

USER'S MANUAL



POLBIONICA UV Vis LABORATORY LAMP Model: PLB02

1. INTRODUCTION

Thank you for your purchase. The product you purchased is a high quality laboratory product meeting European standards. It is a compact and intuitive laboratory device the operation of which has been simplified as much as possible while maintaining control over key parameters.

To take full advantage of the device's capabilities and to minimise the likelihood of malfunctions, please read this user's manual.

1.1 KIT CONTENTS

Transport case	1 pc.
UV-Vis lamp	1 pc.
230V/24V 1A power supply unit	1 set
Orange protective screen	1 pc.
User's manual	1 pc.

1.2 SYMBOLS



A tip – makes it easier to operate the lamp and take advantage of its capabilities.



A warning – prevents damage to the device or misuse of the lamp.



Warns of the danger of serious damage to the lamp or danger to health and life.



Name and address of the manufacturer.



Read and follow the user's manual.



“DO NOT DISPOSE WITH UNSEGREGATED WASTE”



Serial number

1.3 PROTECTION MEASURES AND WARNINGS



Do not modify the device. The housing of the device must not be opened or its structure modified. It is an electric device. Any modifications to the device pose a risk to those around it.

If it is not possible to operate the device safely, it must be taken out of service and protected against accidental use. Safe operation cannot be guaranteed if the device has visible damage or does not respond properly to the settings.



The instructions for use should be kept near the device.

Pay attention to the technical condition of the device's (electrical) wiring. Damaged, deformed wires must not be used.

1.4 SAFETY RULES



Before using the lamp for the first time, please read the user's manual carefully and keep it for future reference. The device should only be given to third parties together with the user's manual.

In the event of non-compliance with the safety rules and instructions for safe operation, the manufacturer shall not be held liable for damage to property or persons. In those cases, the warranty/guarantee shall lapse.



The instructions for use should be kept near the device. Pay attention to the technical condition of the device's (electrical) wiring. Damaged, deformed wires must not be used.



Risk group 1

BE CAUTIOUS of UV light emitted by this product. Minimise eyes and skin exposure. Use suitable shielding.



It is prohibited to direct the switched-on UV Vis light source towards the eyes. Do not look directly at the UV light source.



It is prohibited to touch the metal panel with the UV Vis light source during and immediately after operation.

It is prohibited to touch the light sources (UV Vis LEDs) during and immediately after operation.

2. INTENDED USE

Controlled crosslinking of bio-inks, 3D hydrogels, requires precise control of light intensity and irradiation time. The device provides stable, uniform and targeted irradiation of the work surface with selective UV light at 365 nm or Vis 405 nm wavelength. It enables the initiation of many photopolymerisation reactions and other photochemical and photobiological processes. For professional use in research laboratories only. Appropriately selected LEDs are the light source of the lamp.



Using the device for purposes other than those described in this manual may result in damage to the device. Read the user's manual carefully and keep it for future reference.



The device should only be given to third parties together with the user's manual.



An up-to-date user's manual is also available on the manufacturer's website:



2.1 USE, STORAGE AND TRANSPORT CONDITIONS



Place the device on a stable surface to prevent it from falling. The device is not resistant to strong shocks. Be careful when handling the device. Do not throw, avoid shocks. Falls, even from a low height, can cause damage to the device. It must be secured during transport.

Environmental operating conditions:

Temperature from +5°C ÷ +40°C

Relative humidity from 20 ÷ 90% without condensation

Atmospheric pressure from 700 hPa ÷ 1060 hPa

**Environmental conditions during transport:**

Temperature from -10°C ÷ +55°C

Relative humidity up to < 95%

Atmospheric pressure from 700 hPa ÷ 1060 hPa

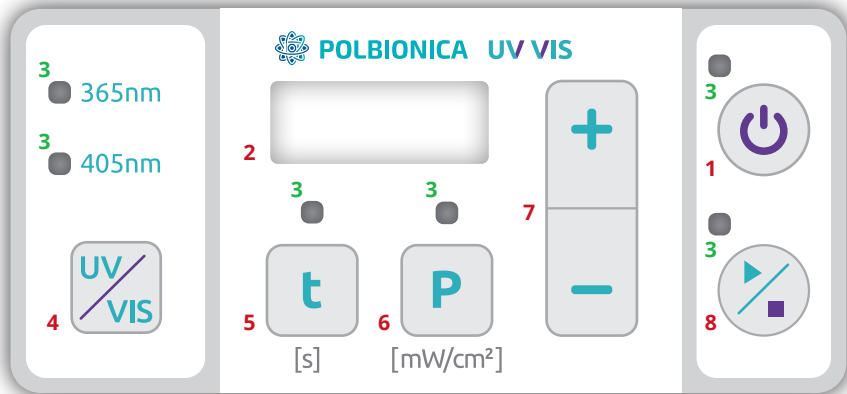
Storage environmental conditions:

Temperature from +5 ÷ +35°C

Relative humidity up to 20 ÷ 75% without condensation

Atmospheric pressure from 700 hPa ÷ 1060 hPa

3. DESCRIPTION OF THE CONTROLS OF THE POLBIONICA UV VIS LAMP:



1. STANDBY function button
2. Numeric display
3. Signalling LEDs [green] - for function buttons
4. Function button for UV-Vis light mode selection
5. Function button for TIME (t) mode selection
6. Function button for POWER (P) mode selection
7. Function button +/- (for increasing/decreasing the selected value)
8. START/STOP function button

3.1 DESCRIPTION OF THE DEVICE'S INPUT/OUTPUT PORTS:



1. Boot service button for software update
2. USB input port
3. 24 V DC 1A power input

4. OPERATING THE POLBIONICA UV VIS 365/405 nm LABORATORY LAMP

The lamp is designed and prepared to operate in three modes allowing safe and comfortable use in laboratory work:

➡ **STANDBY** ➡ **READY** ➡ **GO / IRRADIATION** ➡

4.1 STANDBY MODE

When the lamp is connected to the power supply, the device is in **STANDBY** mode by default.

The LED next to the [1] button flashes cyclically (every 1 second). The numeric display [2] and all signalling LEDs [3] are off. All function buttons of the device are disabled in this mode.

4.2 READY MODE

Pressing the **STANDBY** [1] button causes the device to enter the **READY** mode. The LED next to the **STANDBY** [1] button starts to glow continuously. The numeric display [2] and selected LEDs showing the status of the set parameters are activated. When the lamp is first switched on in **READY** mode, the following default values are set:

- Wavelength of light: 365 nm [signalling LED on]
- Time: 000 seconds
- Power: 00.0 mW/cm²



NOTE: After the device is disconnected from the mains power supply, it always reverts to the default settings. If the lamp has not been disconnected from the mains power supply, the last settings selected by the user are restored when the device is switched from STANDBY to READY mode again.

NUMERIC DISPLAY:

It is designed to interchangeably show the user the three following values:

- Set irradiation time – LED [3] next to the “**t**” button [5] lights up
- Remaining irradiation time – LED [3] next to the “**t**” button [5] flashes cyclically
- Set irradiation power – LED [3] next to the “**P**” button [6] lights up

SETTING THE WAVELENGTH OF LIGHT:

The lamp has a function of selecting and setting the wavelength: [Vis] 405 nm or [UV] 365 nm. To select the right wavelength, press the “**UV/VIS**” button [4]. The selected wavelength is confirmed by the LED [3] lighting up.

SETTING THE TIME (T):

To set the irradiation time, press the “**t**” button [5]. Switching to time setting mode is signalled by the LED [3] located next to the “**t**” button [5] glowing continuously. Then use the “**+**” or “**-**” button [7] to set the desired time value. A single press of the button increases or decreases the value by 1 second. Holding the button down longer will change the value by 5 seconds.



NOTE: Irradiation time range: 1 to 360 seconds

SETTING THE POWER (P):

Press the “**P**” button [6] to set the power value of the planned irradiation. Switching to the power setting mode will be signalled by the LED next to the “**P**” button [6] lighting up. Then use the “**+**” or “**-**” buttons [7] to set the desired value. A single press of the button increases/decreases the value by 1 point. Holding the button down for longer changes the value by 5 points.



NOTE:

Power value for 365 nm: 00.0 mW/cm² to 13.5 mW/cm²
Power value for 405 nm: 00.0 mW/cm² to 28.5 mW/cm²

RESETTING THE TIME/POWER PARAMETER VALUE

In order to reset the Time value to zero, after selecting the “**t**” button [5], which is signalled by the LED [3] lighting up, the “+” and “-” buttons should be **pressed simultaneously**.

In order to reset Power value to zero, after selecting “**P**” button [6], which is signalled by the LED [3] lighting up, the “+” and “-” buttons should be **pressed simultaneously**.



NOTE: Resetting is not possible when the lamp is operating.

4.3 GO MODE (IRRADIATION)

In the **GO** mode you can start the irradiation of the prepared biomaterial. After setting the wavelength of light, the planned time and the power of light, the irradiation can be started with the **Start/Stop** button [8]. The start of operation will be signalled by the LED next to this button lighting up. Light sources will be switched on. The numeric display will start showing and counting “down” the irradiation time set by the user. The countdown time is also indicated by the flashing LED [3] next to the “**t**” button.

NOTE: In the irradiation mode, the user has the option to:



- change the wavelength with the **UV/VIS** button
 - view the set power or time on the display by selecting (holding down) the corresponding “**t**” [5] or “**P**” [6] button.
 - stop the irradiation by pressing the Start/Stop button [8].
 - change the irradiation power by holding down the “**P**” button [6] and change the value with the “+” and “-” buttons [7].
-

The end of irradiation will be indicated by an acoustic signal. The numeric display will show the value of 000. The lamp is ready for selecting new settings.

5. TECHNICAL SPECIFICATIONS

POWER SUPPLY	
Power supply	110–240 V (+/-10%) 50/60 Hz Power supply unit GSM25B24-P1J MEAN WELL MODEL
Maximum power consumption	20 W
SAFETY	
Protection class	II
Device operation mode	Intermittent operation. The maximum duration of continuous irradiation is 360 seconds.
Enclosure IP class (EN 60529)	IP 21
ENVIRONMENTAL OPERATING CONDITIONS	
Temperature	from +5°C ÷ +40°C
Relative humidity	up to 20 ÷ 90% without condensation
Atmospheric pressure	from 700 hPa ÷ 1060 hPa
OPTICAL PARAMETERS	
Wavelength of the emitted light	365 nm or 405 nm
Maximum power of the emitted light	13.5 mW/cm ² (365 nm) 28.5 mW/cm ² (405 nm)
OTHER SPECIFICATIONS	
Device dimensions	121 × 83 × 71 mm (length × width × height)
Packaging dimensions (transport case)	335 × 215 × 95 mm (length × width × height)
Distance of the LED light source from the ground	35 mm
The lamp's working clearance	25 mm
Weigh	500 g 1.2 kg with packaging

6. CLEANING AND MAINTENANCE

Clean the device with a clean, dry, soft and lint-free cloth. Do not use any liquids or water for cleaning. If necessary, use a damp cloth with detergent. For disinfection, the body can be gently wiped with a cloth containing 70% ethanol.

7. SERVICING AND REPAIRS



The device comes with a separate warranty card detailing the scope of validity and the procedure.

Extract from the warranty: Polbionica guarantees the correct operation of the device for 24 months from the date of purchase. Polbionica is not responsible for instances when the device is used outside of the scope of its application. In the event of an unjustified complaint, the complainant shall bear the costs resulting from the inspection of the device. The warranty does not cover damage caused by improper use and/or maintenance of the lamp or mechanical damage to the lamp.

Polbionica guarantees the provision of a replacement unit at no cost within 2 working days of receiving notification of failure.



Polbionica is not responsible for damage to the lamp resulting from improper operation and maintenance. Furthermore, Polbionica shall not be liable for damage caused to third parties as a result of improper use of the lamp by the user. Polbionica reserves the right to make technological changes to improve the performance of the device without changing the terms of the warranty.

8. DISPOSAL:



When the product has reached the end of its service life, hand it over for disposal to a company specialising in the disposal of electronic equipment. You can also return the device to the manufacturer.

At the end of its service life, it should not be disposed of with other household waste. In order to prevent possible environmental contamination or damage to human health from uncontrolled waste disposal, this type of waste must be separated from other waste and processed responsibly, working towards the reuse of material resources. Business users should contact the supplier and check the terms and conditions of the purchase agreement. This product should not be mixed with other commercial waste for disposal.

DEVICE IDENTIFICATION DATA:

SERIAL NUMBER:

PRODUCTION DATE:

QC SIGNATURE:



NOTE: The serial number of the device can be found on the information label (inside of the lamp body).

WE ENCOURAGE YOU TO PURCHASE

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(please provide lamp serial number when placing an order)



POLBIONICA



MANUFACTURER – SELLER – SERVICE:

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Manufactured in Poland

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