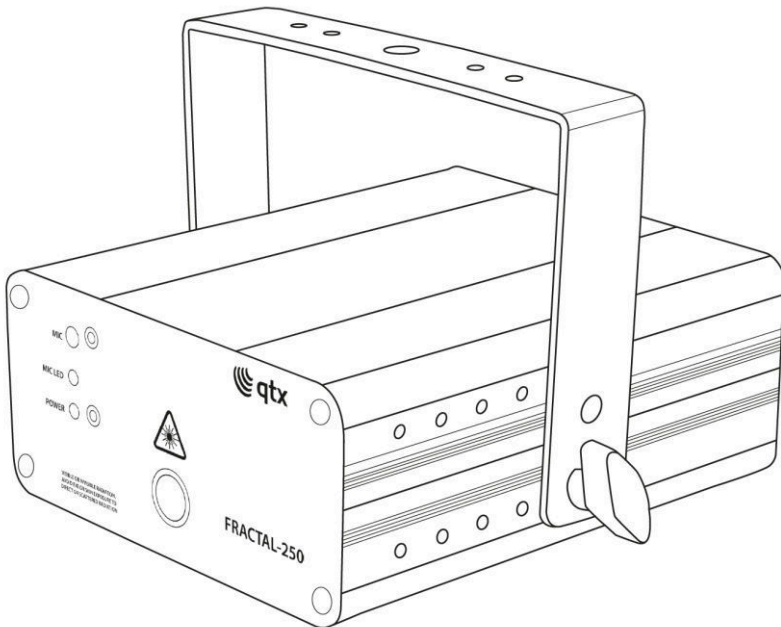


# **FRACTAL-250**

## **RGB PATTERN LASER**

Order ref: 152.764UK

User Manual



**IMPORTANT SAFETY NOTICE**  
Please Read this manual before operating



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


## Introduction

Thank you for choosing THE FRACTAL-250 laser as part of your effects lighting equipment. This product has been designed to project multi-point and pinwheel geometric patterns in 3 colours across a wide area. Please read and retain this manual to achieve the best results from your purchase and avoid damage through misuse.



# 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](http://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 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.

## Unpacking

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

Fractal-250 laser  
Mounting bracket and screws  
IEC power lead(s)  
Safety lock keys

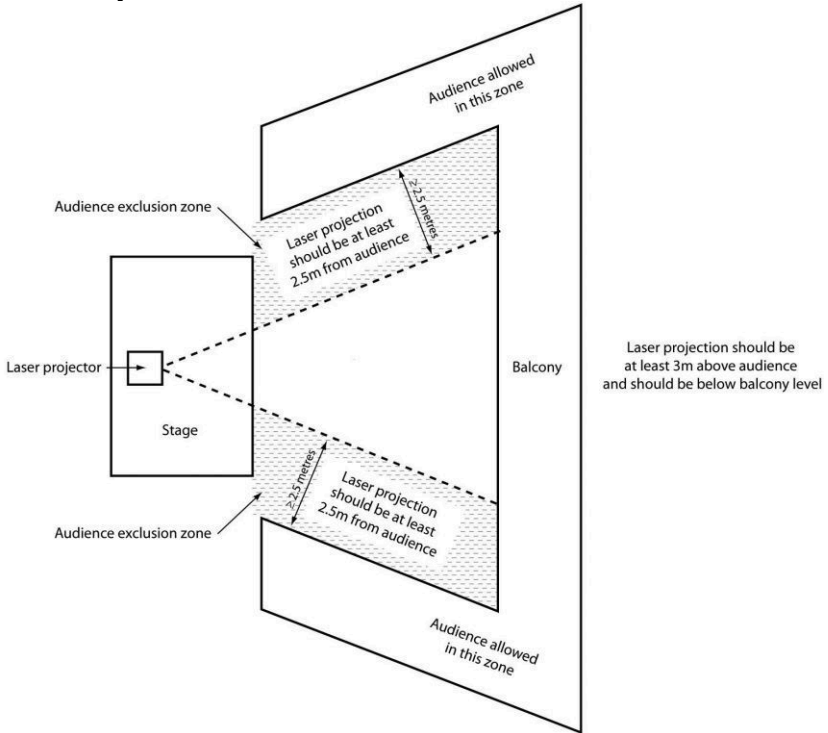
If you find any accessory is missing or the product has arrived with any problems, please contact your retailer at once.

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.

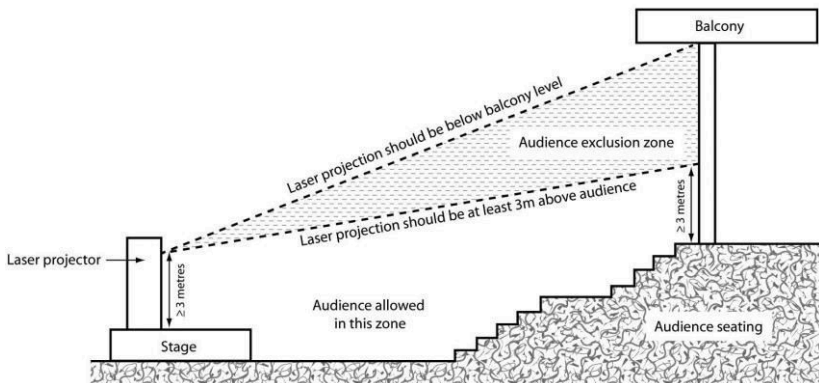
## Setting up

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.

## Vertical bird's eye view




## Vertical cross-sectional view




## 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 IEC 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 part of 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

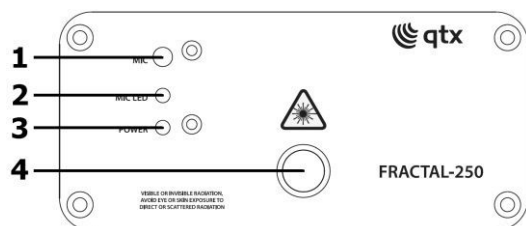
Be sure to power off the fixture before conducting maintenance.  
To maintain optimum performance and minimise wear, fixtures should be cleaned frequently.

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.

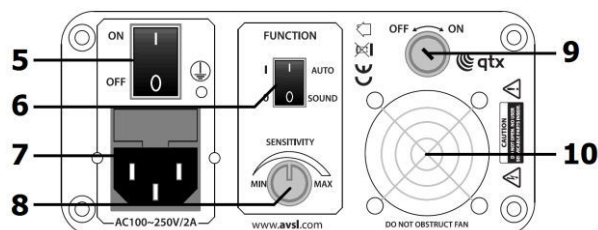
Keep the laser aperture clear of obstructions and to not cover the cooling fan vent or other parts of the housing.

## Front panel



1. Sound activation microphone
2. Microphone signal LED
3. Power LED
4. Laser aperture

## Rear Panel



5. Power on/off switch
6. Auto/sound active switch
7. IEC mains inlet & fuse holder
8. Mic. sensitivity control
9. Safety lock
10. Cooling fan vent

## Positioning

Following the aforementioned safety guidelines, select the preferred projection area.

The Fractal-250 laser uses red, green and blue colour lasers to project multi-point and spiral images, which may be best displayed on a light-coloured wall or surface. Using fog or haze machines can also help to develop beam lines between the laser and projection area.

## Operation

Connect power to the IEC mains inlet (7) using the power lead provided or equivalent.

Ensure that the aperture (4) is directed away from any line of sight and switch on power (5)

Turn the key switch on the safety lock (9) to the "on" position.

The Power LED on the front panel will illuminate.

In AUTO mode, the Fractal-250 laser produces all the pre-programmed patterns in sequence.

Switching to SOUND mode (6) makes the sequence governed by the front microphone (1)

The sensitivity of this microphone is controlled by the Sensitivity dial on the rear panel (8)

To check if the microphone sensitivity is adjusted correctly, check the Mic. LED located on the front panel (2) to see how it reacts to sound. This represents the sound trigger that controls the effect sequence.

When not in use, power down the Fractal-250 laser and remove the IEC if not used for long periods. For security, turn the key in the safety lock to the "off" position and remove the key to avoid use by unauthorized persons.

## Specifications

Power supply	100-250Vac, 50/60Hz (IEC)
Fuse rating	2A
Laser class	3R
Red laser power	180mW (650nm)
Green laser power	60mW (532nm)
Blue laser power	100mW (450nm)
Patterns	8 different geometric shapes
Dimensions	190 x 185 x 71mm
Weight	990g
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"
	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	If ambient temperature is low, wait up to 30 mins for warm-up
	If necessary, carefully clean the scanner mirror with alcohol
	Reduce distance to projected surface
Laser on but no movement	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

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



This 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.