

Canton Laserphoto Electronic Equipment Co.,Ltd

LP Galvo Scanner

USER MANUAL

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www.laserphoto.org

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1, Galvo Scanset Photo



LP12 Galvo Scanner



LP20 Galvo Scanner



LP30N Galvo Scanner

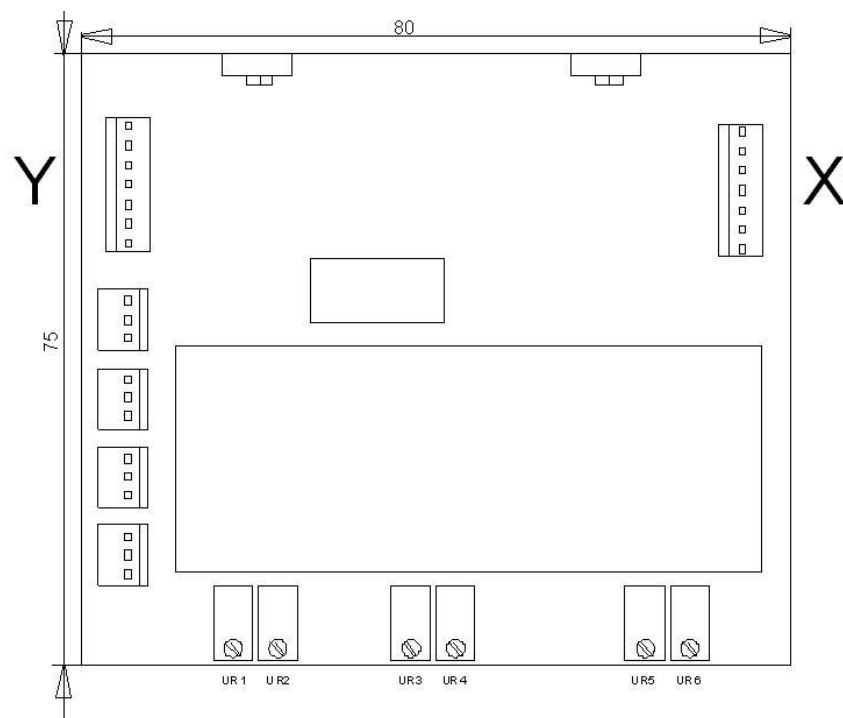
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2, Specification

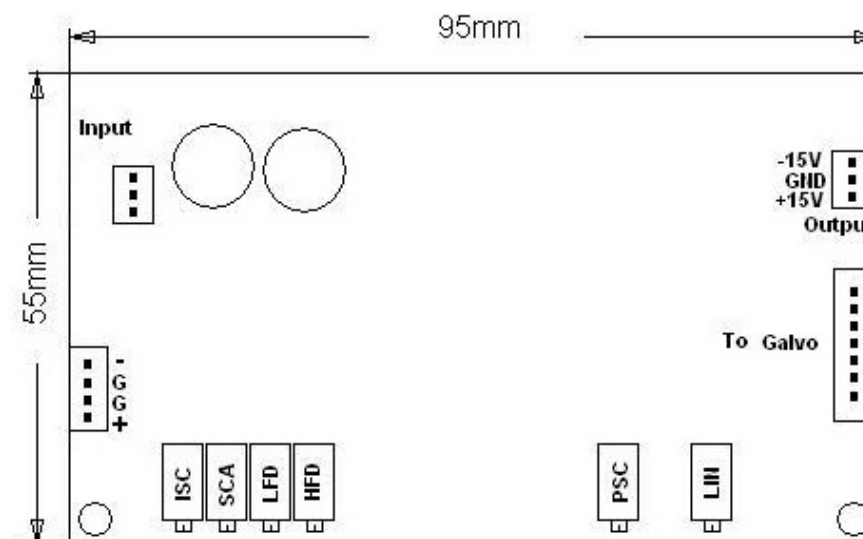
	LP12	LP20	LP30N
Power Supply:	100/250V AC 50-60HZ	100/250V AC 50-60HZ	100/250V AC 50-60HZ
Max. Scan speed:	16kpps @ 7° optical	20kpps @ 8° optical	35kpps @ 8° optical
Mirror Type:	Coated dielectric film, Coated Aluminum available	Coated dielectric film, Coated Aluminum available	Coated dielectric film, Coated Aluminum available
Mirror Size:	5*10 mm/6.5*11mm/7.5*11 mm	5×10 mm/6.5×11mm	5×10 mm/6.5×11mm
Mirror Reflectivity:	>97%(25°-65°)	>97%(25°-65°)	>97%(25°-65°)
Max. angle:	40°	50°	53°
Signal Input:	Analog ±5V	Analog ±5V	Analog ±5V
Driver Adjustments:	Gain, Size Position, Linearity, Damping, Servo gain.	Gain, Size Position, Linearity, High frequency damping, Low frequency damping, Servo gain	Gain, Size Position, Linearity, High frequency damping, Low frequency damping, Servo gain
Components Part:	Scanners head, Amplifier/Driver board, Cable, Mount, Power supply, DMX PCB.	Scanners head, Amplifier/Driver board, Cable, Mount, Power supply, DMX PCB.	Scanners head, Amplifier/Driver board, Cable, Mount, Power supply.

3, Trimmers instruction and dimensions

LP12 Driver (Dual servo scanning amplifier)



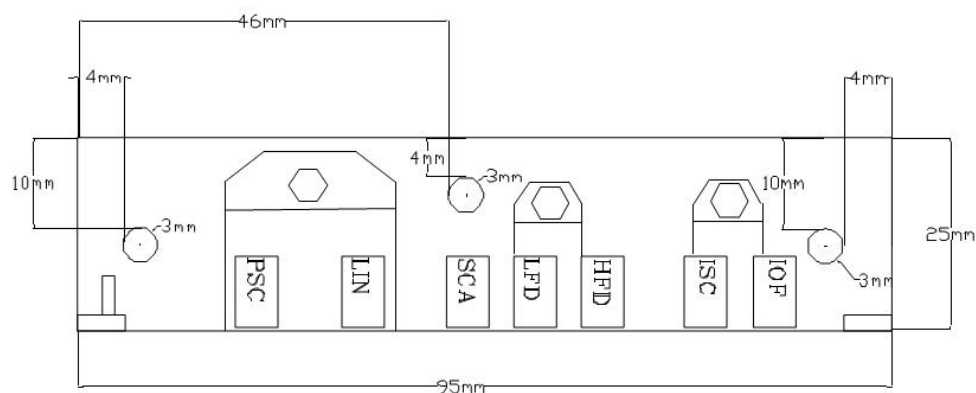
LP20 Driver (Two drivers, each for x, y axis galvo)



VR1:Y Gain	VR2:X Gain
VR3:Y High frequency damping	VR4:Y Low frequency damping
VR5:X Low frequency damping	VR6:X High frequency damping

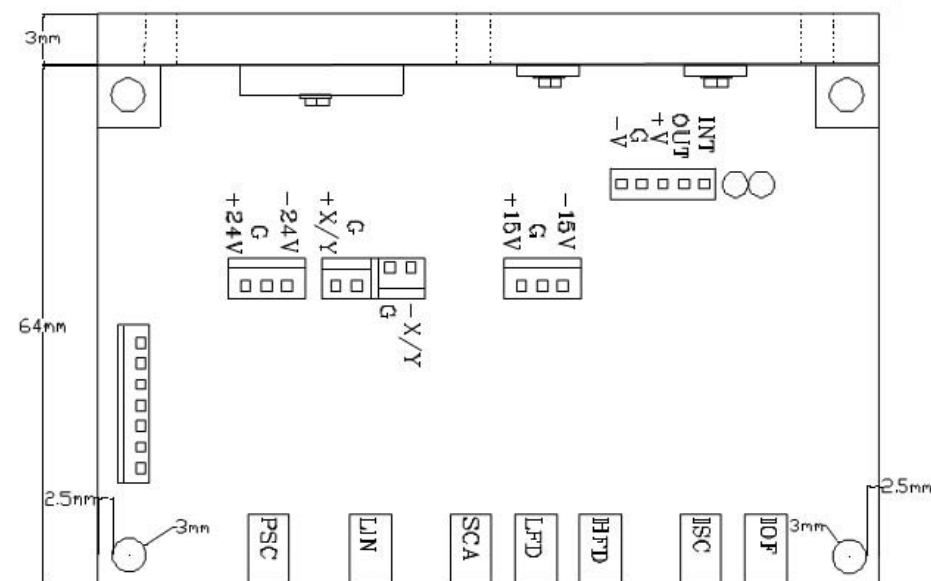
ISC:Input scale	SCA:Servo gain
LFD:Low frequency damping	HFD:High frequency damping
PSC:Position scale	LIN:Linearity

LP30N Driver



AMPS MOUNT(TOP VIEW)

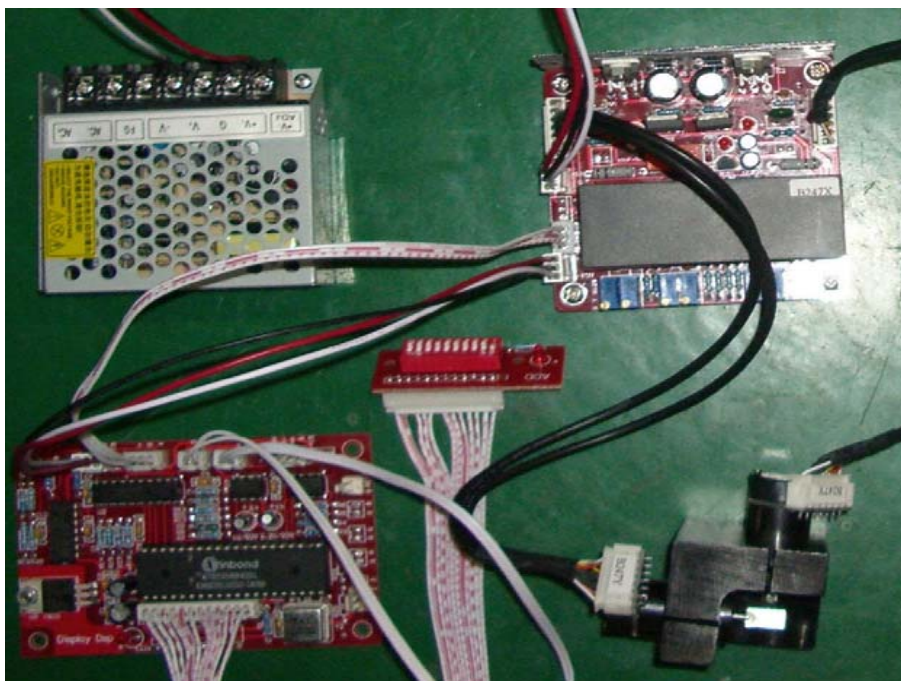
LP30N((Two Drivers, one for X axis galvo, the other for Y axis.)



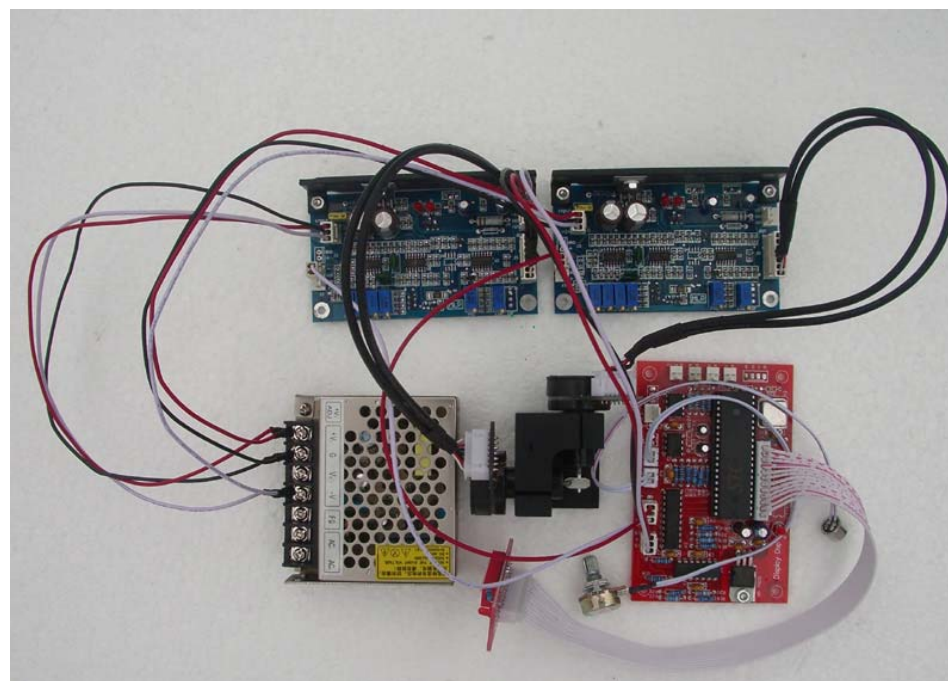
IOF:Input offset	ISC:Input scale
HFD:High frequency damping	LFD:Low frequency damping
SCA:Servo gain	LIN:Linearity
PSC:Position scale	

4,Connection Photo

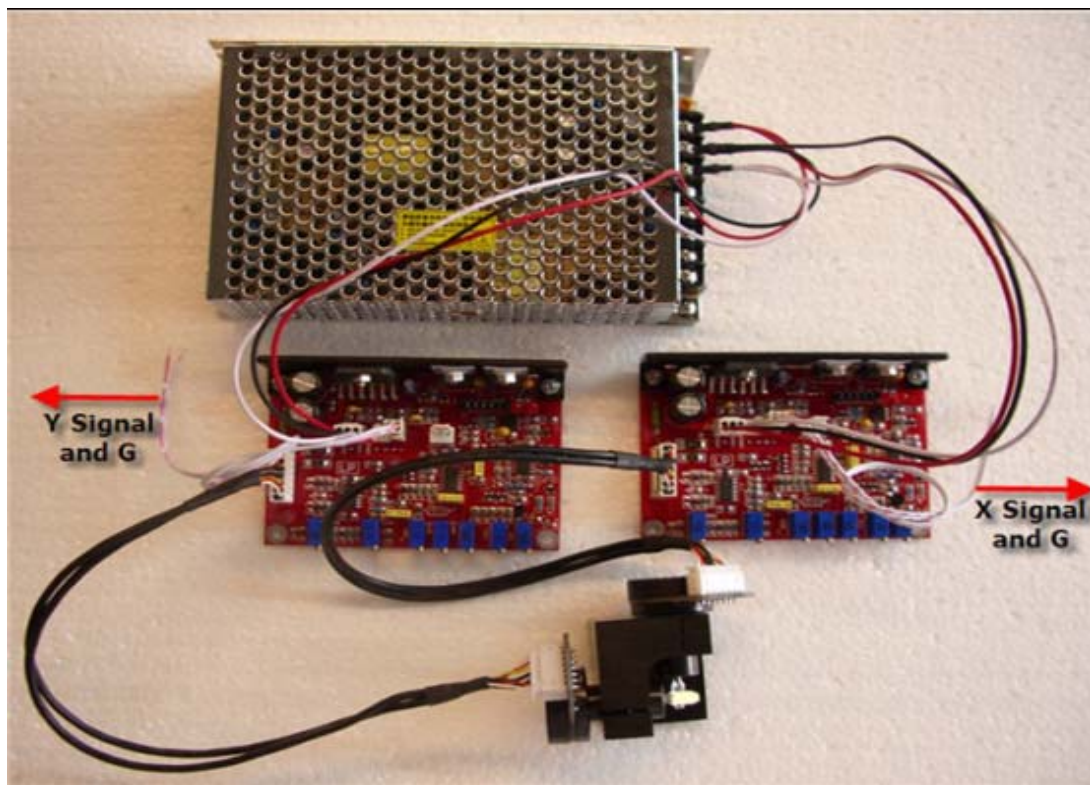
LP12 Galvo Scanner



LP20 Galvo Scanner

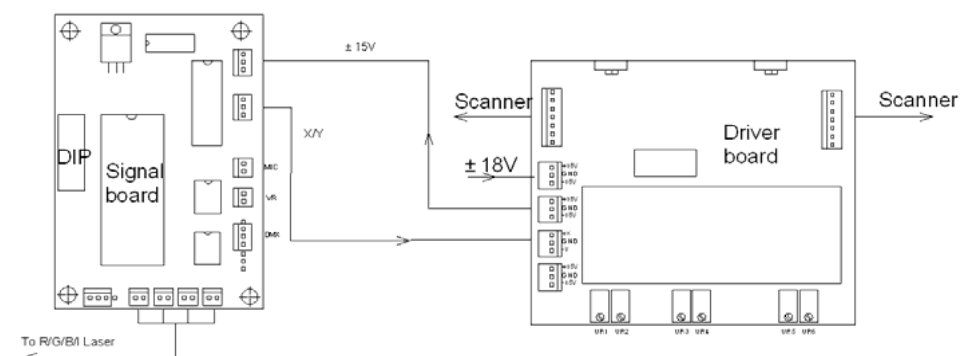


LP30N Galvo Scanner

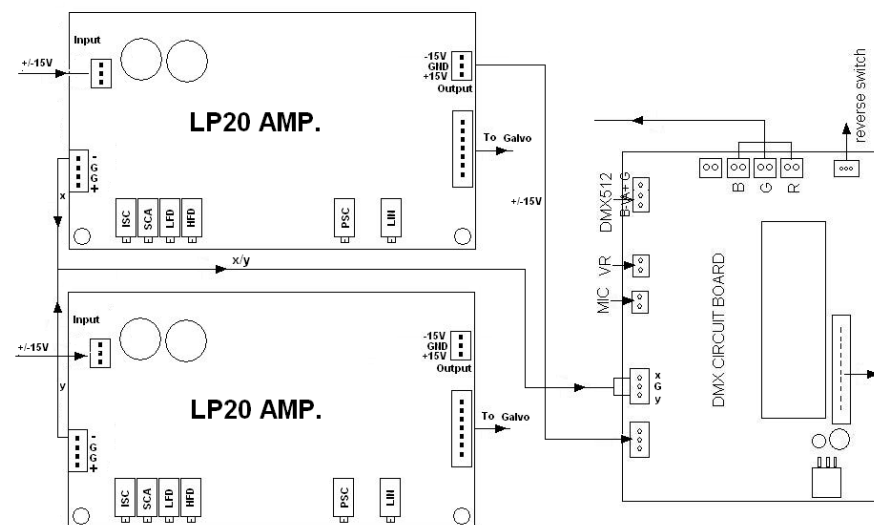


5, Wiring diagrams

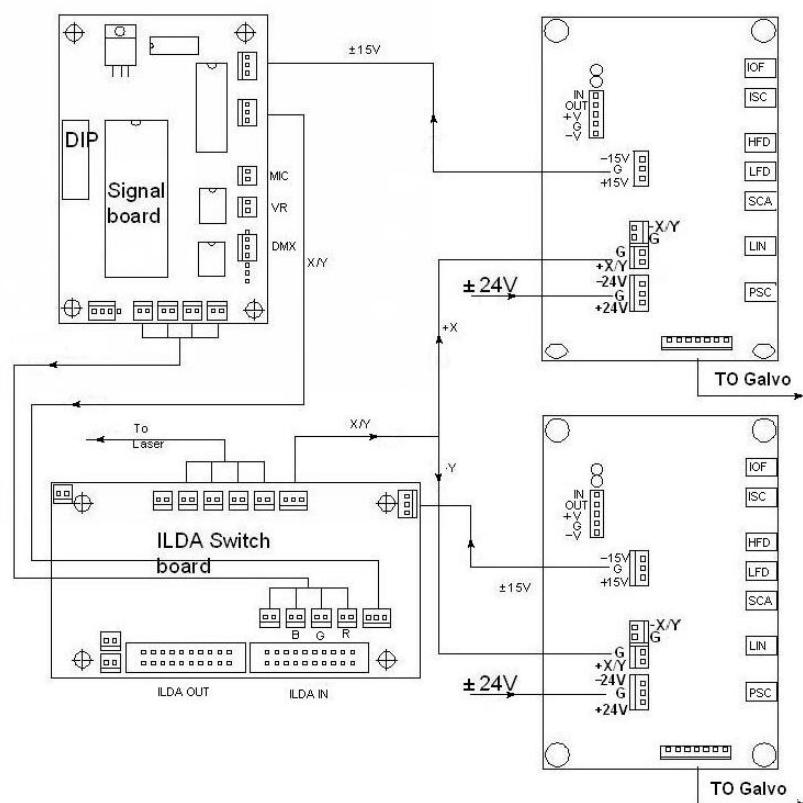
5.1:LP12 wiring diagram









5.2:LP20 wiring diagram



5.3:LP30N wiring diagram (with ILDA)



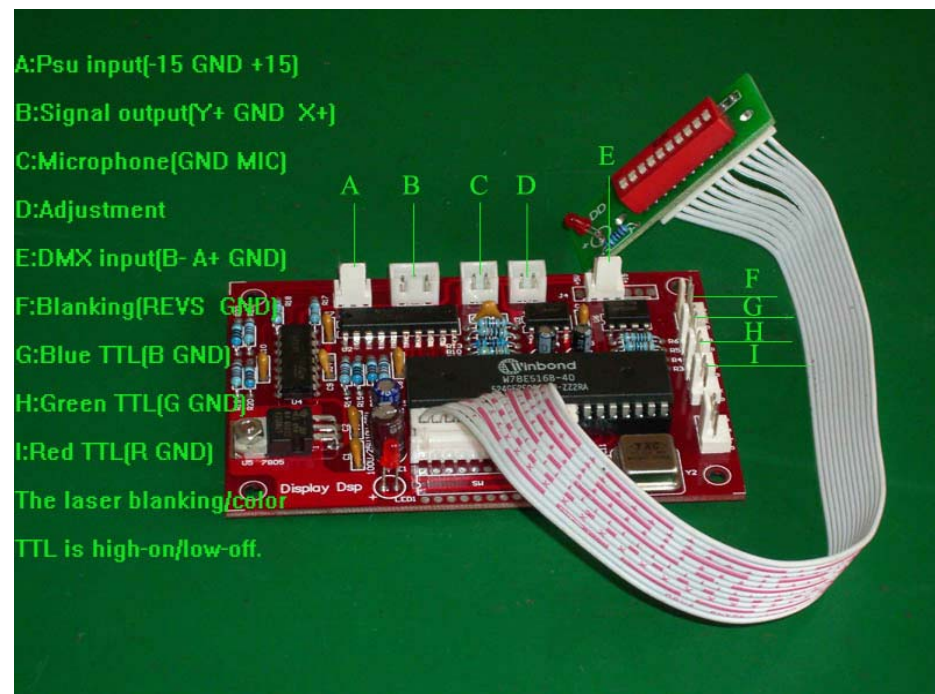
6, Other Parts Introductions

Mount	15VDC	24VDC
		
Height customizable	Applied to LP12&LP20	Applied to LP30N
DMX Controller board	Cables	ILDA Switch board
		
Applied to LP12,LP20,LP30N	Length customizable	Details see below

6.1: DMX Controller board

Normally,LP12 DMX card will be preprogrammed with 128 patterns,LP30N is 256. includes beam show and graphic show patterns.and all the patterns is allowed to custom before shipped out!

Pins specify:

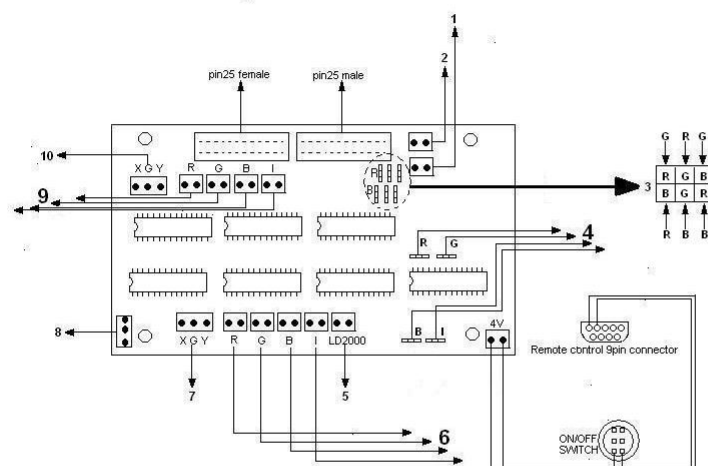


NOTE: If only a single laser module will be connected, eg. a green laser, please use F pin instead of G pin connect the TTL of green laser.

6.2: ILDA SWITCH BOARD

6.3: 24VDC

ILDA SWITCH BOARD

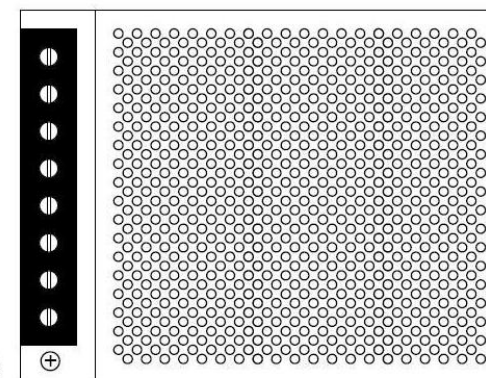


Instruction:
1. Power LED
2. Protect, VH(5V) active (turn lasers off)
3. Jumpers for assigning colors (mainly use for RGB system)
4. work with Remote control to control lasers blanking
5. LD2000 connector
6. RGB laser blanking output
7. X, Y output
8. Power supply input, +/-15V
9. RGB laser blanking input
10. X, Y input

Power supply:

100-260 V AC
Input (mains) { L
N
⏏
Not connected
Ground Not connected

Output (connect to
corresponding
signals on drivers) { -24V
Ground
+24V
+VAd_j



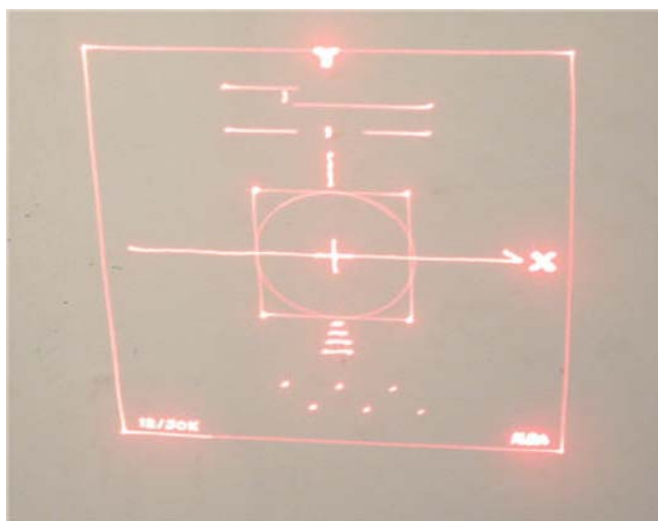
7 DMX channel instruction

DMX card have several catalog programs, includes single pattern 12 channels program, Dual pattern 25 channels program, Details please refer to program DMX channel instruction:.

12 channels refer to LP12_CH12S_SC_manual.pdf

25 channels refer to LP30N_CH25D_TC_manual.pdf

8: ILDA Test pattern



(LP30N was running at 35,000 points per second at a 8 degrees optical angle)

The International Laser Display Association(ILDA) has developed a standard to measure the performance of scanners and scanner driver cards.As above ILDA test pattern,a correct scanner speed,the circle should be the same size(width and height)as the square,it should touch the midpoint of each side of the square.

At slower than rated speeds(lower points per second),the circle will remain outside the square;

At faster than rated speeds, the circle will be smaller than the square.

The ILDA tuning standard also specifies the angle at which the test pattern is scanned. For 30K-tuned scanners, this angle is "about 8 degrees optical or less". (At 8 degrees, the width of the test pattern is roughly 1/7th the scanner-to-screen distance).

(More information at www.laserfx.com)

9: Frequently asked questions (FAQ)

1Q: If you found the projected images have problems, eg. the image appears elliptical

1A: You should check the ground connection, Check and make sure the GND of ILDA connected the GND on the scanner well, and the GND on the DMX board connected the GND on scanner well.

2Q: If i always use scanners for beam show only,how many points to make up a frame is proper for a 30kpps rated scanner?

2A: Because ILDA test30K.ild have 1459 points, so if the speed is 30K@8 degree, the optics angle 37 degree. The result is 20 frames per second. (30000/1459)

If your frame made up with less points and point-to-point have long distance, for example, one frame made up with 100points, run 12k @ 37 degree. $12000/100=120$ frame/s, far more than 20 frame/s, which may result in reducing scanners' expected lifetime,worst cause broken.

If you select 12K@40-60 degree, you should verify most of frames made up with 600++ points or have short distance between point and point.

3Q:My scanner can only project a small size picture,the scan angle is samller than specification stated,what is wrong with my scanner,how can i enlarge the scan angle?

3A: This problem may caused by your DAC,when the DAC dont have a symmetrical signal output(Single output DAC).if you connect Negative pin(-) and Ground pin on the scan amps,the Positive pin(+) leave unconnected,the scan angle should be normal;But if you only connected Positive pin(+) and Gound

pin(G),and the Negative pin(-) unconnected,the scan angle will be only half of the scanner actual can do! So conclusion,to get a right scan angle,you have following two options:

- 1,Connect the (-) differential connector on the scan amps to gnd. Once you did this the scan angle will double.
- 2, Connect Negative pin(-) and Ground pin(G),leave Positive pin(+) unconnected.

(Comments [email us](#))

10: Warranty&Returns

This warranty extends only to the customers purchased scanners directly from Laserphoto

1,Warranty

LP Galvos submit to a 12 months repair/replace warranty,and guarantee service should be efficient from the shipment date.

2,Return/Replacement

A:Scanner have problems and need to return to repair/replace during the warranty period,either a galvo or amp. have problem,please return both the galvos and matching amps.After your package was sent out,please contact us with the tracking number;

B:Buyer will need to pay one side carriage for replacemnet or repair service,and we should pay off the other side.

Last revised at May 2008 by [Laserphoto](#)