MOON 791

network player / preamplifier

Contents

Important Safety Instructions

1. Read these instructions.
2. Keep these instructions.
3. Heed all warnings.
4. Follow all instructions.
5. Do not use this apparatus near water.
6. Clean only with a dry cloth.
7. Do not block ventilation openings. Install in accordance with the manufacturer's instructions.
8. Do not install near heat sources such as radiators, heat registers, stoves or another apparatus that generate heat.
9. Do not defeat the safety purpose of the polarized or grounding-type plug. A polarized plug has two blades with one wider than the other. A grounding-type plug has two blades and a third grounding prong. The wide blade or the third prong is provided for safety. If the provided plug does not fit into the outlet, consult an electrician to replace the obsolete outlet.
10. Protect the power cord from being walked on or pinched, particularly at plugs, convenience receptacles, and the point where they exit from the apparatus. Unplug mains cord during transportation.
11. Only use attachments and accessories specified by the manufacturer.
12. The apparatus is heavy and requires two people to lift it. Exercise caution when maneuvering.
13. Use only with the cart, stand, tripod, bracket, or table specified by the manufacturer or sold with the apparatus. When a cart is used, use caution when moving the cart/apparatus combination to avoid injury from tip over.
14. Unplug this apparatus during lightning storms or when unused for long periods of time.
15. Refer all servicing to qualified service personnel. Servicing is required when the apparatus has been damaged in any way such as when the power cord has been damaged; liquid has been spilled or objects have fallen into the apparatus; or the apparatus has been exposed to rain or moisture, does not operate normally, or has been dropped.
16. No naked flame sources, such as candles, should be placed on the apparatus.

Chemical Burn Hazard
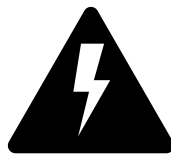
The remote control supplied with this product contains a battery. Do not ingest the battery. Swallowing the battery could cause severe internal burns within two hours leading to death. In the case of accidental ingestion of lodged bodily insertion, seek medical attention immediately. Keep new and used batteries away from children. If the battery compartment does not close securely, stop using the remote control and keep it away from children.

> **WARNING:**
> TO REDUCE THE RISK OF FIRE OR ELECTRIC SHOCK, DO NOT EXPOSE THIS APPLIANCE TO RAIN OR MOISTURE.

CAUTION

RISK OF ELECTRIC SHOCK
DO NOT OPEN

CAUTION: TO REDUCE THE RISK OF ELECTRICAL SHOCK, DO NOT REMOVE COVER. NO USER-SERVICEABLE PARTS INSIDE. REFER SERVICING TO QUALIFIED PERSONNEL.

The lightning flash with the arrowhead symbol, within an equilateral triangle, is intended to alert the user to the presence of uninsulated "dangerous voltage" within the product's enclosure that may be of sufficient magnitude to constitute a risk of electric shock to persons.

The exclamation point within an equilateral triangle is intended to alert the user to the presence of important operating and maintenance (servicing) instructions in the literature accompanying the appliance.

Marking by the "CE" symbol (shown right) indicates compliance of this device with the EMC (Electromagnetic Compatibility) and LVD (Low Voltage Directive) standards of the European Community.

Waste from Electrical and Electronic Equipment (WEEE): This equipment must be sent to a separate collection facility for the recovery and recycling of electrical and electronic waste wherever dedicated facilities exist. WEEE regulations aim to contribute to sustainable production and consumption, addressing environmental and other issues caused by the growing number of discarded electronics. The symbol for the separate collection of electrical and electronic equipment indicates that this product should not be discarded as unsorted waste.

FCC: This device is equipped with the MiND Music Streamer module. This device contains **Transmitter Module FCC ID: 2AJYB-S810**. 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.

The **Spotify Software** is subject to third party licenses found here: spotify.com/connect/third-party-licenses.

Apple, AirPlay, iPad, iPhone, and Siri are trademarks of Apple Inc., registered in the U.S. and other countries. Use of the **Works with Apple** badge means that an accessory has been designed to work specifically with the technology identified in the badge and has been certified by the developer to meet Apple performance standards.

MQA technology requires less network bandwidth to stream high-quality audio files. This product implements the technology under license from MQA Limited. For more information about MQA, please visit: mqa.co.uk.

1. **ALWAYS** disconnect your entire system from the AC mains before connecting or disconnecting any cables, or when cleaning any component. To completely disconnect this apparatus from the AC mains, use the rocker switch on the rear panel or disconnect the power supply cable from the AC receptacle.
2. The unit must be terminated with a three-conductor AC mains power cord, which includes an earth ground connection. To prevent shock hazard, all three connections must **ALWAYS** be used. Connect the unit only to an AC source of the proper voltage; both the shipping box and rear panel serial number label will indicate the correct voltage. Use of any other voltage will likely damage the unit and void the warranty.
3. ALWAYS connect the unit only to an AC source of the appropriate voltage. Both the shipping box and rear panel serial number label indicate the correct voltage. Incorrect voltage could damage the unit and void the warranty.
4. AC extension cords are **NOT** recommended for use with this product. The mains plug of the power supply cord shall remain readily accessible.
5. **NEVER** use flammable or combustible chemicals for cleaning audio components.
6. **NEVER** operate the unit with any covers removed. There are no user-serviceable parts inside. An open unit, especially if it is still connected to an AC source, presents a potentially lethal shock hazard. Refer all questions to authorized service personnel only.
7. **NEVER** wet the inside of the unit with any liquid. If a liquid substance does enter your unit, immediately disconnect it from the AC mains and take it to your MOON Partner for a complete check-up.
8. **NEVER** spill or pour liquids directly onto the unit.
9. **NEVER** block air flow through ventilation slots or heatsinks.
10. **NEVER** bypass any fuse.
11. **NEVER** replace a fuse with a value or type other than those specified.
12. **NEVER** attempt to repair the unit. If a problem occurs, contact a MOON Partner.
13. **NEVER** expose the unit to extremely high or low temperatures.
14. **NEVER** operate the unit in an explosive atmosphere.
15. **ALWAYS** keep electrical equipment out of reach of children.
16. **ALWAYS** unplug sensitive electronic equipment during lightning storms.
17. **WARNING:** Do not expose batteries or battery pack to excessive heat such as sunshine, or fire or the like.

Explore new frontiers

The landmark North Collection represents a culmination of years of research and development in the fields of audio, electronics, materials, and manufacturing processes. Its exciting new look is surpassed only by improvements in its performance made possible by the passionate team of Simaudio engineers and technicians dedicated to delivering an uncompromised music listening experience. With the purchase of this MOON product, you join an elite group of music lovers around the world who expect the absolute best performance and build quality from products in any class.

Get ready for the performance of a lifetime.

Before getting started

Carefully remove the unit from its packaging. Visually inspect it and in the case of damage, report it to your MOON Retailer immediately.

The packaging materials were designed to protect this product while in transit. Store these materials in a dry location for the duration of the warranty period.

The information contained in this Manual is subject to change without notice. The most recent version is available at simaudio.com/guides-downloads.

The MOON 791 includes:

- Quick Start Guide
- Power Cable
- Ethernet Cable
- Wi-Fi Antennas (2)
- Warranty Registration Card (Canada & USA only)
- MOON BRM-1 Remote Control
- USB Cable

Note the serial number of your MOON 791 for future reference.

Install your MOON 791

Consider the location and environment of the device carefully. Set it upon an open, stable, and flat surface. The device requires sufficient space above and around it to adequately disperse the heat it generates. Maintain a minimum gap of 2" around the sides and 4" above of the unit to enable airflow. When stacking multiple units, install MOON Bridges (sold separately) between them.

The performance of this device will continue to improve during the first 100 hours of listening.

Get to know your MOON 791

Front Panel
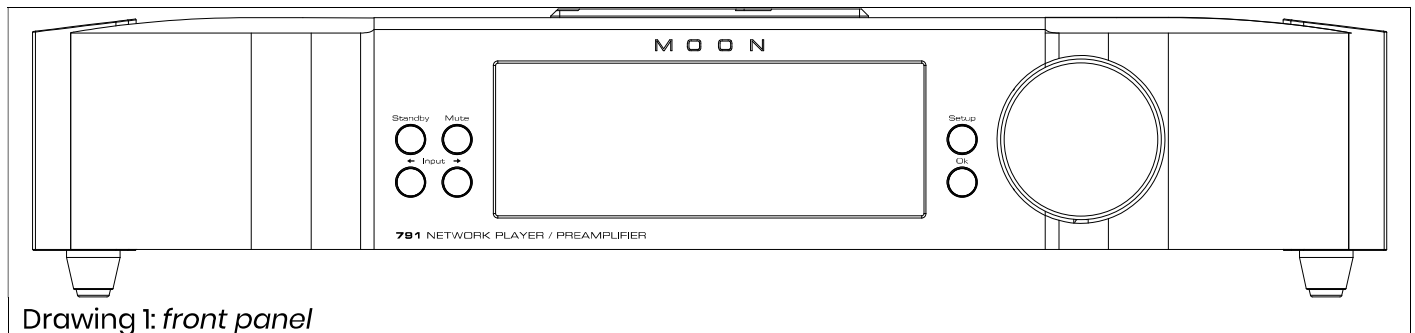
Drawing 1: *front panel*

Standby

toggles the device between active and inactive modes when the device is powered on

Mute

cuts and restores the audio signal to all outputs
Adjusting the volume also restores muted audio.

Input

scrolls ← and → through available inputs

> The **display** provides useful feedback about the state of the preamp.
> - It identifies the active input and volume of the preamplifier and the sample rate of the DAC. On the MiND input, it can identify the file.
> - It also serves as the visual interface for the configuration menu.

Setup

accesses the extensive configuration menu to personalize the device

OK

selects or confirms on-screen prompts

> The **rotary knob** adjusts volume and interfaces with the configuration menu.
> - Rotating the knob adjusts the volume in 1.0 dB increments between 0 and 20, and in 0.5 dB increments between 20 and 80.
> - The knob also navigates the interface for the configuration menu.

Rear Panel
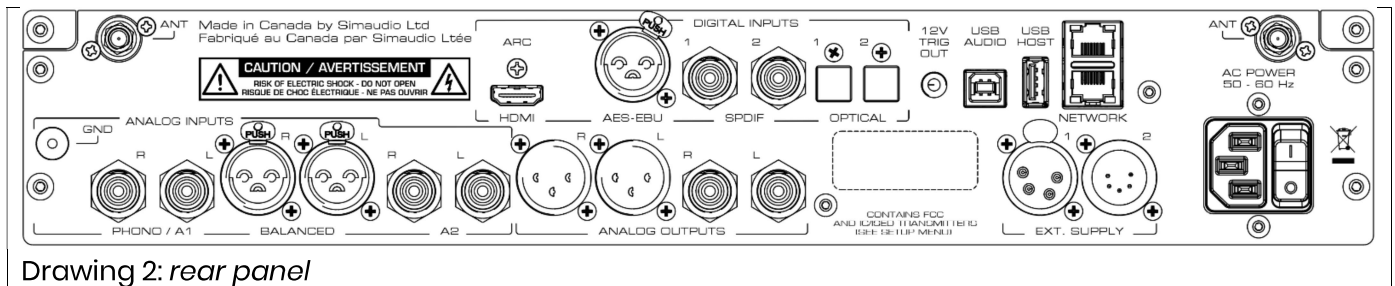
Drawing 2: *rear panel*

Audio Connections

ANALOG INPUTS

Phono / A1
single-ended (RCA) connections

- **A1**
  for line-level analog source devices
- **Phono**
  for configurable RIAA stage accommodating moving-magnet (MM) and moving-coil (MC) phono cartridges
  GND for terminal to ground a tonearm

A2
single-ended (RCA) connections for unbalanced line-level analog source devices

BALANCED
differential (XLR) connections for balanced analog line-level source devices

ANALOG OUTPUTS
individually configurable

- as variable preamplifier connections to power amplifiers, subwoofers, or active loudspeakers
- as fixed source connections to a headphone amplifier or integrated amplifier

DIGITAL INPUTS

AES-EBU
balanced (XLR) connection for two-channel digital PCM source devices

SPDIF
coaxial (RCA) connections for two-channel digital PCM source devices

OPTICAL
optical (TOSLINK) connections for two-channel digital PCM source devices

USB AUDIO
USB (type-B) connection for two-channel computer source devices with audio encoded as PCM or DSD

Note: Windows requires a driver available at simaudio.com for full compatibility. It is not necessary for macOS.

HDMI ARC
HDMI (2.0b) connection for PCM audio input from an ARC-enabled TV

Functional

12V TRIG OUT
mini-jack (TS) connection for coupling a compatible power amplifier to synchronize Standby behaviours

USB HOST
USB (type-A) connection for playback of files on a temporary hard drive using the MiND Controller
Compatibility is not guaranteed with every brand and model of USB drive, nor with every file system. For the best performance and navigation experience, use a DLNA server on a UPnP device to share the files over a network.

NETWORK
network (RJ-45) connections for Ethernet cables
- for connecting the device to a network router
- for extending the network to an additional device (*eg*, NAS device or TV)
- for MOONLink functionality with compatible MOON products

ANT
Wi-Fi antenna terminals for wireless network connectivity
The Ethernet and Wi-Fi connections do not bridge.

EXT. SUPPLY
for connecting bespoke external MOON power supply

IEC *connecter & power switch*
for connecting power cable and toggling the device on [I] and off [O]
With the power switch on, the unit may be toggled into and out of Standby using the button on the front panel, a remote control, the MiND Controller, or by MOONLink. The unit may require up to a minute to connect to the network. For best performance, the device should remain powered up and may be toggled into Standby when not in use. It should be powered down during extended absences by disconnecting the power cable.
Always power on the preamplifier before the power amplifier.
Always power off the power amplifier before the preamplifier.

Personalize your MOON 791

Setup Menu

The device features an extensive menu for configuring and customizing many of its functions.

Navigating the Menu

- The Setup button enters the menu and returns to previous screens.
- The knob rotates to scroll through options.
- The OK button selects the emphasized option.

Editing Text

- The **knob** rotates to reveal uppercase letters, lowercase letters, digits, and symbols.
- The Input ← and → buttons move the cursor left and right.
- When the complete text is correctly displayed and the cursor remains on the last character, the OK button registers the text.
  Note: Do not advance the cursor beyond the last desired character.

```
Setup

    -   Inputs
    -   Analog Outputs
    -   Network
    -   Multiroom
    -   Bluetooth Audio
    -   Remote Control
    -   MOONLink
    -   Display
    -   Volume Settings
    -   Standby Settings
    -   Firmware
    -   Information
    -   Reset
```

Network

Upon powering on the device, it automatically connects to a wired or wireless network. An Ethernet connection has priority over a Wi-Fi connection. The Wi-Fi antennas are deactivated when an active Ethernet connection is detected. When a wireless connection is necessary, the supplied antennas should be fixed to the rear panel.

- MiND Name identifies this device as a playback Zone in the MiND Controller app on a mobile device.
  The default MiND name is MOON 791, although it may be changed to make it easier to identify.
- Wi-Fi Configuration is possible with the Setup menu, which also permits manual configuration of specific advanced network parameters.
- Information displays useful details about the network connection of this device.

Automatic Wi-Fi Configuration

1. From the Setup menu, select Network, Configuration, Wi-Fi Parameters, and Automatic.
2. Select the appropriate SSID (Wi-Fi name) from the list of networks.
   If the desired SSID does not appear, return to Wi-Fi Parameters, and select Manual to enter the SSID.
3. Enter the security key and leave the cursor on the final (flashing) character.

A static IP address may be entered, along with the subnet mask, gateway address, and a DNS server.
This method is for advanced users only, with an additional prompt to confirm the settings.

Connectivity

Inputs
Each input may be personalized.

- **Label** is the name of the input as it appears on the display. Select a predefined label or manually enter a custom label.
- **Offset** is a variable amount of gain applied to each input to fine-tune its volume level so that source components connected to all inputs may have similar levels.
- **Enable** makes an input available to select. It may be disabled to reduce the number of unused inputs to scroll through.
- **Home Theatre Bypass** disables volume control in this device. This mode sets the preamp volume to unity gain for use with a separate audio-video receiver or home theater processor. There is an additional prompt to confirm that a device with its own volume control is connected to the input of the MOON 791 before activating this mode.
- **HDMI ARC** (Audio Return Channel) is an HDMI audio input for use with a TV. CEC (Consumer Electronic Control) enables multiple devices to share commands—such as Standby and Volume—from a single remote control.

> ### CEC Settings
> - **Audio Only** enables audio but disables CEC commands.
> - **Audio + CEC Volume** enables audio and CEC volume control but disables other CEC commands.
> - **Complete** enables audio and all CEC commands.

- **Input Type** converts **Phono – Analog 1** from a line-level input to a phono stage.

Phono
- **Basic** mode provides pre-set configurations for typical Moving Magnet and Moving Coil phono cartridges.

Basic	gain	impedance	capacitance
moving magnet	40 dB	47 kOhms	100 pF
moving coil	60 dB	100 Ohms	0 pF

- **Advanced** mode permits custom values for Gain, Impedance, Capacitance, and EQ Curve.
  Consult the documentation supplied with the cartridge for its specifications or contact its manufacturer for assistance.
  - The RIAA EQ Curve applies the standard frequency equalization for vinyl record playback.
  - The IEC EQ Curve is an adaptation of the RIAA curve with reduced extreme low-frequency output to minimize their potentially adverse effects in certain acoustic environments.
    Consult your MOON Partner for help deciding which curve best suits your installation.

Analog Outputs

Each pair of analog outputs may be configured independently as a Variable-volume output for use as a preamplifier or as a Fixed-volume output for use with a device with its own volume control (like an integrated amplifier).

When both pairs of outputs are set to Fixed, volume commands are relayed to the next MOONLink device in the signal chain.

*Caution: The fixed volume level is extremely high! Lower the volume of the preamp or integrated amp to which it is connected **before** setting the analog output of this device to Fixed.*

Multiroom

The MiND Controller mobile app includes a feature to join multiple MiND 2 Zones together to play audio as a cohesive system. In addition to streaming audio via the MiND 2, this device may also share audio from any of its inputs with multiroom devices.

- **Original** mode maintains the original signal through this device while digitally sharing a digitized audio signal with other multiroom devices on the network.
- **Synchronized** mode forces all the multiroom devices to share one synchronized digital audio signal.

Bluetooth Audio

Devices may connect to this device to transmit their audio via Bluetooth to play through this device. Before connecting for the first time, the two devices must be paired to each other.

- **Pair** makes the device visible to nearby devices in pairing mode for up to 30 seconds.

- **Disconnect** an audio source when it should no longer transmit through this device.

Functionality

Remote Control

This unit may link with up to two BRM-1 remote control units at a time.

- **Link Remote** searches for a nearby MOON BRM-1 remote control, displaying its unique ID on both devices and permitting them to be associated.
- **Unlink Remote** displays associated BRM-1 units permitting them to be disassociated from this device.
- **Information** displays useful details about the associated BRM-1 units.

Refer to the separate Guide included with the BRM-1 for more information.

MOONLink

MOONLink technology makes MOON products more intelligent.

A single button press can trigger automated behaviours and simultaneously operate multiple devices over a network in a symbiotic MOONLink Group. MOONLink simultaneously toggles Standby and can adjust display brightness for all devices in the Group, while enabling volume control and automatic input selection of specific devices in the Group.

- **MOONLink Group** permits the customization of a Group.
  - **Name** identifies a device within the Group.
  - **Group ID** assigns a Group number to a Device. Assigning the same ID to other devices joins them together as a Group.
  - **Status** lists information about the device.
  - **Firmware** verifies the firmware of the device and updates it when necessary.
- **Available Devices** lists devices on the network that could be added to a Group.

A MOONLink Group should include no more than one preamplifier.

Holding the Standby button on the front panel for two seconds automatically toggles Standby mode on all the devices in the MOONLink Group.

Standby Settings

- **Full Power** keeps most of the electronics powered up while in Standby.
- **Low Power** powers down most of the electronics while in Standby.
- **Auto-Standby** engages Low Power Standby after 20 minutes of inactivity.

Volume Settings

The highest volume setting of the preamp is 80.

- **Startup Volume** sets a default initial volume level.

- **Maximum Volume Level** sets an upper threshold to prevent accidents.

Display

Display On
The display may be disabled so that only user interaction temporarily activates the display.

Brightness
The display brightness is variable and may be customized.

- **Brightness Level** is a value from 0% to 100%.
- **Adaptive Brightness** uses sensors to adjust automatically to ambient lighting in the environment.
- **MOONLink Brightness Sync** duplicates the brightness adjustments of this device on other devices in the MOONLink Group.

Background Image
This device displays a pre-defined background image or none at all.

Screen Saver
Two screen saver styles are available, which may also be disabled.

- **Mode** determines what triggers the screensaver.
  - One mode activates the screensaver after 20 minutes of silence.
  - One mode activates the screensaver after 20 minutes of inactivity.
- **Style** sets the screen saver to display a blank screen or a floating MOON logo.

Firmware
Certain hardware components in this device require firmware to function.

- Versions displays the various firmware versions currently installed.
- Update begins the procedure of verifying and, if necessary, updating the firmware with on-screen guide prompts.

Information
Device information, including its serial number, and certifications are displayed for referencing.

Reset
The **Reset** procedure reverses all customizations (including input and network configurations) to factory default settings. It does not revert the firmware to an earlier version.

Enjoy your MOON 791

MiND Controller

State-of-the-art MiND (MOON intelligent Network Device) technology brings together digital music libraries, which continue to increase in size and number, in a sophisticated and intuitive app, adding greater possibilities for the future of music playback. The MOON MiND Controller provides users one clever app to consolidate their music libraries and to control a MOON audio system.

The MiND Controller enables users to stream music from several online services and local network servers, update MOON products automatically, and synchronize playback across devices in multiple Zones simultaneously. In addition to typical UPnP functions, the MiND Controller can toggle Standby, switch inputs, and even control the volume of MOON products anywhere in the home. The app even makes it easy to mix files from different services into a single coherent playlist. Only the MiND Controller merges all these features in one straightforward app.

For more information about MOON and MiND, please visit simaudio.com.

Roon Ready

This is a Roon Ready product. Roon enables users to select and play files through the MiND and to control the volume of the preamp using Roon software instead of the MiND Controller.

For more information about Roon, please visit roonlabs.com.

TIDAL Connect

TIDAL Connect enables users to select and play files through the MiND using the native TIDAL app instead of the MiND Controller.

For more information about TIDAL Connect, please visit tidal.com/connect.

Spotify Connect

Use your phone, tablet, or computer as a remote control for Spotify.

Go to spotify.com/connect to learn how.

AirPlay

AirPlay is an Apple technology to control audio systems and speakers anywhere on your network with the tap of an iPhone or iPad, or by asking Siri.

This device supports AirPlay, which requires iOS 11.4 or later. AirPlay enables compatible Apple devices to stream audio to the network player, to pause, play, and skip forward or backward, and to control the volume of the preamp from within a wide range of apps like Apple Music and YouTube Music.

Technical

Digital Audio

The MOON 791 converts up to 32-bit PCM and MQA, as well as DSD.

	sample rate	Optical	SPDIF AES-EBU	USB	MiND 2	Bluetooth	HDMI
PCM & MQA	**44.1 kHz**	♪	♪	♪	♪	♪	♪
	48 kHz	♪	♪	♪	♪	♪	♪
	88.2 kHz	♪	♪	♪	♪		♪
	96 kHz	♪	♪	♪	♪		♪
	176.4 kHz		♪	♪	♪		♪
	192 kHz		♪	♪	♪		♪
	352.8 kHz			♪	♪		
	384 kHz			♪	♪		
DSD64	**2.8224 MHz**			♪	♪		♪
DSD128	**5.6448 MHz**			♪	♪		
DSD256	**11.2896 MHz**			♪	♪		

USB host

interface	MiND Controller (Library > USB)
supported file system	FAT
	NTFS
	EXT2/3/4
maximum capacity	determined by file system
	NTFS: 256 TB
maximum file bitrate	200 Mb/s
spin rate	5400 RPM / 7200 RPM
HDD size	2.5"
	3.5" (with 12 V power supply)

Specifications

Analog Input Impedance	22 kΩ
Maximum Gain (Line Level)	10 dB
Phono Input Gain	40 dB / 54 dB / 60 dB / 66 dB
Phono Input Capacitance	0 pF / 100 pF / 470 pF
Phono Input Resistance	10 Ω / 100 Ω / 1 kΩ / 47 kΩ
Output Impedance	50 Ω
Crosstalk	−125 dB
Frequency Response	2 Hz – 200 kHz (+0 dB / −3 dB)
Signal-to-Noise Ratio (Analog Preamplifier)	120 dB
Dynamic Range (Digital Input, Fixed Output)	125 dB
Total Harmonic Distortion	0.0004%
Intermodulation Distortion	0.0003%
Power Consumption (Idle)	25 W
Power Consumption (Full Power Standby)	22 W
Power Consumption (Low Power Standby)	5 W
Shipping Weight	19 kg / 41 lbs
Dimensions (L x H x D)	48.1 cm x 10.2 cm x 44.9 cm / 18.95" x 4.03" x 17.66"