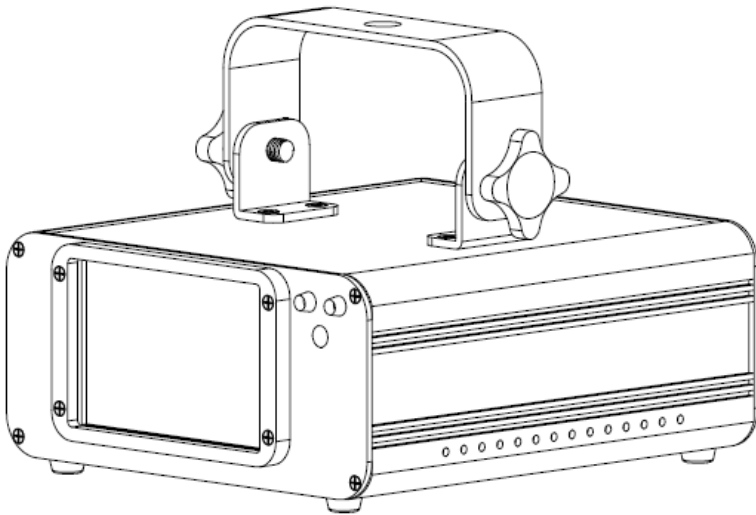


THE FLY

RBP WIDE SCAN 3D LASER

Order ref: 152.763UK

User Manual





Caution: Please read this manual carefully before operating
Damage caused by misuse is not covered by the warranty

Introduction

Thank you for choosing THE FLY laser as part of your effects lighting equipment. This product has been designed to project unique 3D geometric patterns in 3 colours across a wide area. Please read and retain this manual in order to achieve the best results from your purchase and avoid damage through misuse.

- True 3D moving effects
- Large area scanning through wide angle aperture
- 0.22W total laser power (Red: 100mW, Blue: 120mW)
- Auto, sound-activated modes
- 10 channel DMX operation
- Master/slave mode
- Supplied with I.R remote control
- Easy digital display to set the mode of operation
- Key controlled for laser safety
- We recommend that this product is used within the guidelines HSG95



CAUTION



- **Please read this manual fully before installing or operating this product as it contains important safety information relating to its installation and operation.**



- **This Class 3B laser product emits hazardous levels of optical radiation and will cause injury to the eyes if viewed directly.**
- **This product is not suitable for projection directly at audiences or other personnel.**
- **This product must not be used for any form of audience scanning application and is for professional use only.**

Important information

This product is a Class 3B laser and should only be installed and used by personal who are trained in the management of laser radiation and are able to operate in accordance within the guidance given by the Health and Safety Executive (HSE) in HS(G)95: "The Radiation Safety of Lasers used for Display purposes".

Copies of this guide can be downloaded from the HSE website:

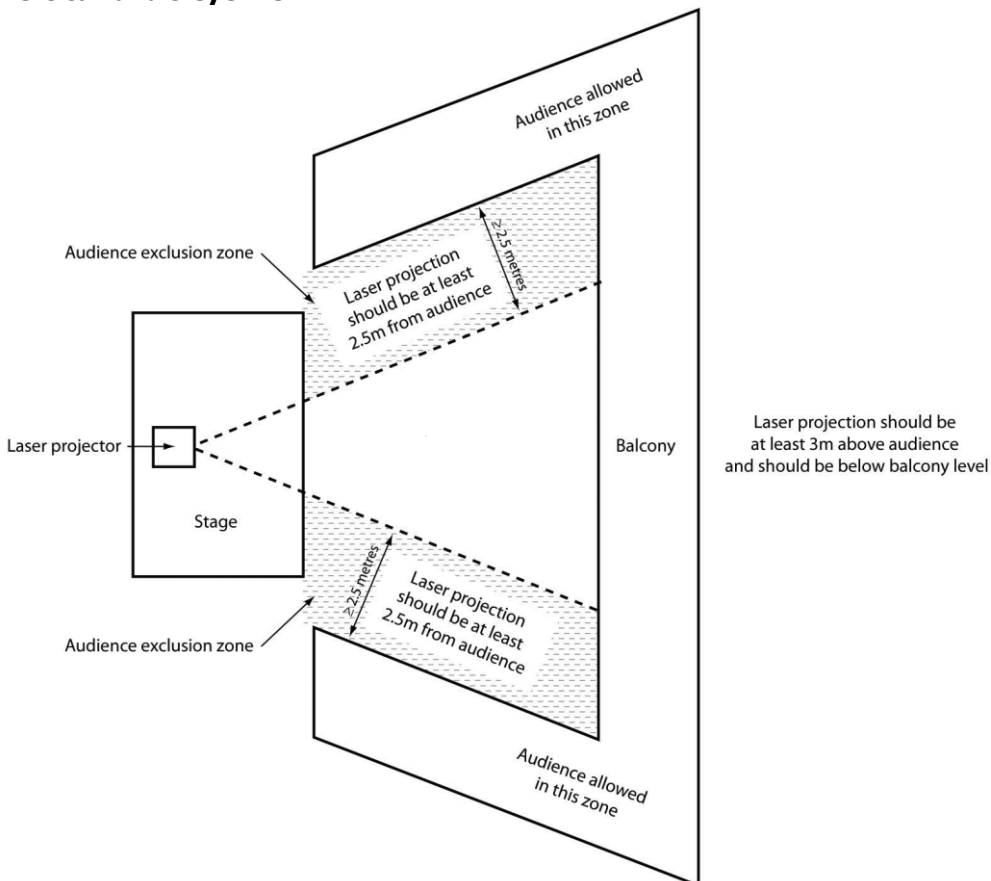
www.hse.gov.uk/pubns/priced/hsg95.pdf

This product contains no user-serviceable parts. Under no circumstances should any attempt be made by the user to dismantle or modify it in any way.

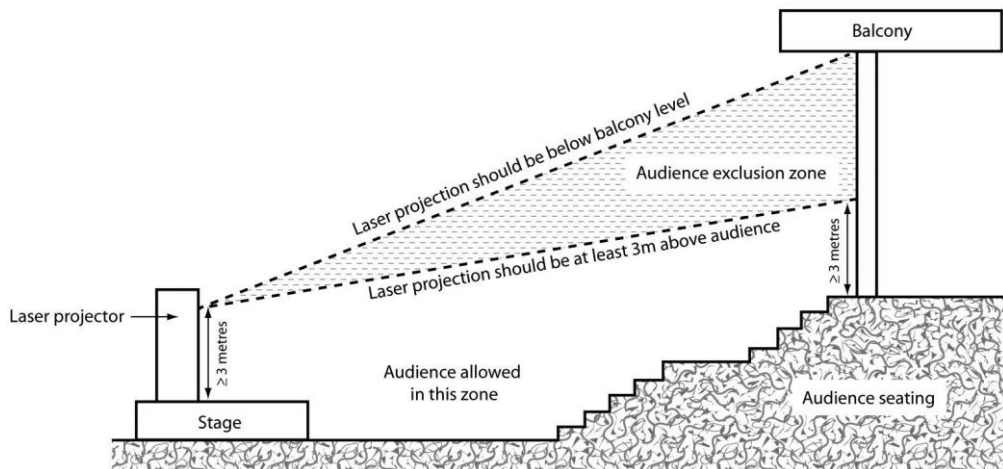
Installation instructions

This product must be securely mounted with adequate fixings to hold the weight. If mounted at height, use a safety wire attached to the eyebolt and a secondary fixing point. Position the aperture so that its emission is always directed away from people and objects that are able to reflect the emission towards people. In this regard the separation distances of 3 metres vertically and 2.5 metres horizontally, cited in HS(G)95 and shown below must be observed.

Vertical bird's eye view



Vertical cross sectional view



Unpacking

Please check the contents to ensure that the product has been received in good condition.

Laser x 1unit	I.R. remote control x 1pc
IEC Power Lead x 1pc	Safety Keys x 2pcs

If you find any accessory is missing or the product has arrived with any problems, please contact your retailer at once.

This product contains no user-serviceable parts so make no attempt to try to fix or modify this item yourself as this will invalidate the warranty. We recommend you keep the original package and proof of purchase for any possible replacement or returned demand.

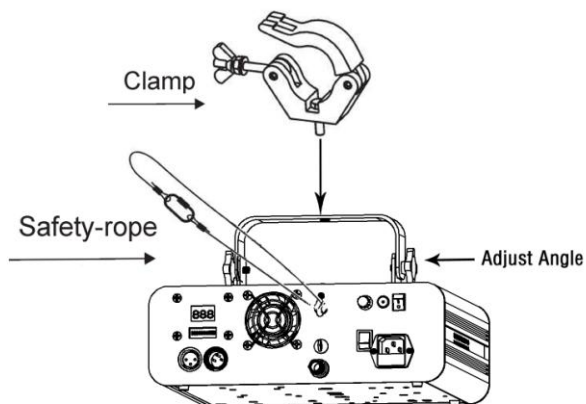
Setting up

1. Unpack the laser ensuring all packaging and tape is removed.
2. Always test the laser before fixing in a permanent location.
3. Connect the IEC mains plug and switch the rear power switch on.
4. Insert the safety key and turn to a quarter turn clockwise. At this point ensure that no one is exposed to laser radiation.
5. Select which mode you want to operate the laser in.
6. Leave the laser to run for 10 minutes before installing in its location.

Installation


When mounting at height, attach a safety wire to the eyebolt with an independent fixing.

Use the integral mounting bracket with a suitable clamp for stand or truss being fixed to. When mounting directly to ceiling surfaces, be sure to use adequate fixings for the supporting material.




Connecting to mains, earth wire (ground) must be connected.

Use the supplied IEC lead to connect to the main power supply as follows:

Wire	Connection	International symbol
Brown	Live	L
Blue	Neutral	N
Yellow /Cyan	Earth	

For your safety, please kindly pay attention to all of the warnings below:

- Always plug in the power plug last and disconnect from the mains when the device is not in use or before cleaning.
- Do not install and operate the device in rain or extreme heat, moisture or dusty environments.
- This device is for indoor use only and in a dry environment.
- Do not switch on immediately. Wait until the unit reaches room temperature.
- Do not shake the device and avoid brute force when installing or operating.
- Do not use the device during thunderstorms and please disconnect the power.
- Do not use solvents or aggressive detergent to clean the device. Use a soft and clean cloth.
- Do not modify the device or the connected power cord without authorisation.
- Do not stare into the aperture. This product emits hazardous levels of optical radiation and will cause serious injury to the eyes if viewed at close range.
- This product should be securely mounted so that its output emission is always directed away from people and at objects that are able to reflect emission towards people. In this regard, the separation distances cited in HS(G)95 should be observed.
- The symbol  determines the minimum distance from lighted objects. The minimum distance between light-output and the illuminated surface must be more than 0.5m.

Replacing the fuse

First disconnect from the mains power supply then remove the fuse holder above the IEC Socket to reveal the fuse. Replace with the correct fuse rating as stated on the product or in the user manual. Then lock the fuse holder cover back into place.

General maintenance

Be sure to power off the fixture before conducting maintenance.

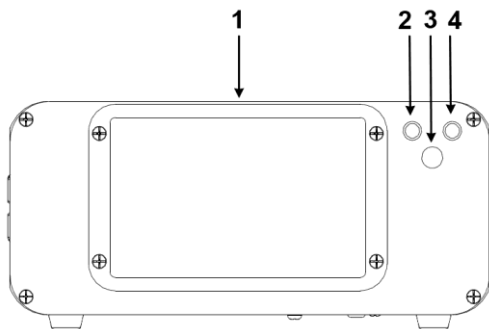
To maintain optimum performance and minimise wear, fixtures should be cleaned frequently.

Usage and environment are contributing factors in determining frequency. As a general rule, fixtures should be cleaned at least twice a month. Dust build-up reduces light output & performance as well as overheating. This can lead to reduced life and increased mechanical wear.

Unplug fixture from power. Use a vacuum or air compressor and a soft brush to remove dust collected on external vents and internal components. Clean all glass when fixture is cold with a mild solution to the cloth or tissue, and drag dirt and grime to the outside of the lens. Gently polish optical surfaces until they are free of haze and lint.

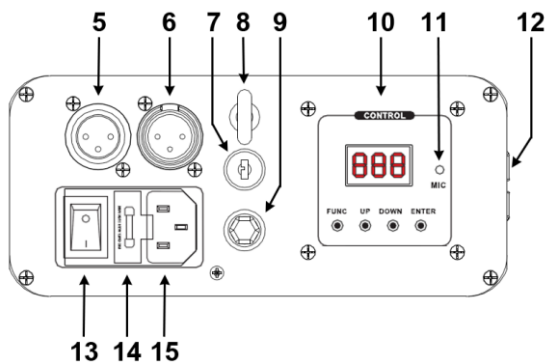
The cleaning of internal and external optical lenses and/or mirrors must be carried out periodically to optimise light output. Cleaning frequently depends on the environment in which the fixture operates: damp, smoky or particularly dirty surroundings can require cleaning fluid. Always dry the parts carefully. Clean the external optics at least every 20 days.

Front panel



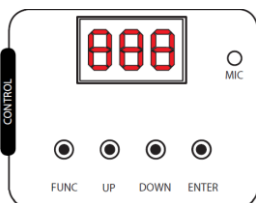
1. Laser aperture
2. Power LED
3. I.R. remote receiver
4. Music LED

Rear Panel



5. DMX input
6. DMX output
7. Safety lock
8. Safety eyebolt
9. Remote power connector
10. Control panel
11. Internal microphone
12. Cooling fan (do not cover)
13. Power switch
14. Mains fuse holder
15. IEC mains inlet

Control panel



The control panel and display allow the user to adjust settings as follows...

- Press FUNC to navigate through the options
- Press ENTER to select an option and adjust value using UP and DOWN buttons
- Press ENTER again to confirm setting

Control panel options

Display	Mode	Press ENTER for setting (press FUNC to exit)
Au1	Auto modes	Au1 (RBP), Au1 (blue), Au2 (red), Au3 (purple)
Sou	Sound activated modes	Sou (RBP), So1 (blue), So2 (red), So3 (purple)
5 6	Microphone sensitivity	5 0 (minimum) to 5 9 (maximum)
001	DMX start address	001 to 510
SLA	Slave mode	SLA = direct slave mode (mimics master unit)
		SL1 = 0.2s delay... SL5 = 1.0s delay
rE1	Remote mode	rE1 = handheld IR remote controlled
tSt	Laser test	tSt = produces purple cross for checking image

Stand-alone modes

THE FLY laser can operate in stand-alone mode one of 2 ways: Auto or Sound-activated

Auto mode

- Press the FUNC button and navigate until **Au1** is displayed
- Press ENTER and 4 options are available using the UP and DOWN buttons
 - **Au1** - Steps through all patterns with red, blue and purple colour
 - **Au1** - Steps through all patterns with blue colour only
 - **Au2** - Steps through all patterns with red colour only
 - **Au3** - Steps through all patterns with purple colour only
- Press ENTER to confirm the required mode

Sound-activated mode

- Press the FUNC button and navigate until **Sou** is displayed
- Press ENTER and 4 options are available using the UP and DOWN buttons
 - **Sou** - Sound-activated patterns with red, blue and purple colour
 - **So1** - Sound-activated patterns with blue colour only
 - **So2** - Sound-activated patterns with red colour only
 - **So3** - Sound-activated patterns with purple colour only
- Press ENTER to confirm the required mode

Microphone sensitivity

In sound-activated mode, the sensitivity of the internal microphone can be adjusted via the control panel. To set the sensitivity level, do the following...

- Press the FUNC button and navigate until **5 6** is displayed
- Press ENTER and 10 levels are available using the UP and DOWN buttons
 - **5 0** = lowest sensitivity, **5 9** = highest sensitivity
- Press ENTER to confirm the required sensitivity level

Master/Slave mode

One or more THE FLY lasers can be operated simultaneously in slave mode from a master unit operating in auto or sound-activated mode.

To set up a master/slave chain, connect a DMX lead from the DMX output of the master unit and connect to the DMX input of the slave unit. Further slave units can be connected from the first slave unit via DMX in the same manner.

To enable slave mode on the unit(s) to be controlled...

- Press the FUNC button until **SLA** is displayed.
- 6 options are available using the UP and DOWN buttons
 - **SLA** - Mimics the master unit exactly
 - **SL 1** - Mimics the master unit with a 0.2 second delay
 - **SL 2** - Mimics the master unit with a 0.4 second delay
 - **SL 3** - Mimics the master unit with a 0.6 second delay
 - **SL 4** - Mimics the master unit with a 0.8 second delay
 - **SL 5** - Mimics the master unit with a 1.0 second delay
- The slave mode is only active when a master signal is received via DMX

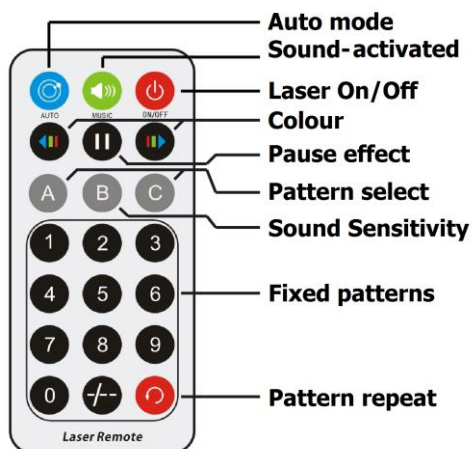
Remote control mode

THE FLY laser can be operated using the supplied handheld infra-red remote control. To use this remote control, firstly, remove the plastic tab at the bottom of the remote to activate the internal battery. If necessary, this can be replaced with a standard CR2025 button cell.

The Remote mode for the laser unit is set via the control panel as follows...

- Press the FUNC button until **rEi** is displayed and press ENTER
- Direct the handheld remote control toward the I.R receiver on the front panel
- See the remote control options below for operation

Remote handset



Note: When sound-activated mode is selected from the remote control... Press "Sound-activated" ... then "B" ... then a number from 1 to 9 to set microphone sensitivity.

Test mode

THE FLY laser can produce a fixed cross pattern for testing size and projection against a surface for adjustment and positioning. To enter the test mode, press the FUNC button until the display shows **t5t** and press ENTER.

DMX mode

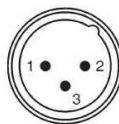
The fixture is equipped with 3-pin XLR connectors for DMX input and output. These connectors are wired in parallel. Only use a shielded twisted-pair cable designed for 3-pin XLR-plugs and connectors in order to connect the controller with the fixture or one fixture with another.

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

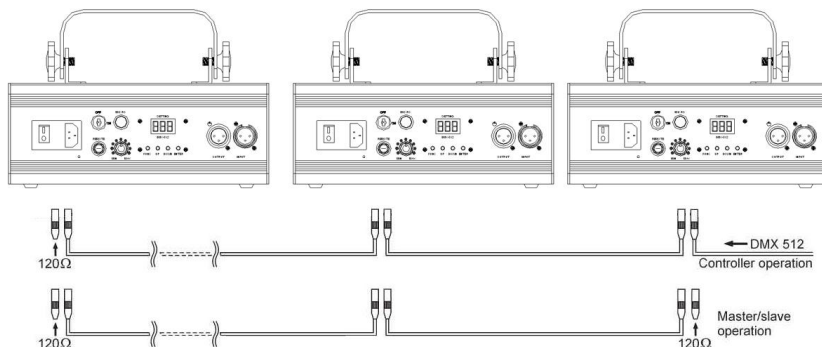


- 1 - Shield
- 2 - Signal (-)
- 3 - Signal (+)

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



Building a serial DMX-chain:



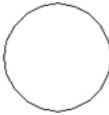









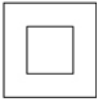














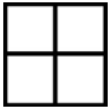






Caution: At the last fixture, the DMX-cable has to end with a terminator.

Solder a 120 Ohm resistor between PIN 2 (-) and PIN 3 (+) into a 3-pin XLR-plug and plug it in the DMX-output of the last fixture.

DMX parameters

Channel	Parameter	Value	Function
CH1	Mode	000-027	Laser off
		028-055	Auto mode RBP
		056-083	Auto mode blue
		084-111	Auto mode red
		112-139	Auto mode purple
		140-167	Sound activated mode RBP
		168-195	Sound activated mode blue
		196-223	Sound activated mode red
		224-251	Sound activated mode purple
		252-255	DMX mode
CH2	Pattern	000-255	32 Patterns as shown in PATTERN LIST
CH3	Colour	000-049	RBP
		050-074	Blue
		075-099	Red
		100-124	Purple
		125-149	Alternate blue/red
		150-174	Alternate red/purple
		175-199	Alternate blue/purple
		200-224	Alternate blue/red/purple
		225-255	Color rolling
CH4	Colour speed	000-255	Stop then slow to fast
CH5	Zoom	000-127	100%-5% Size
		128-169	Zooming in
		170-209	Zooming out
		210-255	Zooming in & out
CH6	X-axis	000-127	128 different fixed position on X
		128-191	Clockwise rotation
		128-255	Anticlockwise rotation
CH7	Y-axis	000-127	128 different fixed position on Y
		128-191	Clockwise rotation
		128-255	Anticlockwise rotation
CH8	Y-axis roll	000-127	0 -359 degree fixed Y axis rolled
		128-191	Clockwise rolling
		192-255	Anticlockwise rolling
CH9	X-axis roll	000-127	0 -359 degree fixed X axis rolled
		128-191	Clockwise rolling
		192-255	Anticlockwise rolling
CH10	Z-axis	000-127	0 -359 degree fixed Z-axis rotation
		128-191	Clockwise rotation
		128-255	Anticlockwise rotation

Patterns

Value	Pattern	Value	Pattern	Value	Pattern	Value	Pattern
000-007		064-071		128-135		192-199	
008-015		072-079		136-143		200-207	
016-023		080-087		144-151		208-215	
024-031		088-095		152-159		216-223	
032-039		096-103		160-167		224-131	
040-047		104-111		168-175		232-239	
048-055		112-119		176-183		240-247	
056-063		120-127		184-191		248-255	

Specifications

Power supply	100-240Vac, 50/60Hz (IEC)
Power consumption	15W
Fuse rating	T1A 250V (20mm glass)
Red laser power	100mW 650nm
Blue laser power	120mW 450nm
Laser class	3B
Operating temperature range	10 - 40°C
DMX connection	3-pin XLR
DMX channels	10
Remote control battery	CR2025 button cell
Dimensions	180 x 155 x 220mm
Weight	1.66kg
Laser & LED safety standard	BSEN60825-1 2007

Troubleshooting

No power or output	Check that mains power is connected correctly
	Check that power indicator is on and mains fuse is OK
	If fuse continually blows, refer to qualified service personnel
Power OK but no output	Check that laser aperture is not covered
	Ensure safety key switch is set to "on"
	Check remote power connector if in use
	If ambient temperature is low, wait up to 30 mins for warm-up
	Check if set to sound-activated without any sound to trigger
Laser output very dim	Check if in DMX mode without DMX signal
	If ambient temperature is low, wait up to 30 mins for warm-up
	If necessary, carefully clean the scanner mirror with alcohol
	If necessary, carefully clean the aperture glass with alcohol
	Check DMX settings – reduce strobe effects if necessary
Laser on but no movement	Reduce distance to projected surface
	Check if set to sound-activated without any sound to trigger
	Check if in DMX mode without motion command from DMX
	Adjust DMX controls manually to check motion commands
No response to DMX	Check DMX start address is set correctly
	Check DMX leads, connections and polarity are OK
	Check DMX leads are not running close to high voltage cables
	Test DMX with alternative controller

Important: This product conformed to Laser & LED Safety standard BSEN60825-1 2007 incorporating corrigendum 2008



Disposal: The "Crossed Wheelie Bin" symbol on the product means that the product is classed as Electrical or Electronic equipment and should not be disposed with other household or commercial waste at the end of its useful life. The goods must be disposed of according to your local council guidelines.

*Errors and omissions excepted.
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