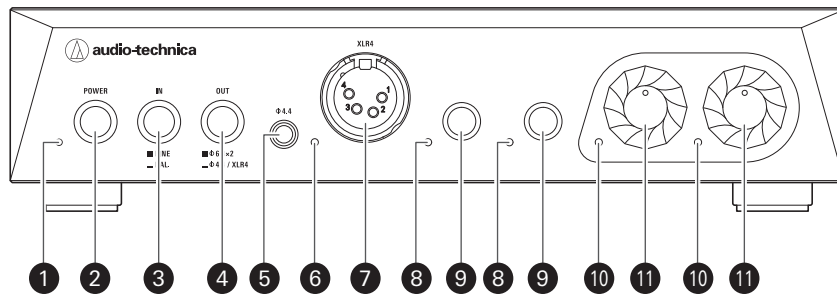
CAN ICES-3 (B)/NMB-3(B)

Notes on use

- Be sure to read the connected device's user manual before use.
- Headphone output terminals of the product are for the use of stereo headphones only. Never connect devices other than stereo headphones.
- To connect a 3.5 mm (1/8") stereo headphone mini-plug, use an appropriate conversion plug adapter (sold separately). Please note that, depending on the shape of the conversion plug, it may be difficult to remove it from the jack.
- The contact pressure of the jack of the product is designed to be a little stronger in order to improve the sound quality. It may be difficult to remove some plugs (especially small plugs that are hard to grip) from the jack.
- When turning on/off the power or connecting headphones to the product, make sure to set volume to the minimum level. Sudden loud sound may have bad effects on hearing. Also, it may cause failure of the headphones.
- Purchase a cable suitable for the device to be connected.
- Fully insert the plug of the connecting cable.
- Stop music playback when plugging or unplugging cables.
- The vacuum tubes used in the product can cause it to become hot, but this is not a malfunction.
- Keep the product at least 1 m (3.3') from inverter-type fluorescent lights, LED lamps, mobile phones, Wi-Fi and other wireless devices. If you use this product near those devices, noise may be caused.
- Vacuum tubes are used in the product. To get sufficient sound quality, make sure to turn on the power and age it before using the product.
 - Before using it for the first time: at least 3 days
 - Before each use: at least 15 minutes

Part names and functions

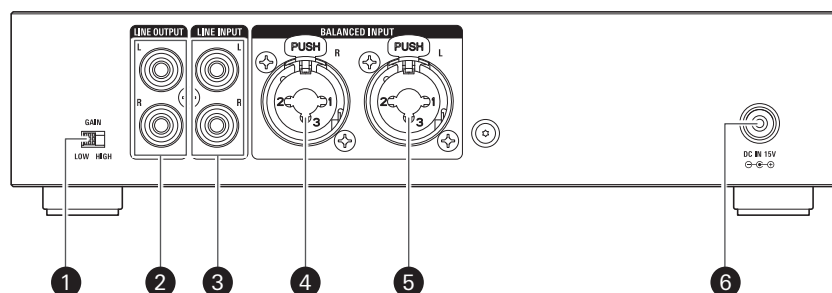
Front panel



- 1** Power indicator lamp
Lights white when the product's power button is turned on.
- 2** Power button
Push-type switch to turn power on/off.
Pressing it turns the power on, and then, after a standby time of about 15 seconds, operation starts. Pressing it again turns off the power.
- 3** Input selector
Switches the input signal (line input/balanced input).
- 4** Headphone output selector button
Switches the output to the headphones (6.3 mm (1/4") headphone output, balanced output (4.4 mm (0.17")/XLR 4-pin)).
- 5** Balanced output terminal (4.4 mm (0.17"))
4.4 mm (0.17") TRRS balanced jack for headphone terminal.
- 6** Headphone output indicator lamp
Lights orange when the headphone output selector button is switched to balanced output (4.4 mm (0.17")/XLR 4-pin).
- 7** Balanced output terminal (XLR 4-pin male)
XLR 4-pin balanced connector for headphone terminal.
- 8** 6.3 mm (1/4") headphone output indicator lamps
Left-side indicator lamp lights green and right-side indicator lamp lights orange when the headphone output selector button is switched to 6.3 mm (1/4") headphone output.
- 9** 6.3 mm (1/4") headphone output terminals
Standard 6.3 mm (1/4") stereo jack for headphone terminal.
- 10** Volume indicator lamps
Left-side indicator lamp lights green and right-side indicator lamp lights orange when the headphone output selector button is switched to 6.3 mm (1/4") headphone output.
Just the right-side indicator lamp lights orange when output is switched to balanced output (4.4 mm (0.17")/XLR 4-pin).
- 11** Volume controls
Adjust the volume to the headphones that are connected to the balanced output terminal (4.4 mm (0.17")/XLR 4-pin) or the 6.3 mm (1/4") headphone output terminal. Turn the controls to the left to decrease volume, and turn them to the right to increase volume.
The colors of the 6.3 mm (1/4") headphone output indicator lamps correspond to the volume indicator lamps. Confirm the color of the indicator lamp for the headphones whose volume you want to adjust, and then turn the volume control associated with that same color to adjust the corresponding volume.

Part names and functions

Rear panel



- 1 Gain switch**

Switches the amplifier's gain.
Switch to low gain (LOW) or high gain (HIGH) to correspond to the volume of the headphones.
- 2 LINE output terminals**

Output the input signal that is selected with the input selector.
When the input is balanced, it can be converted to unbalanced (line) and then output.
- 3 LINE input terminals**

Connect to the LINE output terminals of the audio source device by using an RCA audio cable (sold separately). Terminals are pin jacks.
- 4 Balanced input terminal (Rch)**

Connects to the Rch of a device equipped with a balanced output terminal by using an XLR cable (sold separately) or 6.3 mm (1/4") balanced cable (sold separately).
XLR balanced input (1: GND, 2: HOT, 3: COLD)
6.3 mm (1/4") balanced input (Tip: HOT, Ring: COLD, Sleeve: GND)
- 5 Balanced input terminal (Lch)**

Connects to the Lch of a device equipped with a balanced output terminal by using an XLR cable (sold separately) or 6.3 mm (1/4") balanced cable (sold separately).
XLR balanced input (1: GND, 2: HOT, 3: COLD)
6.3 mm (1/4") balanced input (Tip: HOT, Ring: COLD, Sleeve: GND)
- 6 Power input jack**

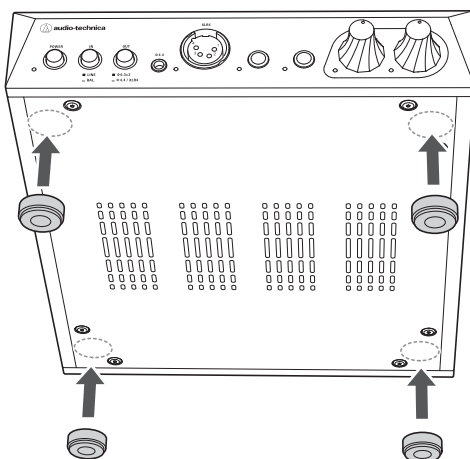
Connects to the AC adapter provided.

Installing the product

- Install the product at least 10 cm (3.94") from any walls.
- If a radio is placed near the product, the sound from the radio may be distorted. Whenever possible, keep radios away from the product.
- Keep the product at least 1 m (3.3') away from inverter-type fluorescent lights, LED lamps, and wireless devices, such as mobile phones or Wi-Fi devices. Using them nearby could cause noise in the product.
- Install the AC adapter away from the main unit and the RCA audio cables. Using them nearby could cause noise in the product.

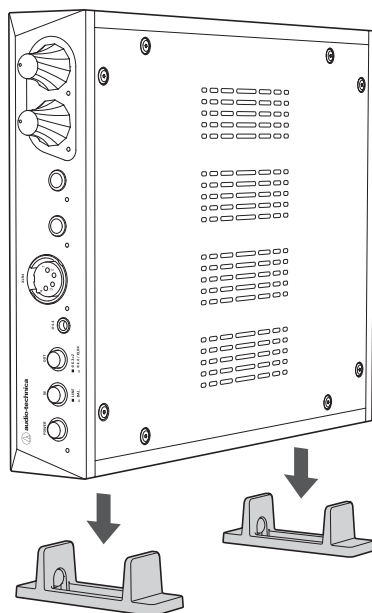
Installing the product horizontally

1. Remove the protective seals from the two-sided tape on the feet, stick them evenly to the bottom of the main unit, and then install it.
 - If you need to remove a foot after sticking it on, slowly pull it off the main unit.



Installing the product vertically

1. Attach the stands to the side of the main unit, and then install it.



Using the product

Before making connections

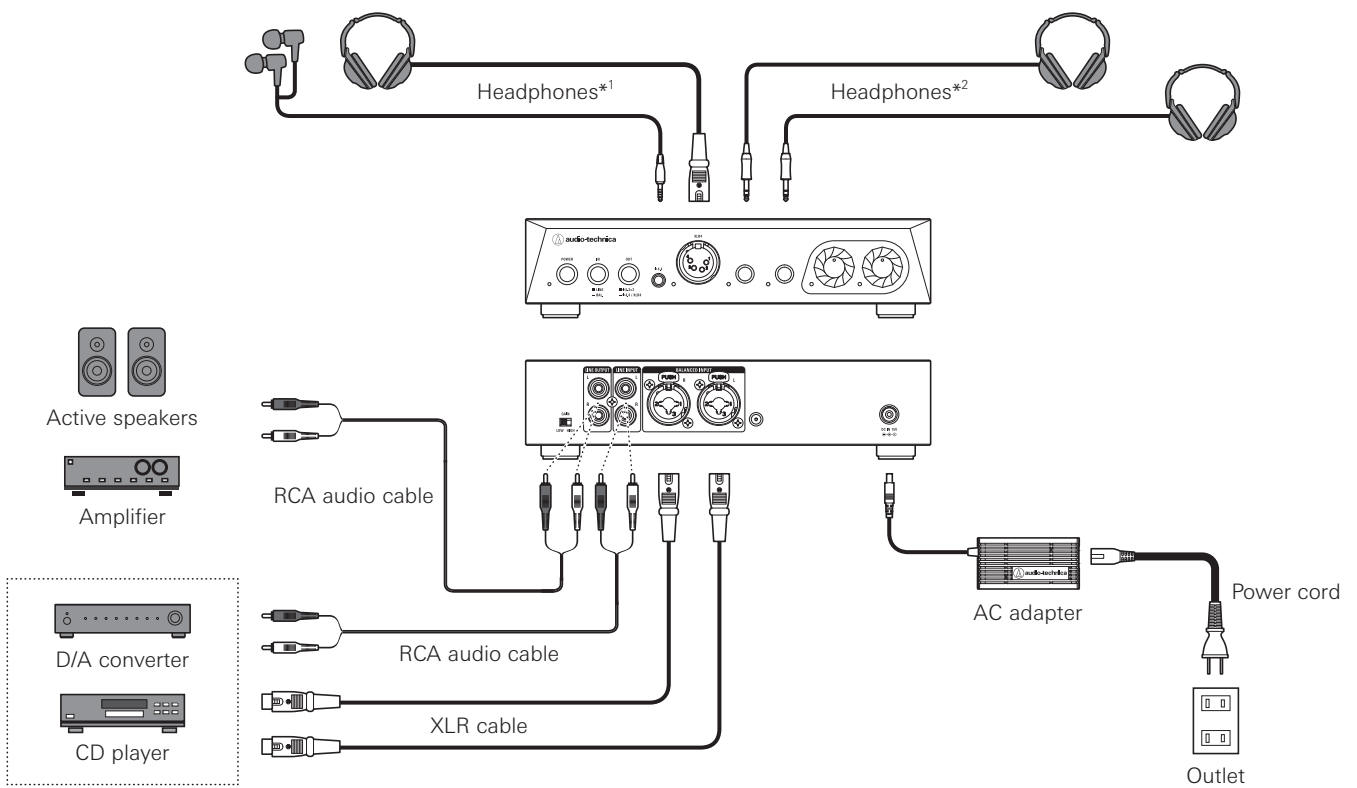
- Be sure to read the connected device's user manual before use.
- Be sure to turn off devices before connecting them.
- Headphone output terminals of the product are for the use of stereo headphones only. Never connect devices other than stereo headphones.
- To connect a 3.5 mm (1/8") stereo headphone mini-plug, use an appropriate conversion plug adapter (sold separately). Please note that, depending on the shape of the conversion plug, it may be difficult to remove it from the jack.
- The contact pressure of the jack of the product is designed to be a little stronger in order to improve the sound quality. It may be difficult to remove some plugs (especially small plugs that are hard to grip) from the jack.
- When turning on/off the power or connecting headphones to the product, make sure to set volume to the minimum level. Sudden loud sound may have bad effects on hearing. Also, it may cause failure of the headphones.
- Purchase a cable suitable for the device to be connected.
- Fully insert the plug of the connecting cable.
- Stop music playback when plugging or unplugging cables.
- Be sure to turn on devices connected to the LINE output terminals. If the power is not turned on, noise could affect the headphones connected to the product.
- If the product's power is off, the audio from the LINE input terminals is output to the LINE output terminals.
- Vacuum tubes are used in the product. To get sufficient sound quality, make sure to turn on the power and age it before using the product.
 - Before using it for the first time: at least 3 days
 - Before each use: at least 15 minutes

Using the product

Making connections

Refer to the connection diagram below to connect the devices you want to use.

1. Connect the power cord to the AC adapter.
2. Connect the AC adapter to the power input jack, and then insert the power cord into the outlet.
3. Turn on the connected devices.
4. Turn on the product's power button.
 - After a standby time of about 15 seconds, operation starts.
5. Use the input selector to select the device you want to play.
6. Use the volume control on the product to reduce the volume, and then connect the headphones to the headphone output terminal.
7. Start playing the audio source device, and then use the volume control to adjust the volume as you like.



*1 When connecting headphones in a balanced connection, connect to either the 4.4 mm (0.17") headphone output terminal or the balanced output terminal.

*2 When using the 6.3 mm (1/4") headphone output terminal, two headphones can be used simultaneously.

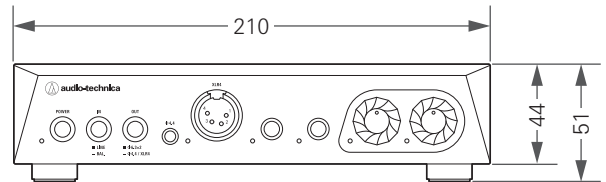
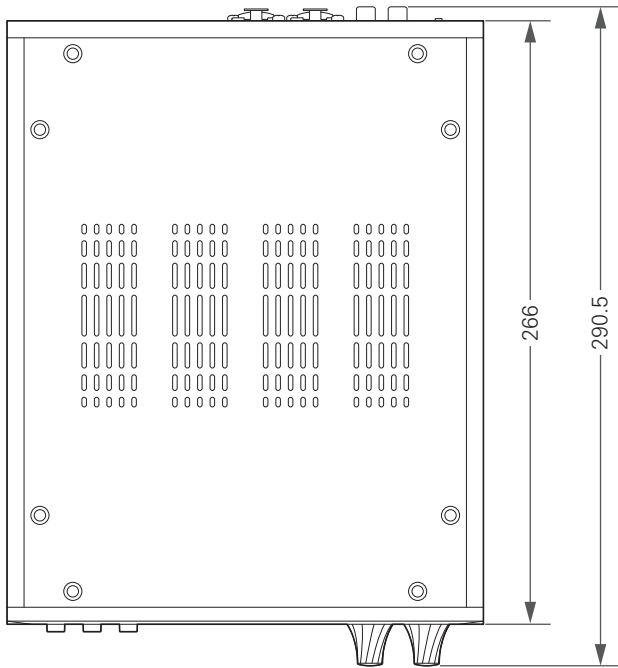
- The product uses an analog volume control. A difference in the left and right volume levels may occur at very low volumes. If this happens, switch the gain switch to low gain (LOW).
- If white noise occurs when highly sensitive headphones are connected, switch the gain switch to low gain (LOW).

Cleaning

- If the product becomes dirty or dusty, turn off the power button, unplug the AC adapter, and then wipe the product with a soft, dry cloth.
- Do not use benzine or paint thinners.
- To store the product for an extended period, turn the power button off, unplug the power cord from the outlet, wrap the equipment in plastic and keep it away from moisture.

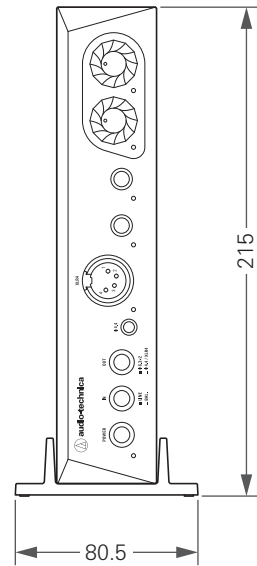
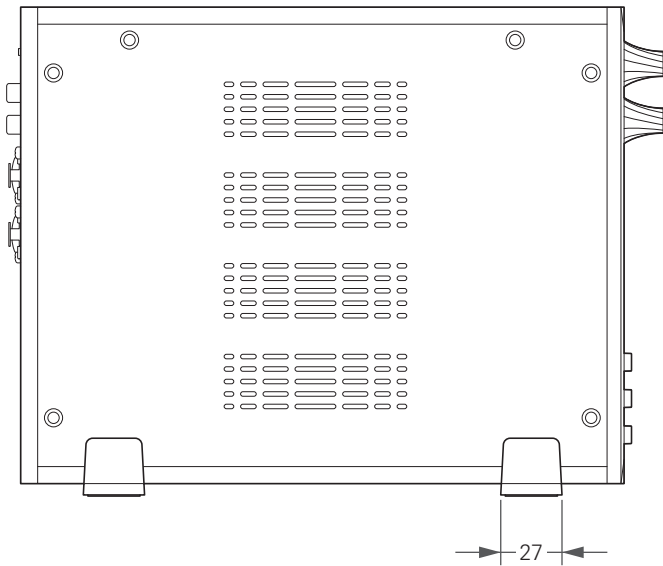
Dimensions

When feet are attached



(Unit: mm)

When stands are attached



(Unit: mm)

Specifications

Corresponding headphone impedance	16 - 600 ohms
Instantaneous maximum output level	6.3 mm (1/4") headphone output (10%, 1 kHz): 680 mW + 680 mW (16 ohms load) 320 mW + 320 mW (32 ohms load) 240 mW + 240 mW (64 ohms load) 30 mW + 30 mW (600 ohms load) Balanced output (10%, 1 kHz): 1,500 mW + 1,500 mW (16 ohms load) 1,200 mW + 1,200 mW (32 ohms load) 800 mW + 800 mW (64 ohms load) 120 mW + 120 mW (600 ohms load)
Frequency response	Line input: 10 Hz to 100 kHz (0, -3 dB at 32 ohms and 10 mW output) Balanced input: 10 Hz to 100 kHz (+0.5, -3 dB at 32 ohms and 10 mW output)
Total harmonic distortion	0.25% or less (20 Hz to 20 kHz at 32 ohms and 1 mW output)
Gain	6.3 mm (1/4") headphone output: 10 dB (high gain) 1.5 dB (low gain) Balanced output: 16 dB (high gain) 7 dB (low gain)
Noise	6.3 mm (1/4") headphone output: -100 dBv (A-weighted high gain) -103 dBv (A-weighted low gain) Balanced output: -92 dBv (A-weighted high gain) -95 dBv (A-weighted low gain)
Separation between channels	6.3 mm (1/4") headphone output: 75 dB (load: 32 ohms, 1 kHz) Balanced output: 100 dB (load: 32 ohms, 1 kHz)
Analog input terminal	Line input (pin jack) × 2 Balanced input (XLR combo connector) × 2
Output terminals	6.3 mm (1/4") stereo headphone output × 2 XLR 4-pin balanced stereo headphone output 4.4 mm (0.17") balanced stereo headphone output Line output (pin jack) × 2
Input selector (front panel)	Line input, Balanced input
Output selector (front panel)	6.3 mm (1/4") headphone output, Balanced output (4.4 mm (0.17")/XLR 4-pin)
Power supply	100 - 240 VAC, 50/60 Hz, 15 VDC/2.4 A (AC adapter provided)
Power consumption	Maximum 25 W
Dimensions	210 mm (8.27") x 266 mm (10.47") x 44 mm (1.73") (W x D x H) (excluding protrusions)
Weight	About 1.8 kg (63.5 oz)
Included accessories	AC adapter (approx. 1.5 m (4.9')), Power cord, Foot x 6, Stand x 2

For product improvement, the product is subject to modification without notice.