

# LAB 12

Handcrafted High-End Audio

## *Owner's Manual*

### Integre4

*Audiophile integrated amplifier*

[www.lab12.gr](http://www.lab12.gr)  
v1.3

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## IT IS YOURS!

Thank you for selecting the Lab12 integre4, a new age audiophile amplifier designed to be the core of a modern high end audio system.

Do not forget that your amplifier is totally handcrafted with perfectly matched parts of the finest selections. You have to know that in order to reach the optimal performance your amplifier need at least 200 hours of listening. In this time all components go from "burn in" period to stable.

Before setting up your new integre4, we encourage you to read this manual thoroughly and get familiar with its features.

The information contained in this manual is subject to change without notice. The most current version of this manual is available on our official website at <http://www.lab12.gr>

## Features

- EL34, 6550, KT88, KT120, KT150 compatible (6550 form factory)
- IR Remote Control
- Large OLED display
- Blue Velvet ALPS motorized potentiometer
- Perfectly Matched tubes
- Sophisticated Bias Adjustment
- Connectivity and extendibility through I/O Upgrade Modules
- Smart protection and monitoring system
- No feedback design
- Handcrafted custom audio grade transformers
- Special audio grade matched parts in every stage
- SRSG® implementation
- Gold plated Teflon rca connectors
- Gold plated tube sockets
- 5mm aluminum face panel with luxury painting

## Unpacking

Lab12 integre4 should be removed from its box with care. Remove all the polystyrene protective pieces of the box before you unpack integre4. Safely store the tubes boxed until you secure integre4 at its final place.

Unpack integre4 with your hands on two sides of amplifier.

Integre4 box contains:

- Integre4 amplifier
- 4 numbered power tubes
- 4 numbered 6N1P driver tubes
- Remote control
- Bias screwdriver
- Owner's manual

## Warnings

During normal operation tubes are getting hot, this is normal and within specifications. Do not touch hot tubes. Never try to remove tubes during operation. Keep away from children.

No user serviceable parts are included inside. Do not unscrew the cover; high voltages remain after disconnecting from mains. In case your amplifier requires any kind of service, please ship or take your equipment directly to Lab12 or to one of our authorized dealers or other qualified personnel.

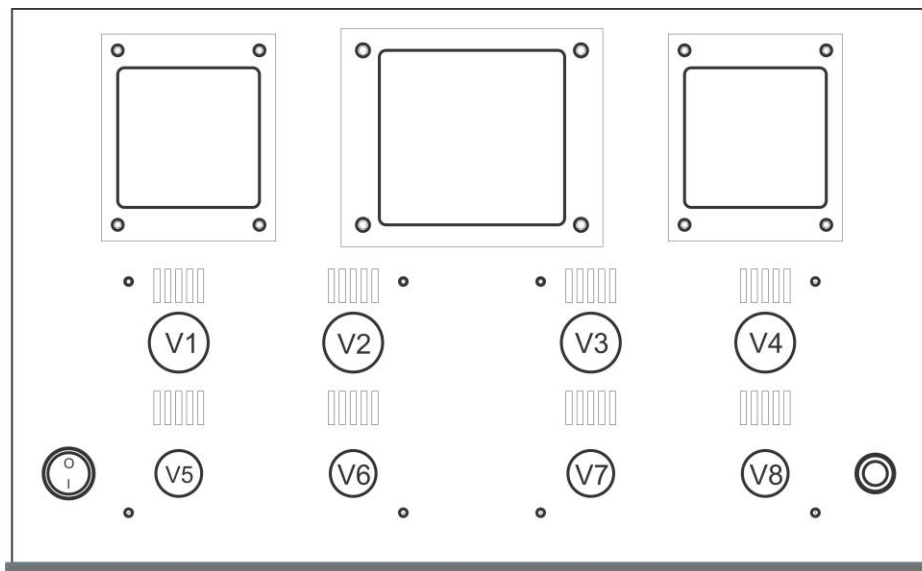
Always use same type of fuses for replacement.

## Installation & Placement

Lab12 integre4 should be placed on a solid flat surface. You should avoid placing it near a heat source as this could compromise the amplifier's performance and reliability. You should never place another component directly on top of this amplifier. Make sure that your amplifier has an adequate flow of air around it. Amplifier could be hot in some points; this is normal and within parts specifications. Take care of the front panel finest luxury finishing using a soft dry cloth.

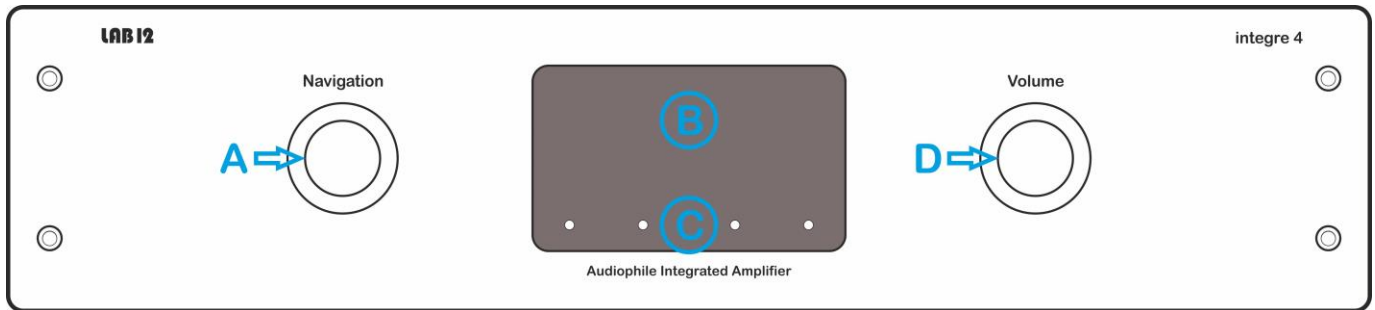
Insert tubes carefully in each position. All tubes are marked with position number was placed during calibration and burn in of integre4.

### Integre4 Tubes Positions



All in box tubes are perfectly matched during calibration to achieve a perfect balanced operation.

## Front Panel



Integre4 Front panel

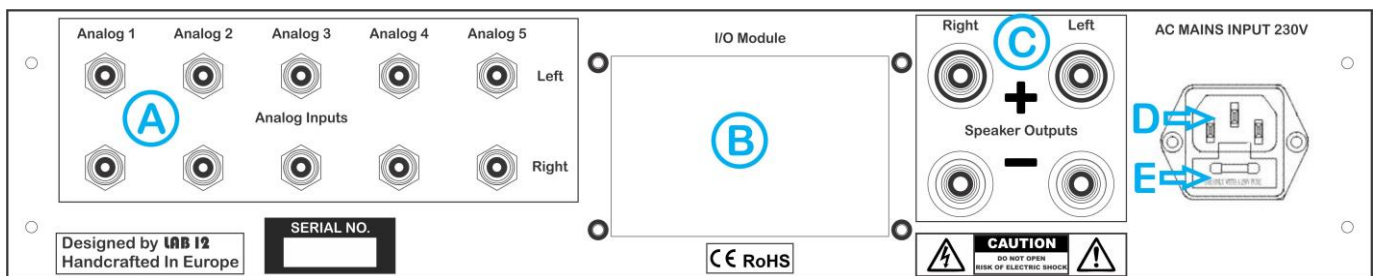
On the front panel you will see the OLED display with bias setting trimmers, the navigation rotary knob and the volume control.

The left rotary/push knob (A) is there for navigation into menu structure.

The OLED display (B) is located in the middle of front panel. Here you can see all the interface menu details. On the bottom of the OLED display you will find the 4 trimmers for the bias adjustment (C).

The right motorized rotary control (D) adjusts the output volume of amplifier.

## Rear Panel Connections



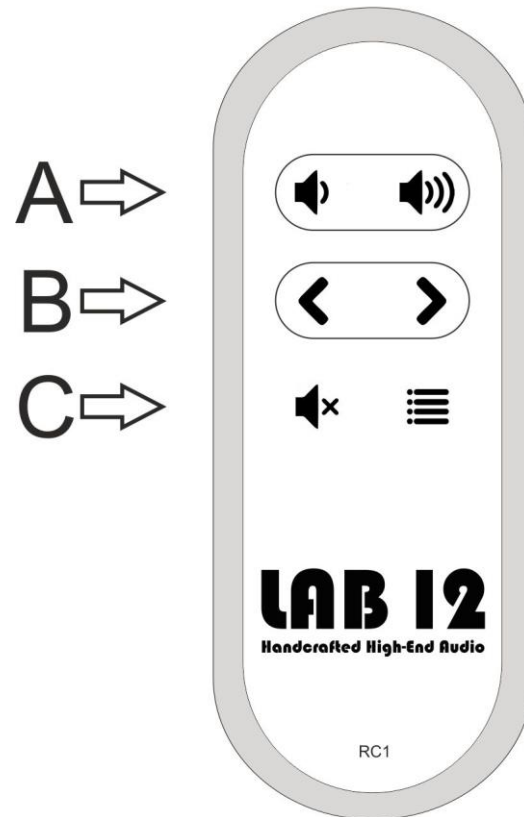
Integre4 Rear panel

On the rear panel you will find the input and output connections.

On the left side are five pairs of single-ended RCA analog audio input connectors (A).

In the middle you will find input / output modules place (B). On the right side of the rear panel two pairs of speakers outputs (C) the main power inlet (D) and the fuse socket (E) are located.

## Remote Control



Integre4 Remote Control

You can fully control your amplifier from IR remote control RC1. At the top section of the remote control the two buttons for output volume adjustment (**A**), are located. Below volume buttons you will find two buttons for input selection and menu navigation (**B**). Output muting and menu buttons are on the bottom line (**C**).

## Interface menu structure

Integre4 is a new era tube integrated amplifier; a powerful processor is responsible for the full and safe control of device. All details can be monitoring through the OLED display.

When you turn on your amplifier the soft start circuit provides about a minute to warm up tubes.

After warming up time, amplifier is ready and the menu selections display appears on the OLED display.

	Menu item	Description	Available Actions
1	Input selection	Let you choose the desired input.	Turn the navigation rotary control knob to select the desired input.
2	OLED display contrast adjustment	Configures the OLED display contrast.	Turn the rotary knob to adjust the OLED display contrast.  Push the button again to lock your adjustment.
3	Valves hours	Informs you about the Total working hours of valves.	Push and hold rotary knob to reset this counter. We suggest to reset only after valves changing.
4	Valves bias	Let you adjust the correct bias current for each of power valves.	Turn the rotary knob to inspect the current bias for each power valve. Adjust if needed from corresponding trimmer at the bottom of OLED display. See paragraph <b>Tubes compatibility / bias values</b> for more details. Push again to go back to the main menu navigation.
5	Input options	You can choose the displayed name for any analog input between the given choices or disable this.	Turn the rotary knob to see the available choices for each input. Push again to go back to the main menu navigation.



## Connections

### Main connections

Connect a High Grade Power cable to the IEC input and to your wall socket. Make sure that your wall socket provides a good ground before connecting the power cable. You can supply 230 to 240 Volts AC (50Hz). (Every integre4 is tuned and calibrated using the LAB12 Knack Power Cable)

### Connect an analog source

Connect any line level analog source to any of the five input pairs. We suggest to use high quality, shielded interconnect cables.

### Connect your Speakers

Connect your speakers to the additional output of integre4. Make sure about the phase and polarity of speakers, always connect 'plus' (red) bind of integre4 to 'plus' (red) bind of speaker and respectively the black one. You can connect any speakers with impedance from 4 to 16 ohm.

## For the safety of your equipment

**! Make sure that all of your equipment is turned off before any connection.**

**! Never turn on integre4 without connected speakers on it. It is possible to damage tubes or even output transformers.**

**! After turning off your amplifier allow at least 10 minutes before turning it back ON.**

## Tubes compatibility / Bias values

Bellow you will find a bias chart for the most common compatible tubes for integre4.

**! After changing tubes always turn all the bias trimmers' counterclockwise (cold bias) with bias screwdriver, before turning on the amplifier. Wrong bias will destroy your tubes and possibly your amplifier. Always adjust between following values for each type of tubes immediately after turning on. Repeat bias procedure at least 3 times the first 5 hours of using.**

Tube type	Lower bias limit	Higher bias limit
6L6	11mA	14mA
EL-34	13mA	18mA
<b>6550</b>	<b>23mA</b>	<b>29mA</b>
KT-88	27mA	28mA
KT-120	29mA	38mA
KT-150	36mA	42mA

**If you are unsure about correct biasing please contact lab12 or advise an authorized dealer.**

## Specifications

- Power: 230/240 V AC 50Hz
- Power consumption: 350 VA max
- Output power: 45 watt per channel (6550)
- Frequency response: 15Hz - 60KHz (-1dB)
- Input impedance: 50K ohms
- Tube complement: 4x 6n1p dual triodes, 4x 6550 power pentodes (EL34, KT88, KT120, KT150 compatible)
- Inputs: 5x line stereo RCA connectors (Available upgrades)
- Color : Matt Grey
- Dimensions (WxHxD): 43x19x29 cm
- Weight: 18Kg

## Warranty

This device has 5 years warranty from the day of purchase for all parts excluding valve tubes.