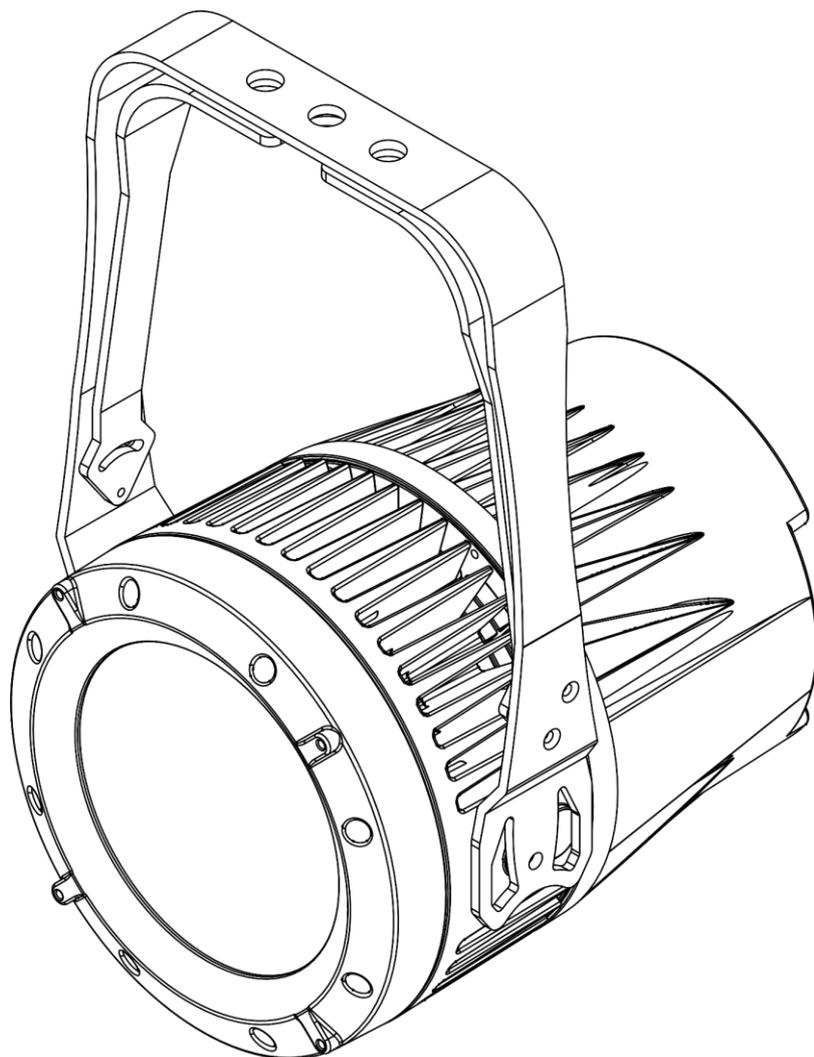




USER MANUAL



ENGLISH

Spectral M1500 Zoom Q4 MKIII V2

Product code: 43549

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 M1500 Zoom Q4 MKIII
- Schuko to PowerCON connector power cable (1,5 m)
- Display protective cover
- User manual

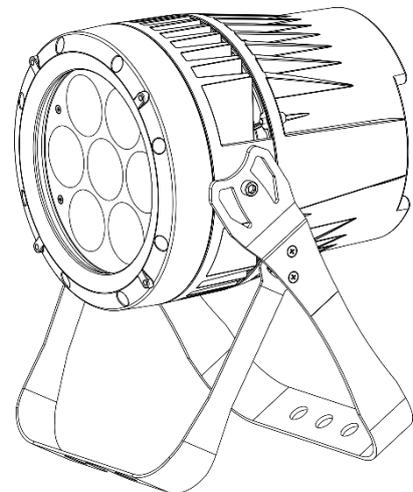


Fig. 01

1.2. Intended Use

This device is intended for professional use as an indoor spot. It is suitable only for indoor installation. This device 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 screw (02)**”
- 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



Eye damage 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 backside of the device.

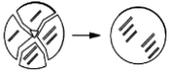
The information label contains the following symbols:



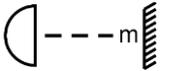
This device shall not be treated as household waste.



This device falls under IEC protection class II.



Replace any cracked protective shield.



Minimum distance from lighted objects.



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 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.
- For replacement use fuses of the same type and rating only.
- 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.



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.



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 an indoor 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 contains a non-user-replaceable light source.
- 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.

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 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 M1500 Zoom Q4 MKIII is a 7x 20 watt RGBW LED spot to wash Parcan, with a wide 8°–40° motorised zoom range and high CRI, suitable for in- and outdoor applications. Each function, including its 2-section LED control, 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. The compact and lightweight 7 kg design, with IP65 rating and -10~40 °C operating temperature range, makes the Spectral M1500 Zoom MKIII fit for almost any environment.

3.1. Front View

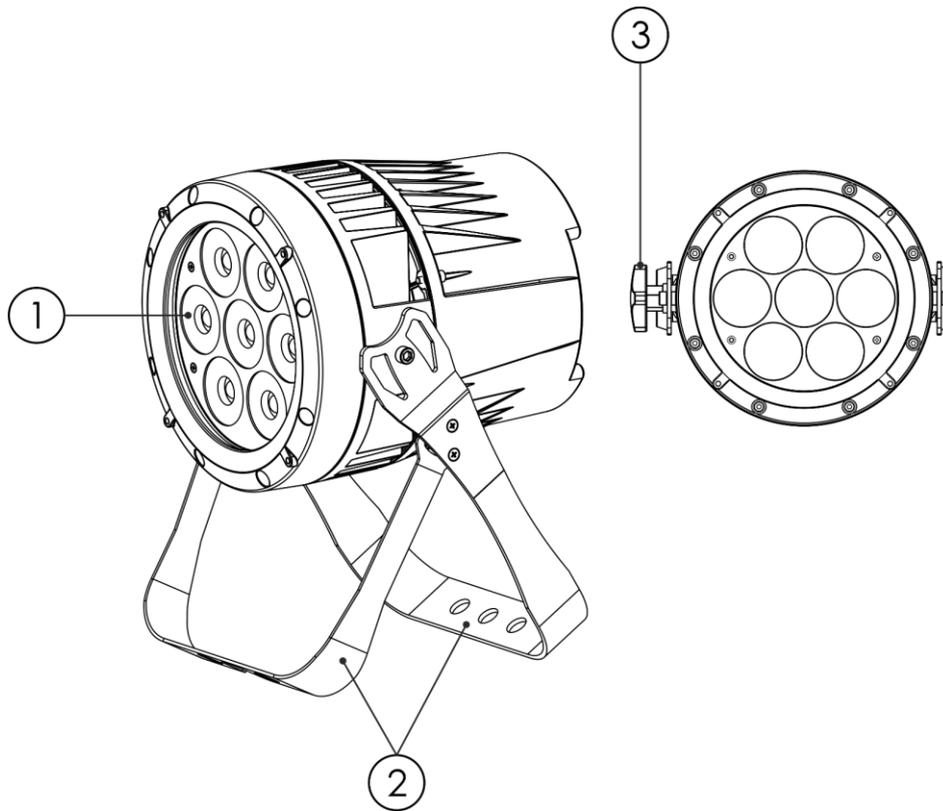


Fig. 02

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

3.2. Back View

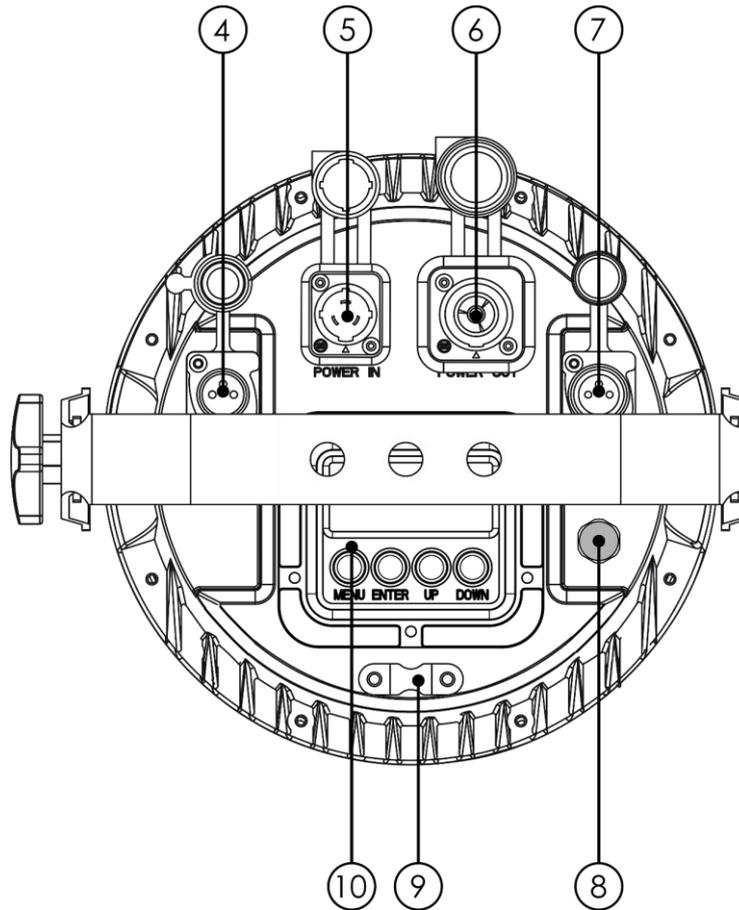


Fig. 03

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

3.3. Product Specifications

Model:	Spectral M1500 Zoom Q4 MKIII	
Electrical:		
Input voltage:	100-240 VAC, 50/60Hz	
Power consumption:	128W (full output)	
Physical:		
Dimensions:	255 x 225 x 360 mm (LxWxH)	
Weight:	7,08 kg	
Optics:		
Light source:	7 x 4-in-1 20W RGBW LEDs	
Dimmer:	0–100 %	
Strobe:	0-20Hz	
Refresh rate:	1200Hz	
Lumen Total:	2696 lm	
Lumen Red:	532 lm	
Lumen Green:	1028 lm	
Lumen Blue:	341 lm	
Lumen White:	1246 lm	
Lux @2m:	17936 lx	
Lux @3m:	7972 lx	
Lux @5m:	2870 lx	
CRI:	85	
Zoom angle:	8–40°	
Zoom	Motorized	
Operation and control:		
Control:	Stand-alone (Static Colors, Auto) Master/Slave (Static Colors, Auto) DMX-512	
DMX channels:	3, 3, 4, 4, 5, 6, 7, 12, 17, 25	
Control panel:	4-digit LED display	
Connections:		
Power connections:	Schuko to PowerCON connector power cable	
Data connections:	IP65 3-pin DMX connectors IN/OUT	
Signal pinouts:	3-pin: pin 1 (ground), pin 2 (-), pin 3 (+)	
Construction:		
Housing:	Die-cast aluminum	
Color:	Black	
IP rating:	IP65	
Cooling:	Convection	
Thermal:		
Maximum ambient temperature t_a :	40 °C	
Minimum Operating Temperature	-10 °C	
Maximum housing temperature t_c :	65 °C	
Minimum distance:		
Minimum distance from flammable surfaces:	0,8 m	
Minimum distance to lighted object:	0,8 m	

3.4. Dimensions

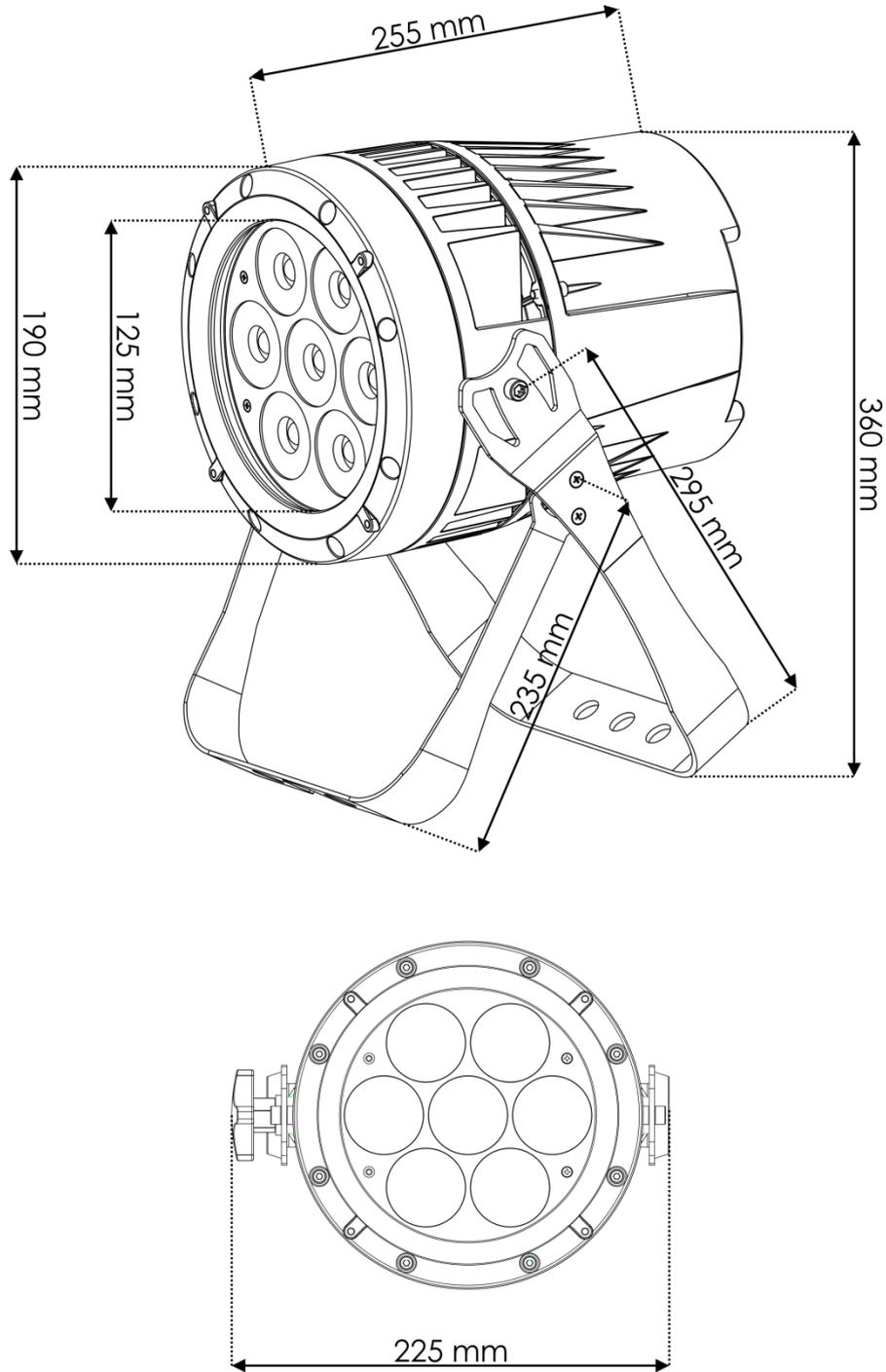


Fig. 04

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 only indoors.
- The device can be mounted to a truss or other rigging structure in any orientation.
- The minimum distance to other objects must be bigger than 0,3 m.
- The minimum distance between the light output and the illuminated surface must be bigger than 0,8 m.
- The maximum ambient temperature $t_a = 40\text{ °C}$ must never be exceeded.
- The relative humidity must not exceed 50 % with an ambient temperature of 40 °C .

4.4. Rigging

The device can be positioned on a flat surface 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.

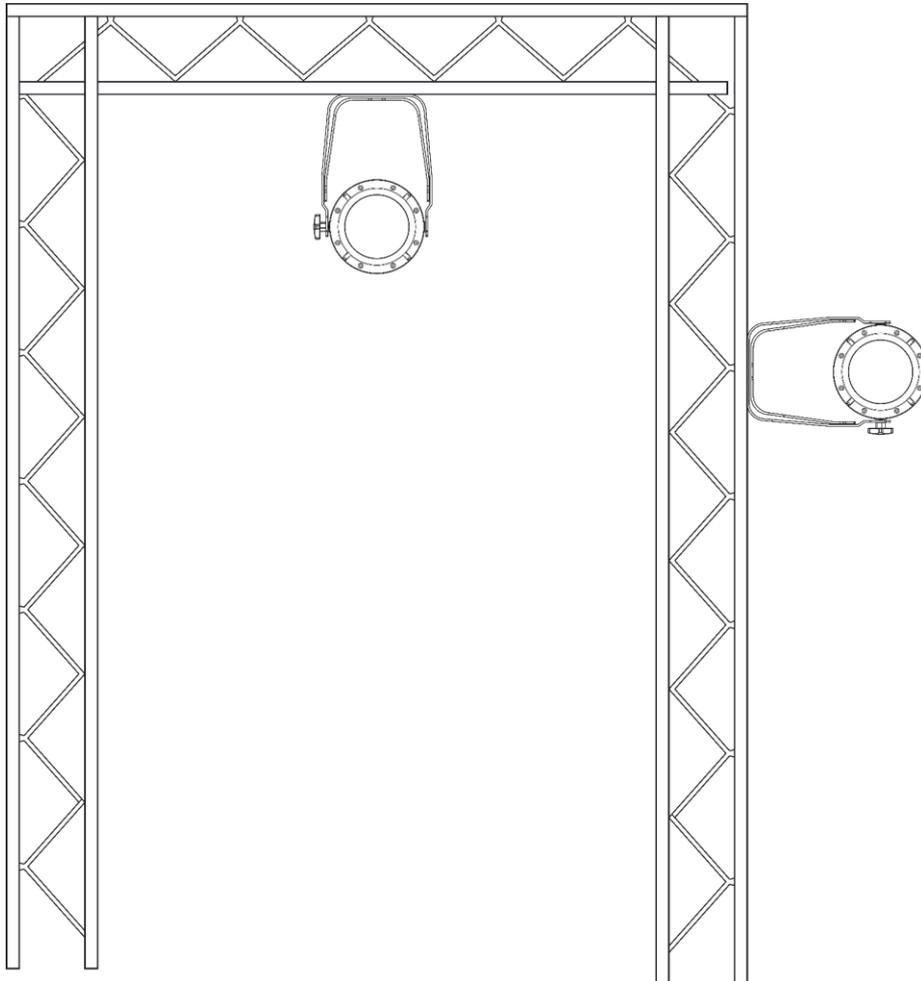


Fig. 05



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. 05. 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 **mounting bracket (02)**, as shown in Fig. 06.

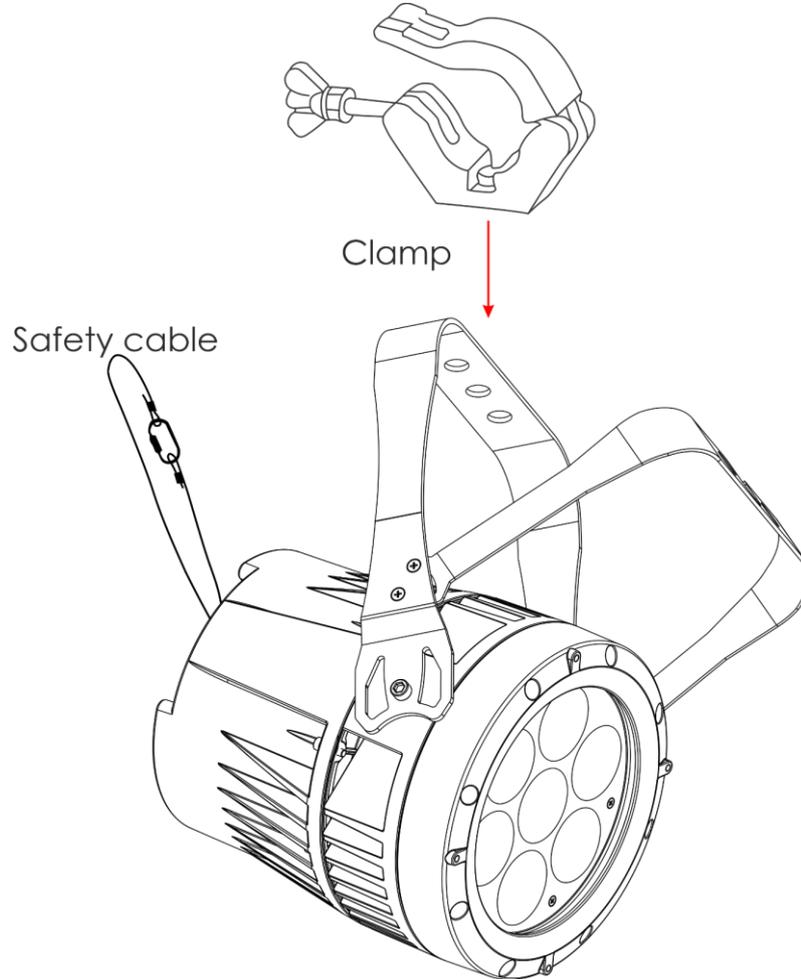


Fig. 06

4.4.1. Angle Adjustment

You can adjust the angle of the device with the **adjustment screw (01)**.

- 01) Turn the **adjustment screw (03)** counterclockwise to release it.
- 02) Tilt the device to the desired angle (see Fig. 07).
- 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.

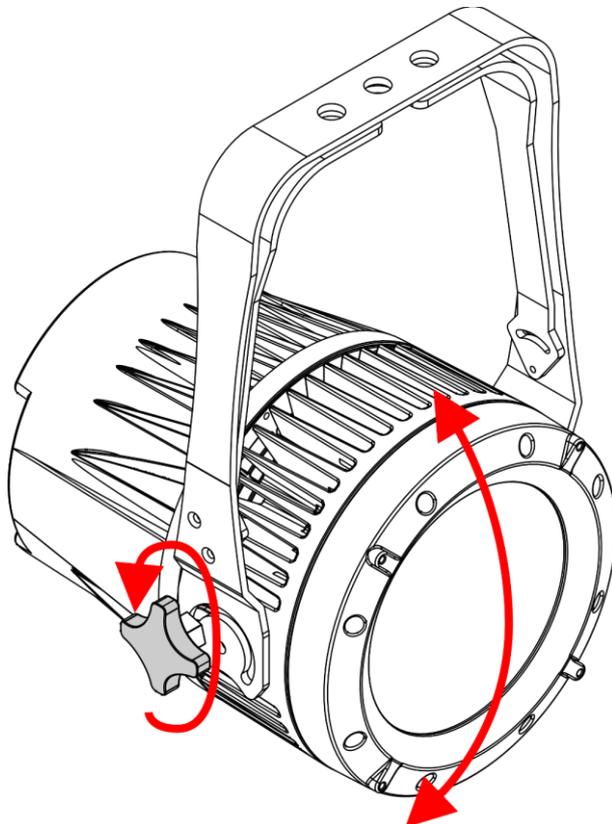


Fig. 07

4.4.2. Free-standing Bracket Installation

- 01) Spread the 2 brackets for solid floor installation as shown in Fig. 08.
- 02) Tighten the screws.

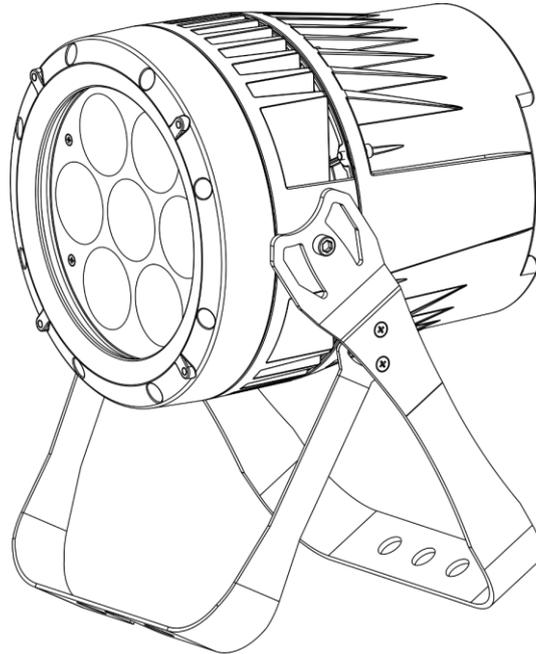


Fig. 08

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: 8 devices Spectral M1500 Zoom Q4 MKIII
- at 200–240 V: 15 devices Spectral M1500 Zoom Q4 MKIII

5. Setup

5.1. Warnings and Precautions



Attention

Connect all data cables before supplying power.

Disconnect power supply before connecting or disconnecting data cables.

5.2. Stand-alone Setup

When Spectral M1500 Zoom Q4 MKIII is not connected to a controller or to other devices, it functions as a stand-alone device. It can be operated manually or in auto mode.

For more information about the control modes, refer to **6.6.1. Static Colors** on page 28 or **6.6.2. Auto Program Mode** on page 28.

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 operating mode.

The Spectral M1500 Zoom Q4 MKIII has 3-pin DMX signal IN and OUT connectors.

The pin assignment is as follows:

- 3-pin: pin 1 (ground), pin 2 (-), pin 3 (+)

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 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 3-pin 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. 09.

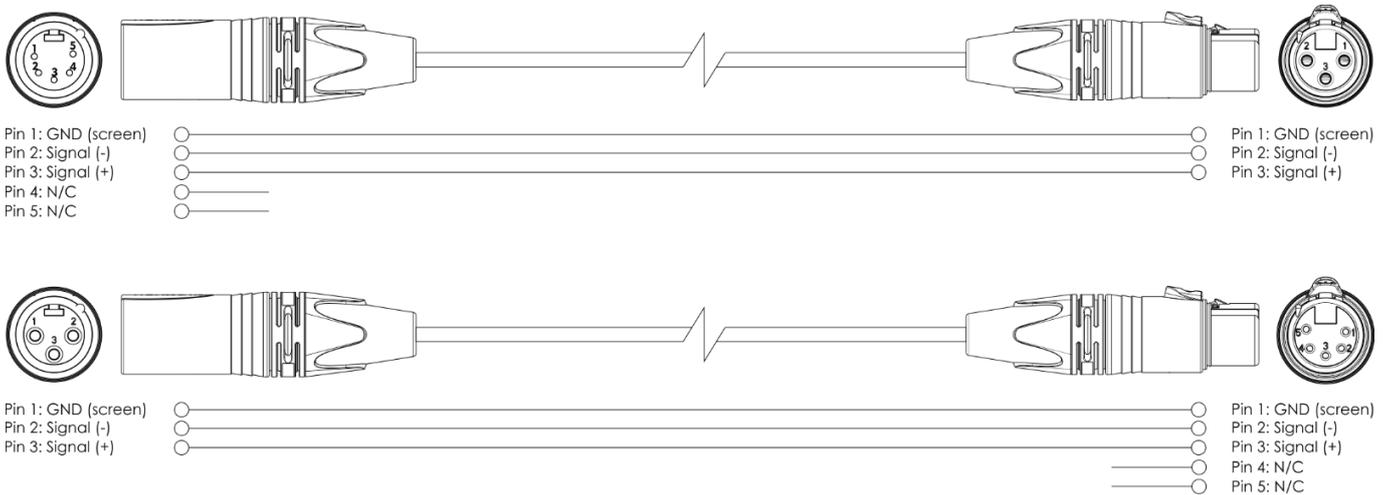


Fig. 09

5.3.3. Master/Slave Setup

The Spectral M1500 Zoom Q4 MKIII supports master/slave control mode. To connect multiple devices in master/slave setup, follow the steps below:

- 01) Connect the first device's DMX OUT connector to the second device's DMX IN connector.
- 02) Repeat step 1 to connect all devices as shown in Fig. 10.
- 03) Connect a DMX terminator (120 Ω resistor) to the DMX OUT connector of the last device in the setup.
- 04) Set the first device on the data link as a master device. See **6.6.3. Run Mode** on page 29 for more information.
- 05) Set the remaining devices to slave mode. See **6.6.3. Run Mode** on page 29 for more information.

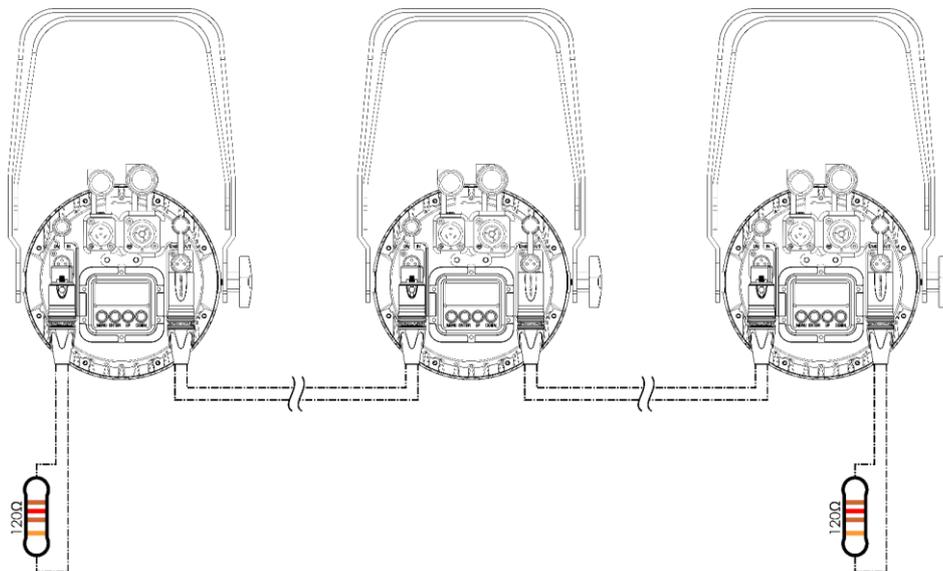


Fig. 10

5.3.4. DMX Linking

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

- 01) Use a 3-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 DMX cable.
- 03) Repeat step 2 to connect all devices in a daisy-chain as shown in Fig. 11.
- 04) Connect a DMX terminator (120 Ω resistor) to the DMX OUT connector of the last device on the data link.

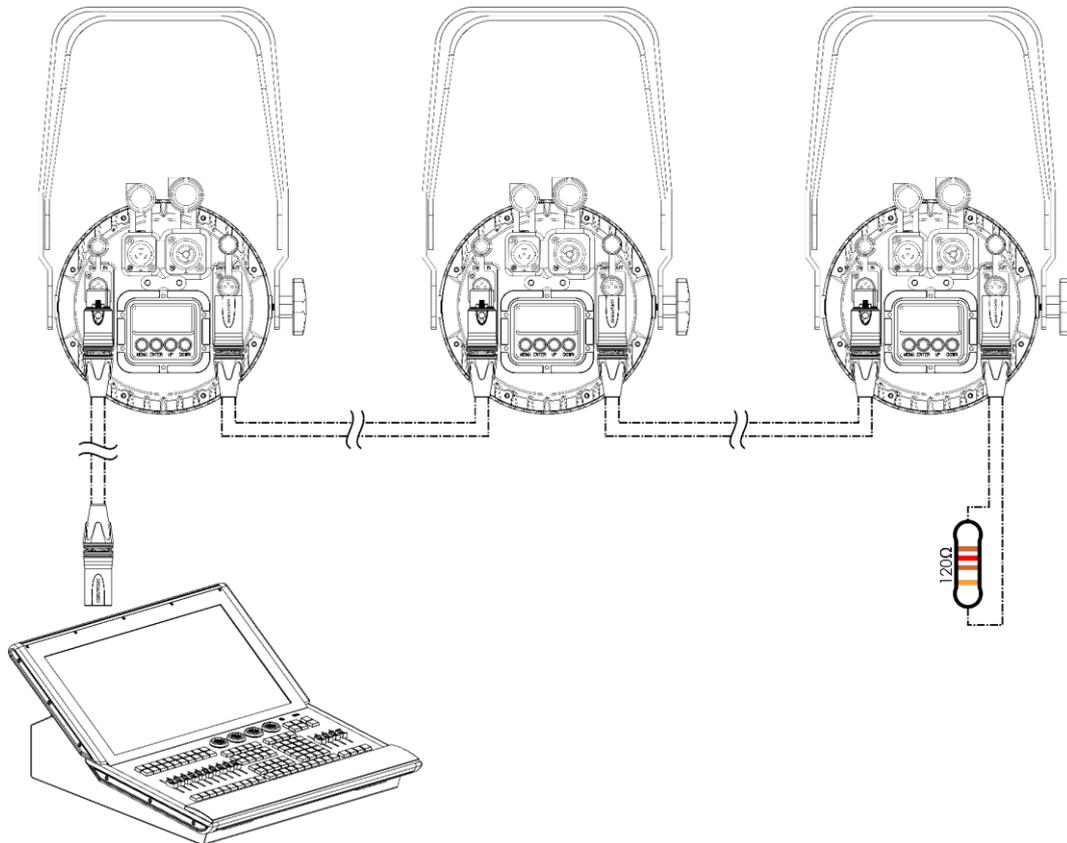


Fig. 11

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 M1500 Zoom Q4 MKIII has 10 personalities: 3, 3, 4, 4, 5, 6, 7, 12, 17, 25 channels.

If you want to connect multiple devices on one data link and use them in 25-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 26 (026), as $1 + 25 = 26$.
- 03) Set the starting address of the 3rd device on the data link to 51 (051) as $16 + 25 = 51$.
- 04) Continue assigning the starting addresses of the remaining devices by adding each time 25 to the previous number.

Make sure that you do not have any overlapping channels in order to control each Spectral M1500 Zoom Q4 MKIII correctly. If two or more devices are addressed similarly, they will work similarly.

- 02) Set the DMX starting address of the device in the DMX Address menu. See **6.6.4. DMX Address** on page 29 for more information.
- 03) Select the DMX channel mode in the DMX Configuration menu. See **6.6.5. Personality** on page 29 for more information. See **6.7. DMX Channels** on pages 35–40 for complete overview of all DMX channels.

6.3. Control Panel

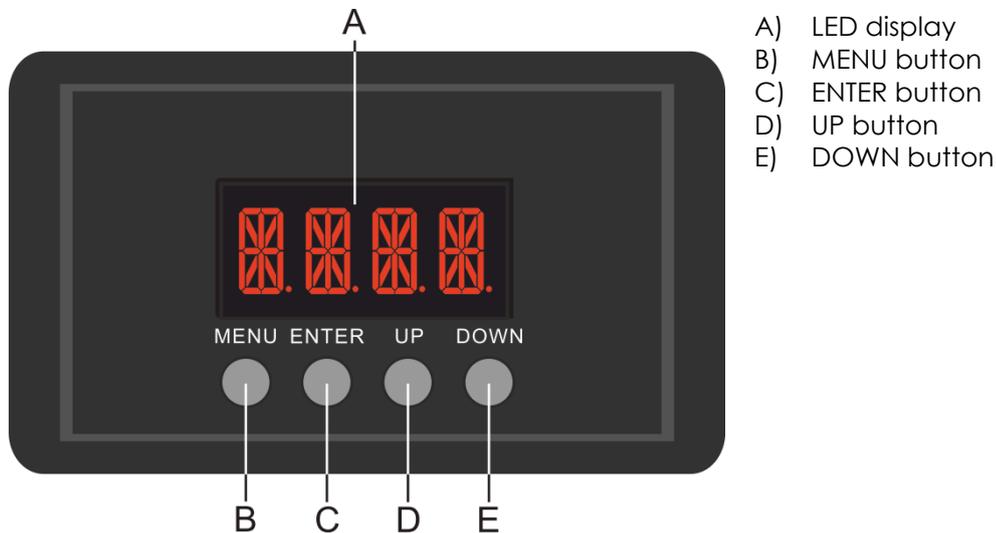


Fig. 12

- Use the **MENU** function in each menu to exit the current submenu and to 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 will show a screen with the current software version.



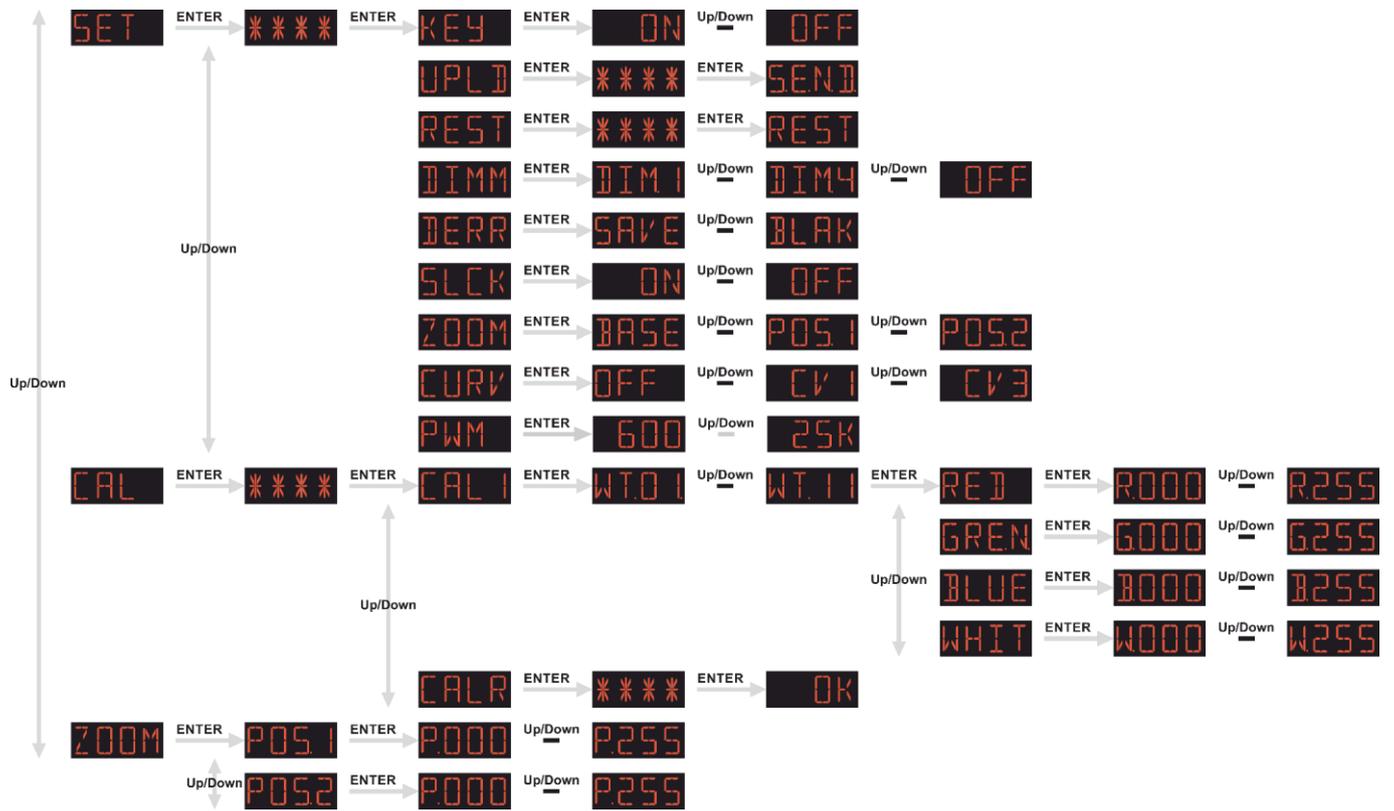
Note:

If no button is pressed, after 30 seconds of inactivity the display will turn off. When no button is pressed for 30 seconds, the display will turn off.

To light up the display, you have to press the MENU, ENTER, UP or DOWN button. Once you have pressed the button, the display will light up.

6.5. Menu Overview





6.6. Main Menu Options

The main menu has the following options:

STAT	Static Colors
AUTO	Auto Programs
RUN	Run Mode
ADDR	DMX Address
PERS	DMX channel modes (10 personalities)
EDIT	Edit Mode
SET	Settings
CAL	White color settings/RGB calibration/Calibration reset
ZOOM	Zoom calibration

- 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. To enter the default password, press the following buttons in this order: **UP, DOWN, UP, DOWN** and press the **ENTER** button to confirm. Deactivating the display lock does not affect the submenu items 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 **UP/DOWN** buttons to select the parameter.
- 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
- **ZOOM:** Adjust the zoom. The adjustment range is 0–255, from low to high intensity
- **STROBE:** Add strobe effect. The adjustment range is 0–20, from OFF to high frequency

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

6.6.2. Auto Program Mode

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 Mode** on page 30.

- 01) Press the **UP/DOWN** buttons to choose an auto program or a custom program:
 - AT.01-AT.10: 10 uneditable built-in programs
 - PR.01-PR.10: 10 presets
- 02) Press the **ENTER** button to confirm your choice.

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
This means that it will react the same as the master device.

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 select the DMX starting address of the device. The selection range is 001–512. Refer to **5.3.5. DMX Addressing** on page 22 for more information.



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 10 options available:



- **TOUR:** 12 channels (DMX address range: D001-D501)
- **TR16:** 17 channels (DMX address range: D001-D496)
- **ARC.1:** 3 channels (DMX address range: D001-D510)
- **AR1.D:** 4 channels (DMX address range: D001-D509)
- **ARC.2:** 4 channels (DMX address range: D001-D509)
- **AR2.D:** 5 channels (DMX address range: D001-D508)
- **AR2.S:** 6 channels (DMX address range: D001-D507)
- **HSV:** 3 channels (DMX address range: D001-D510)
- **AR2.Z:** 7 channels (DMX address range: D001-D506)
- **FULL:** 25 channels (DMX address range: D001-D488)

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

Note:

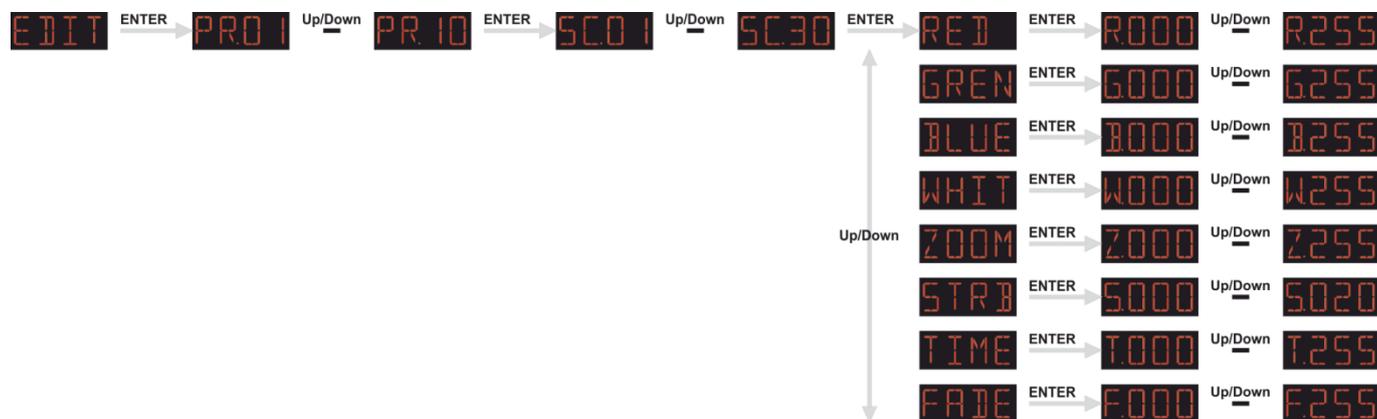
See **6.7. DMX Channels** on pages 35–40 for complete overview of all DMX channels.

6.6.6. Edit Mode

In this menu you can select a custom program. There are 10 custom programs, which can be edited in the Edit menu.

01) Press the **UP/DOWN** buttons to choose a custom program.

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



03) Press the **UP/DOWN** buttons to choose a scene. Each custom program has 30 scenes, which can be edited.

04) Once you have chosen the desired scene, press the **ENTER** button to enter the settings submenu.

05) Press the **UP/DOWN** buttons to select the parameter.

06) Press the **ENTER** button to confirm the selection and open the submenu.

07) 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 low to high intensity
- **STROBE:** Add strobe effect. The adjustment range is 0–20, from OFF to high frequency
- **STEP TIME** Adjust the step time, to set the duration of a scene. The adjustment range is 0–255, from 0 to 255 seconds
- **FADE** Adjust the fade time between particular scenes. The adjustment range is 0–255, from 0 to 255 seconds

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

6.6.6.1. How to make your own custom program

01) First, start with PR.01 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.02 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** and press the **ENTER** button to confirm.

- 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 8 options:



- KEY: See **6.6.6.1. Password**
- UPLD: See **6.6.6.2. Upload**
- REST: See **6.6.6.3. Reset**
- DIMM: See **6.6.6.4. Dimmer**
- DERR: See **6.6.6.5. DMX Error**
- SLCK: See **6.6.6.6. Settings menu lock**
- ZOOM: See **6.6.6.7. Zoom Presets**
- CURV: See **6.6.6.8. Curve**
- PWM: See **6.6.6.9. PWM Rate**

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

6.6.7.1. Key / Password

In this submenu you can activate the display lock.

- 01) Select KEY and press the **ENTER** button to open the menu.
- 02) Press the **UP/DOWN** buttons to select 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** and press the **ENTER** button to confirm
 - OFF: The access to the main menu remains unlocked after the display turns off
- 03) 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.

6.6.7.2. Upload

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

- 01) Select UPLD and press the **ENTER** button to open the menu.
- 02) Insert the password: **UP, DOWN, UP, DOWN** and press the **ENTER** button to confirm.
- 03) The display will show SEND.
- 04) Press the **ENTER** button again, to confirm.
- 05) While **exporting**, the slave devices will light up **yellow**.
- 06) If there are any **problems with exporting**, the master and the slave devices will light up **red**.
- 07) If the operation was **completed successfully**, the master and the slave devices will light up **green**.

6.6.7.3. Reset

In this submenu you can restore the default factory settings and reset the custom programs.

- 01) Select REST and press the **ENTER** button to open the menu.
- 02) Insert the password: **UP, DOWN, UP, DOWN** and press the **ENTER** button to confirm.
- 03) The custom programs will now be reset.

6.6.7.4. Dimmer

In this submenu you can adjust the dimmer speed.

- 01) Select DIMM and press the **ENTER** button to open the menu.
- 02) Press the **UP/DOWN** buttons to select the following 2 options:
 - DIM 1, DIM 2, DIM 3, DIM 4 (Default): non-linear dimmers, from fast to slow
 - OFF: linear dimmer
- 03) Press the **ENTER** button to confirm your choice.

6.6.7.5. DMX Error

In this submenu, you can determine the behaviour of the device in case of a DMX signal error.

- 01) Select DERR and press the **ENTER** button to open the menu.
- 02) Press the **UP/DOWN** buttons to select the following 2 options:
 - SAVE: in case of a DMX signal failure the device will use the last properly received DMX signal ensuring uninterrupted performance. SAVE is the default setting.
 - BLACK: in case of a DMX signal failure the device will black out the light output.
- 03) Press the **ENTER** button to confirm your choice.

6.6.7.6. Settings Menu Lock

In this submenu, you can lock the access to the settings.

- 01) Select SLCK and press the **ENTER** button to open the menu.
- 02) Press the **UP/DOWN** buttons to select the following 2 options:
 - ON: The settings lock is on. If you have chosen ON, you will need to insert the password every time you want to gain access to the settings menu. The default password is pressing the **UP/DOWN** buttons in the following order: **UP, DOWN, UP, DOWN** and press the **ENTER** button to confirm.
 - OFF: The access to the settings menu remains unlocked after the display turns off
- 03) Press the **ENTER** button to confirm your choice.

6.6.7.7. Zoom Presets

In this submenu, you can set the zoom positions.

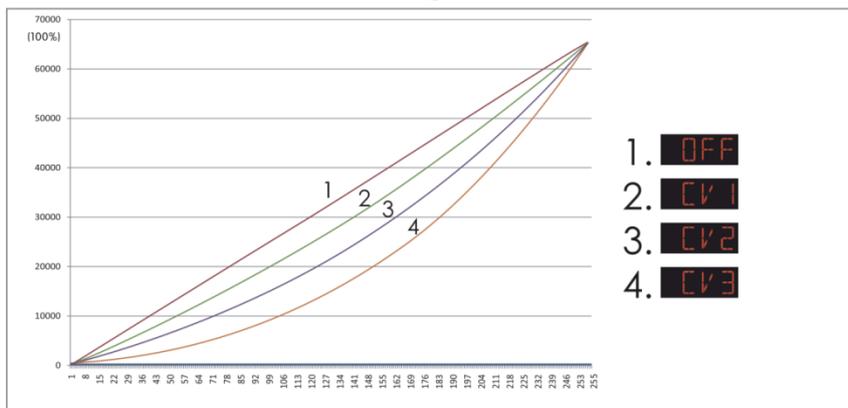
- 01) Select ZOOM and press the **ENTER** button to open the menu.
- 02) Press the **UP/DOWN** buttons to select the following 3 options:
 - BASE
 - POS1
 - POS2

6.6.7.8. Curve

In this submenu, you can adjust the shape of the dimming curve.

- 01) Select CURV and press the **ENTER** button to open the menu.
- 02) Press the **UP/DOWN** buttons to select one of the following options:
 - CV 1, CV 2, CV 3 (Default): dimming curves, from fast to slow
 - OFF: linear dimmer

Dimming curves



- 03) Press the **ENTER** button to confirm your choice.

6.6.7.9. 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. White color settings/Calibration reset

In this menu you can adjust the characteristics of the white color.

- 01) Select CAL and press the **ENTER** button to open the menu.
- 02) Insert the password: **UP, DOWN, UP, DOWN** and press the **ENTER** button to confirm.
- 03) Press the **UP/DOWN** buttons to select the following 2 options:
 - CAL1: White settings
 - CALR: Calibration reset

6.6.8.1. White color settings

In this submenu, you can adjust the color temperature of the built-in white color presets.

- 01) Select CAL1 and press the **ENTER** button to open the menu.
- 02) Press the **UP/DOWN** buttons to select one of the 11 white color presets. The selection range is WT01–WT11.
- 03) Once you have chosen the desired preset, press the **ENTER** button to open the submenu.
- 04) Press the **UP/DOWN** buttons to toggle between RED, GREEN, BLUE and WHITE.
- 05) Press the **ENTER** button to open the desired color brightness settings.
- 06) Press the **UP/DOWN** buttons to increase/decrease the color brightness. The adjustment range of each color is between 0-255, from dark to brightest.

6.6.8.2. Calibration reset

In this submenu, you can reset the color calibration.

- 01) Select CALR and press the **ENTER** button to open the menu.
- 02) Insert the password: **UP, DOWN, UP, DOWN** and press the **ENTER** button to confirm.
- 03) The settings, which you have previously adjusted, will have been reset and the display will show OK.

6.6.9. Zoom calibration

In this menu you can adjust the characteristics of the white color.

- 01) Select CAL and press the **ENTER** button to open the menu.
- 02) Insert the password: **UP, DOWN, UP, DOWN** and press the **ENTER** button to confirm.
- 03) Press the **UP/DOWN** buttons to select the following 2 options:
 - CAL1: White settings.
 - CALR: Calibration reset.

6.6.10. Zoom calibration

In this menu you can set the zoom positions.

- 01) Select ZOOM and press the **ENTER** button to open the menu.
- 02) Press the **UP/DOWN** buttons to select the following 2 options:
 - POS1
 - POS2
- 03) Press the **ENTER** button to confirm your choice.
- 04) Press the **UP/DOWN** buttons to set the zoom factor. The adjustment range is between P000–255, from OFF to full zoom.
- 05) Press the **ENTER** button to confirm your choice.

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)	25 channels (FULL)
Dimmer	1	1	1
Dimmer fine		2	2
Red	2	3	
Red Fine, 16-bit		4	
Red Center Point			3
Red Center Point Fine, 16-bit			4
Step Time, If CH8 set 141-255)	2		
Green	3	5	
Green Fine, 16-bit		6	
Green Center Point			5
Green Center Point Fine, 16-bit			6
Fade Time, If CH8 set 141-255)	3		
Blue	4	7	
Blue Fine, 16-bit		8	
Blue Center Point			7
Blue Center Point Fine, 16-bit			8
White	5	9	
White Fine, 16-bit		10	
White Center Point			9
White Center Point Fine, 16-bit			10
Red Outer Ring			11
Red Outer Ring Fine, 16-bit			12
Green Outer Ring			13
Green Outer Ring Fine, 16-bit			14
Blue Outer Ring			15
Blue Outer Ring Fine, 16-bit			16
White Outer Ring			17
White Outer Ring Fine, 16-bit			18
Macros	6	11	19
Shutter/Strobe, If CH1, 2, 3, 4, 5 set 1-255 (7ch and 12ch mode)	7	12	
Shutter/Strobe, ONLY if CH6 set 11-255 (only 12ch mode)	7	12	
Shutter/Strobe If CH1- CH18 001-255 and CH19 11-255 and CH21 41-140			20
Built-in/Custom programs	8	13	21
Auto speed	9	14	22
Dimmer speed	10	15	23
Zoom	11	16	24
Zoom Reset	12	17	25

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
				010–099	Strobe flash frequency, from low to high frequency (0–25 Hz)
				100–109	Strobe flash frequency, from slow to fast Auto program 2
				110–179	Auto program 3
				180–189	Auto program 4
				190–255	Auto program 5
		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)

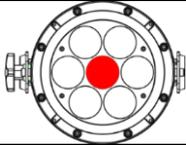
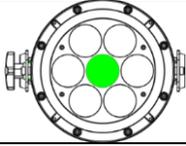
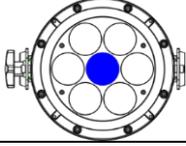
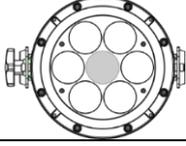
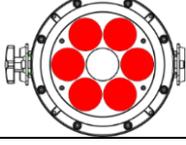
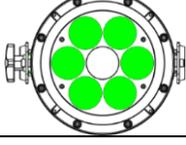
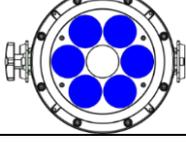
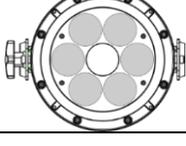
TOUR 12 CH	TR16 17 CH	Function	Value	Setting
1	1	Master Dimmer	000–255	From low to high intensity (0–100 %)
	2	Master Dimmer Fine	000–255	Fine adjustment
2	3	Red	000–255	From low to high intensity (0–100 %)
	4	Red Fine	000–255	Fine adjustment
2		Step Time when CH8 set 141–255	000–255	From fast to slow (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
			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
			010–099	Strobe flash frequency, from low to high frequency (0–25 Hz)
			100–109	Strobe flash frequency, from slow to fast Auto program 2
			110–179	Auto program 3
			180–189	Auto program 4
			190–255	Auto program 5
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

TOUR 12 CH	TR16 17 CH	Function	Value	Setting
			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
			000–009	Preset dimmer speed from the display menu
			010–029	OFF
10	15	Dimmer Speed	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°)
			000–200	No function
12	17	Zoom Reset	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.

6.7.6. FULL (25 channels)

FULL 25 CH	Function	Value	Setting	
1	Master Dimmer	000–255	From low to high intensity (0–100 %)	
2	Master Dimmer Fine	000–255	Fine adjustment	
3	Red (centre point)	000–255	From low to high intensity (0–100 %)	
4	Red Fine (centre point)	000–255	Fine adjustment	
5	Green (centre point)	000–255	From low to high intensity (0–100 %)	
6	Green Fine (centre point)	000–255	Fine adjustment	
7	Blue (centre point)	000–255	From low to high intensity (0–100 %)	
8	Blue Fine (centre point)	000–255	Fine adjustment	
9	White (centre point)	000–255	From low to high intensity (0–100 %)	
10	White Fine (centre point)	000–255	Fine adjustment	
11	Red (outer circle)	000–255	From low to high intensity (0–100 %)	
12	Red Fine (outer circle)	000–255	Fine adjustment	
13	Green (outer circle)	000–255	From low to high intensity (0–100 %)	
14	Green Fine (outer circle)	000–255	Fine adjustment	
15	Blue (outer circle)	000–255	From low to high intensity (0–100 %)	
16	Blue Fine (outer circle)	000–255	Fine adjustment	
17	White (outer circle)	000–255	From low to high intensity (0–100 %)	
18	White Fine (outer circle)	000–255	Fine adjustment	
19	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	
		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	

FULL 25 CH	Function	Value	Setting
		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
20	Strobe	000-009	No function
		010-099	Strobe flash frequency, from low to high frequency (0-25 Hz)
		100-109	Strobe flash frequency, from slow to fast Auto program 2
		110-179	Auto program 3
		180-189	Auto program 4
		190-255	Auto program 5
21	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		
22	Auto Programs Speed	000-255	Speed adjustment, from slow to fast
23	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)
24	Zoom	000-255	Zoom adjustment (8°-40°)
25	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 and the Shutter/Strobe channel are open in order to see the light output.

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	<ul style="list-style-type: none"> Check if power is switched on and cables are plugged in
	Main fuse is blown	<ul style="list-style-type: none"> Disconnect the device and contact your Highlite International dealer
The device responds erratically	The factory settings of the device are changed	<ul style="list-style-type: none"> Reset the device's parameters to the default factory settings. See 6.6.7.3. Reset on page 32
The device does not respond to DMX control	The controller is not connected	<ul style="list-style-type: none"> Connect the controller
	The signal is reversed. The 3-pin/5-pin DMX OUT of the controller does not match the DMX IN of the device	<ul style="list-style-type: none"> Install a phase-reversing cable between the controller and the device
	The controller is defective	<ul style="list-style-type: none"> Try using another controller
The device responds erratically to DMX control	Bad data link connection	<ul style="list-style-type: none"> Examine connections and cables. Correct poor connections. Repair or replace damaged cables
	The data link is not terminated with a 120 Ω termination plug	<ul style="list-style-type: none"> Insert a termination plug in the DMX OUT connector of the last device on the link
	Incorrect addressing	<ul style="list-style-type: none"> 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	<ul style="list-style-type: none"> To find out the defective device, bypass one device at a time until normal operation is restored
No light or LEDs cut out intermittently	LEDs are damaged	<ul style="list-style-type: none"> Disconnect the device and contact your Highlite International dealer
	The power supply settings do not match local AC voltage and frequency	<ul style="list-style-type: none"> Disconnect the device. Check the settings and correct, if necessary

8. Maintenance

8.1. 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.

8.1.1. 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 15 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.

8.1.2. Draining Condensation Water

The Spectral M1500 Zoom Q4 MKIII 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.

The device has 2 GORE® protective vents and 2 drain plugs. If condensation water collects inside the device, follow the steps bellow to remove the condensation water:

- 01) Carefully remove the **GORE® protective vent (08)** with a wrench (16 mm).

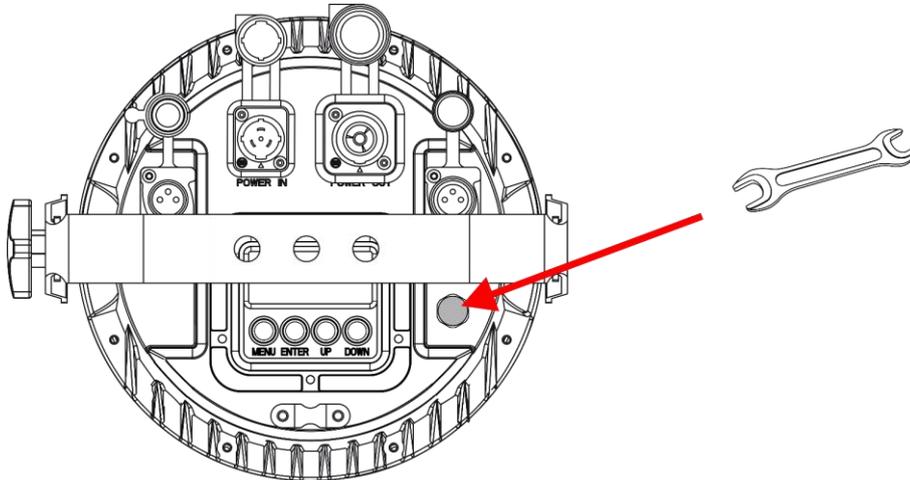


Fig. 13

- 02) Let the device operate at full output for 60 minutes.
- 03) Let the device cool down for 30 minutes.
- 04) Install the **GORE® protective vent (08)** back. Make sure that you do not overtighten them.

8.2. 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 **8.1.1. Basic Cleaning Instructions** on page 42.
- 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



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



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