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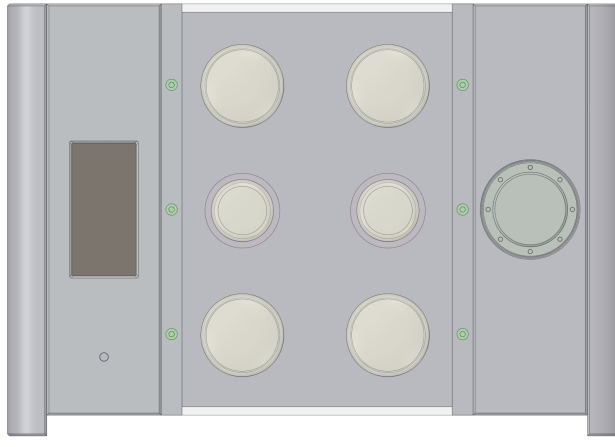


Arcus Integrated Amplifier

Owner's Manual

2017.08 Edition

FOREWORD

We would like to thank you for your purchase of the Arcus amplifier!

This product has been entirely developed, assembled and tested in Switzerland using the highest quality parts, providing you not only with a superlative listening experience but also the assurance of trouble-free operation for the years to come.

The engineering choices made during the design phase endow the Arcus amplifier with unique characteristics. We encourage you to read this manual as it will provide you with all the necessary information to use them fully.

We wish you a pleasant listening experience!

Sincerely,
The Nimbus Audio Team

For your safety!

Before you begin, please read and make sure you understand this manual and the included safety instructions.

Don't hesitate to contact us if you have any questions.

UNPACKING

Installing and connecting your amplifier is straightforward and the following steps will assist you in getting it up and running in a short amount of time.

The Arcus amplifier is composed of two units:

- The Amplifier Unit
- The Power Supply Unit

> **Important Note**
>
> Do not try to stack the amplifier and the power supply units on top of each other as they haven't been designed for that. Each component requires its own shelf in your audio component rack, or if installed on the floor they should sit on their own decoupling platforms.

The package also contain the following parts:

- An accessories box with the remote control and a hex tool allowing the removal of the screws holding the plexiglas front panel.
- The original kit of tubes kit as provided from the manufacture consisting of four 6L6GC and two 6SN7 tubes.
- Two cables with circular connectors for connecting the power supply unit to the amplifier unit.
- One IEC mains power cable.

Please inspect the package contents for missing parts or transport damage. Both units are quite heavy so we recommend that you leave them in their package until you have decided where to install them in the next section.

AMPLIFIER UNIT

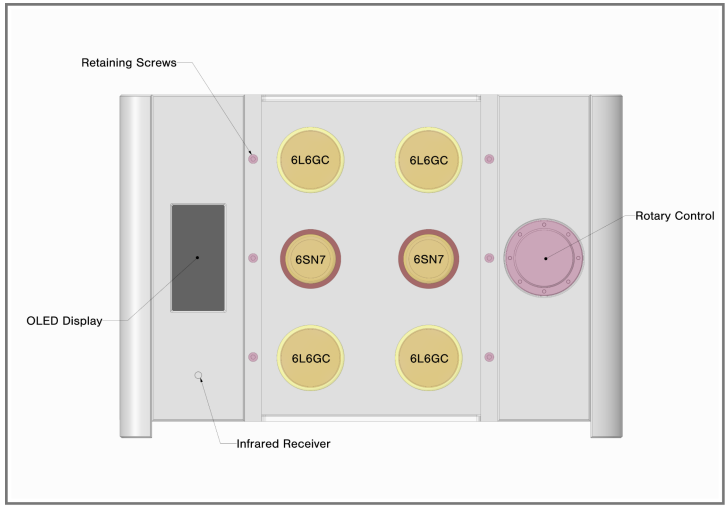


Illustration 1: Amplifier Chassis Front

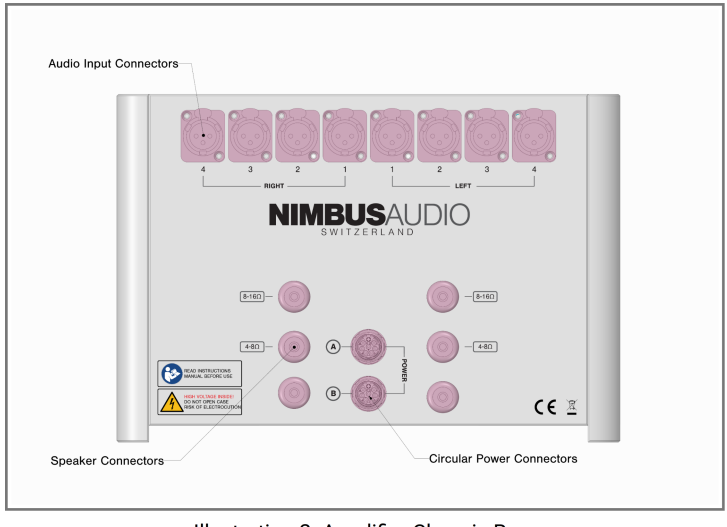


Illustration 2: Amplifier Chassis Rear

POWER SUPPLY UNIT

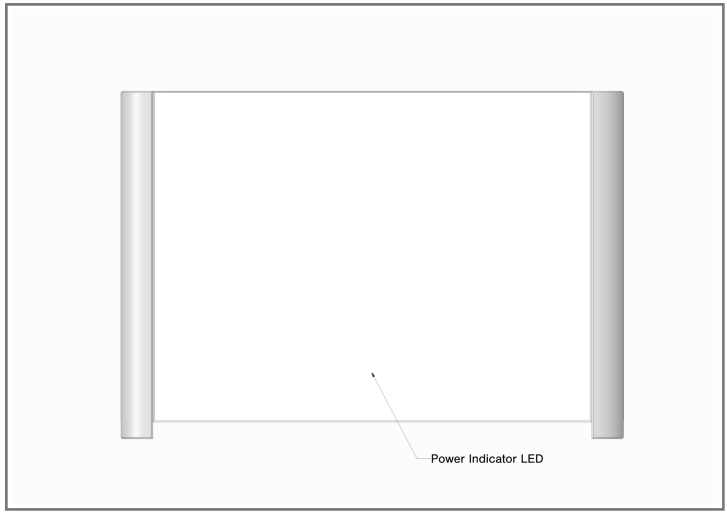


Illustration 3: Power Supply Chassis Front

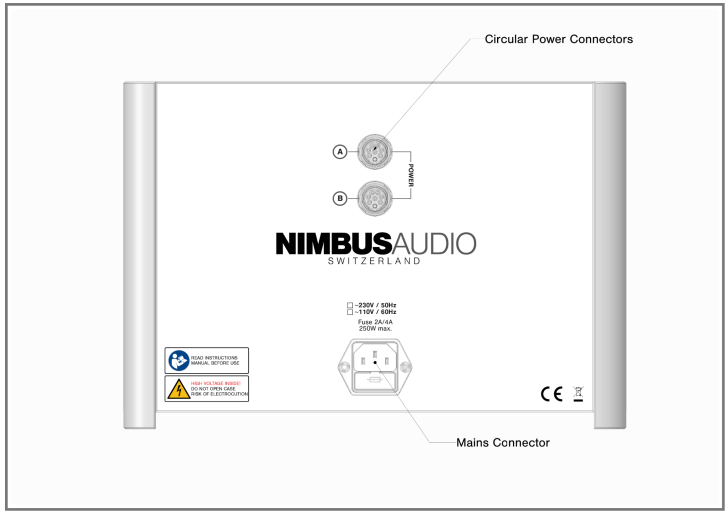


Illustration 4: Power Supply Chassis Rear

LOCATION

The vacuum tubes used in the Arcus amplifier generate a significant amount of heat during operation and good ventilation is of utmost importance for safe, long-term operation.

Please follow the rules below to provide your amplifier with adequate cooling:

- Always install the amplifier on a flat, non heat sensitive surface such as in a dediacted audio components rack.
- Make sure the top and bottom ventilation holes aren't covered at any time. Never install the amplifier on a carpet, textile or heat sensitive / flammable material.
- Leave at least **8cm. (3")** of free space between the top of the amplifier and any shelf above it. This is extremely important as the heat from the vacuum tubes needs to flow freely outside the chassis.
- Due to its weight, we recommend you install the power supply unit in the lower section of your setup or directly on the floor.

Now that you have selected the ideal location, you can proceed with unpacking both units and installing them.

> **Note**
>
> The outside surface of the Arcus Amplifier has been anodized for increased resistance against scuffs or scratches, however rings or jewelry can damage it if you're not careful during installation.

VACUUM TUBES INSTALLATION

For your safety

Never operate the amplifier without the Plexiglas protection screen: the vacuum tubes are very hot in operation.

Always wait at least 30min. to allow the vacuum tubes to cool down before removing the protection screen.

Risk of burns!

For your safety

Ensure that you have inserted the tubes in the correct socket as indicated on the amplifier and in the instructions manual.

The correct tube type is indicated by a label on the amplifier between each pair of sockets.

Risk of malfunction and damage to the amplifier!

The Arcus amplifier is capable of operating with various tubes from the 6L6 and 6SN7 families and installing tubes is very easy.

To ensure a long life and safe operation with various tube models, please carefully read the **Tube Rolling** section of this manual for instructions on how to configure the amplifier for the tubes you are installing.

Tube set removal steps

- Switch off the amplifier and disconnect the power cord from mains.
- Wait at least 30 min. for the tubes to cool down.
- Use the provided tool to remove the six M3 screws that keep the protection Plexiglas panel in place.
- Remove the existing tubes and place them back in their original packaging.

Tube set installation steps

- Install the two **6SN7** tubes in the middle sockets. These sockets are highlighted with **blue rings.**
- Install the four **6L6** tubes in the top and bottom sockets. These are highlighted with **red rings**.
- Make sure the tubes are well seated and fully inserted!
- Re-install the Plexiglas protection window and secure it using the provided tool and screws. Be careful not to over-tighten the screws: finger tight is more than enough!

> **Tip**
>
> The plexiglas panel is easier to install and remove if you start by removing the bottom screws first and work your way up while holding the panel with your other hand

AUDIO AND POWER CONNECTIONS

For your safety

Never attempt to connect or disconnect the power cables between the power supply and amplifier units when the supply is connected to the mains and powered up.

Always disconnect the mains power cord first, and wait at least 5 minutes before disconnecting the cables between the two units.

Risk of electrocution and damage to the amplifier!

Power supply connections

The power supply and amplifier units are connected to each other using two custom power cables equipped with circular screw-in connectors as shown in the illustration.

Power Cable

Illustration 5: Circular Power Cable Connector

To ensure a correct connection, chassis sockets are labelled A and B:

- Connect one cable from connector A on the amplifier to connector A on the power supply unit
- Connect the second cable from connector B on the amplifier to connector B on the power supply unit

Follow these steps to connect the power supply and amplifier units:

- Ensure the mains power cord isn't connected to the power supply unit!
- Start with the A connection on the amplifier side: align the cable connector to the socket and screw the circular connector in fully. If you have troubles making the connection, ensure the two sides are lined up correctly.
- Connect the other end of the cable to the A power supply connector and screw it in fully.
- Repeat the steps above with the B connection, starting with the amplifier then the power supply.

> **Note**
>
> The provided power cables have black and white coloured end sleeves to assist you in making the correct connections but are internally and electrically identical.

Audio input connections

The Arcus amplifier offers four XLR balanced inputs to connect analog audio sources such as phono preamplifiers, digital to analog converters (DACs) and more.

If you desire to use unbalanced sources, a simple RCA to XLR adapter will be sufficient. We however recommend that you always

connect balanced source equipment as this will provide the optimal operating conditions for the input transformers.

It is also worth noting that unbalanced sources have a signal level that is 6dB lower than balanced ones and the volume control will have to be increased by the same amount.

Speaker connections

At the back of the amplifier six binding posts (see Illustration 4), allow speakers to be connected using the most common methods: bananas, spades and nude wire are all supported.

To enable a broad range of speakers to be used, the Arcus amplifier comes configured from the manufacture for 4Ω and 8Ω speakers.

On special request, the following combinations are also available: 8Ω / 16Ω or 4Ω / 16Ω.

Once the desired speaker output has been selected, connect the negative side of the speaker cable to the bottom binding post (black with white ring) and the positive side to either of the two top binding posts (black with red ring).

Only one pair of outputs should be used at a time. Please also make sure that the speaker polarities are not inverted!

Additional Information

The top red speaker connector is always the higher impedance and the middle connector the lower impedance The bottom speaker connector is always the ground connector.

Congratulations, you've completed the installation of your amplifier!

POWERING UP

For your safety

Only connect the power supply to a mains connector that provides the appropriate voltage rating as indicated on the back of the power supply unit!

Risk of electrocution, of fire and damage to the amplifier!

Always replace the fuse with one of the same value as indicated on the back of the power supply!

Risk of electrocution, of fire and damage to the amplifier!

Only use an approved mains power cable for your country.

Risk of electrocution, of fire and damage to the amplifier!

Mains power connection

You are now ready to connect the amplifier to your household mains supply. Once this is done, the LED on the front of the power supply unit will light up to indicate the amplifier is ready.

Checking the tube profile

The currently active tube profile will be displayed at the bottom of the OLED screen when the amplifier is in stand-by.

As shipped from the manufacture, the amplifier will be configured for 6L6GC tubes which are the standard provided set.

If you have purchased an optional tube kit or if the displayed profile doesn't match the tubes that you installed, please read the Settings and the Tube Rolling sections to learn how to configure the amplifier for the installed tubes.

Please do this before turning the amplifier on!

> **Tip**
>
> To save power, the amplifier will automatically turn off the display after a short amount of time when in stand by. Rotating the volume button in any direction will wake up the display and allow you to check the currently active tube profile without turning on the amplifier.

AMPLIFIER CONTROLS

The amplifier operation can be controlled using both the infrared Remote Control or the Rotary Control button on the amplifier itself.

Using the Rotary Control

The rotary control is the round button on the front right side of the amplifier. It allows three different actions:

- Increase / Decrease: rotate the button left or right
- Select: Push the button and release
- Hold: Push the button and keep it pressed for about 3s.

Depending on the amplifier state each action may perform a different function. For example rotating the button will change the volume level by default or select the active input when in input selection mode.

Using the Remote Control

The remote control uses infra red signals to communicate with the amplifier, and needs a clear line of sight to operate correctly.

The remote control offers the same actions as the rotary control:

- Increase / Decrease: Press the up or down arrow buttons
- Select: Press the middle button
- Hold: Press the middle button and hold pressed for about 3s.

Installing the Remote Control battery

If you just unpacked the remote control, you will first need to install the battery before it can be used. The remote control uses a CR2032 (coin cell) Lithium battery.

Follow these steps to install or replace the battery:

- Turn the remote so that you look at its back.
- Slide the back plate downward to remove it.

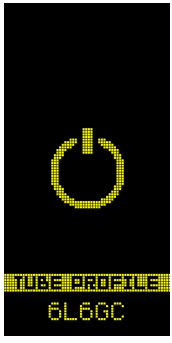
- Install the battery in the battery holder, pay attention to the polarity.
- Slide the back plate in and push until it clicks in place.

The remote control is now ready to be used.

OPERATING THE AMPLIFIER

The OLED display on the left side of the amplifier indicates all the important parameters and current operating conditions.

> **Tip**
>
> Holding the Select button pressed (**Hold** action) will power off the amplifier at any time irrespective of the mode it is in.

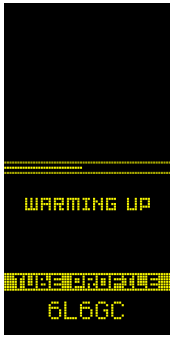


Stand-by

In this state the amplifier is connected to mains power but turned off.

The currently active tube profile is displayed at the bottom of the screen.

- Select: turn on the amplifier.
- Hold: enter the Settings menu (see below for available parameters)



Warm-up

When the amplifier is turned on, it will warm up the tubes progressively to ensure a long service life.

This procedure takes about 30s. to allow tube operating conditions to stabilize.

Please note that full warm-up takes around 1h for all internal components to reach their final operating temperature.

Play Mode

In this state the amplifier is ready to reproduce audio from the selected input. The top of the screen indicates the currently active audio input.

The volume attenuation in dB is indicated in the middle of the screen.

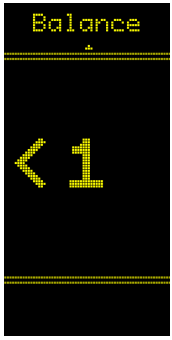
- Increase / decrease: adjust the attenuation level from -63dB to 0dB.
- Select: mute the amplifier and enter Input Selection state.
- Hold: switch off the amplifier.

Input Selection State

When the input selection is active, the audio is muted and the controls allow the currently selected input to be changed. The label 'Input Select' also appears on the display.

- Increase / Decrease: change the active input from 1 to 4. The currently selected input is highlighted with the triangle marker.
- Select: Activate the selected input, un-mute, and return to the Play state.

This function can also be used to mute the amplifier for a short moment without changing the input.



Audio Balance Setting

When in the Input Selection state, advancing the selection cursor to the right, beyond Input 4, will bring up the audio balance setting.

This allows left / right balance to be corrected by up to 9dB in each direction.

- Increase / decrease: adjust balance setting.
- Select: activate balance adjustment and return to the Play state.

The balance value will be indicated on the main screen only if it is not set to zero.

Cool Down

When requested to powered off, the amplifier will undergo a cool down period for about 30s.

Do not disconnect the amplifier or power cables during this period!

Settings Menu

The settings menu allows amplifier parameters to be modified and saved to the non volatile memory so changes made to the settings will not be lost when power is removed.

- Increase / decrease: select the setting to adjust. The current value for that setting is displayed in the bottom section of the display.
- Select: modify the currently highlighted setting, click again to store new value.

Please note that your settings menu might display different options depending on the currently installed software version.

The following settings can be adjusted:

- Tube Profile: select the desired tube profile to apply. Please check the Tube Profiles section for additional information.
- Flash Firmware: Enter firmware update mode. This allows the internal firmware to be upgraded using the USB port.
- Exit: return to Standby state.

TUBE ROLLING

The Arcus amplifier allows several tube types to be installed to tailor the sound signature to your tastes.

There are two sorts of tubes used in by the amplifier, each with a specific function:

- Two 6SN7 tubes for the voltage amplification
- Four 6L6 tubes for the power amplification

The sections below contain additional information about which tubes from those families are compatible and how to use them.

Voltage Amplification Tubes

The voltage amplification section uses two dual-triode tubes from the 6SN7 family and any new or NOS tube from any brand can be used.

Thanks to the amplifier's ability to supply both 6.3V and 12.6V filament heaters, NOS 12SN7 tubes can also be installed thus broadening the range of supported tubes. The amplifier will automatically detect the voltage required during warm up and no manual intervention is needed.

But there's more: using a simple Loctal to Octal socket adapter (not included), the 7N7 and 14N7 tube families can also be used opening up access to a very broad range of high quality NOS tubes.

Summary of supported voltage amplification tubes:

6SN7, 12SN7, 7N7, 14N7

Power Tubes

A unique feature of the Arcus Amplifier is its ability to adjust both the supply voltage and the bias current of the power output stage to enable the use of all 6L6 beam tetrode family tubes.

The main 6L6 family consists of 6L6, 6L6G, 6L6GA, 6L6GB, 6L6GC types. Additional compatible tubes are the 5881 and NOS Russian

6P3S tubes. Other tubes are also compatible with adapters so in case of doubt, please contact us.

As 6L6 tubes come with vastly different plate dissipation ratings, it's very important to select the correct tube profile for the installed tubes. In particular, the older NOS 6L6 tubes are rated for lower voltages and power than modern 6L6GC tubes and will suffer catastrophic failure if used with the incorrect profile.

Summary of supported power tubes:

6L6, 6L6G, 6L6GA, 6L6GB, 6L6GC, 5881, 6P3S

The power tube type must be manually indicated using the Tube Profile option in the Settings menu.

Please note that an added benefit of the tube profile circuitry is that it ensures perfect biasing of power tubes during all their lifetime without any need for manual adjustment.

Tube Profile Name	Supply Voltage	Notes
6L6	360V	6L6, 6L6G All tubes with a 19W plate dissipation.
6P3S	360V	Russian NOS 6P3S tubes.
5881	400V	5881, 6L6GA, 6L6GB All tubes with a 23W plate dissipation.
6L6GC	450V	6L6GC class AB profile All tubes with a 28W plate dissipation.
6L6GC (A)	400V	6L6GC class A profile All tubes with a 28W plate dissipation.

Table 1: Tube Profiles List

Using the incorrect profile can destroy the installed tubes and damage the amplifier!

FIRMWARE UPDATES

The sophisticated functionality of the Arcus amplifier is supervised and made possible by a micro-controller running in-house designed software.

In order to benefit from new features that might be released in the future, the amplifier can be upgraded using the USB port located on the internal left hand side behind the Plexiglas protection panel.

Please head out to our Internet web site at http://www.nimbusaudio.ch to check for new firmware versions and for instructions about how to perform the update.

FAQ

There is no power...

- Check that the power cables between the power supply and the amplifier units are connected, connectors are seated correctly and screwed in fully.
- Check that the A and B connections aren't inverted between the power supply and amplifier units.
- Check that the power supply unit is connected to the right mains supply voltage as indicated on the back of the unit with the appropriate power cord for your country.
- Check the fuse on the power supply unit: disconnect the power cable and remove the fuse from its receptacle.

> **Note**
>
> The power supply unit has a power indicator LED on the front that lights up when it's connected to the mains.

There is no sound...

- Check that the correct input is selected.
- Check that the input cables are connected in the appropriate left and right channel connectors.
- The amplifier goes on mute during the input selection, once the desired input is highlighted press Select to switch to that input and exit the mute mode.
- Check that the speaker cables are correctly connected.

Why are there "clicking" noises coming from the amplifier unit when the volume is changed?

This is completely normal.

The Arcus amplifier uses a precision (0.1%) resistor ladder volume control which is driven by relays. Compared to active

switching devices, relays introduce no alteration of the audio signal. The drawback is that they make a clicking sound when they are operated which we feel is a small price to pay for not introducing any unwanted signal alteration.

As an additional refinement, the dual path volume control allows the volume to be smoothly adjusted without any noise until the desired listening volume is reached.

Why is a warm-up time required?

Tube heater filaments require at least 30s. after being powered up to reach their operating temperature.

It is important that high voltage isn't applied to the tubes during that period to avoid arcing and damage to the cathode.

The Arcus amplifier is equipped with a soft start circuitry that slowly brings the tubes up in temperature before it ramps up the high voltage supply to enable a longer tube service life.

Cleaning of the amplifier surface...

- Always switch off the amplifier and wait 30min. to allow it cool down before any cleaning!
- The chassis is made of milled aluminium that has been treated and anodized for a long lasting finish. It can however be scratched if not treated with precaution. Only use a dry soft cloth to clean up the surface. More difficult to remove stains can be cleaned using a moist cloth.
- Never spray any liquids at the amplifier or power supply units!

SPECIFICATIONS

Input		
Input impedance (balanced)	27	kΩ
Attenuation range	-63..0	dB
Sensitivity	2	V rms
Voltage gain	14	dB

Output		
Bandwidth (+/- 1dB)	20..20000	Hz
Rated power (1kHz, 8Ω)	**A** 27.5 **AB** 30.0	W
Distortion (1kHz, 1W/8Ω)	**A** <0.2 **AB** <0.5	%
Distortion (1kHz, rated power)	**A** <1.2 **AB** <2.5	%
Push-pull bias imbalance	<500	µA

Amplifier Unit		
Outside dimensions (L x W x H)	298 298 200	mm
Weight	13.5	kg

Power Supply Unit		
Outside dimensions (L x W x H)	298 298 200	mm
Weight	17.5	kg

Power Consumption		
Standby	<0.5	W
Idle	160	W
Maximum	250	W

ADDITIONAL INFORMATION

Terms and Conditions

Please check the terms and conditions before purchasing or operating the product. They are available on the Nimbus Audio website at

http://www.nimbusaudio.ch/assets/cgv.pdf

Operating Conditions

The product must not be operated outside the following conditions.

- Altitude: below 2000m
- Temperature: 0 – 35°C ambient
- Humidity: <70% RH

Support

Each amplifier is fully tested and calibrated at the manufacture before it's packaged to ensure the product meets all your expectations.

Should a problem arise during the warranty period, please contact us for assistance at the following email address:

info@nimbusaudio.ch

SYMBOLS

Caution! Make sure to follow the indications.

Caution! Risk of electrical shock or death if instructions aren't followed.

Read the instructions manual.

DISPOSAL

Do not dispose of this device together with household waste material! In observance of European Directive 2012/19/EU on waste electrical and electronic equipment and its implementation in accordance with national law, electronic equipment that has reached the end of its life must be collected separately and returned to an environmentally compatible recycling facility.

Dispose of replaced equipment parts in accordance with the rules and regulations applicable in your country.

DECLARATION OF CONFORMITY

Product: Arcus Integrated Audio Amplifier

Model: ARI-R1

We hereby declare that the product described complies with the following directives:

- 2014/35/EU (LVD)
- 2014/30/EU (EMC)

The following harmonized standards were applied:

- IEC 62368-1:2014
- IEC 61000-3-2:2014

Buchillon, 2017-07-01

CE

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Founder
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