



---

# HIGH PRO-OEM

OEM housing without laser sources

## USER MANUAL



**Please read this manual carefully before use!**

## **I**

### **Table of contents**

|                                 | <b>Page</b> |
|---------------------------------|-------------|
| 1. SAFETY INSTRUCTIONS          | 3           |
| 2. OPERATING THE LASER          | 4           |
| 3. DESCRIPTION                  | 5           |
| 4. OPERATE PANEL                | 6           |
| 5. DMX512 OPERATION             | 7           |
| 6. MAINTENANCE                  | 8           |
| 7. TECHNICAL SPECIFICATIONS     | 8           |
| 8. ELECTRICAL DRAWING           | 9           |
| 9. PROBLEM AND ANSWER           | 10          |
| 10. APPENDIX ILDA PINOUTS       | 11          |
| 11 EU DECLARATION OF CONFORMITY | 12          |

### **Checking Parts**

Please check if the following parts are included:

- 1 x HIGH PRO-OEM Laser
- 1 x Power cable
- 1 x User manual

## SAFETY INSTRUCTIONS

If the device has been exposed to great temperature changes, do not switch it on immediately. Condensation water may damage your device. Leave the device switched off until it has reached room temperature.

The laser must only be used for shows. Any operation has to be attended and supervised by a skilled and well-trained operator.

Never leave this device running unattended and keep it away from children and unauthorized persons.

Keep away from heaters and other heat sources. In order to safeguard sufficient ventilation, leave 50 cm of free space around the device.

Never direct the laser beam to people or animals.

CAUTION LASER DIODE: If you open the device for cleaning, always disconnect from mains!

**-HEALTH HAZARD! Never look directly into the light source, as sensitive persons may suffer an epileptic shock!**

These lasers are considered a definite eye hazard, particularly at the higher power levels, which WILL cause eye damage. So these laser series models supplied with a key switch to prevent unauthorized use, warning labels and aperture labels affixed to the laser.

### Installation safety

Prior to installation and operation of the laser, the paths of the beams and effects should be considered, particularly with respect to how they will reach the audience. If direct audience scanning is desired, then the laser energy in the effects needs to be considered to decide if the effects are safe for direct viewing. Always ensure, that the maximum permissible exposure (MPE) is not exceeded in the area accessible to the public. So install the laser in such a way, that minimum distances and heights ensure the MPE is never exceeded in the public area.



## OPERATING THE LASER

The operator has to make sure that laser radiation – also reflected laser radiation – higher than the maximum permissible level is avoided by technical or organisational measures. (Especially with respect to the MPE, see above.)

Make sure to use the correct voltage

If the device is used in a flying installation, the mounting brackets and an appropriate safety-rope must be fixed.

In some countries, the operator must notify the accident insurance and the authority for industrial safety, before operating a laser. For more information, contact the relevant authorities.

Please consider that unauthorized modifications on the device are strictly forbidden due to safety reasons!

If this device will be operated in any way differently than described in this manual, the product may suffer damages and the guarantee becomes void. Furthermore, any other operation may lead to dangers like short-circuit, burns, electric shock, etc.

Keep surrounding dry and clean. This unit should be kept dry, do not use in the rain or damp and dusty environment. Projector should be put in a water-proof housing when operated outside.

Regularly open the device (see "cleaning" further down) to check for dust inside, or if fog fluid condenses in the housing (if so rearrange hazer and/or laser position).

Operating temperature is 10~35°C . In a new installation, check after some 15-30 minutes whether the outlet air gets too warm. Regularly check the inside for dust deposits, especially around the fans. Let laser cool off 10minutes after 2 hours of operation,to ensure maximum lifetime for the diode.

Distance between laser aperture and projection screen should be not less than 1 meter.

Do not turn device on and immediately off again frequently.

Do not look into the laser beam directly, especially not with optical instruments.

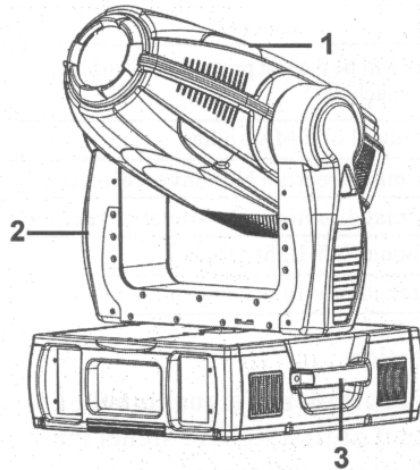
Do not touch the device with wet hands.

When the laser diode becomes dim or broken, please contact your dealer timely.

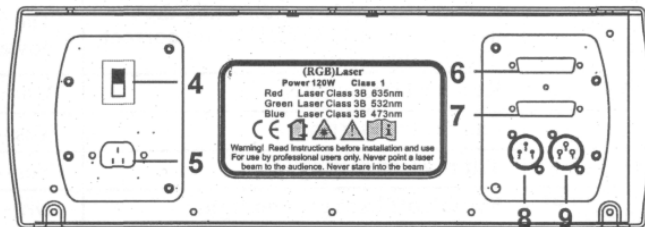
When returning laser to dealer/manufacture always use original packaging.

Maintenance should be performed every 15-day period. See "cleaning" further down.

## Description

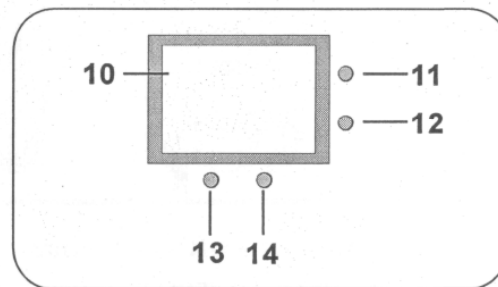


**Laser light**



**Back panel**

|                |                   |
|----------------|-------------------|
| 1.Light head   | 8.DMX output      |
| 2.Arm          | 9.DMX input       |
| 3.Handle clamp | 10.Display screen |
| 4.Power switch | 11.UP             |
| 5.Power input  | 12.Down           |
| 6.ILDA DB 25F  | 13.Meau           |
| 7.ILDA DB 25M  | 14.Enter          |



**Front panel**

## Signal switch instruction

1. The machine will work automatic as preset program or with DMX512 signal if there don't be connected any USB signal cable or ILDA DB 25F connector.
2. When you connect USB graphic card to USB input port, laser program will under control of I. Top laser software in the computer. For moving head function, you need to control it by DMX controller after set display board be DMX mode and DMX address code be 1.
3. When you connect ILDA DB-25F, laser program will work as ILDA drive mode to accept international standard laser show signal such as LD-2000 software of Pangolin company. For moving head function, you also need to control it by DMX controller after set display screen be DMX mode and DMX address code be 1.

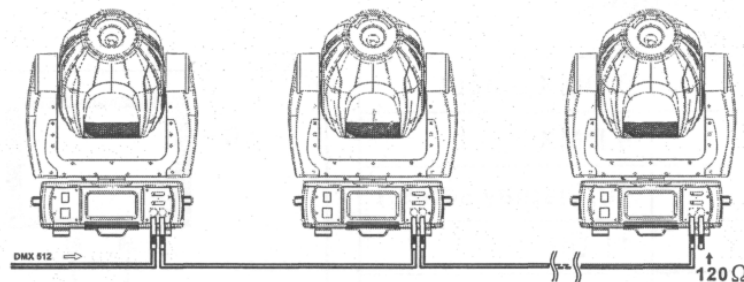
## Operate Panel

### Operate panel functions:

| Mode                 | Function                                                                             | Effect                                                         |
|----------------------|--------------------------------------------------------------------------------------|----------------------------------------------------------------|
| Set address code     | Set address code window and then use "UP" and "DOWN" to set correct DMX address code | The value will be the last presetone when you power on machine |
| DMX mode             | Receive DMX signal                                                                   | Under control of DMX signal                                    |
| Pan reverse          | Pan reverse setting                                                                  | Yes--normal direction No--invert direction                     |
| Tilt reverse         | Tilt reverse setting                                                                 | Yes--normal direction No--invert direction                     |
| Back light of screen | Switch off background light                                                          | On--light on, Off--light off                                   |
| Reset                | Light reset                                                                          | Light back to previous position                                |

### DMX-512 signal cable connection

Connect XLR-XLR signal cable from signal output of controller to signal input of each light. And then connect DMX signal cable from signal output of first light to signal input of second light and so on until all lights be connected well as following picture:



### Occupation of XLR-connection

DMX-OUTPUT  
XLR mounting-socket



1 -Ground  
2 -Signal (-)  
3 -Signal (+)

DMX-OUTPUT  
XLR mounting-plug

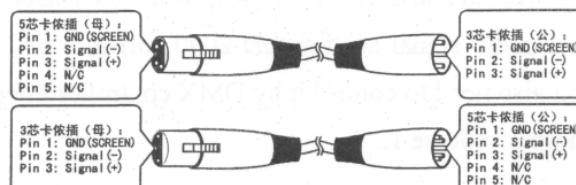


1 -Ground  
2 -Signal (-)  
3 -Signal (+)

### Caution:

At the last fixture, the DMX-cable has to be terminated with a terminator. Solder a 120Ω resistor between signal (-) and signal (+) into a 3-pin XLR-plug and plug it in the DMX-output of the last fixture.

### The transform of the controller line of 3 pins and 5 pins (plug and socket)



## 5. DMX 512 operation

The device is controlled by 24 DMX channels. The customized version is equipped with a memory (SD) ILDA playback card. Channel 6 switches between the internal control and the ILDA playback card.

| Channel | Value    | Internal          | SD Card            |
|---------|----------|-------------------|--------------------|
| 1       | 0..255   | Pan               | Pan                |
| 2       | 0..255   | Pan fine          | Pan fine           |
| 3       | 0..255   | Tilt              | Tilt               |
| 4       | 0..255   | Tilt fine         | Tilt fine          |
| 5       | 0..252   | Pan&tilt speed    | Pan&tilt speed     |
|         | 253..255 | Reset             | Reset              |
| 6       | 0..127   |                   | Switch to internal |
|         | 128..255 | Switch to SD card |                    |
| 7       | 0..255   | Bank              | Bank               |
| 8       | 0..255   | Pattern           | Frame              |
| 9       | 0..255   | Size              | Size               |
| 10      | 0..255   | Colourgroup       | Colourgroup        |
| 11      | 0..255   | Intensity blue    | Intensity blue     |
| 12      | 0..255   | Intensity green   | Intensity green    |
| 13      | 0..255   | Intensity red     | Intensity red      |
| 14      | 0..255   | Master intensity  | Master intensity   |
| 15      | 0..255   | V-roll            | V-roll             |
| 16      | 0..255   | H-roll            | H-roll             |
| 17      | 0..255   | Z-roll            | Z-roll             |
| 18      | 0..255   | V-move            | V-move             |
| 19      | 0..255   | H-move            | H-move             |
| 20      | 0..255   | V-stretch         | V-stretch          |
| 21      | 0..255   | H-stretch         | H-stretch          |
| 22      | 0..255   | HV-stretch        | HV-stretch         |
| 23      | 0..255   | Drawspeed         | Drawspeed          |
| 24      | 0..255   | Pointspeed        | Pointspeed         |

## 6. MAINTENANCE

Always disconnect from mains before cleaning/opening the laser. Remove the cover of the moving head, and the top covers of the base to perform cleaning.

Regularly clean the interior from dust, especially ensure operation of the fans. To clean the mirrors, ideally use acetone and lens cleaning paper (fold paper to get an edge with which to clean the mirrors). If not available, you can also use window cleaner, and a paper towel. Be careful, even light scratches reduce the output power of the laser; always clean with strokes in one direction, to minimize the effect of scratches. Mirrors need cleaning, when a "halo" is noticeable around the beam, or an unusual high amount of diffuse light can be seen inside the device.

When fog fluid condenses in the device, clean all traces, and rearrange the position of hazer and/or laser.

**Never look directly into the light source.**

**Always disconnect from the mains when the device is not in use or before cleaning it.**

## 7. TECHNICAL SPECIFICATIONS

**Power supply:** AC 220V-240V, 50/60 Hz

**DMX 512:** 24 channels

**Condition temperature:** 10°C ~ +35°C

**Input signal bandwidth:** 0~1000Hz

**X/Y axes beam scanning optical angle:** 0 ~ ±30° (max)

**Power consumption:** 200W

**Working mode:** ILDA, DMX512, automatic mode (sound, stand-alone programmes)

**Weight:** 60 kg, 91 kg incl. flightcase

**Dimensions:** 535 x 510 x 845 mm (L x W x H)

**Loudness:** <70dB

Errors and omissions expected.

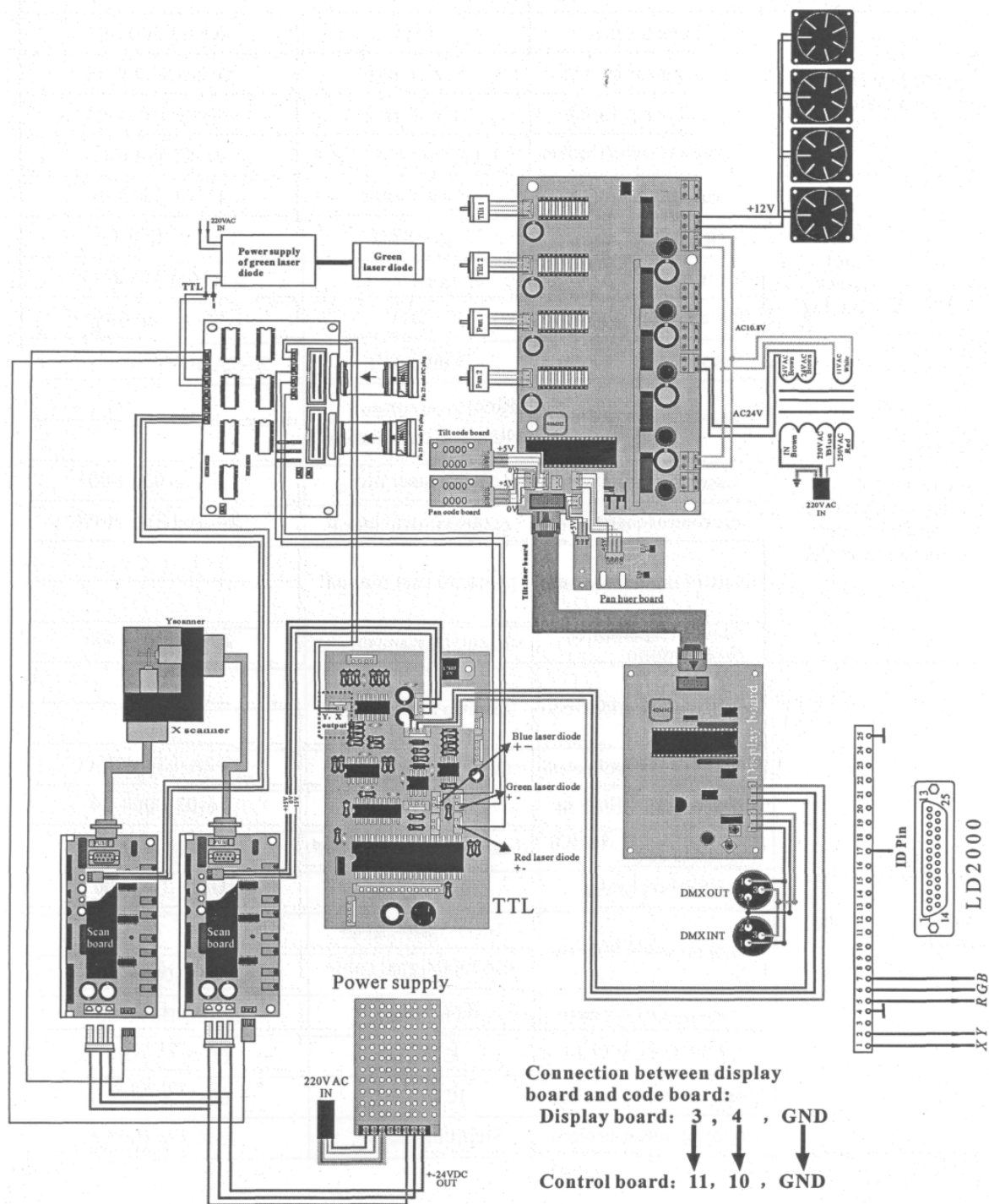
### PLEASE NOTE

This device has left our premises in absolutely perfect condition. In order to maintain this condition and to ensure a safe operation, it is absolutely necessary for the user to follow the safety instructions and warning notes written in this user manual.

Laserworld cannot be made liable for damages caused by incorrect installations and unskilled operation!

For service please contact your dealer, or see <http://en.laserworld.com/en/reclamation-service.html>. Only use Laserworld spare parts.

## Electrical Drawing



### Problem and answer

| Problem                                                                 | Caution                            | Replace parts                           | Series number of parts |
|-------------------------------------------------------------------------|------------------------------------|-----------------------------------------|------------------------|
| No power to scan motor                                                  | Fuse broken                        | Fuse                                    | 09-00-3001-01          |
|                                                                         | Scan motor broken                  | Scan motor                              | 26-2A-2111XY2-00       |
|                                                                         | Transformer broken                 | Transformer                             | 06-00-B074-00          |
|                                                                         | Pin4 power switch broken           | Pin 4 power switch board                | 08-05-0400-03          |
| XY scan motor no power or can not display pattern or scan motor shaking | Scan motor broken                  | Scan motor                              | 15-01-2215-00          |
|                                                                         | 2.78E58BIC broken                  | 78E58BIC                                | 00-78E58-00            |
|                                                                         | Control board broken               | Control board                           | 26-2A-LT6V20-00        |
|                                                                         | Power supply broken                | +24V                                    | 16-03-0004-00          |
|                                                                         | Scan board broken                  | Scan board                              | 26-2A-FASTSCAN-00      |
| No beam out, beam dimmer or no black-out, but other function OK         | Scan mirror not clean              | Refer to maintain clause on user manual |                        |
|                                                                         | Laser diode broken                 | Green laser diode                       | 07-01-0300-00          |
|                                                                         | Code control board broken          | Code control board                      | 26-2A-LT6V20-00        |
|                                                                         | Control mode incorrect             | Refer to user manual                    |                        |
|                                                                         | Control signal switch board broken | Control signal switch board             | 26-2A-Sigls4-00        |
| Not under control, but laser diode, fans and other parts are OK         | Control mode incorrect             | Refer to user manual                    |                        |
|                                                                         | Code control board broken          | Code control board                      | 26-2A-LT6V20-00        |
|                                                                         | Power supply broken                | +24V                                    | 16-03-0004-00          |
|                                                                         | Control signal switch board broken | Control signal switch board             | 26-2A-Sigls4-00        |
|                                                                         | USB box broken                     | 2008USB box                             | USB21-KT-00            |
|                                                                         | Signal cable broken                | USB signal cable                        |                        |
|                                                                         |                                    | Ld2000signal cable                      | 27-08-0005-00          |
|                                                                         | Transformer broken                 | Transformer                             | 06-00-B074-00          |
|                                                                         | Display IC broken                  | IC77E58                                 | 00-77E58-00            |
|                                                                         | Motor driver IC broken             | IC77E58                                 | 00-77E58-00            |
|                                                                         | Stepping motor broken              | Stepping motor                          | 15-00-0082-01          |

**Appendix: ILDADB25F PINOUTSDB 25 defines**

|    |               |                                        |
|----|---------------|----------------------------------------|
| 1  | X+            | -5 to +5V                              |
| 2  | Y+            | -5 to +5V                              |
| 3  | No Use        | No use                                 |
| 4  | Interlock A   | Connected to Pin 17 inside the QM 2000 |
| 5  | Red+          | 0v to +2.5v                            |
| 6  | Green+        | 0v to +2.5v                            |
| 7  | Blue+         | 0v to +2.5v                            |
| 8  | No Use        | No use                                 |
| 9  | No Use        | No use                                 |
| 10 | No Use        | No use                                 |
| 11 | No Use        | No use                                 |
| 12 | Not connected | No use                                 |
| 13 | No Use        | No use                                 |
| 14 | X-            | +5V to -5V                             |
| 15 | Y-            | +5V to -5V                             |
| 16 | No Use        | No use                                 |
| 17 | Interlock B   | Connected to Pin4 inside the Qm 2000   |
| 18 | Red-          | -2.5V to 0V                            |
| 19 | Green-        | -2.5V to 0V                            |
| 20 | Blue-         | -2.5V to 0V                            |
| 21 | No Use        | No use                                 |
| 22 | No Use        | No use                                 |
| 23 | No Use        | No use                                 |
| 24 | No Use        | No use                                 |
| 25 | Ground        | Cable shielded                         |

**Laserworld (Switzerland) AG**

Kreuzlingerstrasse 5  
8574 Lengwil-Oberhofen  
SWITZERLAND



Authorized person:  
Supervisory board Mr Martin Werner

place of business: 8574 Lengwil-Oberhofen / SWITZERLAND  
company number: CH-440.3.020.548-6  
Commercial Registry Kanton Thurgau

[www.laserworld.com](http://www.laserworld.com)  
[info@laserworld.com](mailto:info@laserworld.com)

[representative](#) according to EMVG:  
Cleantech Europe GmbH  
[Managing Director](#): Thomas Schulze  
Fürkhofstr. 5  
81927 München / DE