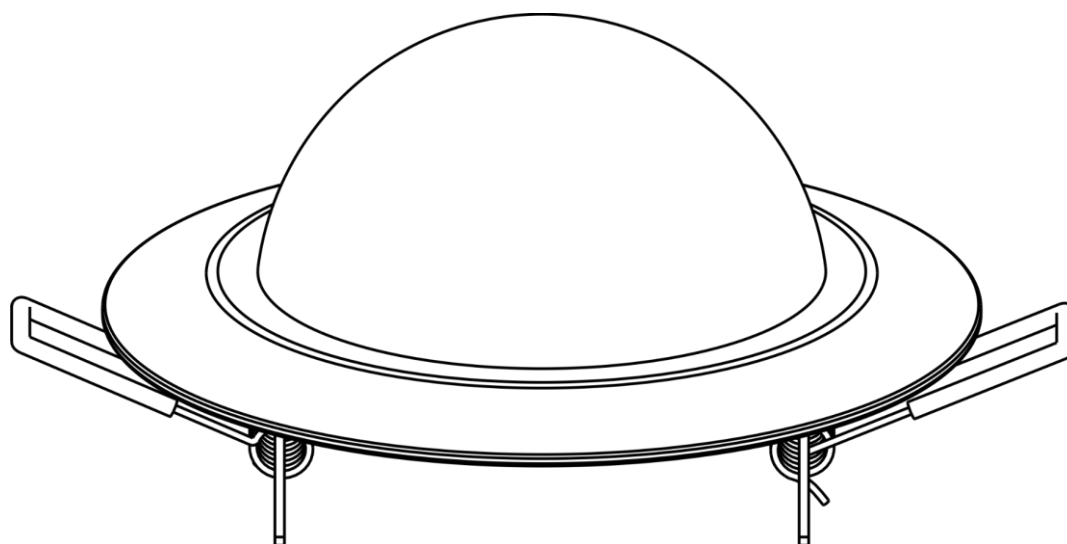




USER MANUAL



ENGLISH

Pixel Dot

V1

Product code: 44530

Preface

Thank you for purchasing this Showtec product.

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

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

This user manual contains information concerning:

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

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

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1. Introduction

1.1. Before Using the Product



Important

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

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

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

Your shipment includes:

- Showtec Pixel Dot
- CAT cable (0,5 m)
- User manual

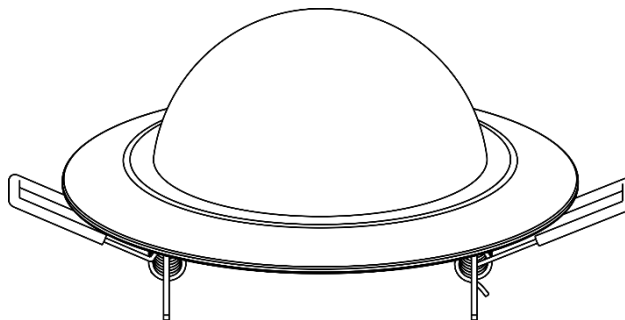


Fig. 01

1.2. Intended Use

This device is intended for professional use as a decorative recessed light. It is suitable only for indoor installation. This device is not suitable for households and for general lighting.

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

1.3. LEDs Lifespan

The light output of the LEDs gradually decreases over time (lumen depreciation). High operating temperatures contribute to this process. You can extend the lifespan of the LEDs by providing adequate ventilation and operating the LEDs at the lowest possible brightness.

1.4. Text Conventions

Throughout the user manual the following text conventions are used:

- References: References to chapters and parts of the device are in bold lettering, for example: "Refer to **2. Safety**", "turn the **adjustment screw (02)**"
- 0–255: Defines a range of values
- Notes: **Note:** (in bold lettering) is followed by useful information or tips

1.5. Symbols and Signal Words

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

Always follow the instructions provided in this user manual.



DANGER

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



WARNING

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



CAUTION

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



Attention

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



Important

Read and observe the instructions in this document.



Provides important information about the disposal of this product.



1.6. Symbols on the Information Label

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

The information label contains the following symbols:



This device is designed for indoor use.



This device shall not be treated as household waste.



This device is IEC protection class III.



Read and observe the instructions in the user manual.

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.



WARNING

Risk of epileptic shock

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



Attention

General safety

- Do not switch the device on and off in short intervals. This decreases the device's life.
- Do not shake the device. Avoid brute force when installing or operating the device.



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 decorative recessed light. Any incorrect use may lead to hazardous situations and result in injuries and material damage.

- This device is not suitable for households and for general lighting.
- This device 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:

- There are no deformations on the housing and the spring-loaded mounting clips.
- There is no damage to the RJ45 connectors.
- There is no damage to the dome diffuser.
- The CAT cables used for connection of the device 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. Maintenance may be carried by ordinary persons. Installation and service shall be carried out only by instructed or skilled persons. Contact your Highlite dealer for more information.

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

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

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

3. Description of the Device

The Showtec Pixel Dot is a decorative recessed light with black housing and white-frosted dome diffuser. It can be installed without any screws or tools. The Pixel Dot only works with the dedicated Pixel Controller. It is suitable only for indoor installation (e.g. in hotels or theaters, in order to create a good ambience in a lobby).

3.1. Overview

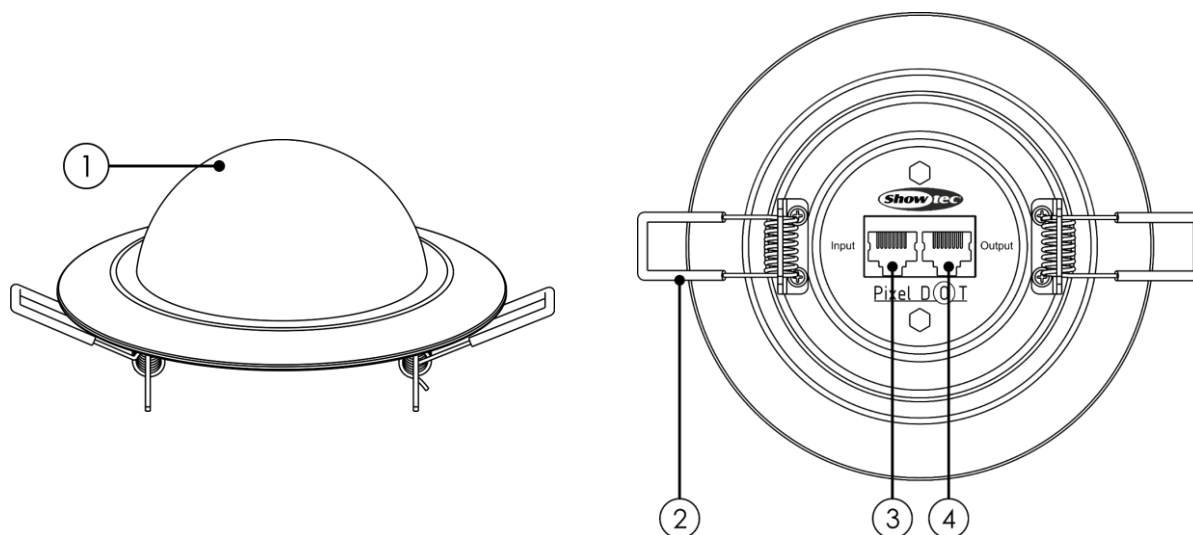


Fig. 02

- 01) Dome diffuser (6 x RGB SMD3535 LED)
- 02) Spring-loaded mounting clips
- 03) RJ45 Pixel Dot connector IN
- 04) RJ45 Pixel Dot connector OUT

3.2. Product Specifications

Model:	Pixel Dot
Physical:	
Dimensions:	140 x 120 x 65 mm (L x W x H)
Weight:	0,1 kg
Optics:	
Light source:	6 x RGB SMD3535 LED
Connections:	
Data connections:	2 x RJ45 connectors IN/OUT
Max. distance from Pixel Dot to the Pixel Controller:	10 m
Construction:	
Housing:	Metal and flame-retardant plastic
Color:	Black
IP rating:	IP20
Thermal:	
Maximum ambient temperature t_a :	40 °C
Maximum housing temperature t_c :	70 °C
Minimum distance:	
Minimum distance from flammable surfaces:	0,8 m
Minimum distance to lighted object:	0,8 m

3.3. Compatibility



Attention

The Pixel Dot is designed to be operated **ONLY** with the Pixel Controller.

The Pixel Dot is delivered without the Pixel Controller. You need to purchase the Pixel Controller separately.

Product code: [44510](#) (Pixel Controller)

3.4. Recommended Software

Product code: [50180](#) (Arkaos LED Master)

Product code: [102101](#) (Arkaos Media Master Express 5.0)

Product code: [102201](#) (Arkaos Media Master Pro 5.0)

3.5. Dimensions

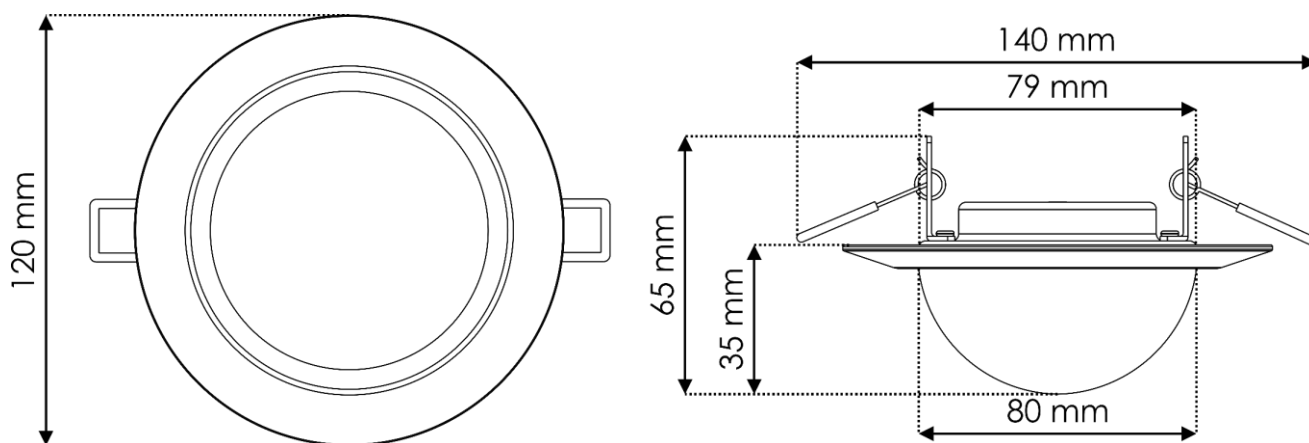


Fig. 03

4. Installation

4.1. Safety Instructions for Installation

If the device is mounted overhead, installation must be carried out only by instructed or skilled persons.

Follow all applicable European, national and local safety regulations concerning electrical installations in buildings and working at heights.

4.2. Personal Protective Equipment

During installation wear personal protective equipment in compliance with the national and site-specific regulations.

4.3. Installation Site Requirements

- The device can be used only indoors.
- The minimum distance to other objects must be bigger than 0,8 m.
- The maximum ambient temperature $t_a = 40\text{ °C}$ must never be exceeded.
- The relative humidity must not exceed 50 % with an ambient temperature of 40 °C.

4.4. Mounting

This device is suitable for recessed mounting on walls, ceilings and other flat surfaces, like panels or boards.

Before installing the Pixel Dot, make sure that the chosen location is free of any obstructions such as pipe work, ducting or wiring. In existing constructions, if no crawlspace is available, use a stud-finding tool to map the wall/ceiling construction and a pipe detector to scan the installation location.



CAUTION

Restrict the access under the work area during mounting and/or demounting.

To mount the device, follow the steps below:

- 01) Mark a cut line on the wall/ceiling. Make sure that the cut line has the correct diameter (\varnothing 79 mm).
- 02) Use a tool to cut the mounting opening.
- 03) Connect the CAT cables to the **RJ45 connectors IN/OUT (03/04)**.
- 04) Fold the **spring-loaded mounting clips (02)** upwards (Fig. 04) and put the Pixel Dot in the mounting opening (Fig. 05).

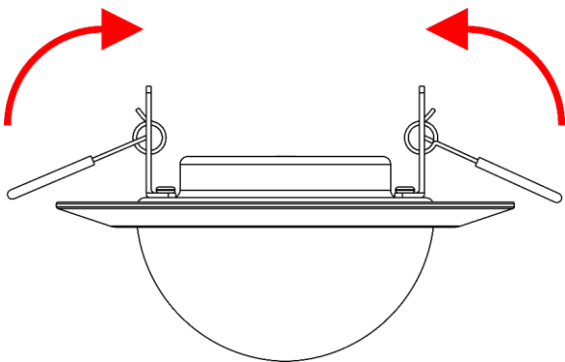


Fig. 04

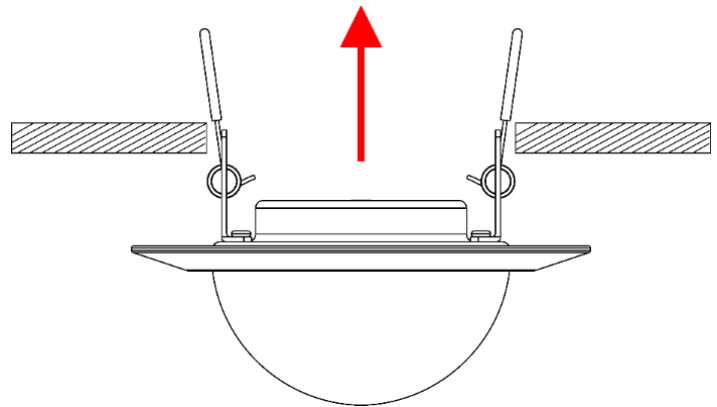


Fig. 05

- 05) Put the Pixel Dot fully in the mounting opening. The **spring-loaded mounting clips (02)** will release and will hold the Pixel Dot in position (Fig. 06).

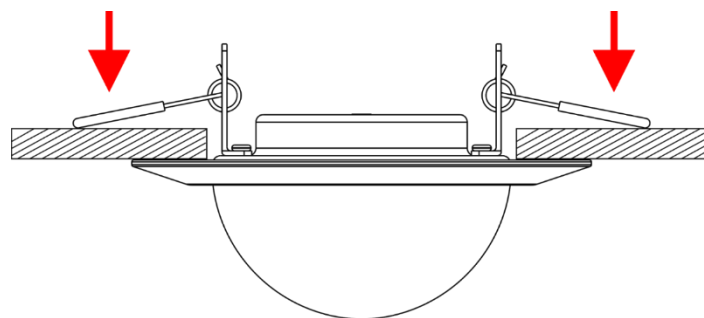


Fig. 06

4.5. Connecting to Power Supply

This device falls under IEC protection class III.

The device only accepts mains power from the Pixel Controller. Do not supply power from any other source to the device.

Connect the Pixel Controller's output port to the Pixel Dot's **RJ45 input connector (03)** with a CAT cable (max. 10 m). For more information about the connection of power supply, see Fig. 07 on page 10 and refer to the user manual of the Pixel Controller (44510).

5. Setup

5.1. Warnings and Precautions



Attention

Connect all cables before supplying power to the system.

Disconnect from the power supply before connecting or disconnecting cables.

5.2. Setup Example

The device is designed to be operated only with the Pixel Controller. You can connect a maximum of 40 devices to each of the 4 output ports on the Pixel Controller (4 outputs x 40 Pixel Dots = 160 Pixel Dots).

- 01) Connect the Pixel Controller's RJ45 output 1 to the first Pixel Dot's RJ45 input connector with a CAT cable.
- 02) Repeat step 1 to connect the Pixel Dots to the Pixel Controller's outputs 2–4.
- 03) Connect the first Pixel Dot's RJ45 output connector to the second Pixel Dot's RJ45 input connector with a CAT cable.
- 04) Repeat step 3 to connect up to 40 Pixel Dots per output, as shown in Fig. 07 on page 10.

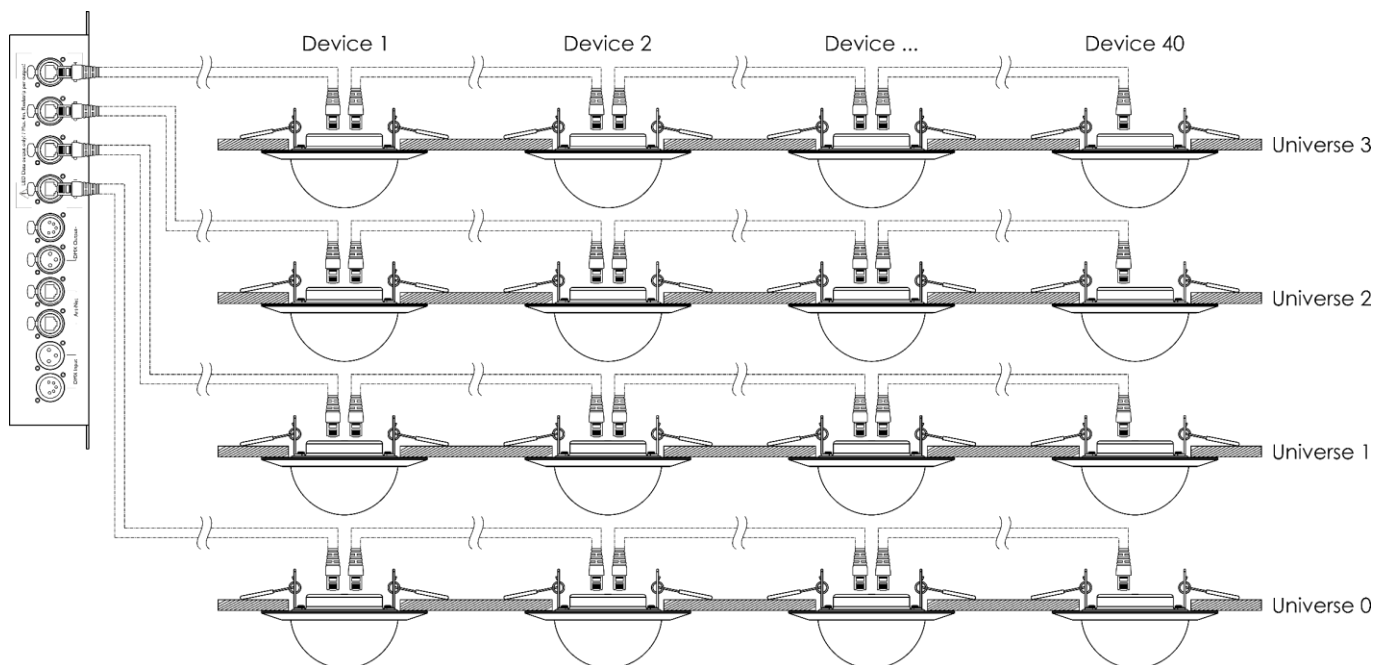


Fig. 07

For more information about the setup, refer to the user manual of the Pixel Controller (44510).

5.3. Maximum CAT Cable Length

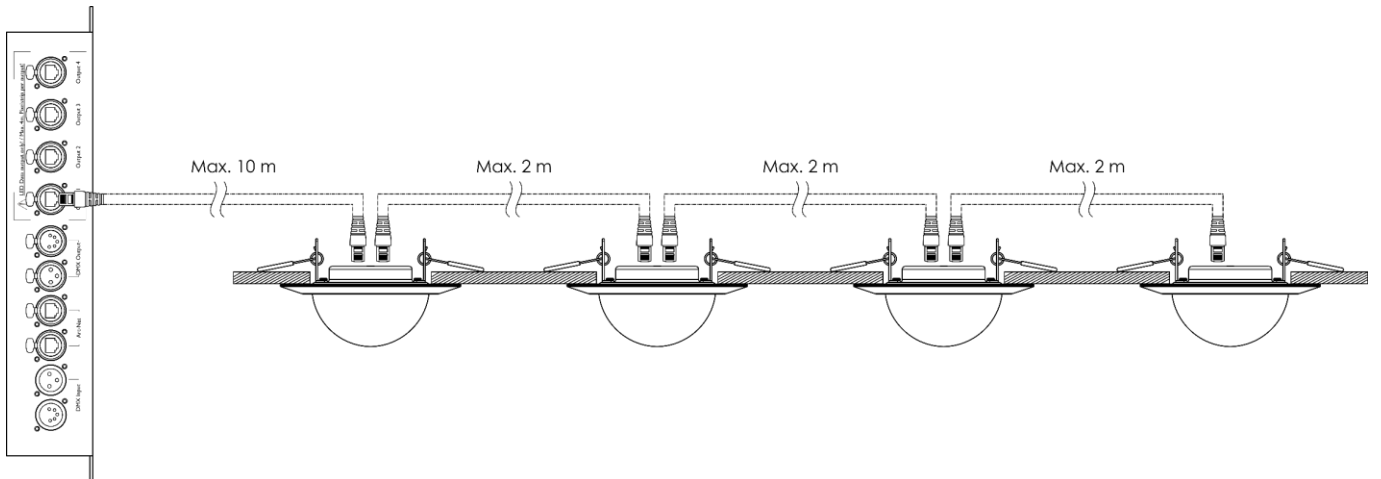


Fig. 08

The maximum allowed CAT cable length:

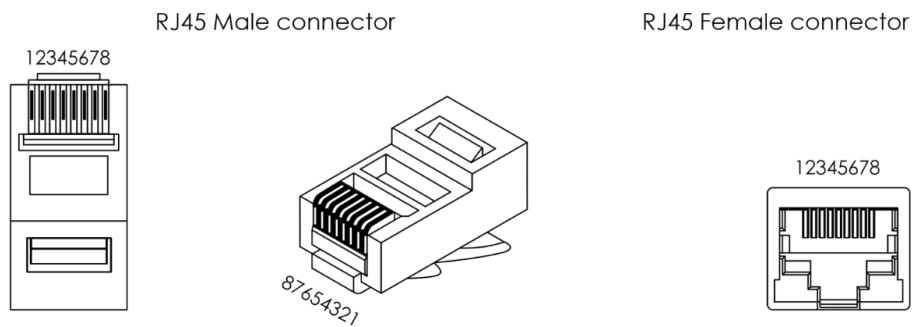
- Between the Pixel Controller and the first Pixel Dot on a data link: 10 m
- Between the Pixel Dots: 2 m

5.4. Network Cables

Attention
Connect all data cables before supplying power.
Disconnect power supply before connecting or disconnecting data cables.

Standard twisted-pair Ethernet cables (CAT-5/CAT-5E/CAT-6) can be used to connect the device to the Pixel Controller or to each other, in a daisy chain.

If you make your own network cables, make sure that you connect the pins and wires correctly as shown in Fig. 09. Use RJ45 (8P8C) connectors and patch the cables according to the T568B color standard.



Color Standard EIA/TIA T568B

	RJ45 Pin #			RJ45 Pin #			
TX+		Orange/White tracer	1	1	Orange/White tracer		PR 2
TX-		Orange	2	2	Orange		
RX+		Green/White tracer	3	3	Green/White tracer		PR 3
		Blue	4	4	Blue		
		Blue/White tracer	5	5	Blue/White tracer		PR 1
RX-		Green	6	6	Green		
		Brown/White tracer	7	7	Brown/White tracer		PR 4
		Brown	8	8	Brown		

Fig. 09

6. Operation

6.1. Safety Instructions for Operation



Attention

This device must be used only for the purposes it is designed for.

This device is intended for professional use as a decorative recessed light. This device is not suitable for households and for general lighting.

When the device is connected to the Pixel Controller, it can be operated with DMX, Art-Net and Kling-Net protocols. To make the whole setup work properly, it is necessary to set the desired setup length in the Pixel Controller's menu. The setup length depends on the number of devices connected to the Pixel Controller. It is possible to operate the devices manually or run the built-in programs over multiple devices, in stand-alone mode.

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

For more information about the operation, refer to the user manual of the Pixel Controller (44510).

7. Troubleshooting

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

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

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

Problem	Probable cause(s)	Solution
The device does not function at all	No power to the device	<ul style="list-style-type: none"> Check if the Pixel Controller is switched on and if the Pixel Dot is connected to the Pixel Controller with a CAT cable
The device does not respond to DMX control	The Pixel Controller is not connected	<ul style="list-style-type: none"> Connect the Pixel Controller
	The Pixel Controller is defective	<ul style="list-style-type: none"> Disconnect the Pixel Controller and contact your Highlite International dealer
The device responds erratically to DMX control	Bad data link connection	<ul style="list-style-type: none"> Examine connections and cables. Correct poor connections. Repair or replace damaged cables
	In case of a setup with multiple devices, one of the devices is defective and disturbs data transmission on the link	<ul style="list-style-type: none"> To find out the defective device, bypass one device at a time until normal operation is restored
No light or LEDs cut out intermittently	LEDs are damaged	<ul style="list-style-type: none"> Disconnect the device and contact your Highlite International dealer

8. Maintenance

Maintenance and cleaning may be carried by ordinary persons.

Follow the maintenance schedule established for the site where the device is installed.

Disconnect the Pixel Dot from the Pixel Controller before servicing or cleaning.

8.1. Basic Cleaning Instructions

The dome diffuser 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 Pixel Controller.

Note: If multiple Pixel Dots are connected, it is not necessary to disconnect Pixel Dots from each other.

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 dome diffuser with a lint-free 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.

8.2. Corrective Maintenance

The device does not contain user-serviceable parts. Do not open the device and do not modify the device.

Refer repairs and servicing to instructed or skilled persons. Contact your Highlite International dealer for more information.

9. Deinstallation, Transportation and Storage

9.1. Instructions for Deinstallation

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

9.2. Instructions for Transportation

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

9.3. Storage

- Clean the device before storing. Follow the cleaning instructions in chapter **8.1. Basic Cleaning Instructions** on page 13.
- Store the device in the original packaging, if possible.

10. Disposal

Correct disposal of this product



Waste Electrical and Electronic Equipment

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

11. Approval



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



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