LASERWORLD®
www.laserworld.com

Manual

PS-29.000RGB CT
PL-20.000RGB CT, PL-42.000RGB CT,
PL-20.000G CT

Please read this manual carefully prior to product operation!

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Legal notice:
Laserworld AG reserves the right to make modifications to its products, attending to further technical developments. These modifications do not necessarily have to be recorded in each case.
This manual and its information have been made with due care. Laserworld AG cannot, however, take any responsibility for errata, bugs, or the resulting damages.
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Content:

1. Scope of delivery & details

Please check if all listed parts are included and undamaged. Included in delivery:

1 x laser projector
1 x power cable
1 x manual

2. Preliminary warning notices

1. Please use this device only **according to these operating instructions**.
2. Do not use the device if there are any **visible damages** on housing, connector panels, power supplies or power cords.
3. **Never look directly into the light source** of a laser projector. Danger of blindness!
4. **Do not operate the device at a high humidity, in rain or in dusty environments.**
5. **Protect device against dripping or splashing water.** Do not place any liquid filled containers at the device.

Warranty claim expires with removal of warranty label.

3. Initial operations, safety instructions

1. Make sure to use **correct voltage**; see information on device & in this manual.
2. Make sure that the device is **not connected to mains** during installation.
3. Installation has to be done by **technical experienced and qualified persons** according to safety regulations of the respective country.
4. Always ensure that maximum permissible exposure (MPE) is not exceeded in areas accessible to the public.
5. In some countries an additional inspection by technical control institutes could be necessary.
6. Connect an **easily accessible interlock connector or circuit breaker** to the projector.
7. The power supply should be easily accessible.
8. When installing the laser mount it with a minimum distance of 15 cm from walls and objects.
9. For safe setup e.g. on walls or ceilings please use a **safety cord.** The safety cord should be able to withstand tenfold the weight of the device. Please follow the accident prevention regulations of professional associations and/or comparable regulations for accident prevention.
10. If the device has been exposed to **great temperature changes**, do not switch it on immediately. Condensation water may damage device.

11. Never use dimmer, RC or other electronically switched sockets. Whenever possible, do not use the laser projector together with large appliances (especially fog machines) on the same mains!
12. Ensure **sufficient ventilation** and do not place the device on any warm or heat radiating surface. Especially the **ventilation openings must not be covered**!
13. Ensure that device does **not get overheated.** Make sure that the device is not exposed to spotlights (especially moving heads). Heat of spotlights could overheat laser in a little while and leads to a degradation of performance.

4. Working on the device

1. Be sure that the mains plug is not connected to the power supply while installing or opening the device (e.g. for cleaning).
2. Take off all reflecting things like rings, watches etc. before starting to work with or at the projector.
3. Only use non-reflecting tools to work on device.
4. Wear protective clothing (like goggles, gloves etc.) according to laser power and wavelength of the laser.

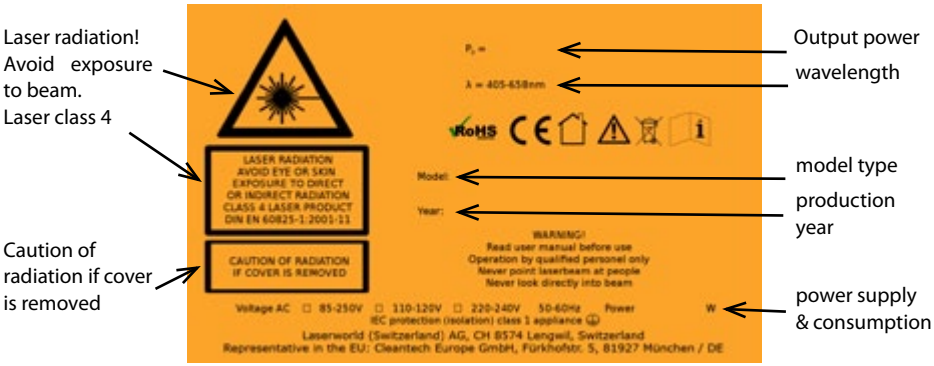
5. Service notes

- Moisture and heat can reduce lifetime of the laser system dramatically and expires any warranty claim.
- Quick on/off switching of device can reduce durability of the laser diode dramatically.
- Avoid concussions during transport.
- To increase durability of your laser, protect device against overheating:
  - Always ensure sufficient ventilation.
  - Do not face spotlights (especially moving heads) to the device.
  - Check temperature after approx. 30 minutes with each new installation. If necessary install the projector at a place with different temperature.
  - Keep the device dry. Protect it from moisture, rain and damp.
  - Switch off device when it is not needed. Diodes are switched on and can wear off even if there is no visible laser output.
- Open the device at regular intervals and remove any dust, particularly around fans and laser. Otherwise the risk of overheating is imminent and will void the warranty.
- If there are traces of fog fluid in the projector, clean it and change the position of the fog machine.
- As for troubleshooting, please check the FAQ on our website www.laserworld.com

- **Removal of the warranty label as well as damages to the device caused by improper handling, neglect of the safety instructions and service notes will void the warranty.**

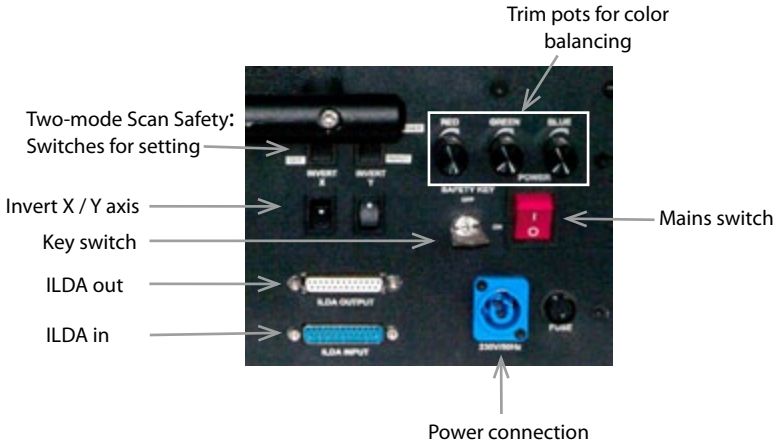
6. Warnings and other notices on the device

Please read manual before operation



Use in enclosed spaces only!

7. Device connections



8. Operation

1. ILDA operation mode

The laser system is controlled over ILDA control signal. Plug in the ILDA cable to the ILDA-in interface at the unit.

2. Scan Safety

This units has a special two-mode scan safety: It can be operated in scan fail safety mode, that prevents the occurance of dangerous radiation in case of malfunction. The beam block mode suppresses every too focussed beam to avoid the accidential exceeding of maximum permitted exposure levels for spectators. The modes can be changed by using the switches at the control panel. The scan safety can also be switched off.

3. Color blancing

By using the trim pots for color balancing it is possible to adjust the individual color sources to achieve a certain white balance. This is especially important if several laser systems are used an a homogenous white is needed.

4. X/Y axis inversion

These switches invert the ILDA singal for the respective axis. This feature is useful if one ILDA signal line is used for controlling several lasers.

Final statement

Product and package leaving warehouse without faults. Users have to follow the local safety regulations and warnings of this manual. Damages through inappropriate use do not unterlie the sphere of influence of manufacturer or dealer. Therefore no liability or warranty will be taken over. We cannot inform you in case of changes of this manual. If you have any questions, please contact your dealer.
For service please contact your dealer or Laserworld. Please use only spare parts of Laserworld. Subject to change without notice. Because of the vast amount of data we cannot guarantee any correctness of given information.

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Technical data

Laser sources:	DPSS laser (green), diode (red / blue)
Laser class:	4
Scanner:	CT-6215, 50kpps with two-mode scan fail safety
Scan angle:	70° max.
Operation modes:	ILDA
Beam:	PS-29.000RGB CT: ca. 5.5mm / <4mrad (full angle divergence) PL-20.000RGB CT: ca. 5.5mm / <2mrad (full angle divergence) PL-42.000RGB CT: ca. 5.5mm / <2mrad (full angle divergence) PL-20.000G CT: ca. 5.5mm / <2mrad (full angle divergence)
Power supply:	230V, 50Hz (+/- 5%)
Power consumption:	max. 600W
Operating temperature:	+10° to +35°C
Dimensions:	510 x 390 x 290 mm (L x W x H)
Weight:	ca. 40kg PL-42.000RGB CT: ca. 48kg

Power specifications (at laser module)

	min. - max.	**Red**	**Green (532nm)**	**Blue (445nm)**
PS-29.000RGB CT	23.900 - 29.000 mW	>3.900mW 638nm	>8.000mW	>12.000mW
PL-20.000RGB CT	16.000 - 20.000mW	>4.000mW 638nm	>8.000mW	>4.000mW
PL-42.000RGB CT	35.000 - 42.000mW	>10.000mW 638nm/658nm	>15.000mW	>10.000mW
PL-20.000G CT	15.000 - 20.000mW	-	>15.000mW	-