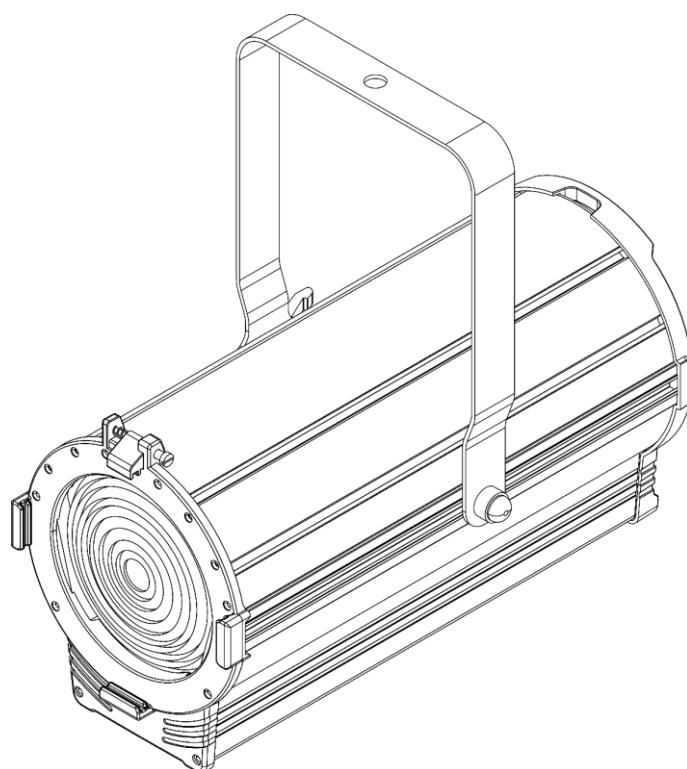




## USER MANUAL



ENGLISH

**ACT Fresnel 150 WW**

**V1**

Product code: 34012

## 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
- Installation and operation of the device
- Intended and non-intended use 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**

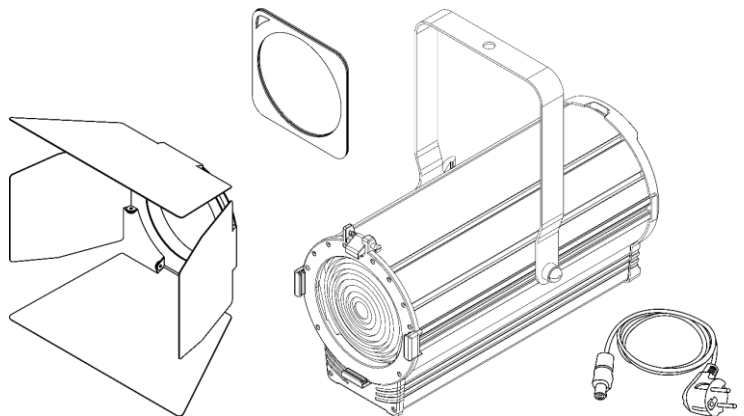
**Read and follow the instructions in this user manual before installing, operating or servicing this product.**

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 ACT Fresnel 150 WW
- Barndoor
- Color frame
- Schuko to power-pro cable (1,5 m)
- User manual



**Fig. 01**

### 1.2. Intended Use

This device is intended for use as a professional theater spotlight and is suitable for indoor installation only. It is not suitable for households or 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 it is not in use. This will reduce wear and improve the device's lifespan.

### 1.4. LEDs Lifespan

The light output of LEDs gradually decrease over time (lumen depreciation). High operating temperatures contribute to this process. The lifespan of LEDs can be extended by ensuring adequate ventilation and operating the LEDs at the lowest possible brightness.

### 1.5. Text Conventions

Throughout the user manual the following text conventions are used:

- Buttons: All buttons are in bold lettering, for example "Press the **UP/DOWN** buttons"
- References: References to chapters and parts of the device are in bold lettering, for example: "Refer to **2. Safety**", "turn the **adjustment handle (06)**"
- 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 serious injury or death.



**WARNING**

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



**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.



Provides important information about the disposal of this product.



## 1.7. Symbols on the Information Label

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

The information label contains the following symbols:



This device is designed for indoor use.



This device falls under IEC protection class I.



This device shall not be treated as household waste.



## 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.
- For replacement use fuses of the same type and rating only.
- Do not let the power cable come into contact with other cables. Handle the power cable and all connections with the mains with caution.
- Do not modify, bend, mechanically strain, put pressure on, pull or heat up the power cable.
- Make sure that the power cable is not crimped or damaged. Examine the power cable periodically for any defects.
- Do not immerse the device in water or other liquids. Do not install the device in a location where flooding may occur.
- Do not use the device during thunderstorms. Disconnect the device from the electrical power supply immediately.



**WARNING**  
**Risk of epileptic shock**

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



**Attention**  
**Power supply**

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



**Attention**  
**General safety**

- Do not connect this 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 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 theater spotlight. 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 IP20 rated. IP (Ingress Protection) 20 class provides protection against solid objects greater than 12 mm, such as fingers, and no protection against harmful ingress of water.

## **2.2. Requirements for the User**

This product may be used by ordinary persons. Installation, service and maintenance 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 service of this product, so that they can identify risks and take precautions to avoid them.

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

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

### 3. Description of the Device

The Showtec ACT Fresnel 150 WW is a compact, professional theater spotlight with a manually adjustable zoom and dimmer. It comes complete with a barndoor and a color frame.

#### 3.1. Front View

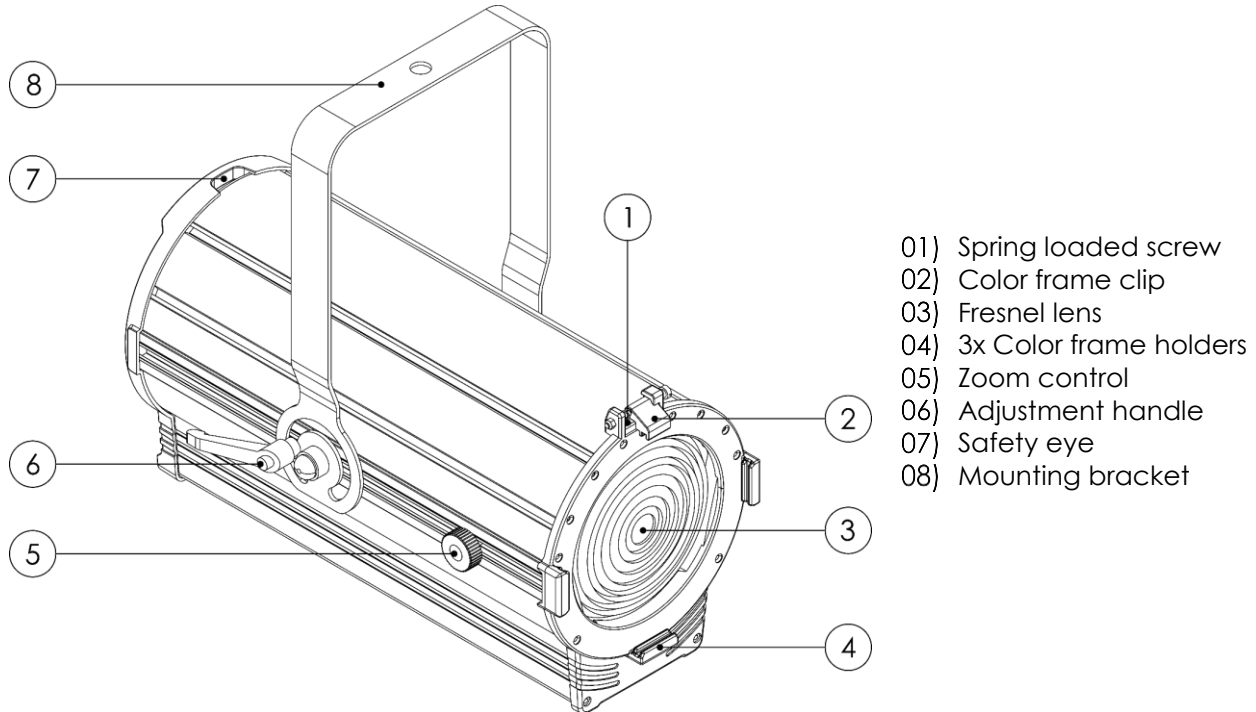


Fig. 02

#### 3.2. Back View

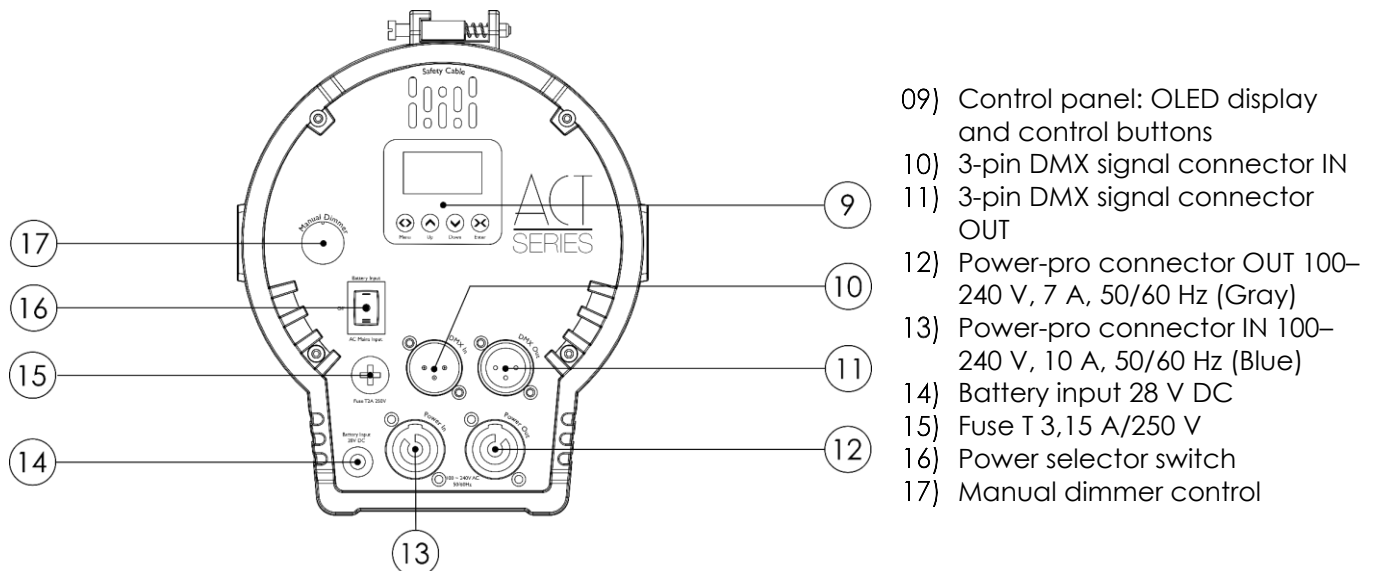
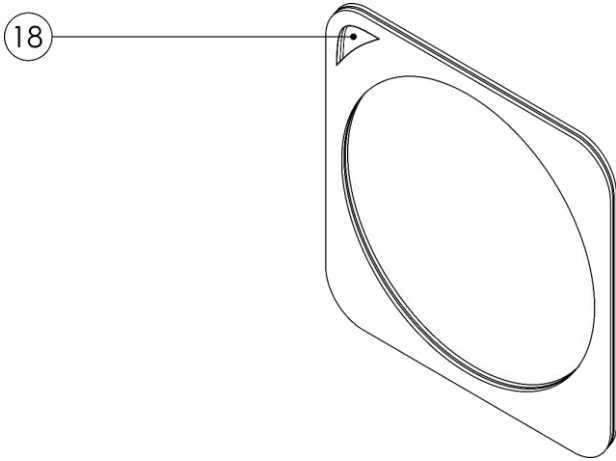


Fig. 03

### 3.3. Accessories



18) Safety eye – color frame

Fig. 04

### 3.4. Product Specifications

Model:	ACT Fresnel 150 WW	
<b>Electrical:</b>		
Input voltage:	100–240 V AC, 50/60 Hz	
Power consumption:	170 W	
Fuse:	T 3,15 A/250 V	
<b>Physical:</b>		
Dimensions:	366 x 225 x 345 mm (L x W x H) (without accessories)	
Weight:	4,1 kg (without accessories)	
Noise level:	33,5–59,8 dB	
<b>Optics:</b>		
Light source:	1 x 150 W COB LED	
Dimmer:	0–100 %	
Strobe:	Yes (via shutter)	
Beam angle:	14°–44° (manual adjustment)	
Field angle:	22°–57°	
Output:	24117 lx @ 2 m, 10719 lx @ 3 m, 8780 lx @ 5 m	
CRI:	96	
CCT:	3000 K (max.)	
Total luminous flux:	8780 lm	
Refresh rate:	1100 Hz	
<b>Operation and control:</b>		
Control:	Stand-alone (manual) DMX-512	
DMX channels:	1 and 2-channel mode	
Control panel:	OLED display and buttons	
Manual operation:	Dimmer & Zoom	
<b>Connections:</b>		
Power connections:	Power-pro connectors IN/OUT	
Data connections:	3-pin DMX connectors IN/OUT	
Signal pinouts:	Pin 1 (ground), pin 2 (-), pin 3 (+)	
<b>Construction:</b>		
Housing:	Aluminum	
Color:	Black	
IP rating:	IP20	
Cooling:	Forced convection	
<b>Thermal:</b>		
Maximum ambient temperature $t_a$ :	40 °C	
Minimum ambient temperature $t_a$ :	0 °C	
<b>Minimum distance:</b>		
Minimum distance from flammable surfaces:	0,5 m	

### 3.5. Dimensions

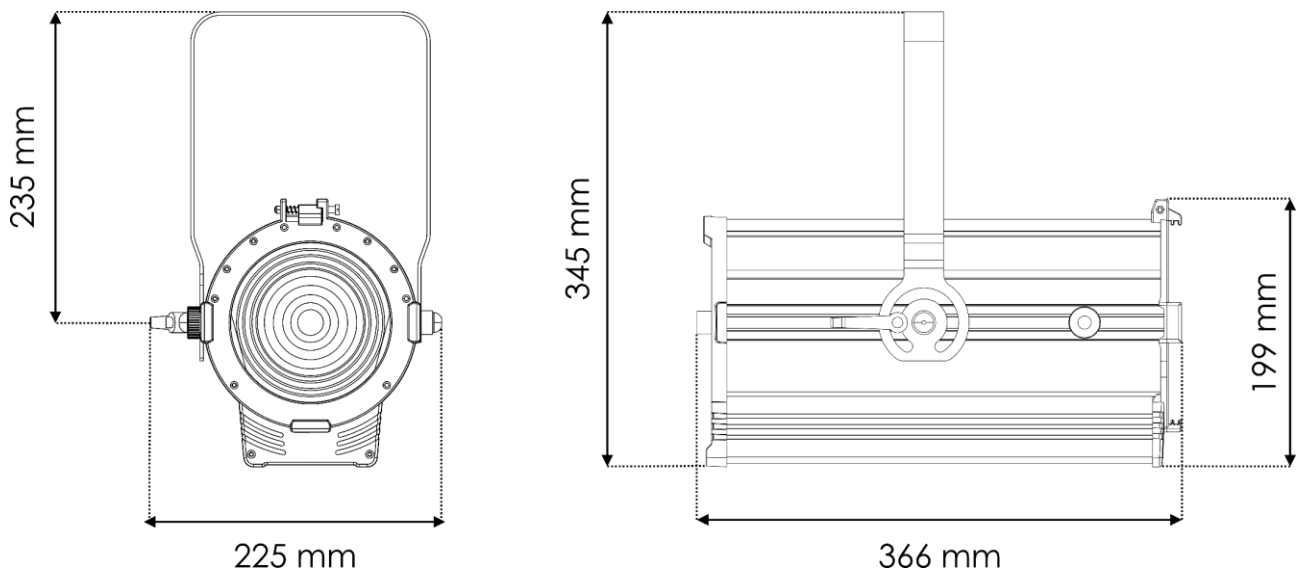


Fig. 05

## 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. Installation Site Requirements

- The device can be used indoors only.
- The device can be mounted to a truss or another rigging structure in any orientation.
- The minimum distance to other objects must be bigger than 0.5 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.

### 4.3. Rigging

The device can be 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. 06. 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. 06.

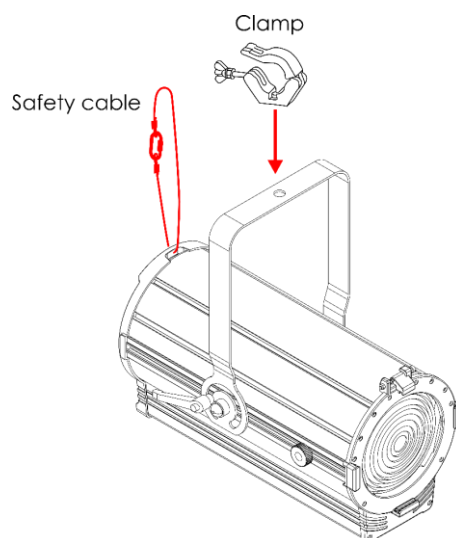


Fig. 06

#### 4.4. Angle Adjustment

You can adjust the angle of the device with the **adjustment handle (06)**.

- 01) Turn the **adjustment handle (06)** counterclockwise to loosen it.
- 02) Tilt the device to the desired angle (see Fig. 07).
- 03) Turn the **adjustment handle (06)** clockwise to tighten it. Make sure that the device cannot move freely after the **adjustment handle (06)** is tightened.

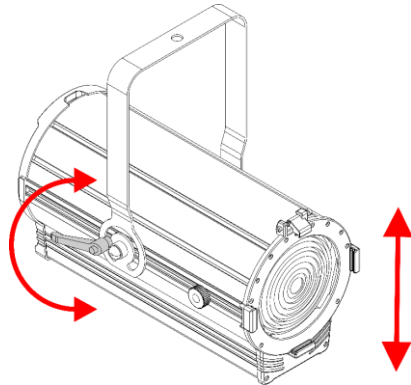


Fig. 07

#### 4.5. Barndoor Installation

The ACT Fresnel 150 WW is delivered with a barndoor. To install the barndoor, follow the steps below:

- 01) Push the **spring-loaded screw (01)** and at the same time lift the **color frame clip (02)** and flip it backwards (see Fig. 08).
- 02) Insert the barndoor into the **color frame holders (04)** (see Fig. 09).
- 03) Pull the **color frame clip (02)** downwards to release the **spring-loaded screw (01)** (see Fig. 10). The barndoor will be locked in position.

**Note:**

Make sure that the barndoor is locked in position with the color frame clip before using the device.

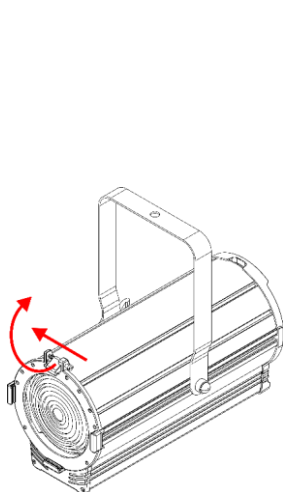


Fig. 08

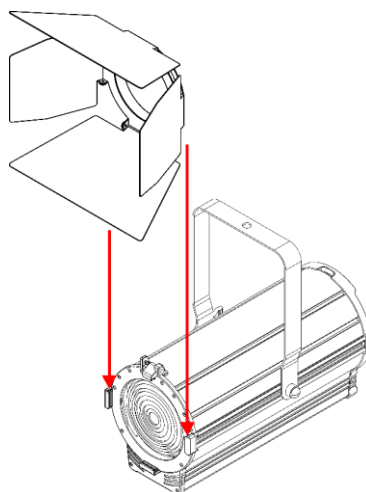


Fig. 09

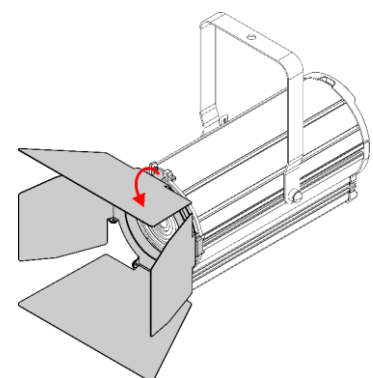


Fig. 10

#### 4.6. Color frame Installation

The ACT Fresnel 150 WW is delivered with a color frame. You can insert a color gel or a diffusion filter into the color frame. To install the color frame, follow the steps below:

- 01) Push the **spring-loaded screw (01)** and at the same time lift the **color frame clip (02)** and flip it backwards (see Fig. 11).
- 02) Insert a color gel or a diffusion filter into the color frame.
- 03) Insert the color frame into the **color frame holders (04)** (see Fig. 12).
- 04) Pull the **color frame clip (02)** downwards to release the **spring-loaded screw (01)** (see Fig. 13). The color frame will be locked in position.
- 05) Secure the color frame to the overhead structure with an appropriate secondary attachment, for example a safety cable. Put the safety cable through the **safety eye (18)** of the color frame. See **4.3. Rigging** on page 13 for more information.

#### Note:

Make sure that the color frame is locked in position with the color frame clip before using the device.

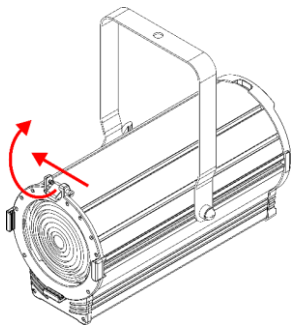


Fig. 11

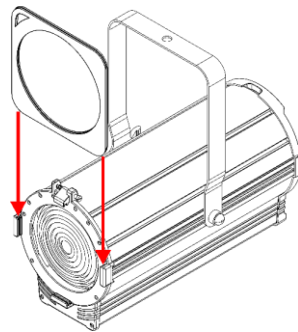


Fig. 12

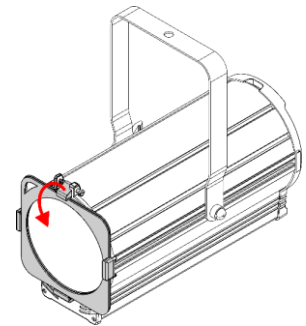


Fig. 13



## 4.7. Connecting to Power Supply



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

The device can be powered by 100–240 V 50/60 Hz AC mains power or an external 28 V DC battery. Do not supply mains 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.

To power the device:

- Connect the device to the socket outlet with the power plug, or
- Connect the device to an external 28 V DC battery.

Refer to **6.2 Power Input Selection** on page 20 for more information.

Do not connect the device to a dimmer circuit, as this may damage the device.

## 4.8. 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: 16 devices ACT Fresnel 150 WW
- at 200–240 V: 8 devices ACT Fresnel 150 WW

## 5. Setup

### 5.1. Warnings and Precautions



**Attention**

**Connect all data cables before supplying power.**

**Disconnect power supply before connecting or disconnecting data cables.**

### 5.2. Stand-alone Setup

When the ACT Fresnel 150 WW 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 and via the manual controls.

For more information about the control modes, refer to **6.3. Control Modes** on page 21.

### 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 ACT Fresnel 150 WW has 3-pin DMX signal IN and OUT connectors.

The pin assignment is as follows: 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.

**Notes:**

- 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 a reliable DMX connection. You can purchase DMX cables directly from your Highlite International dealer or make your own cables.

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

When you make your own DMX cables, make sure that you connect the pins and wires correctly as shown in Fig. 14.

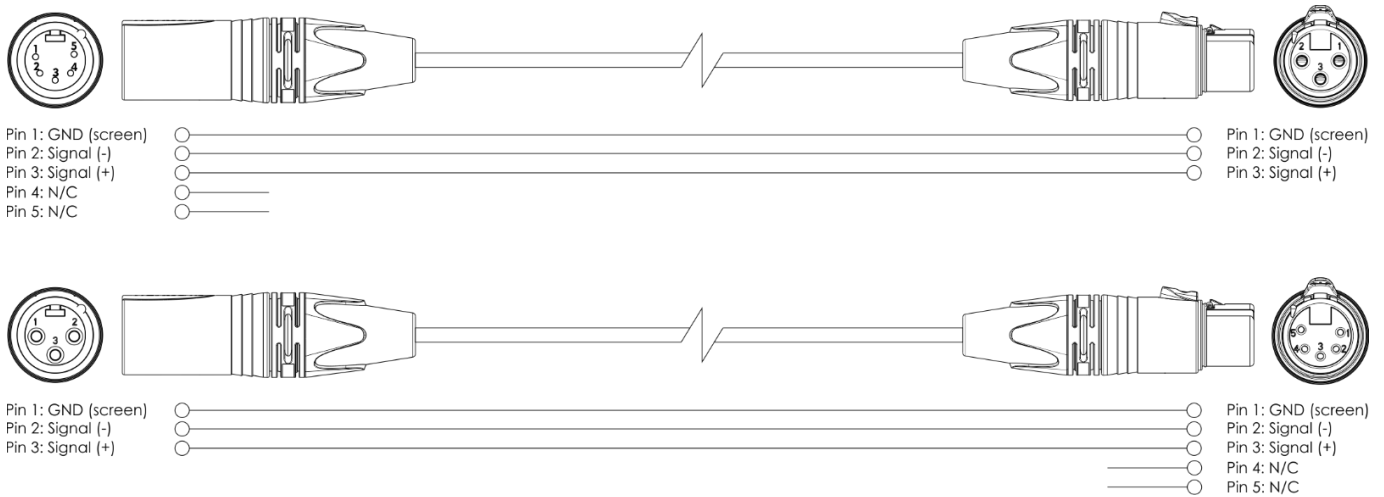


Fig. 14

### 5.3.3. DMX Linking

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

- 01) Connect the DMX OUT connector on the lighting controller to the DMX IN connector on the first device with a 3-pin DMX cable.
- 02) Connect the DMX OUT connector on the first device to the DMX IN connector on the second device with a 3-pin DMX cable.
- 03) Repeat step 2 to connect all devices in a daisy-chain as shown in Fig. 15.
- 04) Connect a DMX terminator (120 Ω resistor) to the DMX OUT connector of the last device on the data link.

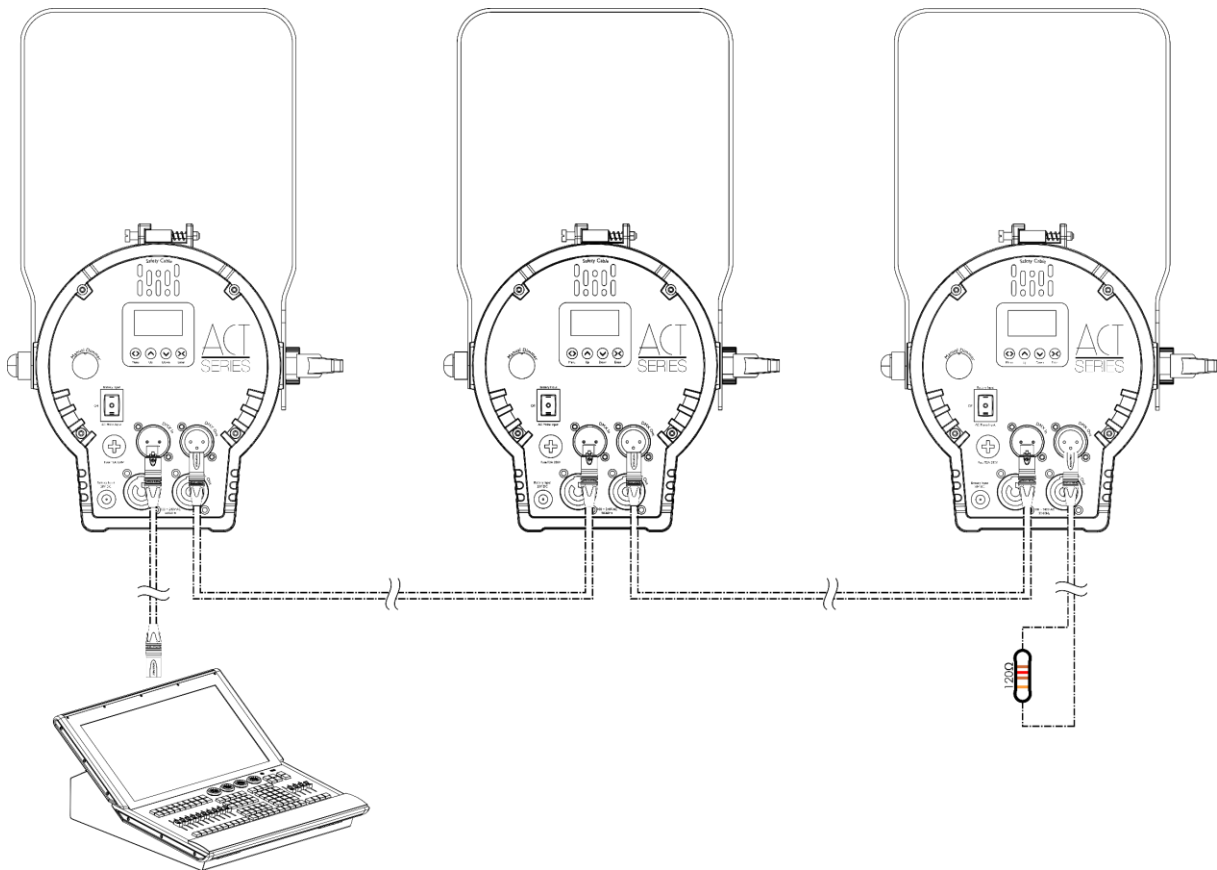


Fig. 15

## 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 ACT Fresnel 150 WW has 2 personalities: 1 channel and 2 channels.

If you want to connect multiple devices on one data link and use them in 2-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 3 (003), as  $1 + 2 = 3$ .
- 03) Set the starting address of the 3<sup>rd</sup> device on the data link to 5 (005) as  $3 + 2 = 5$ .
- 04) Continue assigning the starting addresses of the remaining devices by adding 2 to the previous number each time.

Make sure that you do not have any overlapping channels in order to control each ACT Fresnel 150 WW correctly. If two or more devices are addressed similarly, they will work similarly.

## 5.4. Beam Angle Adjustment

The beam angle of the ACT Fresnel 150 WW can be adjusted manually in the range 14°–44°. To adjust the beam angle, follow the steps below:

- 01) Turn the **zoom control (05)** counterclockwise to loosen it.
- 02) Slide the **zoom control (05)** forwards or backwards to achieve the desired beam angle (see Fig. 16).
- 03) After adjusting the beam angle, turn the **zoom control (05)** clockwise to tighten it. Do not overtighten it.

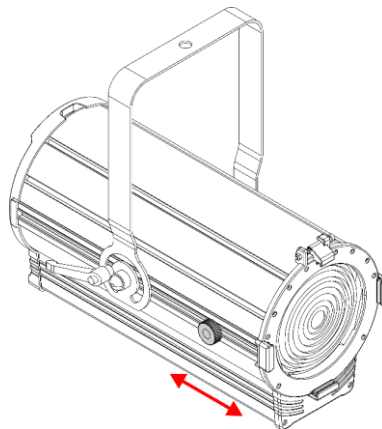


Fig. 16

## 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 use as a professional theater spotlight and is suitable for indoor use only. This device is not suitable for households or 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. Power Input Selection

This device can be powered by 100–240 V 50/60 Hz AC mains or an external 28 V DC battery.

**Note:**

Mains and battery power cannot be used at the same time.

To power the device by AC mains:

- 01) Connect the device to the power supply with the power-pro cable supplied with the device.
- 02) Set the **Power selector switch (16)** to the AC Mains Input position (=) to switch the device on.

To power the device by 28 V DC battery:

- 01) Connect the device to an external 28 V DC battery. See the user instructions of the external battery for more information.
- 02) Set the **Power selector switch (16)** to the Battery Input position (-) to switch the device on.

### 6.3. Control Modes

The ACT Fresnel 150 WW can be operated with a DMX controller and as a stand-alone device.

The ACT Fresnel 150 WW supports the following control modes:

- Stand-alone: Manual operation
- DMX-512: 1 channel and 2 channels

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

You can operate the device manually as a stand-alone device in 2 ways:

- from the control panel and the menu, and
- with the **manual dimmer control (17)**. See **6.7.2. Manual Settings** on page 26 for more information.

To operate the device manually from the control panel and the menu:

- 01) Select Manually Defined in the Mode pop-up submenu. See **6.7.2. Manual Settings** on page 26 for more information.
- 02) Adjust the dimmer and shutter values in the Manually Defined submenu. See **6.7.5.1. Manually Defined** on page 28 for more information.

To operate the device with a DMX controller:

- 01) Set the DMX starting address of the device in the DMX Address menu. See **6.7.1.1. DMX Address** on page 25 for more information.
- 02) Select the behavior of the device in case there is no DMX signal in the DMX Fail pop-up submenu. See **6.7.1.3. DMX Fail** on page 25.
- 03) Select the DMX channel mode in the DMX channel mode menu. See **6.7.1.2. DMX Channel Mode** on page 25 for more information. See **6.8. DMX Channels** on pages 30 for complete overview of all DMX channels.

### 6.4. Control Panel

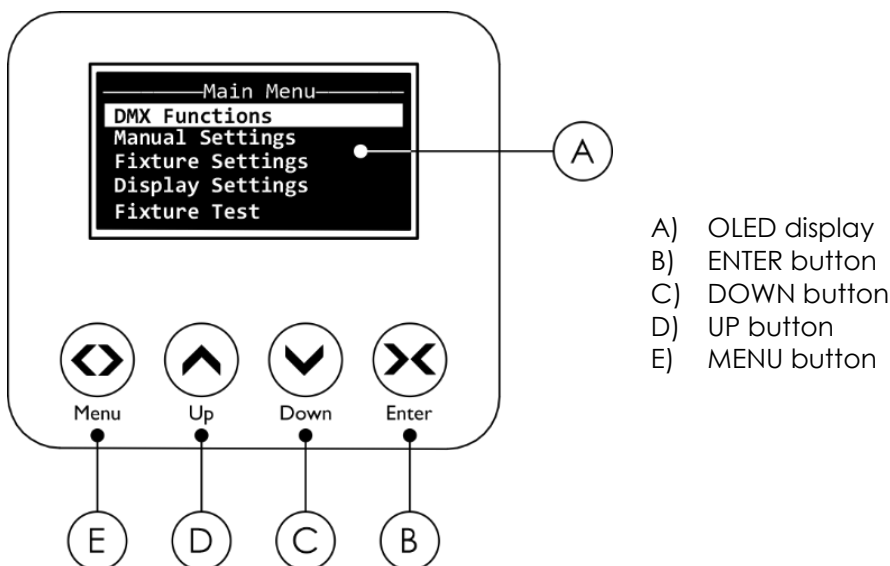
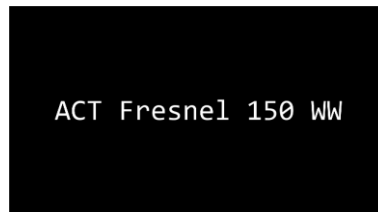


Fig. 17

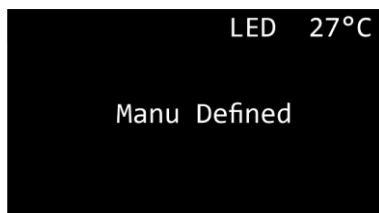
- Use the **MENU** button to exit the current submenu, to return to the Main Menu and to return to the start screen.
- Use the **UP/DOWN** buttons to navigate through the menus or to increase/decrease numeric values.
- Use the **ENTER** button to open the desired menu, to confirm your choice or to set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

## 6.5. Start-up

Upon start-up the display shows a splash screen with the name of the device:



Immediately afterwards, the display shows the start screen. The start screen provides information about the control and operation modes of the device and the temperature of the LEDs, for example:



Manual operation (from the control panel and the menu)

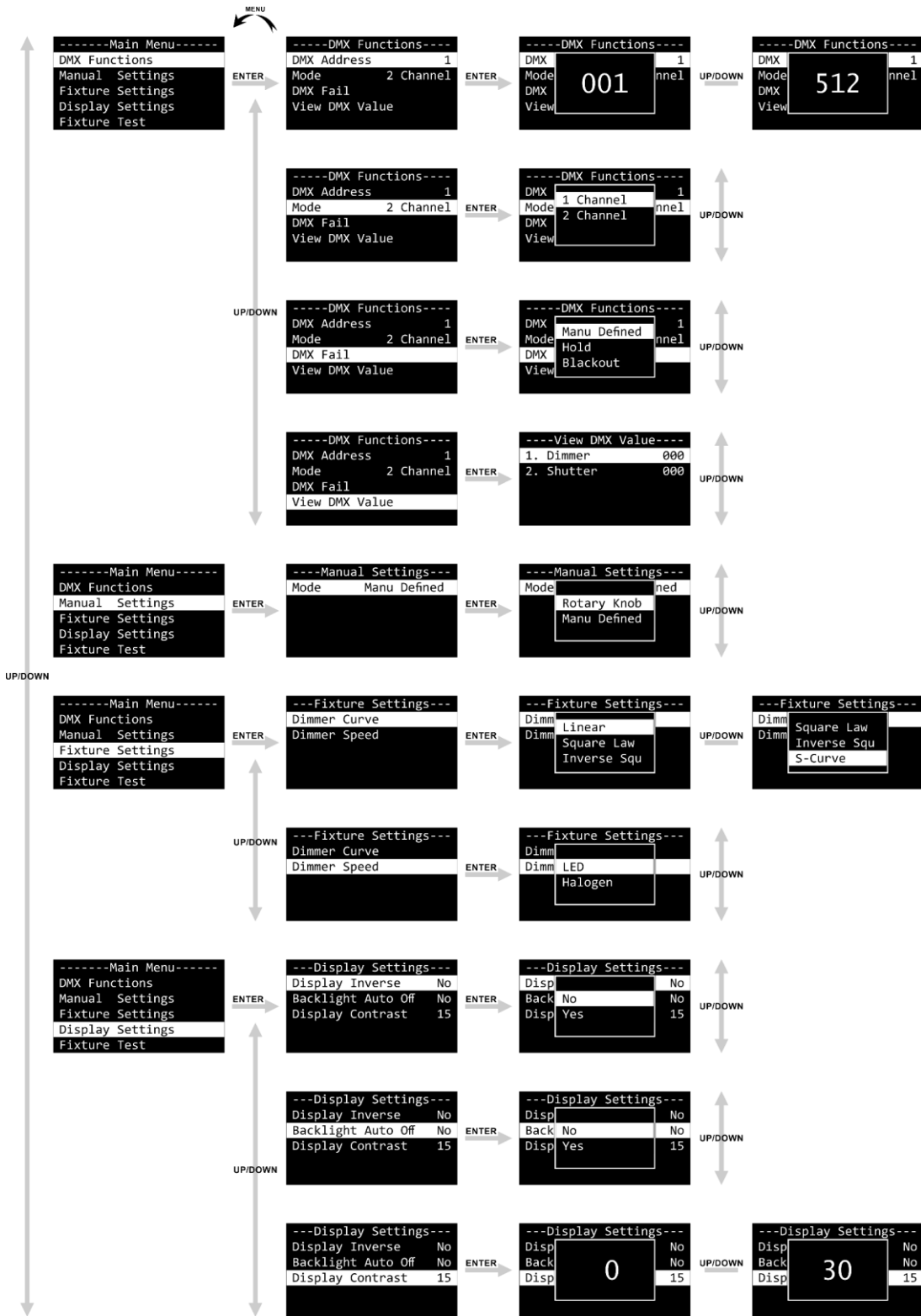


Manual operation (dimmer: 000)

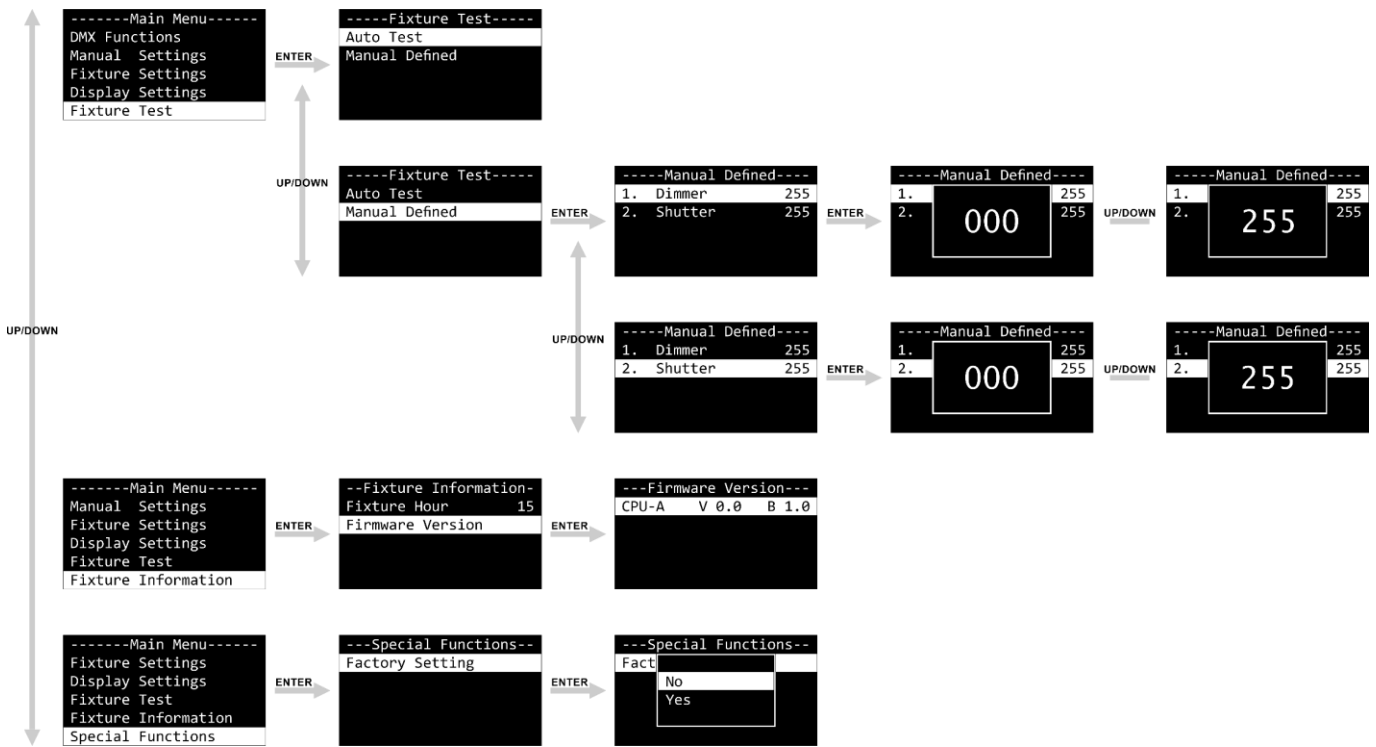
### Note:

If no button is pressed, after 30 seconds of inactivity the display turns off. Press any button to turn the display on. See **6.7.4. Display Settings** on pages 27 for more information.

### 6.6. Menu Overview

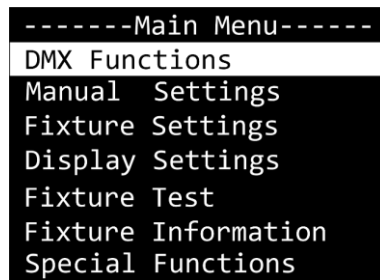






## 6.7. Main Menu Options

The main menu has the following options:

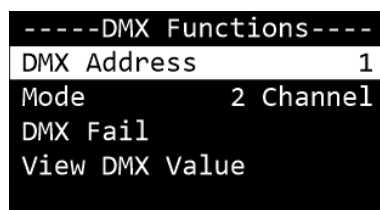


- 01) Press the **UP/DOWN** buttons to navigate through the main menu.
- 02) Press the **ENTER** button to open the submenus.

### 6.7.1. DMX Functions

In this menu you can configure the DMX settings of the device.

- 01) Press the **UP/DOWN** buttons to scroll through the following options:



- DMX Address: See **6.7.1.1. DMX Address** for more information.
  - Mode: See **6.7.1.2. DMX Channel Mode** for more information.
  - DMX Fail: See **6.7.1.3. DMX Fail** for more information.
  - View DMX Value: See **6.7.1.4. View DMX Value** for more information.
- 02) Press the **ENTER** button to confirm your choice.

### 6.7.1.1. DMX Address

In this pop-up submenu you can set the DMX starting address of the device.

- 01) Press the **UP/DOWN** buttons to select the DMX starting address of the device. The selection range is between 1 and 512.

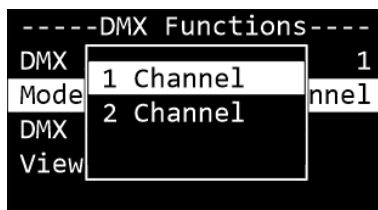


- 02) Press the **ENTER** button to confirm the selection.

### 6.7.1.2. DMX Channel Mode

In this pop-up submenu you can select the DMX channel mode.

- 01) Press the **UP/DOWN** buttons to select the DMX channel mode. There are 2 options available:



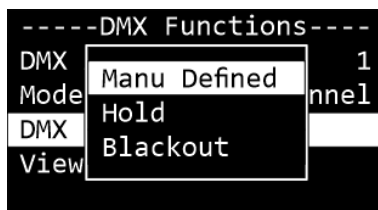
- 1-channel mode
- 2-channel mode

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

### 6.7.1.3. DMX Fail

In this pop-up submenu you can determine the behavior of the device in case there is no DMX signal.

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



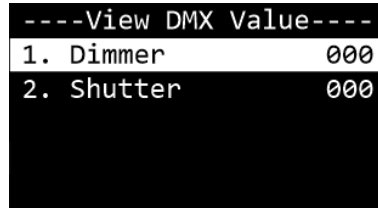
- Manually Defined: The device will use the manually selected dimmer value. See **6.7.5.1. Manually Defined** on page 28 for more information.
- Hold: The device will use the last DMX signal received correctly.
- Blackout: The device will blackout the light output.

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

#### 6.7.1.4. View DMX Value

In this submenu you can view the currently selected DMX value for each DMX channel.

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



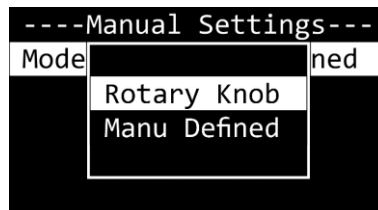
Depending on the selected DMX channel mode in the DMX Channel Mode submenu, you can see the following values:

- in 1- channel DMX mode: dimmer;
- in 2-channel DMX mode: dimmer and shutter.

#### 6.7.2. Manual Settings

In this pop-up submenu you can select how to operate the device manually.

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

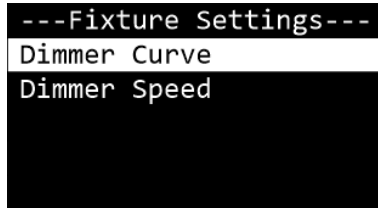


- Rotary Knob: You can control the device manually with the **manual dimmer control (17)**.
  - Manually Defined: You can control the device manually via the control panel and the menu.
- 02) Press the **ENTER** button to confirm your choice.

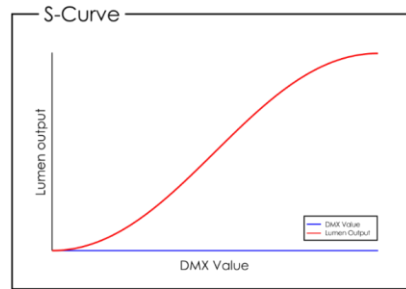
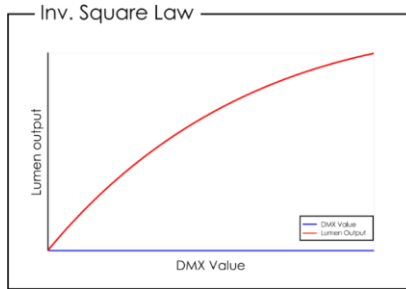
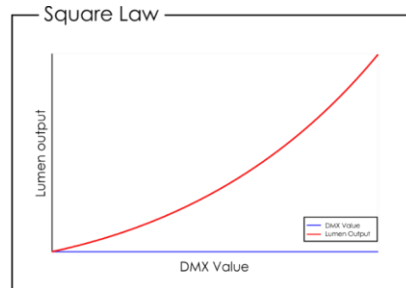
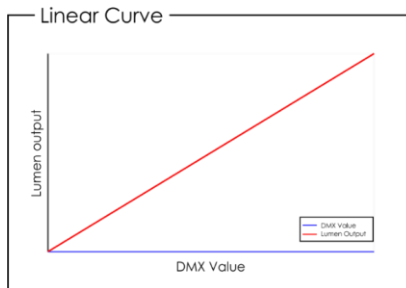
### 6.7.3. Fixture Settings

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

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



- Dimmer Curve: There are 4 options available: Linear, Square Law, Inverse Square Law and S-Curve



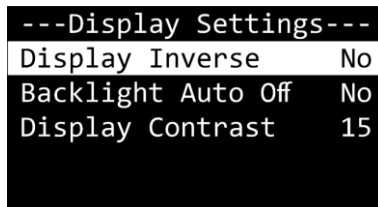
- Dimmer Speed: There are 2 options available: LED (instant dimming without delay) and Halogen (delayed dimming, imitating the behavior of a halogen lamp)

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

### 6.7.4. Display Settings

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

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

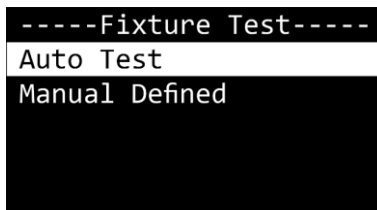


- Display Inverse: The OLED display will be rotated at 180° (NO/YES)
  - Backlight Auto Off: The backlight of the OLED display will not turn off automatically after 30 seconds of inactivity (NO/YES)
  - Display Contrast: The adjustment range is between 0 and 30 (from low to high contrast)
- 02) Press the **ENTER** button to confirm the selection and open the pop-up submenu where you can adjust the settings.
- 03) Press the **UP/DOWN** buttons to select the desired setting.
- 04) Press the **ENTER** button to confirm the selection.

### 6.7.5. Fixture Test

In this menu you can perform a test of the device's parameters and manually adjust the dimmer and shutter values.

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



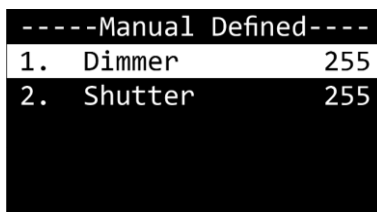
- Auto Test: The device performs an auto test of its parameters
- Manually Defined: See **6.7.5.1. Manually Defined** for more information

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

#### 6.7.5.1. Manually Defined

In this submenu you can manually adjust the dimmer and the shutter.

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



02) Press the **ENTER** button to confirm your selection and open the respective pop-up submenu where you can adjust the values.

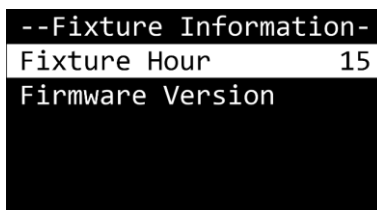
03) Press the **UP/DOWN** buttons to adjust the values. The adjustment range is between 0 and 255.

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

### 6.7.6. Fixture Information

In this menu you can view the LED operating hours and the firmware version of the device.

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



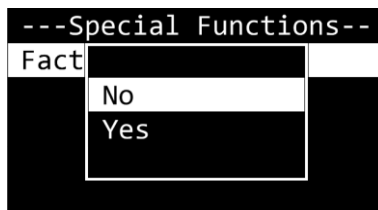
- Fixture Hour: Provides information about the total hours of operation of the LEDs
- Firmware Version: Shows the current firmware version

02) Press the **ENTER** button to confirm the selection and view the information.

## 6.7.7. Special Functions

In this menu you can reset the device's settings to the default factory settings.

01) Press the **ENTER** button to open the pop-up submenu for the factory settings:



02) Press the **UP/DOWN** buttons to choose between NO and YES. If you choose YES, the device's settings will be reset to the default factory settings.

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

6.8. DMX Channels

1 CH	2 CH	Function	Value	Setting
1	1	<b>Dimmer</b>	000–255	Brightness adjustment (0–100 %)
			000–019	Closed/Blackout
			020–024	No strobe
			025–064	Strobe, from high to low frequency
			065–069	No strobe
			070–084	Strobe, fast close/slow open, from high to low frequency
			085–089	No strobe
			090–104	Strobe, slow close/fast open, from high to low frequency
			105–109	No strobe
			110–124	Random strobe, from high to low frequency
		125–129	No strobe	
	<b>2</b>	<b>Strobe</b>	130–144	Random strobe, fast close/slow open, from high to low frequency
			145–149	No strobe
			150–164	Random strobe, slow close/fast open, from high to low frequency
			165–169	No strobe
			170–184	Pulse strobe, from high to low frequency
			185–189	No strobe
			190–204	Random pulse strobe, from high to low frequency
			205–209	No strobe
			210–224	Strobe, slow close/slow open, from high to low frequency
			225–229	No strobe
			230–244	Burst strobe, from high to low frequency
			245–255	No strobe

**Note:**

Make sure that the shutter (strobe) channel is open in 2-CH mode in order to use the dimmer.

## 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>• Check if power is switched on and cables are plugged in</li> </ul>
	Main fuse is blown	<ul style="list-style-type: none"> <li>• Replace the fuse. See <b>8.3.1. Replacing the Fuse</b> on page 33</li> </ul>
The device responds erratically	The factory settings of the device are changed	<ul style="list-style-type: none"> <li>• Reset the device's parameters to the default factory settings. See <b>6.7.7. Special Functions</b> on page 29</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 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	Bad data link connection	<ul style="list-style-type: none"> <li>• Examine connections and cables. Correct poor connections. Repair or replace damaged cables</li> </ul>
	The data link is not terminated with a 120 Ω 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>• Check address settings and correct, if necessary</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 power supply settings do not match local AC voltage and frequency	<ul style="list-style-type: none"> <li>• Disconnect the device. Check the settings and correct, if necessary</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, fixations and installation points.
- The lens is not cracked or damaged.
- The power cables are not damaged and do not show any material fatigue.

#### 8.2.1. Basic Cleaning Instructions

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

To clean the device, follow the steps below:

- 01) Disconnect the device from the electrical power supply.
- 02) Allow the device to cool down for at least 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.
- For replacement use fuses of the same type and rating only.

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.

## 9. Deinstallation, Transportation and Storage

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### 9.1. Instructions for Transportation



**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 Deinstallation

- 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 32.
- Store the device in the original packaging, if possible.

## 10. Disposal

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### Correct disposal of this product



Disposal of Old Electrical and Electronic Equipment (Applicable in the European Union and other European countries with separate collection systems)

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 applicable collection point for the 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.



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