BOS LIGHTING

IMPERVIUS



MAKE LIFE BRIGHTER

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SECTION 1

SAFETY INSTRUCTIONS & MAINTENANCE

This product is for professional use only. It is not for household use.

This product presents risks of severe injury or death due to fire and burn hazards, electric shock and falls. Read this manual before installing, powering or servicing the fixture, follow the safety precautions listed below and observe all warnings in this manual and printed on the fixture. This device has left the factory in perfect condition. In order to maintain this condition and to ensure a safe operation, it is absolutely necessary for the user to follow the safety instructions and warning notes written in this user manual.

If you have questions about how to operate the fixture safely, please contact us via info@bos-lighting.nl.

WARNING!
Read the safety precautions in this section before unpacking, installing, powering or operating this product.

- Review the following safety precautions carefully before installing or operating the fixture. This fixture must be installed in accordance with the applicable installation code by a person familiar with the construction and operation of the fixture and the hazards involved.

WARNING!
Risk of electric shock.

- Always power off/unplug the fixture before removing any covers.
- Ensure that the power is turned off when connecting the fixture to the AC mains supply.
- Do not apply power if the fixture is in any way damaged.
- Do not immerse the fixture in water or liquid.

WARNING!
Take measures to prevent burns and fire.

- Install in a location that prevents accidental contact with the fixture.
- Install only in a well-ventilated space.
- Install at least 0.3 m (12 in.) away from objects to be illuminated.
- Install only in accordance with applicable building codes.
- Ensure a minimum clearance of 0.1 m (4 in.) around the cooling fans.
- Do not paint, cover or modify the fixture.
- Keep all flammable materials away from the fixture.
- Allow the fixture to cool for 15 minutes after operation, before touching it.
- CAUTION: Exterior surface temperature after 5 min. operation = 45 °C

WARNING!
Take measure to prevent personal injury.

- Do not look directly at the light source from close range.
- Take precautions to prevent injury due to falls when working at height.
- For permanent installation, ensure that the fixture is securely fastened to a load-bearing surface with suitable corrosion-resistant hardware.
- For temporary installation with clamps, ensure that the quarter-turn fasteners are turned fully and secured with a suitable safety cable.
- The cable must be approved for a safe working load (SWL) of 10 times the weight of the fixture, and it must have a minimum gauge of 3 mm.

CAUTION!
Disconnect from mains before starting maintenance operation

The following points have to be considered during the inspection:

1. All screws for installing the devices or parts of the device have to be tightly connected and must not be corroded.
2. There must not be any deformations on the housing, color lenses, fixations and installation spots (ceiling, suspension, trussing).
3. Mechanically moved parts must not show any traces of wearing and must not rotate with unbalances.
4. The electric power supply cables must not show any damage, material fatigue or sediments.

Further instructions depending on the installation spot and usage have to be adhered by a skilled installer and any safety problems have to be removed.

SECTION 2

INSTALLATION

WHAT IS IN THE BOX?

- 1x Impervius
- 1x Shuko -> True1
- 1x Safety cable
- 1x Quicklock bracket for clamp

PREPARING

Unpack the fixture and inspect it to ensure that it has not been damaged during transport. Read the manual before installation.

When selecting a location for the fixture, ensure that:

- It is situated away from public thoroughfares and protected from contact with people.
- It is placed with no chance of getting wet
- It has adequate ventilation.

IP65

IP65 is not waterproof - it is water resistant. A product with an IP65 rating cannot be submerged and keep its protection.

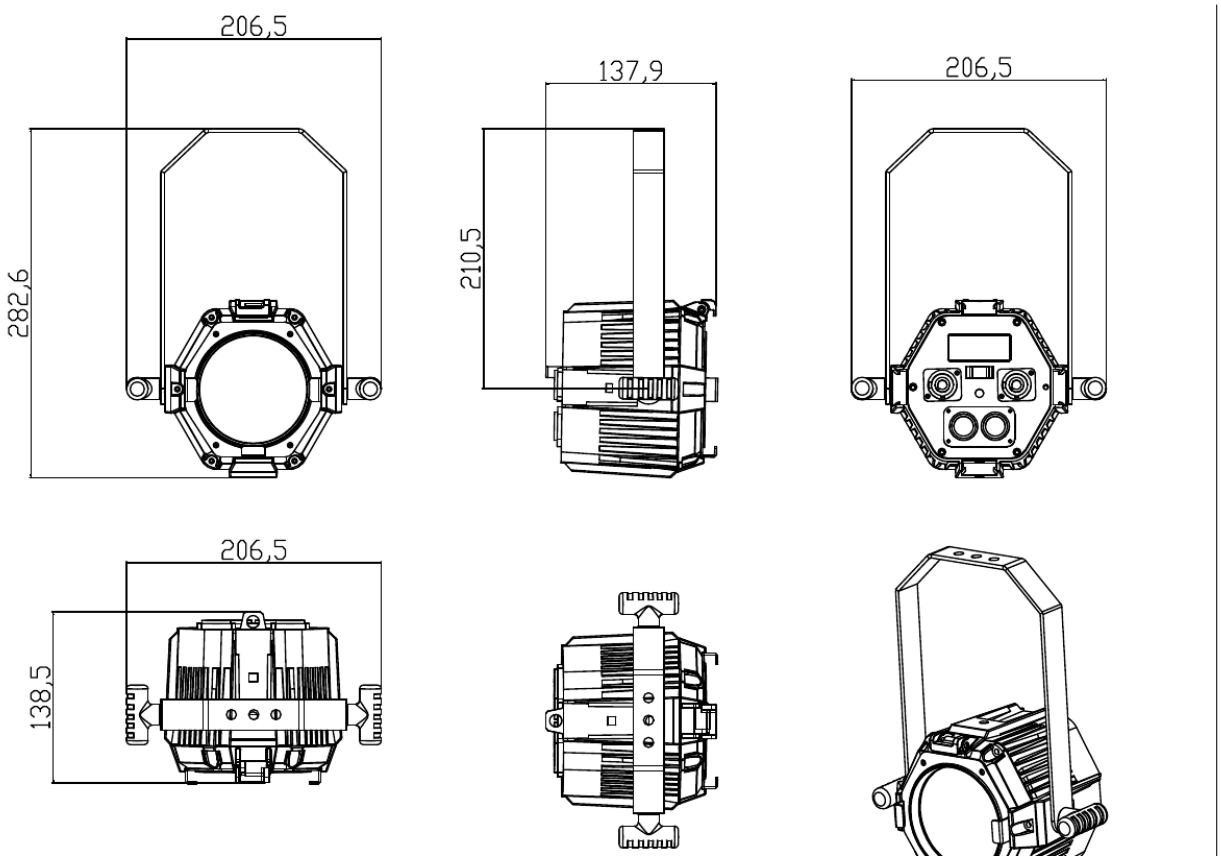
The first digit stands for solids: 6 means dust tight, no ingress of dust. The second digit stands for liquids: 5 means protected against jets of water from any direction, with limited ingress permitted.

The IMPERVIUS is intended for temporary use: festivals, theatres, indoor and outdoor concerts. Permanent outdoor use leads to damage through ageing of the materials and of the coated surfaces, and the rubber seals are affected by long-term UV exposure.

Overtightening the screws affects the IP rating. Follow the cleaning and maintenance procedures to keep the fixture safe.

PRODUCT SIZE & MOUNTING

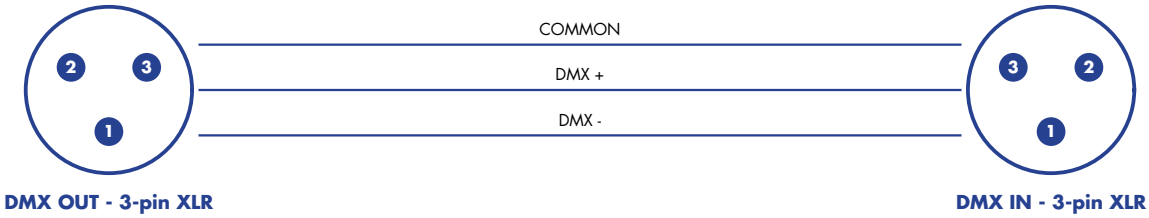
DIMENSIONS IMPERVIUS



SECTION 4

DMX-512 CONTROL CONNECTIONS

Connect the provided XLR cable to the female 3-pin XLR & 5-pin XLR output of your controller and the other side to the male 3-pin XLR & 5-pin XLR input of the moving head. You can chain multiple moving head together through serial linking. The cable needed should be two core, screened cable with XLR input and output connectors. Please refer to the diagram below.



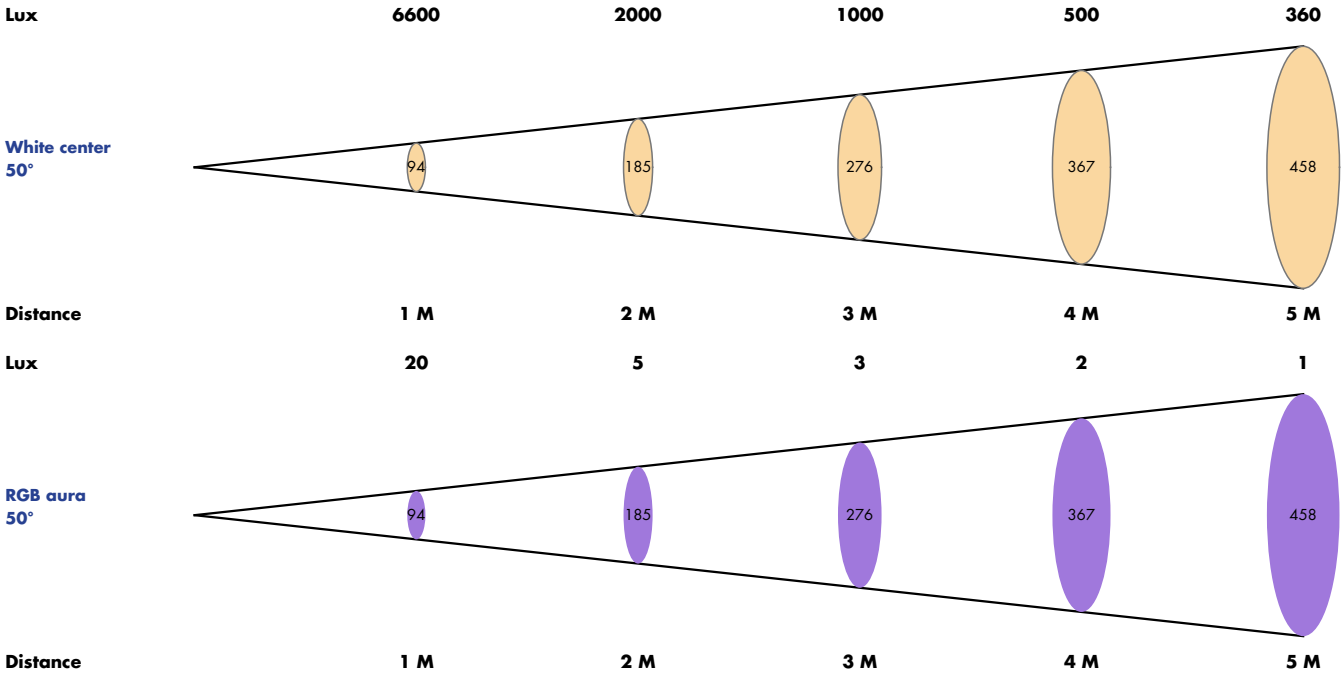
DMX OUT - 3-pin XLR **DMX IN - 3-pin XLR**

1: Ground
2: Data - (cold)
3: Data + (hot)

For installations where the DMX cable has to run a long distance or is in an electrically noisy environment, it is recommended to use a DMX terminator. This helps in preventing corruption of the digital control signal by electrical noise. The DMX terminator is simply an XLR plug with a 120 Ohm resistor connected between pins 2 and 3, which is then plugged into the output XLR socket of the last fixture in the chain.

SECTION 5

PHOTOMETRIC DATA

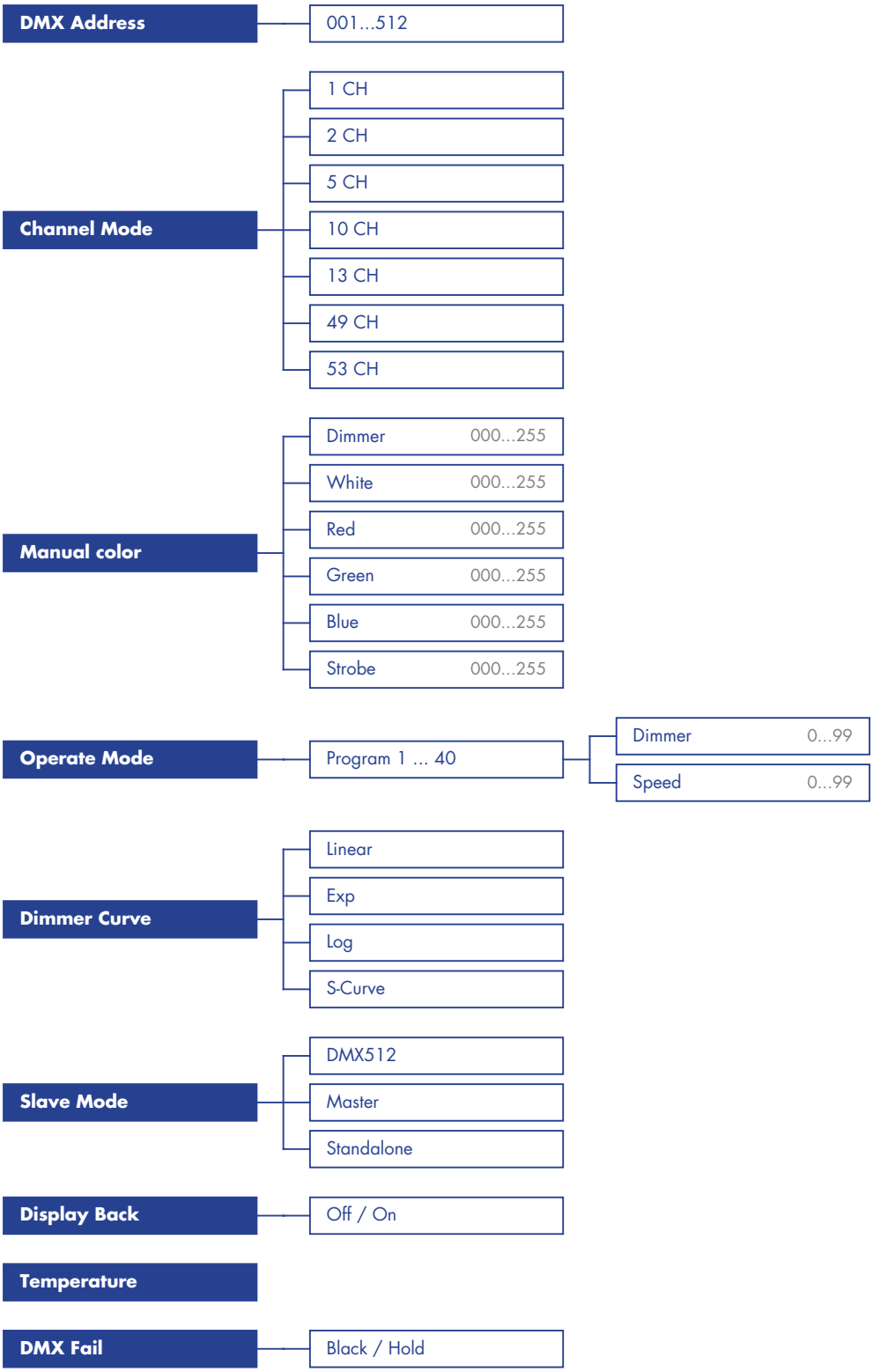


Lux and beam size at 50°

	1 M	2 M	3 M	4 M	5 M
Lux, white center	6600	2000	1000	500	360
Lux, RGB aura	20	5	3	2	1
Beam in cm	94	185	276	367	458

SECTION 6

MENU OVERVIEW



MENU OVERVIEW

Factory Reset	No / Yes

SECTION 7

DMX CHANNELS

1 CH

Channel	Function	Value	Description
1	Dimmer white	000...255	Centre LED from dark (0) to bright (255)

2 CH

Channel	Function	Value	Description
1	Dimmer white	000...255	Centre LED from dark to bright
2	Shutter centre	000...049	No strobe
		050...200	Strobe, slow to fast
		201...210	No strobe
		211...255	Random strobe, slow to fast

5 CH

Channel	Function	Value	Description
1	Dimmer white	000...255	Centre LED from dark to bright
2	Red	000...255	Aura red
3	Green	000...255	Aura green
4	Blue	000...255	Aura blue
5	Shutter all LEDs	000...049	No strobe
		050...200	Strobe, slow to fast
		201...210	No strobe
		211...255	Random strobe, slow to fast

10 CH

Channel	Function	Value	Description
1	Dimmer centre	000...255	Centre LED from dark to bright
2	Dimmer aura	000...255	Aura LED from dark to bright
3	Red	000...255	Aura red
4	Green	000...255	Aura green
5	Blue	000...255	Aura blue
6	Shutter centre	000...049	No strobe
		050...200	Strobe, slow to fast
		201...210	No strobe
		211...255	Random strobe, slow to fast
7	Shutter aura	000...049	No strobe
		050...200	Strobe, slow to fast
		201...210	No strobe

DMX CHANNELS

Channel	Function	Value	Description
		211...255	Random strobe, slow to fast
8	Aura macro	000...255	See the 10 CH effect macro table
9	Aura macro speed	000...255	From slow to fast
10	Dimmer curve	000...009	No function
		010...059	Linear dimming curve
		060...109	Square law dimming curve
		110...159	Inverse square law dimming curve
		160...209	S-curve dimming curve
		210...250	No function

13 CH

Channel	Function	Value	Description
1 - 10	As 10 CH	000...255	Dimmers, colour, shutters, macro and dimmer curve
11	Aura CTC	011...255	2000 K - 11000 K
12	Aura macro colour preset backgrou	000...255	See the colour macro table
13	Aura macro colour preset overlay	000...255	See the colour macro table

49 CH

Channel	Function	Value	Description
1	Dimmer centre	000...255	Centre LED from dark to bright
2 - 4	Aura pixel 1	000...255	Red, green, blue (0 % ... 100 %)
5 - 7	Aura pixel 2	000...255	Red, green, blue
...	...	...	Three channels per pixel, pixels 3 to 14
47 - 49	Aura pixel 16	000...255	Red, green, blue

53 CH

Channel	Function	Value	Description
1 - 5	As 10 CH	000...255	Dimmers, shutters and dimmer curve
6 - 8	Aura pixel 1	000...255	Red, green, blue
...	...	...	Three channels per pixel
51 - 53	Aura pixel 16	000...255	Red, green, blue

DMX CHANNELS

Effect macro in 13 CH mode

Value	Macro
000...047	Rainbow clockwise
048...063	Rainbow counter clockwise
064...079	Rainbow center inside out
080...095	Rainbow center outside in
096...111	Background overlay clockwise
112...127	Background overlay counter clockwise
128...143	Background overlay center inside out
144...159	Background overlay left to right
160...175	Background overlay right to left
176...191	Background overlay down to up
192...207	Background overlay up to down
208...223	Background overlay sin clockwise
224...239	Background overlay mid to top and bottom
240...255	Background overlay mid to left and right

Effect macro in 10 CH mode

Value	Macro	Value	Macro
001...015	Rainbow clockwise	136...141	White counter clockwise
016...021	Rainbow counter clockwise	142...147	Red Blue mid to top/bottom
022...027	Rainbow center inside out	148...153	Green Blue mid to top/bottom
028...033	Rainbow center outside in	154...159	Yellow Blue mid to top/bottom
034...039	Red Blue clockwise	160...165	White Blue mid to top/bottom
040...045	Green Blue clockwise	166...171	White Red mid to top/bottom
046...051	Yellow Blue clockwise	172...177	Red mid to top/bottom
052...057	White Blue clockwise	178...183	Green mid to top/bottom
058...063	White Red clockwise	184...189	Blue mid to top/bottom
064...069	Red clockwise	190...195	White mid to top/bottom
070...075	Green clockwise	196...201	Red Blue mid to left/right
076...081	Blue clockwise	202...207	Green Blue mid to left/right
082...087	White clockwise	208...213	Yellow Blue mid to left/right
088...093	Red Blue counter clockwise	214...219	White Blue mid to left/right
094...099	Green Blue counter clockwise	220...225	White Red mid to left/right
100...105	Yellow Blue counter clockwise	226...231	Red mid to left/right
106...111	White Blue counter clockwise	232...237	Green mid to left/right
112...117	White Red counter clockwise	238...243	Blue mid to left/right
118...123	Red counter clockwise	244...249	White mid to left/right

DMX CHANNELS

Value	Macro	Value	Macro
124...129	Green counter clockwise	250...255	No function
130...135	Blue counter clockwise		

Colour macro (channels 12 and 13)

Value	R / G / B	Value	R / G / B
001...015	255 / 0 / 0	070...075	0 / 85 / 170
016...021	212 / 43 / 0	076...081	0 / 43 / 212
022...027	247 / 147 / 0	082...087	0 / 0 / 255
028...033	255 / 255 / 0	088...093	43 / 0 / 212
034...039	85 / 170 / 0	094...099	85 / 0 / 170
040...045	43 / 212 / 0	100...105	255 / 0 / 255
046...051	0 / 255 / 0	106...111	170 / 0 / 85
052...057	0 / 212 / 43	112...117	212 / 0 / 43
058...063	0 / 170 / 85	118...123	255 / 255 / 255
064...069	0 / 255 / 255	124...255	For future use

SECTION 8

TROUBLESHOOTING AND CLEANING

CAUTION!
Disconnect from mains before starting maintenance operation

The lamp contains professional components such as microcomputer circuit board and high-voltage power supply. For your safety and product life, non-professionals should not disassemble the lamp and related accessories without authorization.

The diode does not light up (except LED light source)

Possible cause: The bulb is not completely cooled, or the bulb has reached the end of its life, the treatment is as follows:

- Due to abnormal operation, the bulb is not completely cooled down, so let the lamp body cool down for more than 10 minutes to make the inside completely return to normal state, and then turn on the power again.
- Check whether the bulb has reached the end of its life, and replace it with a new one.
- Check whether the bulb and the lighter circuit are leaking, falling off, or having poor contact.
- Replace with a new light source.

The light beam appears dim

Possible cause: The bulb has been used for a long time or the light path is not clean, the treatment is as follows:

- Check whether the bulb has reached the end of its life, and replace it with a new one
- Check whether the optical components or bulbs are clean, and whether there is dust on the bulbs and other optical components.
- Regular cleaning and maintenance of the bulbs and components in the lamps are required.

Blurred pattern projection

Possible cause: Lenses are dirty or electronic focus is defect:

- Check if the lenses are clean.
- Check whether the electronic focus channel value is suitable for the current projection distance.

The lamps work intermittently

Possible cause: The internal circuit enters the protection state, and the treatment is as follows

- Check whether the fan is operating normally or whether it is dirty, causing the internal temperature of the lamp to rise
- Check whether the internal temperature control switch is closed
- Check whether the bulb has reached the end of its service life, and replace it with a new one.

After the lamp is reset normally, it does not accept the control of the console

Possible cause: signal line failure or abnormal lamp parameter setting, the treatment is as follows:

- Check the start address code and check the connection of the DMX signal line (whether the signal line cable is intact, and whether the connection of the head is loose)
- Add signal amplifier, add 120 ohm terminal resistance.

The lamp can't start

Possible cause: bad power line, the treatment is as follows:

- Check whether the fuse on the power input socket is fused, replace the fuse.
- Lamps have poor line contact due to vibration during long-distance transportation.
- Check the input power, computer board and other plug-in devices.

CAUTION!
Disconnect from mains before starting cleaning operation

In order to make the lights in good condition and extend the life time, we suggest a regular cleaning to the lights.

1. Clean the inside and outside lens each week to avoid the weakness of the lights due to accumulation of dust.
2. Clean the fan each week.
3. A detailed electric check by approved electrical engineer each three month, make sure that the circuit contacts are in good condition, prevent the poor contact of circuit from overheating.

We recommend a frequent cleaning of the device. Please use a moist, lint-free cloth. Never use alcohol solvents.

TROUBLESHOOTING AND CLEANING

There are no serviceable parts inside the device. Please refer to the instructions under "Installation instructions".

Should you need any spare parts, please order genuine parts from your local dealer.

SECTION 9

TECHNICAL SPECIFICATIONS

Light source	1 x COB 2700 K 50 W plus 16 x RGB LED
Beam angle	50°
Repetition rate	3000 Hz
Control	DMX, buttons and display, infrared remote control
Number of DMX channels	1, 2, 5, 10, 13, 49 of 53 CH
Power connections	Lockable True1 in/out
Control connections	3-pin or 5-pin XLR in/out
Power consumption	60 W
Operating supply voltage	100 - 240 V, 50/60 Hz
Protection class	IP65, indoor and outdoor
Mounting options	Hanging
Dimensions (W x H x D), with bracket	140 mm x 180 mm x 250 mm
Weight	2,4 kg
Temperature range	0 °C ... 40 °C
Relative humidity	20 % ... 80 % (non-condensing)
Construction	Outdoor housing, par
Number of LEDs	16 RGB pixels + 1 COB
Colour mixture	RGB plus warm white
LED type	3-in-1 RGB and 2700 K COB
CRI	> 90
Fanless	Yes
Wireless DMX	No
Housing colour	Black