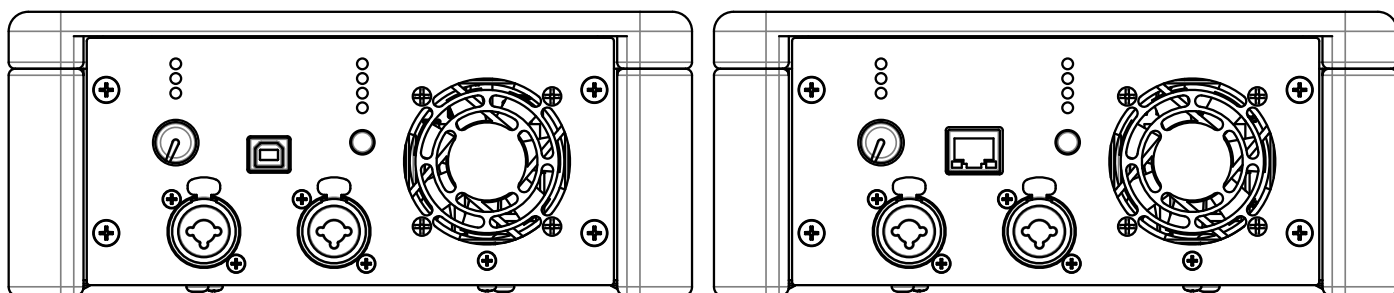


**Outline**

**L3000**

**L3000E**



**Super-compact amplifier**

**USER MANUAL**

## SAFETY REGULATIONS

In order to avoid risks for the user's and other people's safety, as well as annulling the warranty, it is advisable to read the suggestions in this section for the correct use of the product.

Do not expose the unit to rain and don't use it in locations with a high humidity level. Ensure that no liquids or solid objects accidentally enter the unit; should this occur, stop using the unit and contact Outline or qualified service personnel.

When connecting the unit, ALWAYS check the ground connection as required by technical and safety norms. If the original power cord is worn or

damaged, it must be replaced with a new one of the same type. The connections should be carried out by skilled staff only. Move the unit only when disconnected.

Refer all servicing to qualified service personnel only. Servicing is required when the apparatus has been damaged in any way, such as power supply cord or plug is damaged, liquid has been spilled or objects have fallen into the apparatus, the apparatus has been exposed to rain or moisture, does not operate normally, or has been dropped.

For any technical issues please contact Outline.

## DISPOSAL OF WASTE MATERIALS



Your product is designed and manufactured with high quality materials and components, which can be recycled and reused. When this crossed-out wheeled bin symbol is attached to a product, it means the product is covered by the European Directive 2012/19/EU and subsequent amendments. This means that the product must NOT be disposed of with other household-type waste. It is

the users' responsibility to dispose of their waste electrical and electronic equipment by handing it over to an approved reprocessor. For more information about where you can send your equipment for recycling, please contact your local distributor. The correct disposal of your old product will help prevent potential negative consequences for the environment and human health.

## CONFORMITY AND WARRANTY

**CE** All the Outline electro-acoustic and electronic devices are in conformity with the provisions of EC/EU directives (as stated in our CE declaration of conformity).

The CE declaration of conformity is attached to the product warranty certificate and is shipped with the product.

## SYSTEM DESCRIPTION

The L3000's four channels of amplification combined with internal DSP provide the perfect solution for many applications. The flexible two, three or four channels format is ideal for installations but also for portable systems. Up to 3000 W in a really compact wooden chassis, weighing just 3.4 kg/ 7.5 lb, L3000 is a flexible, cost-effective solution for small sound system. This amplifier offers small dimensions, light weight and the traditionally amazing sound quality and reliability of all Outline products. The L3000 can deliver up to 750 W per channel at 4 Ω or 1500

W in bridge mode at 8 Ω. Outline amplifiers deliver crystal-clear highs, and a tight, well-defined low end. Proven design features ensure extremely high performance in terms of super low total harmonic distortion, optimal frequency response and damping factor across a vast number of application scenarios. The PWM output stage allows to transform all the energy drawn from the main into usable power and offers maximum performance, high predictability and immunity from intermodulation artifacts.

## TECHNICAL SPECIFICATIONS

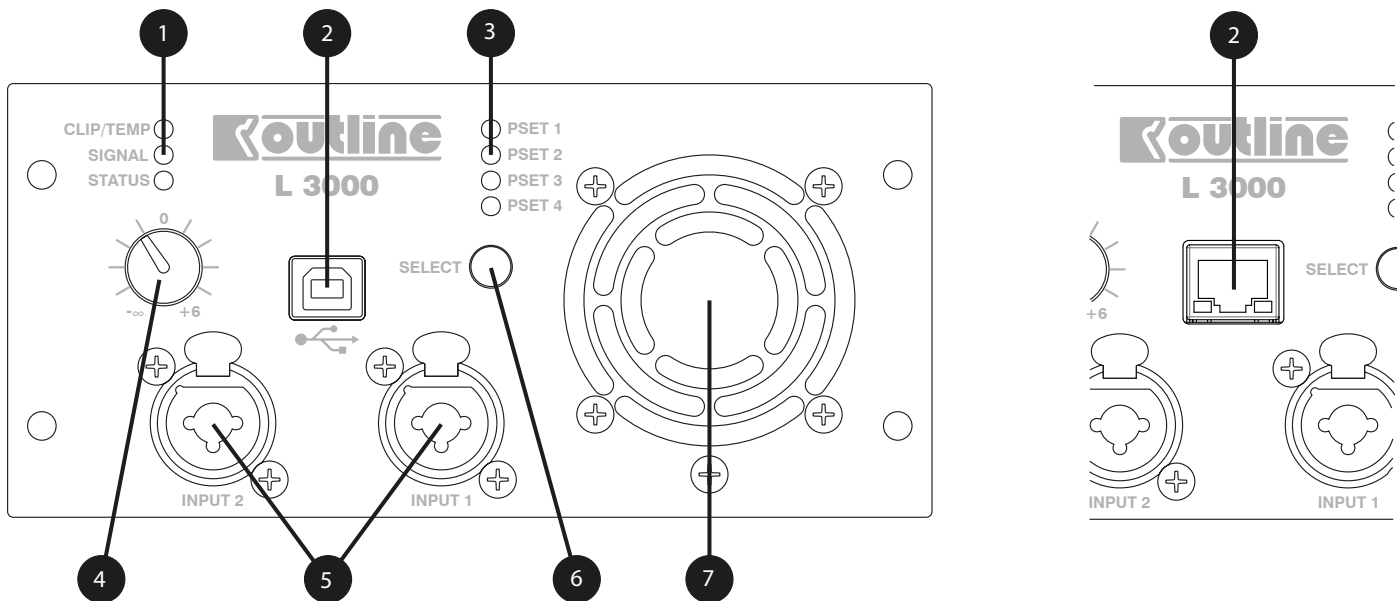
### PERFORMANCE SPECIFICATIONS

Number of channels	4
Output power (per channel)	Single channel mode: 4 x 750 W @ 4 Ω Bridge mode: 2 x 1500 W @ 8 Ω (or 1 x 1500 W @ 8 Ω + 2 x 750 W @ 4 Ω)
Max output voltage	Single channel: 78 V <sub>peak</sub> Bridge: 156 V <sub>peak</sub>
Max output current	Single channel: 30 A <sub>peak</sub> Bridge: 30 A <sub>peak</sub>
AC Main Power	Universal, Regulated switch mode with PFC (Power Factor Correction) Rated Power Supply Voltage: 100 V - 240 V ± 10%, 50-60 Hz Operating Voltage: 90 V - 264 V
Power consumption	Standby: < 1 W (with an aux load < 100 mW) Idle: ≤ 10.2 W @ 100-240 V AC Rated Load (1/4 Max Power): 700 W
Gain	26 dB
Frequency response	20 Hz - 20kHz (±0.5 dB) @ 1 W, 8 Ω
S/N Ratio	> 115 dB (20 Hz - 20 kHz, A weighted)
Crosstalk separation	> 80 dB @ 1kHz
THD+N	< 0.08% from 1 W to half power (typically < 0.05%)
Noise floor	-80 dBV (20 Hz - 20 kHz, A-weighted)
Input sensitivity	11 dBu
Input impedance	4.5 kΩ balanced
Damping factor	> 500 @ 1kHz
Integrated DSP	I/O EQ, Cross-over, Delay, Gain, Limiter

### PHYSICAL

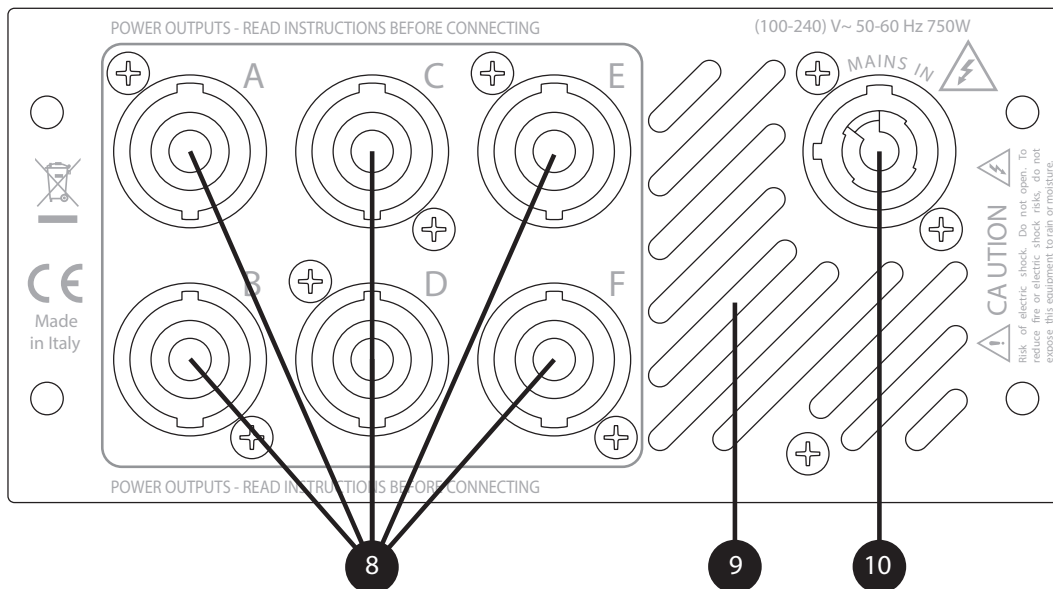
Input connector	2 x XLR-F - Analog signal input
Network connector	USB type B (L3000), Ethernet RJ45 (L3000E)
Output connector	6 x speakON
Height	87.5 mm - 3 1/2"
Width	210 mm - 8 1/4"
Depth	320 mm - 12 5/8"
Weight	3.4 Kg - 7.5 lb

## PANELS FRONT PANEL



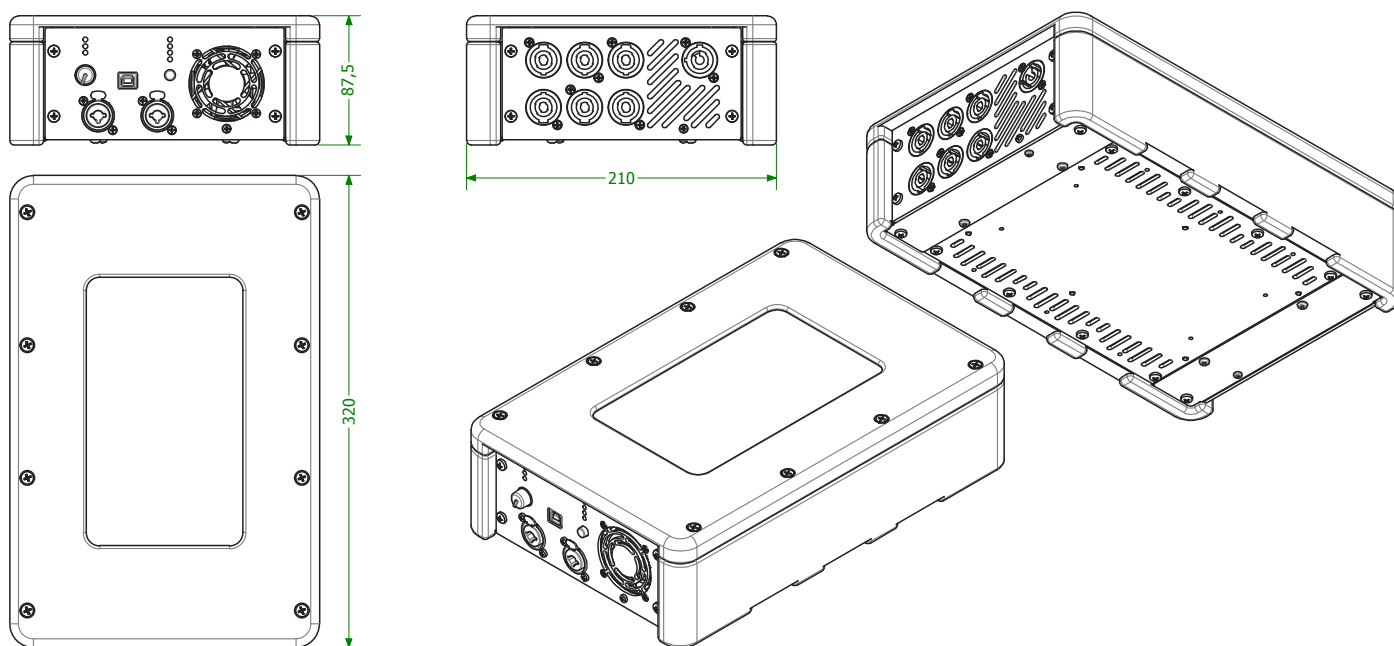
- |  |   |
|--|---|
| 1) Monitoring LEDs                         | 5) Analog IN with combo XLR/TRS 6.35 mm |
| 2) Network connector (USB / Ethernet RJ45) | 6) Preset select button                 |
| 3) Preset LEDs                             | 7) Fan                                  |
| 4) Input level from $-\infty$ to +6 dB     |   |

## REAR PANEL



- |                       |  |
|-----------------------|--|
| 8) Output speakON NL4 | 10) AC Mains input power plug (Powercon) |
| 9) Air vent           |  |

## OVERALL DIMENSIONS



## OPERATIONS

### OPERATING PRECAUTIONS

Make sure the power is off before attempting to make any input or output connections. The AC mains connection is made via the Powercon connector on

the back of the amplifier. Please make sure the AC mains power source operates within the voltage limits indicated in this manual (90 - 264 V).

### COOLING

All Outline amplifiers implement a forced air-cooling system to maintain low and constant operating temperatures. The fan starts to run as soon as the amp module measures a temperature higher than 60°C, the fan control keeps it at the maximum speed

for the first 2s, then its speed will be controlled according to the operating temperature. When the amp module reaches 75°C, the fan starts to run at the maximum speed. Keep the front and back panels as free as possible to ensure correct airflow.

### PROTECTIONS

Power supply protections aim to avoid damages due to the stress of the power supply itself or to isolate a faulty section in the electrical power system from the rest of the device.

Amplifier protections are triggered by the audio signals, output currents and voltages and by the temperature of the output stage's devices.

AC mains overvoltage threshold is set to 280 V<sub>RMS</sub>.

If the AC mains voltage exceeds 280 V<sub>RMS</sub> the primary power supply stop working and turns on again when the AC mains voltage drops under 275 V<sub>RMS</sub>.

If the load impedance is too low or the loudspeaker cable is short circuited, the amplifier output current could rise to harmful values. When the output current reaches 31 A<sub>peak</sub>, the amplifier section switches off.

## DSP INPUT OPERATIONS

The amplifier comprises a range of functions that can be setup manually using Armonía Plus, amplifier management software, which offers control of such parameters as levels, delay, polarity, Input and Output EQ with cross-over filters and limiter settings. You can connect the amplifier using either the USB

port or the Ethernet RJ45 on the front panel (refer to the video tutorials on [vimeo.com/outlineproaudio](http://vimeo.com/outlineproaudio)). On the [armonia.powersoft.it](http://armonia.powersoft.it) web site it is possible to download this software and find all the instructions and training courses for its use.

## MONITORING LEDs

The L3000 front panel provides important information on the state of the amplifier.

There is a set of three LEDs: STATUS, SIGNAL, CLIP/TEMP.

- If the STATUS LED is off, the system is down. If it is **GREEN**, the system is ready to play and standby mode is disabled. If it is **CYAN** the system is ready to play but standby mode is enabled. It is **BLUE** when system is in standby mode;\*
- When the SIGNAL LED is off, there is no input signal, when the signal is present and the output level is in the linear range, it is **GREEN**. If it is **YELLOW**, the input signal is strong enough to engage the output limiter. If it is **RED** Input signal is too high;
- If the CLIP/TEMP LED is off, the system

temperature is ok and there is no signal clipping. A **YELLOW** clip/temp LED indicates high system temperature and the DSP will lower the clipping voltage level to reduce the output power and limit the increase of temperature. If it is **RED**, there is an output signal clipping.

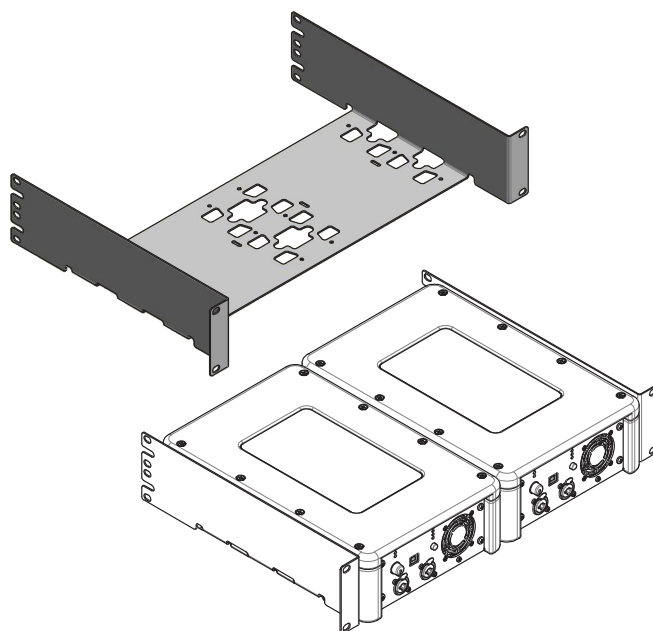
\*By factory default the 'standby mode' is active. By pressing the preset select push-button for at least 3 seconds the user can toggle the standby mode: when active, after 15 minutes of no input signal (input level below -45 dBu) the L3000 enters a low power operating mode (standby) and sends a signal to the power amplifier that turn off the output stages. The system turns back operating when the input signal level exceeds -45 dBu.

## MOUNTING

L3000 amplifier is intended for the standard 19" rack mounting. Using the appropriate hardware, shown in the figure below, one or two amplifiers can be mounted in two rack units (19" x 3.5", 483 mm x 88 mm).

Just lock them with the screws to the accessory and that's it. Use the provided screws to fit the amplifiers.

If it is rack mounted, make sure the exhaust air can flow without resistance.



## CONNECTIONS

### CONNECTING AUDIO INPUTS

Audio input connections are made via two combo XLR/TRS 6.35 mm balanced connectors (pin 1/S: Shield; pin 2/T: hot; pin 3/R: cold) with an input impedance of 4.5 kΩ found on the front of the amplifier.

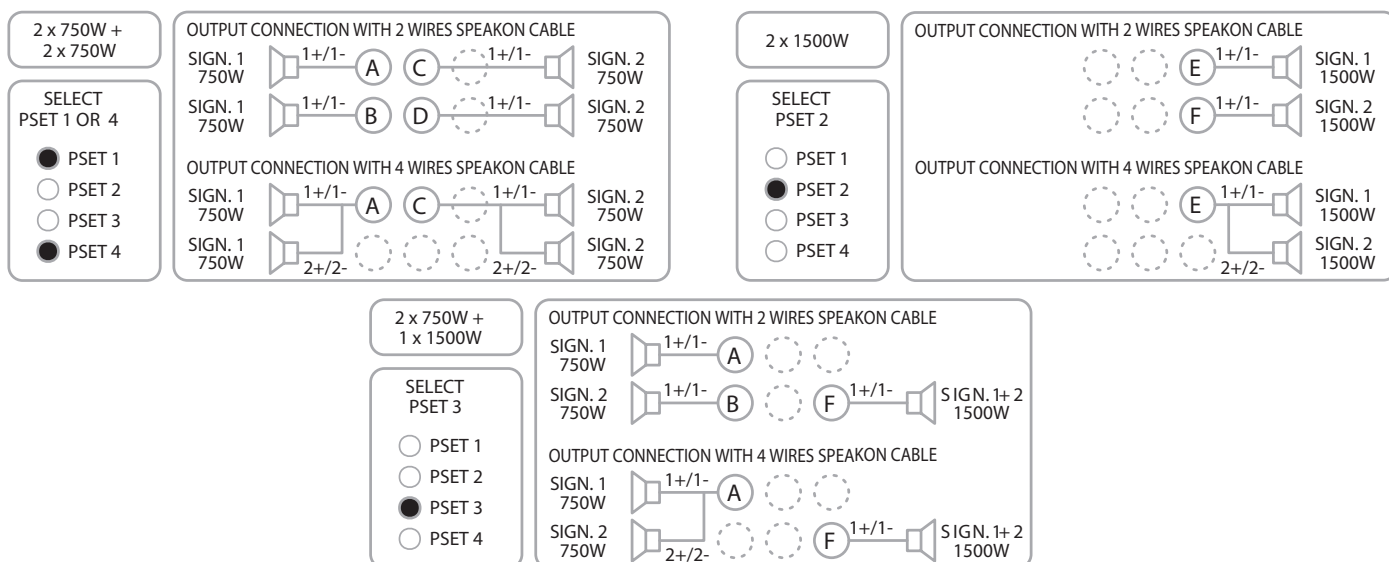
### CONNECTING AUDIO OUTPUTS

All output connections are made via speakON connectors. Both bridge and single channel output connection modes are available. The channels A, B, C and D can be set in single-ended mode, E and F in bridge mode. The connections are made via pins 1+/1-, but outputs B, D and F are also available respectively on outputs A, C and E via pins 2+/2-.

### PRESET

The amplifier offers 4 presets, which change the routing of the signal.

- The standard preset (Preset 1) is designed to have 4 output channels, each 750 W at 4 Ω. The input 1 is assigned to the outputs A and B, input 2 to the outputs C and D. It is possible to wire the outputs in two different ways, either using four 2-poles speakON connectors (1+/1-) with four different cables or two 4-poles speakON connectors (1+/1-, 2+/2-) using only the outputs A (input 1) and C (input 2).
- Preset 2 offers two output channels in bridge mode (1500 W at 8 Ω) with input 1 on output E (1+/1-), and input 2 on output F (1+/1-). It's possible to use only output E with input 1 on 1+/1- and input 2 on 2+/2-.
- Preset 3 offers three output channels with input 1 on output A (1+/1-), input 2 on output B (1+/1-) and both inputs on the output F (1+/1-) in bridge mode. The output connection with 4 -poles cable is also available using only output A (input 1 on 1+/1-, input 2 on 2+/2-) instead of A and B.
- Preset 4 offers four output channels with input 1 on outputs A and B, or just on output A with 4 poles cable (1+/1-, 2+/2-), and the input 2 on output C and D or just on output C (1+/1-, 2+/2-) with the same configuration.





Outline carries out on-going research for product improvement. New materials, manufacturing methods and design upgrades are introduced to existing products without prior notice as a routine result of this philosophy. For this reason, any current Outline product may differ in some aspect from its description, but will always equal or exceed the original design specifications unless otherwise stated.

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