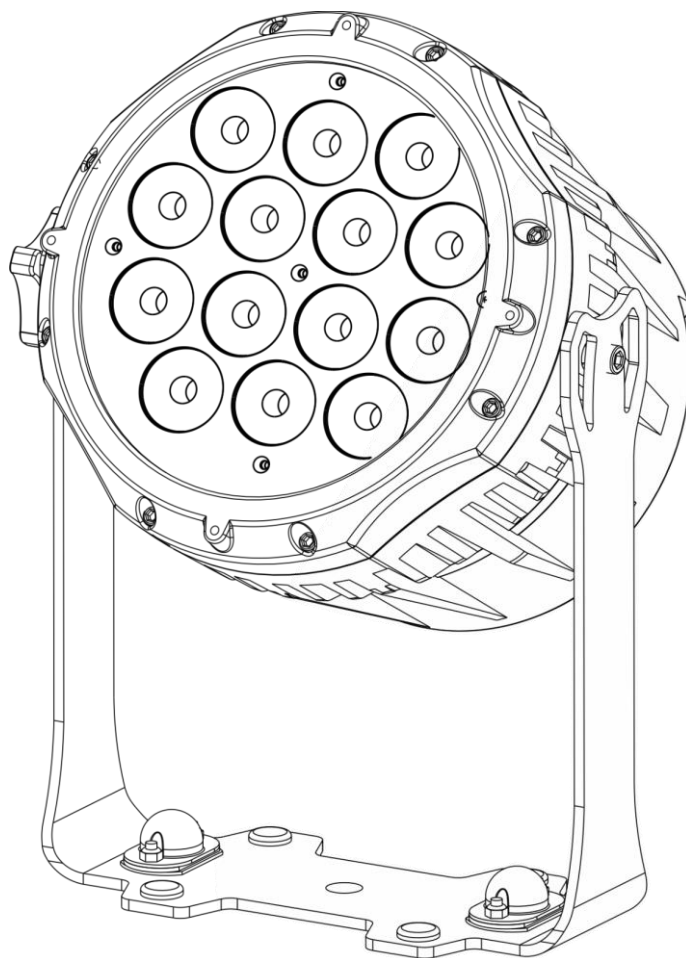




USER MANUAL



ENGLISH

Spectral M800 Q4 IP

V2

Product code: 43571

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 M800 Q4 IP
- Schuko to Seetronic power cable (1,5 m)
- Safety cable
- User manual

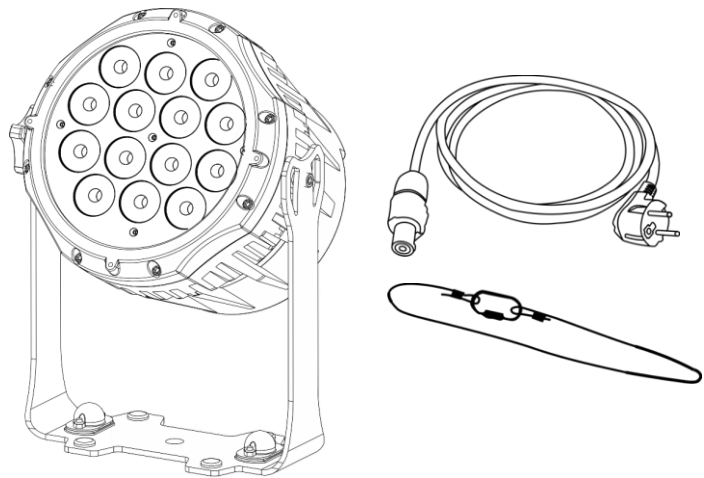


Fig. 01

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 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	
	Hot surface	
	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 I.
	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 dangerous voltage inside

There are areas within the device where dangerous touch voltage (> 120 V DC) 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.

- 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.



WARNING
Risk of burns due to hot surface

The surface and the inner parts of the device can become very hot during operation.

- Do not touch the device during operation.
- Allow the device to cool down for at least 15 minutes before handling.



WARNING
Risk of epileptic shock

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



WARNING
Possible eye damage caused by high light intensity

Possibly hazardous optical radiation emitted from this device.

- Do not look at the operating light source. May be harmful to the eye.
- Do not look at the light source with optical instruments that may concentrate the light output.
- Make sure that persons are not looking directly into the light source when the device lights up suddenly. This can happen when the device is powered or when it receives DMX signal, or when certain menu items are selected.
- Disconnect power supply before servicing.
- Wear protective goggles if looking into light source during service or maintenance.



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.

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 Spectral M800 Q4 IP is a LED fixture with high output and great effects.

3.1. Front View

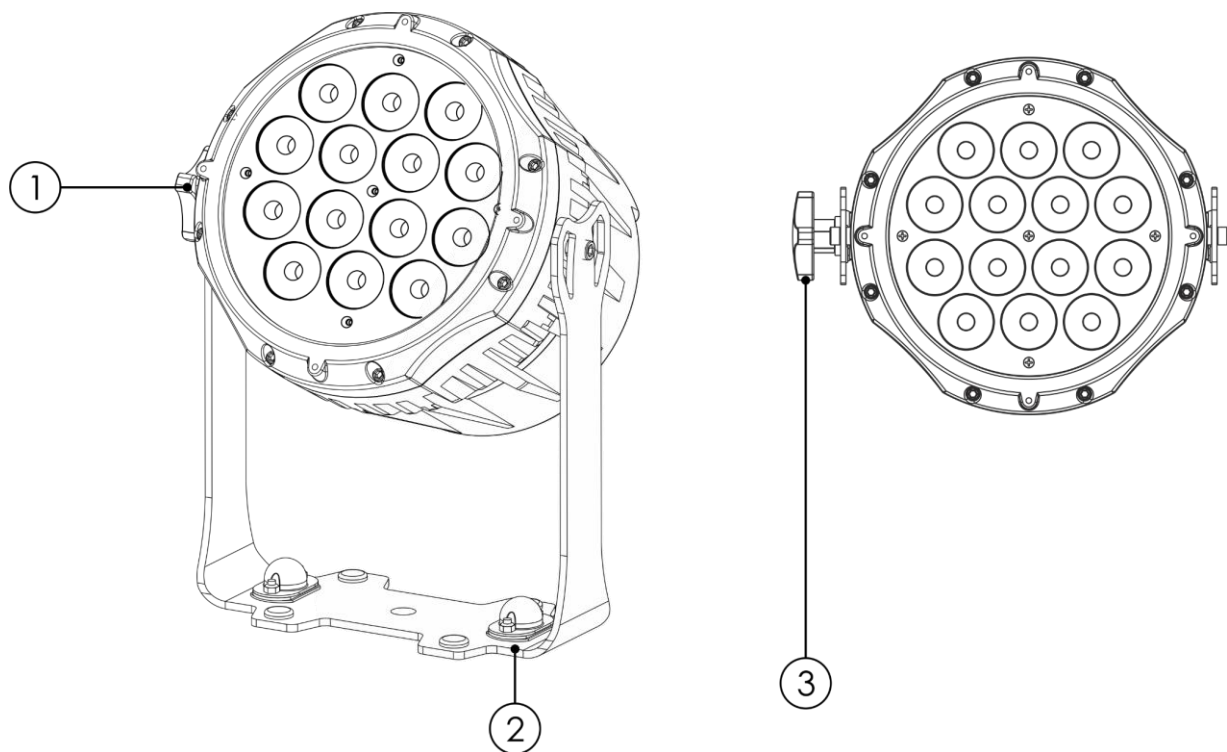


Fig. 02

- 01) 14 x 5 W RGBW LED
- 02) Mounting bracket
- 03) Adjustment screw

3.2. Back View

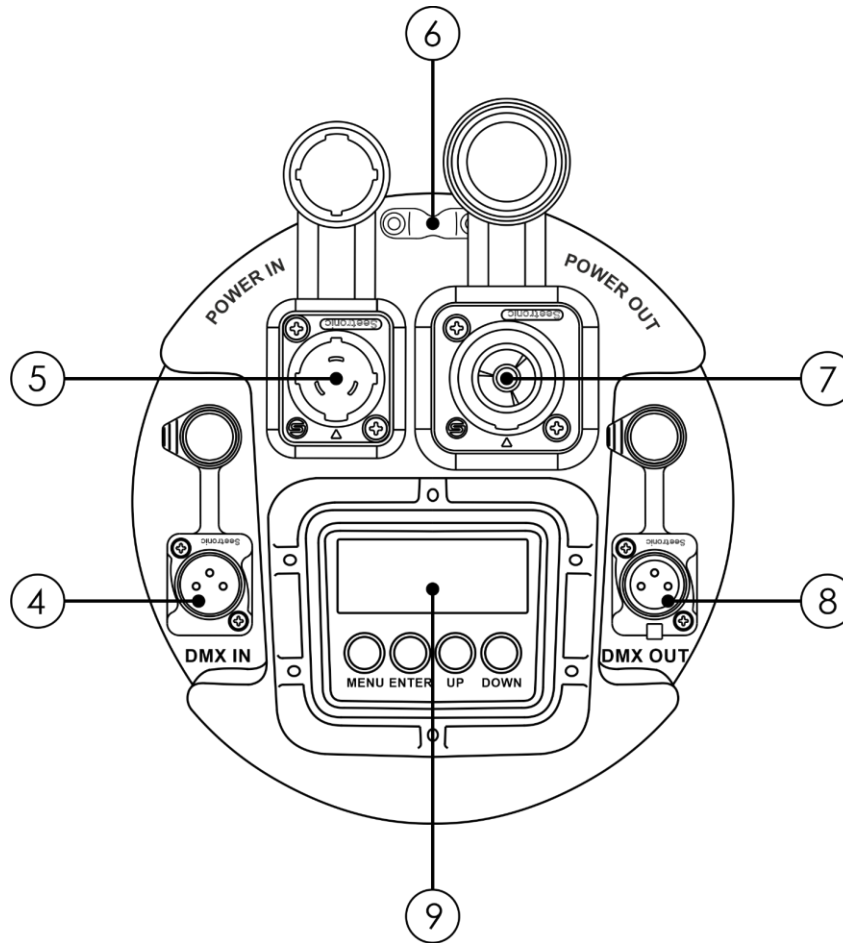


Fig. 03

- 04) IP65-rated Seetronic 3-pin DMX signal connector IN
- 05) IP65-rated Seetronic power connector IN
- 06) Safety eye
- 07) IP65-rated Seetronic power connector OUT
- 08) IP65-rated Seetronic 3-pin DMX signal connector OUT
- 09) 4-digit LED display + menu buttons

3.3. Product Specifications

Model:	Spectral M800 Q4 IP
Electrical:	
Input voltage:	100–240 V AC, 50/60 Hz
Power consumption:	65 W
Physical:	
Dimensions:	180 x 235 x 323 mm (LxWxH)
Weight:	4,3 kg
Optics:	
Light source:	14 x 5 W RGBW LED
Dimmer:	0–100 %
Strobe:	0–20 Hz
Beam angle:	16°
Color range:	16,7 million additive colors
Lumen:	1452 lm
Peak intensity:	15294 cd
Refresh rate:	600–25000 Hz
Operation and control:	
Control:	Static Colors Auto Master/Slave DMX-512, RDM
DMX channels:	4, 4, 5, 6, 7, 9, 10, 13, 15 channels
Control panel:	4-digit LED display
Connections:	
Power connections:	IP65-rated Seetronic power connector IN/OUT
Data connections:	IP65-rated Seetronic 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
Maximum housing temperature t_c :	65 °C
Minimum distance:	
Minimum distance from flammable surfaces:	0,5 m
Minimum distance to lighted object:	0,8 m

3.4. Optional Accessories

The Spectral M800 Q4 IP is delivered without accessories. You can additionally purchase the following accessories:

- Product code: [43514](#) (Showtec Accessory Frame for Spectral)
- Product code: [43520](#) (Showtec Barndoor Quanta 3500/Spectral)
- Product code: [43521](#) (Showtec Tophat Quanta 3500/Spectral)
- Product code: [43522](#) (Showtec Filterframe Quanta 3500/Spectral)
- Product code: [43572](#) (Showtec Freestanding Bracket for Spectral M800)
- Product code: [D7498B](#) (DAP case for 8 x Spectral spot)

3.5. Dimensions

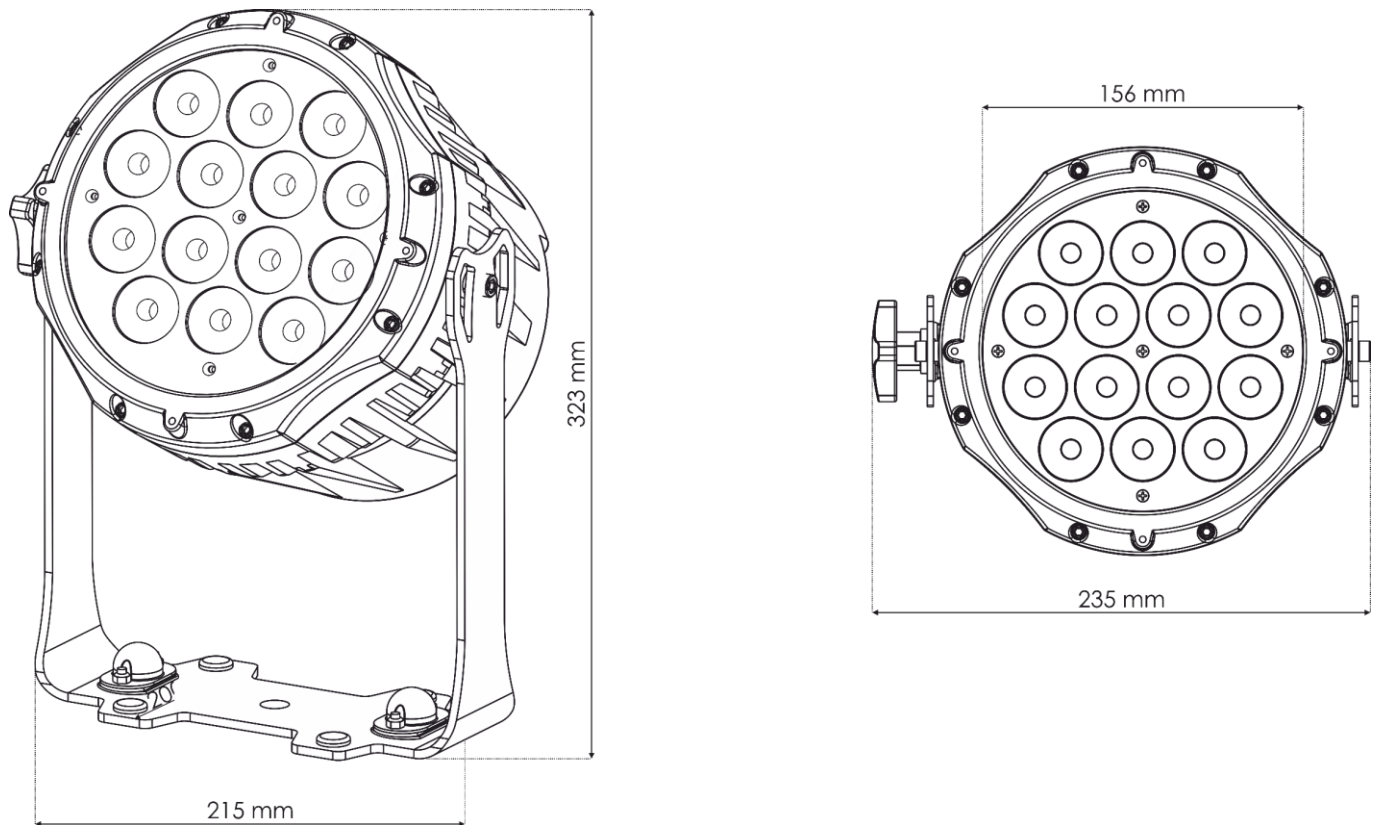


Fig. 04

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 outdoors.
- 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 0,5 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.



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 **safety eye (07)**, as shown in Fig. 05.

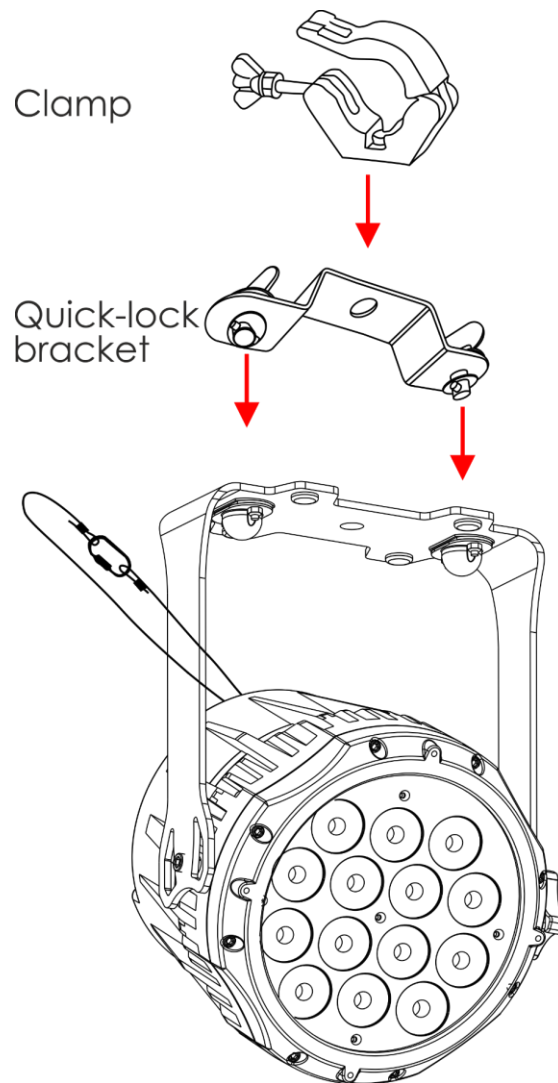


Fig. 05

4.4.1. Angle Adjustment

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

- 03) Turn the **adjustment screw (03)** counterclockwise to release it.
- 04) Tilt the device to the desired angle (see Fig. 06).
- 05) Turn the **adjustment screw (03)** clockwise to tighten it. Make sure that the device cannot move freely after the **adjustment screw (03)** is tightened.

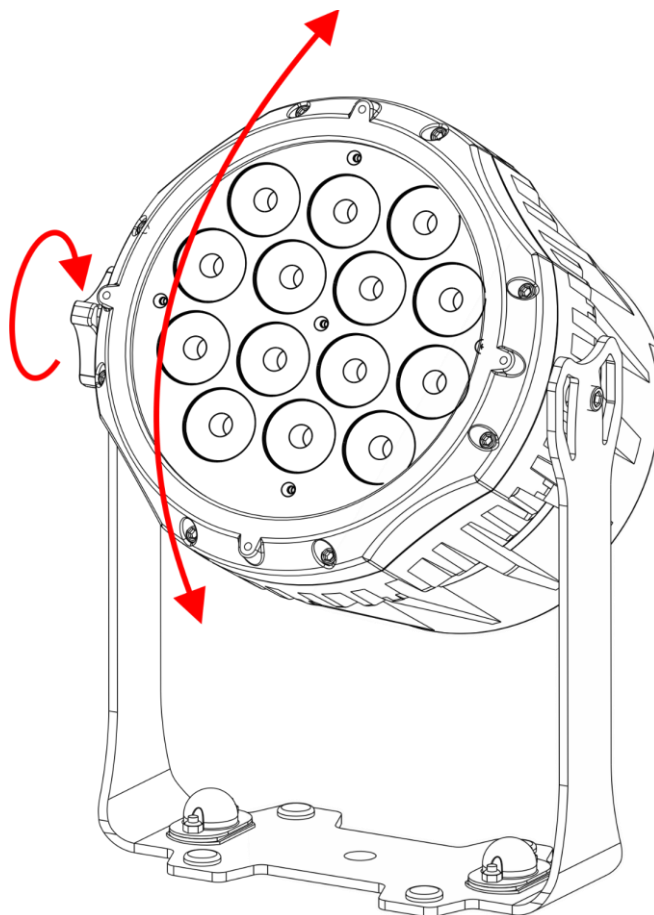


Fig. 06

4.4.2. Accessory Frame Installation

In order to be able to install the optional accessories, you need to install the accessory frame first. It is equipped with a spring-loaded retaining clip which prevents the accessories from falling out.

01) Place the accessory frame on the Spectral and tighten the 4 screws.

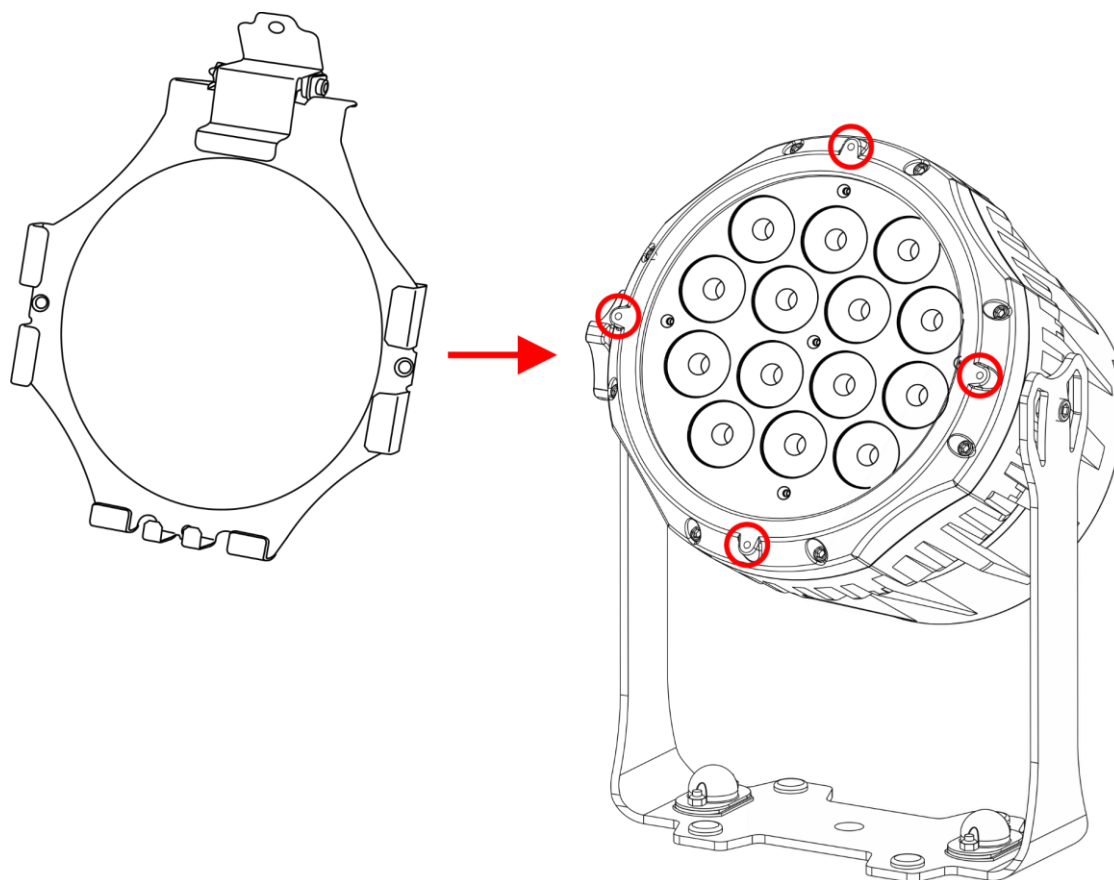


Fig. 07

02) Install other accessories.

4.4.3. Barndoor Installation

The accessory frame is equipped with a spring-loaded retaining clip. This prevents the barndoor from falling out.

- 01) Install the accessory frame. See **4.4.2. Accessory Frame Installation** on page 16 for more information.
- 02) Press on the retaining clip on the accessory frame to open it.
- 03) Slide the barndoor into the accessory frame. See Fig. 08.
- 04) Release the retaining clip to lock the barndoor in position.

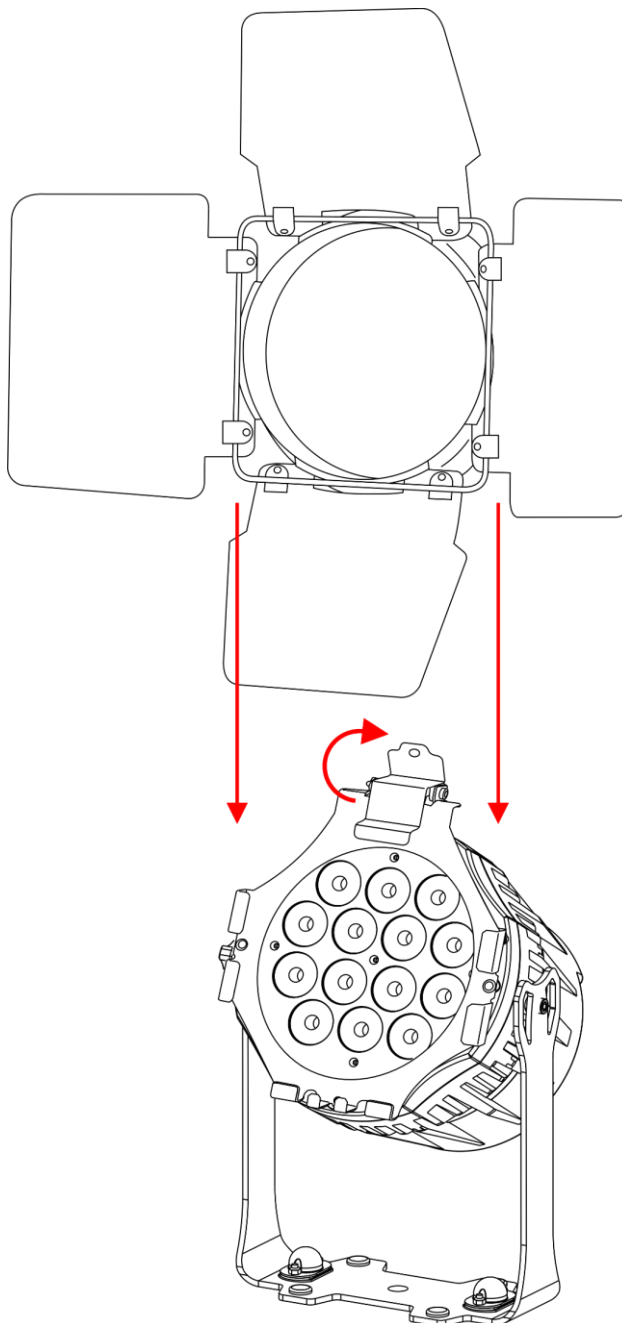


Fig. 08

4.4.4. Tophat Installation

The accessory frame is equipped with a spring-loaded retaining clip. This prevents the tophat from falling out.

- 01) Install the accessory frame. See **4.4.2. Accessory Frame Installation** on page 16 for more information.
- 02) Press on the retaining clip on the accessory frame to open it.
- 03) Slide the tophat into the accessory frame. See Fig. 09.
- 04) Release the retaining clip to lock the tophat in position.

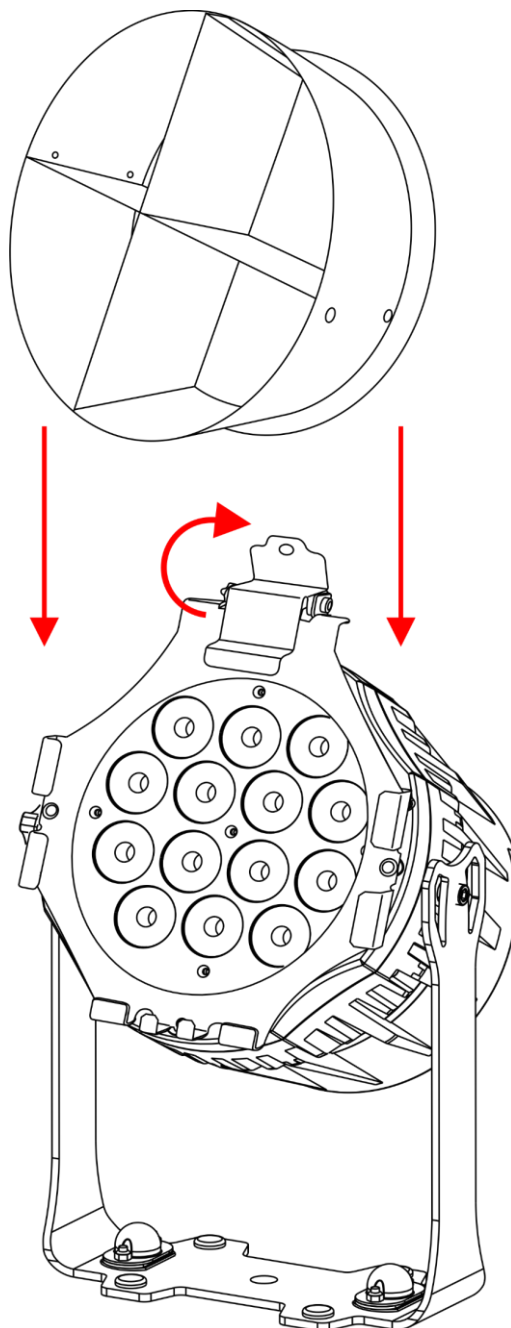


Fig. 09

4.4.5. Filter Frame Installation

The accessory frame is equipped with a spring-loaded retaining clip. This prevents the filter frame from falling out.

- 01) Install the accessory frame. See **4.4.2. Accessory Frame Installation** on page 16 for more information.
- 02) Press on the retaining clip on the accessory frame to open it.
- 03) Slide the filter frame into the accessory frame. See Fig. 10.
- 04) Release the retaining clip to lock the filter frame in position.

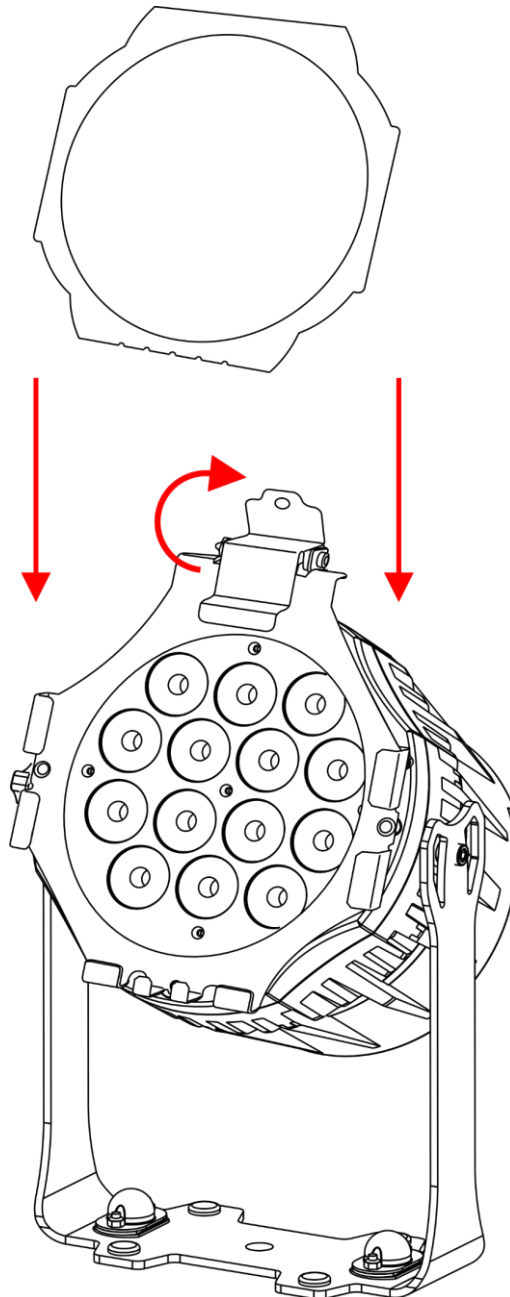


Fig. 10

4.4.6. Free-standing Bracket Installation

- 01) Put the free-standing bracket on the Spectral.
- 02) Install all elements as shown in Fig. 11.
- 03) Tighten the screws.

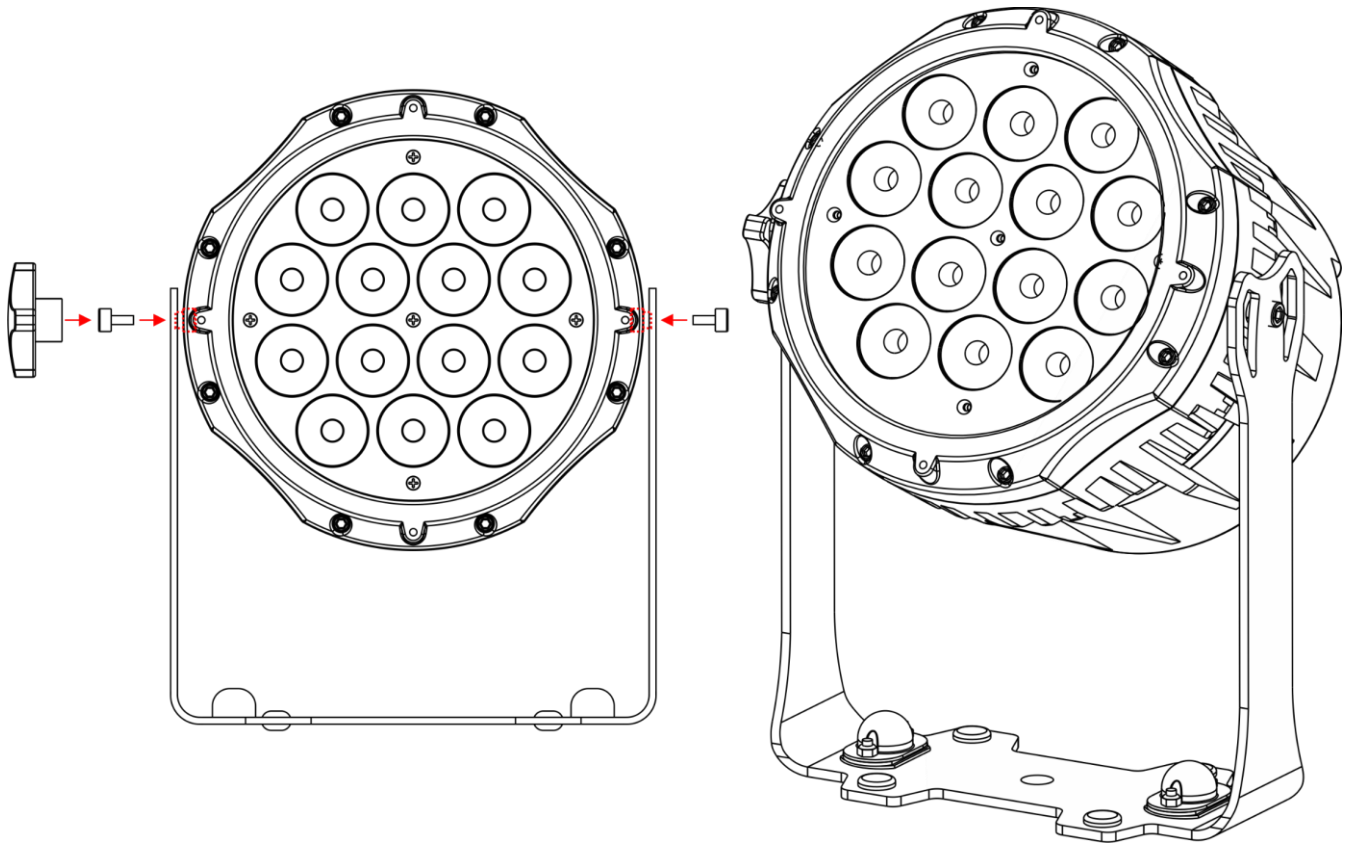


Fig. 11

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 a power plug. Do not connect the device to a dimmer pack, 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: 12 devices
- at 200–240 V: 24 devices

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 M800 Q4 IP 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 **6.2. Control Modes** on page 25.

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 M800 Q4 IP 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. 12.

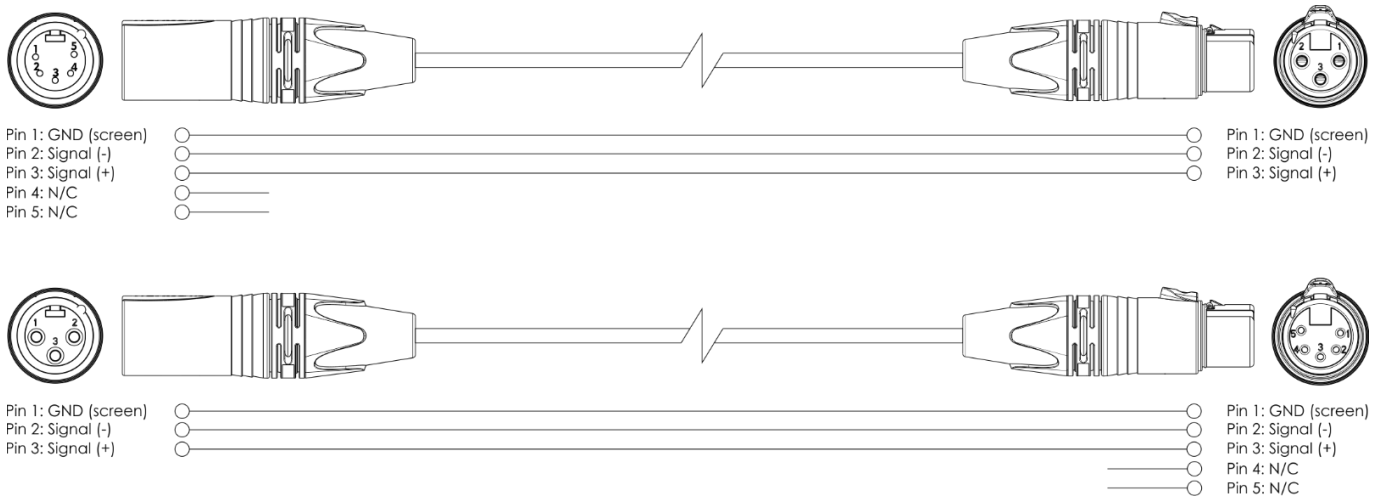


Fig. 12

5.3.3. Master/Slave Setup

The Spectral M800 Q4 IP 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. 13.
- 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. Master/Slave Mode** on page 30 for more information.
- 05) Set the remaining devices to slave mode. See **6.6.3. Master/Slave Mode** on page 30 for more information.

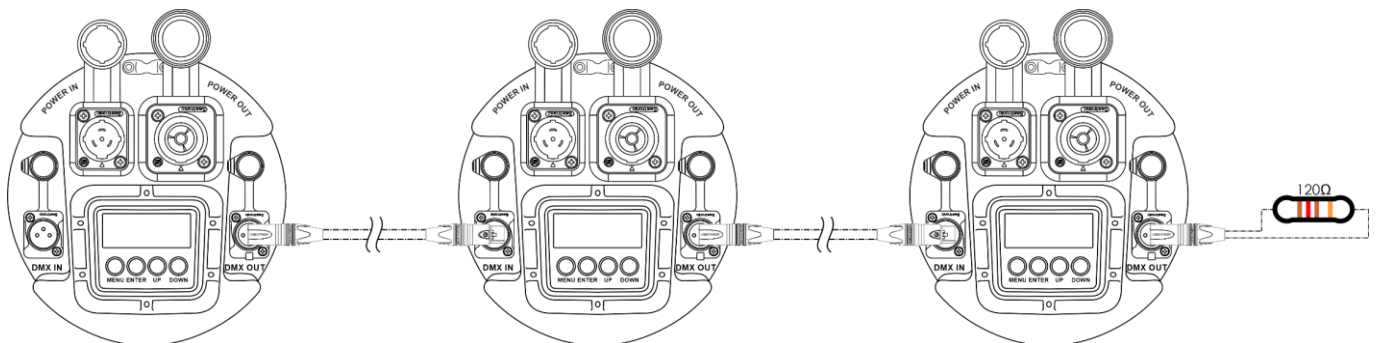


Fig. 13

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. 14.
- 04) Connect a DMX terminator (120 Ω resistor) to the DMX OUT connector of the last device on the data link.

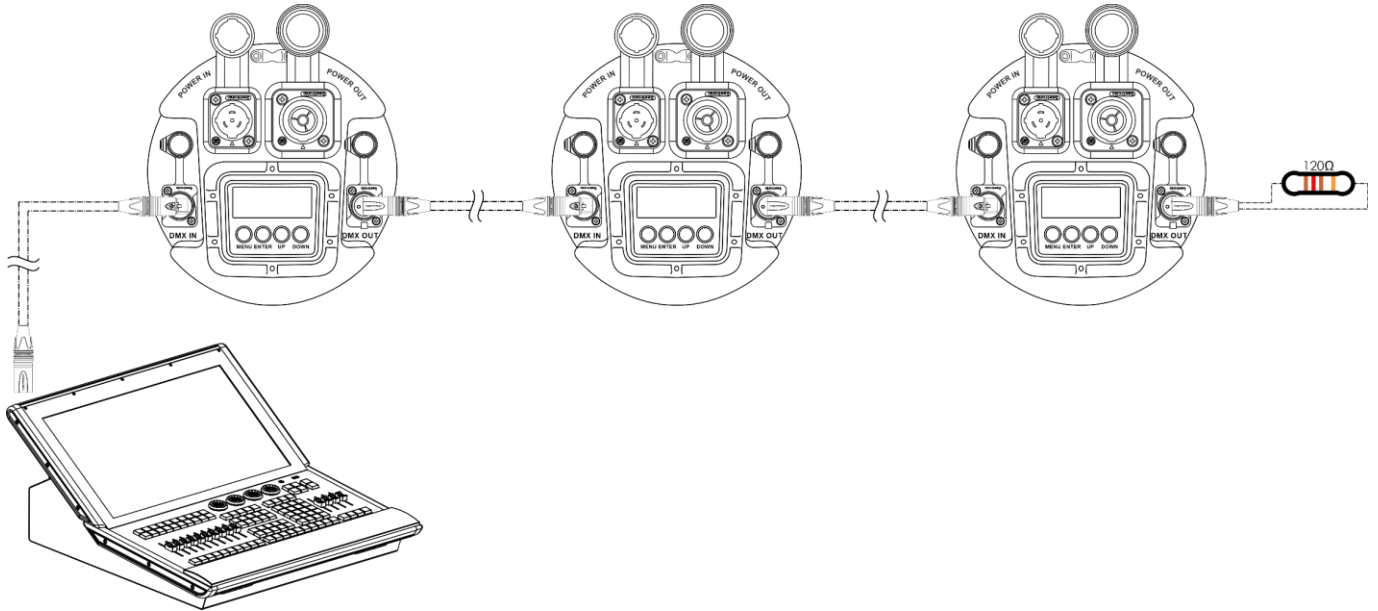


Fig. 14

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 M800 Q4 IP has 9 personalities: 4 channels, 4 channels, 5 channels, 6 channels, 7 channels, 9 channels, 10 channels, 13 channels and 15 channels.

If you want to connect multiple devices on one data link and use them in 15-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 16 (016), as $1 + 15 = 16$.
- 03) Set the starting address of the 3rd device on the data link to 31 (031) as $16 + 15 = 31$.
- 04) Continue assigning the starting addresses of the remaining devices by adding each time 15 to the previous number.

Make sure that you do not have any overlapping channels in order to control each Spectral M800 Q4 IP 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 M800 Q4 IP supports the following control modes:

- Stand-alone: Static Colors, Built-in programs
- Master/Slave:
- DMX-512, RDM 4, 4, 5, 6, 7, 9, 10, 13, 15 channels

For more information about how to connect the devices, refer to **5. Setup** on pages 22–24.

To operate the device manually as a stand-alone device:

- 01) Select DMX mode in the submenu. See **6.6.3. Master/Slave Mode** on page 30 for more information.
- 02) Adjust the light intensity and add strobe effect. See **6.6.1. Static Colors** on page 29 for more information.

To run the built-in programs/custom programs in auto operation mode without a DMX controller:

- 01) Activate Auto in the main menu. See **6.6.2. Built-in and Custom Programs** on page 30 for more information.
 - If you select AT.01–10, the device will run the built-in program.
 - If you select PR.01–10, the device will run the respective custom program. See **6.6.6. Edit Mode** on page 31 for more information on how to edit the custom programs.

To operate the device in master/slave setup:

- 01) Set the master device and the slave devices. See **6.6.3. Master/Slave Mode** on page 30 for more information.
- 02) Adjust the light intensity and add strobe effect. See **6.6.1. Static Colors** on page 29 for more information.

To operate the device with a DMX controller:

- 01) Select DMX mode in the submenu. See **6.6.3. Master/Slave Mode** on page 30 for more information.
- 02) Set the DMX starting address of the device in the DMX Address submenu. See **5.3. DMX Connection** on page 22 and **6.6.4. DMX Address** on page 30.
- 03) Select the DMX channel mode. See **6.6.5. DMX Configuration** on page 30 for more information. See **6.7. DMX Channels** on page 36 for complete overview of all DMX channels.

6.3. Control Panel

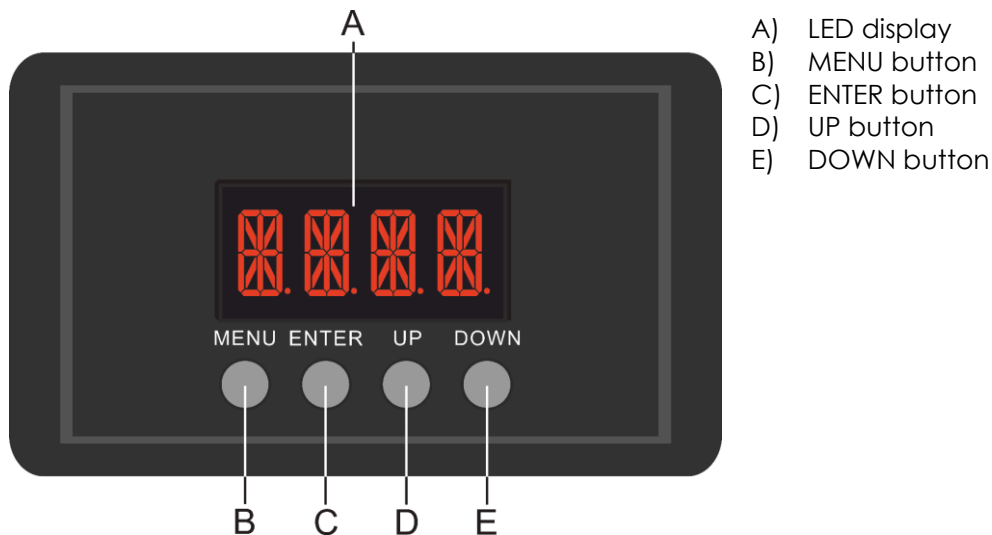


Fig. 15

- Use the **MENU** button 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

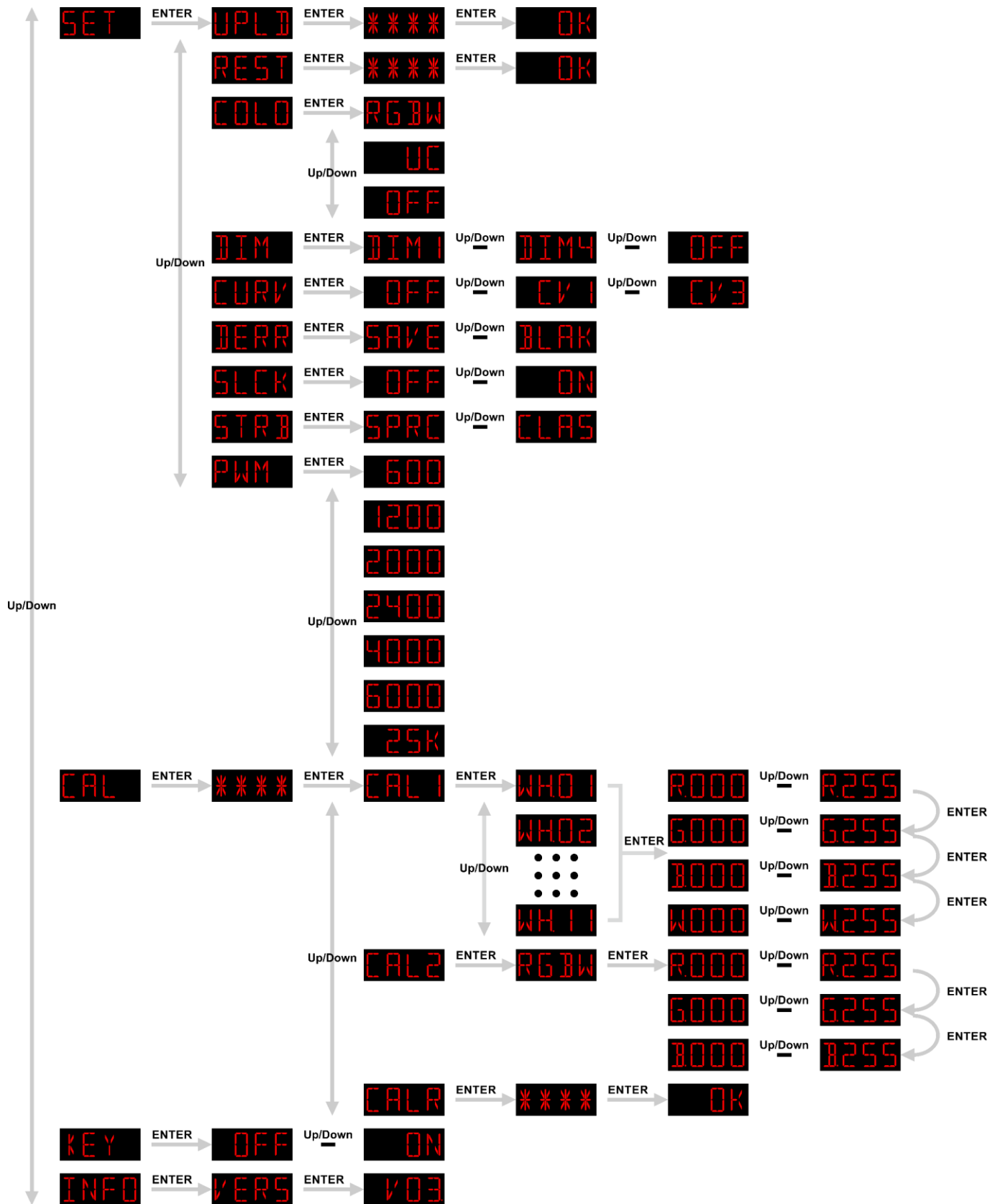
Upon start-up the display will show the current software version.

Note:

- If no button is pressed, after 25 seconds the display will turn off. Press any button to turn the display on.
- If the display is locked, enter the **password** to access the main menu. The default password is pressing the **UP/DOWN** buttons in the following order: **UP, DOWN, UP, DOWN, ENTER**. Deactivating the display lock does not affect the submenu items which by default require a password. See **6.6.7.7. Settings Lock** on page 33 and **6.6.9. Safety Lock** on page 35 for more information.

6.5. Menu Overview





6.6. Main Menu Options

The main menu has the following options:

STAT	Static colors
AUTO	Built-in and custom programs
RUN	Master/Slave mode
DMX	DMX address
PERS	DMX configuration
EDIT	Edit mode
SET	Settings
CAL	Calibration
KEY	Safety lock
INFO	Info

- 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, ENTER**. 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 set the static colors.

- 01) Press the **UP/DOWN** buttons until the display shows **STAT**.
- 02) Press the **ENTER** button to open the menu.
- 03) Press the **ENTER** button to toggle through the static colors (Red, Green, Blue and White) and strobe.
- 04) Press the **UP/DOWN** buttons to set the color intensity. The adjustment range is 0–255, from dark to brightest.
- 05) When the display shows **5000** ^{Up/Down} **5020**, press the **UP/DOWN** buttons to increase/decrease the strobe frequency. The adjustment range is 0–20 (Hz), from OFF to high strobe frequency.
- 06) You can combine Red, Green, Blue and White to create an infinite range of colors (0–255).

6.6.2. Built-in and Custom Programs

In this menu you can set the built-in programs or choose your edited custom programs.

- 01) Press the **UP/DOWN** buttons until the display shows **AUTO**.
- 02) Press the **ENTER** button to open the menu.
- 03) Press the **UP/DOWN** buttons to choose one of the 10 uneditable built-in programs (AT.01–10) and 10 editable presets (PR.01–10) which can be edited in Edit mode. See **6.6.6. Edit Mode** on page 31 for more information.
- 04) Press the **ENTER** button to activate the program.

6.6.3. Master/Slave Mode

In this menu you can set the device as a slave.

- 01) Press the **UP/DOWN** buttons until the display shows **RUN**.
- 02) Press the **ENTER** button to open the menu.
- 03) Press the **UP/DOWN** buttons to toggle between the following 2 options:

DMX

DMX/Master Mode

SLAV

Slave Mode. The device will react the same as the master device.

6.6.4. DMX Address

In this menu you can set the DMX starting address.

- 01) Press the **UP/DOWN** buttons until the display shows **DMX**.
- 02) Press the **ENTER** button to open the menu.
- 03) Press the **UP/DOWN** buttons to choose the desired DMX address. There are 512 available DMX addresses to choose from **0001** ^{Up/Down} **1512**.

6.6.5. DMX Configuration

In this menu you can set the desired DMX channel mode (personality).

- 01) Press the **UP/DOWN** buttons until the display shows **PERS**.
- 02) Press the **ENTER** button to open the menu.
- 03) Press the **UP/DOWN** buttons to choose between RGB or RGBW.
- 04) Press the **ENTER** button to open the selected submenu.
- 05) Press the **UP/DOWN** buttons to toggle through the following DMX channel modes:

RGB Mode:	TOUR	9 channels
	TR16	13 channels
	AR1.D	4 channels
RGBW Mode:	8BIT	10 channels
	16BI	15 channels
	SSP	7 channels
	ARC.2	4 channels
	AR2.D	5 channels
	AR2.S	6 channels

6.6.6. Edit Mode

In this menu you can create your own custom shows.

- 01) Press the **UP/DOWN** buttons until the display shows **EDIT**.
- 02) Press the **ENTER** button to open the menu.
- 03) Press the **UP/DOWN** buttons to choose the desired custom program: PR.01–10. Each custom program has 30 scenes, which can be edited.
- 04) Press the **ENTER** button to enter the settings.
- 05) Press the **ENTER** button to toggle through Red, Green, Blue, White, Strobe, Step Time and Fade options.
 - When the display shows Red, Green, Blue and White, press the **UP/DOWN** buttons to increase/decrease the LED intensity. The adjustment range is 0–255, from OFF to FULL ON.
 - When the display shows STROBE, press the **UP/DOWN** buttons to set the strobe frequency. The adjustment range is 0–20 (Hz), from OFF to high frequency.
 - When the display shows TIME, press the **UP/DOWN** buttons to set the duration of a scene. The adjustment range is 0–255, from 0 to 255 seconds.
 - When the display shows FADE, press the **UP/DOWN** buttons to set the fade time between particular scenes. The adjustment range is between 0–255, from fast to slow.

6.6.6.1. Making Custom Programs

- 01) Start with PR.01 and add the desired settings to scene 1 (SC.01), then scene 2 (SC.02) , etc. You can add a maximum of 30 scenes.
- 02) Repeat step 1 until you reach PR.10, step 30. It is possible to create 300 separate scenes.

6.6.7. Settings

In this menu you can set the device's settings.

- 01) Press the **UP/DOWN** buttons until the display shows **SET**.
- 02) Press the **ENTER** button to open the menu.
- 03) Press the **UP/DOWN** buttons to toggle between the following menus: Upload, Reset, Color, Dimmer, Dimming curve, DMX Error, Settings Lock, Strobe Settings and PWM.

6.6.7.1. Upload

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

- 01) Press the **UP/DOWN** buttons until the display shows **UPL**.
- 02) Press the **ENTER** button to open the menu.
- 03) Insert the password: **UP>DOWN>UP>DOWN** and press the **ENTER** button to confirm. The display will show **OK**.
- 04) Press the **ENTER** button again, to confirm.

Note:

- While **exporting**, the slave devices will light **yellow**.
- If there are any **problems with exporting**, the master and the slave devices will light **red**.
- If the operation was **completed successfully**, the master and the slave devices will light **green**.

6.6.7.2. Reset

In this menu you can reset the custom programs.

- 01) Press the **UP/DOWN** buttons until the display shows **REST**.
- 02) Press the **ENTER** button to open the menu.
- 03) Insert the password: **UP>DOWN>UP>DOWN** and press the **ENTER** button to confirm. The display will show **OK** and the custom programs will be reset.

6.6.7.3. Color

In this menu you can adjust the color calibration functions.

- 01) Press the **UP/DOWN** buttons until the display shows **COLO**.
- 02) Press the **ENTER** button to open the menu.
- 03) Press the **UP/DOWN** buttons to toggle through the following 3 options:

RGBW

RGB to White: RGB = 255, 255, 255. The color displayed is the specific color which you have calibrated in **CAL2 → RGBw** menu.

UC

Adjusted output: The RGB output is adjusted to a standard preset universal color. Different Spectral versions are color-balanced in order to match each other.

OFF

Off: The RGB settings are: 255, 255, 255. The RGB values are not adjusted and the output is the most powerful.

6.6.7.4. Dimmer

In this submenu you can adjust the dimmer speed.

- 01) Press the **UP/DOWN** buttons until the display shows **DIM**.
- 02) Press the **ENTER** button to open the menu.
- 03) Press the **UP/DOWN** buttons to choose one of the 4 dimmer speed options (DIM1–4, non-linear dimmers from fast to slow) and OFF.

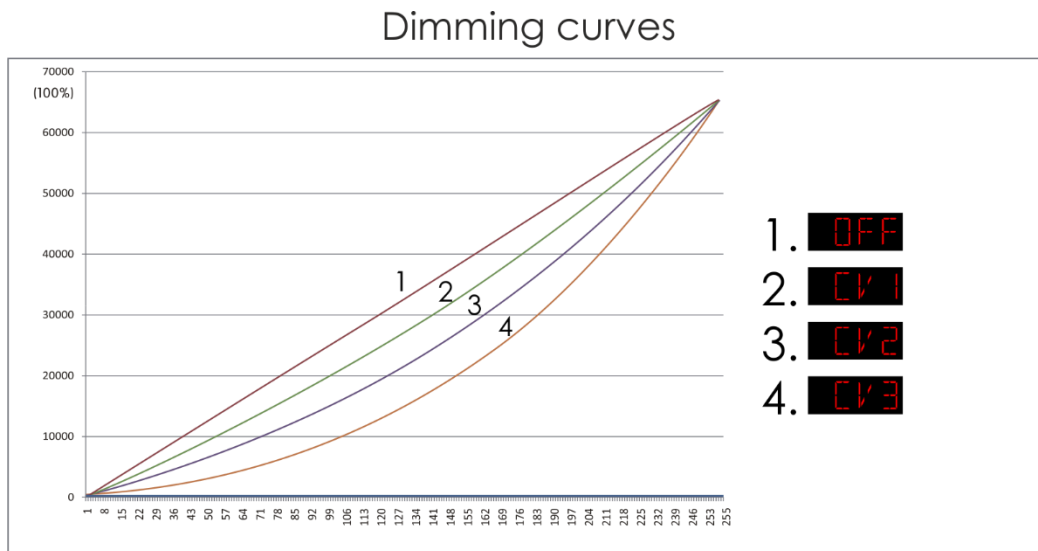
Note:

- If you choose OFF, then RGBW and the master dimmer are linear.
- The dimmer settings do not have any influence on the device's performance in DMX **TOUR** mode. The DMX settings override the dimmer settings.

6.6.7.5. Dimming Curves

In this submenu you can set the dimming curves.

- 01) Press the **UP/DOWN** buttons until the display shows **CURV**.
- 02) Press the **ENTER** button to open the menu.
- 03) Press the **UP/DOWN** buttons to choose one of the 4 dimming curves:
 - CV1, CV2, CV3: non-linear curves
 - OFF: default dimming curve



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

6.6.7.6. DMX Error

In this menu you can set the device's behavior in case of a DMX signal error.

- 01) Press the **UP/DOWN** buttons until the display shows **DERR**.
- 02) Press the **UP/DOWN** buttons to toggle between the 2 options:

SAVE

The device will use the last properly received DMX signal ensuring uninterrupted performance

BLAK

The device will black out the light output

6.6.7.7. Settings Lock

In this menu you can lock/unlock settings menu.

- 01) Press the **UP/DOWN** buttons until the display shows **SLCK**.
- 02) Press the **ENTER** button to open the menu.
- 03) Press the **UP/DOWN** buttons to choose ON or OFF. If the display shows ON, you will need to insert the password (press **UP>DOWN>UP>DOWN** and press the **ENTER** button) to enter Settings menu.

6.6.7.8. Strobe Settings

In this menu you can choose the desired strobe mode.

- 01) Press the **UP/DOWN** buttons until the display shows **STR**.
- 02) Press the **ENTER** button to open the menu.
- 03) Press the **UP/DOWN** buttons to toggle between the following 2 options:

SPRC Special strobe

CLAS Classic strobe

6.6.7.9. PWM

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

- 01) Press the **UP/DOWN** buttons until the display shows **PWM**.
- 02) Press the **ENTER** button to open the submenu.
- 03) 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.

6.6.8. Calibration

In this menu you can adjust the characteristics of the white color or set the RGB calibration.

- 01) Press the **UP/DOWN** buttons until the display shows **CAL**.
- 02) Press the **ENTER** button to open the menu.
- 03) Insert the password: **UP>DOWN>UP>DOWN** and press the **ENTER** button to confirm.
- 04) Press the **UP/DOWN** buttons until the display shows one of the following 3 options:

CAL1 White color calibration

CAL2 RGB calibration

CALR Calibration reset

6.6.8.1. White Color Calibration

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

- 01) When the display shows **CAL1**, press the **ENTER** button to open the menu.
- 02) Press the **UP/DOWN** buttons to choose one of the 11 white color presets: WH.01–11.
- 03) Press the **ENTER** button to open the submenu.
- 04) Press the **ENTER** button to toggle through RED, GREEN, BLUE and WHITE.
- 05) Press the **UP/DOWN** buttons to set the color intensity. The adjustment range of each color is 0–255, from OFF to FULL ON.

6.6.8.2. RGB Calibration

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

- 01) If the display shows **CAL2**, press the **ENTER** button to open the menu. The display shows **RGBW**.
- 02) Press the **ENTER** button to open the submenu.
- 03) Press the **ENTER** button to toggle through RED, GREEN and BLUE.
- 04) Press the **UP/DOWN** buttons to set the color intensity. The adjustment range is 0–255, OFF to FULL ON.

6.6.8.3. Calibration Reset

In this menu you can reset the calibration settings.

- 01) If the display shows **CALR**, press the **ENTER** button to open the menu.
- 02) Press the **ENTER** button to open the menu.
- 03) Insert the password: **UP>DOWN>UP>DOWN** and press the **ENTER** button to confirm.
- 04) The display will show **OK** and the calibration settings will have been reset.

6.6.9. Safety Lock

In this menu you can set the display lock if no button is pressed within 25 seconds.

- 01) Press the **UP/DOWN** buttons until the display shows **KEY**.
- 02) Press the **ENTER** button to open the menu.
- 03) Press the **UP/DOWN** buttons to choose between ON and OFF.
- 04) If you have selected ON, press the **ENTER** button to confirm.

Note:

The display turns off if no button is pressed within 25 seconds. To access the main menu, you will need to enter the password. The default password is pressing the **UP/DOWN** buttons in the following order: **UP, DOWN, UP, DOWN, ENTER**.

6.6.10. Information

In this menu you can view the currently installed software version.

- 01) Press the **UP/DOWN** buttons until the display shows **INFO**.
- 02) Press the **ENTER** button to open the menu and view the currently installed software version. The currently installed software version is **V03**.

6.7. DMX Channels

6.7.1. RGB Personalities

AR1.D (4 Ch)	TOUR (9 Ch)	TR16 (13 Ch)	Function	Value	Setting
1	1	1	Master Dimmer	000–255	From low to high intensity (0–100 %)
		2	Dimmer Fine	000–255	From low to high intensity (0–100 %)
2	2	3	Red	000–255	From low to high intensity (0–100 %)
		3	Time	000–255	Gradual adjustment time, from 0 to 255 sec.
3	3	4	Red Fine	000–255	From low to high intensity (0–100 %)
		4	Fade Time	000–255	Gradual adjustment fade time, from fast to slow
		5	Green	000–255	From low to high intensity (0–100 %)
4	4	6	Green Fine	000–255	From low to high intensity (0–100 %)
		7	Blue	000–255	From low to high intensity (0–100 %)
5	9	8	Blue Fine	000–255	From low to high intensity (0–100 %)
		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: 3200K		
		206–210	White 2: 3400K		
		211–215	White 3: 4200K		
		216–220	White 4: 4900K		
		221–225	White 5: 5600K		
		226–230	White 6: 5900K		
		231–235	White 7: 6500K		
		236–240	White 8: 7200K		
		241–245	White 9: 8000K		
246–250	White 10: 8500K				
251–255	White 11: 10000K				
6	10		Special Strobe	000–009	No function
				010–099	From low to high frequency (0–20 Hz)
				100–109	No function
				110–179	Pulse strobe, from low to high rate
				180–189	No function
				190–255	Random strobe, from low to high rate
6	10		Classic Strobe	000–009	No function
				010–255	From low to high frequency (0–20 Hz)
7	11		Programs	000–020	No function
				021–030	AUTO01
				031–040	AUTO02
				041–050	AUTO03
				051–060	AUTO04
				061–070	AUTO05
				071–080	AUTO06
				081–090	AUTO07
				091–100	AUTO08

AR1.D (4 Ch)	TOUR (9 Ch)	TR16 (13 Ch)	Function	Value	Setting
				101–110	AUTO09
				111–120	AUTO10
				121–130	PR.01
				131–140	PR.02
				141–150	PR.03
				151–160	PR.04
				161–170	PR.05
				171–180	PR.06
				181–190	PR.07
				191–200	PR.08
				201–210	PR.09
				211–220	PR.10
				221–255	No function
	8	12	Program Speed	000–255	Speed adjustment, from slow to fast
	9	13	Dimmer Speed	000–009	Preset dimmer speed from the device's menu
010–029				Linear dimmer	
030–069				Non-linear dimmer 1 (fastest)	
070–129				Non-linear dimmer 2	
130–189				Non-linear dimmer 3	
190–255				Non-linear dimmer 4 (slowest)	

- Note:** Make sure that the dimmer channel(s) are open in order to see the light output.
- Note:** Close Color Macros and Programs channels if you want to use Red, Green and Blue channels.
- Note:** Close Programs channel if you want to use Color Macros channel.
- Note:** Make sure that you use the correct strobe setting for the strobe channel(s) to work properly (special or classic strobe). See **6.6.7.8. Strobe Settings** on page 34 for more information.
- Note:** Set Programs channel between 121–220 if you want to use Time and Fade Time channels.

6.7.2. RGBW Personalities

ARC.2 (4 Ch)	AR2.D (5 Ch)	AR2.S (6 Ch)	Function	Value	Setting
	1	1	Master Dimmer	000–255	From low to high intensity (0–100 %)
1	2	2	Red	000–255	From low to high intensity (0–100 %)
2	3	3	Green	000–255	From low to high intensity (0–100 %)
3	4	4	Blue	000–255	From low to high intensity (0–100 %)
4	5	5	White	000–255	From low to high intensity (0–100 %)
		6	Classic Strobe	000–009	No function
				010–255	From low to high frequency (0–20 Hz)

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

SSP (7 Ch)	8BIT (10 Ch)	16BI (15 Ch)	Function	Value	Setting
1	1	1	Master Dimmer	000–255	From low to high intensity (0–100 %)
		2	Dimmer Fine	000–255	From low to high intensity (0–100 %)
2	2	3	Red	000–255	From low to high intensity (0–100 %)
	2	3	Time	000–255	Gradual adjustment time, from 0 to 255 sec.
		4	Red Fine	000–255	From low to high intensity (0–100 %)
	3	4	Fade Time	000–255	Gradual adjustment fade time, from fast to slow
3	3	5	Green	000–255	From low to high intensity (0–100 %)
		6	Green Fine	000–255	From low to high intensity (0–100 %)
4	4	7	Blue	000–255	From low to high intensity (0–100 %)
		8	Blue Fine	000–255	From low to high intensity (0–100 %)
5	5	9	White	000–255	From low to high intensity (0–100 %)
		10	White Fine	000–255	From low to high intensity (0–100 %)
				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 %
	6	11	Color Macros	201–205	White 1: 3200K
				206–210	White 2: 3400K
				211–215	White 3: 4200K
				216–220	White 4: 4900K
				221–225	White 5: 5600K
				226–230	White 6: 5900K
				231–235	White 7: 6500K
				236–240	White 8: 7200K
				241–245	White 9: 8000K
				246–250	White 10: 8500K
				251–255	White 11: 10000K
				000–009	No function
				010–099	From low to high frequency (0–20 Hz)
				100–109	No function
				110–179	Pulse strobe, from low to high rate
				180–189	No function
				190–255	Random strobe, from low to high rate
6	7	12	Special Strobe	000–009	No function
				010–099	From low to high frequency (0–20 Hz)
				100–109	No function
				110–179	Pulse strobe, from low to high rate
				180–189	No function
				190–255	Random strobe, from low to high rate
6	7	12	Classic Strobe	000–009	No function

SSP (7 Ch)	8BIT (10 Ch)	16BI (15 Ch)	Function	Value	Setting
				010–255	From low to high frequency (0–20 Hz)
	8	13	Programs	000–020	No function
				021–030	AUTO01
				031–040	AUTO02
				041–050	AUTO03
				051–060	AUTO04
				061–070	AUTO05
				071–080	AUTO06
				081–090	AUTO07
				091–100	AUTO08
				101–110	AUTO09
				111–120	AUTO10
				121–130	PR.01
				131–140	PR.02
				141–150	PR.03
				151–160	PR.04
				161–170	PR.05
				171–180	PR.06
				181–190	PR.07
				191–200	PR.08
				201–210	PR.09
	211–220	PR.10			
				221–255	No function
	9	14	Program Speed	000–255	Speed adjustment, from slow to fast
7	10	15	Dimmer Speed	000–009	Preset dimmer speed from the device's menu
				010–029	Linear dimmer
				030–069	Non-linear dimmer 1 (fastest)
				070–129	Non-linear dimmer 2
				130–189	Non-linear dimmer 3
				190–255	Non-linear dimmer 4 (slowest)

Note: Make sure that the dimmer channel(s) are open in order to see the light output.

Note: Close Color Macros and Programs channels if you want to use Red, Green, Blue and White channels.

Note: Close Programs channel if you want to use Color Macros channel.

Note: Make sure that you use the correct strobe setting for the strobe channel(s) to work properly (special or classic strobe). See **6.6.7.8. Strobe Settings** on page 34 for more information.

Note: Set Programs channel between 121–220 if you want to use Time and Fade Time channels.

6.8. Supported RDM PIDs (Parameter IDs)

Parameter ID	Discovery command	SET command	GET command
DISC_UNIQUE_BRANCH	*		
DISC_MUTE	*		
DISC_UN_MUTE	*		
DEVICE_INFO			*
SUPPORTED_PARAMETERS			*
SOFTWARE_VERSION_LABEL			*
DMX_START_ADDRESS		*	*
IDENTIFY_DEVICE		*	*
DEVICE_MODEL_DESCRIPTION			*
MANUFACTURER_LABEL			*
DEVICE_LABEL		*	*
SENSOR_DEFINITION			*
SENSOR_VALUE		*	*
DEVICE_RESET		*	
DMX_PERSONALITY		*	
DMX_PERSONALITY_DESCRIPTION			*
STATUS_MESSAGES			*
STATUS_ID_DESCRIPTION			*

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
	Internal 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 6.6.7.2. 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 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. Safety Instructions for Maintenance



DANGER
Electric shock caused by dangerous voltage inside

Disconnect power supply before servicing or cleaning.



WARNING
Risk of burns due to hot surface

Allow the device to cool down for at least 15 minutes 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:

- 03) Disconnect the device from the electrical power supply.
- 04) Allow the device to cool down for at least 15 minutes.
- 05) Remove the dust collected on the external surface with dry compressed air and a soft brush.
- 06) Clean the lens with a damp cloth. Use a mild detergent solution.
- 07) Dry the lens carefully with a lint-free cloth.
- 08) 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.

8.3. 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 43.
- 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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