

USER MANUAL

surroundings can cause greater accumulation of dirt on the unit's optics

- 1) Clean with a soft cloth using normal glass cleaning products.
 - 2) Always dry the parts carefully.
 - 3) Clean the Aperture glass at least once every 30 days
- i The interior of the fixture should be cleaned annually using a vacuum cleaner or air-jet.

ATTENTION: We strongly recommend internal cleaning to be carried out by qualified engineer!

SPECIFICATIONS

Mains Input:	AC100~240V, 50/60Hz
Fuse:	250V 1.5A slow blow(20mm glass)
Total Power:	20W
Music Control:	Internal microphone
Laser Power:	50mW Green laser (λ=532nm)
	300mW Blue laser (λ=450nm)
Laser Classification:	3B
Laser Safety Standard:	EN60825-1:2007
Condition Temperature:	10°C~40°C
Measurement:	220mm*180mm*80mm
Net Weight:	1.9kg

Specifications subject to change without prior notice.

The availability of particular products may vary by region. Please check with the dealer.

USER MANUAL

WS-GB Laser









This manual contains important laser system safety and operation information. Read and understand all instructions prior to powering on laser unit the first time, to avoid laser eye injury and to avoid breaking the law. Keep this manual in a safe place for future reference.

WARNING

Lasers can be hazardous and have unique safety considerations. Permanent eye injury and blindness is possible if lasers are used incorrectly. Pay close attention to each safety REMARK and WARNING statement in the user manual. Read all instructions carefully BEFORE operating this device.

This unit contains high power laser devices internally. Do not open the laser housing, due to potential exposure to unsafe levels of laser radiation. The laser power levels accessible if the unit is opened can cause instant blindness, skin burns and fires.

The manufacturer will not accept liability for any resulting damages caused by the non-observance of this manual or any unauthorized modification to the device.

-  **Caution!** Prevent damage or injury from incorrect operation.
-  **Laser!** Laser safety warning labels.
-  **Recycle** To protect the environment, recycle packing material wherever possible.
-  **Indoor** The projector is for indoor use only, IP20. Use only in dry locations. Keep this device away from rain and moisture, excessive heat, humidity and dust. Do not allow contact with water or other fluids.
-  **Disposal** Don't throw this product away just as general trash, please dispose of this product following the abandon electronic product regulations in your area.
-  **Location** The projector must be installed in a location with adequate ventilation, at least 50cm (20 inches) from adjacent surfaces. Be sure that no ventilation slots are blocked.

CH4 COLOR	0-10	No output
	11-40	Blue
	41-80	Green
	81-120	Cynn
	121-160	Green strobe, blue not strobe
	161-200	Blue strobe, Green not strobe
	201-255	Blue and Green turn to change
CH5 BLANKING	0-31	No blanking
	32-255	Fast to Slow
CH6 STROBE SPEED	0-10	No Strobe
	11-250	Slow to Fast
	251-255	Strobe by sound
CH7 GRATING SPEED	0-255	Slow to Fast
CH8 GRATING DIRECTION	000	Stop
	001-080	Clockwise
	081-160	Stop
	161-255	Anticlockwise

MAINTENANCE

- | Make sure the area below the installation place is free from unwanted persons during servicing
- | Switch off the fixture, unplug the mains cable and wait until the unit has been cooled down.
- | Housings, fixations and installations spots(ceiling, truss, suspensions) should be totally free from any deformation
- | The mains cables must be in impeccable condition and should be replaced immediately when even a small problem is detected
- | In order to protect the fixture from overheat the cooling fans (if any) and ventilation openings should be cleaned monthly.
- | The cleaning of aperture glass and scanner mirrors must be carried out periodically to optimize light output. Cleaning frequency depends on the environment in which the fixture operates: damp, smoky or particularly dirty

MASTER/SLAVE MODE

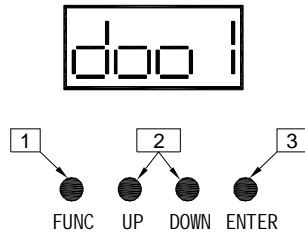
- | Press FUNC to enter MODE OPTION
- | Till to LED panel shows SLAV
- | Press ENTER to confirm the setting.

The laser is working in “SLAVE MODE”. Connect MASTER laser and SLAVE lasers with DMX cable, the SLAVE lasers do what exactly MASTER laser does. Check “5.2 DMX connection” to have more details about laser connection.

DMX MODE

- | Press FUNC to enter MODE OPTION
- | Till to LED panel shows D001.
- | Press ENTER to confirm the setting.

The laser is working in “DMX MODE”. With help of UP/DOWN button, it could be easily change the DMX address of the laser.









DMX CHANNEL

CHANNEL	DMX	CONTROL
CH1 CONTROL MODE	000-049	BLACKOUT
	050-099	AUTO SHOW
	100-149	MUSIC SHOW
	150-255	DMX MODE
CH2 MOTOR A SPEED	0-115	Clockwise (fast to slow)
	116-139	Stop
	140-255	Anticlockwise (slow to fast)
CH3 MOTOR B SPEED	0-19	Stop
	20-255	Slow to Fast

LASER SAFETY WARNINGS

Potential laser injury hazard exists with this product! Read these instructions carefully, which includes important information about installation, safe use and service!

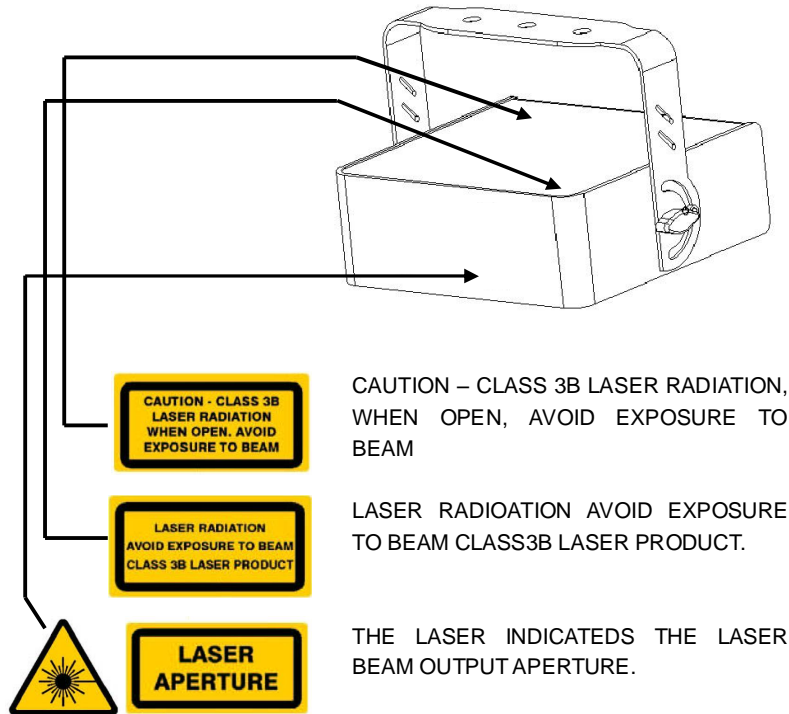
-  **Caution** Avoid direct eye contact with laser light. Never intentionally expose your eyes or others to direct laser light..
-  **Caution** This laser product can potentially cause instant eye injury or blindness if laser light directly strikes the eyes.
-  **Caution** It is illegal and dangerous to shine this laser into audience areas, where the audience or other personnel could get direct laser beams or bright reflections into their eyes.
-  **Caution** It is a US Federal offense to shine any laser at aircraft.
-  **Caution** There are no user serviceable parts inside the unit. Do not open the housing or attempt any repairs yourself. In the unlikely event your unit may require service, please contact the dealer nearest to you.
-  **Caution** Use of controls or adjustments or performance of procedures other than those specified herein may result in hazardous radiation exposure.

Every person involved with installation and maintenance of this device has to:

- | Be qualified
- | Follow the instructions of this manual

CAUTION! Be careful with your operations. With a high voltage you can suffer a dangerous electric shock when touching the wires!

LASER SAFETY LABEL REPRODUCTIONS



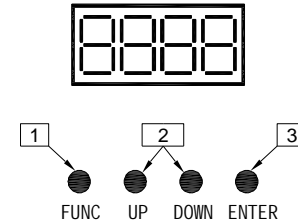
CAUTION – CLASS 3B LASER RADIATION, WHEN OPEN, AVOID EXPOSURE TO BEAM

LASER RADIOATION AVOID EXPOSURE TO BEAM CLASS3B LASER PRODUCT.

THE LASER INDICATEDS THE LASER BEAM OUTPUT APERTURE.



The laser is working in stand alone. Each time when you turn on your laser, you will have this confirmed laser show.



In the MODE OPTION setting, the stand alone laser show that you are going to choose is flashing. Press UP or DOWN to change stand alone laser show, you will have 21 different stand alone preprogrammed laser show. Their DISPLAY and EFFECT are listed below:

DISPALY		STAND ALONE MODE LASER EFFECT
8888	AUTA	Auto mixed slow laser with random show
0001	MG01	Pattern choose (01-79)
0001	MM 1	Motor speed (1-4 turn to left) (5 stop) (6-9 turn to right)
0000	MC 0	Color choose
0500	MS00	Strobe speed (00-15)
5000	SOUD	Sound activated
0001	D001	DMX control effect
0000	SLAV	Master/Slave control effect

CONTROL&FUNCTION

- I Regular breaks during operation are essential to maximize the life of this device as it is not designed for continual use.
- I Do not switch the unit on and off in short time intervals
- I Always unplug the unit when it is not used for a longer time. Or before replacing the bulb or start servicing.
- I In the event of serious operation problems, stop using the fixture and contact your dealer immediately.

Attention Laser will be output from laser aperture in 5 seconds after the unit is powered on.

Operating Mode

When laser is powered on, LED monitor on rear panel shows the current operating standalone mode or DMX address of DMX mode. With help of LED control panel, it is very easy to set and change the operating mode of laser. After every resetting and saved, the new mode information will be shown on LED monitor at next power on.

- FUNC Mode/Function Option, to choose the operating mode of laser.
- ENTER Confirmation, to confirm all setting or change of LED control panel.
- UP UP/DOWN, to change operating mode, parameter or DMX address.
- DOWN

Stand Alone Preprogram Laser Show

- I Press FUNC to enter MODE OPTION.
- I Press UP or DOWN to select your favorite Stand Alone mode as above.
- I Press ENTER to confirm the setting.

LASER EXPOSURE WARNING

**LASER LIGHT
AVOID DIRECT EYE EXPOSURE**

Further guidelines and safety programs for safe use of lasers can be found in the ANSI Z136.1 Standard "For Safe Use of Lasers", available from "www.laserinstitute.org". Many local governments, corporations, agencies, military and others, require all lasers to be used under the guidelines of ANSI Z136.1. Laser Display guidance can be obtained via the International Laser Display Association, www.laserist.org.

LASER EMISSION DATA

Laser Classification	Class 3B
Green Laser Medium	DPSS Nd:YVO4, 532nm
Blue Laser Medium	DPSS 450nm
Beam Diameter	<5mm at aperture
Pulse Data	All pulses < 4Hz (>0.25sec)
Divergence (each beam)	<2mrad
Divergence (total light)	<160 degrees
Laser Power	Blue>300mW, Green>50mW

* As measured under IEC measurement conditions for classification.

LASER COMPLIANCE STATEMENT

According to the EN 60825-1 :1994 + A1 :2002+A2:2001 + COTT regulations, this laser fall under the classification 3B.Direct eye exposure can be dangerous.

BEFORE OPERATION

Unpacking Instructions

CAUTION! Immediately upon receiving a fixture, carefully unpack the carton, check the contents to ensure that all parts are present, and have been received in good condition. Notify the shipper immediately and retain packing material for inspection if any parts appear damage from shipping or the package itself shows signs of mishandling. Save the package and all packing materials. In the event that a fixture must be returned to the factory, it is important that the fixture be returned in the original factory box and packing.

What is included

The carton or flight case contain following items:

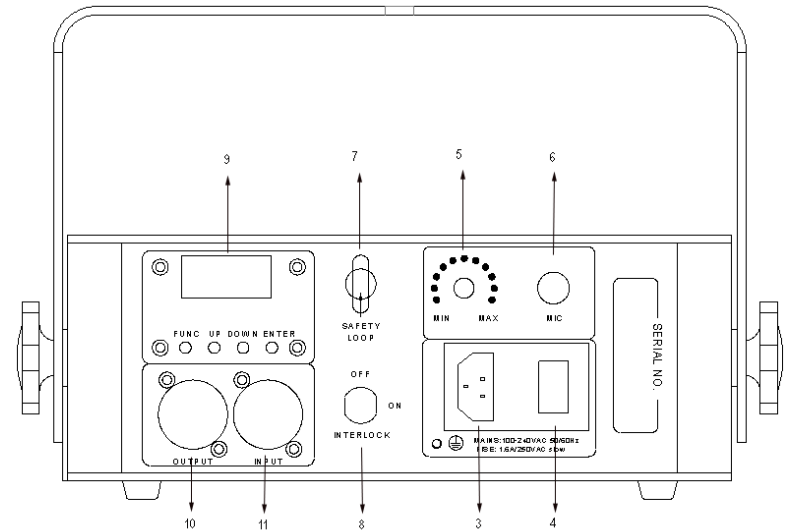
NAME	QTY
Laser Light	1pc
Keys (for key switch)	2pcs
Power Supply	1pc
User Manual	1pc

Power Supply

To determine the power requirements for a particular fixture, see the label affixed to the back plate of the fixture or refer to the fixture's specifications chart. A fixture's listed current rating is its average current draw under normal conditions. All fixtures must be powered directly off a switched circuit and cannot be run off a rheostat (variable resistor) or dimmer circuit, even if the rheostat or dimmer channel is used solely for a 0% to 100% switch. Before applying power to a fixture, check that the source voltage matches the fixture's requirement.

The unit is supplied with a power plug appropriate to its voltage and destination. Should any other connections be required they must be carried out with the following configuration.

Rear Panel

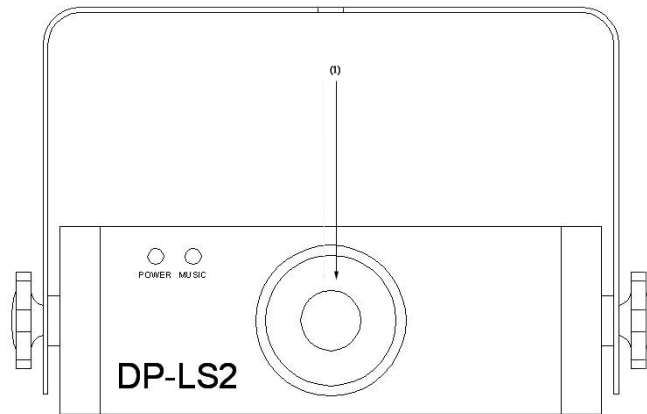


NO.	NAME	DESCRIPTION
3	Power Supply	With IEC socket and integrated fuse holder
4	Power Switch	Switch ON and OFF the fixture
5	Sensitivity Knob	Turn the knob (potentiometer) until the laser works in sync with the music
6	Mic Knob	To detect the music/sound signal
7	Safety Eye	Used to attach a safety cable when the fixture is rigged
8	Interlock Switch	To interlock laser diodes output
9	LED Display Board	To display operation menu
10	DMX Output	3 pins female XLR connector
11	DMX Input	3 pins male XLR connector

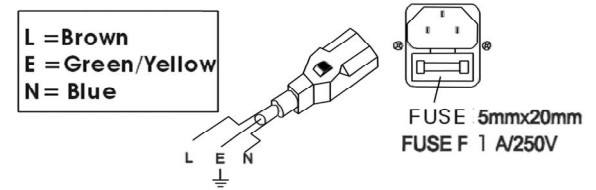
PRODUCT OVERVIEW

- I This device has left out premises in absolutely perfect condition. In order to maintain this condition and to ensure a safe operation, it is necessary for the user to follow the safety instructions and warning notes written in this manual.
- I The manufacturer will not accept liability for any resulting damages caused by the non-observance of this manual or any unauthorized modification to the device.

Front Panel



NO.	NAME	DESCRIPTION
1	Laser Aperture	Laser effect output aperture



Cable(EU)	Cable(US)	Pin	International
Brown	Black	Live	L
Light blue	White	Neutral	N
Yellow/Green	Green	Earth	

DMX-512 connection between fixtures

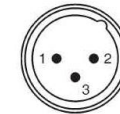
The fixture is equipped with 3-pin XLR sockets for DMX input and output. The sockets are wired in parallel. Only use a shielded twisted-pair cable designed for 3-pin XLR-plugs and connectors in order to connect the controller with the fixture or one fixture with another.

Occupation of the XLR-connection

DMX - output
XLR mounting-sockets (rear view):



DMX-input
XLR mounting-plugs (rear view):

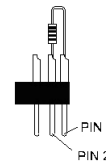


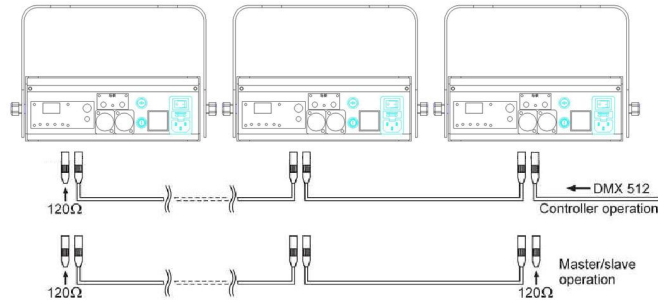
- 1 - Shield
- 2 - Signal (-)
- 3 - Signal (+)



Caution:

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



Building a serial DMX-chain

- I If you are using the standard DMX-controllers, you can connect the DMX-output of the controller directly with the DMX-input of the first fixture in the DMX-chain. If you wish to connect DMX-controllers with other XLR-outputs, you need to use adapter cables.
- I Connect the DMX-output of the first fixture in the DMX-chain with the DMX-input of the next fixture. Always connect output with the input of the next fixture until all fixtures are connected.
- I If you use a controller with 5 pins DMX connector, you need to use a 5 to 3 pins adaptor.
- I At last fixture, the DMX cable has to be terminated with a terminator. Solder a 120 Ohm 1/4W resistor between pin 2(DMX-) and pin 3(DMX+) into a 3 pins XLR-plug and plug it in the DMX-output of the last fixture.
- I Connect the fixture together in a daisy chain by XLR plug cable from the output of the fixture to the input of the next fixture. The cable cannot be branched or split to a Y cable. DMX 512 is a very high speed signal. Inadequate or damaged cables, soldered joints or corroded connectors can easily distort the signal and shut down the system.
- I The DMX output and input connectors are pass-through to maintain the DMX circuit, when power is disconnected to the unit.
- I Each fixture needs to have a DMX address to receive the data from the controller. The DMX address number which could be read from rear panel of each fixture is between 000~511.
- I The end of the DMX 512 chain should be terminated to reduce signal errors.

Rigging the Fixture

CAUTION: Please consider the respective national norms during the installation! The installation must only be carried out by an authorized employee or dealers!

- I The installation of the fixture has to be built and constructed in a way that it can hold 10 times the weight for 1 hour without any harming deformation.
- I The installation must always be secured with a secondary safety attachment, e.g. an appropriate catch net. This secondary safety attachment must be constructed in a way that no part of the installation can fall down if the main attachment fails.
- I Make sure the area below the installation place is free from unwanted persons during rigging, de-rigging and servicing.
- I The operator has to make sure that safety-relating and machine-technical installations are approved by an expert before taking into operation for the first time and after changes before taking into operation another time.
- I The operator has to make sure that safety-relating and machine-technical installations are approved by a skilled person once a year.
- I The fixture should be installed in the position where persons cannot reach and where persons may walk by or be seated.

CAUTION: When installing the device, make sure there is no highly inflammable material (decoration articles, etc.) in between a distance of min 0.5 meter.