

# LAB 12

Owner's Manual

**integre4** Mk2

Audiophile integrated amplifier

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

v1.1

# LAB 12

K. Varnali 57A, Metamorfosi,

14452, Athens, Greece

Tel: +30 210 2845173

Email: [contact@lab12.gr](mailto:contact@lab12.gr)

Web: [www.lab12.gr](http://www.lab12.gr)

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## **IT IS YOURS!**

Thank you for selecting **Lab12 integre4 Mk2**, 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. All components are carefully chosen after hours of listening and testing, while paying great attention to every detail affecting the outcome. As every Lab12 device, integre4 Mk2 has an ultra-solid construction with glass blasting anodized finishing.

In order to reach the optimal performance, your amplifier needs at least 150 hours of listening. In this time all components go from “burn in” period to stable.

Before setting up your new integre4 Mk2, 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>

## **Unpacking**

Lab12 integre4 Mk2 should be removed from its box with care. Remove the top protective foam of the box before you unpack integre4 Mk2. Safely store the tubes boxes until you secure integre4 MK2 at its final place.

Unpack integre4 Mk2 with your hands on two sides of amplifier.

Integre4 Mk2 box contains:

- Integre4 Mk2 amplifier
- 4 numbered power tubes
- 4 numbered 6N1P driver tubes
- Remote control
- Bias screwdriver
- Owner's manual

## Warnings

No user serviceable parts are included inside. Do not unscrew the cover; high voltages remain after disconnecting from mains. In case your device requires any kind of service or upgrade, 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 fuse for replacement.

## Features

- EL34, 6550, KT88, KT120, KT150 compatible  
(KT170 from factory)
- Remote Control
- Large OLED display
- Blue Velvet ALPS motorized potentiometer
- Sophisticated protection and bias monitoring system
- No feedback design
- SRSG® implementation
- Upgraded noise reduction chassis
- Upgraded output transformers
- Redesigned dual mono topology
- 5mm Aluminum face panel
- Five Years Guarantee

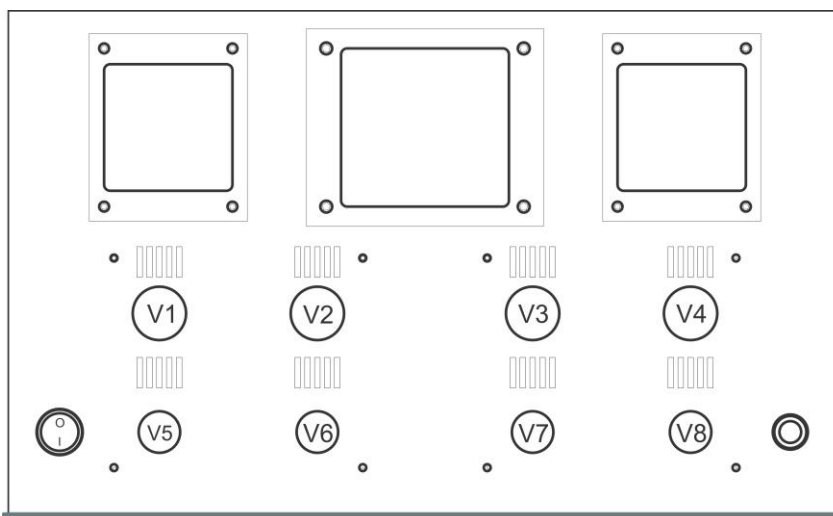
## Installation & Placement

Lab12 integre4 Mk2 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 glass blasting anodized finish of front panel with a soft cloth. No need to use any sprays or polishes. Never use cleaners containing abrasives, as this will damage the surface.

Insert the tubes carefully in each position. All tubes are marked with position number that was placed during calibration and burn in of integre4 Mk2.

### Integre4 MK2 Tubes Positions



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

V1 : KT-170

V5 : 6N1P

V2 : KT-170

V6 : 6N1P

V3 : KT-170

V7 : 6N1P

V4 : KT-170

V8 : 6N1P

- ❖ An optional tube cage for increased safety and different aesthetic approach of your amplifier is available to obtain.

## Front Panel



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

Main Power switch **(A)** is located on the top left of your device. You are turning on the main power of your amplifier from this switch.

With the left rotary/push knob **(B)** you can navigate into menu structure.

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

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

Headphone output **(F)** is located on the right top of amplifier. You can connect your headphones with 6.3mm headphone stereo jack.

## Rear Panel Connections



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

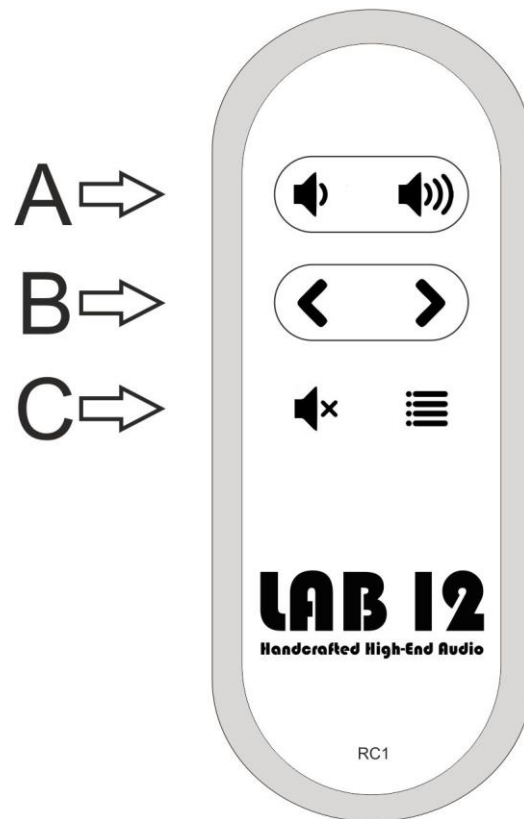
At the left side of the rear panel, you will find five pairs of single-ended RCA analog audio input connectors **(B)** and one pair of XLR input connectors **(A)**. For input 1 you can use only one of the two available types of sockets.

At the right side of the rear panel, you will find two pairs of speakers' outputs **(C)**.

At the right side you will find an IEC AC input **(D)** including a main fuse holder **(E)**.



## Remote Control



Integre4 MK2 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.

Bellow 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 Mk2 is a new era tube integrated amplifier; a powerful processor is responsible for the full and safe control of the device. All details can be monitored through the OLED display.

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

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

	Menu item	Description	Available Actions
1	Input selection	It allows you to choose the desired input.	Turn the navigation rotary control knob to select the desired input.
3	Valves hours	It informs you about the Total working hours of valves.	Push and hold rotary knob to reset this counter. We suggest resetting only after valves' changing.
4	Valves bias	It allows you to adjust the correct bias current for each of the 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.

Every integre4 MK2 is tuned and calibrated using the **Lab12 Knack mk2 Power Cable**. We strongly suggest using this cable.

### Connect an analog source

Connect any line level analog source to any of the five available inputs. We suggest using high quality, shielded interconnect cables (RCA or XLR).

### Connect your Speakers

Connect your speakers to the additional output of integre4 Mk2. Make sure about the phase and polarity of speakers, always connect 'plus' (red) bind of integre4 Mk2 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 your equipment is turned off before any connection.**

**! Never turn on integre4 Mk2 without connected speakers on it. It is possible to damage the tubes or even the output transformers.**

**! After turning off your amplifier wait 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 Mk2.

**! 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
6550	23mA	29mA
KT-88	27mA	28mA
KT-120	32mA	39mA
KT-150	38mA	45mA
KT-170	46mA	54mA

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

## Specifications

- Power: 230VAC 50Hz (115VAC 60Hz)
- Power consumption: 350 VA max
- Output power: 75 Watt per channel (KT-170)
- Frequency response: 15 Hz – 60 KHz (-1dB)
- Input impedance: 50 Kohm
- Recommended speakers: 4-8 ohm
- Tubes complement: 4x 6n1p dual triodes, 4x KT-170 power pentodes
- Inputs: (5) 5x unbalanced line stereo RCA connectors, 1x unbalanced line stereo XLR connectors
- Available Colours: Matt Black, Frozen Silver
- Dimensions (WxHxD): 43x19x29 cm
- Weight: 22Kg

## Warranty

This device has 5 years warranty for all parts (or 90-Day Limited Warranty for vacuum tubes) from the day of purchase.

We wish you to enjoy your new device exactly as we enjoyed it when we built it for you!

# LAB 12

**Notes:**

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