

## Polar Wash 740

Product code: 40106

## Preface

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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.**

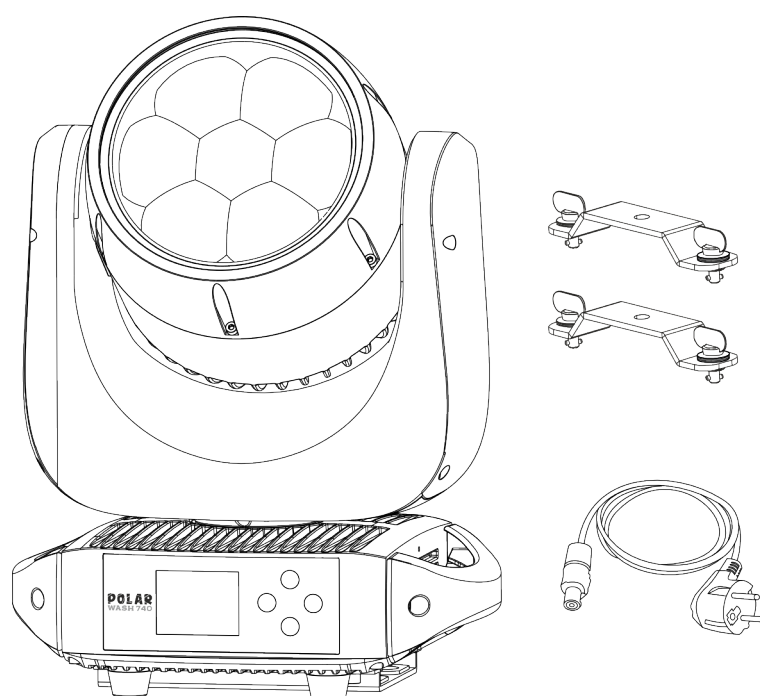
The manufacturer will not accept liability for any resulting damages caused by the non-observance of this manual.

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

Your shipment includes:

- Showtec Polar Wash 740
- Schuko to Power Pro True cable (1,5 m)
- 2 x quick-lock brackets
- User manual

**Figure 1**



## 1.2. Intended Use

This device is intended for professional use as a moving head wash light. It can be installed indoors and outdoors. 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. 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.

## 1.4. 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 parts of the device are in bold lettering, for example: "turn the **adjustment handle (05)**". References to chapters are hyperlinked
- 0–255: Defines a range of values
- Notes: **Note:** (in bold lettering) is followed by useful information or tips

## 1.5. 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.

## 1.6. Symbols on the Information Label

This product is provided with an information label. The information label is located on the base plate of the device.

The information label contains the following symbols:



This device shall not be treated as household waste.



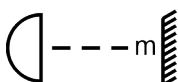
Read and follow the instructions in the user manual before installing, operating or servicing the device.



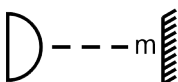
This device falls under IEC protection class I.

**IP65**

This device is rated IP65.



Minimum distance from lighted objects



Minimum distance from other objects

## 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 any parts of the packaging (plastic bags, polystyrene foam, nails, etc.) within the reach of children. Packaging material is a potential source of danger for children.



**DANGER**  
Electric shock caused by dangerous voltage inside

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

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



**WARNING**  
Risk of epileptic shock

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



**CAUTION**  
Possible eye damage caused by high light intensity

Possibly hazardous optical radiation emitted from this device. This is a Risk Group 2 product according to EN 62471. The device should be positioned so that prolonged staring into the light source at a distance closer than 2,5 m is not expected.

- Do not stare at operating lamp. 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 on, when it receives a DMX signal, or when certain menu items are selected.
- Disconnect power before servicing.



**CAUTION**  
Risk of injury due to movement of the device

The head of the device can move quickly. Persons staying near the device could get injured or scared.

- Make sure that there are no persons close to the device when you turn on the device and during operation.
- Keep body parts away from the moving parts of the device when servicing and during maintenance. Long hair or loose clothing can be entangled during the rotation of the moving head.



**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 lift the device holding it by the projector head. This may damage the mechanics. Use the transport handles when handling the device.
- Do not insert objects into air vents.
- Do not connect the device to a dimmer pack.
- Do not switch the device on and off in short intervals. This reduces 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 must be used only for the purposes it is designed for.**

This device is intended for professional use as a moving head wash light. 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, fixings and installation points.
- The lens is not cracked or damaged.
- The power cables are not damaged and do not show any material fatigue.



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

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

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

## 2.2. Requirements for the User

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

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

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

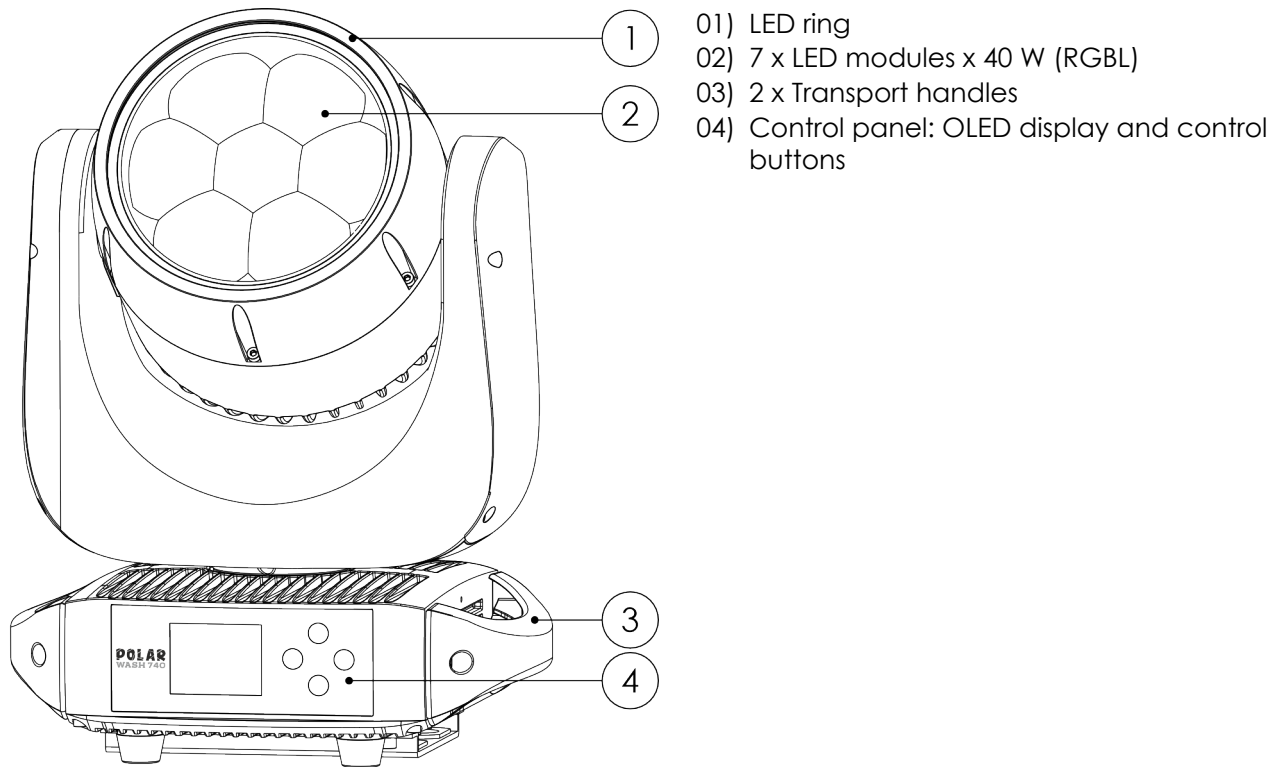
Ordinary persons are all persons other than instructed persons and skilled persons. Ordinary persons include not only users of the product but also any other persons that may have access to the device or who may be in the vicinity of the device.

### 3. Description of the Device

The Showtec Polar Wash 740 is a compact LED wash moving head with zoom and LED ring effects, suitable for indoor and outdoor applications. With the addition of the lime LED, it achieves a CRI of 85 for its white colors. The device features a motorized zoom from 3,5° up to 44°. The 7 RGBL LEDs can be controlled in 2 sections: the center LED and the outer LEDs. The LED ring around the 7 LEDs can be controlled separately.

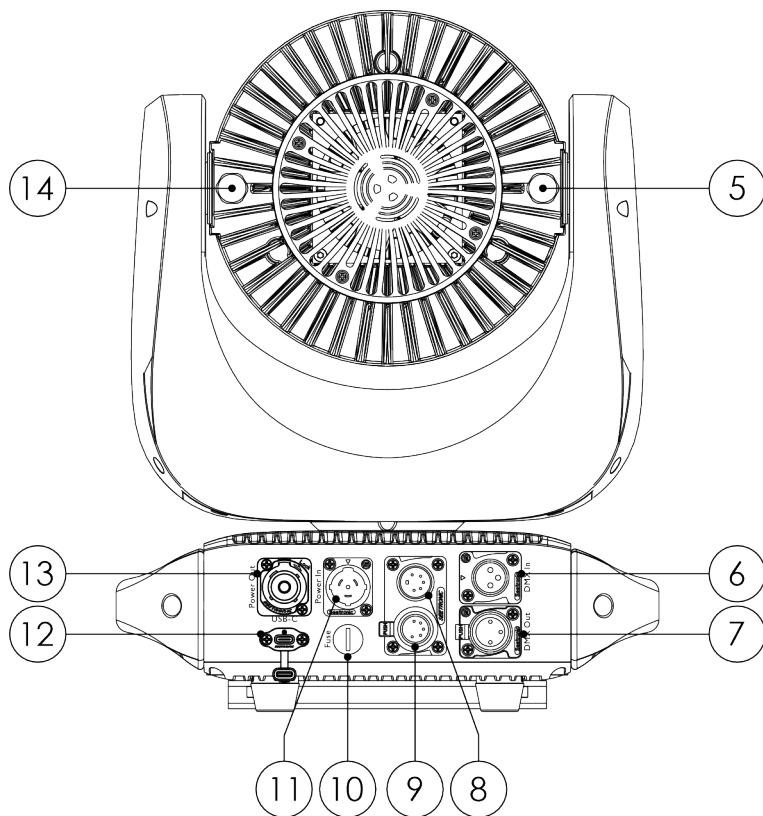
#### 3.1. Front view

Figure 2



### 3.2. Back View

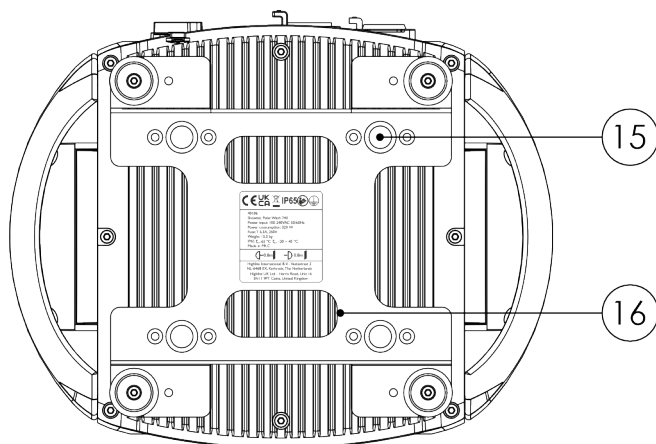
Figure 3



- 05) Protective vent (M12x1,5)
- 06) IP65-rated 3-pin DMX signal connector IN
- 07) IP65-rated 3-pin DMX signal connector OUT
- 08) IP65-rated 5-pin DMX signal connector IN
- 09) IP65-rated 5-pin DMX signal connector OUT
- 10) Fuse (T 6,3 A, 250 V)
- 11) IP65-rated Seetronic power connector IN
- 12) IP65-rated USB-C connector (this is used for servicing to update firmware)
- 13) IP65-rated Seetronic power connector OUT
- 14) Drain plug

### 3.3. Base Plate

Figure 4



- 15) 4 x Mounting holes for quick-lock brackets
- 16) 2 x Openings for a safety cable

### 3.4. Product Specifications

Model:	Polar Wash 740
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<b>Source:</b>	
Light source type	LED
Light source quantity	7
Light source power	40 W
LED color type	R / G / B / L
Refresh rate (min.)	1200 Hz
Refresh rate (max.)	25 kHz
Illuminance @ 2 m	73388 lx
Illuminance @ 3 m	32617 lx
Illuminance @ 5 m	11742 lx
Luminous flux (total)	4060 lm
Luminous flux (red)	1093 lm
Luminous flux (green)	1604 lm
Luminous flux (blue)	679 lm
Luminous flux (lime)	1800 lm
CRI	85

<b>Optical:</b>	
Beam angle min. (circular)	3,5°
Beam angle max. (circular)	44°
Zoom type	Motorized
Zoom ratio	1:10
Zoom minimum	3,5°
Zoom maximum	44°

<b>Control and Programming:</b>	
Control mode	DMX
DMX channels	HSIC (21 CH), SSP (19 CH), Tour (21 CH), TR16 (28 CH), Pixel (25 CH), CMY (22 CH)
Protocols	DMX / RDM
Wireless	Optional
Display	OLED
Fan mode	Yes
Zone control (sections)	2 sections
Dimmer resolution	16 bit

<b>Dynamic Effects:</b>	
Dimmer	0–100 %
Strobe	0–25 Hz

<b>Movement:</b>	
Pan	540°
Tilt	220°
Pan/Tilt resolution	16-bit

Continuous movement	No
---------------------	----

**Electrical Specifications and Connections:**

Power supply	100–240 V AC 50/60 Hz
Power consumption	320 W
Fuse	6,3 A
Power connector IN	Power Pro True
Power connector OUT	Power Pro True
DMX connector IN	XLR 3P / XLR 5P
DMX connector OUT	XLR 3P / XLR 5P

**Mechanical Specifications:**

Length	290 mm
Width	233 mm
Height	375 mm
Weight	9,8 kg
Noise level maximum	45,2 dB
Silent mode noise level	36,1 dB
IP Rating	IP65
Housing	Aluminium die-cast
Color	Black

**Product Properties:**

Cooling	Convection/Axial fan
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**Rigging:**

Mounting options	Quick-Lock
Safety attachment	Yes
Safety eyes	1

**Thermal Specifications:**

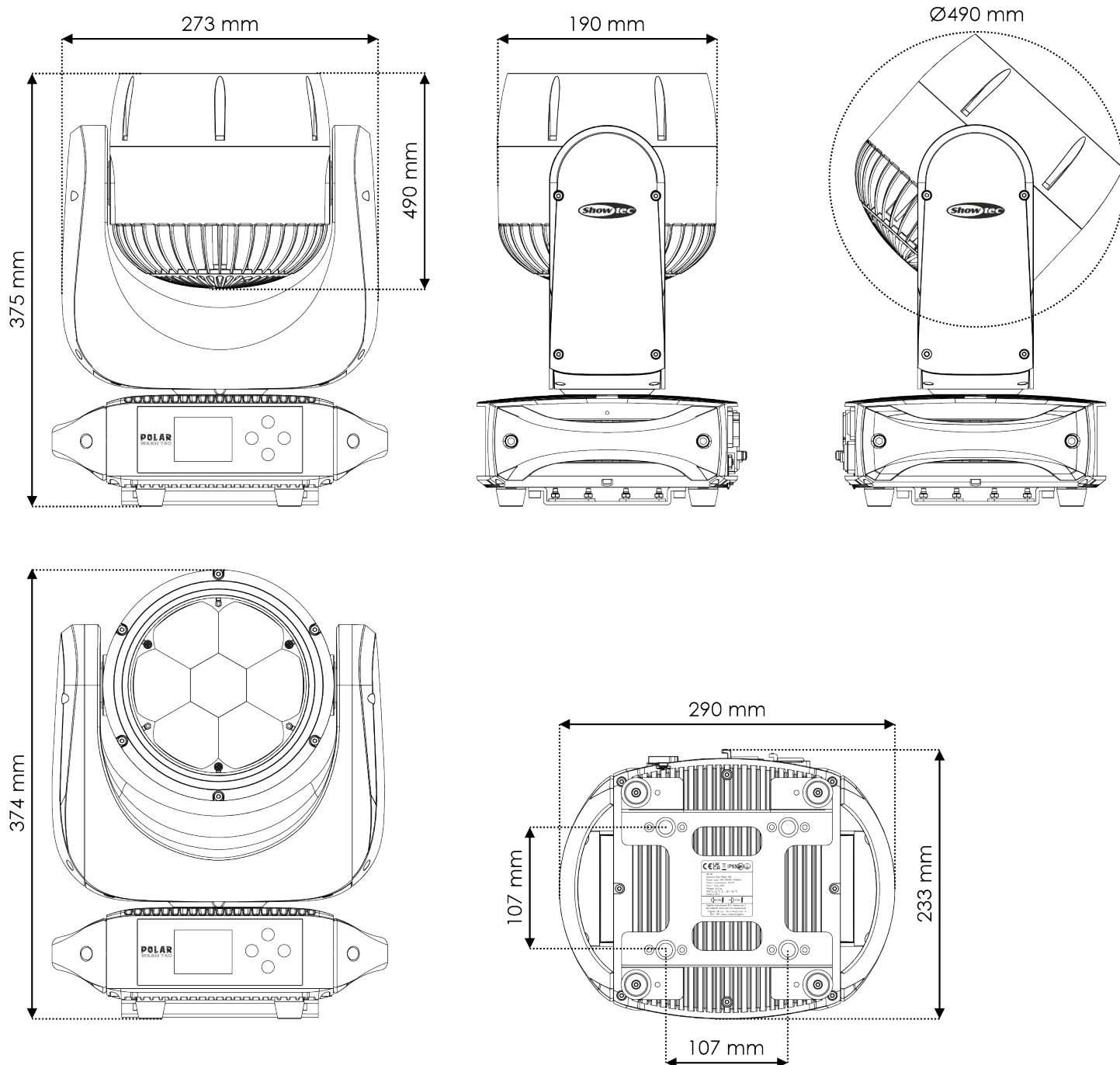
Maximum ambient temperature	45 °C
Maximum surface temperature	65 °C
Minimum operating temperature	-20 °C

**Included Items:**

Included cables	Power Pro True Cable
Included rigging	Quick-Lock Bracket

### 3.5. Dimensions

Figure 5



## 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, deinstallation 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 indoors and outdoors.
- The minimum distance between the light output and the illuminated surface must be bigger than 2 m.
- The minimum distance to other objects must be bigger than 0,5 m.
- The maximum ambient temperature  $t_a = 45\text{ °C}$  must never be exceeded.

## 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.



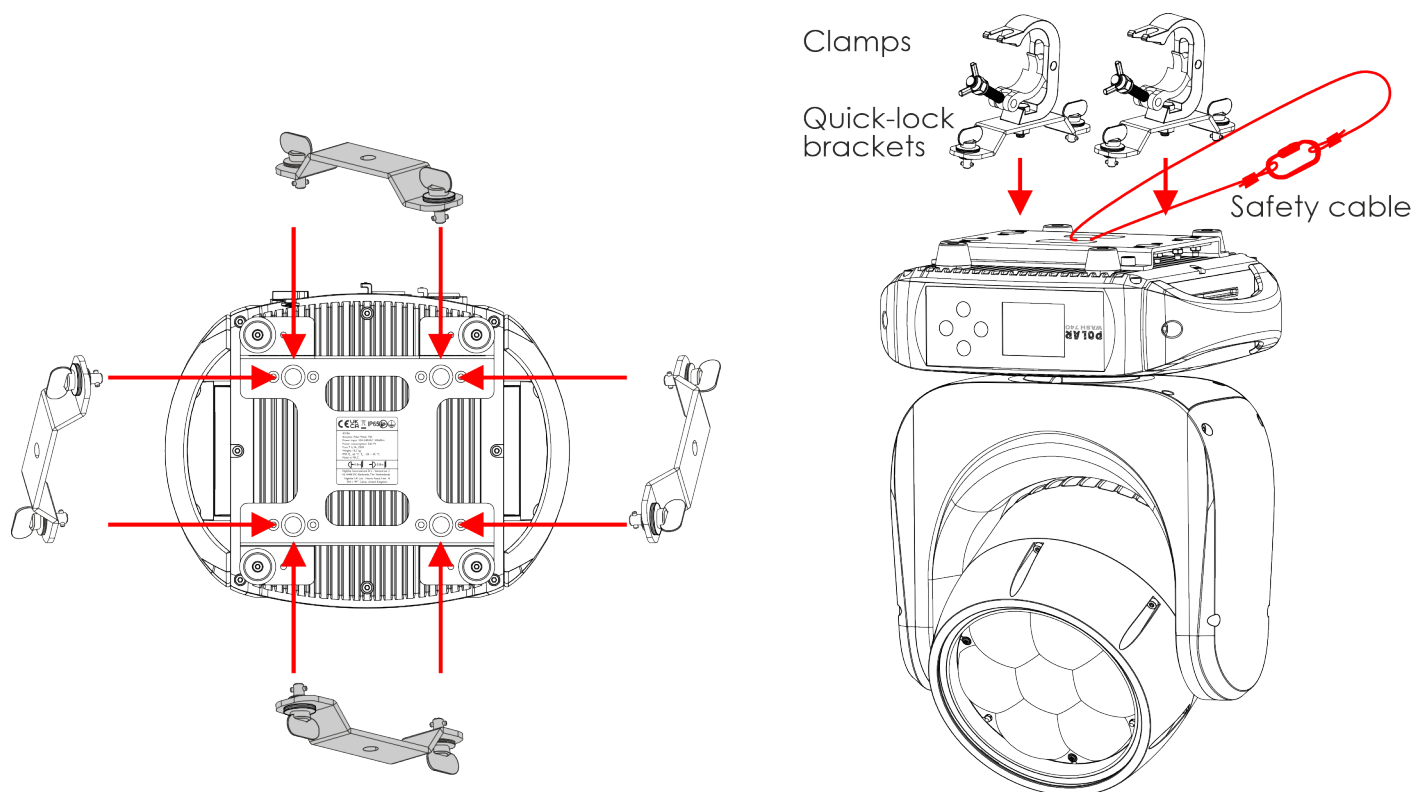
### CAUTION

Restrict the access under the work area during rigging/derigging.

To mount the device, follow the steps below:

- 01) Fasten the 2 quick-lock brackets, supplied with the device, on the **mounting holes for quick-lock brackets (15)**. You can position the quick-lock brackets in two ways.
- 02) Install the clamps. Make sure that you use clamps suitable for attaching the device to a truss.

Figure 6



- 03) Attach the device to the supporting structure. Make sure that the device cannot move freely.
- 04) 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 **openings for a safety cable (16)**.

## 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: 4 devices Polar Wash 740
- at 200–240 V: 9 devices Polar Wash 740



## 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 Polar Wash 740 is not connected to a controller or to other devices, it functions as a stand-alone device. It can be operated manually via the control panel or in auto mode.

For more information refer to Control Modes (see [6.2. Control Modes](#) on page 19).

### 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.

The Polar Wash 740 has 3-pin and 5-pin DMX signal IN and OUT connectors.

The pin assignment is as follows:

- 3-pin: pin 1 (ground), pin 2 (-), pin 3 (+)
- 5-pin: pin 1 (ground), pin 2 (-), pin 3 (+), pin 4 (N/C), pin 5 (N/C)

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

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

**Note:**

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

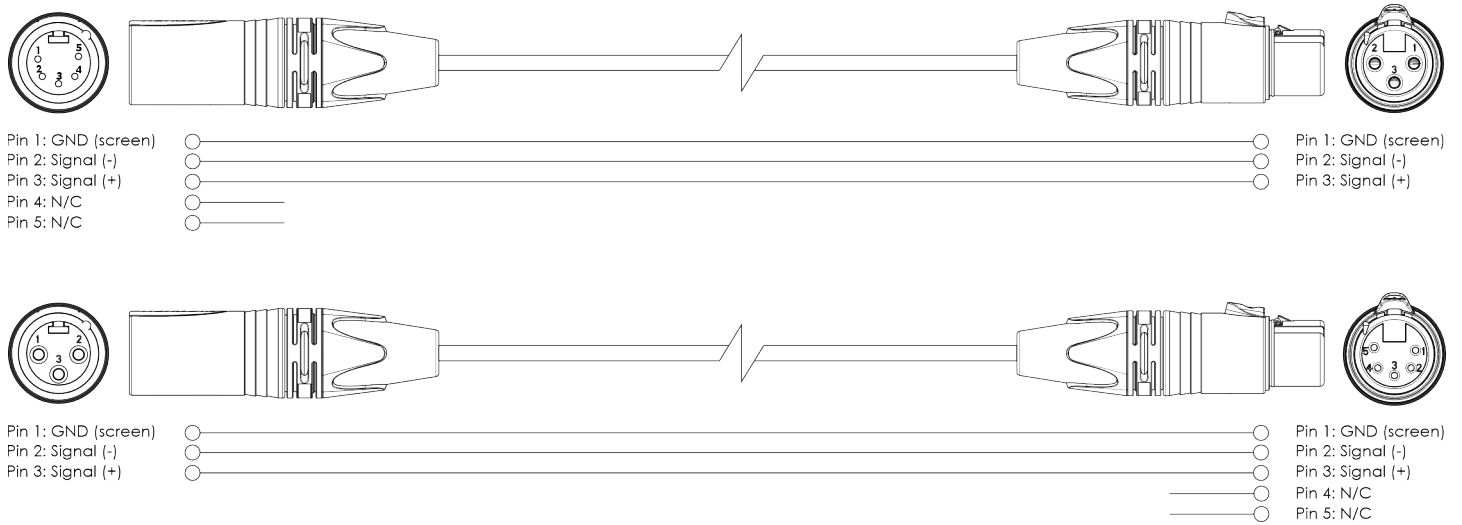
#### 5.3.2. DMX Cables

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

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

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

Figure 7

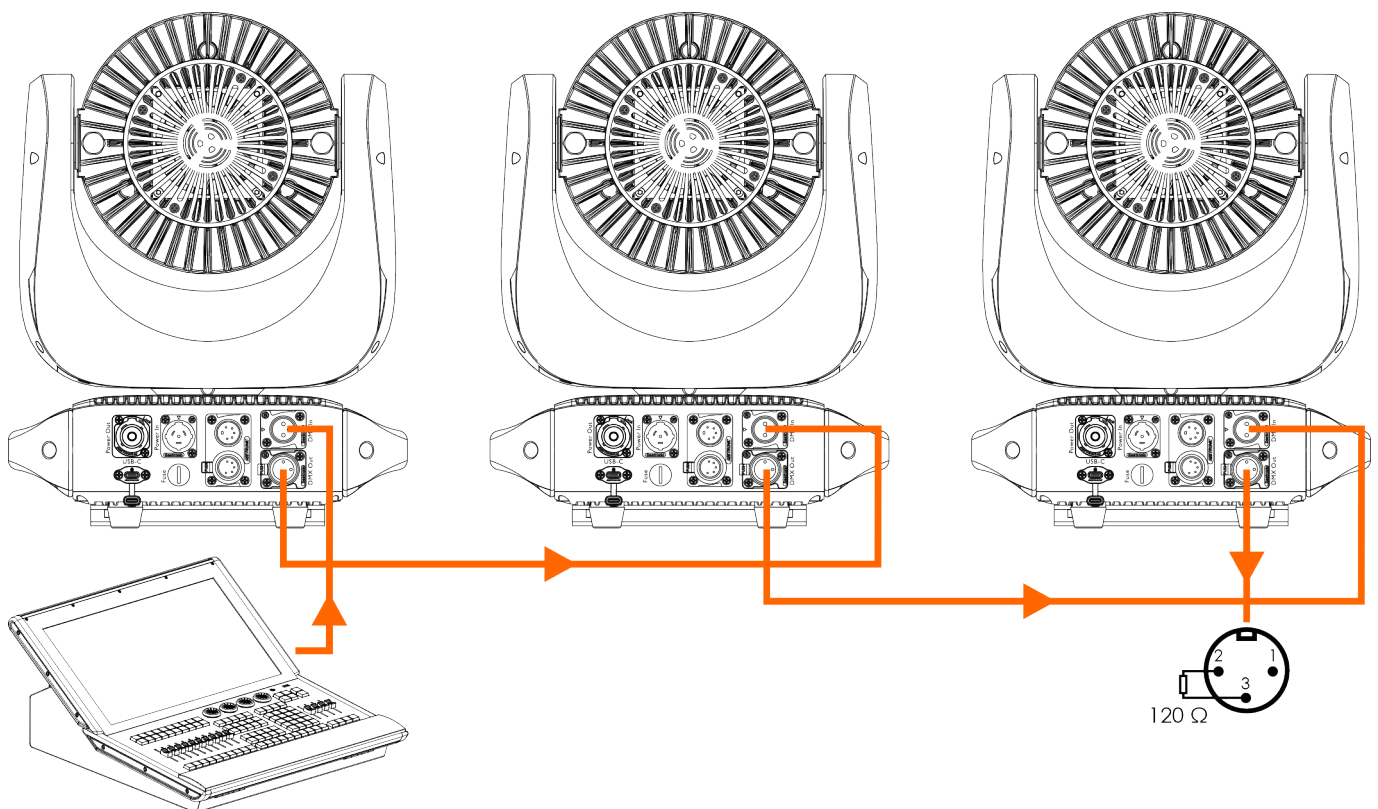


### 5.3.3. DMX Linking

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

- 01) Use a 3-pin/5-pin DMX cable to connect the DMX OUT connector of the lighting controller to the DMX IN connector of the 1<sup>st</sup> device.
- 02) Connect the DMX OUT connector of the 1<sup>st</sup> device to the DMX IN connector of the 2<sup>nd</sup> device with a 3-pin/5-pin DMX cable.
- 03) Repeat step 2 to connect all devices in a daisy-chain.
- 04) Connect a DMX terminator (120 Ω resistor) to the DMX OUT connector of the last device on the data link.

Figure 8



#### 5.3.4. DMX Addressing

In a setup with multiple devices, make sure that you set the DMX starting address of each device correctly. The Polar Wash 740 has 6 personalities: HSIC (21 channels), SSP (19 channels), TOUR (21 channels), TR16 (28 channels), CMY (22 channels), Pixel (25 channels).

If you want to connect multiple devices on one data link and use them in 28-channel mode, for example, follow the steps below:

- 01) Set the starting address of the 1<sup>st</sup> device on the data link to 1 (001).
- 02) Set the starting address of the 2<sup>nd</sup> device on the data link to 29 (029), as  $1 + 28 = 29$ .
- 03) Set the starting address of the 3<sup>rd</sup> device on the data link to 57 (057), as  $29 + 28 = 57$ .
- 04) Continue assigning the starting addresses of the remaining devices by adding each time 28 to the previous number.

Make sure that you do not have any overlapping channels in order to control each Polar Wash 740 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 a moving head wash light. It can be installed indoors and outdoors. 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.



**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 Polar Wash 740 supports the following control modes:

- Stand-alone: Auto operation mode (built-in program, custom programs), manual operation
- DMX-512: HSIC (21 channels), SSP (19 channels), Tour (21 channels), TR16 (28 channels), CMY (22 channels), Pixel (25 channels)

For more information about how to connect the devices, refer to Setup (see [5. Setup](#) on page 16).

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

Adjust the parameters of the device in the Channel submenu (see [6.7.6.1. Channel](#) on page 31).

To run the built-in program or one of the custom programs in auto operation mode without a DMX controller:

Select the control mode of the device in the Run Mode menu (see [6.7.3. Run Mode](#) on page 26).

- If you select AUTO, the device will run the built-in program.
- If you select CUSTOM 1 or CUSTOM 2, the device will run the respective custom program. You can edit the custom programs in the Edit menu (see [6.7.5. Edit](#) on page 29).

To operate the device with a DMX controller:

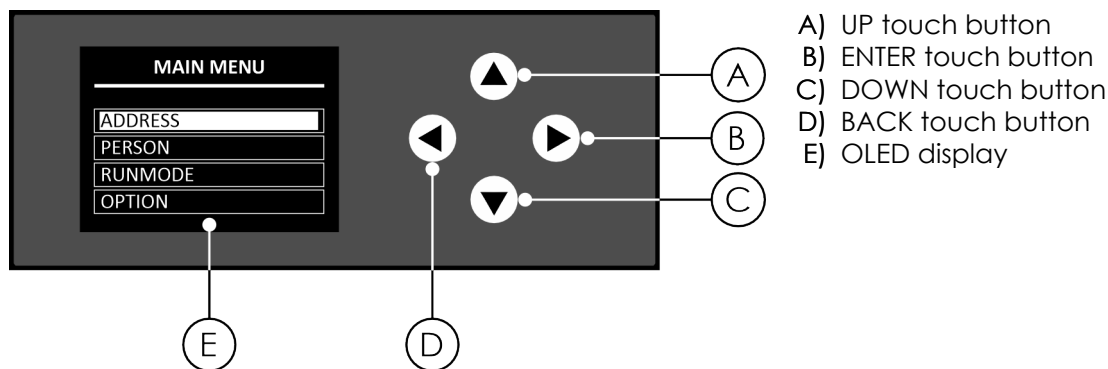
- 01) Select DMX512 as control mode in the Run Mode menu (see [6.7.3. Run Mode](#) on page 26).
- 02) Set the DMX starting address (see [5.3.4. DMX Addressing](#) on page 18) of the device in the DMX Address menu (see [6.7.1. DMX Address](#) on page 26).
- 03) Select the DMX channel mode in the DMX channel mode menu (see [6.7.2. Person \(DMX Channel Mode\)](#) on page 26). Refer to DMX Channels (see [6.8. DMX Channels](#) on page 34) for a complete overview of all DMX channels.

**Note:**

The device can be fitted with a wireless module and controlled via wireless DMX. Contact your Highlite International dealer for more information.

### 6.3. Control Panel

Figure 9



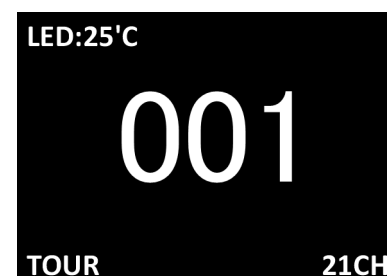
- Use the **BACK** button to exit the current submenu, to return to the Main Menu and to return to the start screen.
- Use the **UP/DOWN** buttons to navigate through the menus or to increase/decrease numeric values.
- Use the **ENTER** button to open the desired menu, to confirm your choice or to set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

### 6.4. Start-up

After the device is connected to power supply, the device will perform a reset. During the reset the display shows a splash screen with the Showtec logo:



After the reset is completed, the device is ready to be operated. The display shows the start screen. The start screen provides information about the temperature of the LEDs, the DMX starting address of the device, and the selected DMX channel mode:



If there is no DMX signal, the DMX starting address on the start screen is blinking.

By default the display of the device is locked. To unlock the display and access the main menu, you need to enter the password:

- 01) Press the **UP/DOWN** buttons in the following order: **UP, DOWN, UP, DOWN** to enter the password.
- 02) Press the **ENTER** button to confirm.

You can change the settings and remove the display lock in the Display lock submenu (see [6.7.4.1. Display Lock](#) on page 28).

#### Note:

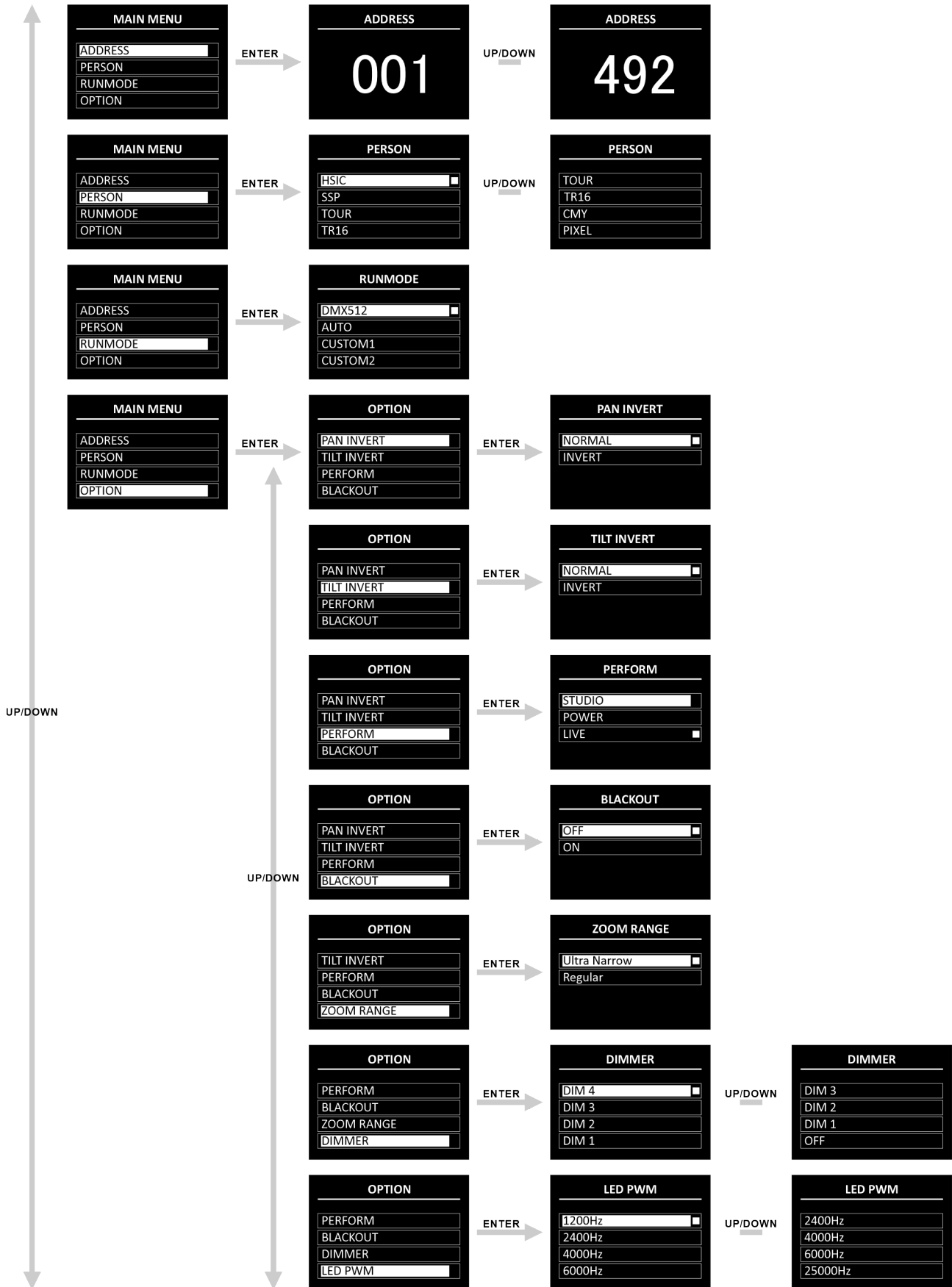
If no button is pressed, after 35 s the display will be locked. After 5 s more the display will turn off. Enter the password to unlock the display. If the display lock is turned off, press any button to turn the display on.

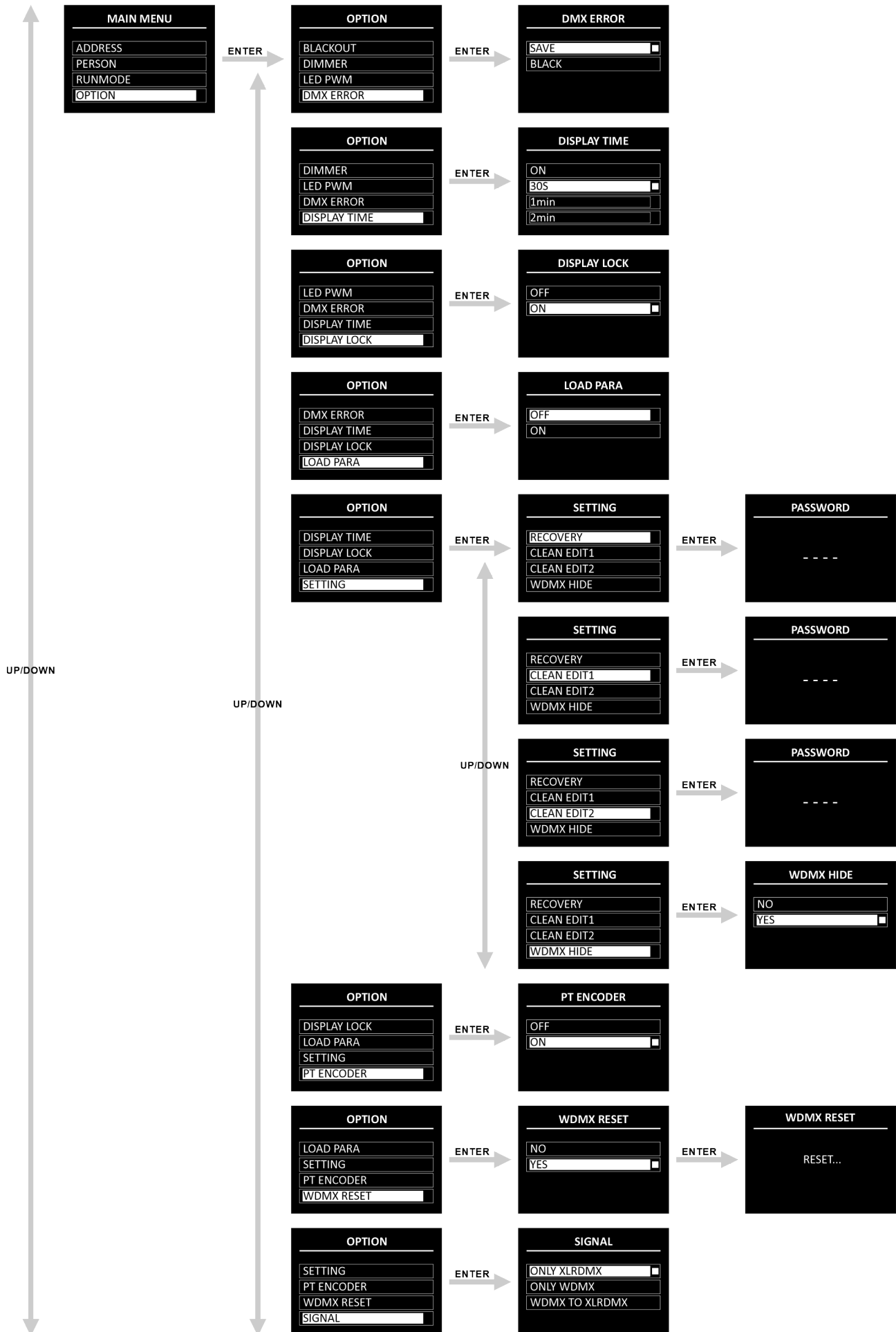
### 6.5. No Reset Start-up

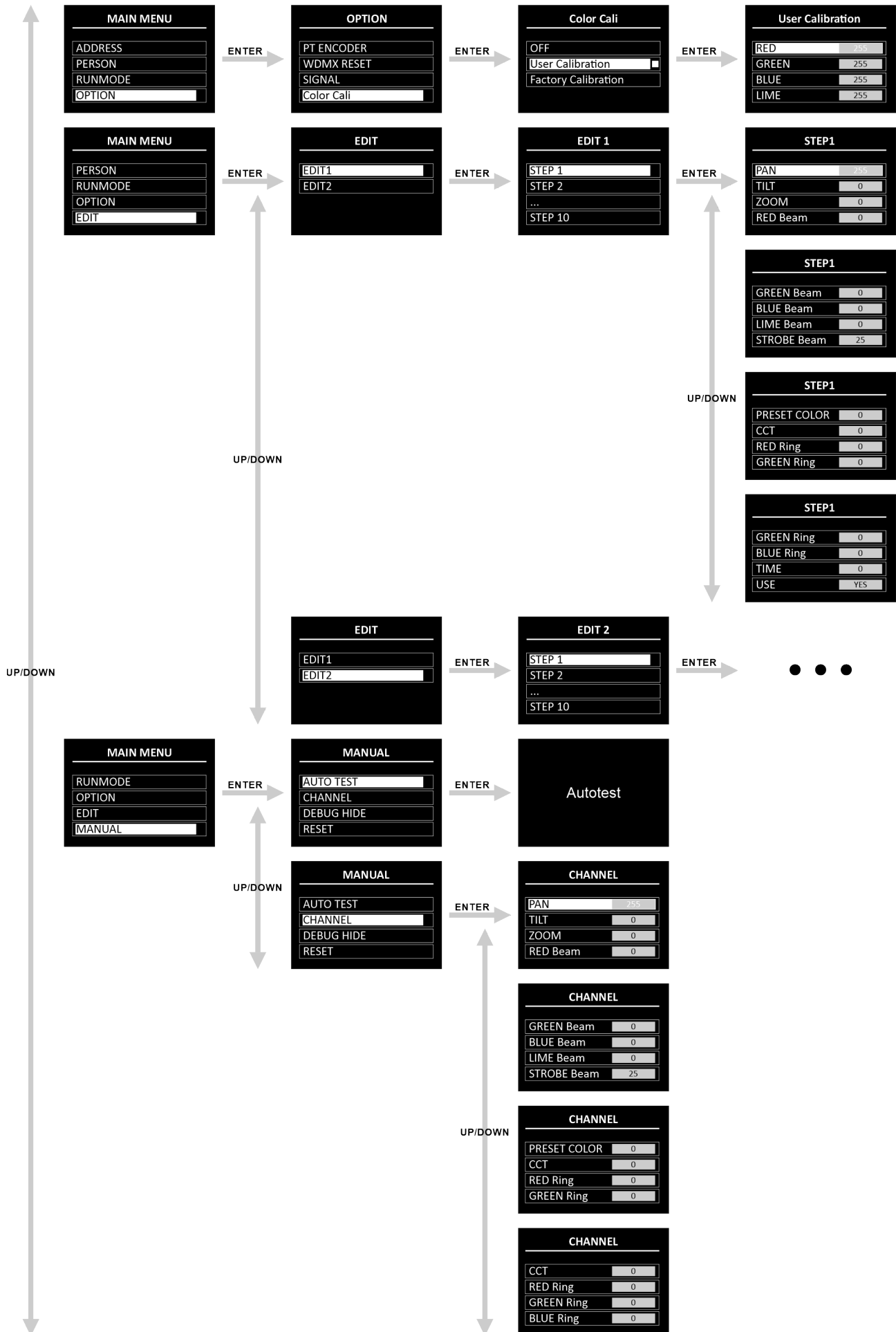
The OLED display of the device is battery-powered. It is not necessary to supply power to the device in order to adjust the settings of the device. You can activate only the display of the device.

Press and hold the **BACK** button for 5 s to turn the display on.

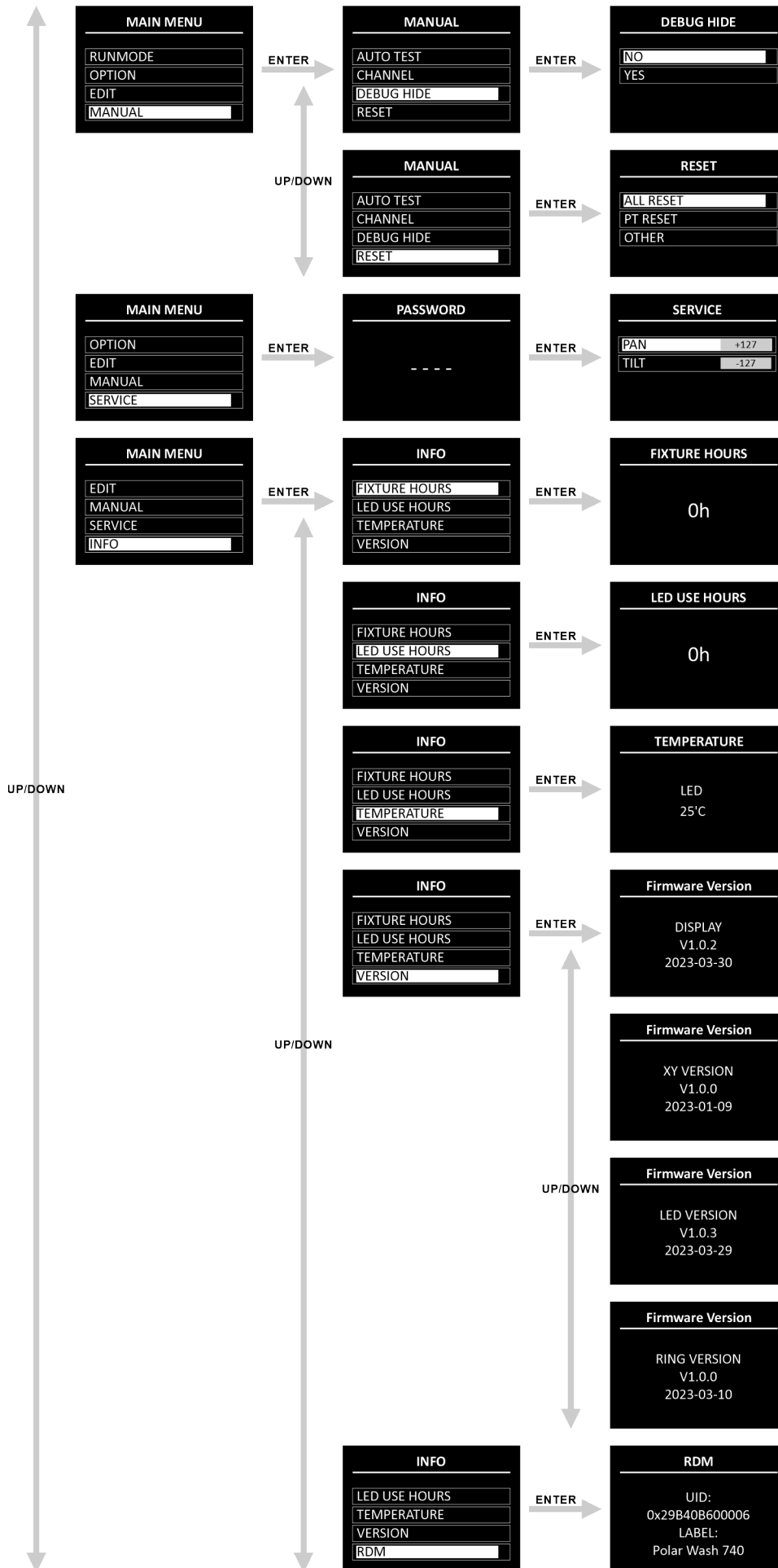
### 6.6. Menu Overview

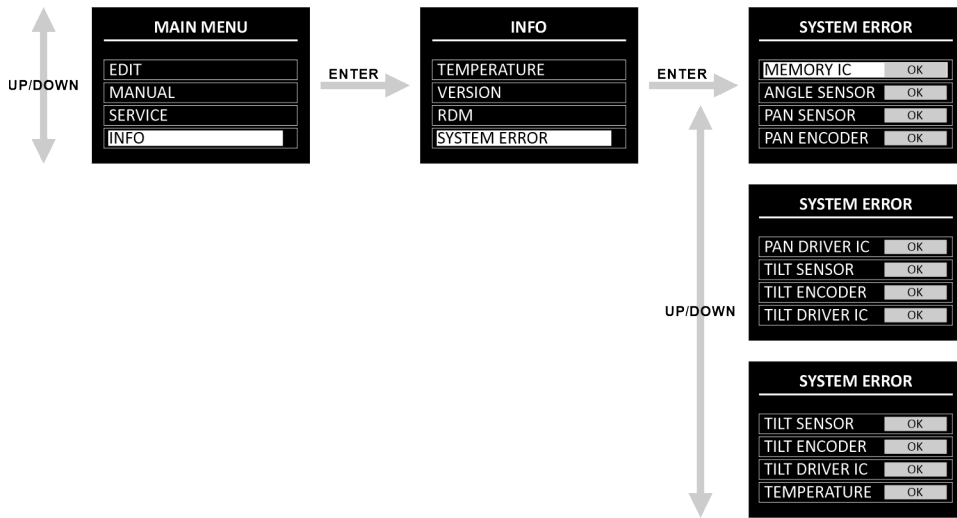






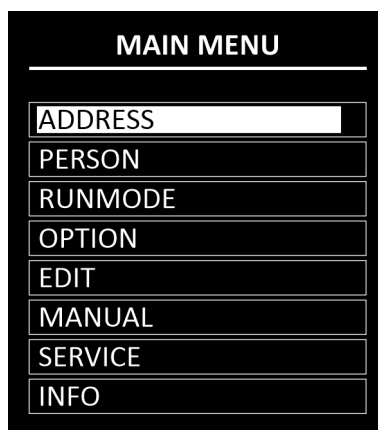






## 6.7. Main Menu Options

The main menu has the following 8 options:



- 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**.

### 6.7.1. 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 depends on the active DMX channel mode:
  - HSIC: 001–492 (21 channels)
  - SSP: 001–494 (19 channels)
  - TOUR: 001–492 (21 channels)
  - TR16: 001–485 (28 channels)
  - CMY: 001–491 (22 channels)
  - PIXEL: 001–488 (25 channels)
- 02) Press the **ENTER** button to confirm the selection.

### 6.7.2. Person (DMX Channel Mode)

In this menu you can select the DMX channel mode.

- 01) Press the **UP/DOWN** buttons to select the desired DMX mode. There are 6 options:
  - HSIC: 21 channels
  - SSP: 19 channels
  - TOUR: 21 channels
  - TR16: 28 channels
  - CMY: 22 channels
  - PIXEL: 25 channels
- 02) Press the **ENTER** button to confirm the selection. For more information refer to DMX Channels (see [6.8. DMX Channels](#) on page 34).

### 6.7.3. Run Mode

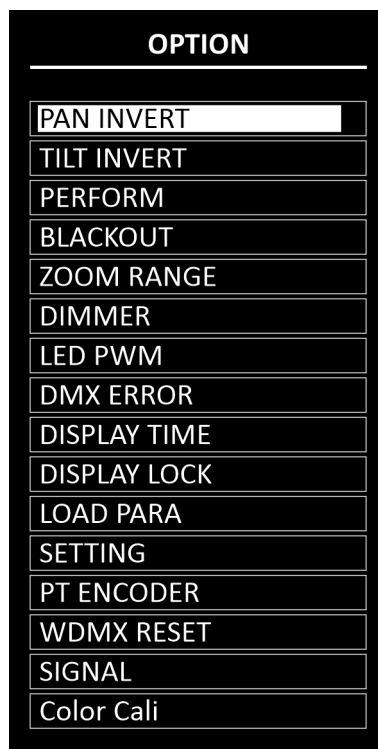
In this menu you can select the control mode of the device.

- 01) Press the **UP/DOWN** buttons to select one of the 4 options:
  - DMX512: The device will operate in DMX mode
  - AUTO: The device will run the built-in program
  - CUSTOM1: The device will run Custom Program 1 (see [6.7.5. Edit](#) on page 29).
  - CUSTOM2: The device will run Custom Program 2 (see [6.7.5. Edit](#) on page 29).
- 02) Press the **ENTER** button to confirm the selection.

#### 6.7.4. Option

In this menu you can adjust the settings of the device.

01) Press the **UP/DOWN** buttons to scroll through the 16 available options:



- PAN INVERT: Turn off/on the inverted pan direction (OFF/ON)
- TILT INVERT: Turn off/on the inverted tilt direction (OFF/ON)
- PERFORM: Set the speed of the cooling fans: STUDIO (slow), POWER (fast), LIVE (auto)
- BLACKOUT: Turn off/on output blackout during pan/tilt movement (OFF/ON)
- ZOOM RANGE: Adjust the zoom: Ultra Narrow, Regular
- DIMMER: Select the dimmer speed: DIM4, DIM3, DIM2, DIM1 (non-linear dimmers), OFF (linear dimmer)
- LED PWM: Set the PWM (Pulse Width Modulation): 1200 Hz, 2400 Hz, 4000 Hz, 6000 Hz, 25000 Hz
- DMX ERROR: Set the behavior of the device in case of a DMX failure. There are 2 options: SAVE (the device will use the last properly received DMX signal) and BLACK (the device will black out the light output)
- DISPLAY TIME: Select whether the display will remain on or will turn off after 40 s of inactivity: ON (the display will not turn off), OFF (the display will turn off)
- DISPLAY LOCK (see [6.7.4.1. Display Lock](#))
- LOAD PARA: Upload the parameters of Custom Program 1 and/or 2 from one device Polar Wash 740 to another device (NO/YES)
- SETTING (see [6.7.4.2. Settings](#))
- PT ENCODER: Turn off/on the pan/tilt encoder. If the PT encoder is turned on (ON), the device will automatically correct the pan/tilt position, if the position deviates from the last saved value (OFF/ON)
- WDMX RESET: Reset the wireless connection and clear all messages of the receiver (NO/YES).
- SIGNAL (see [6.7.4.3. Signal](#))
- Color Cali (see [6.7.4.4. Color Calibration](#))

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

#### Notes:

- The options WDMX RESET and SIGNAL are available in the menu only when WDMX HIDE in the Settings submenu is set to NO (see [6.7.4.2. Settings](#) on page 28).
- The device is not fitted with a wireless module and cannot be controlled via wireless DMX. To have a wireless module installed, contact your Highlite International dealer for more information.

### 6.7.4.1. Display Lock

In this submenu you can activate the display lock.

01) Press the **UP/DOWN** buttons to toggle between ON and OFF.

- **ON:** The display lock is on. The display will be locked after 35 s of inactivity. After 5 s more the display will turn off. To access the main menu, you need to enter the password. The default password is pressing the **UP/DOWN** buttons in the following order: **UP, DOWN, UP, DOWN**
- **OFF:** The access to the main menu remains unlocked after the display turns off

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

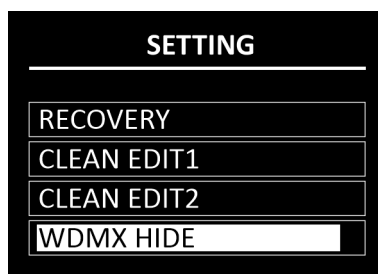
#### Note:

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

### 6.7.4.2. Settings

In this submenu you can reset the parameters of the device and hide the WDMX settings in the main menu.

01) Press the **UP/DOWN** buttons to select one of the 4 options:



- **RECOVERY:** Restore the default factory settings of the device. This submenu requires a password. The default password is pressing the **UP/DOWN** buttons in the following order: **UP, DOWN, UP, DOWN**
- **CLEAN EDIT1:** Reset Custom Program 1. All values set in EDIT 1 (see [6.7.5. Edit](#) on page 29) will be cleared. This submenu requires a password. The default password is pressing the **UP/DOWN** buttons in the following order: **UP, DOWN, UP, DOWN**
- **CLEAN EDIT2:** Reset Custom Program 2. All values set in EDIT 2 (see [6.7.5. Edit](#) on page 29) will be cleared. This submenu requires a password. The default password is pressing the **UP/DOWN** buttons in the following order: **UP, DOWN, UP, DOWN**
- **WDMX HIDE:** Show/hide the wireless mode settings WDMX reset and Signal in the main menu (NO/YES)

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

#### Note:

The device is not fitted with a wireless module and cannot be controlled via wireless DMX. To have a wireless module installed, contact your Highlite International dealer for more information.

### 6.7.4.3. Signal

In this submenu you can set the signal preferences when wireless DMX is enabled. This submenu is available in the menu only when WDMX HIDE is set to NO in the Settings submenu (see [6.7.4.2. Settings](#) on page 28).

01) Press the **UP/DOWN** buttons to select one of the 3 options:

- ONLY XLR DMX: Only DMX via the XLR cable connection is active
- ONLY WDMX: Only DMX via the wireless module is active
- WDMX TO XLR DMX: When linking multiple devices, you can set a wireless connection between the first device and the lighting controller and link the rest of the devices to the first device with a DMX cable

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

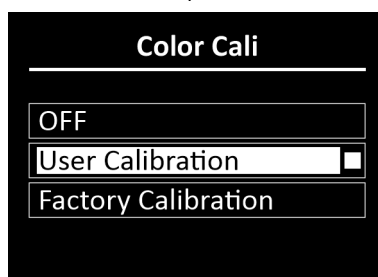
#### Note:

The device is not fitted with a wireless module and cannot be controlled via wireless DMX. To have a wireless module installed, contact your Highlite International dealer for more information.

### 6.7.4.4. Color Calibration

In this submenu you can calibrate the color of the LEDs. The built-in calibration is enabled by default. The built-in calibration guarantees that the color rendering, the color temperature and the brightness of the LEDs remain the same despite differences in the temperature of the LEDs or between different production runs of the same device.

01) Press the **UP/DOWN** buttons to select one of the 3 options:



- OFF: Disables the built-in color calibration
- User Calibration: Manual color calibration of the LEDs: RED, GREEN, BLUE, LIME. The adjustment range is 0–255
- Factory Calibration: Use the factory settings

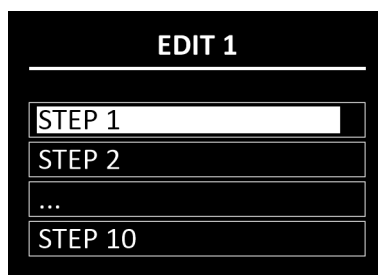
02) Press the **ENTER** button to confirm the selection.

### 6.7.5. Edit

In this menu you can edit the 2 custom programs.

01) Press the **UP/DOWN** buttons to choose the custom program you want to edit: EDIT 1 or EDIT 2.

02) Press the **ENTER** button to confirm the selection and open the submenu with the steps. Each custom program has 10 steps, which can be edited:



03) Press the **UP/DOWN** buttons to select the desired step.

04) Press the **ENTER** button to confirm the selection and open the submenu with the settings for the respective step.

05) Press the **UP/DOWN** buttons to select one of the 15 parameters:

STEP1	
PAN	255
TILT	0
ZOOM	0
RED Beam	0
GREEN Beam	0
BLUE Beam	0
LIME Beam	0
STROBE Beam	25
PRESET COLOR	0
CCT	0
RED Ring	0
GREEN Ring	0
BLUE Ring	0
TIME	0
USE	YES

- PAN: Pan adjustment (0–255)
- TILT: Tilt adjustment (0–255)
- ZOOM: Zoom adjustment (0–255)
- RED Beam: Red color intensity of the beam LEDs (0–255)
- GREEN Beam: Green color intensity of the beam LEDs (0–255)
- BLUE Beam: Blue color intensity of the beam LEDs (0–255)
- LIME Beam: Lime color intensity of the beam LEDs (0–255)
- STROBE Beam: Strobe effect of the beam LEDs, from OFF to high frequency (0–25)
- PRESET COLOR: Select one of the 24 beam color presets (see [6.8.7. Beam Color Presets](#) on page 49) (0–255)
- CCT: Adjust the CCT of the beam LEDs (0–255)
- RED Ring: Red color intensity of the ring LEDs (0–255)
- GREEN Ring: Green color intensity of the ring LEDs (0–255)
- BLUE Ring: Blue color intensity of the ring LEDs (0–255)
- TIME: Set the duration of the step (0–255, from 0,1 s to approximately 25 s)
- USE: Include the step in the custom program (YES/NO). If you choose NO, the step will be excluded from the playback of the custom program

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

07) Press the **UP/DOWN** buttons to increase/decrease the values.

08) Press the **ENTER** button to set the value.

09) Repeat steps 5–8 to set all parameters in the step.

10) Press the **BACK** button to return to the submenu with the steps.

11) Repeat steps 3–10 to edit the remaining steps of the selected custom program (EDIT 1 or EDIT 2).

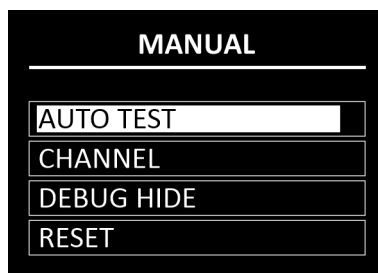
#### Note:

For each custom program you can create 10 steps, which makes it possible to create 20 customized scenes in total.

### 6.7.6. Manual

In this menu you can manually adjust and/or reset the parameters of the device.

01) Press the **UP/DOWN** buttons to select one of the 4 options:



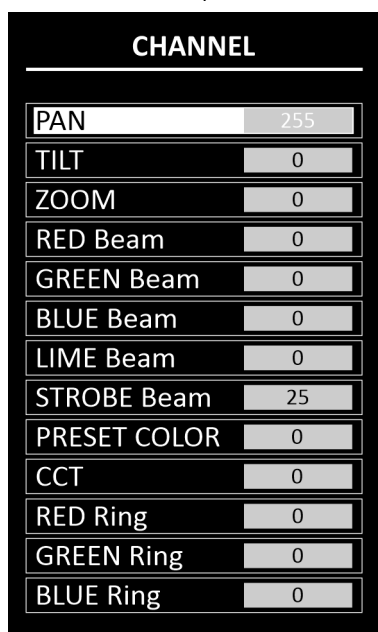
- **AUTO TEST:** Perform auto test of the parameters of the device
- **CHANNEL:** (see [6.7.6.1. Channel](#))
- **DEBUG HIDE:** This option is not relevant to the use and operation of the device
- **RESET:** (see [6.7.6.2. Reset](#))

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

#### 6.7.6.1. Channel

In this submenu you can manually adjust the parameters of the device.

01) Press the **UP/DOWN** buttons to select one of the 13 options:



- **PAN:** Pan adjustment (0–255)
- **TILT:** Tilt adjustment (0–255)
- **ZOOM:** Zoom adjustment (0–255)
- **RED Beam:** Red color intensity of the beam LEDs (0–255)
- **GREEN Beam:** Green color intensity of the beam LEDs (0–255)
- **BLUE Beam:** Blue color intensity of the beam LEDs (0–255)
- **LIME Beam:** Lime color intensity of the beam LEDs (0–255)
- **STROBE Beam:** Strobe effect of the beam LEDs, from OFF to high frequency (0–25)
- **PRESET COLOR:** Select one of the 24 beam color presets (see [6.8.7. Beam Color Presets](#) on page 49) (0–255)
- **CCT:** Adjust the CCT of the beam LEDs (0–255)
- **RED Ring:** Red color intensity of the ring LEDs (0–255)
- **GREEN Ring:** Green color intensity of the ring LEDs (0–255)
- **BLUE Ring:** Blue color intensity of the ring LEDs (0–255)

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

03) Press the **UP/DOWN** buttons to increase/decrease the values.

04) Press the **ENTER** button to set the value.



### 6.7.6.2. Reset

In this submenu you can manually reset the parameters of the device.

- 01) Press the **UP/DOWN** buttons to select one of the 3 options:
  - ALL RESET: Reset all parameters
  - PT RESET: Reset the Pan/Tilt to home position
  - OTHER: Reset the zoom and the focus
- 02) Press the **ENTER** button to confirm the selection and perform the reset.

### 6.7.7. Service

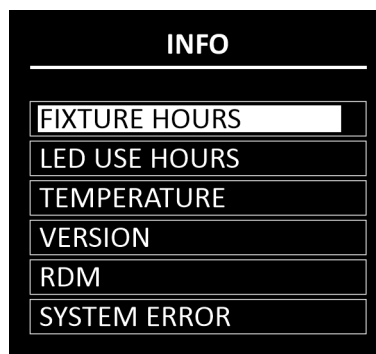
In this menu you can calibrate the pan and tilt parameters of the device. This menu requires a password. The default password is pressing the **UP/DOWN** buttons in the following order: **UP, DOWN, UP, DOWN**.

- 01) Enter the password.
- 02) Press the **ENTER** button to confirm the password and enter the submenu.
- 03) Press the **UP/DOWN** buttons to select one of the 2 options:
  - PAN: Adjust the home position of the pan drive. The adjustment range is between -127 and +127.
  - TILT: Adjust of the home position of the tilt drive. The adjustment range is between -127 and +127.
- 04) Press the **ENTER** button to confirm the selection.
- 05) Press the **UP/DOWN** buttons to increase/decrease the value.
- 06) Press the **ENTER** button to set the value.

### 6.7.8. Info

In this menu you can view the parameters of the device.

- 01) Press the **UP/DOWN** buttons to select one of the 6 options:

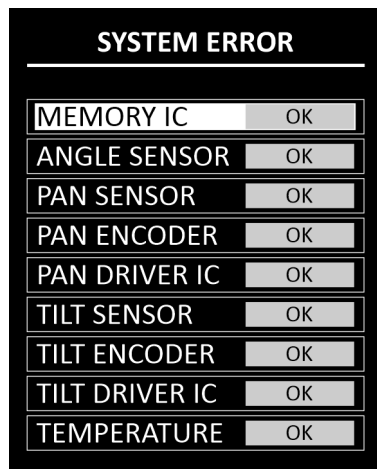


- FIXTURE HOURS: Shows the total hours of operation of the device
  - LED USE HOURS: Shows the total hours of use of the LEDs
  - TEMPERATURE: Provides information about the temperature of the LEDs
  - VERSION: Provides information about the firmware version of the following parameters: Display, XY Drive, LEDs and ring drive. Press the **UP/DOWN** buttons to scroll through the 4 screens
  - RDM: Shows the RDM UID number and name (LABEL) of the device (see [6.9. RDM Information](#) on page 50)
  - SYSTEM ERROR (see [6.7.8.1. System Error](#))
- 02) Press the **ENTER** button to confirm the selection.

### 6.7.8.1. System Error

In this submenu you can view whether there are any system errors.

Press the **UP/DOWN** buttons to scroll through the following 9 options:



The displayed parameters are:

- MEMORY IC
- ANGLE SENSOR
- PAN SENSOR
- PAN ENCODER
- PAN DRIVER IC
- TILT SENSOR
- TILT ENCODER
- TILT DRIVER IC
- TEMPERATURE

If there are no errors, the display will show OK next to the parameter. If there are errors, the display will show ERROR. Contact your Highlite International dealer if there is a system error.

## 6.8. DMX Channels

### 6.8.1. DMX Channels Overview

Function	SSP 19 CH	TOUR 21 CH	TR16 28 CH	CMY 22 CH	HSIC 21 CH	PIXEL 25 CH
Pan	1	1	1	1	1	1
Pan Fine			2	2	2	2
Tilt	2	2	3	3	3	3
Tilt Fine			4	4	4	4
Pan/Tilt Speed	3	3	5	5	5	5
Cyan				6		
Magenta				7		
Yellow				8		
Intensity					6	
Hue					7	
Hue Fine					8	
Saturation					9	
Beam Red	4	4	6			
Beam Red Fine			7			
Beam Green	5	5	8			
Beam Green Fine			9			
Beam Blue	6	6	10			
Beam Blue Fine			11			
Beam Lime	7	7	12			
Beam Lime Fine			13			
Beam Dimmer	8	8	14	9		14
Beam Dimmer Fine			15			
Strobe	9	9	16	10	11	15
Beam Color Presets		10	17	11		
CCT		11	18	12	10	
Zoom	10	12	19	13	12	16
Ring Red	11	13	20	14	13	17
Ring Green	12	14	21	15	14	18
Ring Blue	13	15	22	16	15	19
Ring Color Presets	14	16	23	17	16	21
Ring Color Effects	15	17	24	18	17	22
Ring Chases	16	18	25	19	18	23
Ring Dimmer	17	19	26	20	19	20
Ring Strobe	18	20	27	21	20	24
Control	19	21	28	22	21	25
Beam Red Zone 1						6
Beam Green Zone 1						7
Beam Blue Zone 1						8
Beam Lime Zone 1						9
Beam Red Zone 2						10
Beam Green Zone 2						11

Function	SSP 19 CH	TOUR 21 CH	TR16 28 CH	CMY 22 CH	HSIC 21 CH	PIXEL 25 CH
Beam Blue Zone 2						12
Beam Lime Zone 2						13

### 6.8.2. SSP (19 Channels), TOUR (21 Channels), TR16 (28 Channels)

SSP 19 CH	TOUR 21 CH	TR16 28 CH	Function	Value	Setting
1	1	1	Pan	000–255	Pan adjustment 0°–540°
		2	Pan Fine	000–255	Pan adjustment, 16-bit
2	2	3	Tilt	000–255	Tilt adjustment 0°–220°
		4	Tilt Fine	000–255	Tilt adjustment, 16-bit
3	3	5	Pan/Tilt Speed	000–255	From fast to slow
4	4	6	Red	000–255	From low to high intensity (0–100 %)
		7	Red Fine	000–255	Fine adjustment
5	5	8	Green	000–255	From low to high intensity (0–100 %)
		9	Green Fine	000–255	Fine adjustment
6	6	10	Blue	000–255	From low to high intensity (0–100 %)
		11	Blue Fine	000–255	Fine adjustment
7	7	12	Lime	000–255	From low to high intensity (0–100 %)
		13	Lime Fine	000–255	Fine adjustment
8	8	14	Dimmer	000–255	From low to high intensity (0–100 %)
		15	Dimmer Fine	000–255	Fine adjustment
				000–009	No function
				010–099	From low to high frequency (0–25 Hz)
9	9	16	Strobe	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
	10	17	Color Presets (see <a href="#">6.8.7. Beam Color Presets</a> )	000–015	No function
				016–255	Color Presets
				000–009	No function
				010–024	1800 K
				025–039	2200 K
				040–054	2700 K
				055–069	3000 K
				070–084	3200 K
				085–099	4000 K
	11	18	CCT	100–114	4500 K
				115–129	5000 K
				130–144	5600 K
				145–159	6000 K
				160–174	6500 K
				175–189	7000 K
				190–204	8000 K
				205–255	10000 K

SSP 19 CH	TOUR 21 CH	TR16 28 CH	Function	Value	Setting
10	12	19	Zoom	000–255	Zoom adjustment, 3,5°–44°
11	13	20	Ring Red	000–255	From low to high intensity (0–100 %)
12	14	21	Ring Green	000–255	From low to high intensity (0–100 %)
13	15	22	Ring Blue	000–255	From low to high intensity (0–100 %)
14	16	23	Ring Color Presets	000–009	Open
				010–014	Red
				015–019	Green
				020–024	Blue
				025–029	Yellow
				030–034	Magenta
				035–039	Cyan
				040–044	Lime
				045–049	Violet blue
				050–054	Light blue
				055–059	Wine red
				060–064	May green
				065–069	Reseda green
				070–074	Blue lilac
				075–079	Moss green
				080–084	Signal violet
				085–089	Red lilac
				090–094	Purple red
				095–099	Green brown
				100–104	Pale green
				105–109	Ruby red
				110–114	Flame red
				115–119	Red orange
				120–124	Rose
				125–129	Honey yellow
				130–134	Light pink
				135–139	Deep orange
140–144	Lemon				
145–149	Golden yellow				
150–154	Pastel orange				
155–159	Cream				
160–164	Melon yellow				
165–169	Luminous orange				
170–174	Luminous yellow				
175–179	Pink				
180–184	Purple				
185–189	Turquoise				
190–194	Mint				
195–199	Dark yellow				
200–204	Orange				

SSP 19 CH	TOUR 21 CH	TR16 28 CH	Function	Value	Setting
				205–209	CTO
				210–214	CTB
				215–219	Blackout
				220–255	Open
15	17	24	Ring Color Effects	000–009	Open
				010–023	FX1
				024–037	FX2
				038–051	FX3
				052–065	FX4
				066–079	FX5
				080–093	FX6
				094–107	FX7
				108–121	FX8
				122–135	FX9
				136–149	FX10
				150–163	FX11
				164–177	FX12
				178–191	FX13
192–205	FX14				
				206–219	FX15
				220–255	Open
16	18	25	Ring Chases	000–044	Section indexing
				045–125	CW rotation, from fast to slow
				126–129	Rotation stop
				130–210	CCW rotation, from slow to fast
211–255	Section bounce, from slow to fast				
17	19	26	Ring Dimmer	000–255	From low to high intensity (0–100 %)
18	20	27	Ring Strobe	000–009	No function
				010–099	From low to high frequency (0–25 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
19	21	28	Control	000–010	No function
				011–020	Blackout Pan/Tilt movement ON
				021–030	Blackout Pan/Tilt movement OFF
				031–040	Pan invert
				041–050	Tilt invert
				051–060	Pan/Tilt invert OFF
				061–070	Fan: LIVE
				071–080	Fan: STUDIO
				081–090	Fan: POWER
				091–100	No function
				101–110	DIMMER DIM4

SSP 19 CH	TOUR 21 CH	TR16 28 CH	Function	Value	Setting
				111–120	DIMMER DIM3
				121–130	DIMMER DIM2
				131–140	DIMMER DIM1
				141–150	DIMMER OFF
				151–160	PWM 1200 Hz
				161–170	PWM 2400 Hz
				171–180	PWM 4000 Hz
				181–190	PWM 6000 Hz
				191–200	PWM 25000 Hz
				201–210	All reset
				211–220	XY reset
				221–230	Zoom reset
				231–255	No function

### 6.8.3. CMY (22 Channels)

CMY 22 CH	Function	Value	Setting
1	Pan	000–255	Pan adjustment 0°–540°
2	Pan Fine	000–255	Pan adjustment, 16-bit
3	Tilt	000–255	Tilt adjustment 0°–220°
4	Tilt Fine	000–255	Tilt adjustment, 16-bit
5	Pan/Tilt Speed	000–255	From fast to slow
6	Cyan	000–255	From low to high intensity (0–100 %)
7	Magenta	000–255	From low to high intensity (0–100 %)
8	Yellow	000–255	From low to high intensity (0–100 %)
9	Dimmer	000–255	From low to high intensity (0–100 %)
10	Strobe	000–009	No function
		010–099	From low to high frequency (0–25 Hz)
		100–109	No function
		110–179	Pulse strobe, from low to high rate
		180–189	No function
11	Color Presets (see <a href="#">6.8.7. Beam Color Presets</a> )	190–255	Random strobe, from low to high rate
		000–015	No function
12	CCT	016–255	Color Presets
		000–009	No function
		010–024	1800 K
		025–039	2200 K
		040–054	2700 K
		055–069	3000 K
		070–084	3200 K
		085–099	4000 K
		100–114	4500 K
		115–129	5000 K
130–144	5600 K		

CMY 22 CH	Function	Value	Setting
		145–159	6000 K
		160–174	6500 K
		175–189	7000 K
		190–204	8000 K
		205–255	10000 K
13	Zoom	000–255	Zoom adjustment, 3,5°–44°
14	Ring Red	000–255	From low to high intensity (0–100 %)
15	Ring Green	000–255	From low to high intensity (0–100 %)
16	Ring Blue	000–255	From low to high intensity (0–100 %)
		000–009	Open
		010–014	Red
		015–019	Green
		020–024	Blue
		025–029	Yellow
		030–034	Magenta
		035–039	Cyan
		040–044	Lime
		045–049	Violet blue
		050–054	Light blue
		055–059	Wine red
		060–064	May green
		065–069	Reseda green
		070–074	Blue lilac
		075–079	Moss green
		080–084	Signal violet
		085–089	Red lilac
17	Ring Color Presets	090–094	Purple red
		095–099	Green brown
		100–104	Pale green
		105–109	Ruby red
		110–114	Flame red
		115–119	Red orange
		120–124	Rose
		125–129	Honey yellow
		130–134	Light pink
		135–139	Deep orange
		140–144	Lemon
		145–149	Golden yellow
		150–154	Pastel orange
		155–159	Cream
		160–164	Melon yellow
		165–169	Luminous orange
		170–174	Luminous yellow
		175–179	Pink



CMY 22 CH	Function	Value	Setting
		180–184	Purple
		185–189	Turquoise
		190–194	Mint
		195–199	Dark yellow
		200–204	Orange
		205–209	CTO
		210–214	CTB
		215–219	Blackout
		220–255	Open
18	Ring Color Effects	000–009	Open
		010–023	FX1
		024–037	FX2
		038–051	FX3
		052–065	FX4
		066–079	FX5
		080–093	FX6
		094–107	FX7
		108–121	FX8
		122–135	FX9
		136–149	FX10
		150–163	FX11
		164–177	FX12
		178–191	FX13
		192–205	FX14
206–219	FX15		
220–255	Open		
19	Ring Chases	000–044	Section indexing
		045–125	CW rotation, from fast to slow
		126–129	Rotation stop
		130–210	CCW rotation, from slow to fast
		211–255	Section bounce, from slow to fast
20	Ring Dimmer	000–255	From low to high intensity (0–100 %)
21	Ring Strobe	000–009	No function
		010–099	From low to high frequency (0–25 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
22	Control	000–010	No function
		011–020	Blackout Pan/Tilt movement ON
		021–030	Blackout Pan/Tilt movement OFF
		031–040	Pan invert
		041–050	Tilt invert
		051–060	Pan/Tilt invert OFF

CMY 22 CH	Function	Value	Setting
		061-070	Fan: LIVE
		071-080	Fan: STUDIO
		081-090	Fan: POWER
		091-100	No function
		101-110	DIMMER DIM4
		111-120	DIMMER DIM3
		121-130	DIMMER DIM2
		131-140	DIMMER DIM1
		141-150	DIMMER OFF
		151-160	PWM 1200 Hz
		161-170	PWM 2400 Hz
		171-180	PWM 4000 Hz
		181-190	PWM 6000 Hz
		191-200	PWM 25000 Hz
		201-210	All reset
		211-220	XY reset
		221-230	Zoom reset
		231-255	No function

## 6.8.4. HSIC (21 Channels)

HSIC 21 CH	Function	Value	Setting
1	Pan	000–255	Pan adjustment 0°–540°
2	Pan Fine	000–255	Pan adjustment, 16-bit
3	Tilt	000–255	Tilt adjustment 0°–220°
4	Tilt Fine	000–255	Tilt adjustment, 16-bit
5	Pan/Tilt Speed	000–255	From fast to slow
6	Intensity	000–256	From low to high intensity (0–100 %)
7	Hue	000–257	From low to high hue intensity (0–100 %)
8	Hue Fine	000–258	Fine adjustment
9	Saturation	000–259	From low to high saturation (0–100 %)
10	CCT	000–009	No function
		010–024	1800 K
		025–039	2200 K
		040–054	2700 K
		055–069	3000 K
		070–084	3200 K
		085–099	4000 K
		100–114	4500 K
		115–129	5000 K
		130–144	5600 K
		145–159	6000 K
		160–174	6500 K
		175–189	7000 K
190–204	8000 K		
11	Strobe	205–255	10000 K
		000–009	No function
		010–099	From low to high frequency (0–25 Hz)
		100–109	No function
		110–179	Pulse strobe, from low to high rate
		180–189	No function
12	Zoom	190–255	Random strobe, from low to high rate
		000–255	Zoom adjustment, 3,5°–44°
13	Ring Red	000–255	From low to high intensity (0–100 %)
14	Ring Green	000–255	From low to high intensity (0–100 %)
15	Ring Blue	000–255	From low to high intensity (0–100 %)
16	Ring Color Presets	000–009	Open
		010–014	Red
		015–019	Green
		020–024	Blue
		025–029	Yellow
		030–034	Magenta
		035–039	Cyan
		040–044	Lime
		045–049	Violet blue

HSIC 21 CH	Function	Value	Setting
		050-054	Light blue
		055-059	Wine red
		060-064	May green
		065-069	Reseda green
		070-074	Blue lilac
		075-079	Moss green
		080-084	Signal violet
		085-089	Red lilac
		090-094	Purple red
		095-099	Green brown
		100-104	Pale green
		105-109	Ruby red
		110-114	Flame red
		115-119	Red orange
		120-124	Rose
		125-129	Honey yellow
		130-134	Light pink
		135-139	Deep orange
		140-144	Lemon
		145-149	Golden yellow
		150-154	Pastel orange
		155-159	Cream
		160-164	Melon yellow
		165-169	Luminous orange
		170-174	Luminous yellow
		175-179	Pink
		180-184	Purple
		185-189	Turquoise
		190-194	Mint
		195-199	Dark yellow
		200-204	Orange
		205-209	CTO
		210-214	CTB
		215-219	Blackout
		220-255	Open
17	Ring Color Effects	000-009	Open
		010-023	FX1
		024-037	FX2
		038-051	FX3
		052-065	FX4
		066-079	FX5
		080-093	FX6
		094-107	FX7
		108-121	FX8

HSIC 21 CH	Function	Value	Setting
		122-135	FX9
		136-149	FX10
		150-163	FX11
		164-177	FX12
		178-191	FX13
		192-205	FX14
		206-219	FX15
		220-255	Open
18	Ring Chases	000-044	Section indexing
		045-125	CW rotation, from fast to slow
		126-129	Rotation stop
		130-210	CCW rotation, from slow to fast
		211-255	Section bounce, from slow to fast
19	Ring Dimmer	000-255	From low to high intensity (0-100 %)
20	Ring Strobe	000-009	No function
		010-099	From low to high frequency (0-25 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
21	Control	000-010	No function
		011-020	Blackout Pan/Tilt movement ON
		021-030	Blackout Pan/Tilt movement OFF
		031-040	Pan invert
		041-050	Tilt invert
		051-060	Pan/Tilt invert OFF
		061-070	Fan: LIVE
		071-080	Fan: STUDIO
		081-090	Fan: POWER
		091-100	No function
		101-110	DIMMER DIM4
		111-120	DIMMER DIM3
		121-130	DIMMER DIM2
		131-140	DIMMER DIM1
		141-150	DIMMER OFF
		151-160	PWM 1200 Hz
		161-170	PWM 2400 Hz
		171-180	PWM 4000 Hz
		181-190	PWM 6000 Hz
		191-200	PWM 25000 Hz
		201-210	All reset
		211-220	XY reset
		221-230	Zoom reset
231-255	No function		

## 6.8.5. PIXEL (25 Channels)

Pixel 25 CH	Function	Value	Setting
1	Pan	000–255	Pan adjustment 0°–540°
2	Pan Fine	000–255	Pan adjustment, 16-bit
3	Tilt	000–255	Tilt adjustment 0°–220°
4	Tilt Fine	000–255	Tilt adjustment, 16-bit
5	Pan/Tilt Speed	000–255	From fast to slow
6	Red Zone 1	000–255	From low to high intensity (0–100 %)
7	Green Zone 1	000–255	From low to high intensity (0–100 %)
8	Blue Zone 1	000–255	From low to high intensity (0–100 %)
9	Lime Zone 1	000–255	From low to high intensity (0–100 %)
10	Red Zone 2	000–255	From low to high intensity (0–100 %)
11	Green Zone 2	000–255	From low to high intensity (0–100 %)
12	Blue Zone 2	000–255	From low to high intensity (0–100 %)
13	Lime Zone 2	000–255	From low to high intensity (0–100 %)
14	Dimmer	000–255	From low to high intensity (0–100 %)
15	Strobe	000–009	No function
		010–099	From low to high frequency (0–25 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
16	Zoom	000–255	Zoom adjustment, 3,5°–44°
17	Ring Red	000–255	From low to high intensity (0–100 %)
18	Ring Green	000–255	From low to high intensity (0–100 %)
19	Ring Blue	000–255	From low to high intensity (0–100 %)
20	Ring Dimmer	000–255	From low to high intensity (0–100 %)
21	Ring Color Presets	000–009	Open
		010–014	Red
		015–019	Green
		020–024	Blue
		025–029	Yellow
		030–034	Magenta
		035–039	Cyan
		040–044	Lime
		045–049	Violet blue
		050–054	Light blue
		055–059	Wine red
		060–064	May green
		065–069	Reseda green
		070–074	Blue lilac
		075–079	Moss green
080–084	Signal violet		
085–089	Red lilac		
090–094	Purple red		

Pixel 25 CH	Function	Value	Setting
		095-099	Green brown
		100-104	Pale green
		105-109	Ruby red
		110-114	Flame red
		115-119	Red orange
		120-124	Rose
		125-129	Honey yellow
		130-134	Light pink
		135-139	Deep orange
		140-144	Lemon
		145-149	Golden yellow
		150-154	Pastel orange
		155-159	Cream
		160-164	Melon yellow
		165-169	Luminous orange
		170-174	Luminous yellow
		175-179	Pink
		180-184	Purple
		185-189	Turquoise
		190-194	Mint
		195-199	Dark yellow
		200-204	Orange
		205-209	CTO
		210-214	CTB
		215-219	Blackout
		220-255	Open
22	Ring Color Effects	000-009	Open
		010-023	FX1
		024-037	FX2
		038-051	FX3
		052-065	FX4
		066-079	FX5
		080-093	FX6
		094-107	FX7
		108-121	FX8
		122-135	FX9
		136-149	FX10
		150-163	FX11
		164-177	FX12
		178-191	FX13
		192-205	FX14
		206-219	FX15
		220-255	Open
23	Ring Chases	000-044	Section indexing

Pixel 25 CH	Function	Value	Setting
		045–125	CW rotation, from fast to slow
		126–129	Rotation stop
		130–210	CCW rotation, from slow to fast
		211–255	Section bounce, from slow to fast
24	Ring Strobe	000–009	No function
		010–099	From low to high frequency (0–25 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
25	Control	000–010	No function
		011–020	Blackout Pan/Tilt movement ON
		021–030	Blackout Pan/Tilt movement OFF
		031–040	Pan invert
		041–050	Tilt invert
		051–060	Pan/Tilt invert OFF
		061–070	Fan: LIVE
		071–080	Fan: STUDIO
		081–090	Fan: POWER
		091–100	No function
		101–110	DIMMER DIM4
		111–120	DIMMER DIM3
		121–130	DIMMER DIM2
		131–140	DIMMER DIM1
		141–150	DIMMER OFF
		151–160	PWM 1200 Hz
		161–170	PWM 2400 Hz
		171–180	PWM 4000 Hz
		181–190	PWM 6000 Hz
		191–200	PWM 25000 Hz
		201–210	All reset
		211–220	XY reset
		221–230	Zoom reset
231–255	No function		

**Note:**

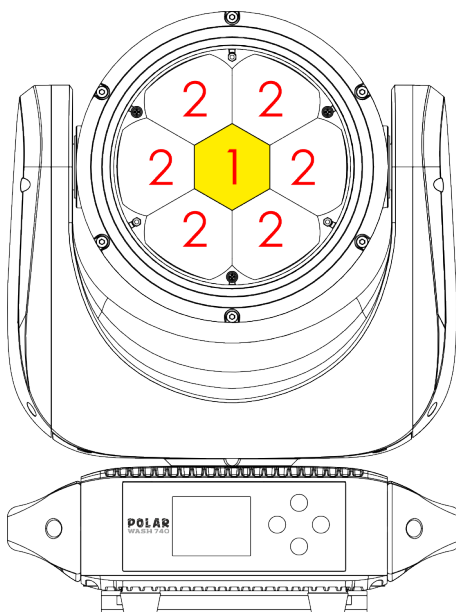
For more information about Zone 1 and Zone 2 refer to Beam LEDs Zone Numbering (see [6.8.6. Beam LEDs Zone Numbering](#) on page 48).



**6.8.6. Beam LEDs Zone Numbering**

The zone numbering of the beam LEDs in the DMX chart is as follows:

**Figure 10**



**6.8.7. Beam Color Presets**

Value	Preset Color	x	y
000-015	No function		
016-020	R40 Light Salmon	0,499	0,321
021-025	L24 Scarlet	0,561	0,296
026-030	L164 Flame Red	0,659	0,302
031-040	No function		
041-045	L08 Dark Salmon	0,498	0,347
046-050	L25 Sunset Red	0,566	0,359
051-055	No function		
056-060	L237 C.I.D. (to Tungsten)	0,43	0,365
061-065	R321 Soft Golden Amber	0,477	0,406
066-070	L652 Urban Sodium	0,535	0,399
071-075	No function		
076-080	L765 LEE Yellow	0,389	0,412
081-085	L513 Ice and a Slice	0,38	0,447
086-105	No function		
106-110	L90 Dark Yellow Green	0,184	0,641
111-115	No function		
116-120	R92 Turquoise	0,235	0,36
121-135	No function		
136-140	L728 Steel Green	0,256	0,302
141-145	L117 Steel Blue	0,223	0,278
146-150	L354 Special Steel Blue	0,173	0,265
151-155	No function		
156-160	L501 New Colour Blue	0,246	0,249
161-165	L174 Dark Steel Blue	0,204	0,205
166-180	No function		
181-185	L142 Pale Violet	0,209	0,148
186-195	No function		
196-200	L794 Pretty n Pink	0,335	0,251
201-205	L328 Follies Pink	0,335	0,18
206-215	No function		
216-220	L127 Smokey Pink	0,397	0,265
221-225	L192 Flesh Pink	0,41	0,237
226-235	No function		
236-240	L157 Pink	0,457	0,272
241-245	R332 Cherry Rose	0,489	0,295
246-255	No function		

## 6.9. RDM Information

This device supports RDM (see [6.9.2. Supported RDM PIDs \(Parameter IDs\)](#)).

### 6.9.1. RDM Details

- Responder ID: 29B4:0B6XXXXX
- Manufacturer's ID: Showtec (Highlite International B.V.)
- Manufacturer Label: Showtec
- Model Description: Polar Wash 740
- Model ID: 182 (0B6 hexadecimal)
- Device Label: Polar Wash 740

#### Note:

An RDM responder ID consists of 3 parts:

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

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

### 6.9.2. Supported RDM PIDs (Parameter IDs)

RDM Parameter ID	Value	Required	GET	SET
DISC_UNIQUE_BRANCH	0x0001	*		
DISC_MUTE	0x0002	*		
DISC_UN_MUTE	0x0003	*		
COMMS_STATUS	0x0015		*	*
STATUS_MESSAGES	0x0030		*	
STATUS_ID_DESCRIPTION	0x0031		*	
CLEAR_STATUS_ID	0x0032			*
SUPPORTED_PARAMETERS	0x0050	*	*	
DEVICE_INFO	0x0060	*	*	
DEVICE_MODEL_DESCRIPTION	0x0080		*	
MANUFACTURER_LABEL	0x0081		*	
DEVICE_LABEL	0x0082		*	*
SOFTWARE_VERSION_LABEL	0x00C0	*	*	
DMX_PERSONALITY	0x00E0		*	*
DMX_PERSONALITY_DESCRIPTION	0x00E1		*	
DMX_START_ADDRESS	0x00F0	*	*	*
SENSOR_DEFINITION	0x0200		*	
SENSOR_VALUE	0x0201		*	*
RECORD_SENSORS	0x0202			*
CURVE	0x0343		*	*
CURVE_DESCRIPTION	0x0344	*	*	
MODULATION_FREQUENCY	0x0347		*	*
MODULATION_FREQUENCY_DESCRIPTION	0x0348	*	*	
PAN_INVERT	0x0600		*	*
TILT_INVERT	0x0601		*	*
IDENTIFY_DEVICE	0x1000	*	*	*

## 7. Troubleshooting

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

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

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

Problem	Probable cause(s)	Solution
The device does not function at all	No power to the device	<ul style="list-style-type: none"> <li>Make sure that the device is connected to power supply and the cables are plugged in</li> </ul>
	Main fuse is blown	<ul style="list-style-type: none"> <li>Replace the fuse (see <a href="#">8.3.1. Replacing the Fuse</a> on page 53)</li> </ul>
The device responds erratically	The factory settings of the device are changed	<ul style="list-style-type: none"> <li>Reset the parameters of the device to the default factory settings (see <a href="#">6.7.6.2. Reset</a> on page 32)</li> </ul>
The device does not respond to DMX control	The controller is not connected	<ul style="list-style-type: none"> <li>Connect the controller</li> </ul>
	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"> <li>Install a phase-reversing cable between the controller and the device</li> </ul>
	The controller is defective	<ul style="list-style-type: none"> <li>Try using another controller</li> </ul>
The device responds erratically to DMX control	Connections are defective	<ul style="list-style-type: none"> <li>Examine connections and cables. Correct defective connections. Repair or replace damaged cables</li> </ul>
	The data link is not terminated with a 120 $\Omega$ termination plug	<ul style="list-style-type: none"> <li>Insert a termination plug in the DMX OUT connector of the last device on the link</li> </ul>
	Incorrect addressing	<ul style="list-style-type: none"> <li>Make sure that the address settings are correct</li> </ul>
	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"> <li>To find out the defective device, bypass one device at a time until normal operation is restored</li> </ul>
No light or LEDs cut out intermittently	LEDs are damaged	<ul style="list-style-type: none"> <li>Disconnect the device and contact your Highlite International dealer</li> </ul>
	The input power parameters of the device do not match the local AC voltage and frequency	<ul style="list-style-type: none"> <li>Disconnect the device. Make sure that the local current, voltage and frequency match the input voltage, current and frequency specified on the information label on the device</li> </ul>

## 8. Maintenance

### 8.1. Safety Instructions for Maintenance



**DANGER**  
Electric shock caused by dangerous voltage inside

Disconnect power supply before servicing or cleaning.

### 8.2. Preventive Maintenance



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

Make sure that:

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

#### 8.2.1. Basic Cleaning Instructions

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

To clean the device, follow the steps below:

- 01) Disconnect the device from the electrical power supply.
- 02) Allow the device to cool down for at least 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.

### 8.3. 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.

### 8.3.1. Replacing the Fuse



**DANGER**  
Electric shock caused by short-circuit

- Do not bypass the thermostatic switch or fuses.
- Replace fuses only with same type and rating.

Power surges, short-circuit or incorrect electrical power supply may cause a fuse to burn out. If the fuse burns out, the device will not function anymore. If this happens, 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) Loosen the fuse cover with a screwdriver and remove the fuse holder.
- 04) If the fuse is brown or unclear, it is burned out. Remove the old fuse.
- 05) Insert a new fuse in the fuse holder. Make sure that the type and the rating of the replacement fuse are the same as the ones specified on the information label of the product.
- 06) Replace the fuse holder in the opening and tighten the fuse cover.

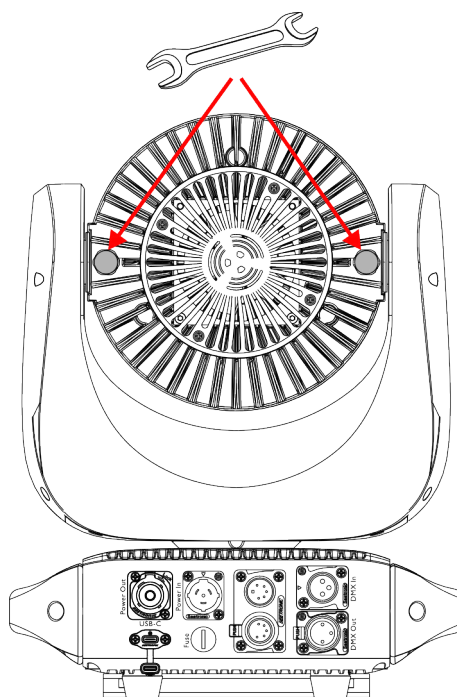
### 8.3.2. Draining Condensation Water

The Polar Wash 740 is IP65 rated. The device can resist water jets. If the device is exposed to extreme humid conditions during use, condensation may collect inside the device. This can happen also during transportation, if the device is exposed to extreme temperature variations.

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

- 01) Carefully remove the **protective vent (05)** and the **drain plug (14)** with a wrench (16 mm).
- 02) Let the device operate with all LEDs at full output for 60 minutes.
- 03) Let the device cool down for 30 minutes.
- 04) Install the **protective vent (05)** and the **drain plug (14)** back. Make sure that you do not overtighten them.

Figure 11



## 9. Deinstallation, Transportation and Storage

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### 9.1. Instructions for Deinstallation



**WARNING**

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

- Let the device cool down before dismantling.
- 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 (see [8.2.1. Basic Cleaning Instructions](#) on page 52).
- Store the device in the original packaging, if possible.

## 10. Disposal

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### 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

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

