



# Tiny Acculaser FX



User manual

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## 1. Safety instructions



- This device is suitable for indoor use only.
- All modifications to the device will void the warranty.
- Repairs are to carry out by skilled personnel only.
- Use only fuses of the same type and original parts as spare parts.
- Protect the unit from rain and humidity to avoid fire and electric shocks.
- Make sure to unplug the power supply before opening the housing.

### 1.1. FOR SAFE AND EFFICIENT OPERATION

#### **Be careful with heat and extreme temperature**

Avoid exposing it to direct rays of the sun or near a heating appliance.

Not put it in a temperature bellow 32°F /0°C, or exceeding 104°F /40°C.

#### **Keep away from humidity, water and dust**

Do not place the set in a location with high humidity or lots of dust.

Containers with water should not be placed on the set.

#### **Keep away from sources of hum and noise**

Such as transformer motor, tuner, TV set and amplifier.

#### **To avoid placing on un-stable location**

Select a level and stable location to avoid vibration.

#### **Do not use chemicals or volatile liquids for cleaning**

Use a clean dry cloth to wipe off the dust, or a wet soft cloth for stubborn dirt.

#### **If out of work, contact sales agency immediately**

Any troubles arose, remove the power plug soon, and contact with an engineer for repairing, do not open the cabinet by yourself, it might result a danger of electric shock.

#### **Take care with the power cable**

Never pull the power cable to remove the plug from the receptacle, be sure to hold the plug. When not using the device for an extended period of time, be sure to disconnect the plug from the receptacle.

**Important:** Damages caused by the disregard of this user manual are not subject to warranty. The dealer will not accept liability for any resulting defects or problems. Make sure the electrical connection is carried out by qualified personnel. All electrical and mechanical connections have to be carried out according to the European safety standards.

## 2. Warning!

Lasers can be hazardous and have unique safety considerations. Permanent eye injury and blindness is possible if lasers are used incorrectly. Pay close attention to each safety **REMARK** and **WARNING** statement in the user manual. Read all instructions carefully **BEFORE** operating this device.



**Attention!** Indicates a skill or other useful information for special situation



**Important!** Indicates important information, to protect people from laser incident or damage



**Caution!** Prevent damage or injury from incorrect operation.



**Laser!** Laser safety warning labels.



**Recycle** To protect the environment, recycle packing material wherever possible.



**Indoor** The projector is for indoor use only, IP20. Use only in dry locations. Keep this device away from rain and moisture, excessive heat, humidity and dust. Do not allow contact with water or any other fluids, or metallic objects.



**Waste** Don't throw this product away just as general trash, please dispose of this product following the abandon electronic product regulation in your country.



**Location** The projector must be installed in a location with adequate ventilation, at least 50cm (20inches) from adjacent surfaces. Be sure that no ventilation slots are blocked.

### 2.1. Laser Safety Warnings



Potential laser injury hazard exists with this product! Read these Instructions carefully, which include important information about installation, safe use and service?



**Caution** Avoid direct eye contact with laser light. Never intentionally expose your eyes or others to direct laser radiation.



**Caution** This laser product can potentially cause instant eye injury or blindness if laser light directly strikes the eyes.

**Caution!**

It is illegal and dangerous to shine this laser into audience areas, where the audience or other personnel could get direct laser beams or bright reflections into their eyes.

**Caution!**

It is a US Federal offense to shine any laser at aircraft

**Caution**

There are no user serviceable parts inside the unit. Do not open the housing or attempt any repairs yourself. In the unlikely event your unit may require service, please contact the dealer nearest to you.

**Caution**

Use of controls or adjustments or performance of procedures other than those specified herein may result in hazardous radiation exposure.

## **2.2. NON-INTERLOCKED HOUSING WARNING**

This unit contains high power laser devices internally. Do not open the laser housing, due to potential exposure to unsafe levels of laser radiation. The laser power levels accessible if the unit is opened can cause instant blindness, skin burns and fires.

## **2.3. LASER SAFETY AND OPERATING INSTRUCTIONS**

**STOP AND READ ALL LASER SAFETY DATA**

Laser light is different from any other light source which you may be familiar. The light from this product can potentially cause eyes injury if not set up and used properly.



Laser light is thousands of times more concentrated than light from any other kind of light source. This concentration of light power can cause instant eye injuries, primarily by burning the retina (the light sensitive portion at the back of the eye). Even if you cannot feel "heat" from a laser beam, it can still potentially injure or blind you or your audience. Even very small amounts of laser light are potentially hazardous even at long distances. Laser eye injuries can happen quicker than you can blink.



It is incorrect to think that because these laser entertainment products split the laser into hundreds of beams or laser beam is scanned out in high speed, that an individual laser beam is safe for eye exposure. This laser product uses dozens of milliwatts of laser power (Class 3B levels internally). Many of the individual beams are potentially hazardous to the eyes.

It is also incorrect to assume that because the laser light is moving, it is safe. This is not true. Nor, do the laser beams always move. Since eye injuries can occur instantly, it is critical to prevent the possibility of any direct eye exposure. In the laser safety regulation, it is not legal to aim Class 3B lasers in areas which people can get exposed. This is true even if it is aimed below people's faces, such as on a dance floor.

- Do not operate laser without first reading and understanding all safety and technical data in this manual.
- Always set up and install all laser effects so that all lasers light is at least 3 meters (9.8 feet) above the floor on which people can stand. See "Proper Laser Set-up & Usage" section later in this manual.
- After set up, and prior to public use test laser to ensure proper function. Do not use if any defect is detected.
- Do not use if laser emits only one or two laser beams rather than dozens/hundreds, as this could indicate damage to the diffraction grating optic, and could allow emission of higher laser levels.
- Do not point lasers at people or animals.
- Never look into the laser aperture or laser beams.
- Do not point lasers in areas in which people can potentially get exposed. Such as uncontrolled balconies, etc.
- Do not point lasers at highly reflective surfaces such as windows, mirrors and shiny metal. Even laser reflections can be hazardous
- Never point a laser at aircraft, this is a federal offense.
- Never point un-terminated laser beams into the sky.
- Do not expose the output optic (aperture) to cleaning chemicals.
- Do not use laser if the laser appears to be emitting only one or two beams.
- Do not use laser if housing is damaged or open, or if optics appear damaged in any way.
- Never open the laser housing. The high laser power levels inside of the protective housing can start fires, burn skin and will cause instant eye injury.
- Never leave this device running unattended.
- The operation of a Class 3B laser show laser is only allowed if the show is controlled by a skilled and well-trained operator familiar with the data included in this manual.
- The legal requirements for using laser entertainment products vary from country to country. The user is responsible for the legal requirements at the location/country of use.
- Always use appropriate lighting safety cables when hanging lights and effects overhead.

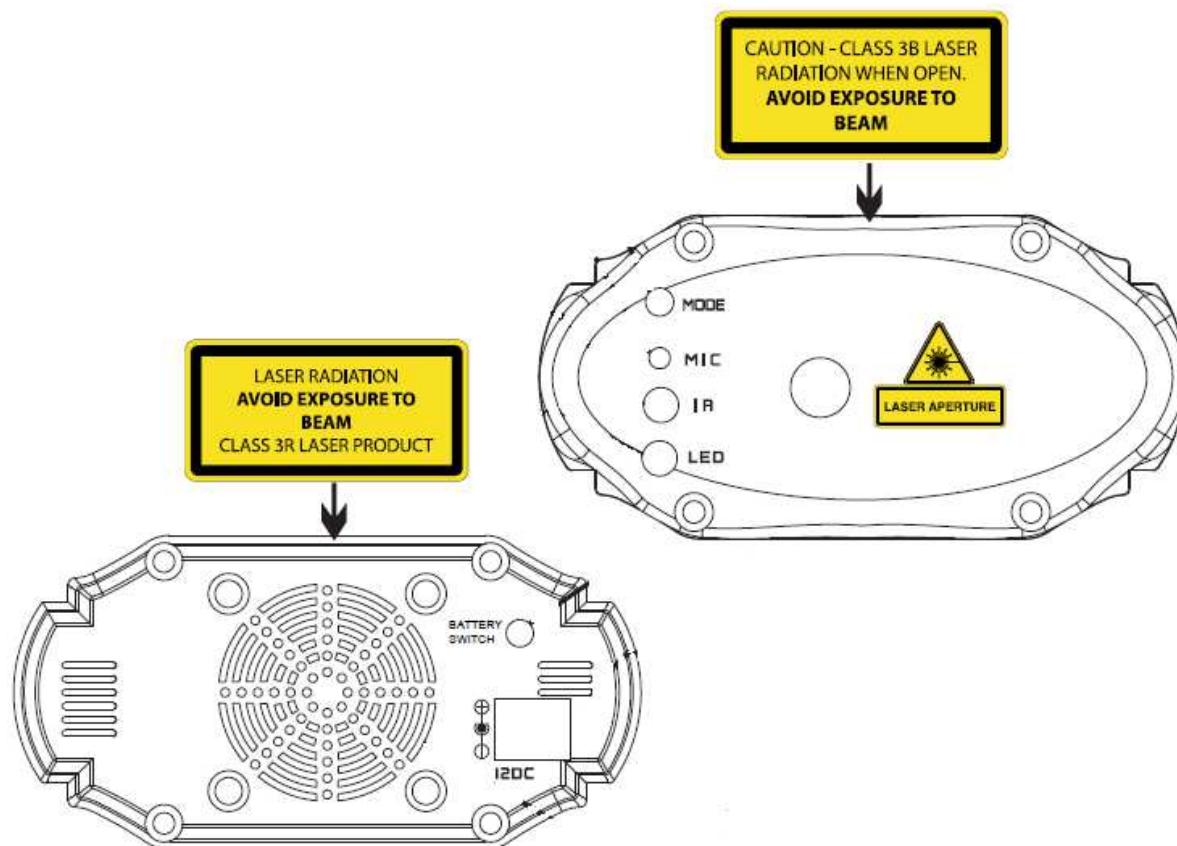
## **2.4. LASER EXPOSURE WARNING**



### **LASER LIGHT AVOID DIRECT EYE EXPOSURE**

Further guidelines and safety programs for safe use of lasers can be found in the ANSI Z136.1 Standard "For Safe Use of Lasers", available from "[www.laserinstitute.org](http://www.laserinstitute.org)". Many local governments, corporations, agencies, military and others, require all lasers to be used under the guidelines of ANSI Z136.1. Laser Display guidance can be obtained via the International Laser Display Association, [www.laserist.org](http://www.laserist.org).

### 3. LASER SAFETY LABEL REPRODUCTIONS



#### 3.1. LASER EMISSION DATA

Laser Classification	3R
Red Laser Medium	Type: LD GaAlAs, 650nm
Green Laser Medium	Type: DPSS Nd:YVO4, 532nm
Blue Laser Medium	Type: LD InGaN, 450nm
Beam diameter	<5mm at aperture
Pulse Data	All Pulse < 4Hz (>0,25s)
Divergence (each beam)	< 2mrad
Divergence (total light)	< 160°

#### 3.1. LASER COMPLIANCE STATEMENT

This laser product complies with EN/IEC 60825-1 Ed 2, 2007-03.

## 4. GENERAL SAFETY INSTRUCTIONS

Every person involved with installation and maintenance of this device has to

- Be qualified.
- Follow the instructions of this manual.

**CAUTION! Be careful with your operations. With a high voltage you can suffer a dangerous electric shock when touching the wires!**

This device has left out premises in absolutely perfect condition. In order to maintain this condition and to ensure a safe operation, it is necessary for the user to follow the safety instructions and warning notes written in this manual.



**Important!**

The manufacturer will not accept liability for any resulting damage caused by the non-observance of this manual or any unauthorized modification to the device.

- Please consider that damages caused by manual modifications to the device are not subject to warranty.
- Never let the power-cord come into contact with other cables! Handle the power-cord and all connections with the mains with particular caution!
- Make sure that the available voltage is not higher than stated on the rear panel.
- Always plug in the power plug least. Make sure that the power-switch is set to off-position before you connect the device to the mains. The power-plug has to be accessed after installing the device.
- Make sure that the power-cord is never crimped or damaged by sharp edges. Check the device and the power-cord from time to time.
- Always disconnect from the mains, when the device is not in use or before cleaning it. Only handle the power-cord by the plug. Never pull out the plug by tugging the power-cord.
- It is essential to connect the yellow/green conductor to earth.
- The electric connection, repairs and servicing must be carried out by a qualified employee.
- Do not switch the fixture on and off in short intervals as this would reduce the laser diode life.
- For replacement, please use fuses of same type and rating only.
- If the device has been exposed to drastic temperature fluctuation, do not switch it on immediately. The arising condensation water might damage your device. Leave the device switched off until it has reached room temperature.
- Do not shake the device. Avoid brute force when installing or operating the device.
- When choosing the installation-spot, please make sure that the device is not exposed to extreme heat, moisture or dust. There should not be any cables lying around. You endanger your own and the safety of others!
- The minimum distance between the fixture and surrounding walls must be more than 50cm.
- Always fix the fixture with an appropriate safety-rope. Fix the safety-rope at the safety-rope only.
- The ambient temperature must be between 10°C to 40°C.



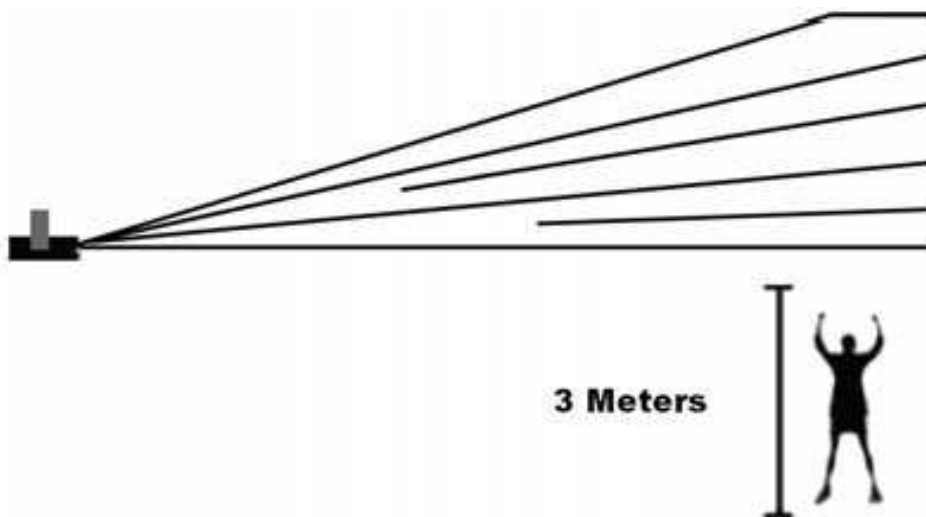
- Please use the original packaging if the device is to be transported.
- Please consider that unauthorized modifications on the device are forbidden due to safety reasons!

**CAUTION!** Operate the device only after having familiarized with its functions. Do not permit operation by persons not qualified for operating the device. Most damages are the result of unprofessional operation

**CAUTION!** If this device will be operated in any way different to the one described in this manual, the product may suffer damages and the warranty word.

## 5. 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.



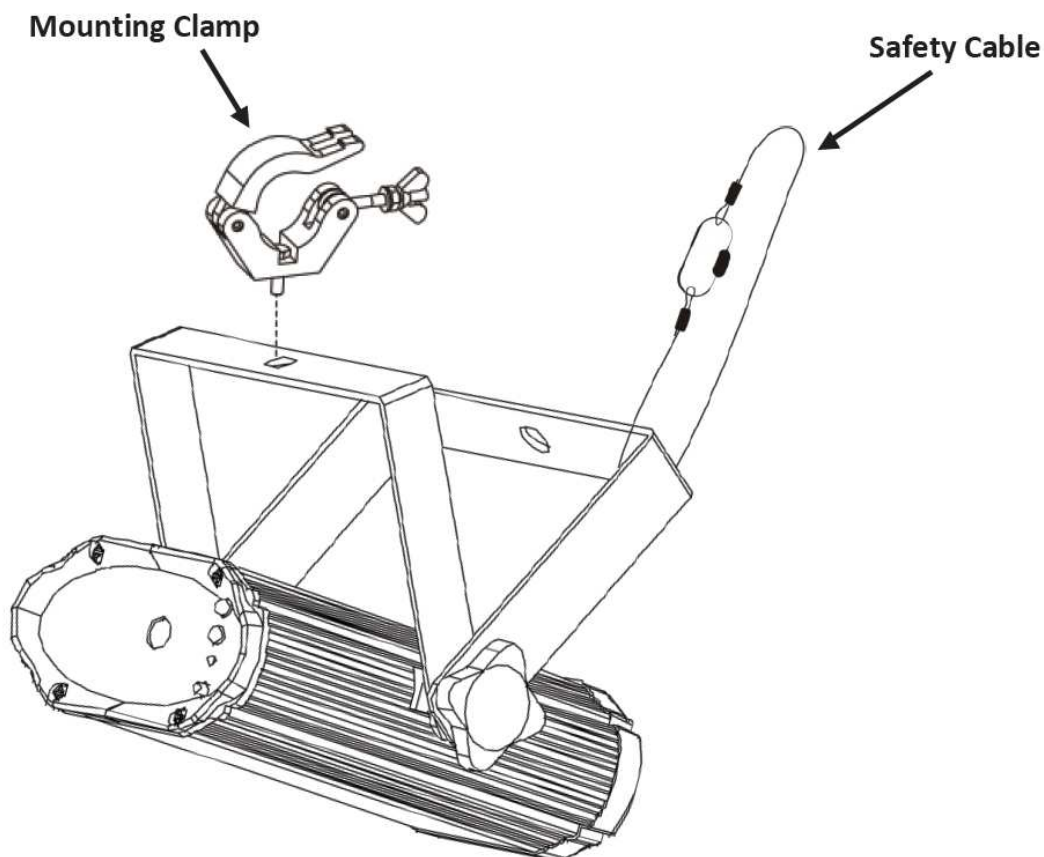
**CAUTION:** Use of controls, adjustments, or performance of procedures other than what is specified herein may result in hazardous radiation exposure

### 5.1. Rigging the Fixture

**CAUTION!** Please consider the respective national norms during the installation! The installation must only be carried out by an authorized employee or dealers!

- The installation of the fixture has to be built and constructed in a way that it can hold 10 times the weight for 1 hour without any harming deformation.
- The installation must always be secured with a secondary safety attachment, e.g. an appropriate catch net. This secondary safety attachment must be constructed in a way that no part of the installation can fall down if the main attachment fails.
- Make sure the area below the installation place is free from unwanted persons during rigging, de-rigging and servicing.
- The operator has to make sure that safety-relating and machine-technical installations are approved by an expert before taking into operation for the first time and after changes before taking into operation another time.
- The operator has to make sure that safety-relating and machine-technical installations are approved by a skilled person once a year.
- The fixture should be installed in the position where persons cannot reach and where persons may walk by or be seated.

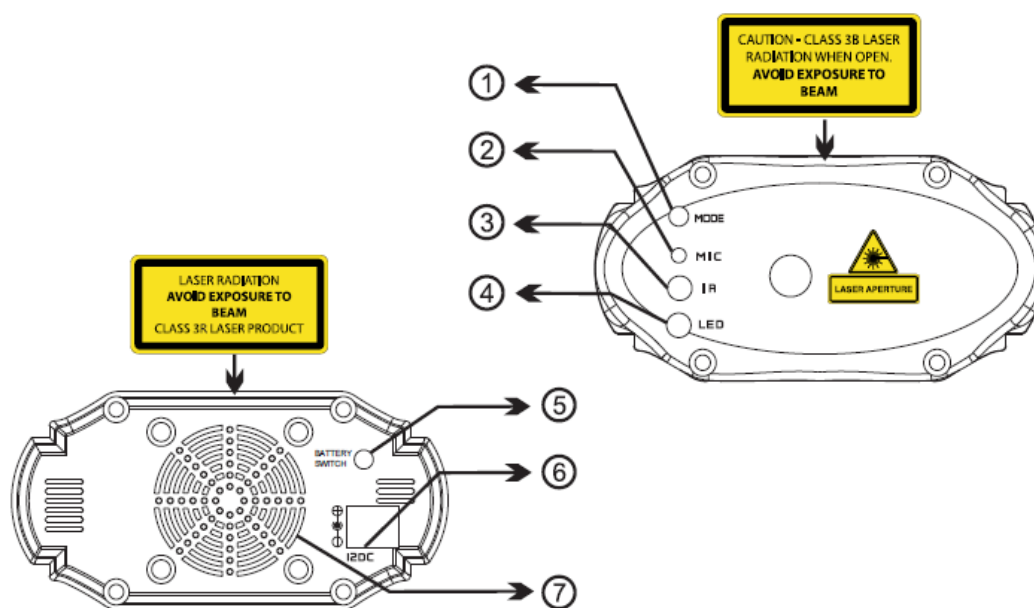
**CAUTION!** When installing the device, make sure there is no highly inflammable material (decoration articles, etc.) in between a distance of min 0.5 meter.



## 6. Description

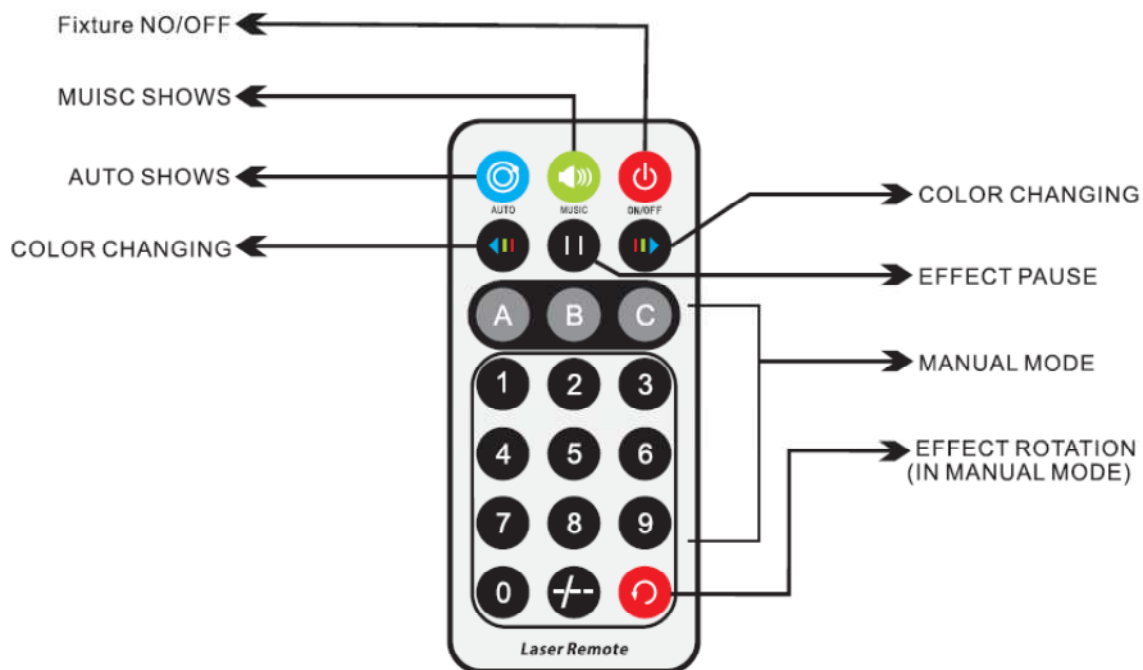
- 2 Auto shows
- 2 Music shows
- Different modes
- Different effects
- Remote control
- Battery-powered

### 6.1. Handling



1	MODE	Auto Emotion	LED lights red
		Auto Smooth	
		Sound	LED lights blue
		Sound Strobe	
		Press this button to switch the device on or off	
2	MIC	The number 1-9 are for the sensitivity of the microphone. 1 is the lowest and 9 the highest sensitivity.	
3	IR	IR Remote receiver	
4	LED	LED indicator	
5	Battery Switch	Switch ON/OFF when battery powered	
6	12DC	DC 12V Power input	
7		Cooling fan	

## 6.2. Remote Control



Fixture ON/OFF	Switch the device on or off
	Sound
	Strobe
Music shows	The LED light blue. The number 1-9 are for the sensitivity of the microphone. 1 is the lowest and 9 the highest sensitivity.
	Auto Emotion
Auto shows	Auto Smooth The LED lights red.
	Cycle through programmed color: RGB, R, G, B, RG, RB, GB (for Auto Emotion/Smooth und Sound only)
Color change	A: Strobe green B : Strobe blue C: Strobe red
Manual mode	1-8 = strobing from fast to slow, 9 = on, 0 = off
Effect rotation	1-9 = R&G&B strobing change, 0 = no blue

## 7. Technical Data

Laser classification	3R
Red laser diode	100mW 650nm
Green laser diode	30-50mW 532nm
Blue laser diode	80mW 450nm
Fixture power supply	DC 12V/100mA
External power supply	100-240V AC, 50/60Hz
Lithium battery	Maximum runtime up to 6 hours
Battery recharge time	Up to 5 hours
Work Environment	10-40°C
Weight	0,35kg
Measures	163x48x140mm

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