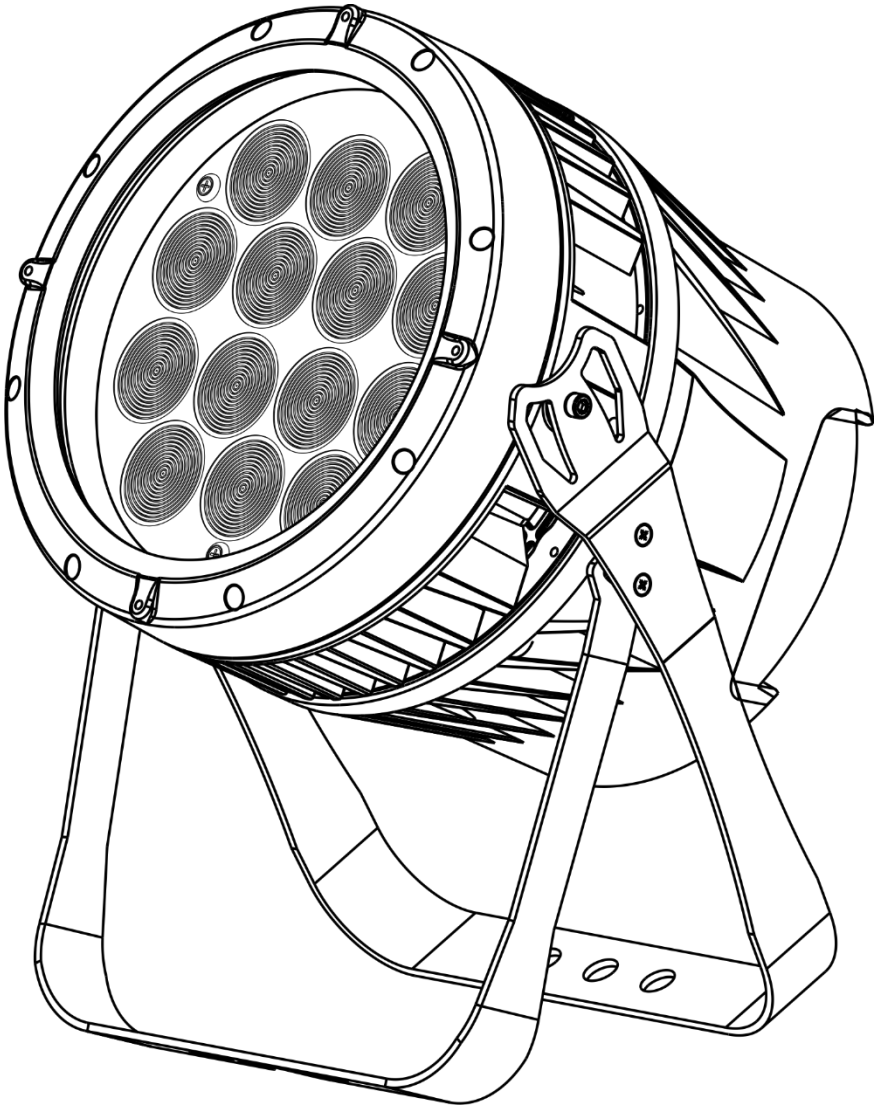
USER MANUAL



ENGLISH

Spectral M3000 Zoom Q4 MKII IP65 V3

Product code: 43548

Firmware version: 2.0.5

Highlite International B.V. – Vestastraat 2 – 6468 EX – Kerkrade – the Netherlands

Preface

Thank you for purchasing this Showtec product.

The purpose of this user manual is to provide instructions for the correct and safe use of this product.

Keep the user manual for future reference as it is an integral part of the product. The user manual shall be stored at an easily accessible location.

This user manual contains information concerning:

- Safety instructions
- Intended and non-intended use of the device
- Installation and operation of the device
- Maintenance procedures
- Troubleshooting
- Transport, storage and disposal of the device

Non-observance of the instructions in this user manual may result in serious injuries and damage of property.

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1. Introduction

1.1. Before Using the Product

Important
Read and follow the instructions in this user manual before installing, operating or servicing this product.

The manufacturer will not accept liability for any resulting damages caused by the non-observance of this manual.

After unpacking, check the contents of the box. If any parts are missing or damaged, contact your Highlite International dealer.

Your shipment includes:

- Showtec Spectral M3000 Zoom Q4 MKII
- Schuko to Seetronic True1 power cable (1,5 m)
- Safety cable
- User manual

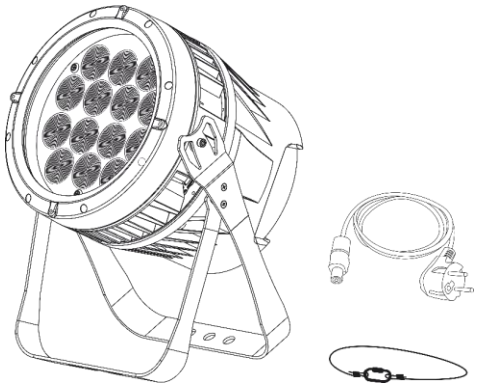


Fig. 01

1.2. Intended Use

This device is intended for professional use as an outdoor spot. It is not suitable for households and for general lighting.

Any other use, not mentioned under intended use, is regarded as non-intended and incorrect use.

1.3. Product Lifespan

This device is not designed for permanent operation. Disconnect the device from the electrical power supply when the device is not in operation. This will reduce the wear and will improve the device's lifespan.

1.4. LEDs Lifespan

The light output of the LEDs gradually decreases over time (lumen depreciation). High operating temperatures contribute to this process. You can extend the lifespan of the LEDs by providing adequate ventilation and operating the LEDs at the lowest possible brightness.

1.5. Text Conventions

Throughout the user manual the following text conventions are used:

- Buttons: All buttons are in bold lettering, for example "Press the **UP/DOWN** buttons"
- References: References to chapters and parts of the device are in bold lettering, for example: "Refer to **2. Safety**", "turn the **adjustment handle (05)**"
- 0–255: Defines a range of values
- Notes: **Note:** (in bold lettering) is followed by useful information or tips

1.6. Symbols and Signal Words

Safety notes and warnings are indicated throughout the user manual by safety signs.

Always follow the instructions provided in this user manual.



DANGER Indicates an imminently hazardous situation which, if not avoided, will result in death or serious injury.



WARNING Indicates a potentially hazardous situation which, if not avoided, could result in death or serious injury.



CAUTION Indicates a potentially hazardous situation, which, if not avoided, may result in minor or moderate injury.



Attention Indicates important information for the correct operation and use of the product.



Important Read and observe the instructions in this document.



Electrical hazard



Provides important information about the disposal of this product.

1.7. Symbols on the Information Label

This product is provided with an information label. The information label is located on the mounting bracket of the device.

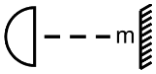
The information label contains the following symbols:



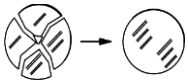
This device shall not be treated as household waste.



This device falls under IEC protection class I.



Minimum distance from lighted objects.



Replace any cracked protective shield.



Caution: Risk of electric shock. Do not open.
Caution: To reduce the risk of electrical shock, do not remove cover. No user-serviceable parts inside. Refer servicing to qualified personnel.

2. Safety



Important
Read and follow the instructions in this user manual before installing, operating or servicing this product.

The manufacturer will not accept liability for any resulting damages caused by the non-observance of this manual.

2.1. Warnings and Safety Instructions



DANGER
Danger for children

For adult use only. The device must be installed beyond the reach of children.

- Do not leave various parts of the packaging (plastic bags, polystyrene foam, nails, etc.) within children's reach. Packaging material is a potential source of danger for children.



DANGER
Electric shock caused by dangerous voltage inside

There are areas within the device where dangerous touch voltage may be present.

- Do not open the device or remove any covers.
- Do not operate the device if the covers or the housing are open. Before operation, check if the housing is firmly closed and all screws are tightly fastened.
- Disconnect the device from electrical power supply before service and maintenance, and when the device is not in use.



DANGER
Electric shock caused by short-circuit

This device falls under IEC protection class I.

- Make sure that the device is electrically connected to ground (earth). Connect the device only to a socket-outlet with ground (earth) connection.
- Do not cover the ground (earth) connection.
- Do not bypass the thermostatic switch or fuses.
- Do not let the power cable come into contact with other cables. Handle the power cable and all connections with the mains with caution.
- Do not modify, bend, mechanically strain, put pressure on, pull or heat up the power cable.
- Make sure that the power cable is not crimped or damaged. Examine the power cable periodically for any defects.
- Do not immerse the device in water or other liquids. Do not install the device in a location where flooding may occur.
- Do not use the device during thunderstorms. Disconnect the device from the electrical power supply immediately.
- Keep the connectors sealed with the rubber caps when the connectors are not in use.
- Do not connect the cables from above the connectors, if the device is installed outdoors. Make a 'drip loop' in the cable so that rain water cannot enter the device.



WARNING
Risk of epileptic shock

Strobe lighting can trigger seizures in photosensitive epilepsy. Sensitive persons should avoid looking at strobe lights.



Attention
Power supply

- Before connecting the device to the power supply, make sure that the current, voltage and frequency match the input voltage, current and frequency specified on the information label on the device.
- Make sure that the cross-sectional area of the extension cords and power cables is sufficient for the required power consumption of the device.



Attention
General safety

- Do not connect the device to a dimmer pack.
- Do not switch the device on and off in short intervals. This decreases the device's life.
- Do not shake the device. Avoid brute force when installing or operating the device.
- Change the lens or the LEDs if they are visibly damaged to such an extent that their effectiveness is impaired, for example by cracks or deep scratches. Contact your Highlite International dealer for more information, as servicing can be performed only by instructed or skilled persons.
- If the device is dropped or struck, disconnect the device from the electrical power supply immediately.
- If the device is exposed to extreme temperature variations (e.g. after transportation), do not switch it on immediately. Let the device reach room temperature before switching it on, otherwise it may be damaged by the formed condensation.
- If the device fails to work properly, discontinue the use immediately.



Attention
For professional use only
This device shall be used only for the purposes it is designed for.

This device is designed to be used as a professional outdoor spot. Any incorrect use may lead to hazardous situations and result in injuries and material damage.

- This device is not suitable for households and for general lighting.
- This device is not designed for permanent operation.
- This device does not contain user-serviceable parts. Unauthorized modifications to the device will render the warranty void. Such modifications may result in injuries and material damage.

Attention
Before each use, examine the device visually for any defects.

Make sure that:

- All screws used for installing the device or parts of the device are tightly fastened and are not corroded.
- The safety devices are not damaged.
- There are no deformations on housings, fixations and installation points.
- The lens is not cracked or damaged.
- The power cables are not damaged and do not show any material fatigue.

Attention
Do not expose the device to conditions that exceed the rated IP class conditions.

This device is IP65 rated. IP (Ingress Protection) 65 class means that the device is dust-tight and protected against harmful effect of water jets.

Keep the connectors sealed with the rubber caps when the connectors are not in use.

2.2. Requirements for the User

This product may be used by ordinary persons. Maintenance may be carried by ordinary persons. Installation and service shall be carried out only by instructed or skilled persons. Contact your Highlite International dealer for more information.

Instructed persons have been instructed and trained by a skilled person, or are supervised by a skilled person, for specific tasks and work activities associated with the installation, service and maintenance of this product, so that they can identify risks and take precautions to avoid them.

Skilled persons have training or experience, which enables them to recognize risks and to avoid hazards associated with the installation, service and maintenance of this product.

Ordinary persons are all persons other than instructed persons and skilled persons. Ordinary persons include not only users of the product but also any other persons that may have access to the device or who may be in the vicinity of the device.

3. Description of the Device

The Showtec Spectral M3000 Zoom Q4 MKII is a bright 14x 12 watt RGBW LED spot to wash Parcan, with a wide 8°–40° motorised zoom range, suitable for in- and outdoor applications. Each function, including its 0–100 % dimmer, 0–20 Hz strobe and colour mixing engine, is controllable via DMX and Master/Slave in either Manual and Auto run mode. A compact and lightweight 8.4 kg design with IP65 rating, makes the Spectral M3000 Q4 MKII fit for almost any environment.

3.1. Front View

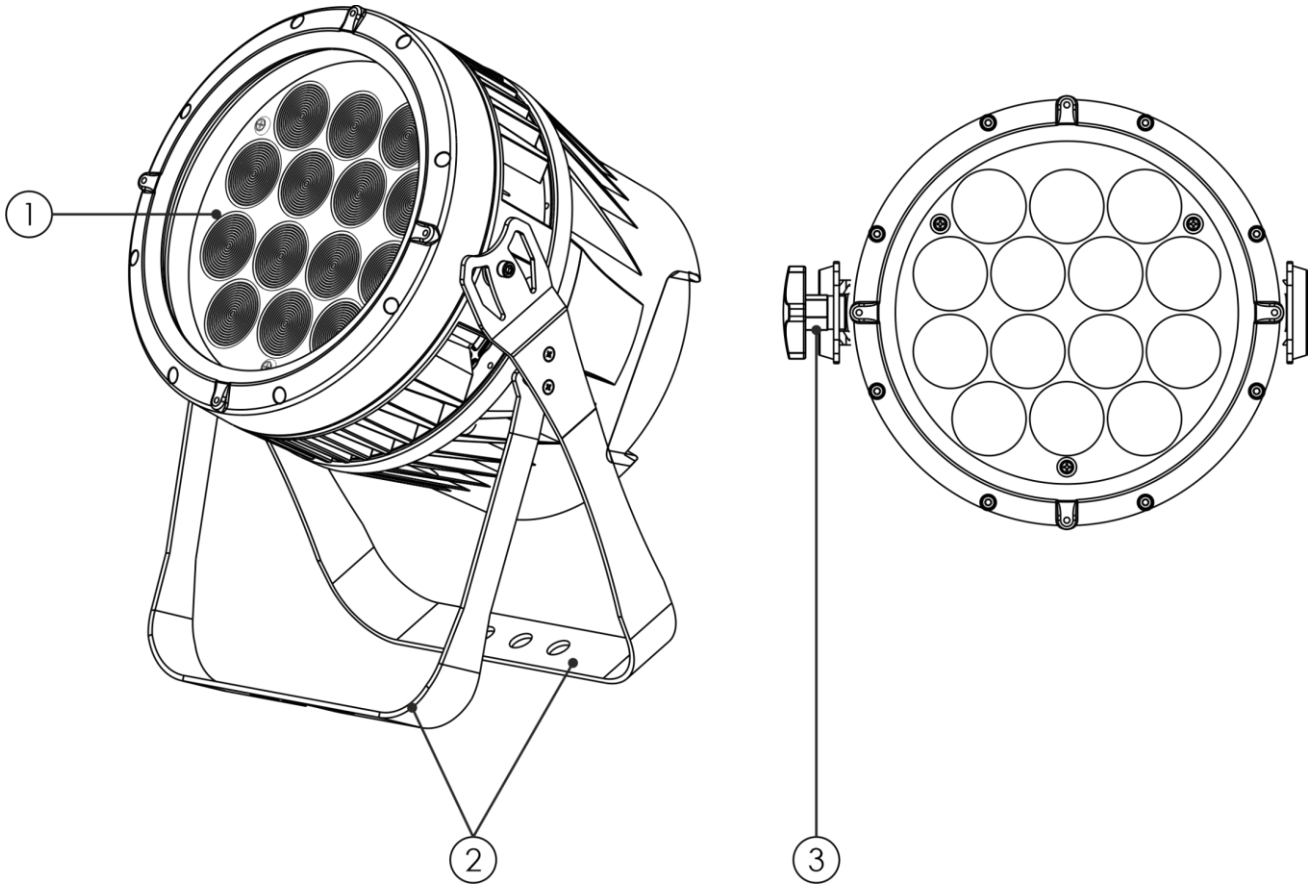


Fig. 02

01) 14 x 4-in-1 12W RGBW LED
02) Mounting brackets with inclination screw
03) Adjustment screw

3.2. Back View

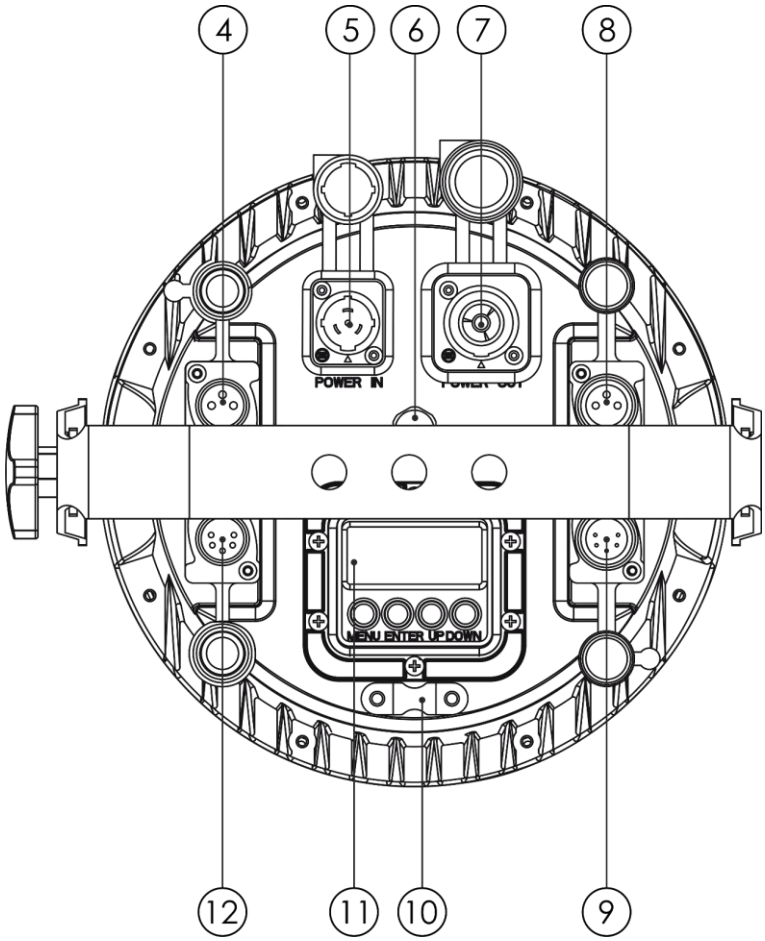


Fig. 03

04) Special IP 3-pin DMX signal connector IN
05) Special IP powerCON True1 connector 100-240V IN
06) Protective valve
07) Special IP powerCON True1 connector 100-240V OUT
08) Special IP 3-pin DMX signal connector OUT
09) Special IP 5-pin DMX signal connector OUT
10) Safety eye
11) 4-digit LED display + menu buttons
12) Special IP 5-pin DMX signal connector IN

3.3. Product Specifications

Model:	Showtec Spectral M3000 Zoom Q4 MKII

Electrical:	
Input voltage:	100–240 V AC, 50/60 Hz
Power consumption:	200 W

Physical:	
Dimensions:	250 x 275 x 375 mm (L x W x H) (including bracket)
Weight:	8,9 kg

Optics:	
Light source:	14 x 4-in-1 12W RGBW LED
Dimmer:	0–100 %
Zoom:	Motorized
Beam angle circular:	8°–40°
Strobe:	0–20 Hz
Lumen total:	3900 lm
Refresh rate:	900 Hz
Color mixing:	RGBW

Operation and control:	
Control:	Stand-alone (Static Colors, Auto) Master/Slave DMX-512, RDM
DMX channels:	TOUR (12 channels) ARC.1 (3 channels) AR1.D (4 channels) ARC.2 (4 channels) AR2.D (5 channels) AR2.S (6 channels) HSV (3 channels) TR16 (17 channels) AR2.Z (7 channels)
Control panel:	4-digit LED display and buttons

Connections:	
Power connections:	IP65-rated Seetronic power connectors IN/OUT
Data connections:	IP65-rated 3-pin DMX connectors IN/OUT IP65-rated 5-pin DMX connectors IN/OUT
Signal pinouts:	3-pin: pin 1 (ground), pin 2 (-), pin 3 (+) 5-pin: pin 1 (ground), pin 2 (-), pin 3 (+), pin 4 (N/C), pin 5 (N/C)

Construction:	
Housing:	Die-cast aluminum
Color:	Black
IP rating:	IP65
Cooling:	Convection

Thermal:	
Maximum ambient temperature t_a:	45 °C
Minimum ambient temperature:	-10 °C

Minimum distance:	
Minimum distance from flammable surfaces:	0,5 m
Minimum distance to lighted object:	0,8 m

3.4. Dimensions

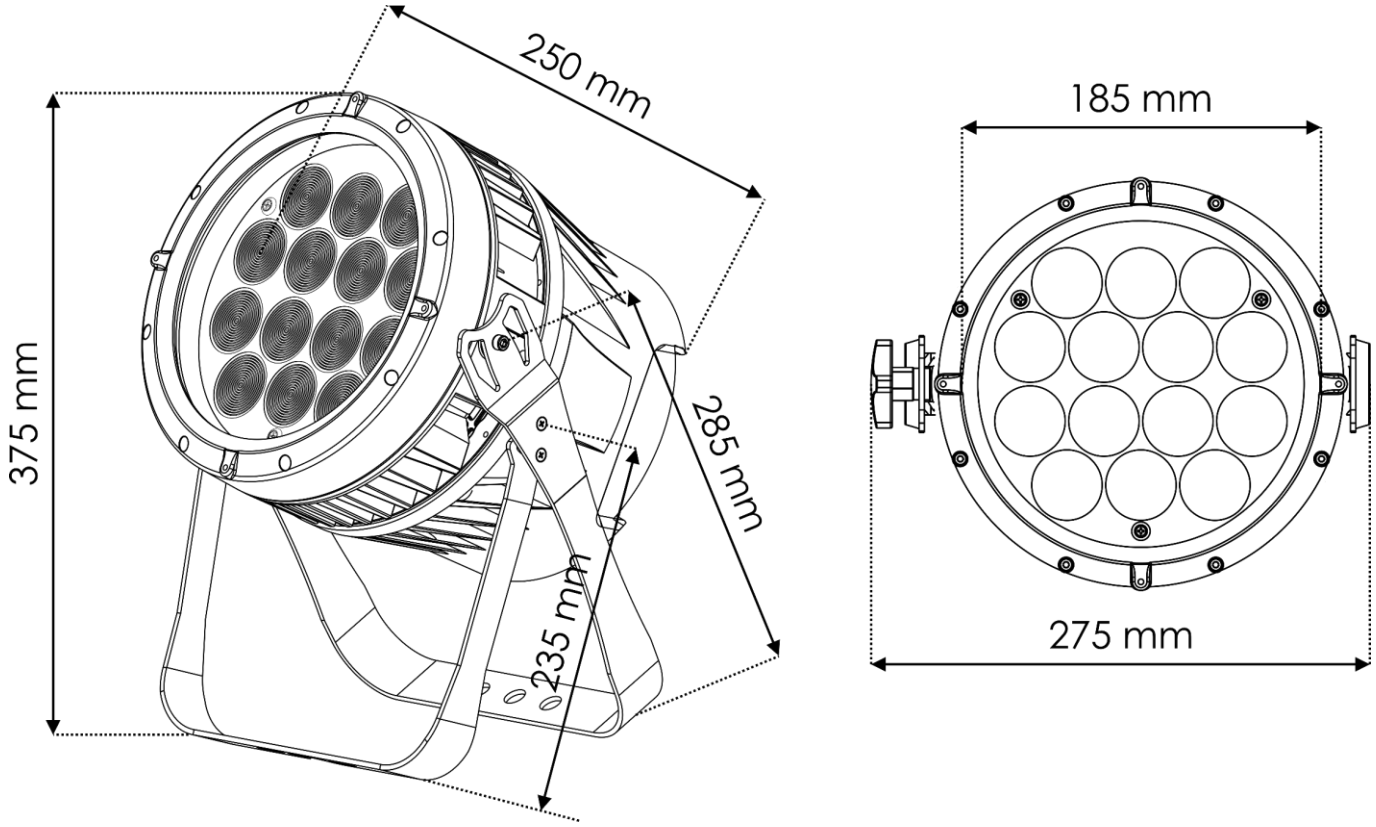


Fig. 06

4. Installation

4.1. Safety Instructions for Installation



WARNING
Incorrect installation can cause serious injuries and damage of property.

If trussing systems are used, installation must be carried out only by instructed or skilled persons.

Follow all applicable European, national and local safety regulations concerning rigging and trussing.

4.2. Personal Protective Equipment

During installation and rigging wear personal protective equipment in compliance with the national and site-specific regulations.

4.3. Installation Site Requirements

- The device can be used outdoors.
- The device can be mounted to a truss or other rigging structure in any orientation.
- The minimum distance between the light output and the illuminated surface must be bigger than 0,8 m.
- The maximum ambient temperature t_a = 45 °C must never be exceeded.

4.4. Rigging

The device can be positioned on a flat surface (see Fig. 07) or mounted to a truss or other rigging structure in any orientation. Make sure that all loads are within the pre-determined limits of the supporting structure.

CAUTION
Restrict the access under the work area during rigging and/or derigging.

To mount the device, follow the steps below:

01) Use a clamp to attach the device to the supporting structure, as shown in Fig. 08. Make sure that the device cannot move freely.
02) Secure the device with a secondary suspension, for example a safety cable. Make sure that the secondary suspension can hold 10 times the weight of the device. If possible, the secondary suspension should be attached to a supporting structure independent of the primary suspension. Put the safety cable through the **safety eye (10)**, as shown in Fig. 08. You can use the safety cable supplied with the device.

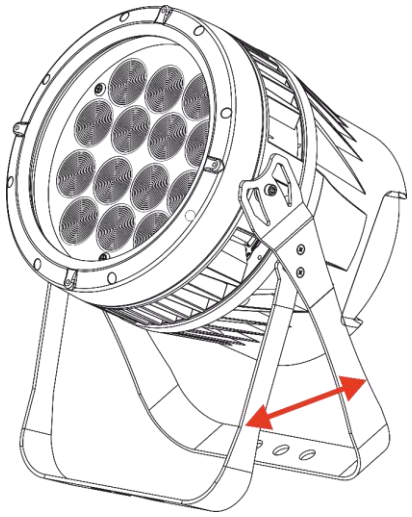


Fig. 07

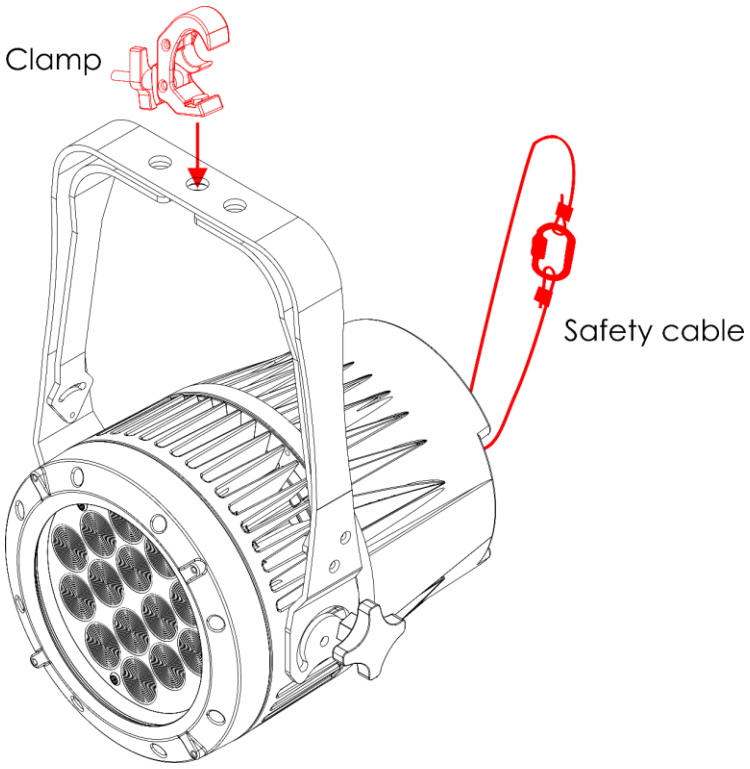


Fig. 08

4.4.1. Angle Adjustment

You can adjust the angle of the device with the 1 **adjustment screw (03)**.

01) Turn the **adjustment screw (03)** counterclockwise to release it.
02) Tilt the device at the desired angle (see Fig. 09).
03) Turn the **adjustment screw (03)** clockwise to tighten it. Make sure that the device cannot move freely after the **adjustment screw (03)** is tightened.

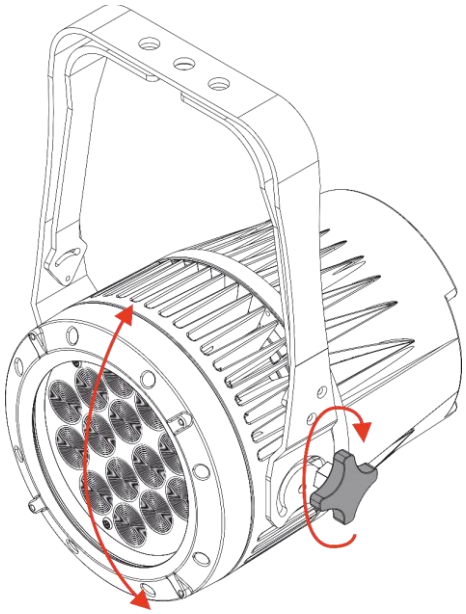


Fig. 09

4.5. Connecting to Power Supply



DANGER
Electric shock caused by short-circuit

The device accepts AC mains power at 100–240 V and 50/60 Hz. Do not supply power at any other voltage or frequency to the device.

This device falls under IEC protection class I. Make sure that the device is always electrically connected to the ground (earth).

Before connecting the device to the socket-outlet:
- Make sure that the power supply matches the input voltage specified on the information label on the device.
- Make sure that the socket-outlet has ground (earth) connection.

Connect the device to the socket-outlet with the power plug. Do not connect the device to a dimmer circuit, as this may damage the device.

This device is IP65 rated.

- Do not expose the device to conditions that exceed the rated IP class conditions.
- Keep the connectors sealed with the rubber caps when the connectors are not in use.
- Do not connect the cables from above the connectors, if the device is installed outdoors. Make a 'drip loop' in the cable so that rain water cannot enter the device.
- Make sure that the cable run is not too heavy. A heavy cable run can cause damage to the connectors. If the connectors are damaged, their ingress protection (IP) can deteriorate.

4.6. Power Linking of Multiple Devices

This device supports power linking. Power can be relayed to another device via the power OUT connector. Note that the input and the output connectors have different designs: one type cannot be connected to the other.

Power linking of multiple devices must be carried out only by instructed or skilled persons.



WARNING
Incorrect power linking may lead to overload of the electrical circuit and result in serious injuries and damage of property.

To prevent overload of the electrical circuit, when power linking multiple devices:

- Use cables with sufficient current-carrying capacity. The power cable supplied with the device is not suitable for power linking of multiple devices.
- Make sure that the total current draw of the device and all connected devices does not exceed the rated capacity of the power cables and the circuit breaker.
- Do not link more devices on one power link than the maximum recommended number.

Maximum recommended number of devices:
- at 100–120 V: 10 devices Spectral M3000 Zoom Q4 MKII IP65
- at 200–240 V: 20 devices Spectral M3000 Zoom Q4 MKII IP65

5. Setup

5.1. Warnings and Precautions



DANGER
Electric shock caused by short-circuit

This device is IP65 rated.

- Do not expose the device to conditions that exceed the rated IP class conditions.
- Keep the connectors sealed with the rubber caps when the connectors are not in use.
- Do not connect the cables from above the connectors, if the device is installed outdoors. Make a 'drip loop' in the cable so that rain water cannot enter the device.
- Make sure that the cable run is not too heavy. A heavy cable run can cause damage to the connectors. If the connectors are damaged, their ingress protection (IP) can deteriorate.



Attention
Connect all data cables before supplying power.
Disconnect power supply before connecting or disconnecting data cables.

5.2. Stand-alone Setup

When the Spectral M3000 Zoom Q4 MKII IP65 is not connected to a controller or to other devices, it functions as a stand-alone device.

For more information about the control modes, refer to **6.2. Control Modes** on page 20.

5.3. DMX Connection

5.3.1. DMX-512 Protocol

You need a DMX serial data link to run light shows of one or more devices using a DMX-512 controller or to run synchronized shows of two or more devices set in a master/slave control mode.

The Spectral M3000 Zoom Q4 MKII IP65 has 3-pin/5-pin DMX signal IN and OUT connectors.

The pin assignment is as follows:
- 3-pin: pin 1 (ground), pin 2 (-), pin 3 (+)
- 5-pin: pin 1 (ground), pin 2 (-), pin 3 (+), pin 4 (N/C), pin 5 (N/C)

Devices on a serial data link must be daisy-chained in a single line. The number of devices that you can control on one data link is limited by the combined number of the DMX channels of the connected devices and the 512 channels available in one DMX universe.

To comply with the TIA-485 standard, no more than 32 devices should be connected on one data link. In order to connect more than 32 devices on one data link, you must use a DMX optically isolated splitter/booster, otherwise this may result in deterioration of the DMX signal.

Note:
- Maximum recommended DMX data link distance: 300 m
- Maximum recommended number of devices on a DMX data link: 32 devices

5.3.2. DMX Cables

Shielded twisted-pair cables with 3-pin/5-pin XLR connectors must be used for reliable DMX connection. You can purchase DMX cables directly from your Highlite International dealer or make your own cables.

If you use XLR audio cables for DMX data transmission, this may lead to signal degradation and unreliable operation of the DMX network.

When you make your own DMX cables, make sure that you connect the pins and wires correctly as shown in Fig. 10.

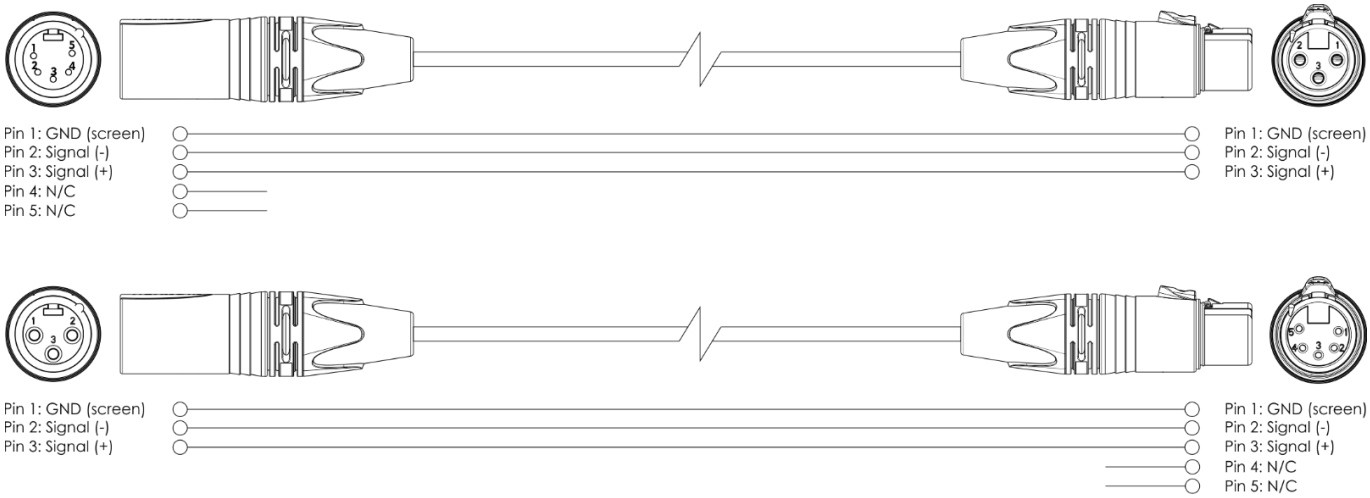


Fig. 10

5.3.3. Master/Slave Setup

The Spectral M3000 Zoom Q4 MKII IP65 supports master/slave control mode. To connect multiple devices in a master/slave setup, follow the steps below:

01) Connect the first device's DMX OUT connector to the second device's DMX IN connector with a 3-pin/5-pin DMX cable. The first connected device in the setup will be automatically recognized as the master device.
02) Repeat step 1 to connect all devices as shown in Fig. 11.
03) Set all subsequent devices in the setup as slave devices. See **6.6.3 Run Mode** on page 25 for more information.
04) Connect a DMX terminator (120 Ω resistor) to the DMX OUT connector of the last device in the setup.

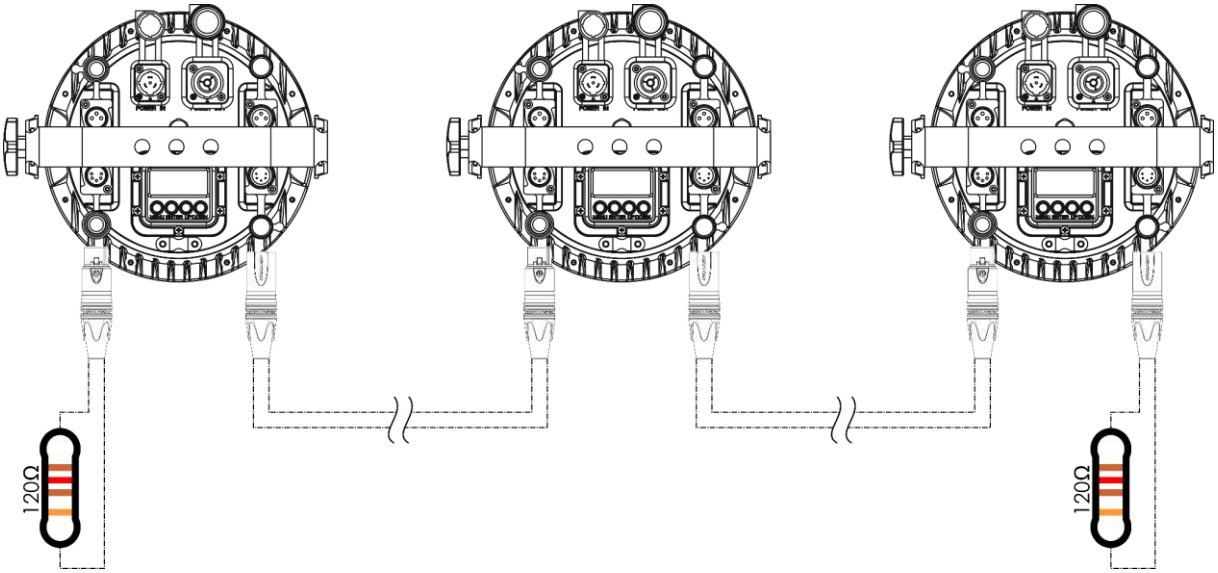


Fig. 11

5.3.4. DMX Linking

To connect multiple devices on one DMX data link, follow the steps below:

01) Use a 3-pin/5-pin DMX cable to connect the DMX OUT connector of the lighting controller to the DMX IN connector of the first device.
02) Connect the first device's DMX OUT connector to the second device's DMX IN connector with a 3-pin/5-pin DMX cable.
03) Repeat step 2 to connect all devices in a daisy-chain as shown in Fig. 12.
04) Connect a DMX terminator (120 Ω resistor) to the DMX OUT connector of the last device on the data link.

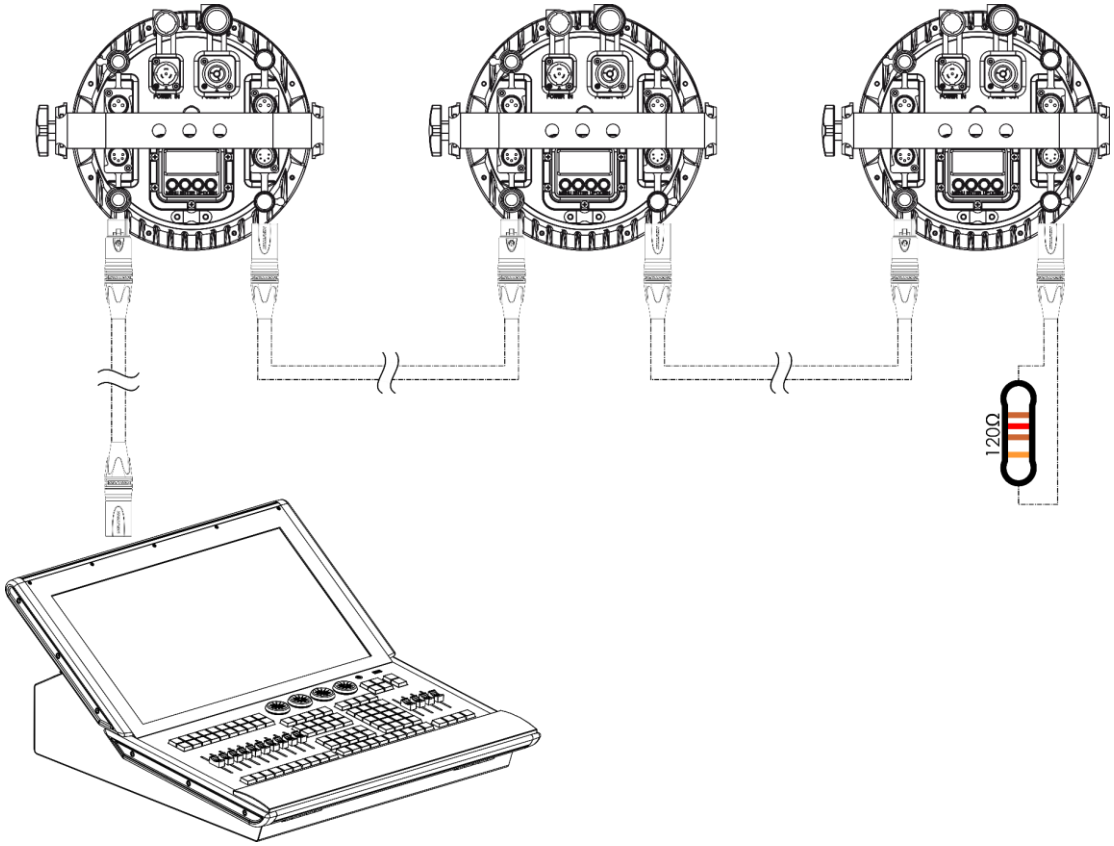


Fig. 12

5.3.5. DMX Addressing

In a setup with multiple devices, make sure that you set the DMX starting address of each device correctly. The Spectral M3000 Zoom Q4 MKII IP65 has 9 personalities: TOUR (12 channels), ARC.1 (3 channels), AR1.D (4 channels), ARC.2 (4 channels), AR2.D (5 channels), AR2.S (6 channels), HSV (3 channels), TR16 (17 channels), AR2.Z (7 channels).

If you want to connect multiple devices on one data link and use them in 17-channel mode, for example, follow the steps below:

01) Set the starting address of the 1st device on the data link to 1 (001).
02) Set the starting address of the 2nd device on the data link to 18 (018), as 1 + 17 = 18.
03) Set the starting address of the 3rd device on the data link to 35 (035), as 18 + 17 = 35.
04) Continue assigning the starting addresses of the remaining devices by adding each time 17 to the previous number.

Make sure that you do not have any overlapping channels in order to control the Spectral M3000 Zoom Q4 MKII IP65 correctly. If two or more devices are addressed similarly, they will work similarly.

6. Operation

6.1. Safety Instructions for Operation



Attention
This device must be used only for the purposes it is designed for.

This device is intended for professional use as an outdoor spot. It is not suitable for households and for general lighting.

Any other use, not mentioned under intended use, is regarded as non-intended and incorrect use.



Attention
Power supply

Before connecting the device to the power supply, make sure that the current, voltage and frequency match the input voltage, current and frequency specified on the information label on the device.

6.2. Control Modes

The Spectral M3000 Zoom Q4 MKII IP65 can be operated with a DMX controller, or without a DMX controller as a stand-alone device or in a master/slave setup.

The Spectral M3000 Zoom Q4 MKII IP65 supports the following control modes:

- Stand-alone: Auto operation mode (auto programs, custom programs), manual operation mode (static colors)
- Master/Slave: Auto operation mode (auto programs, custom programs), manual operation mode (static colors)
- DMX-512: 9 channel modes (3, 3, 4, 4, 5, 6, 7, 12 and 17 channels)

For more information about how to connect the devices, refer to **5. Setup** on pages 17–19.

To operate the device manually as a stand-alone device or in a master/slave setup:

01) Adjust the intensity values for the colors. See **6.6.1. Static Colors** on page 24 for more information.
02) Add strobe effect or adjust the zoom. See **6.6.1. Static Colors** on page 24 for more information.

In auto operation mode you can run one of the 10 built-in auto programs or 10 user-editable custom programs. To run one of the programs:

01) Select one of the 10 auto programs or 10 custom programs. See **6.6.2. Auto Programs** on page 24 for more information.
02) Adjust the speed of the selected auto program. See **6.6.2. Auto Programs** on page 24 for more information.

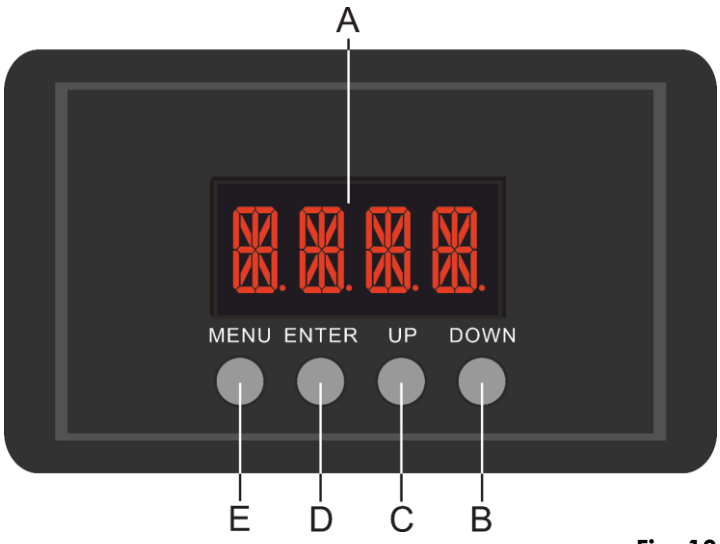
Note:

- You cannot adjust the speed of the custom programs.
- You can upload the custom programs from the master device to the slave devices in master/slave setup. See **6.6.7. Settings** on pages 27–29 for more information.

To operate the device with a DMX controller:

01) Select DMX mode in the Run Mode menu. See **6.6.3. Run Mode** on page 25 for more information.
02) Set the DMX starting address of the device in the DMX Address menu. See **6.6.4. DMX Address** on page 25 for more information.
03) Select the DMX channel mode in the DMX Configuration menu. See **6.6.5. Personality** on page 25 for more information. See **6.7. DMX Channels** on pages 32–34 for complete overview of all DMX channels.

6.3. Control Panel



A) LED display
B) DOWN button
C) UP button
D) ENTER button
E) MENU button

Fig. 13

- Use the **MENU** button to open the main menu or to exit the current submenu and return to the main menu.
- Use the **UP/DOWN** buttons to navigate through the menus or to increase/decrease numeric values.
- Use the **ENTER** button to open the desired menu, to confirm your choice or to set the currently selected value.

6.4. Start-up

Upon start-up the display shows a splash screen with the currently installed firmware version.



Afterwards the display shows the main menu.

Press the **UP/DOWN** buttons to enter the main menu.

Note:

If no button is pressed, after 25 seconds of inactivity the display will turn off. Press any button to turn the display on. If the display lock is turned on, enter the password to unlock the display. The password is pressing the **UP/DOWN** buttons in the following order: **UP, DOWN, UP, DOWN**.

6.5. Menu Overview



6.6. Main Menu Options

The main menu has the following options:



Static Colors



Built-in programs



Master/Slave Mode



DMX-512 Mode



DMX channel modes (personalities)



Edit Mode



Settings



Display lock



Calibration menu



Zoom settings (Calibration menu)

01) Press the **UP/DOWN** buttons to navigate through the main menu.
02) Press the **ENTER** button to open the submenus.

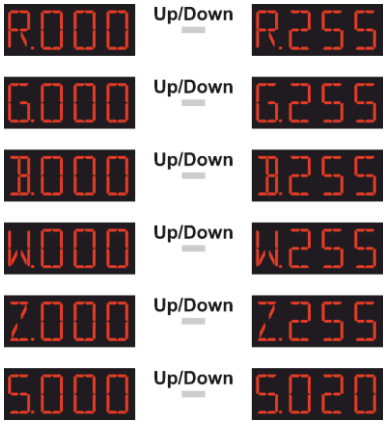
Note:

Some of the submenus require a password. The default password is pressing the **UP/DOWN** buttons in the following order: **UP**, **DOWN**, **UP**, **DOWN**. If you turn off the display lock, this will not affect the submenus which by default require a password.

6.6.1. Static colors

In this menu you can create a custom color, adjust the zoom and add strobe effect.

01) Press the **ENTER** button to select the parameter.
02) Press the **UP/DOWN** buttons to increase/decrease the values:



- RED: Set the intensity of the red color. The adjustment range is 0–255, from low to high intensity
- GREEN: Set the intensity of the green color. The adjustment range is 0–255, from low to high intensity
- BLUE: Set the intensity of the blue color. The adjustment range is 0–255, from low to high intensity
- WHITE: Set the intensity of the white color. The adjustment range is 0–255, from low to high intensity
- ZOOM: Adjust the zoom. The adjustment range is 0–255, from narrow angle to wide angle
- STROBE: Add strobe effect. The adjustment range is 0–25, from OFF to high frequency

03) Press the **ENTER** button to set the value and to move to the next setting.

6.6.2. Auto Programs

In this menu you can select a built-in auto program or a custom program. There are 10 built-in auto programs, which cannot be edited, and 10 custom programs, which can be edited in the Edit menu. For more information see **6.6.6. Edit** on pages 26–27.

01) Press the **UP/DOWN** buttons to choose an auto program or a custom program.
02) Press the **ENTER** button to confirm your choice. If you have chosen one of the auto programs, you can additionally adjust the speed.



03) Press the **UP/DOWN** buttons to set the program speed. The adjustment range is between 0–255, from slow to fast.

Note:

You cannot adjust the speed of the custom programs.

6.6.3. Run Mode

In this menu you can set the control mode of the device.

01) Press the **UP/DOWN** buttons to select one of the following 2 options:



- DMX: The device will operate in DMX mode
- SLAVE: The device will operate as a slave device in master/slave mode

02) Press the **ENTER** button to confirm the selection.

6.6.4. DMX Address

In this menu you can set the DMX starting address of the device.

01) Press the **UP/DOWN** buttons to set the desired DMX address. Refer to **5.3.5. DMX Addressing** on page 19 for more information. The adjustment range depends on the selected DMX channel mode:
- TOUR (12 channels): 001–501
- ARC.1 (3 channels): 001–510
- AR1.D (4 channels): 001–509
- ARC.2 (4 channels): 001–509
- AR2.D (5 channels): 001–508
- AR2.S (6 channels): 001–507
- HSV (3 channels): 001–510
- TR16 (17 channels): 001–496
- AR2.Z (7 channels): 001–506

02) Press the **ENTER** button to save the changes.

6.6.5. Personality

In this menu you can select the DMX channel mode.

01) Press the **UP/DOWN** buttons to select the desired DMX channel mode. There are 9 options available:



- TOUR: 12 channels
- ARC.1: 3 channels
- AR1.D: 4 channels
- ARC.2: 4 channels
- AR2.D: 5 channels
- AR2.S: 6 channels
- HSV: 3 channels
- TR16: 17 channels
- AR2.Z: 7 channels

02) Press the **ENTER** button to confirm the selection.

Note: See **6.7. DMX Channels** on pages 32–34 for complete overview of all DMX channels.

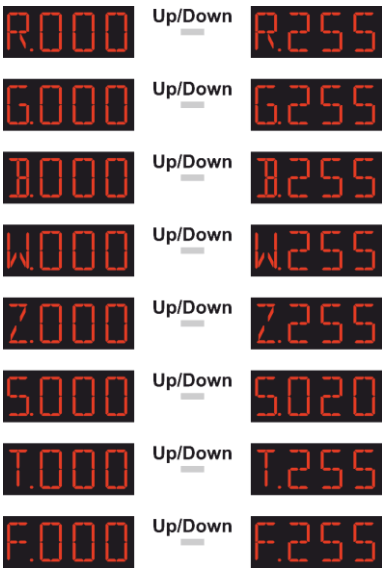
6.6.6. Edit

In this menu you can edit the 10 custom programs.

01) Press the **UP/DOWN** buttons to choose the custom program you want to edit: PROGRAM1–PROGRAM10.
02) Press the **ENTER** button to confirm the selection and open the submenu with the scenes. Each custom program has 30 scenes, which can be edited:



03) Press the **UP/DOWN** buttons to select the desired scene.
04) Press the **ENTER** button to confirm the selection and open the submenu with the settings for the respective scene.
05) Press the **ENTER** button to select one of the following 8 options:



- RED: Set the intensity of the red color. The adjustment range is 0–255, from low to high intensity
- GREEN: Set the intensity of the green color. The adjustment range is 0–255, from low to high intensity
- BLUE: Set the intensity of the blue color. The adjustment range is 0–255, from low to high intensity
- WHITE: Set the intensity of the white color. The adjustment range is 0–255, from low to high intensity
- ZOOM: Adjust the zoom. The adjustment range is 0–255, from narrow angle to wide angle
- STROBE: Add strobe effect. The adjustment range is 0–25, from OFF to high frequency
- TIME: Set the duration of the scene. The adjustment range is 0–255, from 0,1 to approximately 25 seconds
- FADE: Set the fading effect between the scenes. The adjustment range is 0–255

06) Press the **UP/DOWN** buttons to increase/decrease the values.
07) Press the **ENTER** button to set the value and to move to the next setting.
08) Repeat steps 6–7 to set all 8 parameters in the scene.
09) Press the **MENU** button to return to the submenu with the steps.
10) Repeat steps 3–8 to edit the remaining steps of the selected custom program.

6.6.6.1. How to make your own custom program

01) First, start with PR.C1 and add the desired settings in scene 1 (SC.01), then scene 2 (SC.02) , etc.
02) In this way you can add a maximum of 30 scenes.
03) After that, you can start with PR.C2 and create a maximum of 30 scenes again.
04) You can repeat these steps, until you've reached PR.10, step 30.
05) It is possible to create 300 separate scenes.

6.6.7. Settings

In this menu you can adjust the device's settings. This menu requires a password. The default password is pressing the **UP/DOWN** buttons in the following order: **UP, DOWN, UP, DOWN**.

01) Enter the password.
02) Press the **ENTER** button to confirm the password and access the menu.
03) Press the **UP/DOWN** buttons to select one of the following 7 options:



- UPLOAD: See **6.6.7.1. Upload**
- RESET: See **6.6.7.2. Reset**
- DIMMER: See **6.6.7.3. Dimmer**
- DMX ERROR: See **6.6.7.4. DMX Error**
- ZOOM: See **6.6.7.5. Zoom settings**
- CURV: See **6.6.7.6. Dimming curve settings**
- PWM: See **6.6.7.7. PWM Rate**

04) Press the **ENTER** button to confirm the selection.

6.6.7.1. Upload

In this submenu you can export the custom programs from the master device to the connected slave devices.

01) Select UPLOAD and press the **ENTER** button to open the submenu.
02) Enter the password, pressing the buttons in the following order: **UP, DOWN, UP, DOWN**.
03) Press the **ENTER** button to confirm the password.
04) While **exporting**, the light output of the slave devices will turn yellow and the display will show:



05) When the upload is finished, the display will show OK.
06) If there are any **problems with exporting**, the master and the slave devices will light in **red**.
07) If the operation was **completed successfully**, the master and the slave devices will light in **green**.

6.6.7.2. Reset

In this submenu you can restore the default factory settings of the device. This submenu requires a password. The default password is pressing the **UP/DOWN** buttons in the following order: **UP**, **DOWN**, **UP**, **DOWN**.

01) Enter the password.
02) Press the **ENTER** button to confirm the password and start the reset. During reset the display will show:



When the reset is completed, the display will show OK.
03) Press any button to return to the main menu.

Note:

Calibration changes made in **6.6.9 Calibration** cannot be reset.

6.6.7.3. Dimmer

In this submenu you can adjust the dimmer speed.



01) Select DIMMER and press the **ENTER** button to open the submenu.
02) Press the **UP/DOWN** buttons to choose one of the following options:
    - OFF: linear dimmer
    - DIM1-DIM 4: Dimmer speed, from fast to slow
03) Press the **ENTER** button to confirm your choice.

6.6.7.4. DMX Error

In this submenu you can determine the behavior of the device in case of a DMX failure.

01) Press the **UP/DOWN** buttons select one of the following 2 options:
    - SAVE: The device will use the last properly received DMX signal
    - BLACK: The device will black out the light output
02) Press the **ENTER** button to confirm your choice.

6.6.7.5. Zoom settings

In this menu you can select the zoom settings.

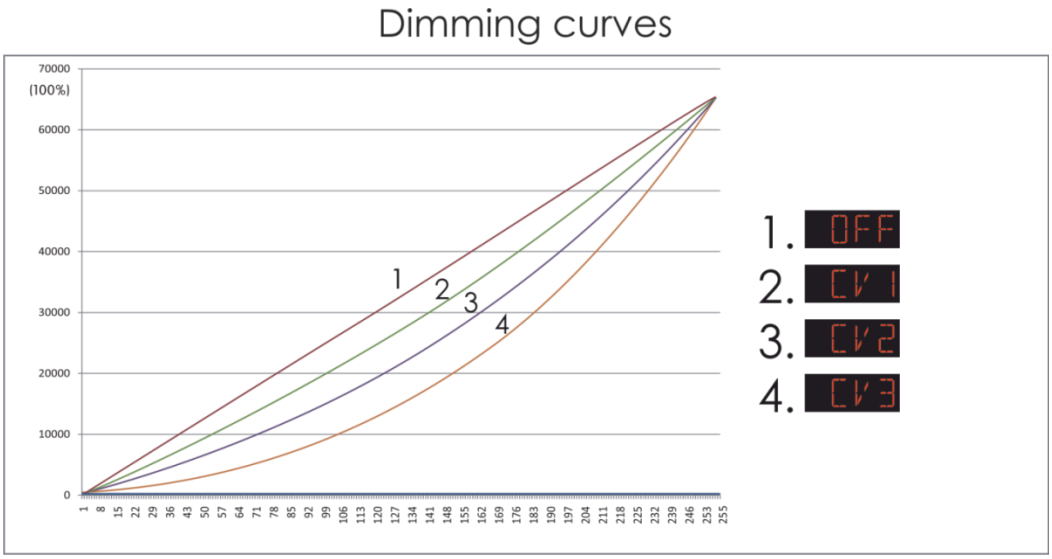
01) Press the **UP/DOWN** buttons to select one of the following 3 options:
    - BASE: Zoom, basic position
    - POS1: Zoom, 1st position
    - POS2: Zoom, 2nd position
02) Press the **ENTER** button to confirm the selection.

6.6.7.6. Dimming curve settings

In this menu you can select the dimming curve settings.

01) Press the **UP/DOWN** buttons to select one of the following 4 options:
- OFF
- CV1
- CV2
- CV3

02) Press the **ENTER** button to confirm the selection.



6.6.7.7. PWM Rate

In this submenu you can set the PWM (Pulse Width Modulation) frequency.



01) Select PWM RATE and press the **ENTER** button to open the submenu.
02) Press the **UP/DOWN** buttons to choose the desired PWM frequency.
The available options are: 600 Hz, 1200 Hz, 2000 Hz, 2400 Hz, 4000 Hz, 6000 Hz and 25000 Hz.
Note: The higher the PWM frequency, the lower the dimmer's grayscale.
03) Press the **ENTER** button to set the value.

6.6.8. Key / Display Lock

In this menu you can activate the display lock.

01) Press the **UP/DOWN** buttons to select one of the following 2 options:.
- ON: The display lock is on. The display turns off after 30 seconds of inactivity. To access the main menu, you need to enter the password. The default password is pressing the **UP/DOWN** buttons in the following order: **UP, DOWN, UP, DOWN**
- OFF: The access to the main menu remains unlocked after the display turns off

02) Press the **ENTER** button to confirm your choice.

Note:

If you turn off the display lock, this will not affect the submenus which by default require a password.

6.6.9. Calibration

In this menu you can calibrate the white light. This menu requires a password. The default password is pressing the **UP/DOWN** buttons in the following order: **UP, DOWN, UP, DOWN**.

01) Enter the password.
02) Press the **ENTER** button to confirm the password and access the menu.
03) Select the following option:



- WHITE: See **6.6.9.1. White Calibration**

04) Press the **ENTER** button to confirm the selection.

6.6.9.1. White Calibration

In this submenu you can calibrate each predefined color temperature for the white light. There are 11 predefined white colors. You can access these 11 colors in DMX mode. See **6.7. DMX Channels** on pages 32–34 for more information.

01) Press the **UP/DOWN** buttons to select one of the following 11 options: WH01–WH11
02) Press the **ENTER** button to confirm the selection and open the submenu.
03) Press the **UP/DOWN** buttons to increase/decrease the values:



- RED: Set the intensity of the red color. The adjustment range is 0–255, from low to high intensity
- GREEN: Set the intensity of the green color. The adjustment range is 0–255, from low to high intensity
- BLUE: Set the intensity of the blue color. The adjustment range is 0–255, from low to high intensity
- WHITE: Set the intensity of the white color. The adjustment range is 0–255, from low to high intensity

04) Press the **ENTER** button to set the value and to move to the next setting.

Note:
If you change the values for a predefined white color in this submenu, the CCT in the respective DMX channel will be changed as well.

6.6.10. Zoom preset positions

In this menu you can select the zoom preset positions.

01) Press the **UP/DOWN** buttons to select one of the following 2 options:
- POS1
- POS2

02) Press the **ENTER** button to confirm the selection and open the submenu.
03) Press the **UP/DOWN** buttons to increase/decrease the values:



- ZOOM POSITION: Set the zoom position. The adjustment range is 0–255, from OFF to full zoom

6.7. DMX Channels

6.7.1. DMX Channels Overview

Function	3 channels (HSV)	3 channels (ARC1)	4 channels (AR1.D)	4 channels (ARC.2)	5 channels (AR2.D)	6 channels (AR2.S)	7 channels (AR2.Z)
Hue	1						
Dimmer	2		1		1	1	1
Red	3	1	2	1	2	2	2
Green		2	3	2	3	3	3
Blue		3	4	3	4	4	4
White				4	5	5	5
Shutter/Strobe						6	
Zoom							6
Zoom Reset							7

Function	12 channels (TOUR)	17 channels (TR16)
Dimmer	1	1
Dimmer fine		2
Red	2	3
Red Fine, 16-bit		4
Step Time, If CH8 set 141-255)	2	
Green	3	5
Green Fine, 16-bit		6
Fade Time, If CH8 set 141-255)	3	
Blue	4	7
Blue Fine, 16-bit		8
White	5	9
White Fine, 16-bit		10
Macros	6	11
Shutter/Strobe, If CH1, 2, 3, 4, 5 set 1-255 and CH6 set 11-255 or CH8 set 41-139	7	12
Built-in/Custom programs	8	13
Auto speed	9	14
Dimmer speed	10	15
Zoom	11	16
Zoom Reset	12	17

6.7.2. HSV (3 channels)

HSV 3 CH	Function	Value	Setting
1	Hue	000–255	From low to high intensity (0–100 %)
2	Saturation	000–255	From low to high saturation (0–100 %)
3	Dimmer / Intensity	000–255	From low to high intensity (0–100 %)

6.7.3. ARC1 (3 channels), AR1.D (4 channels), ARC.2 (4 channels)

ARC1 3 CH	AR1.D 4 CH	ARC.2 4 CH	Function	Value	Setting
	1		Master Dimmer	000–255	From low to high intensity (0–100 %)
1	2	1	Red	000–255	From low to high intensity (0–100 %)
2	3	2	Green	000–255	From low to high intensity (0–100 %)
3	4	3	Blue	000–255	From low to high intensity (0–100 %)
		4	White	000–255	From low to high intensity (0–100 %)

Note:
Make sure that the Master Dimmer channel is open in order to see the light output.

6.7.4. AR2.D (5 channels), AR2.S (6 channels), AR2.Z (7 channels)

AR2.D 5 CH	AR2.S 6 CH	AR2.Z 7 CH	Function	Value	Setting
1	1	1	Master Dimmer	000–255	From low to high intensity (0–100 %)
2	2	2	Red	000–255	From low to high intensity (0–100 %)
3	3	3	Green	000–255	From low to high intensity (0–100 %)
4	4	4	Blue	000–255	From low to high intensity (0–100 %)
5	5	5	White	000–255	From low to high intensity (0–100 %)
	6		Strobe	000–009	No function
				010–255	From low to high frequency (0–25 Hz)
		6	Zoom	000–255	Zoom adjustment (5°–45°)
		7	Zoom Reset	000–200	No function
				201–220	Zoom reset
				221–255	No function

Note:
Make sure that the Master Dimmer channel is open in order to see the light output.

6.7.5. TOUR (12 channels), TR16 (17 channels)

TOUR 12 CH	TR16 17 CH	Function	Value	Setting
1	1	Master Dimmer	000–255	From low to high intensity (0–100 %)
	2	Master Dimmer Fine	000–255	Fine adjustment
2	3	Red	000–255	From low to high intensity (0–100 %)
	4	Red Fine	000–255	Fine adjustment
2		Step Time when CH8 set 141–255	000–255	From fast to slow (1 sec to 255 sec)
3	5	Green	000–255	From low to high intensity (0–100 %)
	6	Green Fine	000–255	Fine adjustment
3		Fade Time when CH8 set 141–255	000–255	From slow to fast
4	7	Blue	000–255	From low to high intensity (0–100 %)
	8	Blue Fine	000–255	Fine adjustment
5	9	White	000–255	From low to high intensity (0–100 %)
	10	White Fine	000–255	Fine adjustment
6	11	Color Macros	000–010	No function
			011–030	Red 100 % / Green up/ Blue 0 %
			031–050	Red down / Green 100 % / Blue 0 %
			051–070	Red 0 % / Green 100 % / Blue up

TOUR 12 CH	TR16 17 CH	Function	Value	Setting
			071–090	Red 0 % / Green down / Blue 100 %
			091–110	Red up/ Green 0 % / Blue 100 %
			111–130	Red 100 % / Green 0 % / Blue down
			131–150	Red 100 % / Green up / Blue up
			151–170	Red down / Green down / Blue 100 %
			171–200	Red 100% / Green 100% / Blue 100% / White 100%
			201–205	White 1: 3200 K
			206–210	White 2: 3400 K
			211–215	White 3: 4200 K
			216–220	White 4: 4900 K
			221–225	White 5: 5600 K
			226–230	White 6: 5900 K
			231–235	White 7: 6500 K
			236–240	White 8: 7200 K
			241–245	White 9: 8000 K
			246–250	White 10: 8500 K
			251–255	White 11: 10000 K
7	**12**	**Strobe**	000–009	No function
			010–255	From low to high frequency (0–25 Hz)
8	**13**	**Auto Programs**	000–040	No function
			041–050	Auto program 1
			051–060	Auto program 2
			061–070	Auto program 3
			071–080	Auto program 4
			081–090	Auto program 5
			091–100	Auto program 6
			101–110	Auto program 7
			111–120	Auto program 8
			121–130	Auto program 9
			131–140	Auto program 10
			141–150	Custom program 1
			151–160	Custom program 2
			161–170	Custom program 3
			171–180	Custom program 4
			181–190	Custom program 5
			191–200	Custom program 6
			201–210	Custom program 7
			211–220	Custom program 8
			221–230	Custom program 9
			231–255	Custom program 10
9	**14**	**Auto Programs Speed**	000–255	Speed adjustment, from slow to fast
10	**15**	**Dimmer Speed**	000–009	Preset dimmer speed from the display menu
			010–029	OFF
			030–069	DIM 1, Non-linear dimmer 1 (fastest)
			070–129	DIM 2, Non-linear dimmer 2
			130–189	DIM 3, Non-linear dimmer 3
			190–255	DIM 4, Non-linear dimmer 4 (slowest)
11	**16**	**Zoom**	000–255	Zoom adjustment (8°–40°)
12	**17**	**Zoom Reset**	000–200	No function
			201–220	Zoom reset, after 3 sec.
			221–255	No function

Note:

Make sure that the Master Dimmer channel is open in order to see the light output.

6.8. RDM Information

This device supports RDM. Refer to **6.8.2. Supported RDM PIDs (Parameter IDs)** for more information.

6.8.1. RDM Details

- Responder: 29B4:045xxxxx
- Manufacturer's ID: Showtec (Highlite International B.V.)
- Manufacturer Label: Showtec
- Model Description: Spectral M3000 Zoom ZQ4 MKII
- Model ID: 69
- Device Label: Spectral M3000 Zoom ZQ4 MKII

Note:

An RDM responder ID consists of 3 parts:

- 1st part – 4 digits – Manufacturer's ID
- 2nd part – 3 digits – Model ID
- 3rd part – 5 digits – Unique ID

The RDM responder IDs of all products of Highlite International start with the same 4 digits. The first 7 digits of the RDM responder ID for each model are the same. The last 5 digits are different for each device.

6.8.2. Supported RDM PIDs (Parameter IDs)

Parameter ID	Value	Required	GET	SET
DISC_UNIQUE_BRANCH	0x0001	*		
DISC_MUTE	0x0002	*		
DISC_UN_MUTE	0x0003	*		
COMMS_STATUS	0x0015		*	*
STATUS_MESSAGES	0x0030		*	
STATUS_ID_DESCRIPTION	0x0031		*	
CLEAR_STATUS_ID	0x0032			*
SUPPORTED_PARAMETERS	0x0050	*	*	
DEVICE_INFO	0x0060	*	*	
DEVICE_MODEL_DESCRIPTION	0x0080		*	
MANUFACTURER_LABEL	0x0081		*	
DEVICE_LABEL	0x0082		*	*
FACTORY_DEFAULTS	0x0090		*	*
LANGUAGE_CAPABILITIES	0x00A0		*	
LANGUAGE	0x00B0		*	*
SOFTWARE_VERSION_LABEL	0x00C0	*	*	
DMX_PERSONALITY	0x00E0		*	*
DMX_PERSONALITY_DESCRIPTION	0x00E1		*	
DMX_START_ADDRESS	0x00F0	*	*	*
SENSOR_DEFINITION	0x0200		*	
SENSOR_VALUE	0x0201		*	*
RECORD_SENSORS	0x0202			*
CURVE	0x0343		*	*
CURVE_DESCRIPTION	0x0344	*	*	
MODULATION_FREQUENCY_ DESCRIPTION	0x0348	*	*	
IDENTIFY_DEVICE	0x1000	*	*	*

7. Troubleshooting

This troubleshooting guide contains solutions to problems which can be carried out by an ordinary person. The device does not contain user-serviceable parts.

Unauthorized modifications to the device will render the warranty void. Such modifications may result in injuries and material damage.

Refer servicing to instructed or skilled persons. Contact your Highlite International dealer in case the solution is not described in the table.

Problem	Probable cause(s)	Solution
The device does not function at all	No power to the device	• Check if power is switched on and cables are plugged in
	Internal fuse is blown	• Disconnect the device and contact your Highlite International dealer
The device responds erratically	The factory settings of the device are changed	• Reset the device's parameters to the default factory settings. See **6.6.7.2. Reset** on page 28
The device does not respond to DMX control	The controller is not connected	• Connect the controller
	The signal is reversed. The 5-pin DMX OUT of the controller does not match the DMX IN of the device	• Install a phase-reversing cable between the controller and the device
	The controller is defective	• Try using another controller
The device responds erratically to DMX control	Bad data link connection	• Examine connections and cables. Correct poor connections. Repair or replace damaged cables
	The data link is not terminated with a 120 Ω termination plug	• Insert a termination plug in the DMX OUT connector of the last device on the link
	Incorrect addressing	• Check address settings and correct, if necessary
	In case of a setup with multiple devices, one of the devices is defective and disturbs data transmission on the link	• To find out which device is defective, bypass one device at a time until normal operation is restored
No light or LEDs cut out intermittently	LEDs are damaged	• Disconnect the device and contact your Highlite International dealer
	The power supply settings do not match local AC voltage and frequency	• Disconnect the device. Check the settings and correct, if necessary

8. Maintenance

8.1. Safety Instructions for Maintenance



DANGER
Electric shock caused by dangerous voltage inside

Disconnect power supply before servicing or cleaning.

8.2. Preventive Maintenance



Attention
Before each use, examine the device visually for any defects.

Make sure that:

- All screws used for installing the device or parts of the device are tightly fastened and are not corroded.
- The safety devices are not damaged.
- There are no deformations on housings, fixations and installation points.
- The lens is not cracked or damaged.
- The power cables are not damaged and do not show any material fatigue.

8.2.1. Basic Cleaning Instructions

The external lens of the device must be cleaned periodically in order to optimize the light output. The cleaning schedule depends on the conditions at the site where the device is installed. When smoke or fog machines are used at the site, the device will need more frequent cleaning. On the other hand, if the device is installed in well-ventilated area, it will need less frequent cleaning. To establish a cleaning schedule, examine the device at regular intervals during the first 100 hours of operation.

To clean the device, follow the steps below:

01) Disconnect the device from the electrical power supply.
02) Allow the device to cool down for at least 5 minutes.
03) Remove the dust collected on the external surface with dry compressed air and a soft brush.
04) Clean the lens with a damp cloth. Use a mild detergent solution.
05) Dry the lens carefully with a lint-free cloth.
06) Clean the DMX and other connections with a damp cloth.



Attention

- Do not immerse the device in liquid.
- Do not use alcohol or solvents.
- Make sure that the connections are fully dry before connecting the device to the power supply and to other devices.

8.2.2. Draining Condensation Water

The Spectral M3000 Zoom Q4 MKII IP65 is IP65 rated. The device can resist water jets. If the device is exposed to extreme humid conditions during servicing, condensation may collect inside the device. This can happen also during transportation, if the device is exposed to extreme temperature variations.

If condensation water collects inside the device, follow the steps below to remove the condensation water:

01) Carefully remove the **protective vent (13)** with a wrench (16 mm).

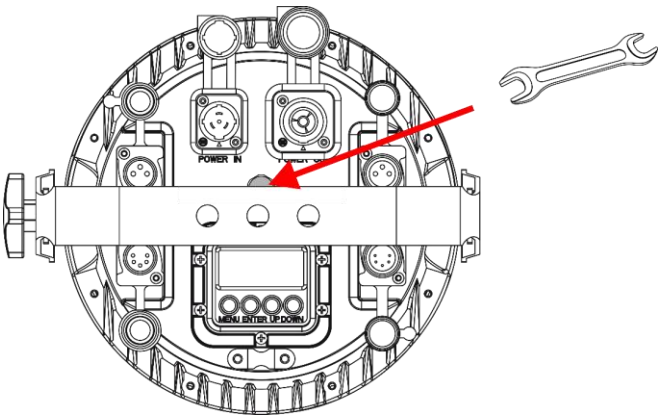


Fig. 14

02) Let the device operate at full output for 60 minutes.
03) Let the device cool down for 30 minutes.
04) Install the **protective vent (13)** back in place. Make sure that you do not overtighten it.

8.3. Corrective Maintenance

The device does not contain user-serviceable parts Do not open the device and do not modify the device.

Refer repairs and servicing to instructed or skilled persons. Contact your Highlite International dealer for more information.

9. Deinstallation, Transportation and Storage

9.1. Instructions for Deinstallation

WARNING
Incorrect deinstallation can cause serious injuries and damage of property.

- Let the device cool down before dismounting.
- Disconnect power supply before deinstallation.
- Always observe the national and site-specific regulations during deinstallation and derigging of the device.
- Wear personal protective equipment in compliance with the national and site-specific regulations.

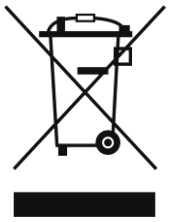
9.2. Instructions for Transportation

- Use the original packaging to transport the device, if possible.
- Always observe the handling instructions printed on the outer carton box, for example: “Handle with care”, “This side up”, “Fragile”.

9.3. Storage

- Clean the device before storing. Follow the cleaning instructions in chapter **8.2.1. Basic Cleaning Instructions** on page 37.
- Store the device in the original packaging, if possible.

10. Disposal



Correct disposal of this product

Waste Electrical and Electronic Equipment

This symbol on the product, its packaging or documents indicates that the product shall not be treated as household waste. Dispose of this product by handing it to the respective collection point for recycling of electrical and electronic equipment. This is to avoid environmental damage or personal injury due to uncontrolled waste disposal. For more detailed information about recycling of this product contact the local authorities or the authorized dealer.

11. Approval

CE

UK CA

Check the respective product page on the website of Highlite International (www.highlite.com) for an available declaration of conformity

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