



PRO-1500R-658



USER MANUAL

Please read this manual carefully before use!

Date: 08/2008

1. Open the box for checking

In order to use this product safely and reasonably for the users, please read over this manual carefully before use and the operation must strictly according to this manual to avoid any damage to the product and personal safety.

Once after received this products please take and put carefully. And check carefully that whether the product was damaged or not during the transportation and please check the following things were enclosed:

Power cable 1PC	Pin 25 ILDA Signal cable 1PC
3 pin signal line 1PC	Safety string 1PC
User manual 1PC	unit laser light 1PC

2. Installation

1. Please check the voltage whether is the same with the one showed on the equipment or not.
2. It must ask for the technical person and set the light safety when installation. And let the light beam at the suitable angle.
3. When install this equipment please make sure there's no flammable surfaces (decorated things, etc) within at least 1.5M and maintain minimum distance of 0.5M from the equipment to the walls.
4. Please make sure that there's no other equipment or decorating materials obstructed the exhaust fan and the vent-pipe.
5. Products should be install immobility.
6. In case of safety, it's very important that to connect the earth with line.

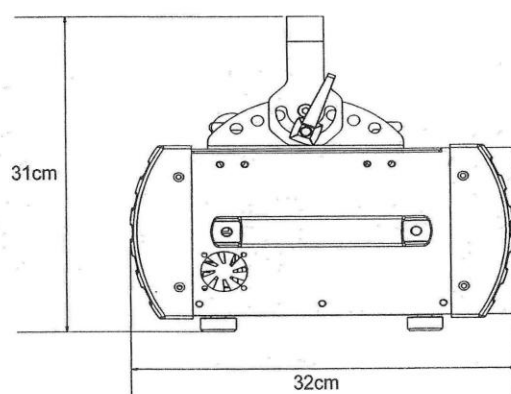
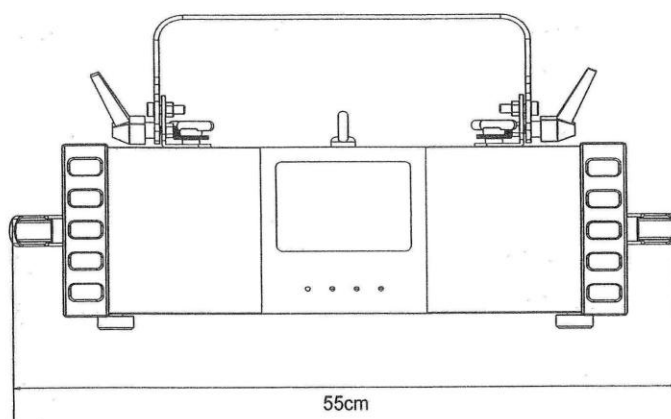
3. Attention

1. Must operate according to the user manual. Don't separate the light personally. Call the technician when the machine breaks down.
2. Please do not see the laser beam directly to avoid any damage.
3. Before connect or disconnect the power, please adjust the luminance of the laser diode to the least to avoid any damage to the laser diode.
4. This unit should be keep dry, do not use in the rain or dark and dusty environment. It can be use in the outdoor with the water-proof cover protector.
5. Set the light immobility and try to avoid strong shake or hit.
6. Prevent dust into the equipment to avoid problems.
7. Please keep that there's no other equipment or decorating materials obstructed the exhaust fan and the vent-pipe when the equipment was working.
8. Before connect power, check the plug is immobility or not, power line should be connect well.
9. Please do not open or close the equipment frequently that's to avoid any affect to the life span of the laser diode, and try the best to avoid the long time working.
10. Due to the characteristic of the laser diode, after three hours working, it should be close at least 25 minutes until the laser diode cooling then work again.
11. Don't touch the light or draw the power line when your hand was wet. And do not pull the electronic power line.
12. Maintain the distance at least 10M above from the equipment to the object.
13. This equipment does not have any parts can repair for the users, please do not open the equipment.
14. When the laser diode became dim or damaged please contact the dealer timely.
15. To use the original package when transport again and to avoid shake.

4. Warning

1. Don't look the light directly to prevent make some destroy with eyes..
2. Keep the space between light equipments and the lighted things more than 10 M.

5. Dimensions



6. Scan motor Replacement

(1) Steps:

1. Unscrew UK M6 screw and plug out male signal connector.
2. Disassemble all M4 × 10 screw for X,Y scanner socket so that scan motors can be took out,put in or rotate to adjust the scan angle.
3. After adjust ,fix M4 × 10 screws,plug in male signal connector and then screw UK M6 screw.

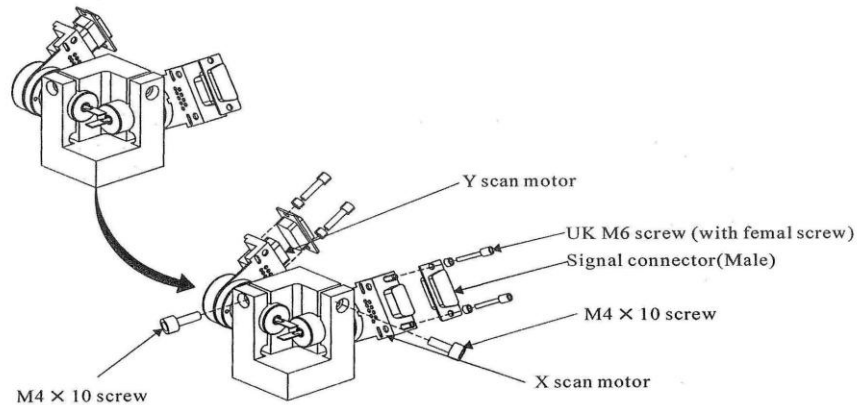


Fig6-1 Scan motor install diagram

7. Adjustable mirror socket

(1) Steps

1. Loose setscrew of X,Y and then adjust mirror socket to suitable position by X,Y adjustable screws.
2. Adjust Z adjustable screw at same time.
3. Fix X,Y setscrew.

NOTE: Made sure all beams through adjustable mirror socket be one point when you adjust X,Y,Z line with adjustable screw.

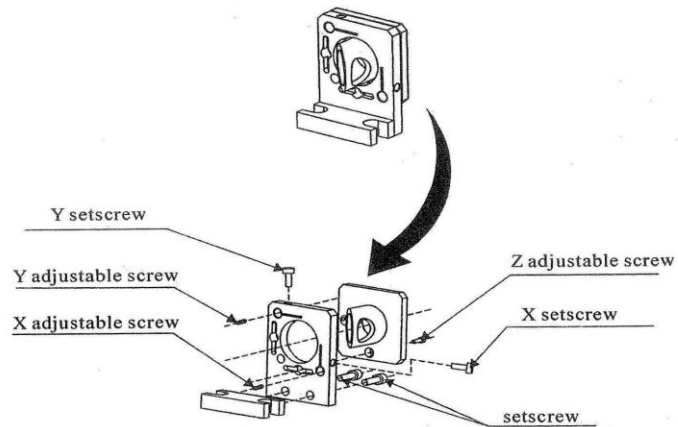
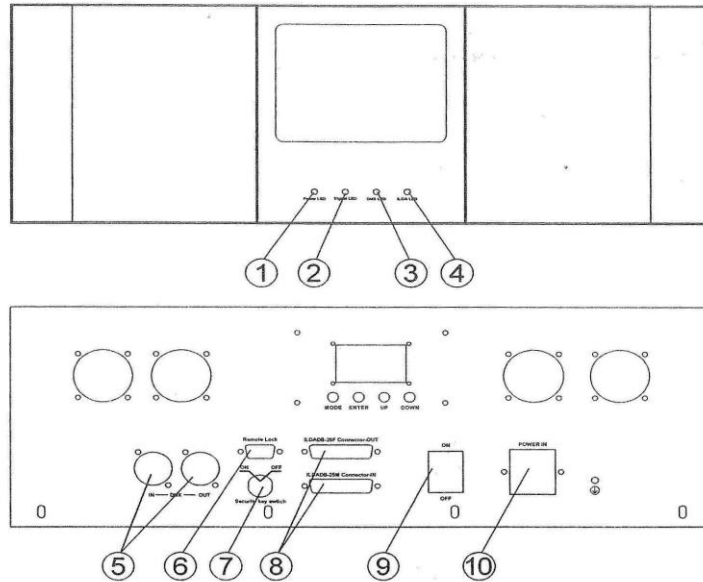


Fig7-1 Adjustable mirror socket structure

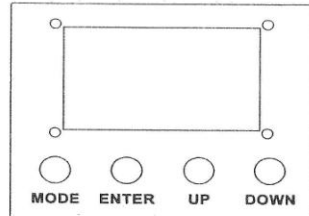
8. Control board instruction



1	Power LED: LED on, means the forward voltage is normal.
2	Signal LED: LED on, means the display PCB is work well, LED off, means the display PCB is working abnormally.
3	DMX LED: DMX512 input situation, LED on means have input DMX512, LED off, means no DMX512 signal or input signal abnormality .
4	ILDA LED: LED on means the ILDA signal connected well, otherwise the connection is not in good condition.
5	DMX IN/OUT: DMX signal input/output
6	Remote Lock: In the event of removal, laser will not emit any beam.(E.U. IEC regulation)
7	Security key switch: Laser diode ON/OFF
8	ILDADB-25F Connector-IN/OUT: Signal input connection port of the laser perform software that in accordance with the ILDA standard.
9	POWER ON/OFF: Power switch
10	POWER IN: Input power, with inner fuse.

9. Control board operation

1. Control board operating way:



- ◆ **MODE:** Select working mode or back to upper menu.
- ◆ **ENTER:** Confirm setting or go to subordinate menu.
- ◆ **UP:** Increase DMX value or select working mode.
- ◆ **DOWN:** Decrease DMX value or select working mode.

2. Preset program mode (include DMX mode)

Press MODE to select work mode on LCD display. Use ENTER to active or close setting. UP & DOWN to set DMX address code.

Working mode instruction:

Music Active: Standard music active

Automatic mode: Auto-mode

DMXAddr: DMX512 mode. Set address code under this mode. OPEN to active DMX address value setting function. Then use UP & DOWN to select address code value you need. Press SAVE to save setting and close DMX address Code setting function.

LCD display memory function: Save setting automatic when you turn off fixture.

3. Computer software control mode

Fixture, there has a switch to select control mode - by computer or inside program: The fixture has ILDA DB 25 connector so that it can be controlled by computer software. In the When ILDA DB25F IN connects with QM2000 interfacial card or USB interfacial card, the lamp will be control by software which installed in the computer. When ILDA DB25F IN connector's connection port are free, the laser will driver by the inside program, temporality it can control by music or DMX512 signal.

The control mode switch will check the 4th Pin (InterLock A) and the 17th Pin (InterLock B) to adjust whether there has computer (with interfacial card) be connected to fixture. If Pin 4 not be connected to Pin 17, it means there no interfacial card otherwise there has and the connection port can receive all the signal of laser perform software that accord with the ILDA standard, such as LD-2000 of Pangolin company.

In the theory, all the signal of laser perform software that accord with the ILDA Db25 standard can control the fixture. But Pin 4 and Pin 17 not be connected in some laser perform interfacial card. You will need to sold this two pins together at Pin25 signal output connector or connect Pin4 and Pin 17 of the standard Pin 25 signal cable before use.

Note: We have tested that Pangolin Ld2000 (Qm2000 PCI interfacial card) and our i.Top laser (USB2.0) interfacial card) can work with this fixture well. But you will need to make changes as above mentioned when you use Mamba Black software (Easylaser interfacial card) of MediaLaser company.

10. DMX512 Operate

The fixture have 14 DMX channels. The following is function list:

Channel	Value	Function
1	Control mode	0~63 Auto-Music mode(Channel 1&2 valid)
		64~127 Auto- mode(Channel 1&2 valid)
		128~191 Music-edit mode(All channel valid)
		192~255 Mannle-edit mode(All channel valid)
2	Colour	0~40 No beam
		41~86 Red
		87~128 Yellow
		129~170 Green
		171~212 R.G.Y color change
		213~251 Color flow
		252~255 Open
3	Gobo group	0~42 Gobo group 1: 32gobos
		43~85 Gobo group 2: 32gobos
		86~128 Gobo group 3: 32gobos
		129~171 Gobo group 4: 32gobos
		172~214 Gobo group 5: 32gobos
		215~255 Gobo group 6: Cartoons(4 sequency)
4	Gobo change	0~255 32 gobos (0~255)/8=(0~31) 4 sequency (0~255)/8=(0~31)
5	Speed	0~255 12 class speed (0~255)/23=(0~11)(from slow to fast)
6	Rotate	0~63 No function
		64~127 Horizontal rotating
		128~191 Vertical rotating
		192~255 Horizontal & Vertical rotating
7	Dot Rotating	0~63 No function
		64~127 Rotating
		192~255 Rotating & Dotting
8	Move	0~63 No function
		64~127 Horizontal movement (Y line)
		128~191 Vertical movement (X line)
		192~255 Horizontal & Vertical movement
9	Extend	0~63 No function
		64~127 Extending in Horizontal
		128~191 Extending in Vertical
		192~255 Extending in Horizontal & Vertical
10	Zoon	0~85 No function
		86~169 Zoom from small to large
		170~255 Zoom from large to small
11	Drawing speed	0~255 255 class speed (from slow to fast)
12	Scan speed	0~255 255 class speed (from fast to slow)
13	Colour speed	0~255 255 class speed (from fast to slow)
14	Size	0 Original size
		1~255 42 class size (1~255)/6=(0~42) 1~19 smaller 20 original size 21~42 enlarge

11. Specification

- Voltage: AC 100V~240V, 50/60Hz
- Total power: 120W
- Signal input power: -5~+5V
- X/Y axes beam scanning optical angle: $\pm 30^\circ$
- Input signal bandwidth: 0~1000Hz
- Condition temperature: -10℃~+35℃
- Laser light power: Red Laser Class 4 650nm
Green Laser Class 4 532nm
- Working Mode: Laserword, Pangolin(ILDA connector), DMX512
- Net weight: 13 kg
- Dimension: 55 x 32 x 31 cm

12. Maintain

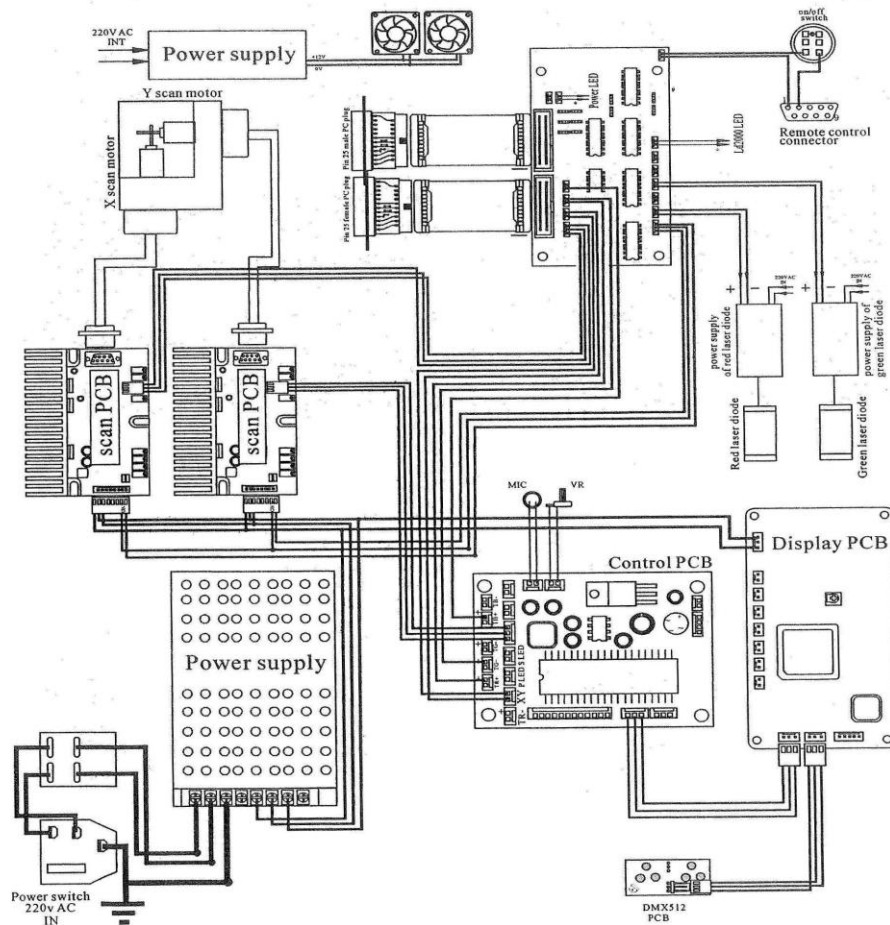
- Maintenance should be performed every 15-day period, by using a sponge which is dipped with alcohol, rather than wet cloth or other chemical liquid, to clean the mirror.
- Warning: Power must be disconnected before maintenance or repair. Do not look at the light source directly.

ATTENTION: DISCONNECT INPUT POWER BEFORE MAINTAIN.

DON'T LOOK STRAIGHTLY AT THE LIGHT SOURCES.

NOTE: Don't separate laser machine from laser power and repair them by yourself otherwise no good repair service will be supplied.

13. Electrical diagram



14. Trouble shooting

Problem	Causation	Solution way	Series number
No power to motor	Damaged Fuse	Fuse	09-00-2001-01
	Damaged power supply	$\pm 24V$	16-03-0039-00
No response to music or it is difficult to be active by music	Damaged mic	MIC	16-03-0001-00
	Damaged control PCB	Control PCB	26-2A-LT12V2-00
	Damaged potentiometer	Potentiometer	04-03-0104-01
	Damaged control PCB IC	IC	00-89C516RD-00
X,Y scanner no strength or no pattern or scanner shaking	Damaged scanner	Super scan motor	15-01-2215-00
	Damaged control PCB IC	IC	00-89C516RD-00
	Damaged control PCB	Control PCB	26-2A-LT12V2-00
	Damaged power supply	$\pm 24V$	16-03-0039-00
	Damaged scan board	Scan board	26-2A-6800A-00
No beam or beam dim or beam can't close, but other functions OK	Dirty lens	Clear it with alcohol	
	Damaged laser diode	Red laser diode	07-03-0200-02
		Green laser diode	07-01-0200-04
	Damaged control PCB	Control PCB	26-2A-LT12V2-00
Can not control other function OK Such as laser diode and fans	Control mode setting incorrect	Please refer to the user manual for further instruction	
	Damaged control PCB	Control PCB	26-2A-LT12V2-00
	Damaged power supply	$\pm 24V$	16-03-0039-00
	Damaged display PCB	Display PCB	26-2A-LT228DI-00
	Damaged display PCB IC	IC	00-STC89C54RD-00

Appendix:

ILDA DB 25F PINOUTS DB 25 defines

1	X+	-5 to +5V
2	Y+	-5 to +5V
3	Intensity/Blanking+	0V to +2.5V
4	Interlock A	Connected to pin 17 inside the Qm2000
5	Red+	0V to +2.5V
6	Green+	0V to +2.5V
7	Blue+	0V to +2.5V
8	Deep blue+	0V to +2.5V
9	Yellow+	0V to +2.5V
10	Cyan+	0V to +2.5V
11	Z+	Depth Z(not intensity), -5 to +5V
12	Not connected	
13	Shutter	0V to +5V
14	X-	-5V to +5V
15	Y-	-5V to +5V
16	Intensity/Blanking-	-2.5V to 0V
17	Interlock B	Connected to pin 4 inside the Qm2000
18	Red-	-2.5V to 0V
19	Green-	-2.5V to 0V
20	Blue-	-2.5V to 0V
21	Deep blue-	-2.5V to 0V
22	Yellow-	-2.5V to 0V
23	Cyan-	-2.5V to 0V
24	Z-	-5V to +5V
25	Ground	Cable shield

EU- Declaration of Conformity



We hereby confirm that the following device

Laserworld PRO-1500R-658

complies with the essential safety requirements, laid down in the regulations of the committee to assimilate the provisions of law of all participating EU states on the electromagnetic compatibility (98/336/EWG).

The device has been classified considering the following EU-norms on electromagnetic compatibility:

DIN EN 55103-1: 1996

DIN EN 55103-2: 1996

DIN EN 61000-3-2:2000 + A2: 2005

DIN EN 61000-3-3:1995 + A1: 2001

Assessment of compliance of the product with the requirements relating to the Low Voltage Directive (LVD) was based on the following standards:

DIN EN 60065 : 2002

Furthermore, the device is verified in correspondence to the laser class regulations DIN EN 60825-1, if properly set up according to the upper mentioned laser safety regulation. After installing the device, an inspection and official approval is indispensable for the overall setup. The inspection must follow the european guidelines EN 60825-1 and corresponding regulations for the prevention of accidents BGV-B2.

This declaration is executed on behalf of the PRO-1500R-658 Laser manufacturer.

Laserworld (Switzerland) AG

Oberstrasse 1
8274 Tägerwilen
SWITZERLAND

Authorized person:
Supervisory board Ms Rhea Gössel

place of business: 8274 Tägerwilen / SWITZERLAND
company number: CH-440.3.020.548-6
Commercial Registry Kanton Thurgau

www.laserworld.com
info@laserworld.com

representative according to EMVG:
Cleantech Europe GmbH
Managing Director: Thomas Schulze
Fürkhofstr. 5
81927 München / DE

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