

# Laser Product Safety Test Report

Product Classification Assessment using EN 60825-1:2014  
(Safety of laser products Part 1: Equipment classification and requirements)

## 1. Product Identification and Supplier

Product Name	LaserCube LC-1000
Identification	Serial Number 313010340199
Description	Laser Projector
Country of Origin	China
Manufacturer / Supplier	Magnum Lighting Technology Co., Ltd 12/F SanToi Building, 137-139 Connaught Road, Central Hong Kong
Contact Details	support@laseros.com
Contact Name	Guofeng Yu



## 2. Overall Assessment Classification

**Class 4** - The accessible emission created by the device is Class 4. Laser products in this class emit light for which intrabeam (direct) viewing and skin exposure is hazardous, and for which the viewing of diffuse reflections may be hazardous. Specific engineering features must be included in such products, as should appropriate labeling and information to the user.

## 3. IEC 60825-1:2014 Compliance Status

**PASS** – If the device is supplied with the appropriate warning labelling and user information is provided as indicated, the device meets the compliancy tests prescribed in IEC 60825-1:2014.

#### 4. Device Description and Laser Source

The device comprises of a sealed enclosed through which projected beams are only accessible from the small output aperture. The device is intended to create lighting effects and graphics/text images. The laser projection device houses three solid-state semiconductor laser diodes (red, green & blue), combined into a single output beam, that is deflected through approximately 30 degrees in the x and y planes, by galvanometers, exiting through a glass output aperture. The device may be powered from an external source, or its own internal rechargeable battery. Control of the projector's output is achieved through the connection of a compatible external control device such a mobile phone, tablet, of computer, to the USB port.

#### 5. Testing

The most hazardous emission is created when all three output beams are stationary and outputting at maximum power. For the purposes of checking the emitted power levels against the manufacturer's specifications, and the accessible emission, the rationale for testing followed the process described in the EN 60825-1:2014 standard using a calibrated spectroradiometer, thermal laser power meter.

Accessible Emission < 1W CW

1. Tests were carried out at LVR's testing facility, under controlled conditions.
2. All measurements were undertaken within a temperature range of 18C-24C, with a relative humidity between 30%-70%, monitored by a Testo Temperature / Humidity Logger / Alarm. (21C 52.3% Testo logged)

#### 6. Required Engineering Controls

Para 6.2	Protective housing	PRESENT
Para 6.3	Access panels / safety Interlocks	N/A <sup>1</sup>
Para 6.4	Remote interlock connector	PRESENT
Para 6.5	Manual reset	PRESENT <sup>2</sup>
Para 6.6	Key control	PRESENT - removable physical key
Para 6.7	Laser radiation emission warning	PRESENT - 2x white LEDs at rear of device
Para 6.8	Beam stop or attenuator	PRESENT - electronic signal
Para 6.9	Controls in safe location	PRESENT
Para 6.10	Viewing optics	N/A
Para 6.11	Scanning safeguard	N/A
Para 6.12	Safeguard for Class 1C products	N/A
Para 6.13	"Walk-in" access	N/A
Para 6.14	Environmental conditions	NOT TESTED <sup>3</sup> – temperature, relative humidity
Para 6.15	Protection against other hazards	PRESENT
Para 6.16	Power limiting circuit	N/A

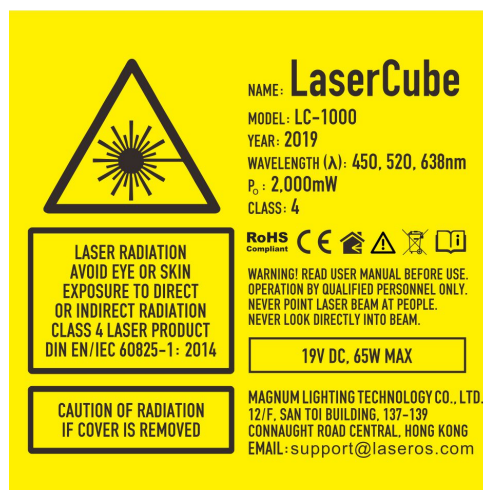
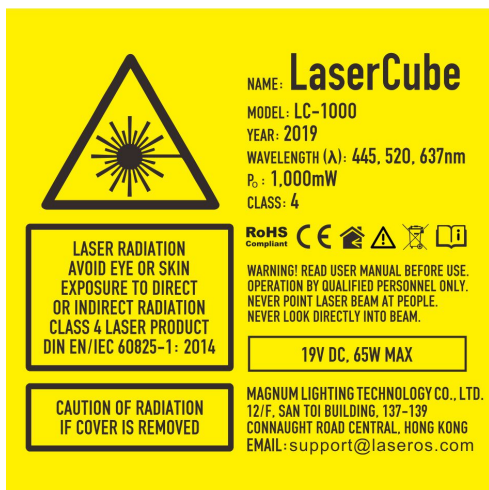
<sup>1</sup> Sealed enclosure. No user serviceable parts inside the protective housing. Tools required to remove the protective housing.

<sup>2</sup> The key-switch must be turned to the off position, then reenabled, following power up, or an interlock interruption.

<sup>3</sup> Device tested at normal room temperature in stable conditions

#### 7. Required Labelling

Advised that the following labels will be supplied with the product.

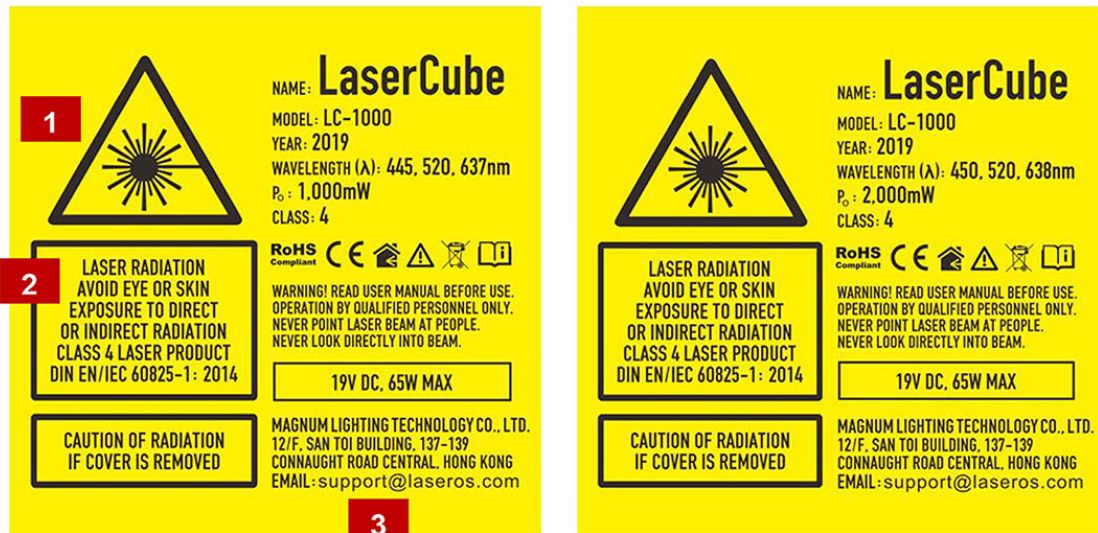


**LAZAR APERTURE**

## 8. Required Information

1. Copy of the 45-page user manual received (LASERCUBE Manual-EU-20191129.pdf).
2. Laser device specifications, user warnings, and instruction on assembly and use included.
3. Reproductions of all the labels are provided, detailing their position on the device and the output aperture position. An excerpt is included below:

## 4. Product Labeling and Placement



Label Placement

1. Hazard Warning Symbol
2. Explanatory
3. Manufacturer's Identification
4. Laser Aperture

Protective Housing Label  
(Appears on underside of housing)



NOTE: The manufacture must continue to ensure that laser classification of this product is present on any promotional material, such as brochures, websites etc., and that distributors are advised of this and the appropriate warnings for safe use.