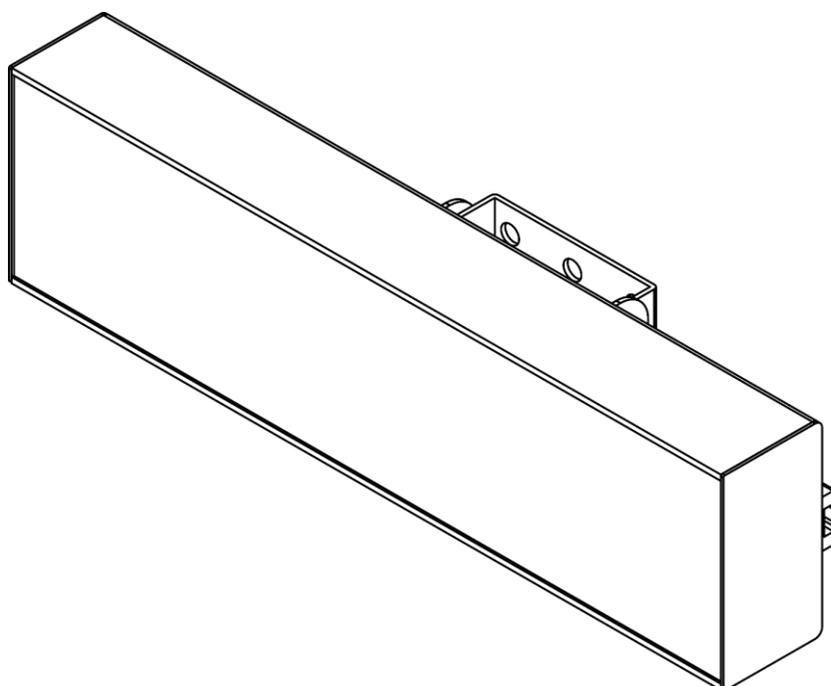




USER MANUAL



ENGLISH

Pixel Panel 1024

V1

Product code: 44560

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 Panel 1024
- Powercon power cable (1,5 m)
- User manual

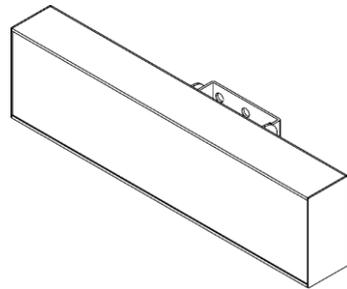


Fig. 01

1.2. Intended Use

This device is intended for professional use as an indoor Pixel panel matrix. It is not suitable for households and for general lighting.

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

1.3. Product Lifespan

This device is not designed for permanent operation. Disconnect the device from the electrical power supply when the device is not in operation. This will reduce the wear and will improve the device's lifespan.

1.4. LEDs Lifespan

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

1.5. Text Conventions

Throughout the user manual the following text conventions are used:

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

1.6. Symbols and Signal Words

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

Always follow the instructions provided in this user manual.



DANGER

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



WARNING

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



CAUTION

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



Attention

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



Important

Read and observe the instructions in this document.



Electrical hazard



Provides important information about the disposal of this product.

1.7. Symbols on the Information Label

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

The information label contains the following symbols:



This device shall not be treated as household waste.



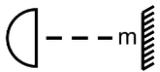
This device is designed for indoor use.



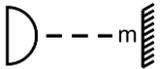
Read and observe the instructions in the user manual.



This device falls under IEC protection class I.



Minimum distance from lighted objects.



Minimum distance from other objects.



Caution: Risk of electric shock. Do not open.

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 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 the device to a dimmer pack.
- Do not switch the device on and off in short intervals. This decreases the device's life.
- Do not shake the device. Avoid brute force when installing or operating the device.
- If the device is dropped or struck, disconnect the device from the electrical power supply immediately.
- If the device is exposed to extreme temperature variations (e.g. after transportation), do not switch it on immediately. Let the device reach room temperature before switching it on, otherwise it may be damaged by the formed condensation.
- If the device fails to work properly, discontinue the use immediately.



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

This device is designed to be used as an indoor Pixel panel matrix. 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 contains a non-user-replaceable light source.
- 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 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. 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 Panel 1024 is a 64x16 RGB Pixel panel matrix with Individual Pixel Control, suitable for indoor venues. It comes with an alignment plate, flexible rigging system and removable black frosted cover. This enables you to easily align multiple Pixel Panels in a row. The Pixel Panel 1024 is controllable by DMX, Master/Slave, Art-Net and Kling-Net, but can also be used as a stand-alone fixture with built-in programs.

Its 30 nice built-in graphics, RGBW colour engine, strobe and dimmer are all controllable in the 8-channel mode, making it a nice addition to your show, even without having to use video software.

3.1. Back View

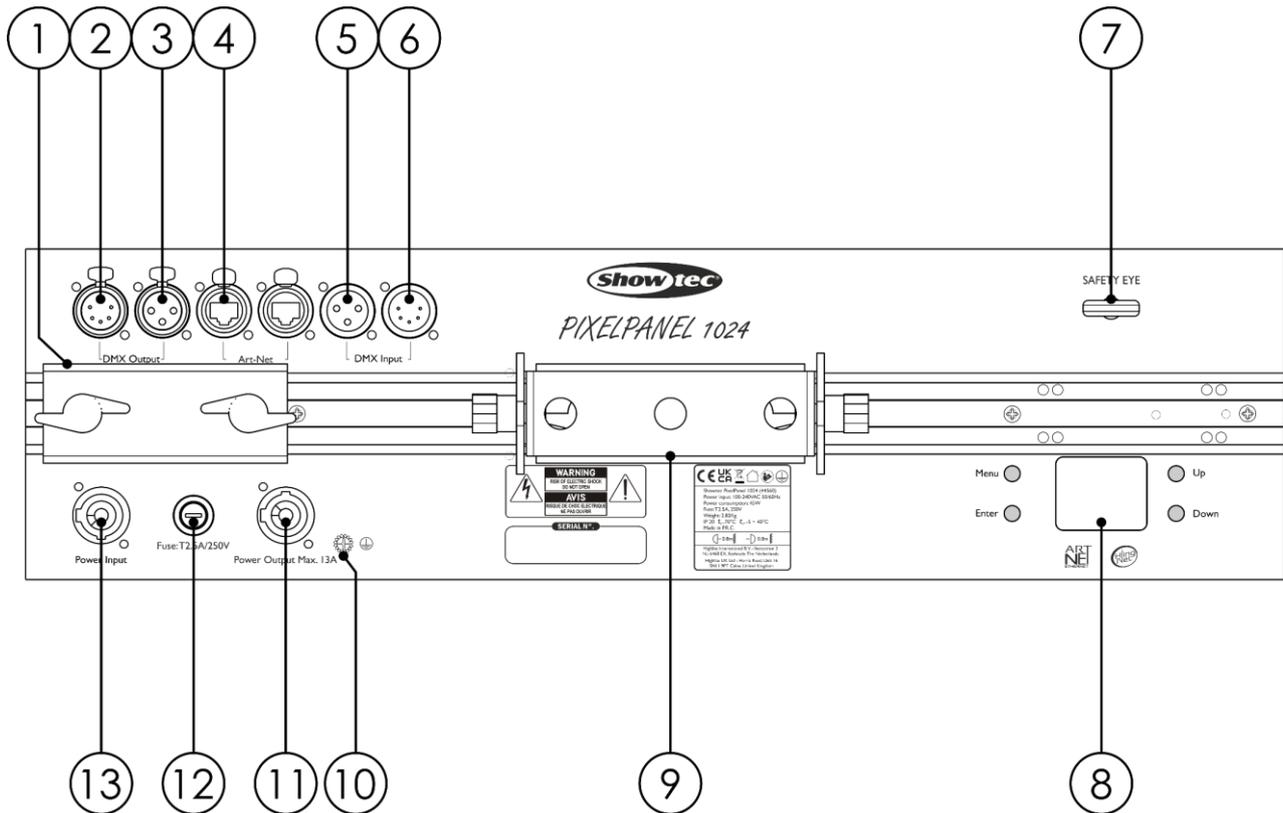


Fig. 02

- 01) Bracket for aligning 2 Pixel Panels
- 02) 5-pin DMX signal connector OUT
- 03) 3-pin DMX signal connector OUT
- 04) 2x RJ45 ArtNet connector
- 05) 3-pin DMX signal connector IN
- 06) 5-pin DMX signal connector IN
- 07) Safety eye
- 08) OLED display + menu buttons
- 09) 2x Adjustment screws + Mounting bracket
- 10) Ground/earth connection
- 11) Pro power connector 100-240V OUT (Gray)
- 12) Fuse T2,5A/250V
- 13) Pro power connector 100-240V IN (Blue)

3.2. Product Specifications

Model:	Pixel Panel 1024
Electrical:	
Input voltage:	100–240 V AC, 50/60 Hz
Power consumption:	53 W
Fuse	T2,5A/250V
Physical:	
Dimensions:	516 x 85 x 136 mm (LxWxH) excluding brackets
Weight:	2,82 kg
Optics:	
Dimmer:	0–100 %
Strobe:	0–25 Hz
Operation and control:	
Control:	Stand-alone (auto, manual) Master/Slave (auto, manual) DMX-512, Art-Net: 8, 3072 channels Kling-Net: Pixel mapping
DMX channels:	8
Control panel:	OLED display
Connections:	
Power connections:	Pro power connectors IN/OUT
Data connections:	3-pin + 5-pin DMX connectors IN/OUT
Signal pinouts:	Pin 1 (ground), pin 2 (-), pin 3 (+) Pin 1 (ground), pin 2 (-), pin 3 (+), pin 4 (N/C), pin 5 (N/C)
Construction:	
Housing:	Aluminum
Color:	Black
IP rating:	IP20
Cooling:	Convection
Thermal:	
Maximum ambient temperature t_a :	40 °C
Minimum Operating Temperature	0 °C
Maximum housing temperature t_c :	65 °C
Minimum distance:	
Minimum distance from flammable surfaces:	0,5 m
Minimum distance to lighted object:	0,8 m

3.3. Dimensions

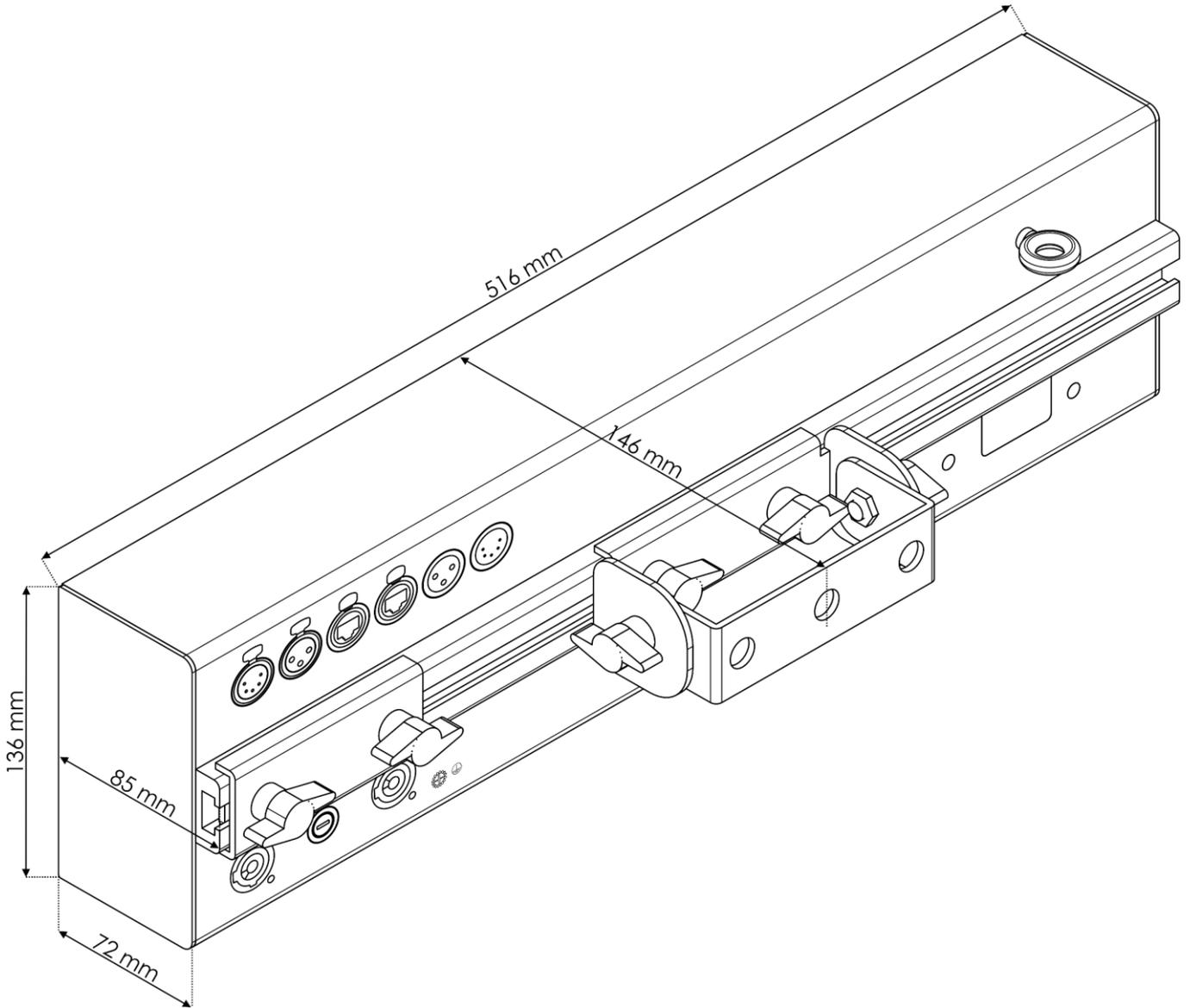


Fig. 03

4. Installation

4.1. Safety Instructions for Installation



WARNING

Incorrect installation can cause serious injuries and damage of property.

If trussing systems are used, installation must be carried out only by instructed or skilled persons.

Follow all applicable European, national and local safety regulations concerning rigging and trussing.

4.2. Personal Protective Equipment

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

4.3. Installation Site Requirements

- The device must be installed only indoors.
- The device can be mounted to a truss or other rigging structure in any orientation.
- The minimum distance to other objects must be bigger than 0,5 m.
- The minimum distance between the light output and the illuminated surface must be bigger than 0,8 m.
- The maximum ambient temperature $t_a = 40\text{ °C}$ must never be exceeded.
- The relative humidity must not exceed 50 % with an ambient temperature of 40 °C .

4.4. Rigging

The device can be 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.

The device is delivered with 1 mounting bracket.



CAUTION

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

To mount the device, follow the steps below:

- 01) Install the clamp, as shown in Fig. 04. Make sure that you use clamps suitable for attaching the device to a truss.

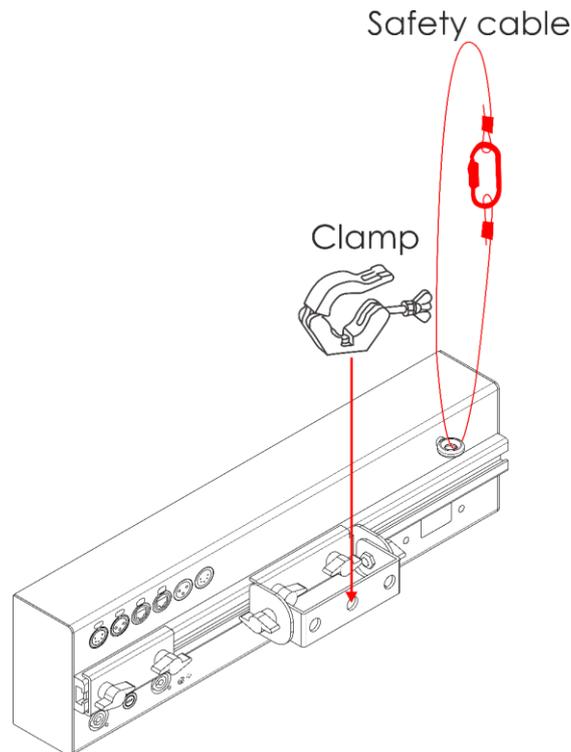


Fig. 04

- 02) Attach the device to the supporting structure. Make sure that the device cannot move freely.
- 03) 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. 04

4.5. Connecting to Power Supply



DANGER
Electric shock caused by short-circuit

The device accepts AC mains power at 100–240 V and 50/60 Hz. Do not supply power at any other voltage or frequency to the device.

This device falls under IEC protection class I. Make sure that the device is always electrically connected to the ground (earth).

Before connecting the device to the socket-outlet:

- Make sure that the power supply matches the input voltage specified on the information label on the device.
- Make sure that the socket-outlet has ground (earth) connection.

Connect the device to the socket-outlet with the power plug. Do not connect the device to a dimmer circuit, as this may damage the device.

4.6. Power Linking of Multiple Devices

This device supports power linking. Power can be relayed to another device via the power OUT connector. Note that the input and the output connectors have different designs: one type cannot be connected to the other.

Power linking of multiple devices must be carried out only by instructed or skilled persons.



WARNING
Incorrect power linking may lead to overload of the electrical circuit and result in serious injuries and damage of property.

To prevent overload of the electrical circuit, when power linking multiple devices:

- Use cables with sufficient current-carrying capacity. The power cable supplied with the device is not suitable for power linking of multiple devices.
- Make sure that the total current draw of the device and all connected devices does not exceed the rated capacity of the power cables and the circuit breaker.
- Do not link more devices on one power link than the maximum recommended number.

Maximum recommended number of devices:

- at 100–120 V: 12 devices Pixel Panel 1024
- at 200–240 V: 24 devices Pixel Panel 1024

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 Pixel Panel is not connected to a controller or to other devices, it functions as a stand-alone device. It can be operated in auto mode or manually.

For more information about the control modes, refer to **6.6.3.5. Auto Program** on page 32 or **6.6.3.6. Manual Color Mode** on page 33.

5.3. DMX Connection

5.3.1. DMX-512 Protocol

You need a DMX serial data link to run light shows of one or more devices using a DMX-512 controller or to run synchronized shows of two or more devices set in a master/slave operating mode.

The Pixel Panel has 3-pin and 5-pin DMX signal IN and OUT connectors.

The pin assignment is as follows:

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

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

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

Note:

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

5.3.2. DMX Cables

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

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

When you make your own DMX cables, make sure that you connect the pins and wires correctly as shown in Fig. 05.

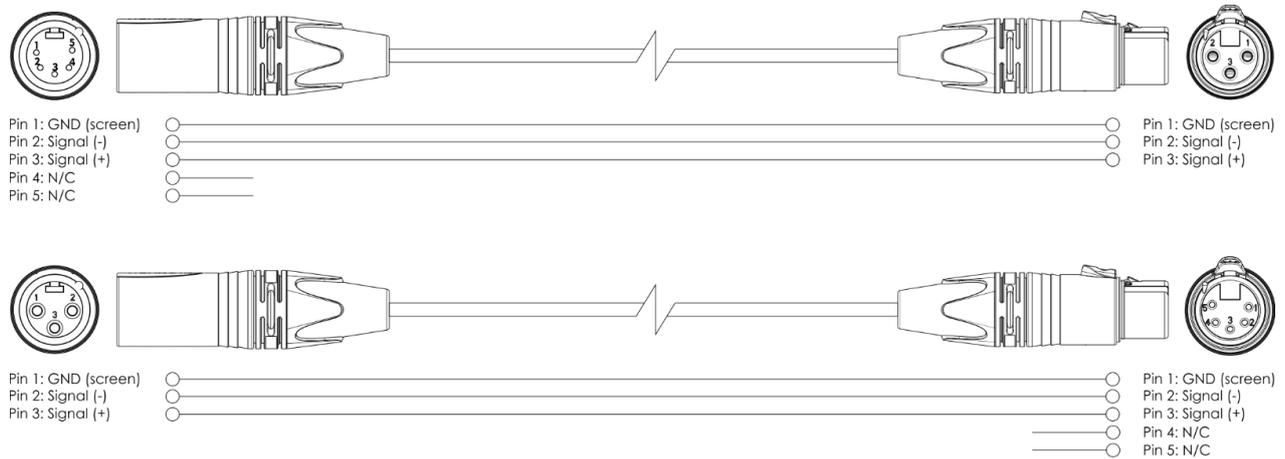


Fig. 05

5.3.3. Master/Slave Setup

The Pixel Panel 1024 supports master/slave control mode. To connect multiple devices in master/slave setup, follow the steps below:

- 01) Connect the first device's DMX OUT connector to the second device's DMX IN connector.
- 02) Repeat step 1 to connect all devices as shown in Fig. 06.
- 03) Connect a DMX terminator (120 Ω resistor) to the DMX OUT connector of the last device in the setup.
- 04) Set the first device on the data link as a master device. See **6.6.3.4 Master/Slave** on page 32, **6.6.3.5 Auto Program** on page 32 or **6.6.3.6. Manual Color Mode** on page 33 for more information.
- 05) Set the remaining devices to slave mode. See **6.6.3.4 Master/Slave** on page 32, **6.6.3.5 Auto Program** on page 32 or **6.6.3.6. Manual Color Mode** on page 33 for more information.

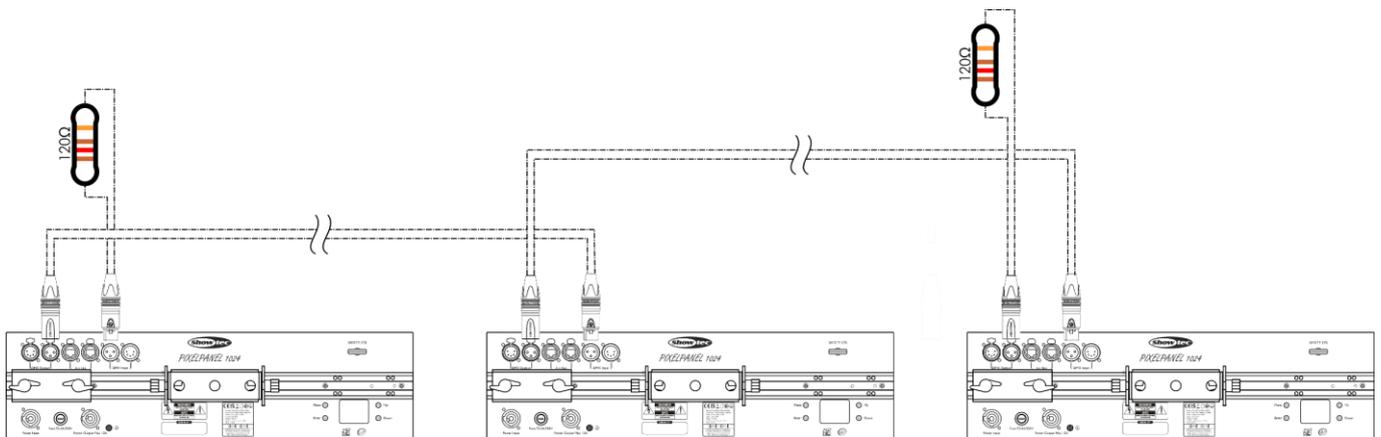


Fig. 06

5.3.4. DMX Linking

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

- 01) Use a 3-pin/5-pin DMX cable to connect the DMX OUT connector of the lighting controller to the DMX IN connector of the first device.
- 02) Connect the first device's DMX OUT connector to the second device's DMX IN connector with a 3-pin DMX cable.
- 03) Repeat step 2 to connect all devices in a daisy-chain as shown in Fig. 07.
- 04) Connect a DMX terminator (120 Ω resistor) to the DMX OUT connector of the last device on the data link.

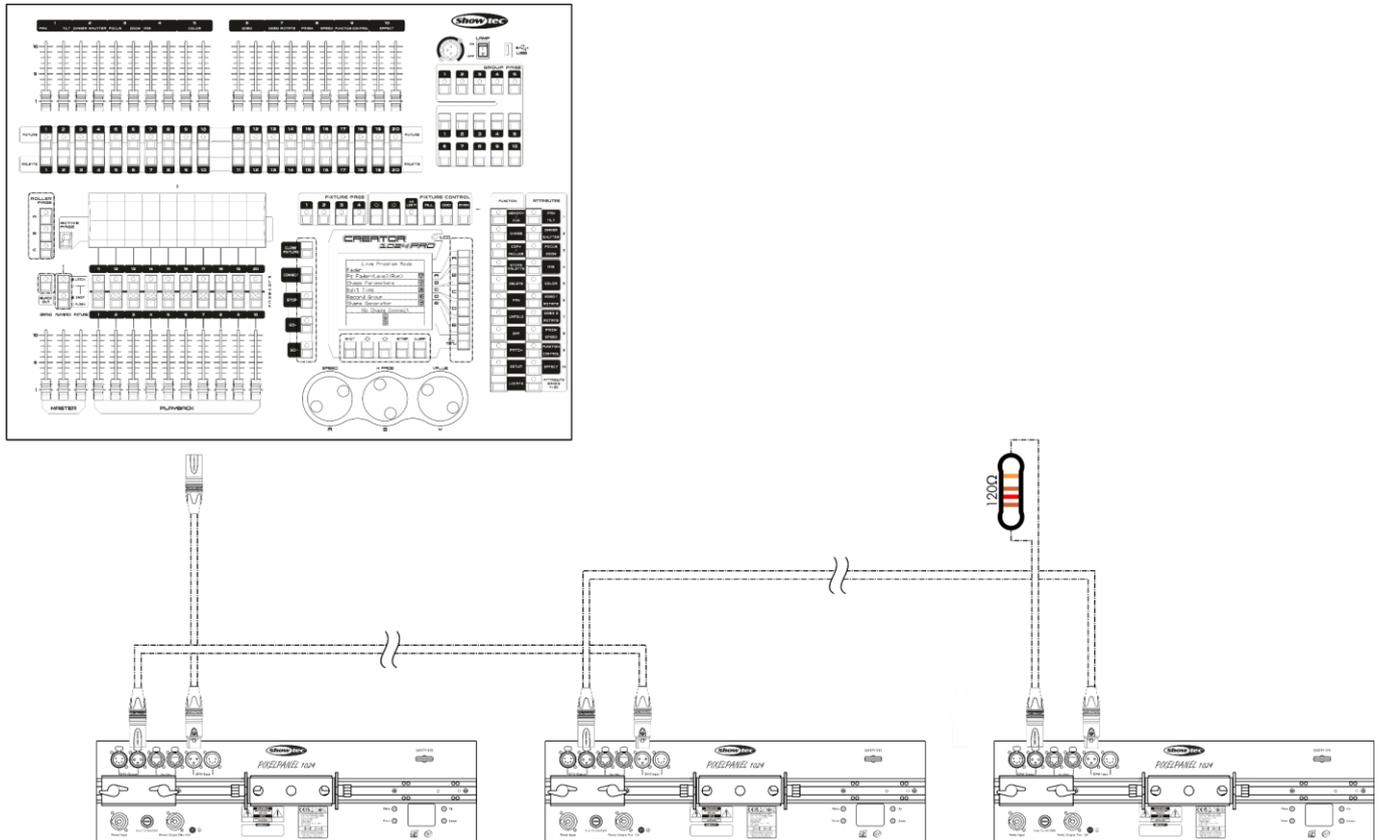


Fig. 07

5.3.5. DMX Addressing

In a setup with multiple devices, make sure that you set the DMX starting address of each device correctly. The Pixel Panel 1024 has 1 personality: 8 channels

If you want to connect multiple devices on one data link and use them in 8-channel mode, for example, follow the steps below:

- 01) Set the starting address of the 1st device on the data link to 1 (001).
- 02) Set the starting address of the 2nd device on the data link to 9 (009), as $1 + 8 = 9$.
- 03) Set the starting address of the 3rd device on the data link to 17 (017) as $9 + 8 = 17$.
- 04) Continue assigning the starting addresses of the remaining devices by adding each time 8 to the previous number.

Make sure that you do not have any overlapping channels in order to control each Pixel Panel 1024 correctly. If two or more devices are addressed similarly, they will work similarly.

5.4. Ethernet Connection



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

5.4.1. Art-Net and Kling-Net Protocols

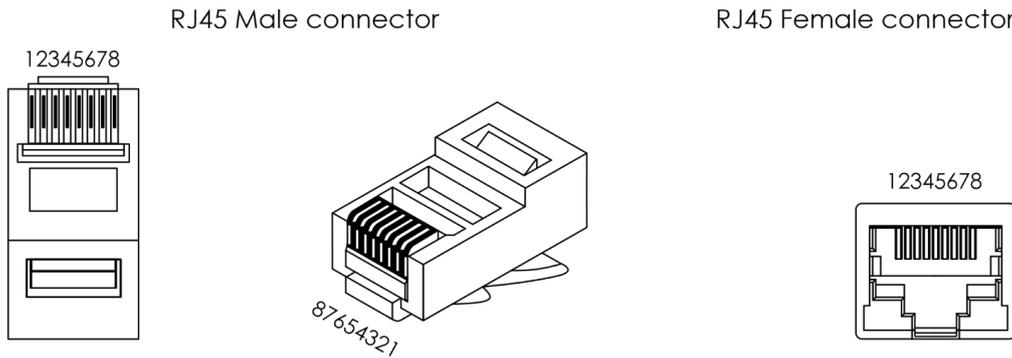
Art-Net is a protocol that uses TCP/IP to transfer large amount of DMX-512 data over an Ethernet network. Art-Net 4 can support up to 32768 universes. Art-Net™ Designed by and Copyright Artistic Licence Holdings Ltd.

Kling-Net is a protocol that allows the creation of a network of LED display devices, which are automatically configured. Kling-Net is independent of DMX-512 or Art-Net protocols. It uses a standard Ethernet network.

5.4.2. Network Cables

Standard twisted-pair Ethernet cables (CAT-5/CAT-5E/CAT-6) can be used to connect the device to a computer or to a lighting controller that supports Art-Net or Kling-Net.

If you make your own network cables, make sure that you connect the pins and wires correctly as shown in Fig. 08. Use RJ45 (8P8C) connectors and patch the cables according to the T568B color standard.



Color Standard EIA/TIA T568B

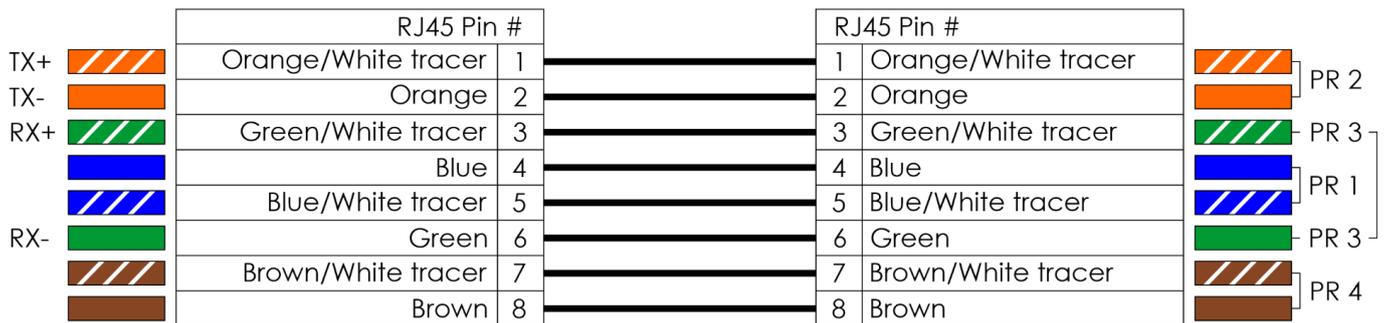


Fig. 08

5.4.3. Art-Net/Kling-Net Setup

The Pixel Panel 1024 has 2 RJ45 connectors. Either connector can be used as an input and as throughput. To connect multiple devices in an Art-Net/Kling-Net setup, follow the steps below:

- 01) Use a CAT-5/CAT-5E/CAT-6 cable to connect the RJ45 connector of the computer/lighting controller to one of the RJ45 connectors of the first device.
- 02) Connect the other RJ45 connector of the first device to the RJ45 connector of the second device with a CAT-5/CAT-5E/CAT-6 cable.
- 03) Repeat step 2 to connect all devices as shown in Fig. 09.

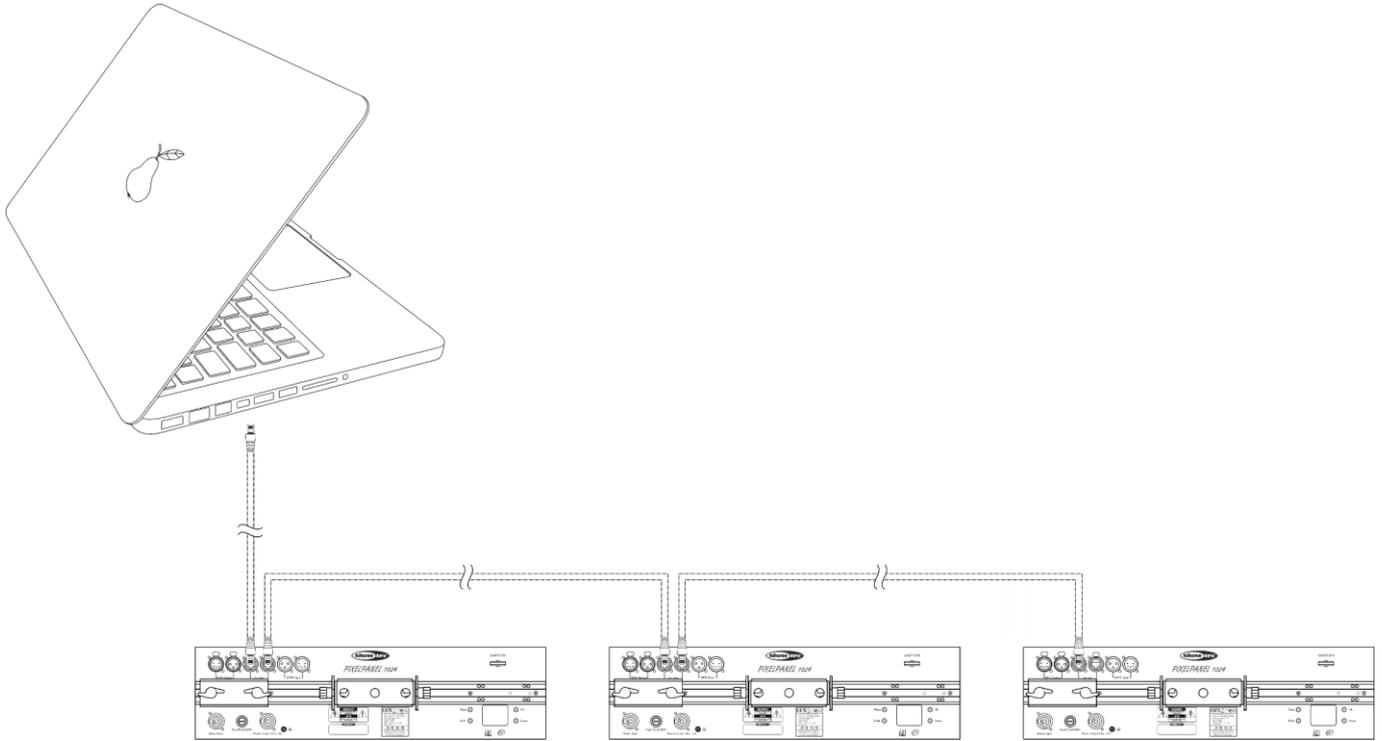


Fig. 09

5.4.4. Art-Net Settings

To run your device using Art-Net protocol:

- 01) Configure the network address of your computer/lighting controller in the correct range (IP 2.x.x.x, 10.x.x.x or 192.168.x.x and Subnet 255.0.0.0). To change the IP address of the device, refer to **6.6.2.1. Set Manual/DHCP** on page 29 and **6.6.2.2. Set IP Address** on page 29. To change the Subnet mask, refer to **6.6.2.3. Set Net Mask** on page 29. Make sure that all devices in the network have unique IP addresses.

Note: Art-Net 4 supports both DHCP and static addressing.

- 02) Select Art-Net Protocol in the Set Net Protocol menu. See **6.6.3.2. Art-Net** on page 31 or **6.6.3.3. Kling-Net** on page 31.
- 03) Set the universe. See **5.4.6. Universe Numbering** on page 22.

5.4.5. Kling-Net Settings

To run your device using Kling-Net protocol:

- 01) Install any Kling-Net-based software on your computer.
- 02) Make sure that your computer has a fixed IP address.
- 03) Select KlingNet IP in the Set IP Mode menu. See **6.6.2.1. Set Manual/DHCP** on page 29. The Kling-Net-based software will automatically configure the IP address of the device.
- 04) Select KlingNet Protocol in the Set Net Protocol menu. See **6.6.3.2. Art-Net** on page 31 or **6.6.3.3. Kling-Net** on page 31.
- 05) Map the device following the instructions of the Kling-Net-based software.

5.4.6. Universe Numbering

If you want to connect more than 5 devices on one data link and use them in 101-channel mode, you will need to address them on different universes.

- 01) Set the DMX starting address of the first 5 devices. Follow the instructions in **5.3.5. DMX Addressing** on page 18.
- 02) Set the universe number of the 6th device to 001 and the DMX starting address to 001.
- 03) Continue addressing the devices, each time increasing the universe number, after the limit of 512 channels for one universe has been reached.

There are 512 channels (1–512) in one universe. 16 consecutive universes (0–15) make up one sub-net. 16 sub-nets (0–15) make up one net. There are in total 128 nets (0–127).

Note:

- In Art-Net, universes are called Port Address and number from 0 to 32767. There are 32768 unique numbers.

15-bit Port Address	Net (0–127)	Sub-net (0–15)	Universe (0–15)
0	0	0	0
1	0	0	1
2	0	0	2
...
15	0	0	15
16	0	1	0
17	0	1	1
...
31	0	1	15
32	0	2	0
33	0	2	1
...
255	0	15	15
256	1	0	0
257	1	0	1
...
32766	127	15	14
32767	127	15	15

Make sure that you do not have any overlapping channels in order to control each Pixel Panel 1024 correctly. If two or more devices are addressed similarly, they will work similarly.

- Note:** If you are using an Art-Net controller that supports Art-Net I or Art-Net II, the Art-Net net must be set to 0. The net number is available in Art-Net 3 and higher versions of the Art-Net protocol.

5.5. Connecting to a Network

5.5.1. KlingNet settings

- 01) Install any KlingNet-based software on your PC (Windows or Mac), for example [50180](#) - Arkaos LED
- 02) Connect the Pixel Panel.
- 03) Connect the power supply to the Pixel Panel.
- 04) Switch the Pixel Panel ON.
- 05) Make sure that your PC has a **fixed IP Address (IP:10.x.x.x. and subnet:255.0.0.0.)**. The Pixel Panel does not require any further network setting adjustments.
- 06) Connect the Pixel Panel with a CAT-5/CAT-6 cable to your computer.
Once you have connected the devices, they will automatically be recognized by the software.
- 07) Map the devices, using the "drag-and-drop" method, by placing the fixtures in "on-screen" interface in the right position. It only requires a few minutes and, once it is done, the system is completely set up.
- 08) When creating large setups, it is recommended to use a 16-bit, high speed ethernet switch to distribute the KlingNet data signal.

5.5.2. ArtNet settings

- 01) Install any ArtNet-based software on your PC (Windows or Mac) or use a light controller which supports ArtNet.
- 02) Connect the power supply to the Pixel Panel.
- 03) Connect the device's Ethernet connector (**06**) to your software/light controller's Ethernet connector, by using a CAT-5/CAT-6 cable.
- 04) Set the IP address of your software/light controller to **2.x.x.x** or **10.x.x.x**, depending on the ArtNet settings.
- 05) Set the subnet mask to **255.0.0.0.** on both – the Pixel Panel and your software/light controller. Make sure that all the fixtures in the network have a **unique IP address.**
- 06) If you want to connect more than one fixture, operating in 3072-channel mode, follow the example below.

Example: The Pixel Panel, 3072-channel mode.

- 01) Make sure that each connected Pixel Panel has a **unique IP address.**
- 02) Make sure that the subnet mask on each device is set to **255.0.0.0.**
- 03) Set the universe of the first Pixel Panel to **1.**
- 04) Set the first Pixel Panel's DMX address to **001.**
- 05) Due to the fact, that the Pixel Panel has 3072 DMX channels, there is no space to connect the second Pixel Panel in the same DMX universe/DMX line. It is caused by the DMX channel limit, which is 512.
- 06) In order to solve this problem, set the universe of the second Pixel Panel to **9** and its DMX address to **001.**
- 07) In order to connect the third Pixel Panel, set its universe to **17** and its DMX address to **001.**
- 08) When connecting multiple Pixel Panels, you can repeat steps 6 and 7 up to 15 times, each time inserting ascending universe numbers (as there are 15 universes available).
- 09) If you want to connect more than 15 devices, set the net value of the 16th Pixel Panel to **2.**
- 10) Now, you are able to connect another 15 Pixel Panels, as each separate net is equipped with 15 universes. There are 15 nets in total (the number of nets depends on the software which you use).
- 11) Using your software (for example [102111](#) - Arkaos Media Master Express 6), map all the connected devices, using the settings described above.
- 12) The Pixel Panels are now ready for use.
- 13) When creating large setups, it is recommended to use a 16-bit, high speed ethernet switch to distribute the ArtNet data signal.

5.5.3. Software for controlling

In combination with Arkaos or DMT Software, you are able to play videos over the Pixel Panel (pixelmapping). You only have to connect all the Pixel Panels and run your software.

[50180](#) - Arkaos LED Master

An all-in-one solution to run LED light shows for everyone. Originally designed around KlingNet, this fast and easy application will take your LED show to the next level.

[102111](#) - Arkaos Media Master Express 6

The latest update of the successful media server software.

[102211](#) - Arkaos Media Master Pro 6

Arkaos Media Master Pro 6: PRO DMX video software for lighting designers.

6. Operation

6.1. Safety Instructions for Operation



Attention

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

This device is intended for professional use as an indoor Pixel panel matrix. It is not suitable for households and for general lighting.

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



Attention

Power supply

Before connecting the device to the power supply, make sure that the current, voltage and frequency match the input voltage, current and frequency specified on the information label on the device.

6.2. Control Mode

The Pixel Panel supports the following control modes:

- Stand-alone: Auto operation mode (built-in chases), manual operation
- Master/Slave: Auto operation mode (built-in chases), manual operation
- DMX-512, Art-Net: 8, 3072 channels
- Kling-Net: Pixel mapping

For more information about how to connect the devices, refer to **5. Setup** on pages 16–24.

To operate the device manually as a stand-alone device or in a master/slave setup:

- 01) Adjust the levels for red, green, blue and strobe in the Manual Control menu. See **6.6.3.6. Manual Color Mode** on page 33 for more information.

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

- 01) Select one of the 30 built-in chases in the Auto Control menu. See **6.6.3.5. Auto Program** on page 32 for more information.
- 02) Set the speed of the built-in chase in the Auto Control menu. See **6.6.3.5. Auto Program** on page 32 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 **5.3.5. DMX Addressing** on page 18 and **6.6.1. DMX Address** on page 28.
- 02) Select the DMX channel mode. See **6.6.3. Control Modes** on page 30 for more information. See **6.7. DMX Channels** on pages 36–37 for complete overview of all DMX channels.

6.3. Control Panel

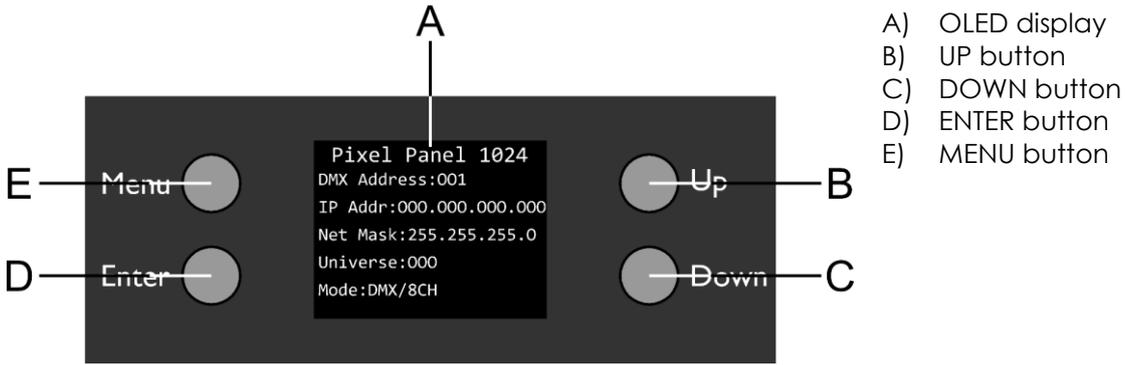
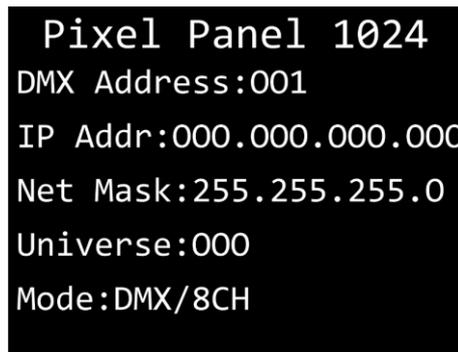


Fig. 10

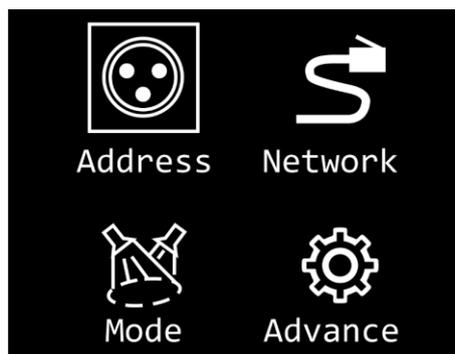
- Use the **MENU** button to exit the current submenu, to return to the main menu and to return to the start screen.
- Use the **UP/DOWN** buttons to navigate through the menus or to increase/decrease numeric values.
- Use the **ENTER** button to open the desired menu, to confirm your choice or to set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

6.4. Start-up

Upon start-up the display will show the following screen:

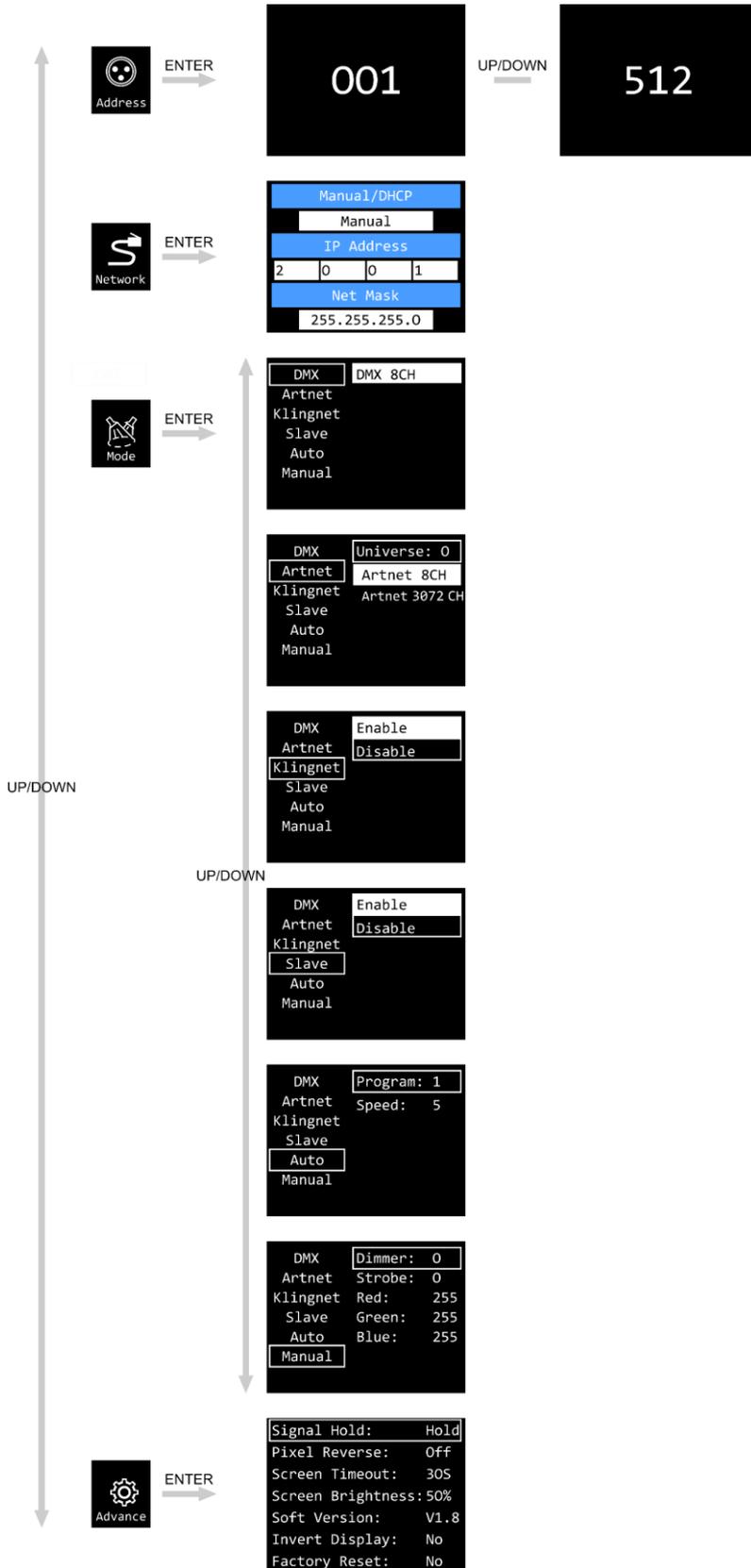


When you press the **MENU** button, the Pixel Panel will show its main menu :



Note: If no button is pressed, after 20 seconds of inactivity the display will return to the start screen and after 10 more seconds it will turn off. Press any button to turn the display on.

6.5. Menu Overview



6.6. Main Menu Options

The main menu has the following options:



DMX address



Network Settings



DMX / Art-Net / Kling-Net / Slave / Auto / Manual



Signal Hold / Pixel Reverse / Screen Timeout / Screen Brightness / Software Version / Invert Display / Factory Reset

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

6.6.1. DMX Address

In this menu you can set the DMX starting address of the device.



- 01) While in main menu, press the **UP/DOWN** buttons to select .
- 02) Press the **ENTER** button to confirm and open this menu.
- 03) Press the **UP/DOWN** buttons to select the DMX starting address. The selection range is 001–512.
- 04) Press the **ENTER** button to confirm the selection.

6.6.2. Network Settings

With this menu you can set the network settings.



- 01) While in main menu, press the **UP/DOWN** buttons to select
- 02) Press the **ENTER** button to confirm. The display will show:

Manual/DHCP			
Manual			
IP Address			
2	0	0	1
Net Mask			
255.255.255.0			

6.6.2.1. Set Manual/DHCP

- 01) Press the **UP/DOWN** buttons to select MANUAL/DHCP.
- 02) Press the **ENTER** button to open the menu.
- 03) Press the **UP/DOWN** buttons to select one of the 2 options:
 - MANUAL: You can enter a desired IP address and net mask.
 - DHCP: The device will receive its network settings from a DHCP server. **If you choose this option, you will not be able to adjust any settings in this menu**
- 04) Press the **ENTER** button to confirm your choice.

6.6.2.2. Set IP Address

- 01) Press the **UP/DOWN** buttons to select IP ADDRESS.
- 02) Press the **ENTER** button to open the menu.
- 03) Press the **UP/DOWN** buttons to adjust the 1st section of the IP address.
- 04) Press the **ENTER** button to save changes.
- 05) Press the **UP/DOWN** buttons to select the 2nd section of the IP address.
- 06) Press the **ENTER** button to open the menu.
- 07) Press the **UP/DOWN** buttons to adjust the 2nd section of the IP address.
- 08) Press the **ENTER** button to save changes.
- 09) Repeat the process to adjust the remaining 2 sections of the IP address.

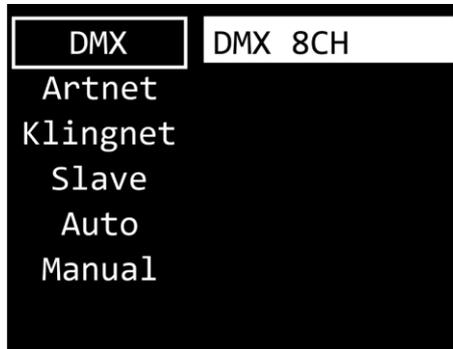
6.6.2.3. Set Net Mask

- 01) Press the **UP/DOWN** buttons to select NET MASK.
- 02) Press the **ENTER** button to open the menu.
- 03) Press the **UP/DOWN** buttons to select one of the 3 net mask options:
 - 255.0.0.0
 - 255.255.0.0
 - 255.255.255.0
- 04) Press the **ENTER** button to confirm your choice.

6.6.3. Control Modes



- 01) While in main menu, press the **UP/DOWN** buttons to select
- 02) Press the **ENTER** button to open the menu. The display will show:



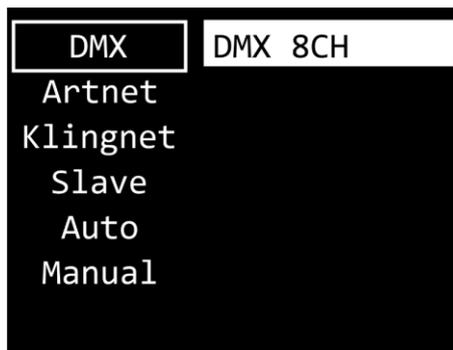
- 03) Press the **UP/DOWN** buttons to select one of the 6 modes:
 - DMX
 - ART-NET
 - KLING-NET
 - SLAVE
 - AUTO
 - MANUAL

- 04) Press the **ENTER** button to open the desired menu.

6.6.3.1. DMX

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

- 01) When the display shows DMX, press the **ENTER** button to open the menu. The display will show:



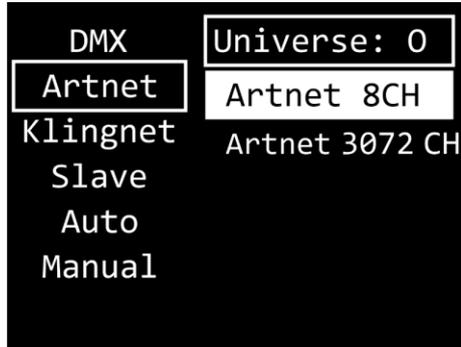
- 02) Press the **UP/DOWN** buttons to select 1 channel mode:
 - 8 channels
- 03) Press the **ENTER** button to confirm your choice.

Note: The Pixel Panel does not automatically detect whether DMX data signal is received or not. Activate DMX control.

6.6.3.2. Art-Net

In this menu you can set the Art-Net settings.

01) When the display shows ARTNET, press the **ENTER** button to open the menu. The display will show:



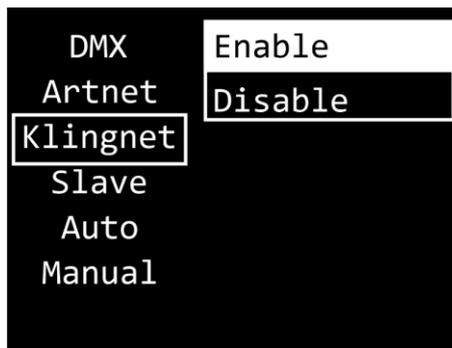
- 02) Press the **UP/DOWN** buttons to select UNIVERSE and press the **ENTER** button to confirm.
 03) Press the **UP/DOWN** buttons to set the universe. The adjustment range is 0–255.
 04) Press the **ENTER** button to save changes.
 05) Press the **UP/DOWN** buttons to select the channel mode selection field and press the **ENTER** button to confirm.
 06) Press the **UP/DOWN** buttons to select one of the 2 channel modes:
- 8 channels
 - 3072 channels
- 07) Press the **ENTER** button to confirm your choice.

Note: The Pixel Panel does not automatically detect whether Art-Net data signal is received or not. Activate Art-Net control.

6.6.3.3. Kling-Net

In this menu you can set the Kling-Net settings.

01) When the display shows KLINGNET, press the **ENTER** button to open the menu. The display will show:



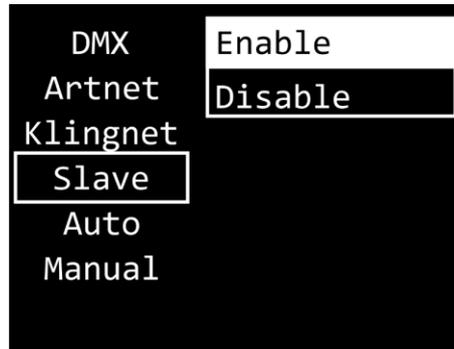
- 02) Press the **UP/DOWN** buttons to select the ENABLE/DISABLE field. Press the **ENTER** button to confirm.
 03) Press the **UP/DOWN** buttons to select ENABLE or DISABLE. If you choose ENABLE, Kling-Net protocol will be active.
 04) Press the **ENTER** button to confirm your choice.

Note: The Pixel Panel does not automatically detect whether Kling-Net data signal is received or not. Activate Kling-Net control.

6.6.3.4. Master/Slave

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

01) When the display shows SLAVE, press the **ENTER** button to open the menu. The display will show:



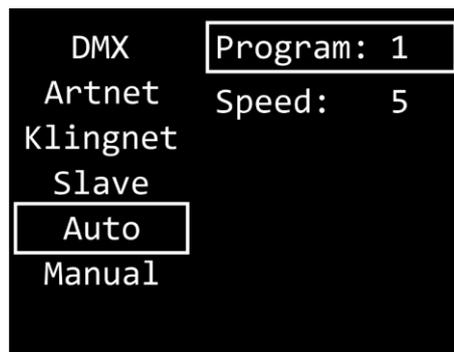
02) Press the **UP/DOWN** buttons to select ENABLE or DISABLE. If you choose ENABLE, the device will react the same as the master device.

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

6.6.3.5. Auto Mode

In this menu you can run the desired built-in programs.

01) When the display shows AUTO, press the **ENTER** button to open the menu. The display will show:



02) Press the **UP/DOWN** buttons to select PROGRAM and press the **ENTER** button to confirm.

03) Press the **UP/DOWN** buttons to select one of the 30 built-in programs.

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

05) Press the **UP/DOWN** buttons to select SPEED and press the **ENTER** button to confirm.

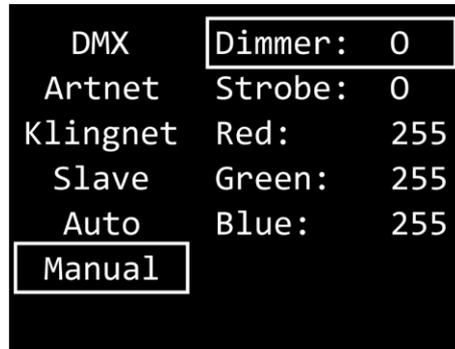
06) Press the **UP/DOWN** buttons to set the program speed. The adjustment range is 1–9, from slow to fast.

07) Press the **ENTER** button to save changes.

6.6.3.6. Manual Mode

In this menu you can run the Manual mode.

01) When the display shows MANUAL, press the **ENTER** button to open the menu. The display will show:



02) Press the **UP/DOWN** buttons to select one of the 5 options:

- DIMMER: Dimmer brightness (0–255, from dark to brightest)
- STROBE: Strobe frequency (0–4, strobe OFF; 5–255, from low to high frequency)
- RED: Red color brightness (0–255, from dark to brightest)
- GREEN: Green color brightness (0–255, from dark to brightest)
- BLUE: Blue color brightness (0–255, from dark to brightest)

03) Press the **ENTER** button to open the desired menu.

04) Press the **UP/DOWN** buttons to adjust the values.

05) Press the **ENTER** button to save changes.

06) You can combine RED, GREEN and BLUE to create an infinite range of colors.

6.6.4. Advanced Settings



- 01) While in main menu, press the **UP/DOWN** buttons to select **Advance**.
- 02) Press the **ENTER** button to open the menu. The display will show:

Signal Hold:	Hold
Pixel Reverse:	Off
Screen Timeout:	30S
Screen Brightness:	50%
Soft Version:	V1.8
Invert Display:	No
Factory Reset:	No

- 03) Press the **UP/DOWN** buttons to select one of the 7 modes:
- SIGNAL HOLD
 - PIXEL REVERSE
 - SCREEN TIMEOUT
 - SCREEN BRIGHTNESS
 - SOFTWARE VERSION (V1.8)
 - INVERT DISPLAY
 - FACTORY RESET
- 04) Press the **ENTER** button to open the desired option.
- 05) Press the **UP/DOWN** buttons to change settings.
- 06) Press the **ENTER** button to confirm your choice.

6.6.4.1. Signal Hold

In this menu you can determine the behaviour of the Pixel Panel in case of a DMX failure.

- 01) Press the **ENTER** button to open menu Fan Mode.
- 02) Press the **UP/DOWN** buttons to select one of the 2 options:
- **BLACK:** If DMX signal is lost, the device will black its output out.
 - **HOLD:** If DMX signal is lost, the device will use the last successfully received DMX signal and will continue using it until DMX signal reception is restored, in order to ensure uninterrupted performance.
- 03) Press the **ENTER** button to confirm your choice.

6.6.4.2. Pixel Reverse

In this menu you can set the Pixel Reverse.

- 01) Press the **UP/DOWN** buttons to select one of the 2 options:
- **ON:** Pixel Reverse is enabled.
 - **OFF:** Pixel Reverse is disabled.
- 02) Press the **ENTER** button to confirm your choice.

6.6.4.3. Screen Timeout

In this menu you can set the amount of time after which the display will turn off, when no button is pressed.

- 01) Press the **UP/DOWN** buttons to select one of the 3 options: 30 seconds/60 seconds/NEVER.
- 02) Press the **ENTER** button to confirm your choice.

6.6.4.4. Screen Brightness

In this menu you can set the screen brightness.

- 01) Press the **UP/DOWN** buttons to select one of the 4 options: 25/50/75/100 %, from dark to brightest.
- 02) Press the **ENTER** button to confirm your choice.

6.6.4.5. Software Version

This menu shows the version of the currently installed software.

6.6.4.6. Invert Display

In this menu you can set the display inversion.

- 01) Press the **UP/DOWN** buttons to select one of the 2 options:
 - YES: Display inversion is enabled.
 - NO: Display inversion is disabled.
- 02) Press the **ENTER** button to confirm your choice.

6.6.4.7. Factory Reset

In this menu you can restore the default factory settings.

- 01) Press the **UP/DOWN** buttons to select one of the 2 options:
 - YES: Restore the default factory settings.
 - NO: Keep the current settings.
- 02) Press the **ENTER** button to confirm your choice.

6.7. DMX Channels

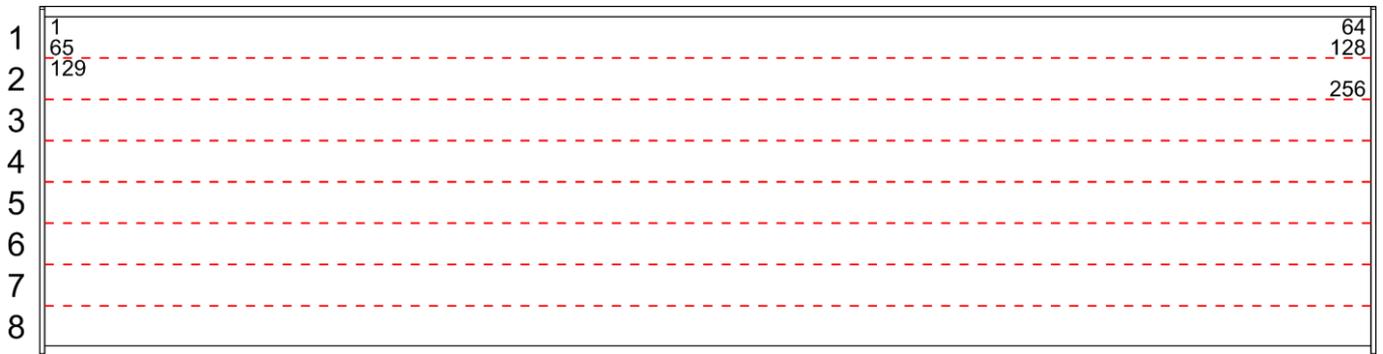
6.7.1. 8 Channels

8 CH	Function	Value	Setting
1	Master Dimmer	000–255	From low to high intensity (0–100 %)
2	Strobe	000–004	Not functional
		005–255	From low to high frequency
3	Red	000–255	From low to high intensity (0–100 %)
4	Green	000–255	From low to high intensity (0–100 %)
5	Blue	000–255	From low to high intensity (0–100 %)
6	Built-in programs	000–015	Not functional
		016–023	Program 1
		024–031	Program 2
		032–039	Program 3
		040–047	Program 4
		048–055	Program 5
		056–063	Program 6
		064–071	Program 7
		072–079	Program 8
		080–087	Program 9
		088–095	Program 10
		096–103	Program 11
		104–111	Program 12
		112–119	Program 13
		120–127	Program 14
		128–135	Program 15
		136–143	Program 16
		144–151	Program 17
		152–159	Program 18
		160–167	Program 19
		168–175	Program 20
		176–183	Program 21
		184–191	Program 22
		192–199	Program 23
		200–207	Program 24
		208–215	Program 25
		216–223	Program 26
		224–231	Program 27
		232–239	Program 28
		240–247	Program 29
248–255	Program 30 (Random program 1 to 29 automatically changes every 30-3 seconds, depending on the interval time set in CH 7)		
7	Program speed	000–255	If CH 6 is set between 16–247, then CH 7 is the Program Speed, from slow to fast If CH 6 is set between 248–255, then CH 7 is the interval time for Program 30, from 30 seconds to 3 seconds (value 000–255)
8	Program Direction	000–127	Normal Direction
		128–255	Direction Reverse

6.7.2. 3072 Channels

Note: In 3072-channel mode, the numbers of LEDs progress vertically. See below:

There are 8 rows, each row containing 128 pixels divided into 2 horizontal sections (64 pixels each). There is a total of 8 rows x 128 pixels = 1024 pixel possibilities subdivided into 3 colors (Red, Green, Blue), resulting in a total of 3072 different colored pixels.



7. Troubleshooting

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

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

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

Problem	Probable cause(s)	Solution
The device does not function at all	No power to the device	<ul style="list-style-type: none"> Check if power is switched on and cables are plugged in
	Main fuse is blown	<ul style="list-style-type: none"> Replace the fuse. See 8.2.1. Replacing the Fuse on page 40
The device does not respond to DMX control	The controller is not connected	<ul style="list-style-type: none"> Connect the controller
	The signal is reversed. The 3-pin/5-pin DMX OUT of the controller does not match the DMX IN of the device	<ul style="list-style-type: none"> Install a phase-reversing cable between the controller and the device
	The controller is defective	<ul style="list-style-type: none"> Try using another controller
The device responds erratically to DMX control	Bad data link connection	<ul style="list-style-type: none"> Examine connections and cables. Correct poor connections. Repair or replace damaged cables
	The data link is not terminated with a 120 Ω termination plug	<ul style="list-style-type: none"> Insert a termination plug in the DMX OUT connector of the last device on the link
	Incorrect addressing	<ul style="list-style-type: none"> Check address settings and correct, if necessary
	In case of a setup with multiple devices, one of the devices is defective and disturbs data transmission on the link	<ul style="list-style-type: none"> To find out the defective device, bypass one device at a time until normal operation is restored
No light or LEDs cut out intermittently	LEDs are damaged	<ul style="list-style-type: none"> Disconnect the device and contact your Highlite International dealer
	The power supply settings do not match local AC voltage and frequency	<ul style="list-style-type: none"> Disconnect the device. Check the settings and correct, if necessary

8. Maintenance

8.1. 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 Pixel Panel is not cracked or damaged.
- The power cables are not damaged and do not show any material fatigue.

8.1.1. Basic Cleaning Instructions

The Pixel Panel 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 Pixel Panel with a damp cloth. Use a mild detergent solution.
- 05) Dry the Pixel Panel 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.

8.2. 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.

8.2.1. 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) Loosen the fuse cover with a screwdriver and remove the fuse holder.
- 03) If the fuse is brown or unclear, it is burned out. Remove the old fuse.
- 04) 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.
- 05) Replace the fuse holder in the opening and tighten the fuse cover.

9. Deinstallation, Transportation and Storage

9.1. Instructions for Deinstallation



WARNING

Incorrect deinstallation can cause serious injuries and damage of property.

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

9.2. Instructions for Transportation

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

9.3. Storage

- Clean the device before storing. Follow the cleaning instructions in chapter **8.1.1. Basic Cleaning Instructions** on page 39.
- 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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