Pixel Bubble 75 Set V1

Product code: 44570

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.

Design and product specifications are subject to change without prior notice.

For the latest version of this document or other language versions, please visit our website www.highlite.com or contact us at service@highlite.com.

Table of contents

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 Bubble 75 Set
- Powercon power cable (1,5 m)
- User manual
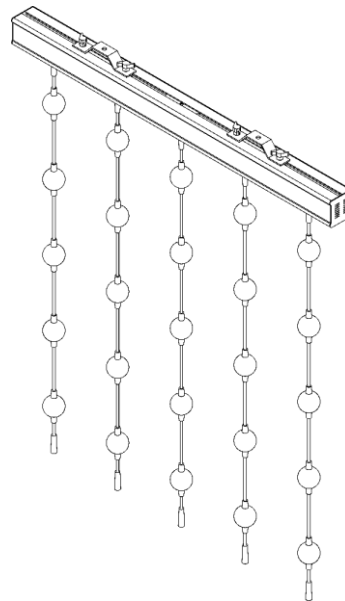
Fig. 01

1.2. Intended Use

This device is intended for professional use as an indoor LED ball 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.
	Max. 6m Pixel Bubble string per output
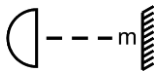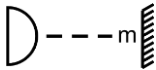
2. Safety

> **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.

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> ⚠️ **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 LED ball 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 Bubble 75 Set is a matrix of 75x 50 mm (2") white frosted RGB balls with Individual Pixel Control, suitable for creating a nice indoor visual effect. The set includes a 5-output PSU and 15 daisy-chainable 1-m (3.28 ft) strings, each equipped with 5 multi-colour LED balls. Additional strings are optional since each PSU-output can power to up to 6 daisy-chained strings. The Pixel Bubble 75 Set has an innovative rigging system for easy truss rigging. Also, it has multiple controlling options, like DMX, Master/Slave, Art-Net, Kling-Net and can be used as a stand-alone fixture with built-in programs.

3.1. Back View
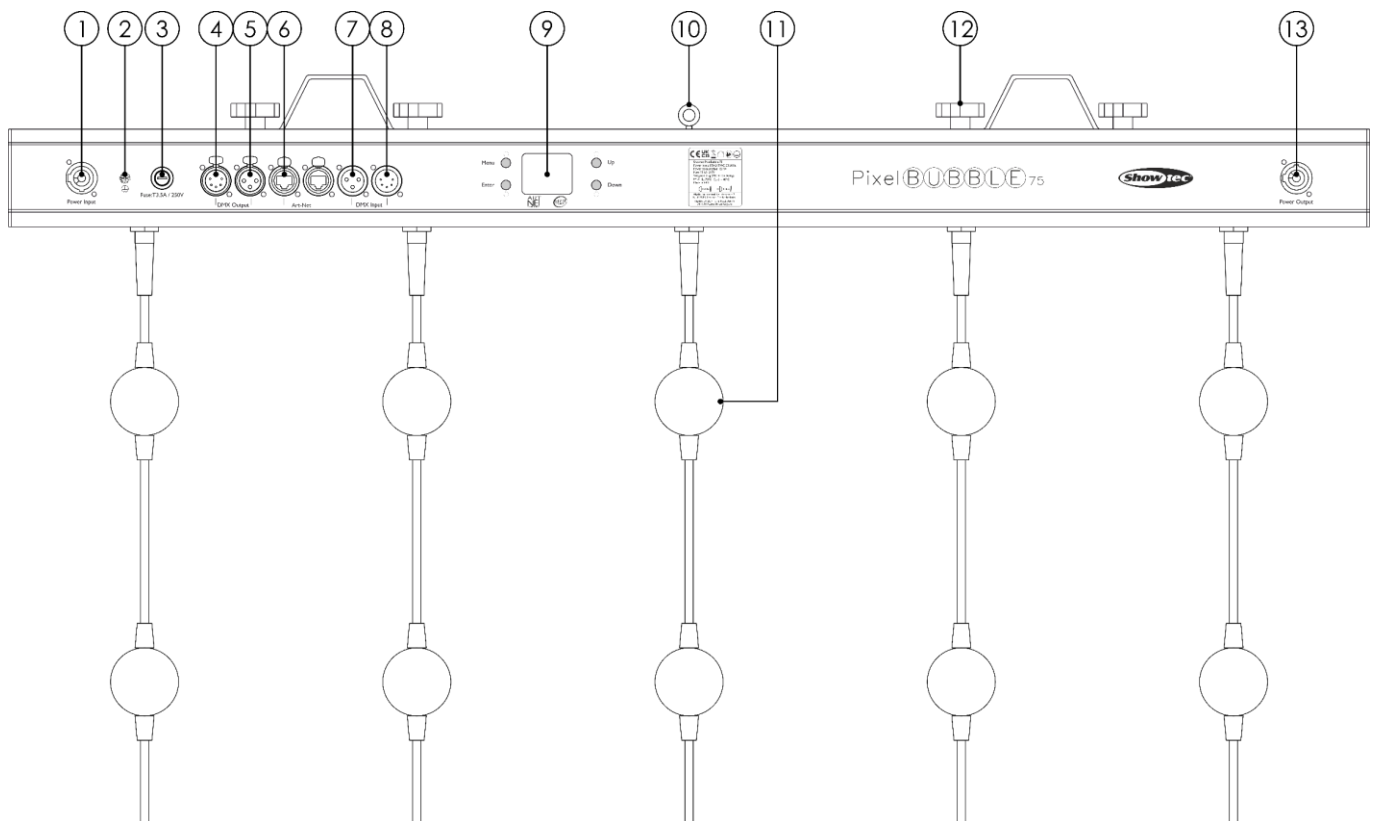
Fig. 02

01) Pro power connector 100-240V IN (Blue)
02) Ground/earth connection
03) Fuse T3,5A/250V
04) 5-pin DMX signal connector OUT
05) 3-pin DMX signal connector OUT
06) 2x RJ45 ArtNet connector
07) 3-pin DMX signal connector IN
08) 5-pin DMX signal connector IN
09) LCD display + menu buttons
10) Safety eye
11) 4x Adjustment screw + 2x Mounting bracket
12) 5x 50 mm (2") RGB balls per string
13) Pro power connector 100-240V OUT (Gray)

3.2. Product Specifications

Model:	Pixel Bubble 75 Set

Electrical:	
Input voltage:	100–240 V AC, 50/60 Hz
Power consumption:	121 W
Fuse	T3,5A/250V

Physical:	
Dimensions:	1005 x 71 x 75 mm (LxWxH) excluding brackets
Weight:	3,12 kg excl. balls, 6,3 kg incl. 5 rows of balls

Optics:	
Light source:	5x 50 mm (2") RGB balls per string
	Multi-colour LED Ball Matrix
	Individual Pixel Control
	15x 1 m (3.28 ft) daisy chainable strings
	PSU with 5 string outputs, each up to 6 m (19.7 ft)
	Expandable with up to 15 additional strings
Dimmer:	0–100 %
Strobe:	0–20 Hz

Operation and control:	
Control:	Stand-alone (auto, manual)
	Master/Slave (auto, manual)
	DMX-512, Art-Net: 7, 450 channels
	Kling-Net: Pixel mapping
DMX channels:	7, max 450 channels (1string 75 channels, 2 strings 150 channels, 3 strings 225 channels, 4 strings 300, 5 strings 375 channels, 6 strings 450 channels)
Control panel:	LED display

Connections:	
Power connections:	Pro power connectors IN/OUT
Data connections:	3-pin + 5-pin DMX connectors IN/OUT
Signal pinouts:	Pin 1 (earth), pin 2 (-), pin 3 (+)
	Pin 1 (ground), pin 2 (-), pin 3 (+), pin 4 (N/C), pin 5 (N/C)

Construction:	
Housing:	Metal
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
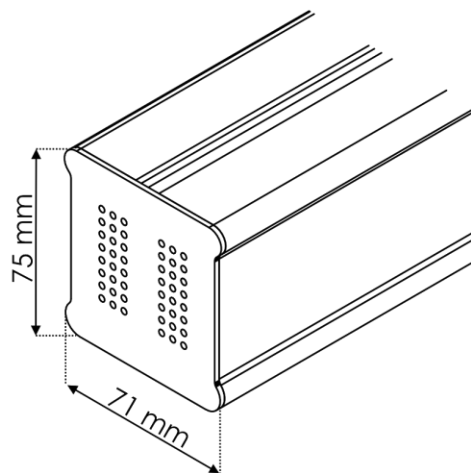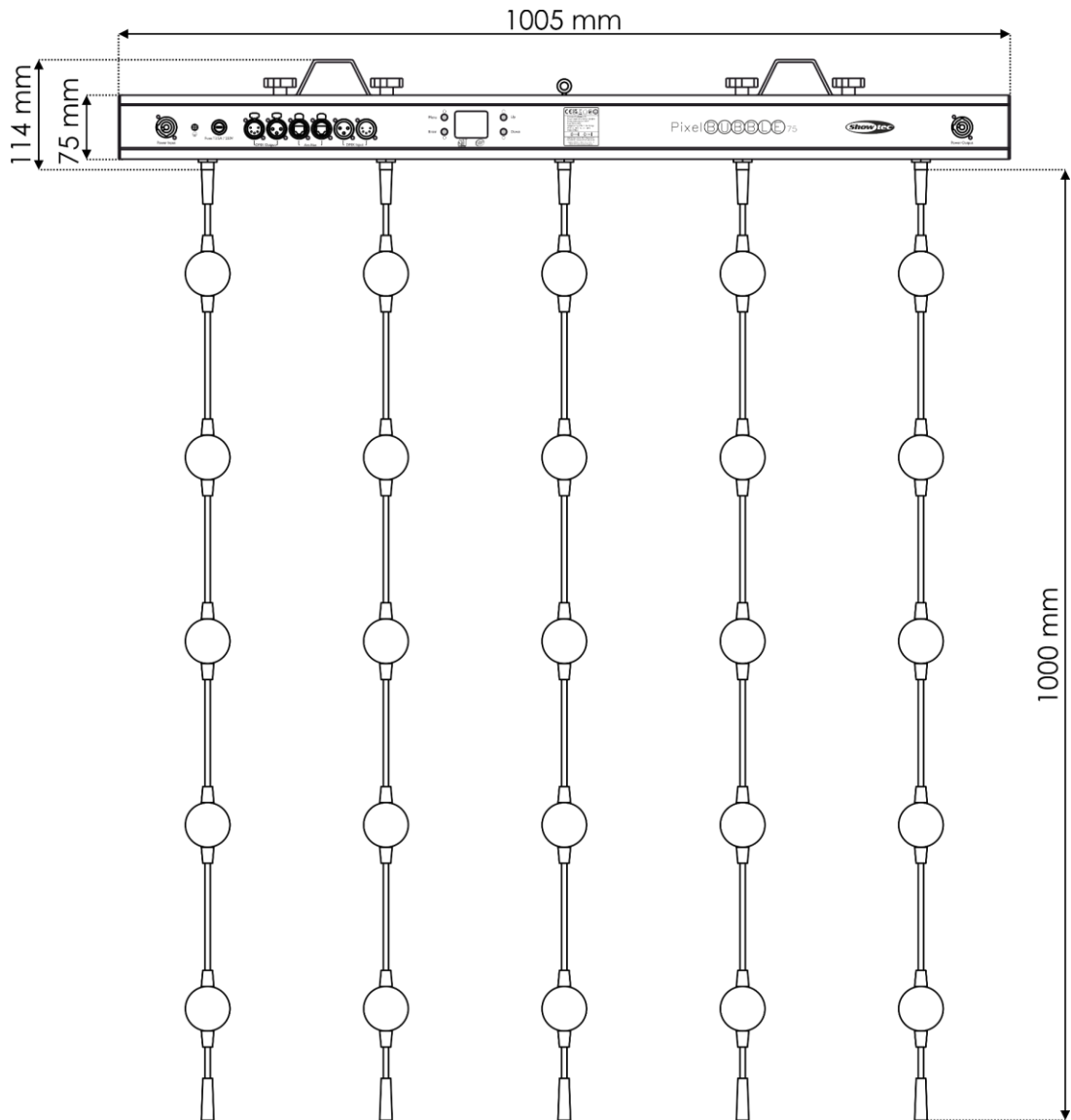
Fig. 03

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 ta = 40 °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 2 mounting brackets.

> ⚠ **CAUTION**
> **Restrict the access under the work area during rigging and/or derigging.**

To mount the device, follow the steps below:

01) Install the clamps, as shown in Fig. 06. Make sure that you use clamps suitable for attaching the device to a truss.
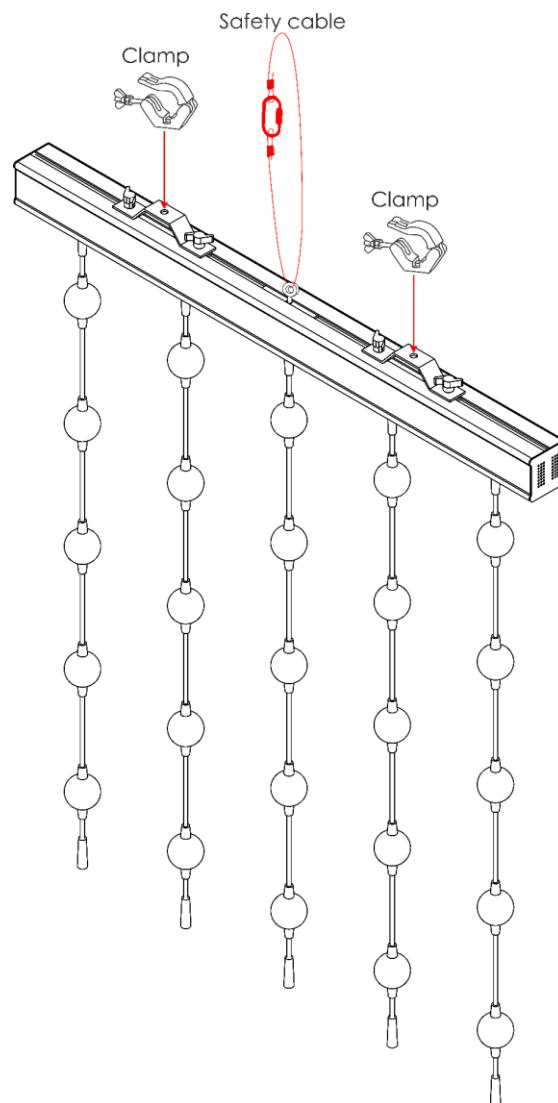
Fig. 04

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 (10)**, 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: 8 devices Pixel Bubble 75
- at 200–240 V: 16 devices Pixel Bubble 75

4.7. Installation of multiple LED strings

This device supports linking of multiple strings of balls. Signals can be relayed to another device via the connector. Note that the input and the output connectors have different designs: one type cannot be connected to the other.

01) It is possible to connect multiple LED strings **(**44571**)** to the Pixel Bubble 75.
02) You can connect up to 6 strings per output (30 strings in total).
03) The number of strings is determined by the **Length** settings in menu **6.6.3.1. Set String** on page 31.
04) While connecting final LED strings, make sure that each final LED string on each output should be equipped with a terminator. **Always choose the appropriate LED strings.**

⚠ **You can connect from 1 up to 6 LED strings per output (30 strings in total). Make sure that each final LED string on each output is equipped with a terminator.** ⚠
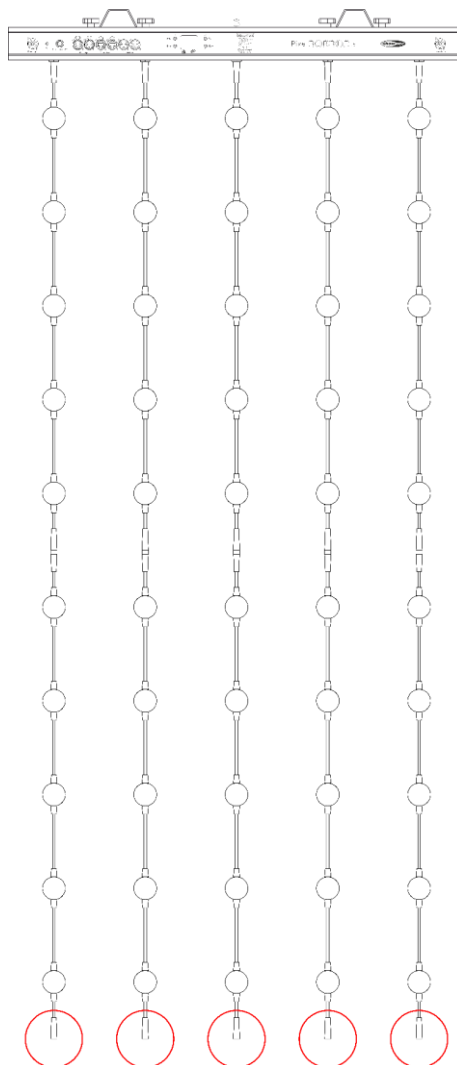
Fig. 05

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 Bubble 75 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 **6.6.3.6. Auto Program** on page 34 or **6.6.3.7. Manual Color Mode** on page 34.

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 Bubble 75 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. 06.

Pin 1: GND (screen)
Pin 2: Signal (-)
Pin 3: Signal (+)
Pin 4: N/C
Pin 5: N/C

Pin 1: GND (screen)
Pin 2: Signal (-)
Pin 3: Signal (+)

Pin 1: GND (screen)
Pin 2: Signal (-)
Pin 3: Signal (+)

Pin 1: GND (screen)
Pin 2: Signal (-)
Pin 3: Signal (+)
Pin 4: N/C
Pin 5: N/C
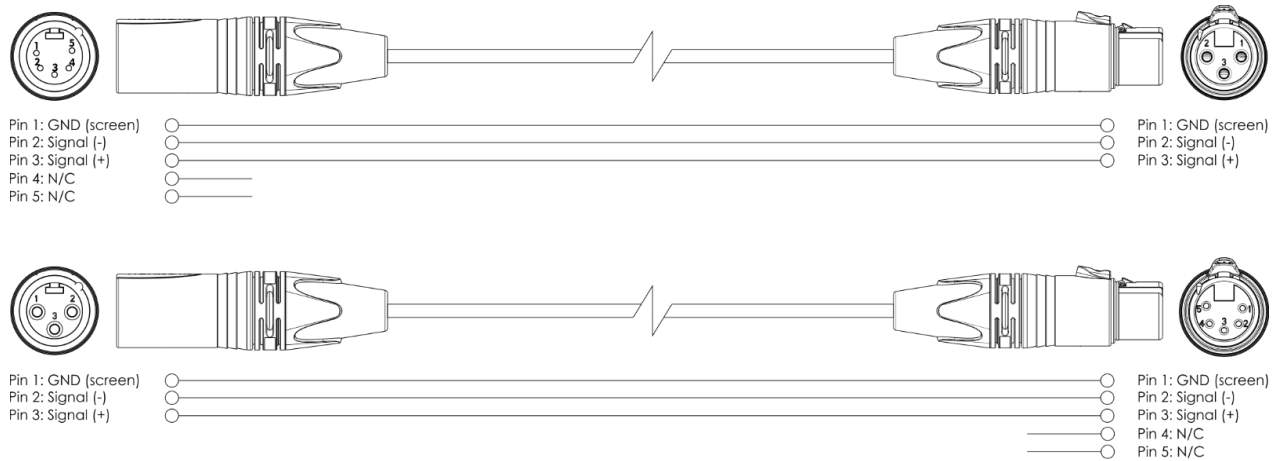
Fig. 06

5.3.3. Master/Slave Setup

The Pixel Bubble 75 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. 07.
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 **6.6.3.5 Master/Slave** on page 33, **6.6.3.6. Auto Program** on page 34 or **6.6.3.7. Manual Color Mode** on page 34 for more information.
05) Set the remaining devices to slave mode. See **6.6.3.5 Master/Slave** on page 33, **6.6.3.6. Auto Program** on page 34 or **6.6.3.7. Manual Color Mode** on page 34 for more information.
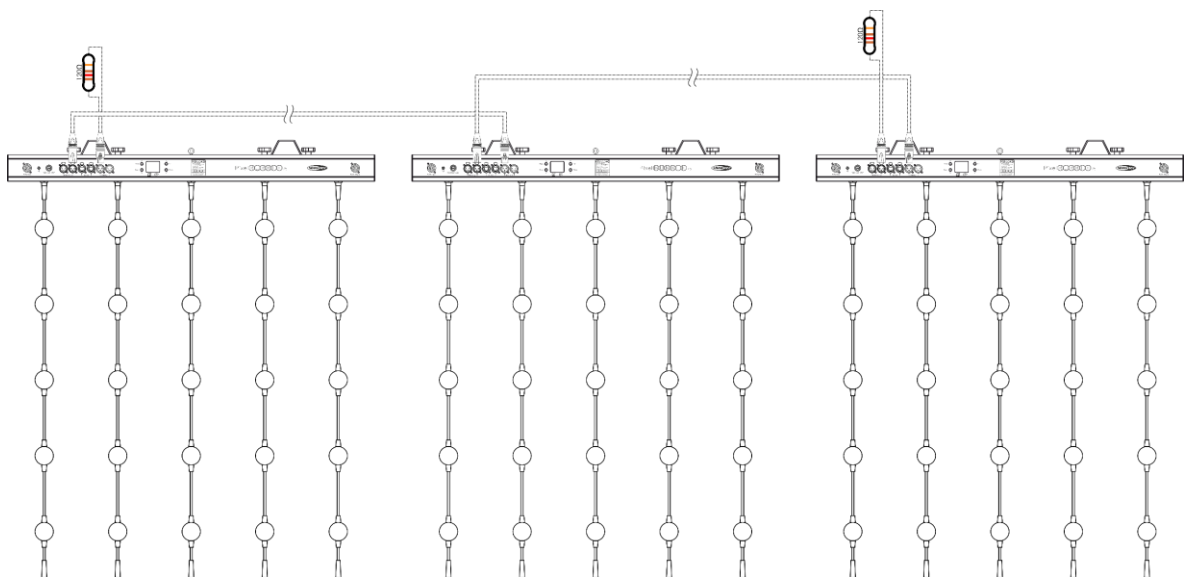
Fig. 07

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. 08.
04) Connect a DMX terminator (120 Ω resistor) to the DMX OUT connector of the last device on the data link.
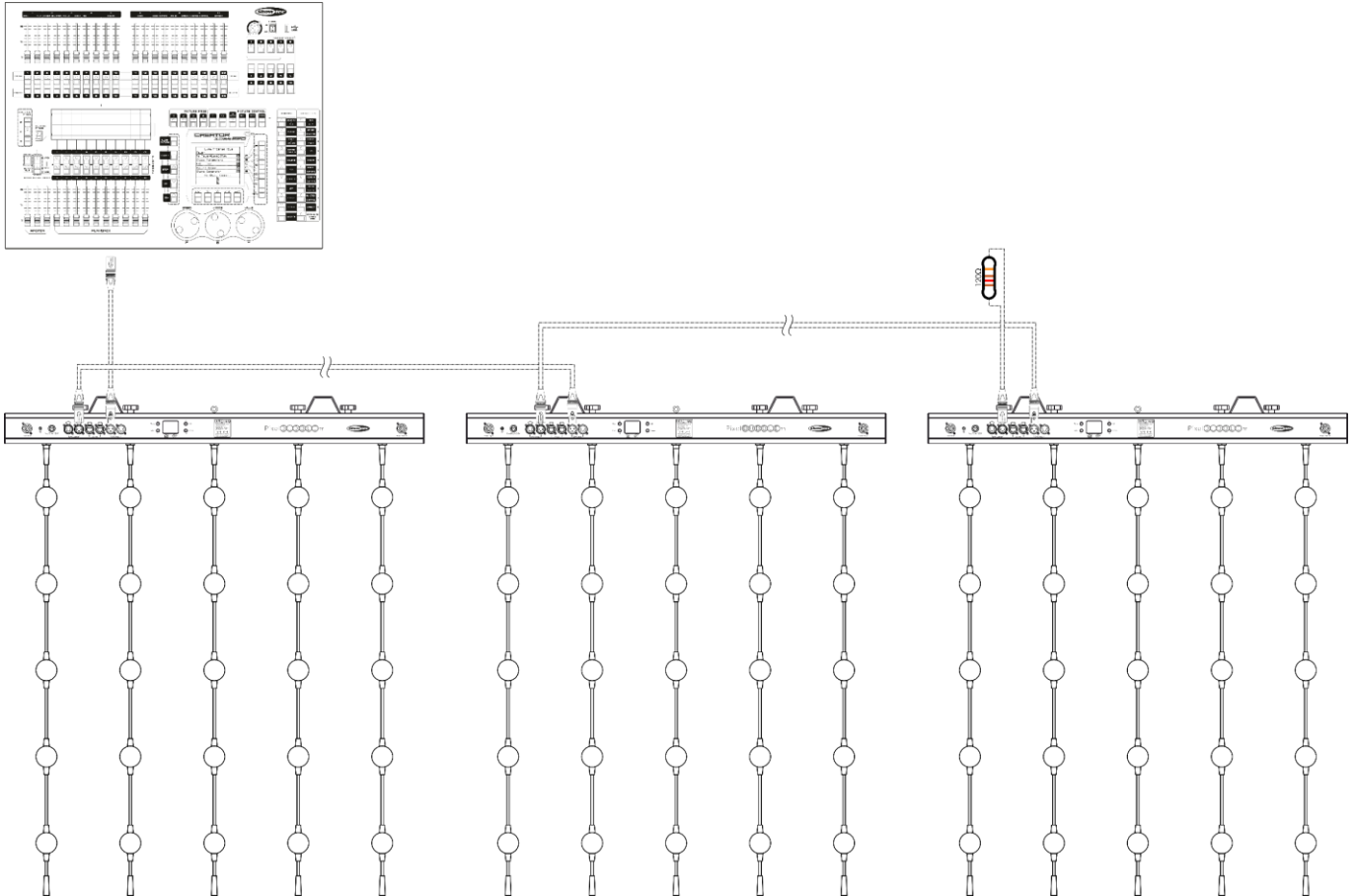
Fig. 08

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 Bubble 75 has 2 personalities: 7 channels and max. 450 channels (1string 75 channels, 2 strings 150 channels, 3 strings 225 channels, 4 strings 300, 5 strings 375 channels, 6 strings 450 channels)

If you want to connect multiple devices on one data link and use them in 7-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 8 (008), as 1 + 7 = 8.
03) Set the starting address of the 3rd device on the data link to 12 (012) as 8 + 7 = 12.
04) Continue assigning the starting addresses of the remaining devices by adding each time 7 to the previous number.

Make sure that you do not have any overlapping channels in order to control each Pixel Bubble 75 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. 09. Use RJ45 (8P8C) connectors and patch the cables according to the T568B color standard.

RJ45 Male connector · RJ45 Female connector
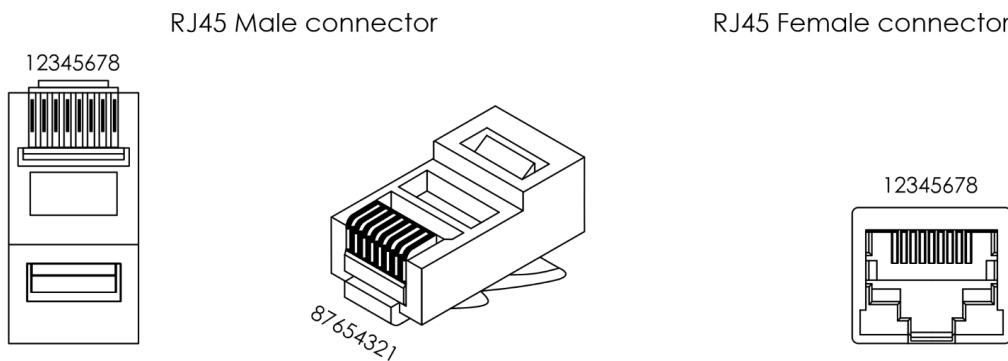
Color Standard EIA/TIA T568B

		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		PR 1
		Blue/White tracer	5	5	Blue/White tracer		
RX-		Green	6	6	Green		PR 3
		Brown/White tracer	7	7	Brown/White tracer		PR 4
		Brown	8	8	Brown		
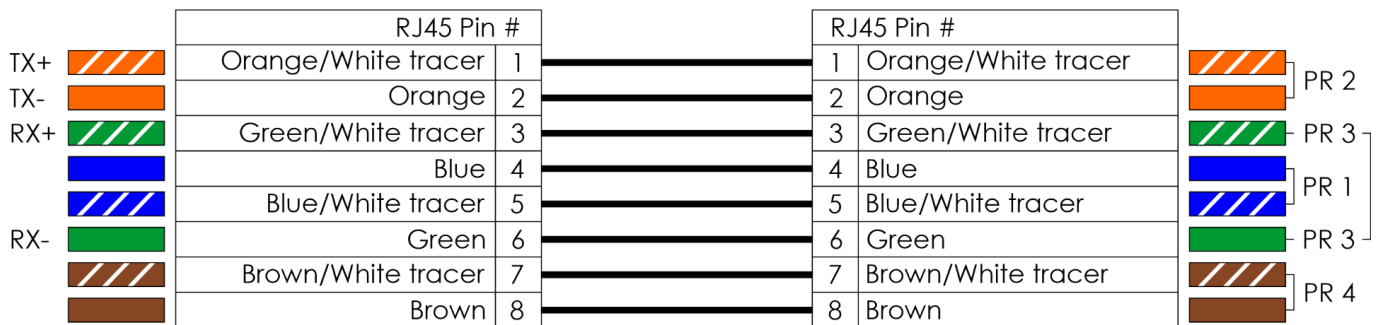
Fig. 09

5.4.3. Art-Net/Kling-Net Setup

The Pixel Bubble 75 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. 10.
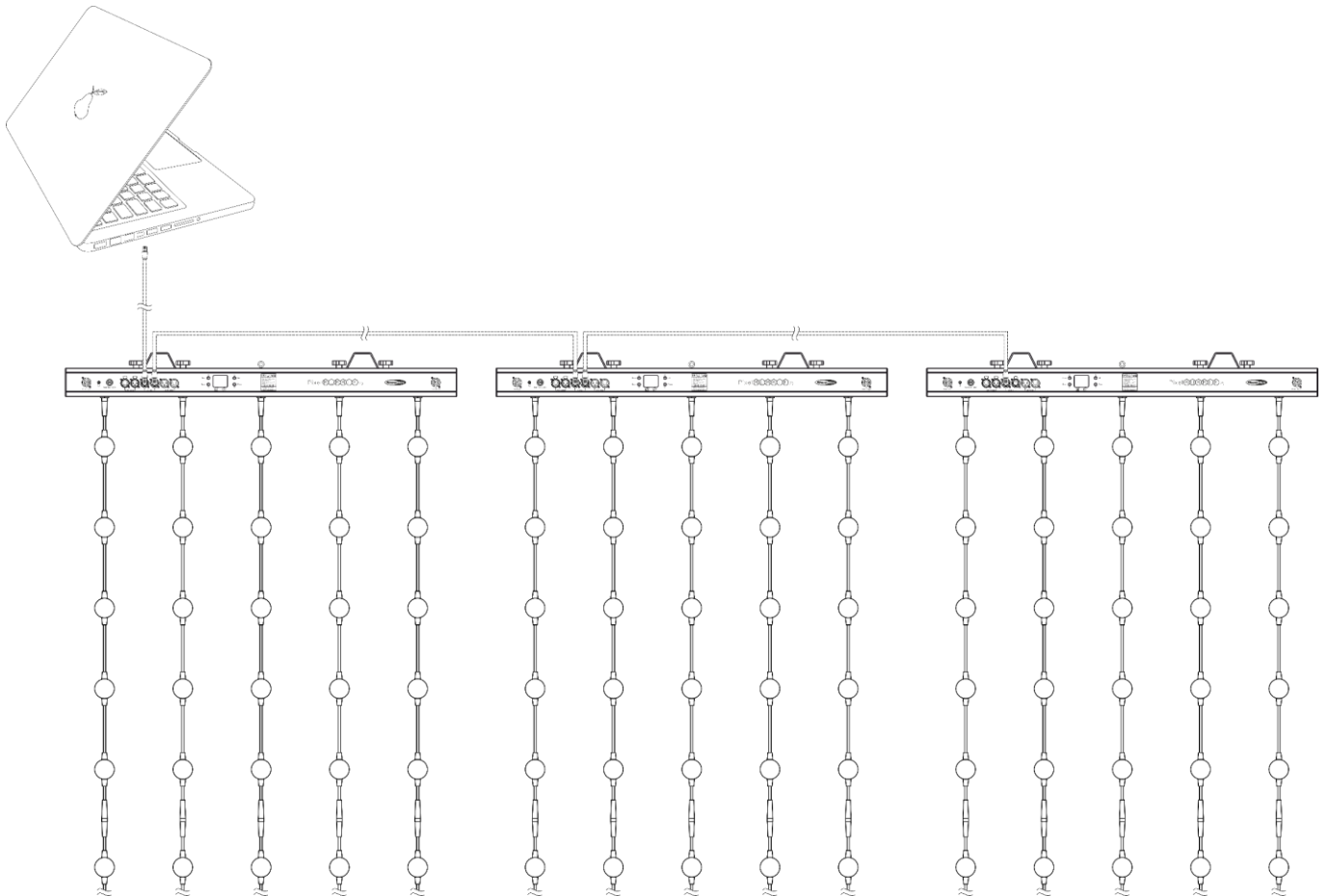
Fig. 10

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 30 and **6.6.2.2. Set IP Address** on page 30. To change the Subnet mask, refer to **6.6.2.3. Set Net Mask** on page 30. 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 **6.6.3.3. Art-Net** on page 32 or **6.6.3.4. Kling-Net** on page 33.
03) Set the universe. See **5.4.6. Universe Numbering** on page 23.

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 30. 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 **6.6.3.3. Art-Net** on page 32 or **6.6.3.4. Kling-Net** on page 33.
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 19.
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 Bubble 75 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 LED strings to the Pixel Bubble.
03) Connect the power supply to the Pixel Bubble.
04) Switch the Pixel Bubble ON and select the desired setup length.
05) Set the DMX starting address to 001.
06) Make sure that your PC has a **fixed IP Address** (**IP:10.x.x.x**. and **subnet:255.0.0.0.**). The Pixel Bubble does not require any further network setting adjustments.
07) Connect the Pixel Bubble with a CAT-5/CAT-6 cable (See **5.4.6. Universe Numbering** on page 23) to your computer.
   Once you have connected the devices, they will automatically be recognized by the software.
08) 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.
09) 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 Bubble 75.
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 Bubble 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 450-channel mode, follow the example below.

Example: The Pixel Bubble 75, 450-channel mode.
01) Make sure that each connected Pixel Bubble 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 Bubble to **1**.
04) Set the first Pixel Bubble's DMX address to **001**.
05) Due to the fact, that the Pixel Bubble has 450 DMX channels, there is no space to connect the second Pixel Bubble 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 Bubble to **2** and its DMX address to **001**.
07) In order to connect the third Pixel Bubble, set its universe to **3** and its DMX address to **001**.
08) When connecting multiple Pixel Bubbles, 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 Bubble to **2**.
10) Now, you are able to connect another 15 Pixel Bubbles, 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 Bubbles 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 Bubble (pixelmapping). You only have to connect all the Pixel Bubbles 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 LED ball 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 Bubble 75 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: 7, 450 channels (1string 75 channels, 2 strings 150 channels, 3 strings 225 channels, 4 strings 300, 5 strings 375 channels, 6 strings 450 channels)
- Kling-Net: Pixel mapping

For more information about how to connect the devices, refer to **5. Setup** on pages 17–22.

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 **6.6.3.7. Manual Color Mode** on page 34 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 **6.6.3.6. Auto Program** on page 34 for more information.
02)   Set the speed of the built-in chase in the Auto Control menu. See **6.6.3.6. Auto Program** on page 34 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 19 and **6.6.1. DMX Address** on page 29.
02)   Select the DMX channel mode. See **6.6.3. Control Modes** on page 31 for more information. See **6.7. DMX Channels** on pages 37–40 for complete overview of all DMX channels.

6.3. Control Panel

A

A) OLED display
B) UP button
C) DOWN button
D) ENTER button
E) MENU button

PixelBubble
DMX Address:001
IP Addr:000.000.000.000
Net Mask:255.255.255.0
Universe:000
Mode:Auto/6mtr

E — Menu   Up — B

D — Enter   Down — C
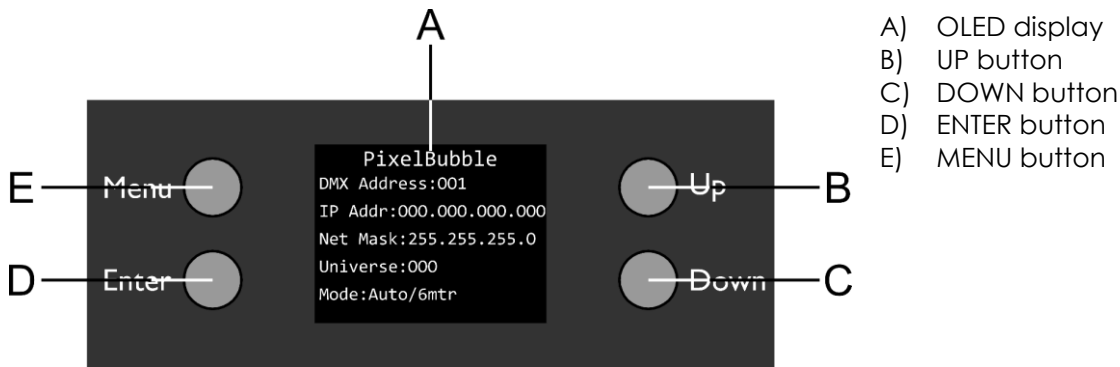
Fig. 11

● 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:


```
PixelBubble
DMX Address:001
IP Addr:000.000.000.000
Net Mask:255.255.255.0
Universe:000
Mode:Auto/6mtr
```
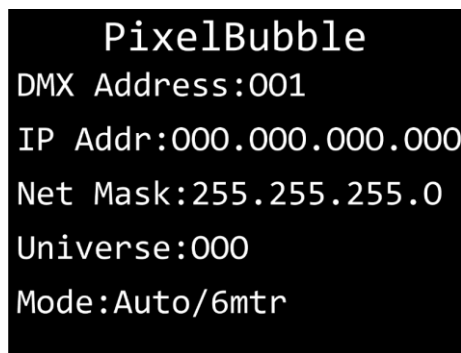
When you press the **MENU** button, the Pixel Bubble 75 will show its main menu :

Address   Network

Mode   Advance

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

| Address | ENTER → | 001 | UP/DOWN | 512 |

| Network | ENTER → | Manual/DHCP
Manual
IP Address
2 0 0 1
Net Mask
255.255.255.0 |

| Mode | ENTER → | SetString 5Pix/1Mtr
DMX   10Pix/2Mtr
Artnet   15Pix/3Mtr
Klingnet 20Pix/4Mtr
Slave   25Pix/5Mtr
Auto   30Pix/6Mtr
Manual |

SetString DMX 7CH
DMX   DMX 450CH
Artnet
Klingnet
Slave
Auto
Manual

SetString Universe: 0
DMX   Artnet 7CH
Artnet   Artnet 450CH
Klingnet
Slave
Auto
Manual

UP/DOWN

SetString Enable
DMX   Disable
Artnet
Klingnet
Slave
Auto
Manual

SetString Enable
DMX   Disable
Artnet
Klingnet
Slave
Auto
Manual

SetString Program: 1
DMX   Speed: 5
Artnet
Klingnet
Slave
Auto
Manual

SetString Dimmer: 0
DMX   Strobe: 0
Artnet   Red: 255
Klingnet   Green: 255
Slave   Blue: 255
Auto
Manual

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

UP/DOWN

6.6. Main Menu Options

The main menu has the following options:

Address	DMX address
Network	Network Settings
Mode	Set String / DMX / Art-Net / Kling-Net / Slave / Auto / Manual
Advance	Signal Hold / Pixel Reverse / Screen Timeout / Screen Brightness / Software Version / Invert Display / Factory Reset
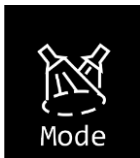
01) Press the **UP/DOWN** buttons to navigate through the main menu.
02) Press the **ENTER** button to open the submenus.
03) Press the **MENU** button to return to the previous screen.

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 **Address** .
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:

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.
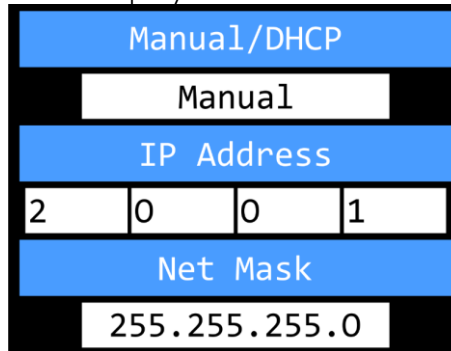05) Press the **UP/DOWN** buttons to select the 2nd section of the IP address.
06) Press the **ENTER** button to open the menu.
07) Press the **UP/DOWN** buttons to adjust the 2nd section of the IP address.
08) Press the **ENTER** button to save changes.
09) Repeat the process to adjust the remaining 2 sections of the IP address.
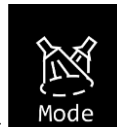
6.6.2.3. Set Net Mask

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 ![Mode] .
02) Press the **ENTER** button to open the menu. The display will show:

```
SetString  5Pix/1Mtr
  DMX      10Pix/2Mtr
 Artnet    15Pix/3Mtr
Klingnet   20Pix/4Mtr
 Slave     25Pix/5Mtr
 Auto      30Pix/6Mtr
 Manual
```

03) Press the **UP/DOWN** buttons to select one of the 7 modes:
   ● SET STRING
   ● DMX
   ● ART-NET
   ● KLING-NET
   ● SLAVE
   ● AUTO
   ● MANUAL

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

6.6.3.1. Set String

In this menu you can set the desired number of strings.

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

```
SetString  5Pix/1Mtr
  DMX      10Pix/2Mtr
 Artnet    15Pix/3Mtr
Klingnet   20Pix/4Mtr
 Slave     25Pix/5Mtr
 Auto      30Pix/6Mtr
 Manual
```

02) Press the **UP/DOWN** buttons to select one of the 6 string lengths:
   ● 5 Pixels / 1 m
   ● 10 Pixels / 2 m
   ● 15 Pixels / 3 m
   ● 20 Pixels / 4 m
   ● 25 Pixels / 5 m
   ● 30 Pixels / 6 m

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

Note: The Pixel Bubble 75 does not automatically detect what number of strings is connected.

6.6.3.2. 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:
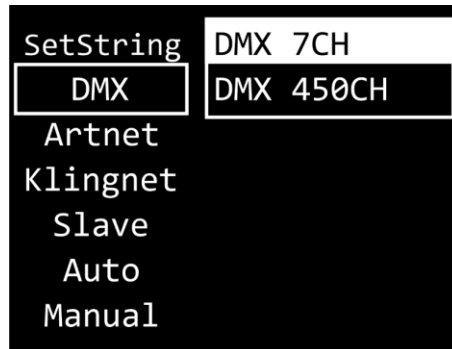
```
SetString  DMX  7CH
   DMX     DMX 450CH
  Artnet
 Klingnet
  Slave
   Auto
  Manual
```

02) Press the **UP/DOWN** buttons to select one of the 2 channel modes:
   ● 7 channels
   ● 450 channels (1string 75 channels, 2 strings 150 channels, 3 strings 225 channels, 4 strings 300, 5 strings 375 channels, 6 strings 450 channels)
03) Press the **ENTER** button to confirm your choice.

Note: The Pixel Bubble 75 does not automatically detect whether DMX data signal is received or not. Activate DMX control.

6.6.3.3. 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:

```
SetString  Universe: 0
   DMX      Artnet 7CH
  Artnet   Artnet 450CH
 Klingnet
  Slave
   Auto
  Manual
```

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:
   ● 7 channels
   ● 450 channels (1string 75 channels, 2 strings 150 channels, 3 strings 225 channels, 4 strings 300, 5 strings 375 channels, 6 strings 450 channels)

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

Note: The Pixel Bubble 75 does not automatically detect whether Art-Net data signal is received or not. Activate Art-Net control.

6.6.3.4. Kling-Net

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

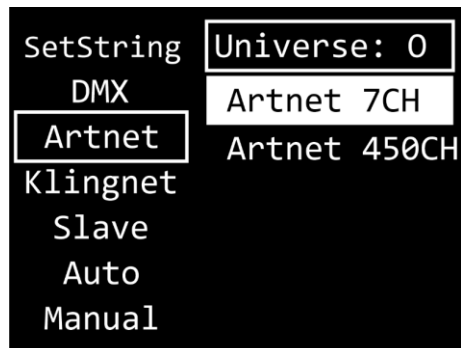01) When the display shows KLINGNET, press the **ENTER** button to open the menu. The display will show:

```
SetString  Enable
   DMX      Disable
  Artnet
 Klingnet
  Slave
   Auto
  Manual
```
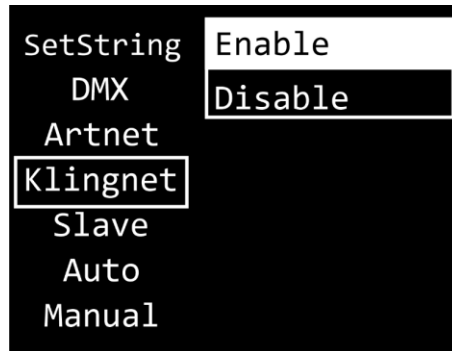
02) Press the **UP/DOWN** buttons to select the ENABLE/DISABLE field. Press the **ENTER** button to confirm.
03) Press the **UP/DOWN** buttons to select ENABLE or DISABLE. If you choose ENABLE, Kling-Net protocol will be active.
04) Press the **ENTER** button to confirm your choice.

Note: The Pixel Bubble 75 does not automatically detect whether Kling-Net data signal is received or not. Activate Kling-Net control.

6.6.3.5. 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:

```
SetString  Enable
   DMX      Disable
  Artnet
 Klingnet
  Slave
   Auto
  Manual
```

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.

6.6.3.6. 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:

```
SetString  Program: 1
   DMX      Speed:    5
  Artnet
 Klingnet
   Slave
   Auto
  Manual
```
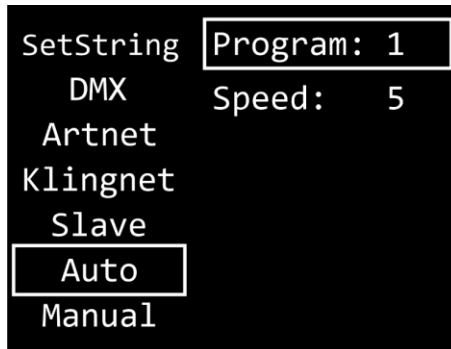
02) Press the **UP/DOWN** buttons to select PROGRAM and press the **ENTER** button to confirm.
03) Press the **UP/DOWN** buttons to select one of the 30 built-in programs.
04) Press the **ENTER** button to confirm your choice.
05) Press the **UP/DOWN** buttons to select SPEED and press the **ENTER** button to confirm.
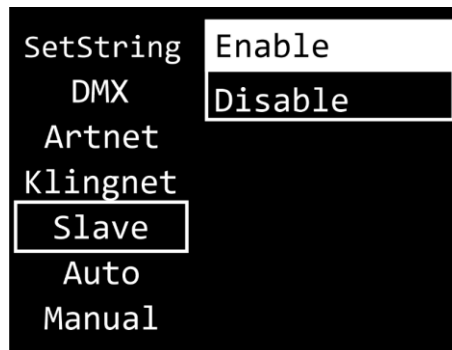06) Press the **UP/DOWN** buttons to set the program speed. The adjustment range is 1–9, from slow to fast.
07) Press the **ENTER** button to save changes.

6.6.3.7. 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:

```
SetString  Dimmer:   0
   DMX      Strobe:   0
  Artnet    Red:    255
 Klingnet   Green:  255
   Slave    Blue:   255
   Auto
  Manual
```
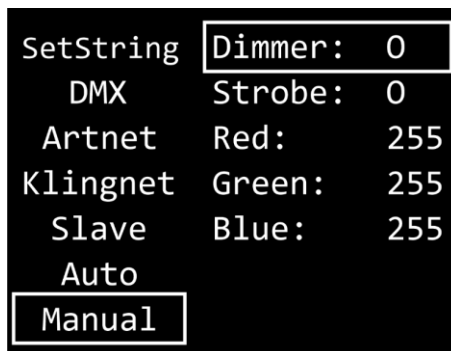
02) Press the **UP/DOWN** buttons to select one of the 5 options:
   ● DIMMER: Dimmer brightness (0–255, from dark to brightest)
   ● STROBE: Strobe frequency (0–4, strobe OFF; 5–255, from low to high frequency)
   ● RED: Red color brightness (0–255, from dark to brightest)
   ● GREEN: Green color brightness (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 Bubble 75 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 undisrupted 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.

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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. 7 Channels

7 CH	Function	Value	Setting
1	**Master Dimmer**	000–255	From low to high intensity (0–100 %)
2	**Strobe**	000–255	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**	0–15	Not functional
		16–23	Program 1
		24–31	Program 2
		32–39	Program 3
		40–47	Program 4
		48–55	Program 5
		56–63	Program 6
		64–71	Program 7
		72–79	Program 8
		80–87	Program 9
		88–95	Program 10
		96–103	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 30 automatically changes every 10 seconds)
7	**Program speed**	000–255	From slow to fast

6.7.2. 75 Channels (1 LED string)

Note: In 75-channel mode, the numbers of LEDs progress vertically. See below:
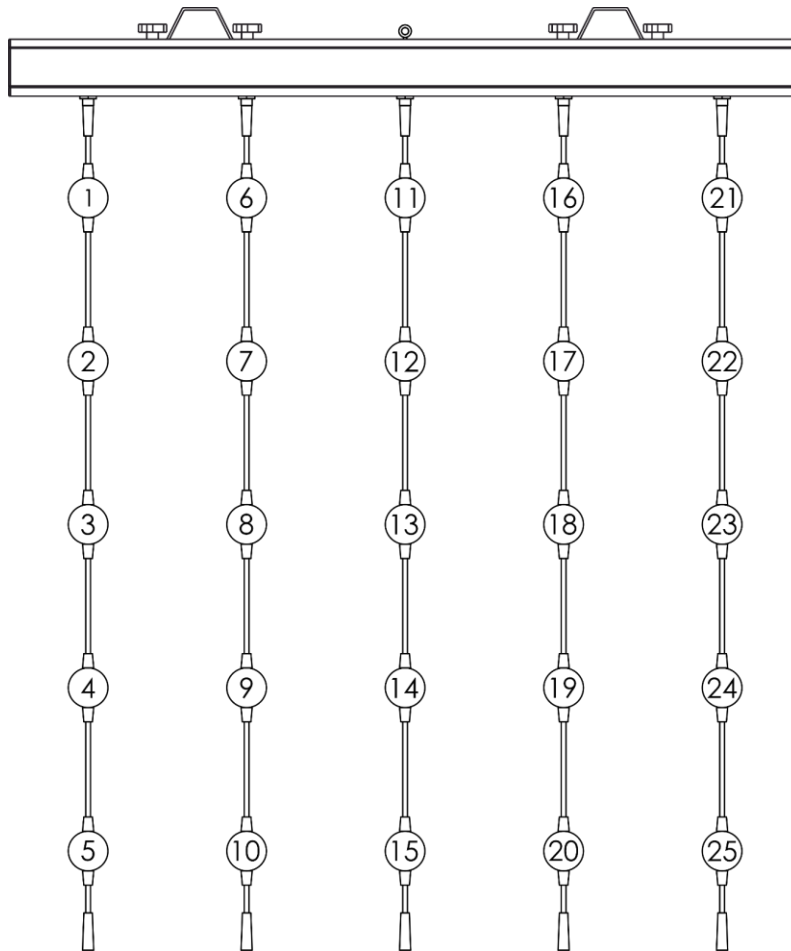
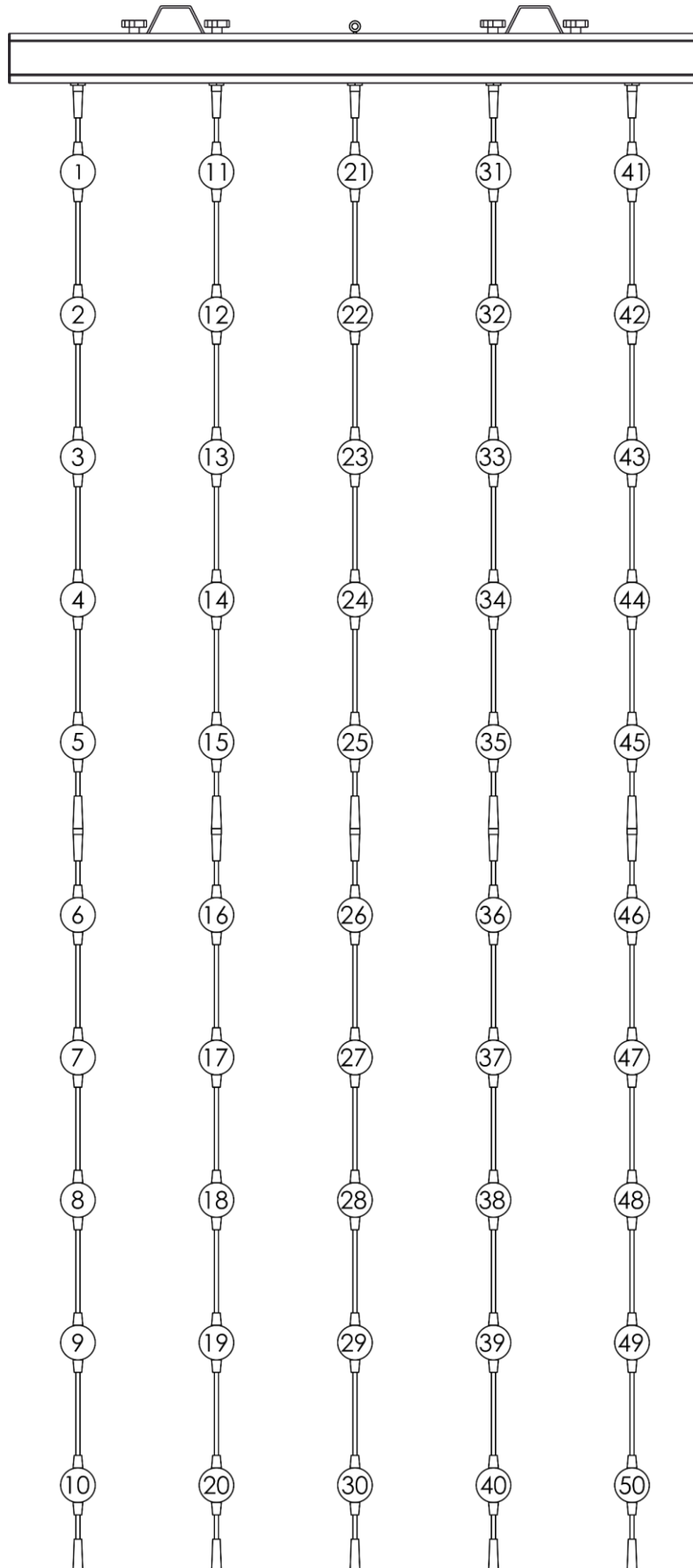| CH	LED	Color	CH	LED	Color	CH	LED	Color	CH	LED	Color
1	LED 1	Red	22	LED 8	Red	43	LED 15	Red	64	LED 22	Red
2	LED 1	Green	23	LED 8	Green	44	LED 15	Green	65	LED 22	Green
3	LED 1	Blue	24	LED 8	Blue	45	LED 15	Blue	66	LED 22	Blue
4	LED 2	Red	25	LED 9	Red	46	LED 16	Red	67	LED 23	Red
5	LED 2	Green	26	LED 9	Green	47	LED 16	Green	68	LED 23	Green
6	LED 2	Blue	27	LED 9	Blue	48	LED 16	Blue	69	LED 23	Blue
7	LED 3	Red	28	LED 10	Red	49	LED 17	Red	70	LED 24	Red
8	LED 3	Green	29	LED 10	Green	50	LED 17	Green	71	LED 24	Green
9	LED 3	Blue	30	LED 10	Blue	51	LED 17	Blue	72	LED 24	Blue
10	LED 4	Red	31	LED 11	Red	52	LED 18	Red	73	LED 25	Red
11	LED 4	Green	32	LED 11	Green	53	LED 18	Green	74	LED 25	Green
12	LED 4	Blue	33	LED 11	Blue	54	LED 18	Blue	75	LED 25	Blue
13	LED 5	Red	34	LED 12	Red	55	LED 19	Red			
14	LED 5	Green	35	LED 12	Green	56	LED 19	Green			
15	LED 5	Blue	36	LED 12	Blue	57	LED 19	Blue			
16	LED 6	Red	37	LED 13	Red	58	LED 20	Red			
17	LED 6	Green	38	LED 13	Green	59	LED 20	Green			
18	LED 6	Blue	39	LED 13	Blue	60	LED 20	Blue			
19	LED 7	Red	40	LED 14	Red	61	LED 21	Red			
20	LED 7	Green	41	LED 14	Green	62	LED 21	Green			
21	LED 7	Blue	42	LED 14	Blue	63	LED 21	Blue			

6.7.3. 150 Channels (2 LED strings)

Note: In 150-channel mode, the numbers of LEDs progress vertically. See below:

CH	LED	Color	CH	LED	Color	CH	LED	Color	CH	LED	Color
1	LED 1	Red	43	LED 15	Red	85	LED 29	Red	127	LED 43	Red
2	LED 1	Green	44	LED 15	Green	86	LED 29	Green	128	LED 43	Green
3	LED 1	Blue	45	LED 15	Blue	87	LED 29	Blue	129	LED 43	Blue
4	LED 2	Red	46	LED 16	Red	88	LED 30	Red	130	LED 44	Red
5	LED 2	Green	47	LED 16	Green	89	LED 30	Green	131	LED 44	Green
6	LED 2	Blue	48	LED 16	Blue	90	LED 30	Blue	132	LED 44	Blue
7	LED 3	Red	49	LED 17	Red	91	LED 31	Red	133	LED 45	Red
8	LED 3	Green	50	LED 17	Green	92	LED 31	Green	134	LED 45	Green
9	LED 3	Blue	51	LED 17	Blue	93	LED 31	Blue	135	LED 45	Blue
10	LED 4	Red	52	LED 18	Red	94	LED 32	Red	136	LED 46	Red
11	LED 4	Green	53	LED 18	Green	95	LED 32	Green	137	LED 46	Green
12	LED 4	Blue	54	LED 18	Blue	96	LED 32	Blue	138	LED 46	Blue
13	LED 5	Red	55	LED 19	Red	97	LED 33	Red	139	LED 47	Red
14	LED 5	Green	56	LED 19	Green	98	LED 33	Green	140	LED 47	Green
15	LED 5	Blue	57	LED 19	Blue	99	LED 33	Blue	141	LED 47	Blue
16	LED 6	Red	58	LED 20	Red	100	LED 34	Red	142	LED 48	Red
17	LED 6	Green	59	LED 20	Green	101	LED 34	Green	143	LED 48	Green
18	LED 6	Blue	60	LED 20	Blue	102	LED 34	Blue	144	LED 48	Blue
19	LED 7	Red	61	LED 21	Red	103	LED 35	Red	145	LED 49	Red
20	LED 7	Green	62	LED 21	Green	104	LED 35	Green	146	LED 49	Green
21	LED 7	Blue	63	LED 21	Blue	105	LED 35	Blue	147	LED 49	Blue
22	LED 8	Red	64	LED 22	Red	106	LED 36	Red	148	LED 50	Red
23	LED 8	Green	65	LED 22	Green	107	LED 36	Green	149	LED 50	Green
24	LED 8	Blue	66	LED 22	Blue	108	LED 36	Blue	150	LED 50	Blue
25	LED 9	Red	67	LED 23	Red	109	LED 37	Red			
26	LED 9	Green	68	LED 23	Green	110	LED 37	Green			
27	LED 9	Blue	69	LED 23	Blue	111	LED 37	Blue			
28	LED 10	Red	70	LED 24	Red	112	LED 38	Red			
29	LED 10	Green	71	LED 24	Green	113	LED 38	Green			
30	LED 10	Blue	72	LED 24	Blue	114	LED 38	Blue			
31	LED 11	Red	73	LED 25	Red	115	LED 39	Red			
32	LED 11	Green	74	LED 25	Green	116	LED 39	Green			
33	LED 11	Blue	75	LED 25	Blue	117	LED 39	Blue			
34	LED 12	Red	76	LED 26	Red	118	LED 40	Red			
35	LED 12	Green	77	LED 26	Green	119	LED 40	Green			
36	LED 12	Blue	78	LED 26	Blue	120	LED 40	Blue			
37	LED 13	Red	79	LED 27	Red	121	LED 41	Red			
38	LED 13	Green	80	LED 27	Green	122	LED 41	Green			
39	LED 13	Blue	81	LED 27	Blue	123	LED 41	Blue			
40	LED 14	Red	82	LED 28	Red	124	LED 42	Red			
41	LED 14	Green	83	LED 28	Green	125	LED 42	Green			
42	LED 14	Blue	84	LED 28	Blue	126	LED 42	Blue			

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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	• Check if power is switched on and cables are plugged in
	Main fuse is blown	• Replace the fuse. See **8.2.1. Replacing the Fuse** on page 43
The device does not respond to DMX control	The controller is not connected	• 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	• 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	Bad data link connection	• Examine connections and cables. Correct poor 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	• 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	• 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	• Disconnect the device and contact your Highlite International dealer
	The power supply settings do not match local AC voltage and frequency	• 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 Bubble balls are 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 Bubble balls 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 Bubble balls with a damp cloth. Use a mild detergent solution.
05) Dry the Pixel Bubble balls 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 42.
- 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

CE

UK CA

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