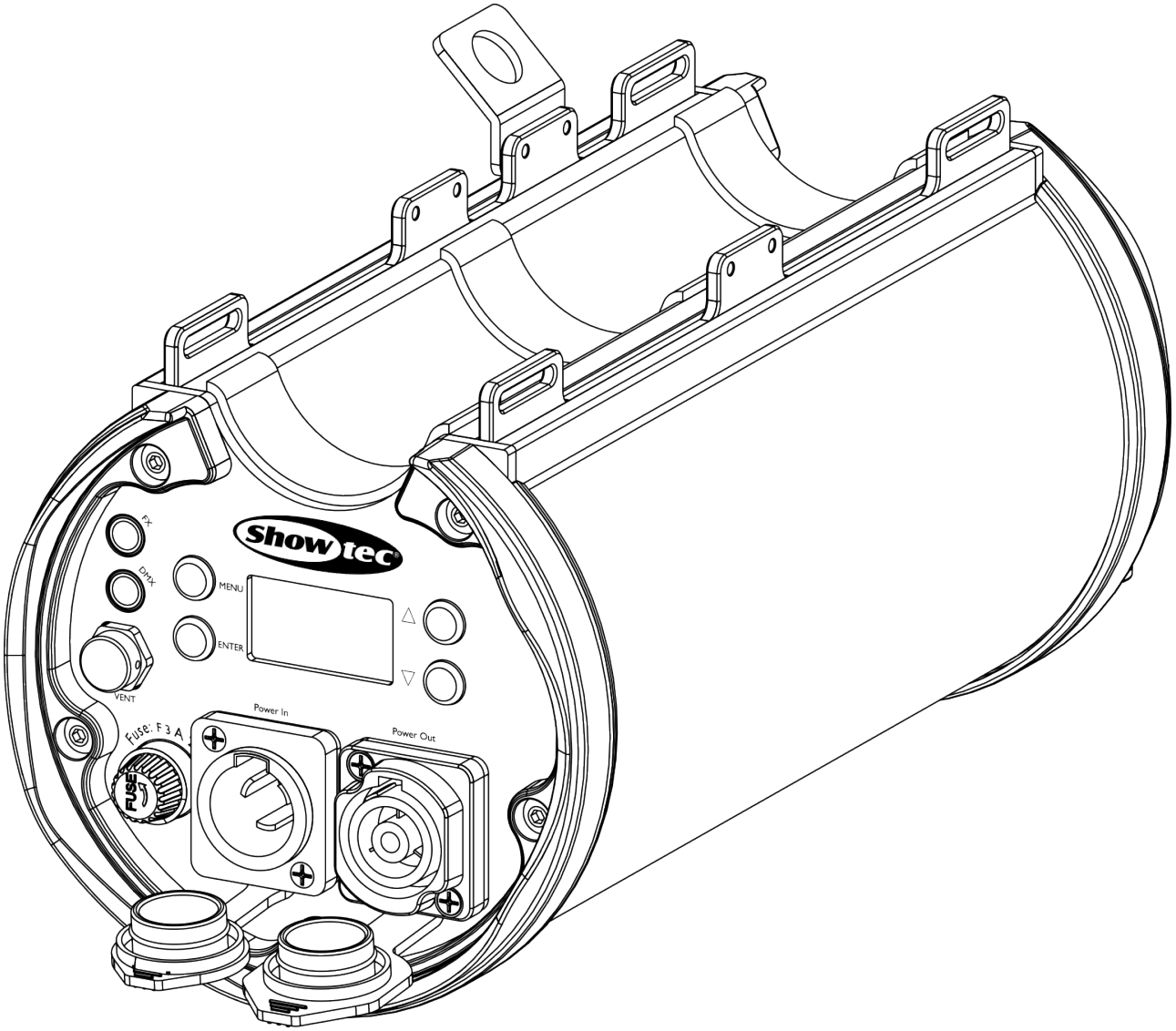
USER MANUAL

ENGLISH

V1.0



TED Pack IP, 5-pin

Product code: 50454

Preface

Thank you for purchasing this Showtec product.

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

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

This user manual contains information concerning:

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

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

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

Table of contents

1. Introduction **4**
1.1. Before Using the Product 4
1.2. Intended Use 4
1.3. Text Conventions 4
1.4. Symbols and Signal Words 5
1.5. Symbols on the Information Label 5

2. Safety **6**
2.1. Warnings and Safety Instructions 6
2.2. Requirements for the User 8

3. Description of the Device **9**
3.1. Front view 9
3.2. Back View 9
3.3. Top View 10
3.4. Product Specifications 11
3.5. Dimensions 12

4. Installation **12**
4.1. Safety Instructions for Installation 12
4.2. Personal Protective Equipment 12
4.3. Installation Site Requirements 12
4.4. Mounting Options 13
4.4.1. Mounting with a Bracket 13
4.4.2. Mounting with Hook-and-loop Straps 13
4.5. Connecting to Power Supply 14
4.6. Power Linking of Multiple Devices 15

5. Setup **16**
5.1. Warnings and Precautions 16
5.2. DMX Connection 16
5.2.1. DMX-512 Protocol 16
5.2.2. DMX Cables 16
5.2.3. DMX Linking 17
5.3. Connecting Fixtures 18
5.4. Setup Example 18

6. Operation **19**
6.1. Safety Instructions for Operation 19
6.2. Trailing-edge Dimming vs. Leading-edge Dimming 19
6.2.1. Trailing-edge Dimming 19
6.2.2. Leading-edge Dimming 19
6.3. Operation Modes 20
6.3.1. Dimmer Mode 20
6.3.2. Switch Mode 20
6.3.3. FX Mode 20
6.4. Control Panel 21
6.5. Start-up 21
6.6. Menu Overview 22
6.7. Main Menu Options 24
6.7.1. DMX Address 24
6.7.2. DMX Person 24
6.7.3. Humidity 25
6.7.4. Information 25
6.7.5. Status 25
6.7.6. Dimming Mode 25
6.7.7. Minimum Output 26
6.7.8. Maximum Output 26
6.7.9. Curve 27
6.7.10. Manual 27
6.7.11. DMX Fail 27
6.7.12. Dimmer Speed 28

6.7.13. Display OFF ... 28
6.7.14. Display Invert ... 28
6.7.15. Factory Reset ... 28
6.8. DMX Channels ... 29
6.9. RDM Information ... 29
6.9.1. RDM Details ... 29
6.9.2. Supported RDM PIDs for the Device ... 30
6.9.3. Supported RDM PIDs for the SubDevices ... 30

7. Troubleshooting ... 31

8. Maintenance ... 32
8.1. Safety Instructions for Maintenance ... 32
8.2. Preventive Maintenance ... 32
8.2.1. Basic Cleaning Instructions ... 32
8.3. Corrective Maintenance ... 33
8.3.1. Replacing the Fuse ... 33
8.3.2. Draining Condensation Water ... 33

9. Deinstallation, Transportation and Storage ... 34
9.1. Instructions for Deinstallation ... 34
9.2. Instructions for Transportation ... 34
9.3. Storage ... 34

10. Disposal ... 34

11. Approval ... 34

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.

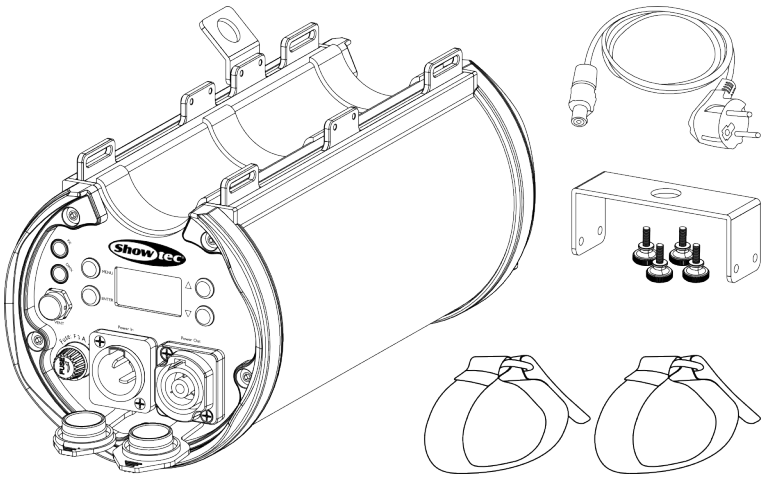
The manufacturer will not accept liability for any resulting damages caused by the non-observance of this manual.

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

Your shipment includes:

- Showtec TED Pack IP, 5-pin
- Schuko to Power Pro True cable (1,5 m)
- Mounting bracket
- 4 x thumbscrews
- 2 x hook-and-loop straps
- User manual

Figure 1



1.2. Intended Use

This device is intended for professional use as trailing-edge dimmer. It can be installed indoors and outdoors. This device is not suitable for households.

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

1.3. 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

1.4. Symbols and Signal Words

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

Always follow the instructions provided in this user manual.



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



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



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



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



Important Read and observe the instructions in this document.



Electrical hazard



Provides important information about the disposal of this product.

1.5. Symbols on the Information Label

This product is provided with an information label. The information label is located on the side 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 devices is rated IP65.

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 the 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.



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 shake the device. Avoid brute force when installing or operating the device.
- 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 use immediately.



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

This device is designed to be used as trailing-edge dimmer. Any incorrect use may lead to hazardous situations and result in injuries and material damage.

- This device is not suitable for households.
- 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.
- There are no deformations on housings, fixings and installation points.
- 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.

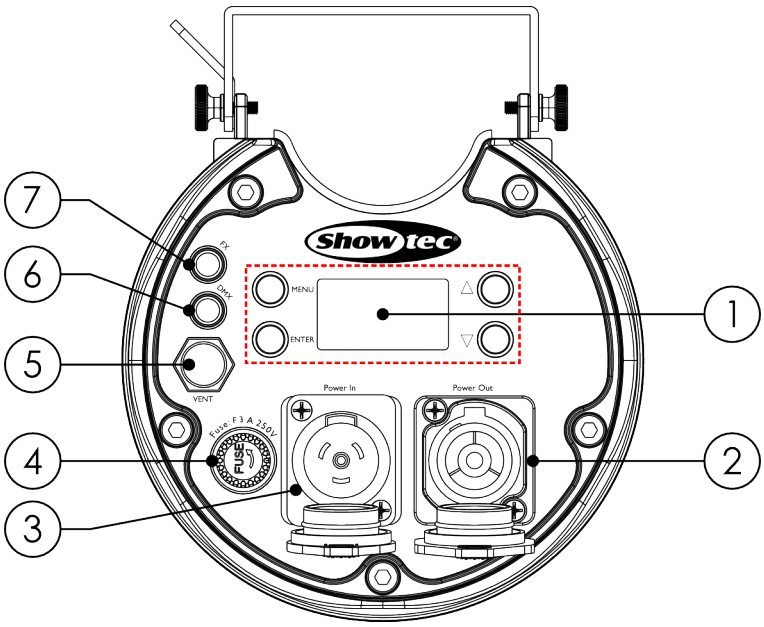
Ordinary persons are all persons other than instructed persons and skilled persons. Ordinary persons include not only users of the product but also any other persons that may have access to the device or who may be in the vicinity of the device.

3. Description of the Device

The Showtec TED Pack IP, 5-pin is a trailing-edge 2-channel dimmer for indoor and outdoor use. It can be operated in dimmer, switch and FX modes. The device is compatible with LED and incandescent lights of up to 1 A (200 W) per output channel. The TED Pack IP, 5-pin uses MOSFETs to dim the output and can be switched between leading edge and trailing edge dimming. The FX mode offers a safety channel that prevents unintentional activation. It can be used for controlling shooters, canons, drops, and similar devices.

3.1. Front view

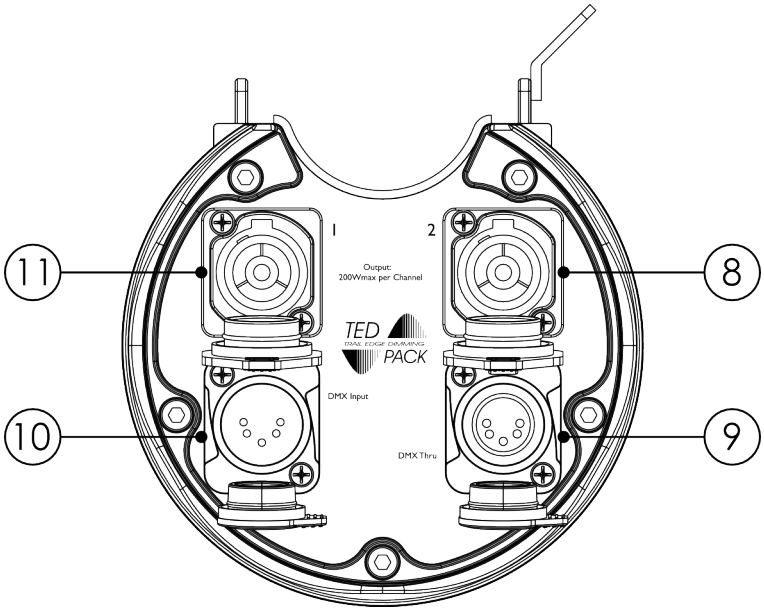
Figure 2



01) Control panel: OLED display and control buttons
02) IP65-rated Power Pro True connector OUT
03) IP65-rated Power Pro True connector IN
04) Fuse F 3 A, 250 V
05) Protective vent
06) DMX LED indicator
07) FX Mode LED indicator

3.2. Back View

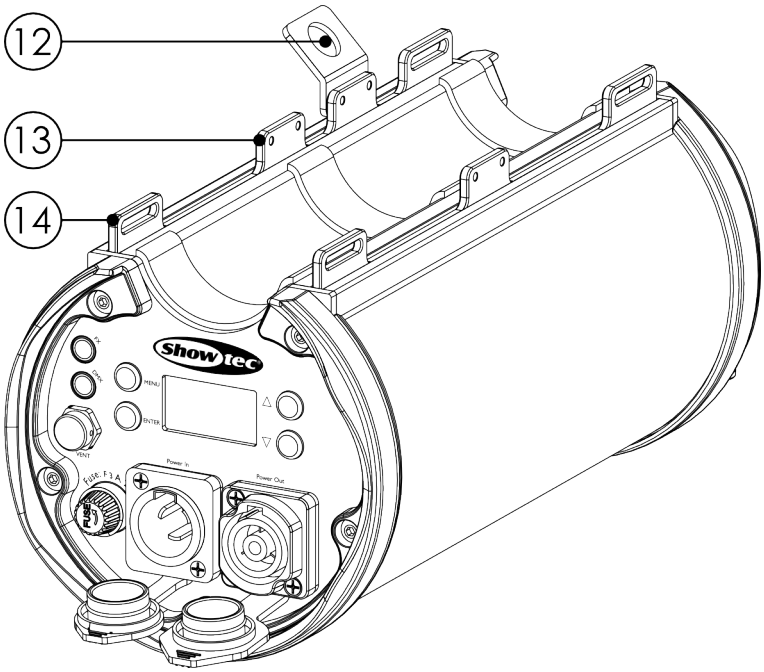
Figure 3



08) Output 2 (IP65-rated Power Pro True connector OUT)
09) IP65-rated 5-pin DMX connector THRU
10) IP65-rated 5-pin DMX connector IN
11) Output 1 (IP65-rated Power Pro True connector OUT)

3.3. Top View

Figure 4



12) Safety eye
13) 4 x Openings for mounting bracket
14) 4 x Hook-and-loop slots

3.4. Product Specifications

Model:	TED Pack IP, 5-pin

Control and Programming:	
Control mode	DMX, Manual
Protocols	DMX, RDM
DMX channels	Dimmer (2 channels), Switch (2 channels), FX (3 channels)

Electrical Specifications and Connections:	
Power supply	220–240 V AC 50 Hz
Power consumption	2 W
Fuse	F 3 A, 250 V
Output current per channel	1 A
Output wattage per channel	200 W
Power connector IN	Power Pro True
Power connector OUT	Power Pro True
DMX connector IN	XLR 5P
DMX connector OUT	XLR 5P

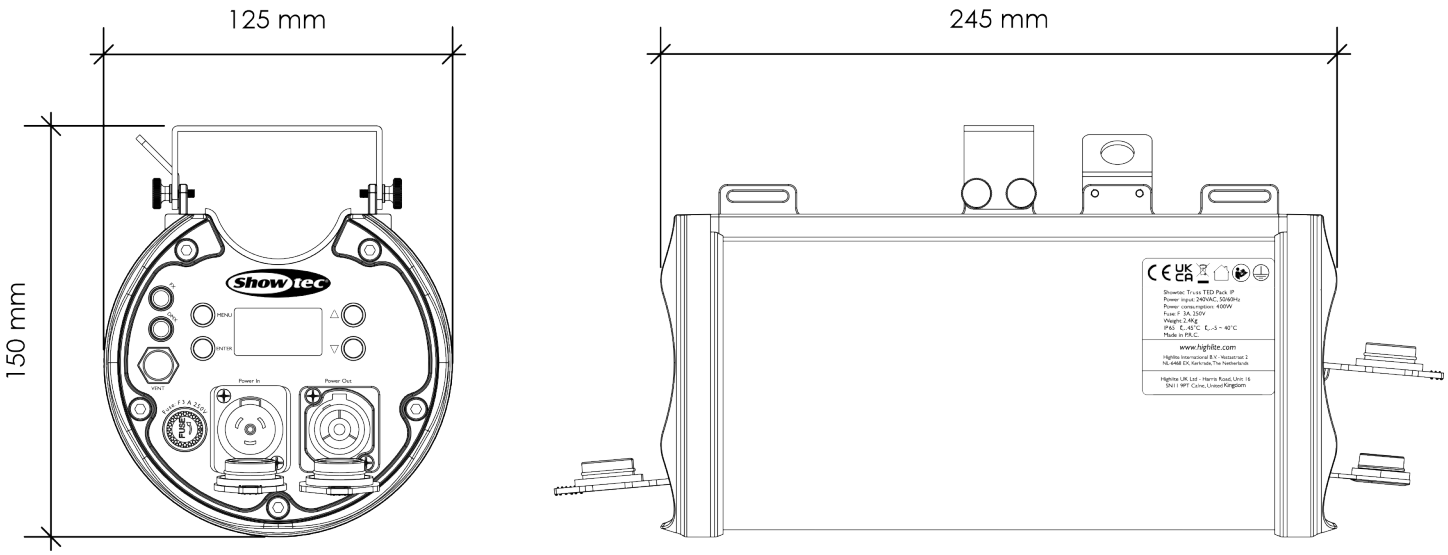
Mechanical Specifications:	
Length	245 mm
Width	125 mm
Height	150 mm
Weight	2,43 kg
IP Rating	IP65
Housing	Aluminum
Color	Black

Product Properties:	
LED indicators	DMX Green Signal / FX Red Signal

Thermal Specifications:	
Maximum ambient temperature	40 °C
Minimum ambient temperature	-5 °C

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 ambient temperature must be in the range -5 and 40 °C.
- The relative humidity must not exceed 50 % with an ambient temperature of 40 °C.

4.4. Mounting Options

The device can be mounted to a truss or other rigging structure in any orientation. It can be mounted using a clamp or the included hook-and-loop straps. 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.

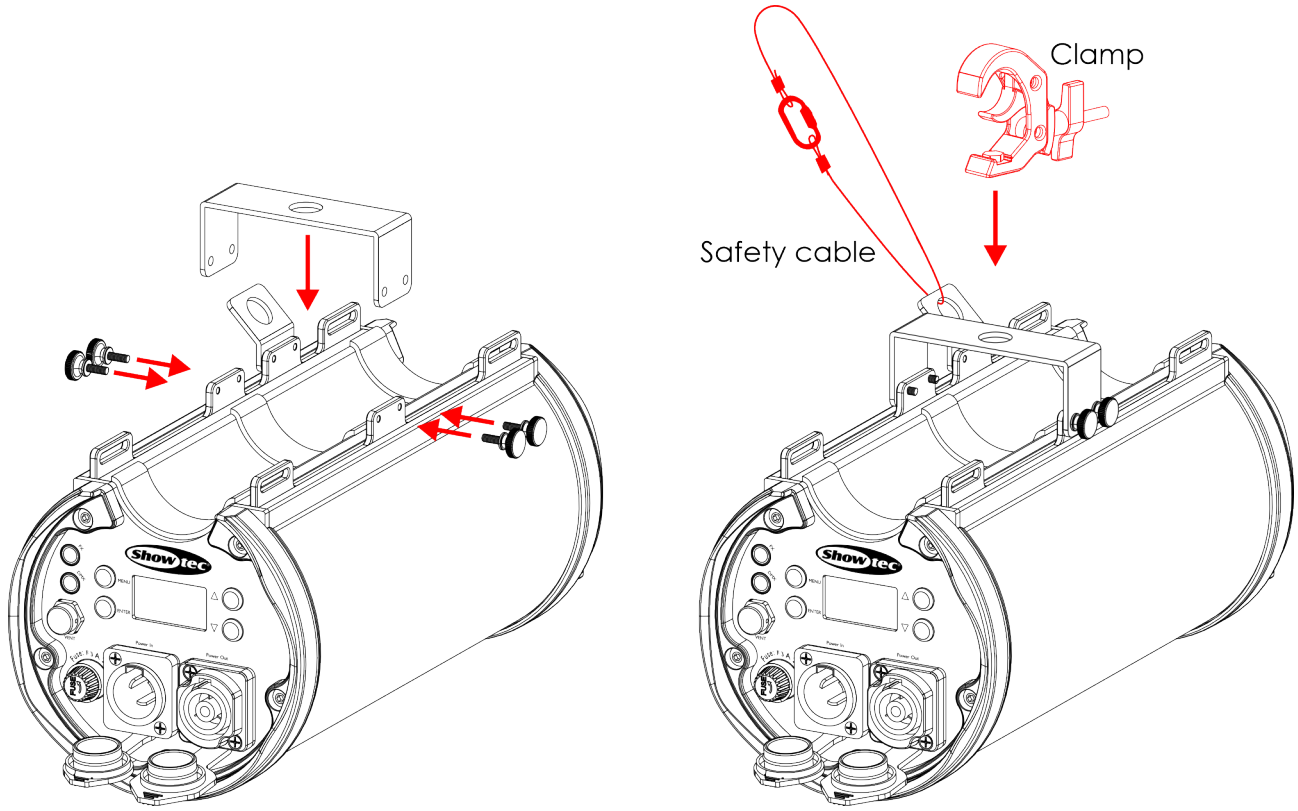
4.4.1. Mounting with a Bracket

You can mount the device to a rigging structure with the supplied mounting bracket and 4 thumbscrews.

To mount the device, follow the steps below:

01) Use the 4 thumbscrews to attach the mounting bracket to the 4 **openings for mounting bracket (13)**.
02) Install the clamp. Make sure that you use a clamp 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 **safety eye (12)**.

4.4.2. Mounting with Hook-and-loop Straps

You can mount the device to a tube (max. Ø 50 mm) with the supplied 2 hook-and-loop straps.

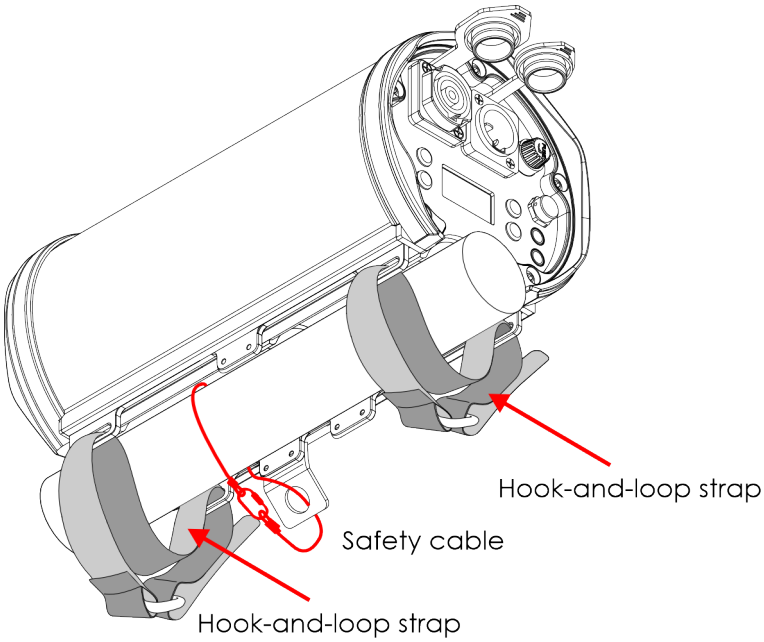
Minimum two persons are necessary to mount the device.

To mount the device, follow the steps below:

01) Place the device above or under the tube.
02) While holding the device in place, thread one of the hook-and-loop-straps through a pair of **hook-and-loop slots (14)** with the hook-and-loop side facing the tube.

03) Fold the hook-and-loop-strap and thread it through the first **hook-and-loop slots (14)** with the hook-and-loop side facing upwards.
04) Pull the end of the hook-and-loop-strap through the metal buckle.
05) Tighten and secure the hook-and-loop-strap.
06) Repeat steps 2–3 to secure the second hook-and-loop-strap.
07) Make sure that the device cannot move freely.
08) 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 (12)**.

Figure 7



4.5. Connecting to Power Supply

DANGER
Electric shock caused by short-circuit

The device accepts AC mains power at 220–240 V and 50 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 a ground (earth) connection.

Connect the device to the socket-outlet with the power plug.

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.

The maximum recommended number of devices depends on the total load of all connected fixtures and TED Pack IP, 5-pin devices. The total load shall not exceed 3500 W.

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. DMX Connection

5.2.1. DMX-512 Protocol

The TED Pack IP, 5-pin has 5-pin DMX signal IN and OUT connectors.

The pin assignment is as follows: 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

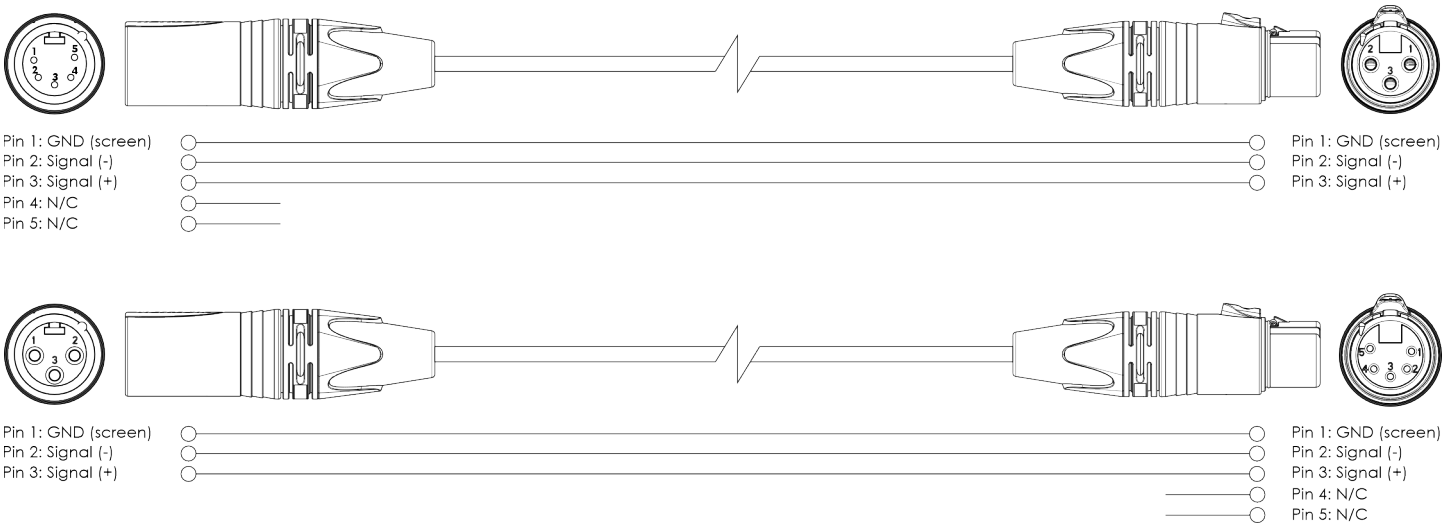
5.2.2. DMX Cables

Shielded twisted-pair cables with 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 8

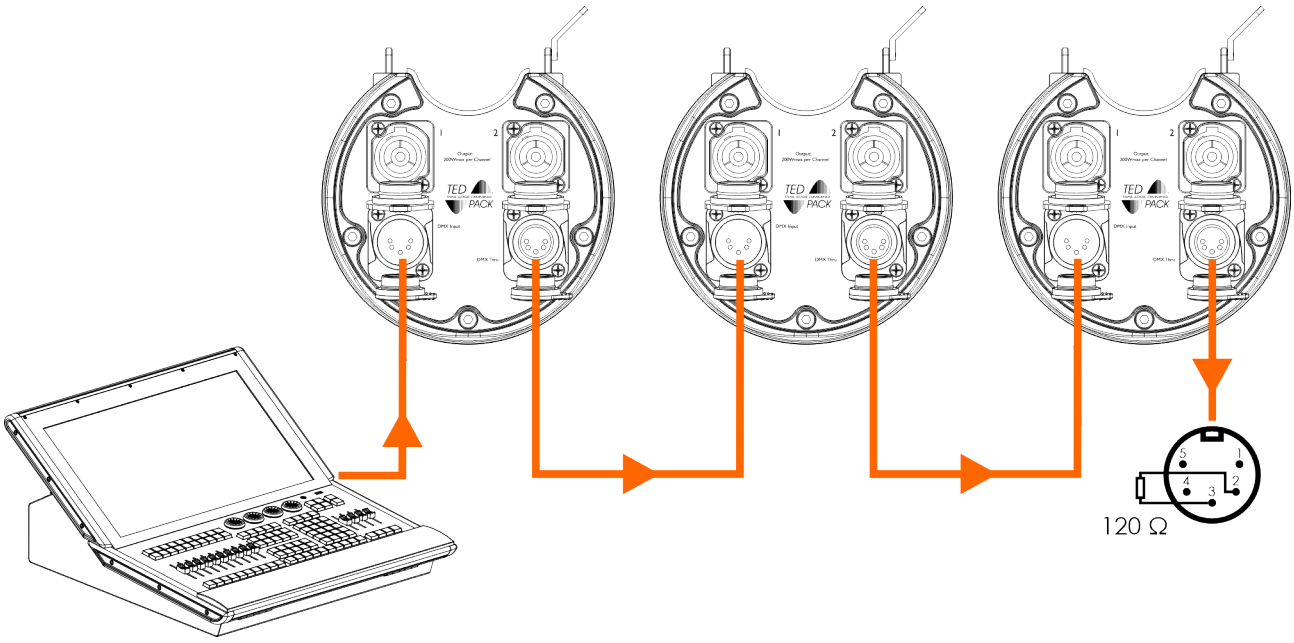


5.2.3. DMX Linking

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

01) Use a 5-pin DMX cable to connect the DMX OUT connector of the lighting controller to the DMX IN connector of the 1st device. The **DMX LED indicator (06)** lights up.
02) Connect the DMX OUT connector of the 1st device to the DMX IN connector of the 2nd device with a 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 9



5.3. Connecting Fixtures

The TED Pack IP, 5-pin is compatible with both LED and incandescent lighting fixtures. It can be also used for controlling shooters, canons, drops, and similar fixtures.

Make sure that the total load per output does not exceed the maximum wattage (200 W) and the maximum current (1 A).

Connect the fixtures to **output 1 (11)** and **output 2 (08)**.

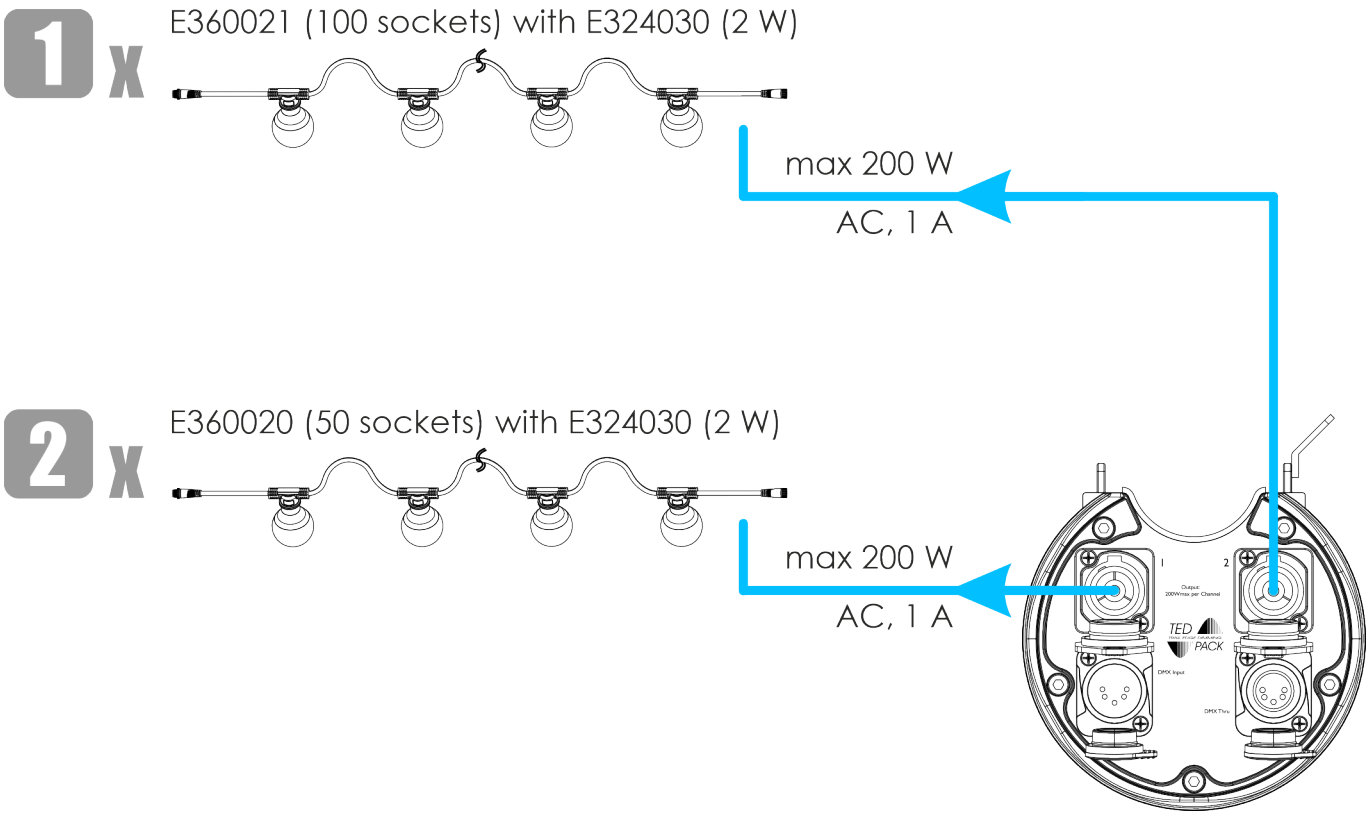
5.4. Setup Example

This is a typical setup with TED Pack IP, 5-pin used as trailing-edge dimmer.

Make sure that:

- The total load per output does not exceed the maximum wattage (200 W) and current (1 A).
- The total load of all connected fixtures and devices does not exceed 3500 W.

Figure 10



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 trailing-edge dimmer. It can be used indoors and outdoors. This device is not suitable for households.

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. Trailing-edge Dimming vs. Leading-edge Dimming

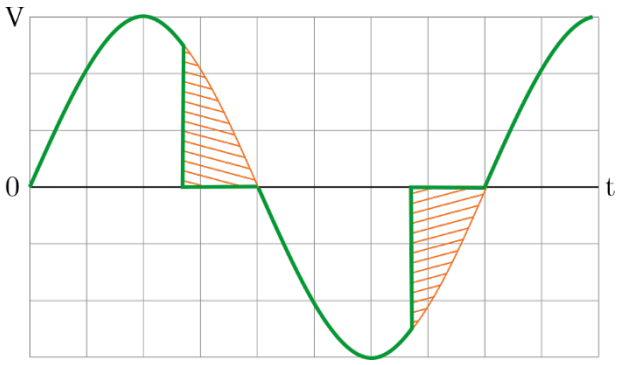
The TED Pack IP, 5-pin is trailing-edge dimmer that supports also leading-edge dimming. You can set the dimming mode (see 6.7.6. Dimming Mode on page 25) for each connected fixture separately.

6.2.1. Trailing-edge Dimming

Trailing-edge dimming is a reverse-phase dimming with a phase-cut at the end of each wave's half cycle before the zero crossing. This makes trailing-edge dimming suitable for conductive loads and for lower wattage lamps, for example LED lamps. Trailing-edge dimming does not produce high inrush of current.

Trailing-edge dimmers use MOSFET or IGBT circuits to dim. This technology produces less EMI radiations, current surges and AC distortions. This results in less interference and noise compared to traditional leading-edge dimmers. Trailing-edge dimmers can support also leading-edge dimming.

Figure 11



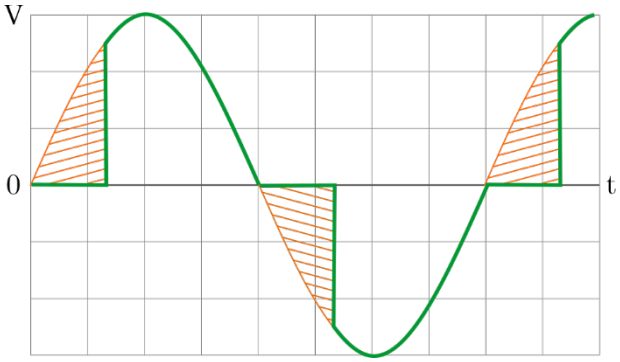
6.2.2. Leading-edge Dimming

Leading-edge dimming is a forward-phase dimming with a phase-cut at the beginning of each wave's half cycle after the zero crossing.

The leading-edge dimmers were originally developed to dim incandescent and halogen lamps. As they have a high minimum load, they are not suitable for low wattage LED lamps.

Traditional leading-edge dimmers use a TRIAC or an SCR to dim. This technology produces more EMI radiations, which results in unwanted interference and buzzing noise. These dimmers do not support trailing-edge dimming.

Figure 12



6.3. Operation Modes

The TED Pack IP, 5-pin can be operated in dimmer mode, switch mode, and FX mode.

6.3.1. Dimmer Mode

In dimmer mode the device functions as a dimmer and you can control the intensity of the light output of the connected fixtures.

The device is compatible with LED and incandescent lights of up to 1 A (200 W) per output channel. Make sure that you select the correct dimming mode (see 6.2. Trailing-edge Dimming vs. Leading-edge Dimming on page 19).

You can operate the device in dimmer mode via the **control panel (01)** and via DMX.

6.3.2. Switch Mode

In switch mode you can switch on and off the connected fixtures.

You can operate the device in switch mode via the **control panel (01)** and via DMX.

Note:

In switch mode you cannot adjust the following parameters: minimum output, maximum output, and dimming curve.

6.3.3. FX Mode

In FX mode you can switch on and off the connected fixtures. The FX mode has a safety channel that prevents unintentional switching on/off. This mode can be used for controlling shooters, canons, drops, and similar devices.

You can operate the device in FX mode only via DMX (see 6.8. DMX Channels on page 29).

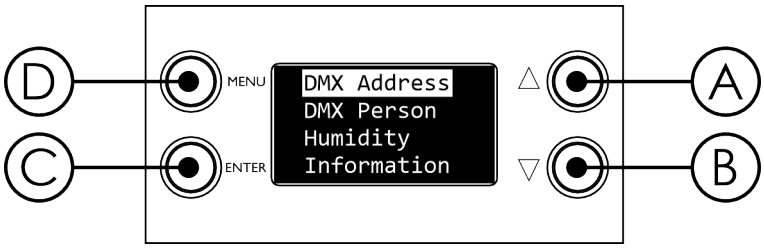
When the control over outputs 1–2 is enabled in the safety channel (CH 5) in FX mode, the **FX mode LED indicator (07)** lights up.

Notes:

- In FX mode you cannot adjust the following parameters: minimum output, maximum output, and dimming curve.
- In FX mode the default behavior of the device in case of a DMX failure is OFF.

6.4. Control Panel

Figure 13



A) UP button
B) DOWN button
C) ENTER button
D) MENU button

- 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 and to select values and options.
- Use the **ENTER** button to open the selected submenu.

6.5. Start-up

At start-up the display shows a splash screen with the logo of Showtec followed by the start screen.

The start screen provides information about the selected DMX personality, the configuration of the 2 outputs, the temperature and the humidity:



- DMX personality (operation mode): Dimmer-2ch, Switch-4ch, FX-3ch
- DM (dimming mode): Led (leading-edge), Tra (traling-edge)
- CV (dimming curve): Lin (linear) Sqe (square), ISq (inverse square), Log (logarithmic)
- AD (DMX starting address of the connected fixture)
- T (temperature)
- H (humidity)

Press the **MENU** button to toggle between the information screen and the main menu.

Note:

If the display is turned off, press any button to turn the display on (see 6.7.13. Display OFF on page 28).

6.6. Menu Overview

Level 1	Level 2	Level 3
DMX Address (see 6.7.1. DMX Address on page 24)	Address All	001–512
	Address 1	001–512
	Address 2	001–512
	Address FX	001–512
DMX Person (see 6.7.2. DMX Person on page 24)	Dimmer-2ch	
	Switch-2ch	
	FX-3ch	
Humidity (see 6.7.3. Humidity on page 25)	XXX%	
Information (see 6.7.4. Information on page 25)	Frequency, Version, Date, UID	
Status (see 6.7.5. Status on page 25)	CH1: XXX%, CH2: XXX%	
Dimmer Mode (see 6.7.6. Dimming Mode on page 25)	Out All Dimm	Trailing Edge
		Leading Edge
	Out 1 Dim	Trailing Edge
		Leading Edge
	Out 1 Dim	Trailing Edge
		Leading Edge
Min Output (see 6.7.7. Minimum Output on page 26)	Out All Min	000%–010%
	Out 1 Min	000%–010%
	Out 2 Min	000%–010%
Max Output (see 6.7.8. Maximum Output on page 26)	Out All Max	049%–100%
	Out 1 Max	049%–100%
	Out 2 Max	049%–100%
Curve (see 6.7.9. Curve on page 27)	Out All Curve	Linear
		Square
		Inverse Square
		Logarithmic
	Out 1 Curve	Linear
		Square
		Inverse Square
		Logarithmic
	Out 2 Curve	Linear
		Square
		Inverse Square
		Logarithmic

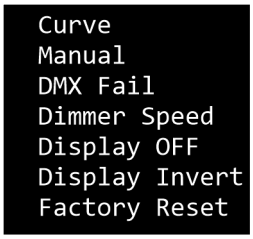
Level 1	Level 2	Level 3
Manual (see 6.7.10. Manual on page 27)	Manual All	000%–100%
	Manual 1	000%–100%
	Manual 2	000%–100%
DMX Fail (see 6.7.11. DMX Fail on page 27)	Manual	
	Hold	
	Off	
Dimmer Speed (see 6.7.12. Dimmer Speed on page 28)	Fast	
	Dim1	
	Dim2	
	Dim3	
Display OFF (see 6.7.13. Display OFF on page 28)	Always ON	
	60 Seconds	
	10 Seconds	
Display Invert (see 6.7.14. Display Invert on page 28)	Off	
	On	
Factory Reset (see 6.7.15. Factory Reset on page 28)	Confirm	

6.7. Main Menu Options

The main menu has the following options:



DMX Address
DMX Person
Humidity
Information
Status
Dimmer Mode
Min Output
Max Output



Curve
Manual
DMX Fail
Dimmer Speed
Display OFF
Display Invert
Factory Reset

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 Address

In this menu you can set the DMX starting address of the connected fixtures and the FX channel.



01) Press the **UP/DOWN** buttons to select one of the channels or all channels together.
02) Press the **ENTER** button to confirm the selection and open the submenu.
03) Press the **UP/DOWN** buttons to set the DMX starting address:
- Address All: Select all connected fixtures. The adjustment range is 001–512
- Address 1: Select the connected fixture(s) on CH1. The adjustment range is 001–512
- Address 2: Select the connected fixture(s) on CH2. The adjustment range is 001–512
- Address FX: Select the FX channel. The adjustment range is 001–512

Note:

If you want to control the connected fixtures on each channel separately, make sure that the DMX starting address of each channel is different.

6.7.2. DMX Person

In this menu you can select the DMX personality (see 6.8. DMX Channels on page 29) (operation mode) for the connected fixtures.

Press the **UP/DOWN** buttons to select the DMX channel mode. There are 3 options available:

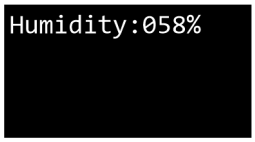
- Dimmer-2ch: 2 channels
- Switch-2ch: 2 channels
- FX-3ch: 3 channels

Notes:

- You cannot adjust the DMX personality (operation mode) for each channel (connected fixture) separately.
- In switch mode and in FX mode you cannot adjust the following parameters: minimum output, maximum output, and dimmer curve.
- In FX mode the default behavior of the device in case of a DMX failure is OFF.

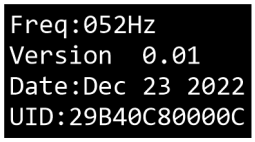
6.7.3. Humidity

In this menu you can view the relative humidity inside the housing of the device.



6.7.4. Information

In this menu you can view the following parameters of the device: frequency, firmware version, installation date of the firmware, and UID.



6.7.5. Status

In this menu you can view the dimming percentage selected in manual mode (see 6.7.10. Manual on page 27).



6.7.6. Dimming Mode

In this menu you can set the dimming mode of the connected fixtures.



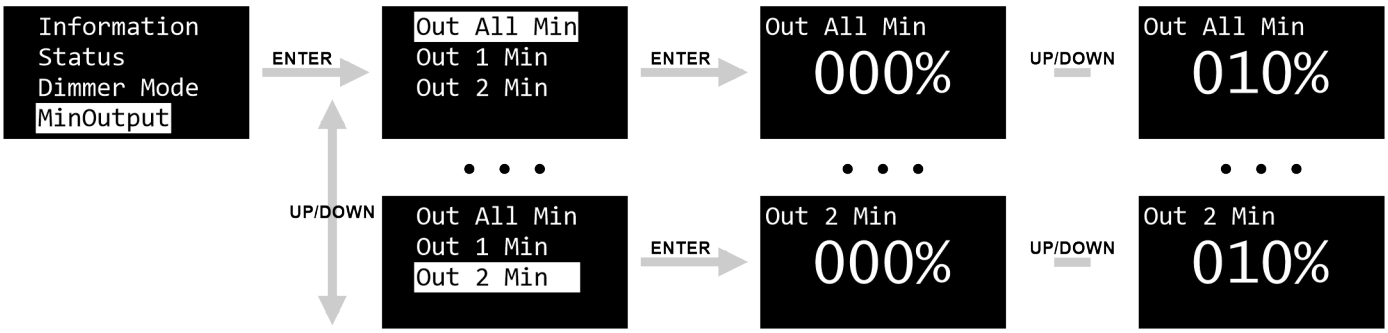
01) Press the **UP/DOWN** buttons to select one of the channels or all channels together.
02) Press the **ENTER** button to confirm the selection and open the submenu.
03) Press the **UP/DOWN** buttons to select one of the 2 options:
- Trailing Edge: Reverse-phase dimming with a phase-cut at the end of each wave's half cycle (see 6.2.1. Trailing-edge Dimming on page 19)
- Leading Edge: Forward-phase dimming with a phase-cut at the beginning of each wave's half cycle (see 6.2.2. Leading-edge Dimming on page 19)

Note:

It is not recommended to use the leading-edge dimming.

6.7.7. Minimum Output

In this menu you can set the minimum light output of the connected fixtures.



01) Press the **UP/DOWN** buttons to select one of the channels or all channels together.
02) Press the **ENTER** button to confirm the selection and open the submenu.
03) Press the **UP/DOWN** buttons to set the minimum light output. The selection range is 0–10 %.

Note:

In switch mode and in FX mode you cannot set the minimum light output of the connected fixtures.

6.7.8. Maximum Output

In this menu you can set the maximum light output of the connected fixtures.



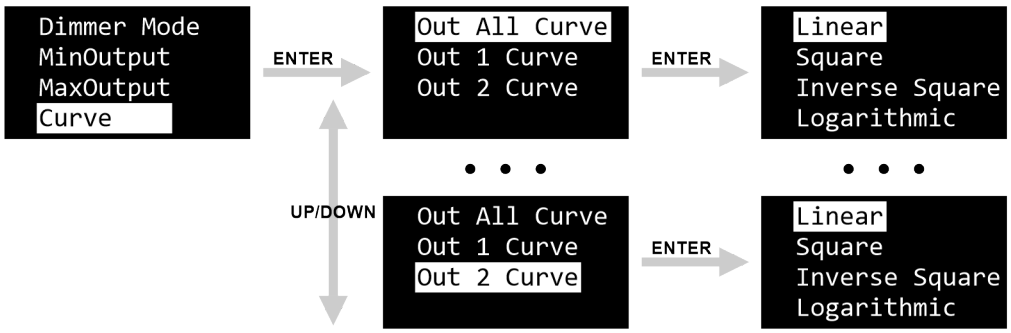
01) Press the **UP/DOWN** buttons to select one of the channels or all channels together.
02) Press the **ENTER** button to confirm the selection and open the submenu.
03) Press the **UP/DOWN** buttons to set the maximum light output. The selection range is 49–100 %.

Note:

In switch mode and in FX mode you cannot set the maximum light output of the connected fixtures.

6.7.9. Curve

In this menu you can set the dimmer curve of the connected fixtures.



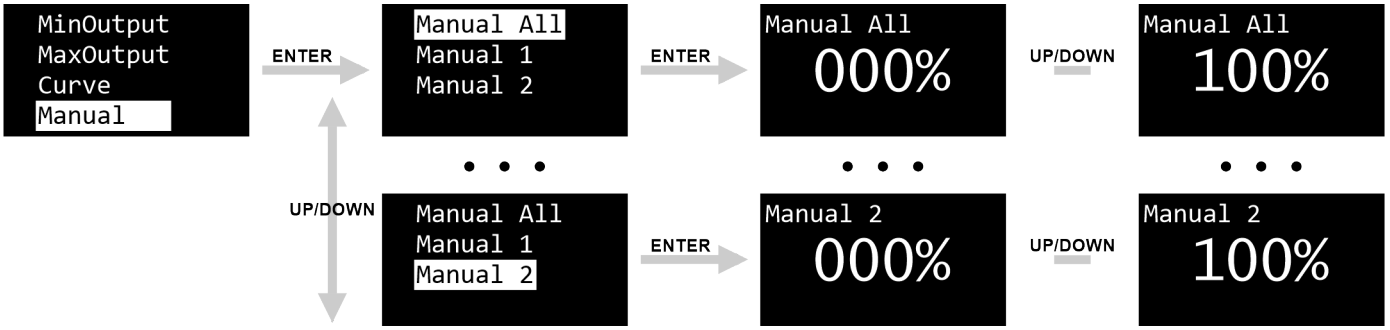
01) Press the **UP/DOWN** buttons to select one of the channels or all channels together.
02) Press the **ENTER** button to confirm the selection and open the submenu.
03) Press the **UP/DOWN** buttons to select one of the 4 options:
- Linear
- Square
- Inverse Square
- Logarithmic

Note:

In switch mode and in FX mode you cannot set the dimmer curve of the connected fixtures.

6.7.10. Manual

In this menu you can set the intensity of the light output of the connected fixtures.



01) Press the **UP/DOWN** buttons to select one of the channels or all channels together.
02) Press the **ENTER** button to confirm the selection and open the submenu.
03) Press the **UP/DOWN** buttons to set the intensity of the light output. The selection range is 0–100 %.

6.7.11. DMX Fail

In this menu you can set the behavior of the device in case of a DMX failure.

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

- Manual: The device will use the values selected in manual mode (see 6.7.10. Manual on page 27)
- Hold: The device will use the last working DMX value on the output
- Off: The device will not output any signal

Note:

In FX mode the default behavior of the device in case of a DMX failure is OFF.

6.7.12. Dimmer Speed

In this menu you can set the dimmer speed.

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

- Fast
- Dim1
- Dim2
- Dim3

6.7.13. Display OFF

In this menu you can set the amount of time the backlight on the display stays on after the last button is pressed on the control panel.

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

- Always ON: The backlight of the display remains on
- 60 seconds: The backlight of the display turns off after 60 s of inactivity
- 10 seconds: The backlight of the display turns off after 10 s of inactivity

Note:

If the display is turned off, press any button to turn the display on.

6.7.14. Display Invert

In this menu you can set the orientation of the OLED display.

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

- Off: Normal orientation of the OLED display
- On: The OLED display is rotated at 180°

Note:

If the display is rotated at 180°, the function of the buttons on the control panel will be reversed, as well.

- The **MENU** button will function as **ENTER** button and vice versa.
- The **UP** button will function as **DOWN** button and vice versa.

6.7.15. Factory Reset

In this menu you can restore the default factory settings of the device.

Press the **ENTER** button to confirm the reset of the device. The **FX mode LED indicator (07)** will blink once and the reset will be performed.

6.8. DMX Channels

Dimmer 2 CH	Switch 2 CH	FX 3 CH	Function	Value	Setting
1			**Dimmer 1**	000–255	Output 1 adjustable (0–100 %)
2			**Dimmer 2**	000–255	Output 2 adjustable (0–100 %)
	1	**1**	**Switch 1**	000–127	Output 1 disabled (set to 0 %)
				128–255	Output 1 enabled (set to 100 %)
	2	**2**	**Switch 2**	000–127	Output 2 disabled (set to 0 %)
				128–255	Output 2 enabled (set to 100 %)
		3	**Safety channel**	000–120	Disable control over outputs 1–2 (output remains at 0 %)
				121–131	Enable control over outputs 1–2 (output follows DMX input signal)
				132–255	Disable control over outputs 1–2 (output remains at 0 %)

Notes:

- In switch mode and in FX mode you cannot adjust the following parameters: minimum output, maximum output, and dimmer curve.
- In FX mode the default behavior of the device in case of a DMX failure is OFF.
- When the control over outputs 1–2 is enabled in the safety channel (CH 3) in FX mode, the **FX mode LED indicator (07)** lights up.

6.9. RDM Information

This device supports RDM. Refer to Supported RDM PIDs for the Device (see 6.9.2. Supported RDM PIDs for the Device) and Supported RDM PIDs for the SubDevices (see 6.9.3. Supported RDM PIDs for the SubDevices) for more information.

6.9.1. RDM Details

- Responder ID: 29B4:0C8XXXXX
- Manufacturer's ID: Showtec (Highlite International B.V.)
- Manufacturer Label: Showtec
- Model Description: TED Pack IP
- Model ID: 200 (0C8 hexadecimal)
- Device Label: TED Pack IP
- SubDevice 1 Label: TED Pack Out 1
- SubDevice 2 Label: TED Pack Out 2

Note:

An RDM responder ID consists of 3 parts:

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

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

6.9.2. Supported RDM PIDs for the Device

RDM Parameter ID	Value	Required	GET	SET
DISC_UNIQUE_BRANCH	0x0001	*		
DISC_MUTE	0x0002	*		
DISC_UN_MUTE	0x0003	*		
SUPPORTED_PARAMETERS	0x0050	*	*	
DEVICE_INFO	0x0060	*	*	
DEVICE_MODEL_DESCRIPTION	0x0080		*	
MANUFACTURER_LABEL	0x0081		*	
DEVICE_LABEL	0x0082		*	*
FACTORY_DEFAULTS	0x0090		*	*
SOFTWARE_VERSION_LABEL	0x00C0	*	*	
BOOT_SOFTWARE_VERSION_ID	0x00C1		*	
BOOT_SOFTWARE_VERSION_LABEL	0x00C2		*	
DMX_PERSONALITY	0x00E0		*	*
DMX_PERSONALITY_DESCRIPTION	0x00E1		*	
DMX_START_ADDRESS	0x00F0	*	*	*
SLOT_INFO	0x0120		*	
SLOT_DESCRIPTION	0x0121		*	
DMX_BLOCK_ADDRESS	0x0140		*	*
SENSOR_DEFINITION	0x0200		*	
SENSOR_VALUE	0x0201		*	*
DIMMER_INFO	0x0340		*	
MINIMUM_LEVEL	0x0341		*	*
MAXIMUM_LEVEL	0x0342		*	*
CURVE	0x0343		*	*
CURVE_DESCRIPTION	0x0344	*	*	
DISPLAY_INVERT	0x0500		*	*
IDENTIFY_DEVICE	0x1000	*	*	*
RESET_DEVICE	0x1001			*

6.9.3. Supported RDM PIDs for the SubDevices

RDM Parameter ID's	Value	Required	GET	SET
SUPPORTED_PARAMETERS	0x0050	*	*	
DEVICE_INFO	0x0060	*	*	
DEVICE_LABEL	0x0082		*	*
DMX_PERSONALITY	0x00E0		*	*
DMX_PERSONALITY_DESCRIPTION	0x00E1		*	
DMX_START_ADDRESS	0x00F0	*	*	*
DIMMER_INFO	0x0340		*	
MINIMUM_LEVEL	0x0341		*	*
MAXIMUM_LEVEL	0x0342		*	*
CURVE	0x0343		*	*
CURVE_DESCRIPTION	0x0344	*	*	

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	• Make sure that the device is connected to power supply and the cables are plugged in
	The main fuse is blown	• Replace the fuse (see 8.3.1. Replacing the Fuse on page 33)
The device responds erratically	The factory settings of the device are changed	• Reset the parameters of the device to the default factory settings (see 6.7.15. Factory Reset on page 28)
The device does not respond to DMX control	The controller is not connected	• Connect the controller
	The signal is reversed. The 5-pin DMX OUT of the controller does not match the DMX IN of the device	• Install a phase-reversing cable between the controller and the device
	The controller is defective	• Try using another controller
The device responds erratically to DMX control	Connections are defective	• Examine connections and cables. Correct defective connections. Repair or replace damaged cables
	The data link is not terminated with a 120 Ω termination plug	• Insert a termination plug in the DMX OUT connector of the last device on the link
	Incorrect addressing	• Make sure that the address settings are correct
	In case of a setup with multiple devices, one of the devices is defective and disturbs data transmission on the link	• To find out the defective device, bypass one device at a time until normal operation is restored
The connected fixtures do not function	The fixtures are incompatible	• Disconnect the fixtures and check their compatibility
	The fixtures are defective	• Try using different fixtures

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 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 power cables are not damaged and do not show any material fatigue.

8.2.1. Basic Cleaning Instructions

To clean the device, follow the steps below:

01) Disconnect the device from the electrical power supply.
02) Allow the device to cool down for at least 5 minutes.
03) Clean the device with a soft, lint-free cloth.



Attention

- Do not immerse the device in liquid.
- Do not use alcohol or solvents.

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 the 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 manually 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.

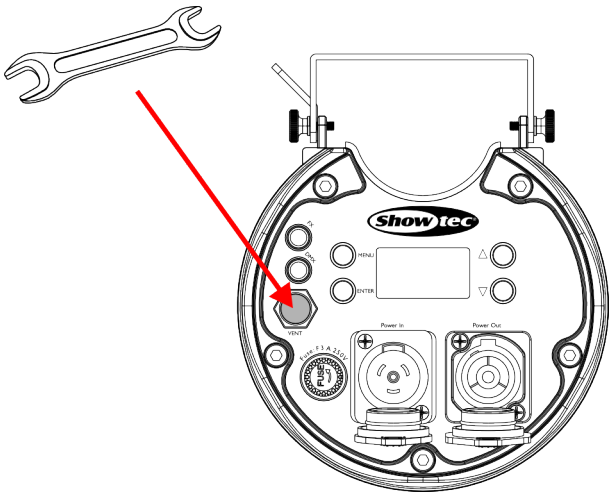
8.3.2. Draining Condensation Water

The TED Pack IP, 5-pin 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 below to remove the condensation water:

01) Carefully remove the **protective vent (05)** with a wrench (16 mm).
02) Let the device operate for 60 minutes.
03) Let the device cool down for 30 minutes.
04) Install the **protective vent (05)** back. Make sure that you do not overtighten them.

Figure 14



9. Deinstallation, Transportation and Storage

9.1. Instructions for Deinstallation

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

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

9.2. Instructions for Transportation

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

9.3. Storage

- Clean the device before storing (see 8.2.1. Basic Cleaning Instructions on page 32).
- Store the device in the original packaging, if possible.

10. Disposal



Correct disposal of this product

Waste Electrical and Electronic Equipment

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

11. Approval

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