

## USER MANUAL

# DJ Spark II



The beam output from this machine can be directed by the LED control panel. Simply depress ALL 4 buttons, switch on the machine and the laser output keyswitch. You will see two static beams. Each beam can be directed for height and width via the function button and by pressing either up or down buttons to select the position of output required. After each setting is decided make sure the Enter button is pressed then the machine will start at you chosen positions each time the machine is switched on.

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.

## **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**

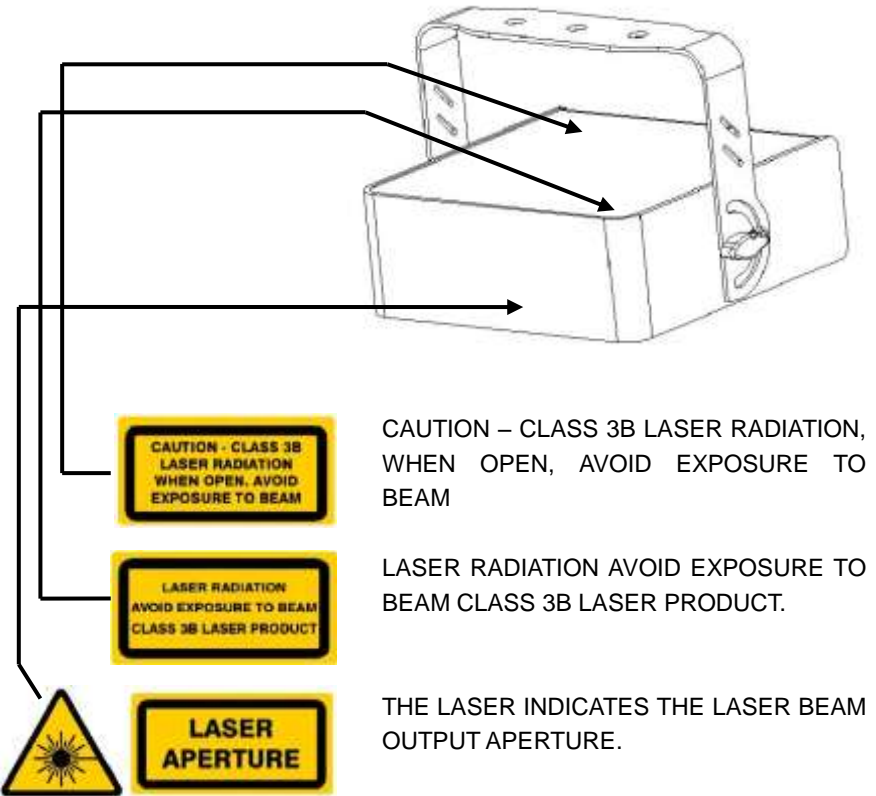
Use of controls or adjustments or performance of procedures other than those specified herein may result in hazardous radiation exposure.

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**



## **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
Beam Diameter	<5mm at aperture
Pulse Data	All pulses < 4Hz (>0.25sec)
Divergence (each beam)	<2mrad
Divergence (total light)	<160 degrees
Laser Power	Green>100mW

\* 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 laser, 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**

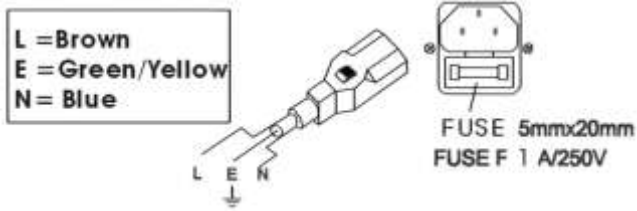
The carton or flight case contain following items:

<b>NAME</b>	<b>QTY</b>
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 fixed 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.



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):



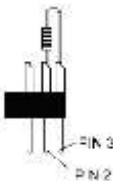
DMX-input  
XLR mounting-plugs (rear view):



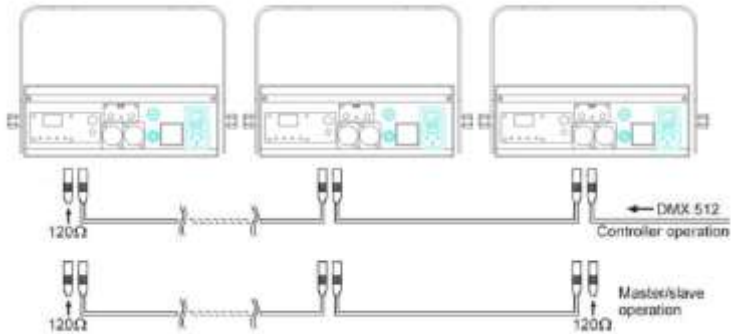
- 1 - Shield
- 2 - Signal (-)
- 3 - Signal (+)



**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 and plug it in the DMX-output of the last fixture.



## **Building a serial DMX-chain**



- 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.
- 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.
- If you use a controller with 5 pins DMX connector, you need to use a 5 to 3 pins adaptor.
- 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.
- 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.
- The DMX output and input connectors are pass-through to maintain the DMX circuit, when power is disconnected to the unit.
- 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.
- 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!

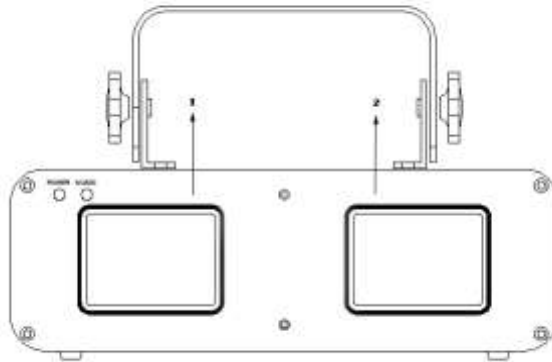
- The installation of the fixture has to be built and constructed in a way that it can hold 10 times the weight for 1 hour without any harming deformation.
- The installation must always be secured with a secondary safety attachment, e.g. an appropriate catch net. This secondary safety attachment must be constructed in a way that no part of the installation can fall down if the main attachment fails.
- Make sure the area below the installation place is free from unwanted persons during rigging, de-rigging and servicing.
- 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.
- The operator has to make sure that safety-relating and machine-technical installations are approved by a skilled person once a year.
- 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.

## **PRODUCT OVERVIEW**

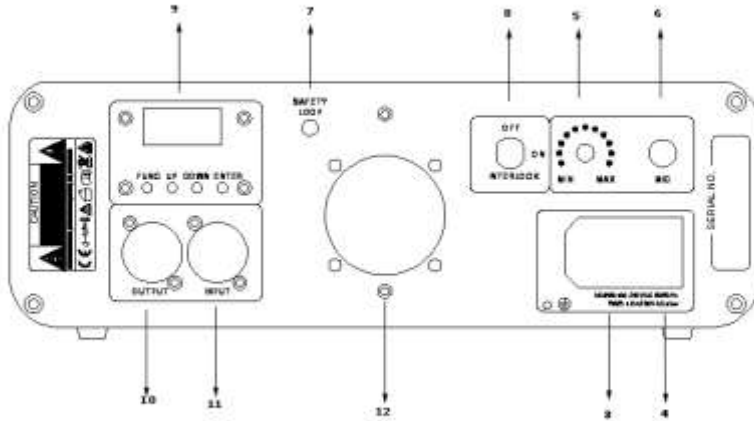
- This device has left our premises in absolutely perfect condition. In order to maintain this condition and to ensure a safe operation, it is necessary for the user to follow the safety instructions and warning notes written in this manual.
- The manufacturer will not accept liability for any resulting 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
2	Laser Aperture	Laser effect output aperture

## 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	To detect the music/sound signal
7	Safety Eye	Used to attach a safety cable when the fixture is rigged
8	Interlock Switch	To allow 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
12	Fan	Fan for laser fixture

## **CONTROL&FUNCTION**

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

**Attention**     **Laser will be output from aperture 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.



Mode/Function Option, to choose the operating mode of laser.



Confirmation, to confirm all setting or change of LED control panel.



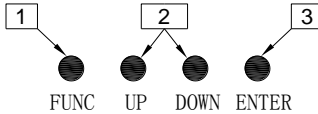
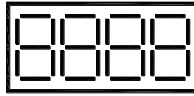
UP/DOWN, to change operating mode, parameter or DMX address.



### **Stand Alone Preprogram Laser Show**

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

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
	<b>AUT1</b>	Auto mixed with random show,Aut1-Aut9, Fast to Slow
	<b>SOUD</b>	Sound activated
	<b>D001</b>	DMX control effect
	<b>SLAV</b>	Master/Slave control effect
	<b>S X0</b>	Press 4 button at one time and power on the laser, to set the position of X axis
	<b>S Y0</b>	Press 4 button at one time and power on the laser, to set the position of Y axis
	<b>S X1</b>	Press 4 button at one time and power on the laser, to set the position of X axis
	<b>S Y1</b>	Press 4 button at one time and power on the laser, to set the position of Y axis

**MASTER/SLAVE MODE**

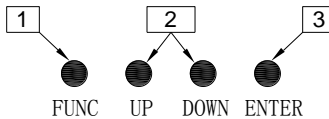
- Press FUNC to enter MODE OPTION
- Press until the LED panel shows SLAV
- Press ENTER to confirm the setting.

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
- Press until the 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	000-063	BLACKOUT
	063-127	AUTO SHOW
	128-191	MUSIC SHOW
	192-255	DMX MODE
CH2 GOBOS	0-255	Split 32 patterns
CH3 ZOOM	0-127	100%-5%
	128-169	Zoom out mode
	170-209	Zoom in mode
	210-255	Zoom out and Zoom in mode

CH4 LEFT RIGHT TURN	000-127	0-359 Degree
	128-255	Clockwise Mode
	192-255	Anticlockwise Mode
CH5 UP DOWN TURN	000-127	0-359 Degree
	128-191	Clockwise Mode
	192-255	Anticlockwise Mode
CH6 ROTATE	000-127	0-359 Degree
	128-191	Clockwise Mode
	128-255	Anticlockwise Mode
CH7 LEFT RIGHT MOVE	000-127	Left Right position, total 128 position
	128-191	Clockwise Move Mode
	128-255	Anticlockwise Move Mode
CH8 UP DOWN MOVE	000-127	Up Down position, total 128 position
	128-191	Clockwise Move Mode
	128-255	Anticlockwise Move Mode

## **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 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
- 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**

<b>Mains Input:</b>	AC100~240V, 50/60Hz
<b>Fuse:</b>	250V 1.5A slow blow(20mm glass)
<b>Total Power:</b>	40W
<b>Music Control:</b>	Internal microphone
<b>Laser Power:</b>	100mW Green laser ( $\lambda=532\text{nm}$ )
<b>Laser Classification:</b>	3B
<b>Laser Safety Standard:</b>	EN60825-1:2007
<b>Condition Temperature:</b>	10°C~40°C
<b>Measurement:</b>	300mm*217mm*153mm
<b>Net Weight:</b>	2.4kg

Specifications subject to change without prior notice.

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