

LED Light Source SL 3500

Instruction Manual

Please read this Manual carefully before operating the device.



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1. List of Equipment

Carefully unpack the carton, which contains:

- **LED Light Panel with attached power and communication cable(s).**
- **Power Supply (control unit).**
- **Detachable mains cable.**
- **Adjustable stand.**
- **This Instruction Manual** (*on a CD or a printed version*).
- **Optional accessories** (*according to your specific order*).

Note:

If any item is missing, please, contact the manufacturer. Also check the carton for any visible external damage. If you find any damage, notify the carrier and the manufacturer immediately. The carton and all packing materials should be retained for inspection by the carrier or insurer.

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2. General Information

LED Light Sources can be used as stand-alone devices powered by autonomous electronics and manually controlled from the Power Supply front panel.

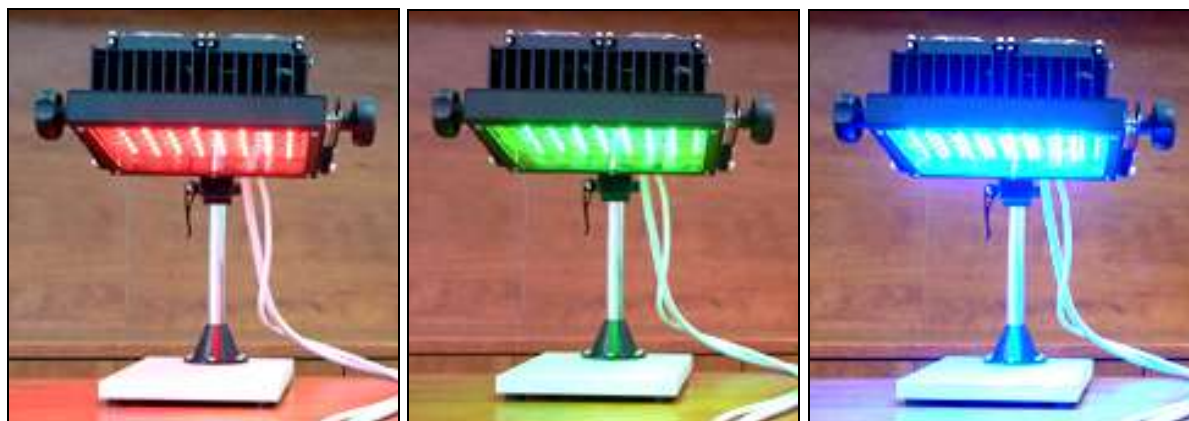
If supplied with the **Light Controller LC 100** or with the **Light Studio software**, the LED Light Sources can be programmed and precisely controlled in the light mode, intensity and timing.

They can also be integrated into other PSI instruments, such as the FluorCam, Photobioreactor, or the Double-Modulation Fluorometer.

THE DEVICE IS MANUFACTURED IN THE FOLLOWING STANDARD VERSIONS:

A) Based on color:

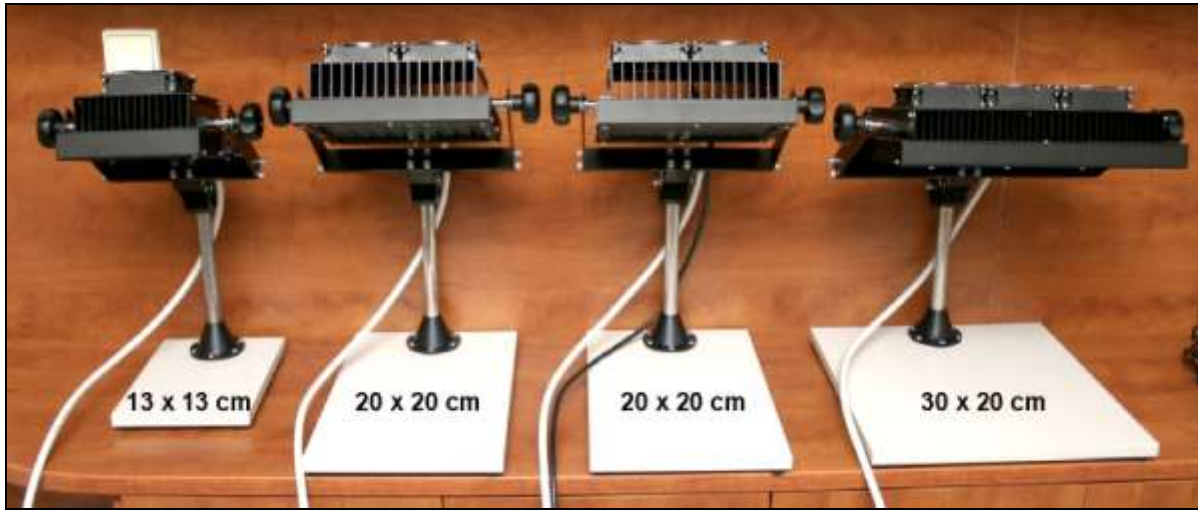
- 1) Blue Royal 447 nm
- 2) Red-Orange 617 nm
- 3) Cool White
- 4) Warm White
- 5) Tri-color: Red + Green + Blue
- 6) Red + Green + Blue with added IR LEDs



B) Based on the number of mounted LEDs:

- 1) 72 LEDs (A - 13 x 13 cm, single color)
- 2) 180 LEDs (B - 20 x 20 cm, single color)
- 3) 168 LEDs (C - 20 x 20 cm, tri-color)
- 4) 104 LEDs (D - 30 x 20 cm, single color)
- 5) 240 LEDs (E - 30 x 20 cm, tri-color with 4 added IR LEDs)

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- C) Based on the panel size:**
- 1) 13 x 13 cm
 - 2) 20 x 20 cm
 - 3) 30 x 20 cm



3. Safety Precautions

- The LED radiation may be harmful to eyes, avoid direct and strongly reflected exposure. 365 nm through 390 nm LEDs can be considered Class 1M LED Product. Wear protective glasses!
- The device has a built-in temperature control and safety temperature fuse. The Light Panel switches off automatically when the Power Supply (control unit) gets heated above 70 °C and/or the Light Panel gets heated above 60 °C. After cooling, the panel switches on again.
- Even if the temperature fuse switches the device off, the manufacturer strongly recommends to switch off the device manually and to allow its sufficient cooling.
- Never cover the Power Supply (control unit) or the Light Panel! Low ventilation can cause an irreversible damage to the device.
- Keep the device dry; avoid working in a high humidity environment!
- The LED Light Source should be always used with the original Power Supply (control unit) supplied by the manufacturer. This control unit is an important component of the device and should never be replaced by any other similar appliance.
- When connecting the device modules, use only the cables supplied by the manufacturer. The only exception may be the mains cable that differs from the DIN or CZ standard in some countries.
- Keep in mind that no warranty is provided for the damage due to device misuse, modification, improper installation, negligence, or accident.

GENERAL ELECTRICAL SAFETY GUIDELINES:

- Connect all peripheral units when the device is switched off!
- Routinely check the devices and their wiring.
- Replace worn or damaged cords immediately.
- Use electrical extension cords wisely and do not overload them.
- Place the devices on a flat and firm surface. Keep them away from wet floors and counters.
- Avoid touching the device, socket outlet or switch if your hands are wet.
- Do not perform any alterations to the electrical part of the devices or its components.

3. Device Installation

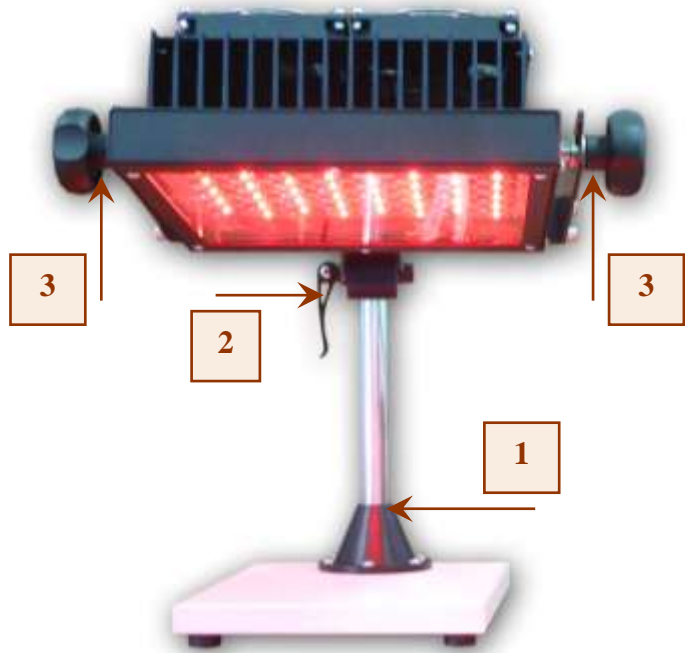
REMEMBER!

- **FIRST** connect all device parts with cables.
- **THEN** connect the device to an electrical power source and switch it on.

FIVE STEPS FOR EASY AND SAFE DEVICE INSTALLATION:

Step 1: Mount the Light Panel onto the adjustable stand.

- [1] Insert the rod into the fitting of the stand base.
- [2] Put a frame onto the rod and fix it using the clasp.
- [3] Insert the Light Panel into the frame and fix it on both sides using the knobs.



Step 2: Connect the Light Panel to the Power Supply (control unit).

- [1] Connect the Light Panel to the Power Supply (control unit) using the LED PANEL connector.
- [2] For the external control, connect the communication cable of the Light Controller LC 100 or of a PC to the Power Supply - use the TRIGGER IN connector.



Important note:

In the three-channel device version (e.g., Red-Green-Blue), the Light Panel and the Power Supply **must be always connected by both supplied cables** – [1] and [2] in the picture.



Step 3: Connect the mains cable to the Power Supply (control unit).

[1] Connect the mains cable to the connector on rear part of the Power Supply (control unit).



Step 4: Connect the device to an electrical power source (110/230V). Be sure that the device and all peripheral units are switched off!

Step 5: Switch on the device.

[1] Switch on the power switch of the Power Supply (control unit).



[2] When using your LED Light Source with the Light Controller, first switch on the Power Supply. Then, switch on the Light Controller LC 100.



6. Device Operation

The device can be controlled either in the manual mode or in the external mode:

- The manual control mode allows permanent lighting that can be controlled in the intensity.
- The external control mode provides the possibility of creating sophisticated protocols for precise control of the light mode, intensity, and timing. Light can be dynamically modulated with periods ranging from microseconds to hours. The external control mode requires either the Light Controller LC 100 or the Light Studio software in a PC.

MANUAL CONTROL:

[1] The light intensity can be set on the front panel of the Power Supply (control unit) in the range of 0 – 100 %.

[2] When using a multiple channel version of the device, each channel controls a different color. Each color's intensity can be controlled independently.



EXTERNAL CONTROL:

[3] Connect the Light Controller or the computer with the Light Studio software to the TRIGGER IN connector of the Power Supply.

[4] Enable the external light control by switching the light trigger to REMOTE position.

More information on the external control mode is provided in the Operating Manuals of the Light Controller LC 100 or of the Light Studio software.

7. Statement of Limited Warranty

- This Limited Warranty applies only to the LED Light Source SL 3500. It is valid one year from the date of shipment.
- If at any time within this warranty period the instrument does not function as warranted, return it and the manufacturer will repair or replace it at no charge. The customer is responsible for shipping and insurance charges (for the full product value) to PSI. The manufacturer is responsible for shipping and insurance on return of the instrument to the customer.
- No warranty will apply to any instrument that has been (i) modified, altered, or repaired by persons unauthorized by the manufacturer; (ii) subjected to misuse, negligence, or accident; (iii) connected, installed, adjusted, or used otherwise than in accordance with the instructions supplied by the manufacturer.
- The warranty is return-to-base only, and does not include on-site repair charges such as labor, travel, or other expenses associated with the repair or installation of replacement parts at the customer's site.
- The manufacturer repairs or replaces faulty instruments as quickly as possible; the maximum time is one month.
- The manufacturer will keep spare parts or their adequate substitutes for a period of at least five years.
- Returned instruments must be packaged sufficiently so as not to assume any transit damage. If damage is caused due to insufficient packaging, the instrument will be treated as an out-of-warranty repair and charged as such.
- PSI also offers out-of-warranty repairs. These are usually returned to the customer on a cash-on-delivery basis.
- *Wear & Tear Items* (such as sealing, tubing, padding, etc.) are excluded from this warranty. The term *Wear & Tear* denotes the damage that naturally and inevitably occurs as a result of normal use or aging even when an item is used competently and with care and proper maintenance.

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