THUNDERBOLTG2

User's instruction manual

This manual contains important information about the safe installation and use of this product
Please read this instruction manual carefully before installing or operating
Please keep these instructions in a safe place for future reference

Introduction

Thanks for choosing our laser device, believing this brand new product will bring you unlimited marvel and happiness. Before operating this device, please read this manual thoroughly, and retain it for future reference.

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

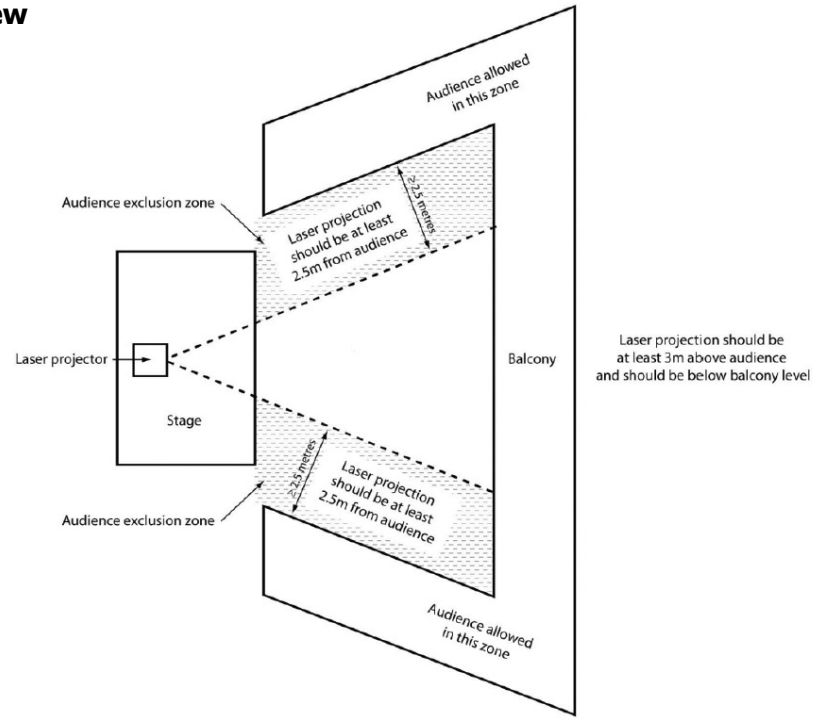
This product is a Class 3B laser and should only be installed and used by personal who are trained in the management of laser radiation and are able to operate in accordance within the guidance given by the Health and Safety Executive (HSE) in HS(G)95: "The Radiation Safety of Lasers used for Display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

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.

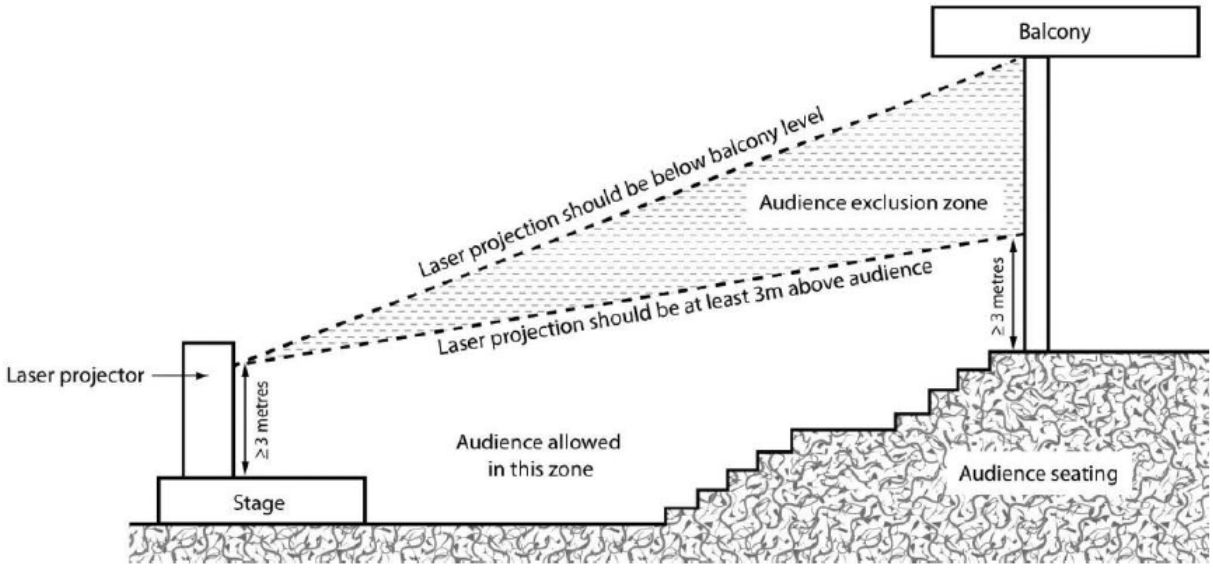
Installation instructions

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 1 unit	I.R. remote control x1 pc
IEC Power Lead x 1pc	Safety Keys x2pcs

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.

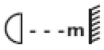
▪ Do not use the device during thunderstorms and please disconnect the power.

▪ 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.

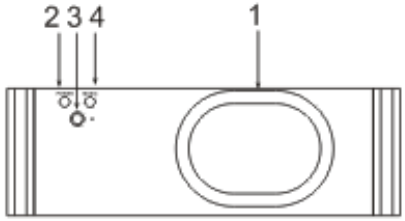
To maintain optimum performance and minimize wear, fixtures should be cleaned frequently.

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.

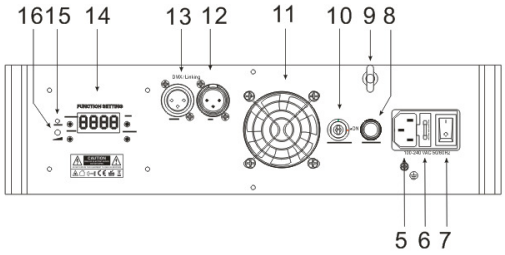
The cleaning of internal and external optical lenses and/or mirrors must be carried out periodically to optimize light output. Cleaning frequently depends on the environment in which the fixture operates: damp, smoky or particularly dirty surroundings can require cleaning fluid. Always dry the parts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

Front panel



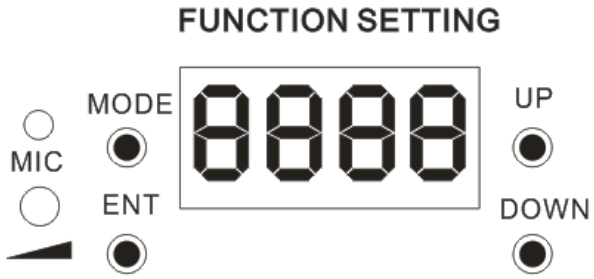
1. Laser aperture
2. Power LED
3. I.R. remote receiver
4. Music LED

Rear Panel



5. IEC mains inlet
6. Mains fuse holder
7. Power switch
8. Remote power connector
9. Safety eyebolt
10. Safety lock
11. Cool fan
12. DMX input
13. DMX output
14 Contorl panel
15. Internal microphone
16. Sensitivity

Control panel



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

Press MODE 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 ENT for setting(press MODE to exit)**
Auto	Auto modes	
Sound	Sound activated modes	
d001	DMX start address	
SLAU	Slave mode	

Stand-alone modes

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

Auto Show / Stand Alone mode (Auto)

1 Press the function button (Func) to enter Mode options
2 Press the function button until the LED panel shows Auto
3 Press the Enter button to confirm the setting The laser will now be working in Auto Show / Stand Alone mode

Sound Activated / Sound-to-Light / Stand Alone mode (Sound)

1 Press the function button (MODE) to enter Mode options
2 Press the function button until the LED panel shows Sound
3 Press the Enter button to confirm the setting The laser will now be working in Sound Activated

DMX mode

1 Press the function button (mode) to enter Mode options
2 Press the function button until the LED panel shows d001
3 Press the Enter button to confirm the setting or change the address using the Up and Down buttons 4 Press the Ent button to confirm the setting The laser will now be working in DMX mod

DMX mode / DMX address setting

1 Ensure the unit is in DMX mode (see above)
2 Press the Up or Down buttons to adjust the DMX address
3 Press the Enter button to confirm the setting

If multiple connected units are to be controlled in exactly the same way, set all units to the same starting address (e.g. 001). If individual control of multiple connected units is required, each unit must have its own starting address. This address must be at least 10 channels apart e.g. set the first unit to 001 and the second unit to 011, the third unit to 021 and so on. The DMX controller will now control all the connected units separately.

Master/Slave mode

1 Press the function button (MODE) to enter Mode options
2 Press the function button until the LED panel shows SLA
3 Press the Enter button to confirm the setting

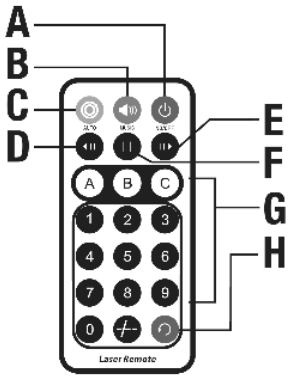
The laser will now be working in Slave mode

To create a Master/Slave chain of units, one laser has to be designated as the Master unit whilst the remaining units have to be set as Slave units. To set the Master unit, choose one laser and set it to your desired mode (Auto mode, Sound-to-Light mode, etc). Next connect all other units via DMX cables. To achieve this, join the DMX output of one unit to the next unit's DMX input until all lasers are connected. Set all the Slave units to Slave mode (see above). The Slave lasers will now duplicate the actions of the Master unit.

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…

Remote control mode

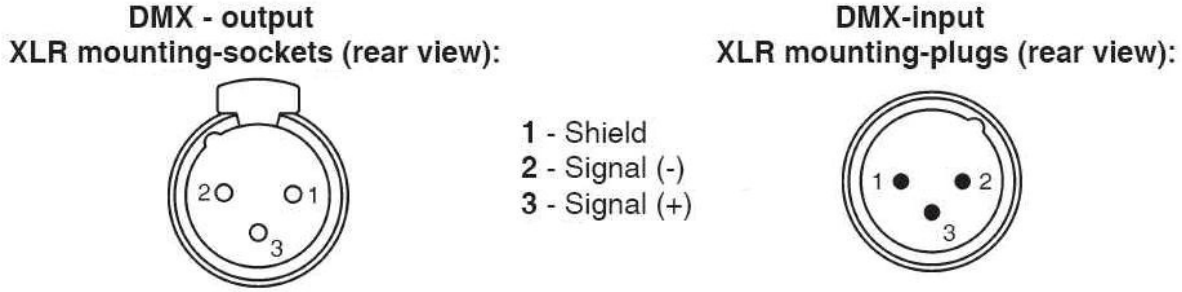


The laser can be operated using the supplied handheld infra-red remote control.
To use this remote control, firstly, remove the plastic tab at the bottom of the remote to activate the internal battery. If necessary, this can be replaced with a standard CR2025 button cell.

A On/Off button	Press button to turn laser On or Off
B Music mode	Press button to activate Sound-to-Light mode
C Auto mode	Press button to activate Auto mode
D/E Color buttons	Press buttons to cycle through laser's available colors
F Pause button	Press button to pause the laser effect
G Pattern buttons	Press the A and C buttons to change the laser patterns Use the 0-9 digit buttons to choose any pattern from 1 to 32
H Pattern repeat	Press button to cycle repeat the last and current patterns

DMX MODE

The laser 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.



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

CH 1 CONTROL MODE	000-063	BLACK OUT
	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
CH 8 UP DOWN MOVE	000-127	Up Down position, total 128 position
	128-191	Clockwise Move Mode
	128-255	Anticlockwise Move Mode

Specifications

Model	THUNDERBOLTG2
Green DPSS 532nm	50mW
Laser level	Class 3B Laser
Dimensions	225x185x80mm
Weight	2 KG
Power supply	100-240Vac, 50/60Hz(IEC)
consumption	20W
Fuse rating	250V 1 A Slow Blow (20mm Glass)
Operating temperature	10-40℃
Channel Range	1-9
Remote control battery	CR2025 button cell

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.