



I N S T R U C T I O N M A N U A L

# Laserscan 300 RGB/3D

320mW RGB/3D fast scanning laser

M A N U A L V E R S I O N 1 . 0

24 - 04 - 12

Due to continuous product development, please ensure that you have downloaded the latest instruction manual for this product from the Kam website at [www.kam.co.uk](http://www.kam.co.uk)

For the latest updates and information on the entire Kam range visit:

[www.kam.co.uk](http://www.kam.co.uk)

Kam products are manufactured by: **Lamba plc**, Unit 1, Southfields Road, Dunstable, Bedfordshire, United Kingdom LU6 3EJ

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If this product is ever no longer functional please take it to a recycling plant for environmentally friendly disposal.

Due to continuous product development, specifications and appearance are subject to change.

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**Thank you for purchasing this KAM product, we are sure that it will serve you for many years to come.**

To optimise the performance of this product, please read these operating instructions carefully to familiarise yourself with the basic operations of this unit. After you have read the instructions, please retain them for future reference.

This unit has been tested at the factory before being shipped to you.

To prevent or reduce the risk of electrical shock or fire, do not expose the unit to rain or moisture. To prevent a fire hazard, do not expose the unit to any naked flame sources. Unplug this apparatus during lightning storms or if it is unlikely to be used for long periods of time.

When installing the unit, please ensure you leave enough space around the unit for ventilation. Slots and openings in the unit are provided for ventilation to ensure reliable operation of the product and to protect it from overheating. To prevent fire hazard, the openings should never be blocked or covered.

Always handle the power cable by the plug. Never pull out the plug by pulling on the cable. Never touch the power cable when your hands are wet as this could cause an electric shock. Do not tie a knot in the cable. The power cable should be placed such that it is not likely to be stepped on. A damaged power cable can cause a fire or give you an electrical shock. Check the power cord periodically, if you ever find that it is damaged, replace it before using the unit again. Contact your retailer for a replacement.

The voltage of the available power supply differs according to country or region. Be sure that the power supply voltage of the area where this unit is to be used meets the required written on the unit.



**The lightning flash symbol inside a triangle is intended to alert the user to the presence high voltage within the unit's enclosure that may be of sufficient power to constitute a risk of electrical shock to persons.**

**Caution: to prevent the risk of electric shock, do not attempt to open the unit. No user-serviceable parts inside. Refer all servicing to qualified service personnel.**

**The exclamation mark inside a triangle is intended to alert the user to the presence of important operating and maintenance instructions in the literature accompanying the appliance.**

Any modification carried out on the unit may invalidate the unit's warranty.

If applicable, only use the stand, tripod or bracket specified or sold with the apparatus.

Select the installation location of your unit carefully. Avoid placing it in direct sunlight or locations subject to vibration and excessive dust. Do not use the unit where there are extremes in temperature (below 41°F / 5°C or exceeding 95°F / 35°C).

Unpacking and safety: Please unpack your new product carefully, your new product should reach you in perfect condition. Please check that no damage has occurred during transit. If any damage is found, do not operate your unit. Please contact the retailer you purchased it from immediately. If there is any damage to the mains cable do not use the device. Always disconnect the unit from the mains supply when carrying out any servicing or cleaning of the unit.

The serial number for this equipment should be located on the rear or underside of the unit. Please make a note of this number as you will need it for your warranty, it is a good idea to keep a copy of the serial number for your own records.

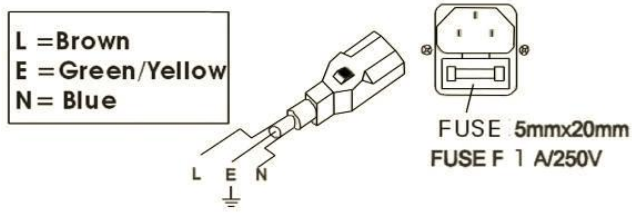
### **Unpacking Instructions**


**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 damaged 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 retailer, it is important that the fixture be returned in the original box and packing.

### **Contents**

1 x laser, 2 x keys (for key switch), 1 x interlock connector, 1 x power cord, 1 x user manual, 1 x laser safety guide

## Power Supply



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. These 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.

## XLR-connection

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



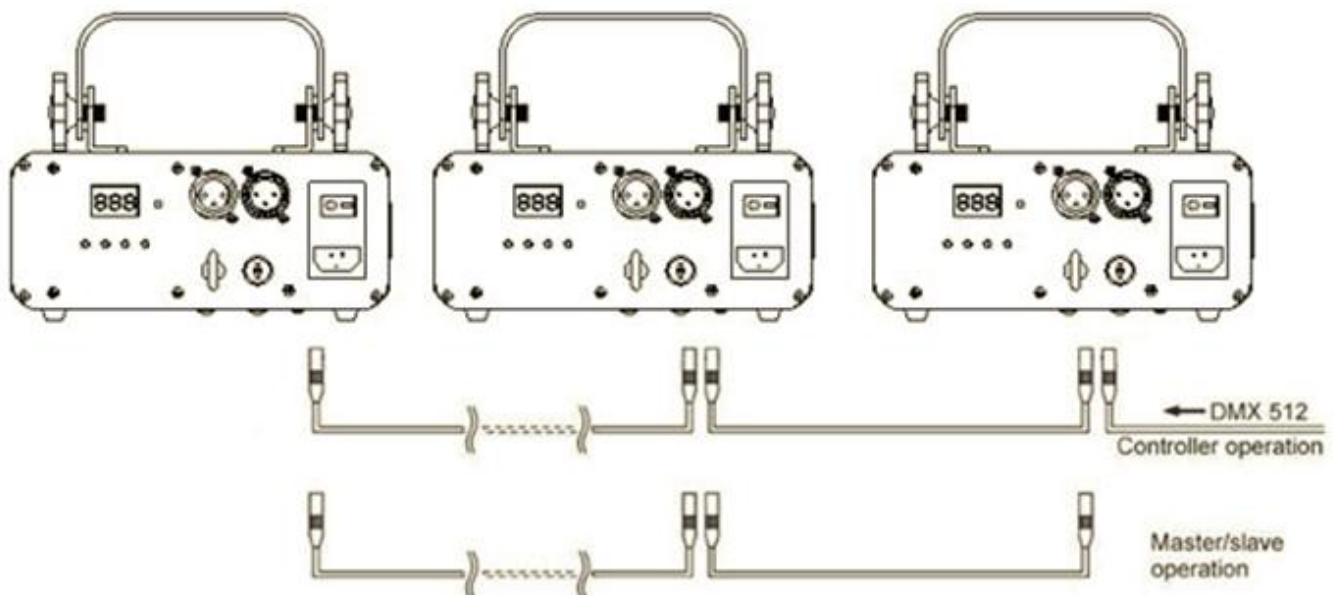
- 1 - Shield
- 2 - Signal (-)
- 3 - Signal (+)

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



## Building a serial DMX-chain

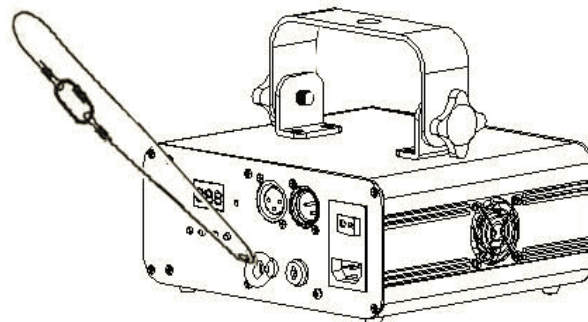
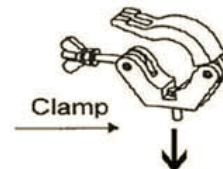
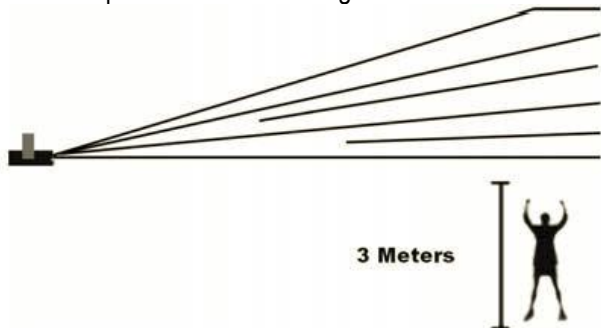
- If you are using a standard DMX-controller, you can connect the DMX-output of the controller directly with the DMX-input of the first fixture in the DMX-chain. If you wish to connect DMX-controllers with other XLR-outputs, you need to use adapter cables. (DMX controller not supplied).
- Connect the 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 3pins adapter.
- 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.



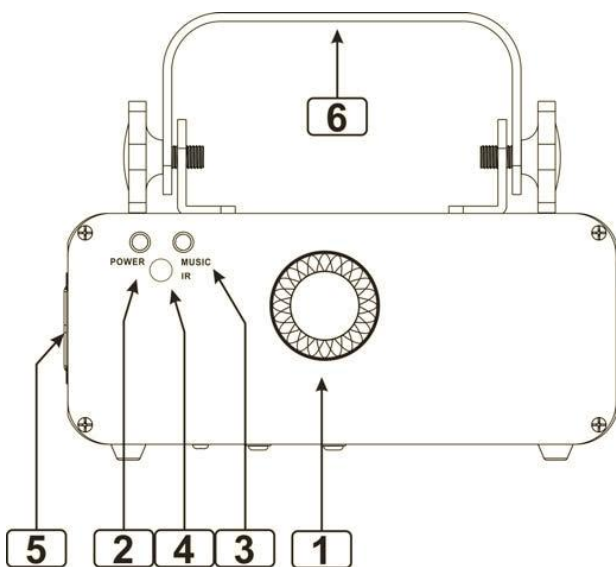
## Proper laser set up & usage

This fixture has been designed to be hung. It is recommended for safety purposes, your lighting effect are properly mounted using a suitable hanging clamp and safety cable. Items appropriate for safe and effective mounting are easily sourced from your lighting vendor.

International laser safety regulations require that lasers must be operated in the fashion illustrated below, with a minimum of 3 meters (9.8 ft) of vertical separation between the floor and the lowest laser light vertically. Additionally, 2.5 meters of horizontal separation is required between laser light and audience or other public spaces.

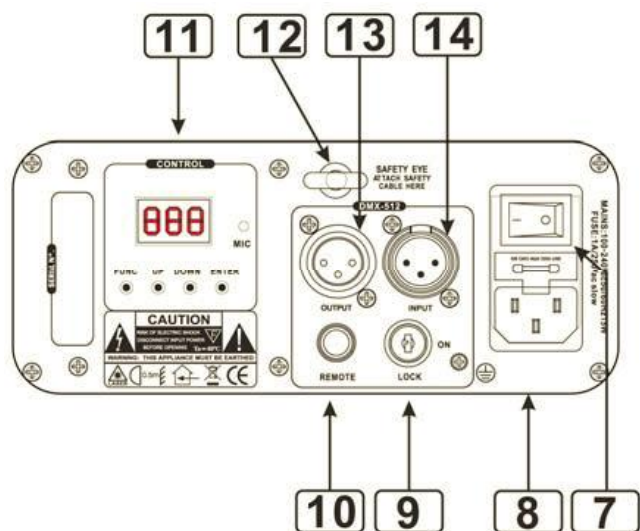


**CAUTION:** Use of controls, adjustments, or performance of procedures other than what is specified herein may result in hazardous radiation exposure



### Front Panel

1. Laser output – Laser output aperture
2. Power – Main power indicated LED. Red is ON
3. Music/IR – Synchronize to detected music signal / IR indicator (flashing for each signal received)
4. IR – Infrared remote receiver
5. Cooling fan – cooling the unit. Never cover this fan outlet
6. Hanging bracket – 2 knobs on each side to fasten the unit and a mounting hole to fix a mounting clamp.



### Rear Panel

7. Switch – Switch on and off the power
8. Mains input – with socket and integrated fuse holder
9. Key switch
10. Interlock – For emergency laser stop
11. LED function display
12. Safety eye – Attach the safety cable
13. DMX input - 3 PIN Male XLR
14. DMX output – 3 PIN Female XLR

## Operating Mode

When the laser is powered on, the LCD monitor on rear panel shows the current operating standalone mode, DMX address or Slave mode. With help of the LCD control panel, it is very easy to set and change the operating mode of the laser. The next time the laser is powered on it will show the last setting used before the laser was powered off.



Mode Option, to choose the operating mode of laser.

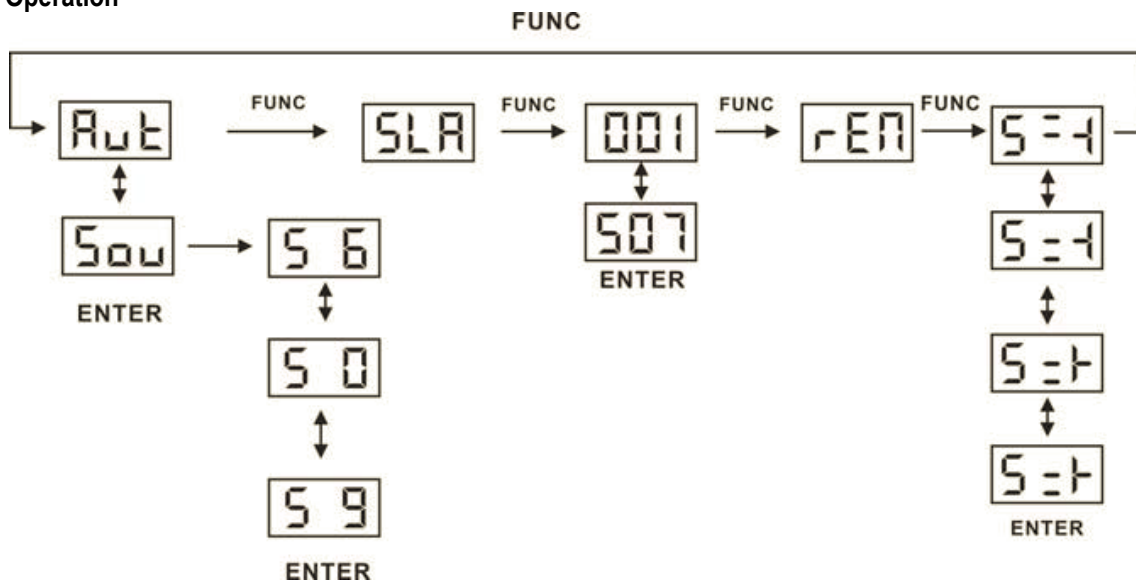


Confirmation, to confirm the selected mode.



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

## Operation



Display	Stand alone mode pre-programmed effect
Aut	Automatic show with slow effect
Sou	Sound activated show

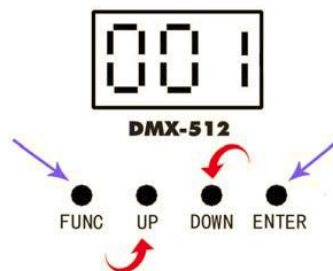
**ATTENTION!** In pre-programmed standalone MUSIC SHOW mode, the laser beam will be blank-out in 3 seconds without AUDIO/MIC activated signal.

## DMX MODE

- Press FUNC to enter the MODE selection
- The LED panel will show 001 for DMX mode
- Press ENTER to confirm the setting

Now the laser is working in DMX mode.

Use the up/down buttons to select the DMX address.



**Note:** In DMX MODE, once the DMX cable is connected to the laser and DMX controller, the DMX LED in front panel of laser will be ON.

## DMX address

Each unit uses 17 DMX channels. To select the desired DMX address press the menu button until DMX mode is displayed, then press the enter button to access the DMX channel menu.

This example shows how to set the start address to 001 but use the same formula to set address at different numbers.

At the top of the menu address #\*\*\* is displayed, use the up/down buttons until 001 is shown and press the enter button to confirm. Now this unit has the DMX starting address of 001. If all units are to be controlled exactly the same set all units to address 001.

If individual control of units is required each unit must have its own starting address and must be at least 17 channels apart. None of the channels must cross. E.g. Set the first unit to 001 the second unit to 018 and so on each unit is 17 channels apart. Now the DMX controller will control all the units separately.

## SLAVE MODE

- Press FUNC to enter the MODE selection
- Use the up/down buttons to select SLA for Slave mode
- Press ENTER to confirm the setting

Now the laser is working in SLAVE MODE. Connect the MASTER laser with several SLAVE lasers using a DMX cable. The SLAVE lasers will produce exactly the same laser show as MASTER laser.

## REM MODE (Remote Optional)

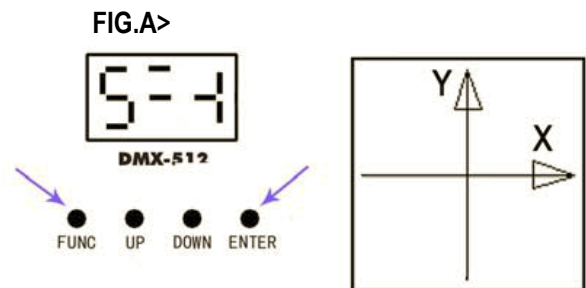
- Press FUNC to enter the MODE selection
- Use the up/down buttons to select REM for Remote mode
- Press ENTER to confirm the setting

Please check **Remote Instruction** for remote control details.

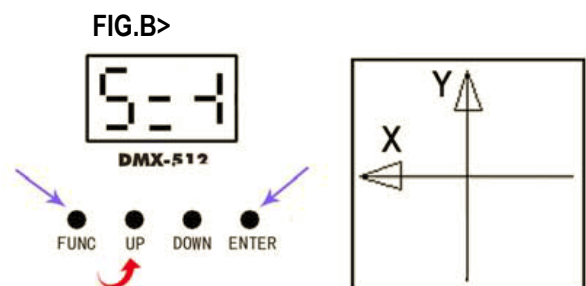
**Note:** In any standalone mode (except REM and SLA), press ON/OFF for 2 seconds to activate the remote function.

## PATTERN MIRROR REVERSE SETTING

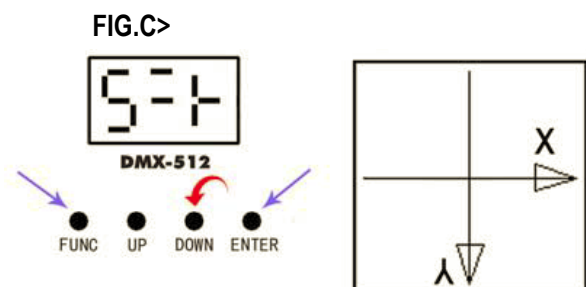
- Press FUNC to enter the MODE selection
- Use the up/down buttons to set the LED display to match Fig A.
- Press ENTER to confirm the setting.



- Using the up/down buttons, set the LED display to match Fig. B. This will rotate the graphic in the X direction.

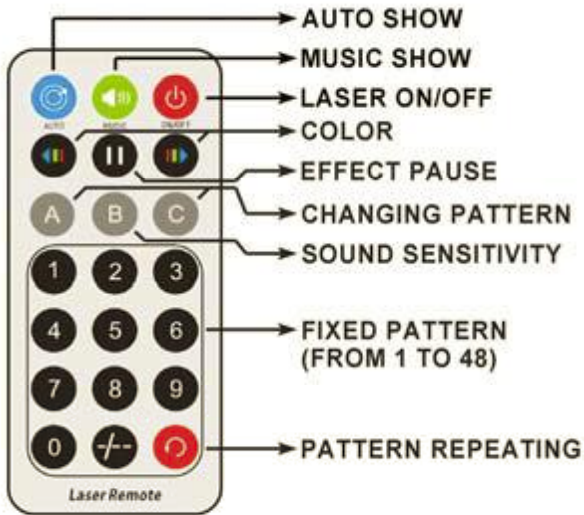








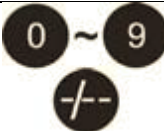

- Using the up/down buttons, set the LED display to match Fig. C. This will flip the graphic in the Y direction.





## Remote Instruction

































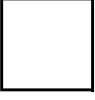



















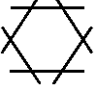

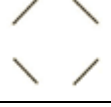



























Button	Function	Description
	ON/OFF	In REM mode, to turn ON/OFF laser. In any stand alone mode, except for SLA mode, pressing this button for 2 seconds will activate the REM mode.
	Auto	Auto running slow
	Music	Sound Activated show. The blue music LED indicator is flashing when sound signal is detected.
	Sound sensitivity	In Sound Activated Mode, press Music + B + "1-9" to adjust the sensitivity setting. "9" is the most sensitive.
	Colour changing	Cycle through the colours
	Pattern changing	To show and change patterns
	Fixed pattern	Choose favourite pattern from 1 to 48
	Pattern repeat	Last pattern and current pattern cycle repeating

## DMX Channels Chart

Channel	Value	Function
CH 1 – Mode	000-063	Laser OFF
	064-127	Auto mode
	128-191	Sound mode
	192-255	DMX MODE
CH 2 - Group	000-051	1 Group Patterns.
	052-103	2 Group Patterns.
	104-155	3 Group Patterns.
	156-207	4 Group Patterns.
	208-255	5 Group Patterns.
CH 3 - Pattern	000-255	Every 16 for 1 Group, total 80 patterns.
CH 4 - Colour	000-007	Original pre-programmed colour
	008-015	Red
	016-023	Green
	024-031	Yellow
	032-039	Blue
	040-047	Purple
	048-055	Light Blue
	056-063	White
	064-111	Colour Rolling
	112-159	Colour Jumping
	160-127	Colour Moving
	208-255	Strobing
CH 5 - Clipping	000	Full pattern without clipping
	001-127	0%~99% fixed pattern clipped
	128-255	Clipping Speed
CH 6 - Zooming	000-127	100%~5% fixed pattern zoomed
	128-169	Zooming IN
	170-209	Zooming OUT
	210-255	Alternately Zooming
CH 7 – Zoom speed	000-255	Fast to Slow
CH 8 – Y Axis rolling	000-127	0 -359 degree fixed Y axis rolled
	128-191	Clockwise rolling
	192-255	Anticlockwise rolling
CH 9 – Roll speed	0-255	Fast to Slow
CH 10 – X Axis rolling	000-127	0 -359 degree fixed X axis rolled
	128-191	Clockwise rolling
	192-255	Anticlockwise rolling
CH 11 – Roll speed	0-255	Fast to Slow
CH 12 – Z Axis Rolling	000-127	0 -359 degree fixed Z axis rolled
	128-191	Clockwise rolling
	192-255	Anticlockwise rolling
CH 13 – Roll speed	0-255	Fast to Slow
CH 14 – Y Axis moving	000-127	128 different fixed position on X axis
	128-191	Clockwise moving
	192-255	Anticlockwise moving
CH 15 – Move speed	0-255	Fast to Slow
CH 16 – X Axis moving	000-127	128 different fixed position on Y axis
	128-191	Clockwise moving
	192-255	Anticlockwise moving
CH 17 – Move speed	0-255	Fast to Slow



Pattern list

DMX	1	2	3	4	5
000-015					
016-031					
032-047					
048-063					
064-079					
080-095					
096-111					
112-127					
128-143					
144-159					
160-175					
176-191					
192-207					
208-223					
224-239					
240-255					

**Specifications**

<b>Mains Input:</b>	AC100~240V, 50/60Hz
<b>Fuse:</b>	250V /1A Slow Blow (20mm Glass)
<b>Total Power:</b>	15w
<b>X/Y Axis Beam Angle:</b>	±20°
<b>Music Control:</b>	Audio / Sound Activated
<b>Laser Power (per unit):</b>	150mW 650nm Red CW 50mW 532nm Green CW 120mW 450nm Blue CW
<b>Laser Classification:</b>	Class 3B
<b>Laser Safety Standard:</b>	EN60825-1 2007
<b>Condition Temperature:</b>	10~40°C
<b>DMX Connections:</b>	3 pins XLR Male/Female
<b>DMX Channels:</b>	Max 17 channels
<b>Dimensions:</b>	190 x 160 x 170mm
<b>Nett Weight:</b>	1.6Kg