

# USER MANUAL

## 12 Channel DMX Controller



### CAUTION!

Keep this device away from rain and moisture!  
Unplug mains lead before opening the housing!

For your own safety, please read this user manual carefully before you initially start-up.

Every person involved with the installation, operation and maintenance of this device has to

- be qualified
- follow the instructions of this manual
- consider this manual to be part of the total product
- keep this manual for the entire service life of the product
- pass this manual on to every further owner or user of the product
- download the latest version of the user manual from the Internet

### INTRODUCTION

Thank you for having chosen a 12 Channel LED PSI-1 DMX Controller. If you follow the instructions given in this manual, we are sure that you will enjoy this device for a long period of time.

Unpack your 12 Channel DMX Controller.

### SAFETY INSTRUCTIONS



### CAUTION!

Be careful with your operations. With a dangerous voltage you can suffer a dangerous electric shock when touching the wires!

This device has left our premises in absolutely perfect condition. In order to maintain this condition and to ensure a safe operation, it is absolutely necessary for the user to follow the safety instructions and warning notes written in this user manual.



#### Important:

Damages caused by the disregard of this user manual are not subject to warranty. The dealer will not accept liability for any resulting defects or problems.

If the device has been exposed to drastic temperature fluctuation (e.g. after transportation), do not switch it on immediately. The arising condensation water might damage your device. Leave the device switched off until it has reached room temperature.

Please make sure that there are no obvious transport damages. Should you notice any damages on the A/C connection cable or on the casing do not take the device into operation and immediately consult your local dealer?

Please make sure that the device can always be disconnected from the mains.

This device falls under protection-class I. The power plug must only be plugged into a protection class I outlet. The voltage and frequency must exactly be the same as stated on the device. Wrong voltages or power outlets can lead to the destruction of the device and to mortal electrical shock.

Always plug in the power plug last. The power plug must always be inserted without force. Make sure that the plug is tightly connected with the outlet.

Never let the power-cord come into contact with other cables! Handle the power-cord and all connections with the mains with particular caution! Never touch them with wet hands, as this could lead to mortal electrical shock.

Never modify, bend, strain mechanically, put pressure on, pull or heat up the power cord. Never operate next to sources of heat or cold. Disregard can lead to power cord damages, fire or mortal electrical shock.

The cable insert or the female part in the device must never be strained. There must always be sufficient cable to the device. Otherwise, the cable may be damaged which may lead to mortal damage.

Make sure that the power-cord is never crimped or damaged by sharp edges. Check the device and the power-cord from time to time.

If extension cords are used make sure that the core diameter is sufficient for the required power consumption of the device. All warnings concerning the power cords are also valid for possible extension cords.

Always disconnect from the mains, when the device is not in use or before cleaning it. Only handle the power-cord by the plug. Never pull out the plug by tugging the power-cord. Otherwise, the cable or plug can be damaged leading to mortal electrical shock. If the power plug or the power switch is not accessible, the device must be disconnected via the mains.

If the power plug or the device is dusty, the device must be taken out of operation, disconnected and then be cleaned with a dry cloth. Dust can reduce the insulation which may lead to mortal electrical shock. More severe dirt in and at the device should only be removed by a specialist.

There must never enter any liquid into power outlets, extension cords or any holes in the housing of the device. If you suppose that also a minimal amount of liquid may have entered the device, it must immediately be disconnected. This is also valid, if the device was exposed to high humidity. Also if the device is still running, the device must be checked by a specialist if the liquid has reduced any insulation. Reduced insulation can cause mortal electrical shock.

There must never be any objects entering into the device. This is especially valid for metal parts. If any metal parts like staples or coarse metal chips enter into the device, the device must be taken out of operation and disconnected immediately. Malfunction or short-circuits caused by metal parts may cause mortal injuries.

The total weight of the installation (=total weight of all individual parts) must never exceed the maximum load of the installation area.

If the device will be installed on a trussing system or be suspended, it must always be secured with an appropriate safety-rope!

Please consider that damages caused by manual modifications to the device are not subject to warranty.

Keep away children and amateurs!

## OPERATING DETERMINATIONS

This device is a lighting controller for controlling other devices like spots in discotheques, on stages etc. This product is allowed to be operated with an alternating current of 100-240 V, 50/60 Hz and was designed for indoor use only.

Do not shake the device. Avoid brute force when installing or operating the device.

When choosing the installation-spot, please make sure that the device is not exposed to extreme heat, moisture or dust. There should not be any cables lying around. You endanger your own and the safety of others!

This device must never be operated or stockpiled in surroundings where splash water, rain, moisture or fog may harm the device. Moisture or very high humidity can reduce the insulation and lead to mortal electrical shocks. When using smoke machines, make sure that the device is never exposed to the direct smoke jet and is installed in a distance of 0.5 meters between smoke machine and device. The room must only be saturated with an amount of smoke that the visibility will always be more than 10 meters.

The ambient temperature must always be between -5° C and +45° C. Keep away from direct insulation (Particularly in cars) and heaters.

The relative humidity must not exceed 50 % with an ambient temperature of 45° C.

This device must only be operated in an altitude between -20 and 2000 m over NN.

The ambient contamination must never exceed level 1 and must not be conducting, only dry.

Never use the device during thunderstorms. Over voltage could destroy the device. Always disconnect the device during thunderstorms.

Make sure that the area below the installation place is blocked when rigging, derigging or servicing the fixture.

Never put any liquids on the device or close to it. Should any liquid enter the device nevertheless, disconnect from mains immediately. Please let the device be checked by a qualified service technician before you operate it again. Any damages caused by liquids having entered the device are not subject to warranty!

Operate the device only after having become familiarized with its functions. Do not permit operation by persons not qualified for operating the device. Most damages are the result of unprofessional operation!

Please use the original packaging if the device is to be transported.

Inspection deadlines according to BGV-A2 for electrical resources must be complied with.

Please consider that unauthorized modifications on the device are forbidden due to safety reasons!

Never remove the serial barcode from the device as this would make the guarantee void.

If this device will be operated in any way different to the one described in this manual, the product may suffer damages and the guarantee becomes void. Furthermore, any other operation may lead to dangers like short-circuit, burns, electric shock, etc.

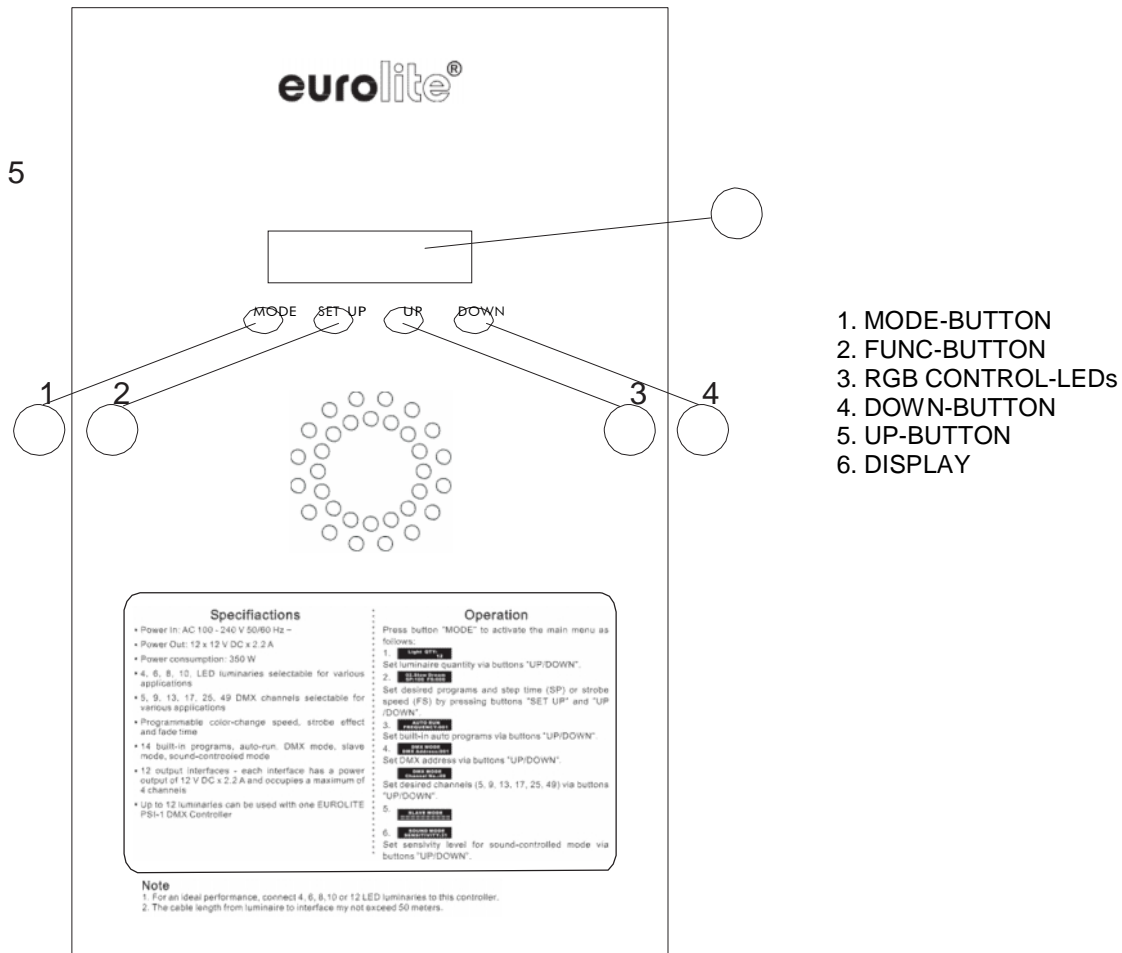
# DESCRIPTION OF THE DEVICE

The intelligent controller for indoor and outdoor luminaries!

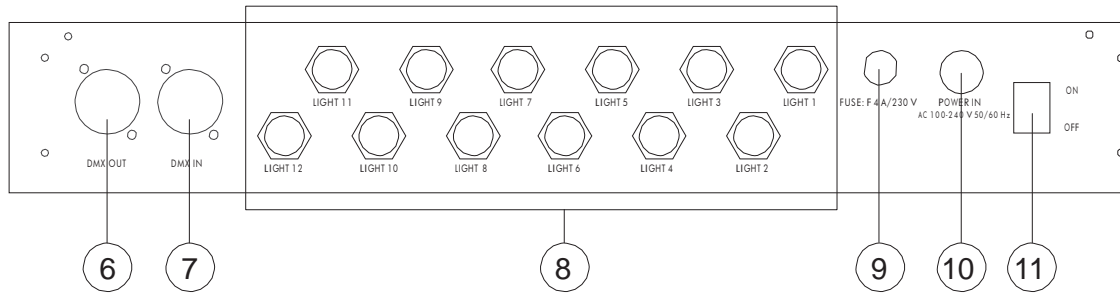
- Up to 12 luminaries can be used with one 12 Channel DMX Controller
- Power 12 x 12 V DC x 2.2 A
- DMX-controlled operation or stand alone operation with Master/Slave-function and Sound-control mode
- DMX-control via every standard DMX-controller
- DMX address selectable via the control board
- 5, 9, 13, 17, 25, or 49 DMX channels selectable for various applications
- Programmable color-change speed, strobe effect, and fade time
- RGB color-mixing
- 14 internal programs
- Ready for connection with safety-plug
- For wall mounting

## Overview control elements

Front



## Connections



- 6. DMX OUTPUT SOCKET
- 7. DMX INPUT SOCKET
- 8. LOAD OUTPUTS
- 9. FUSE
- 10. POWER SUPPLY
- 11. POWER ON/OFF

## INSTALLATION

Install the device on a plane surface or mount it on a wall or trussing system.

### Wall mounting

Before attaching the device, make sure that the installation area can hold a minimum point load of 10 times the device's weight.

The device must only be installed absolutely planar at a vibration-free, oscillation-free and fire-resistant location. Make sure that the device is installed absolutely planar by using a water-level.

The device must be installed out of the reach of people.

The device must always be installed via all fixation holes. Do only use appropriate screws and make sure that the screws are properly connected with the ground.

The durability of the installation depends very much on the material used at the installation area (building material) such as wood, concrete, gas concrete, brick etc. This is why the fixing material must be chosen to suit the wall material. Always ask a specialist for the correct plug/screw combination indicating the maximum load and the building material.

Procedure:

- Step 1: On the base plate, there are the holes for the installation.
- Step 2: Hold the base plate onto the location where the device is to be installed.
- Step 3: Mark the boreholes with a pen or a suitable tool.
- Step 4: Drill the holes.
- Step 5: Hold the base plate in the desired position and tighten it.



### DANGER TO LIFE!

Before taking into operation for the first time, the installation has to be approved by an expert!

## Overhead rigging on a trussing system



### DANGER TO LIFE!

Please consider the EN 60598-2-17 and the respective national norms during the installation!  
The installation must only be carried out by an authorized dealer!

The installation of the device has to be built and constructed in a way that it can hold 10 times the weight for 1 hour without any harming deformation.

The installation must always be secured with a secondary safety attachment, e.g. an appropriate catch net. This secondary safety attachment must be constructed in a way that no part of the installation can fall down if the main attachment fails.

When rigging, derigging or servicing the device staying in the area below the installation place, on bridges, under high working places and other endangered areas is forbidden.

The operator has to make sure that safety-relating and machine-technical installations are approved by an expert before taking into operation for the first time and after changes before taking into operation another time.

The operator has to make sure that safety-relating and machine-technical installations are approved by an expert after every four year in the course of an acceptance test.

The operator has to make sure that safety-relating and machine-technical installations are approved by a skilled person once a year.

#### Procedure:

The device should be installed outside areas where persons may walk by or be seated.

**IMPORTANT! OVERHEAD RIGGING REQUIRES EXTENSIVE EXPERIENCE**, including (but not limited to) calculating working load limits, installation material being used, and periodic safety inspection of all installation material and the device. If you lack these qualifications, do not attempt the installation yourself, but instead use a professional structural rigger. Improper installation can result in bodily injury and or damage to property.

The device has to be installed out of the reach of people.

If the device shall be lowered from the ceiling or high joists, professional trussing systems have to be used. The device must never be fixed swinging freely in the room.

**Caution:** Devices in hanging installations may cause severe injuries when crashing down! If you have doubts concerning the safety of a possible installation, do NOT install the device!

Before rigging make sure that the installation area can hold a minimum point load of 10 times the device's weight.

Mount the device to your trussing system using an appropriate clamp.

For overhead use, always install a safety-rope that can hold at least 12 times the weight of the fixture. You must only use safety-ropes with quick link with screw cap. Pull the safety-rope through the hole in the mounting-bracket and over the trussing system or a safe fixation spot. Insert the end in the quick link and tighten the safety screw.

The maximum drop distance must never exceed 20 cm.

A safety rope which already has held the strain of a crash or which is defective may not be used again.

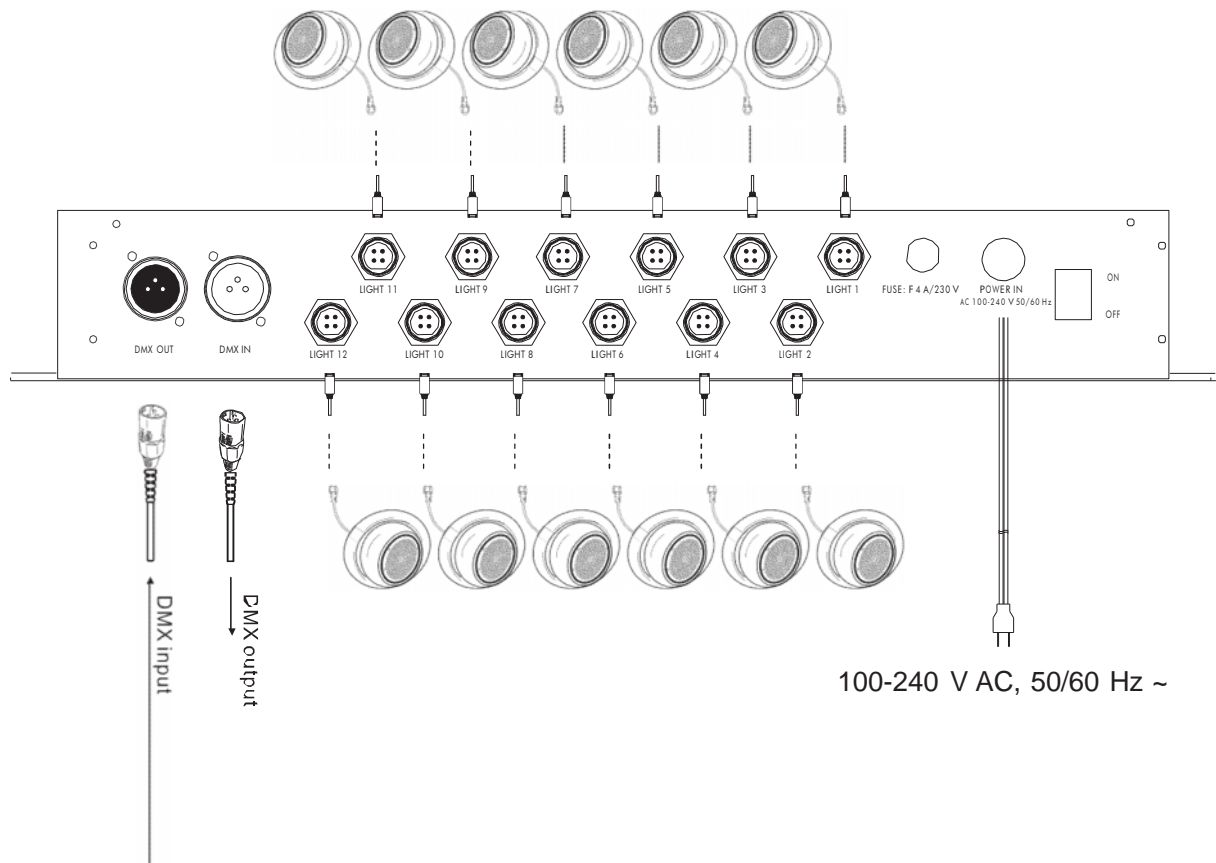
Adjust the desired inclination-angle via the mounting-bracket and tighten the fixation screws.



## DANGER TO LIFE!

Before taking into operation for the first time, the installation has to be approved by an expert!

### Connection with luminaries



Connect your loads to the 4-pin connection cables at the load outputs of the controller.

Connect the controller to the mains with the power plug. With the POWER-switch, you can switch the controller on and off.

**Attention:** The maximum length of the connection cable between load and controller may not exceed 50 m.

### Outputs

The output sockets are located on the rear panel. Connect your loads to the connectors. The maximum load per channel is 27 W. Please note that the maximum current must never be exceeded!

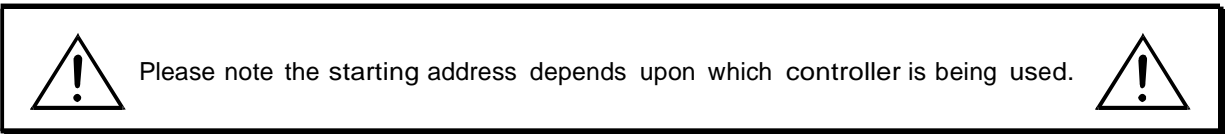
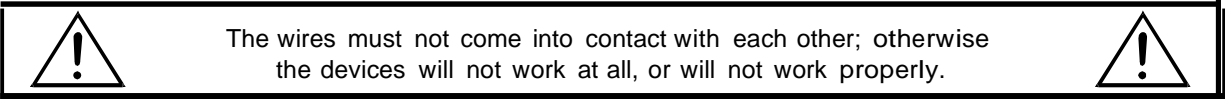
### Master/Slave-operation

The master/slave-operation enables that several devices can be synchronized and controlled by one master-device.

On the side panel of the controller you can find an XLR-jack (DMX Out) and an XLR-plug (DMX In), which can be used for connecting several devices.

Choose the device which is to control the effects. This device then works as master-device and controls all other slave-devices, which are to be connected to the master-device via a balanced microphone lead. Connect the DMX OUT-jack with the DMX IN-plug of the next device.

## DMX-512 control



Only use a stereo shielded cable and 3-pin XLR-plugs and connectors in order to connect the controller with the device or one device with another.

Occupation of the XLR-connection:



If you are using controllers with this occupation, you can connect the DMX-output of the controller directly with the DMX-input of the first device in the DMX-chain. If you wish to connect DMX-controllers with other XLR-outputs, you need to use adapter-cables.

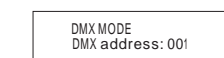
Building a serial DMX-chain:

Connect the DMX-output of the first device in the DMX-chain with the DMX-input of the next device. Always connect one output with the input of the next device until all devices are connected.

Caution: At the last device, the DMX-cable has to be terminated with a terminator. Solder a 120 resistor between Signal (-) and Signal (+) into a 3-pin XLR-plug and plug it in the DMX-output of the last device.

## Addressing the device

The control board allows you to assign the DMX fixture address, which is defined as the first channel from which the LED PSI-1 DMX will respond to the lighting controller.



To define the starting address, you have to be in DMX-mode. Press MODE until the display indicates d001. In DMX-mode, the DMX LED indicator lights up.



Set an address between 001 and 512 via the UP and DOWN buttons.

Controlling:

After having addressed the LED PSI-1 DMX, you may now start operating it via your lighting controller.



## Connection with the mains



### DANGER TO LIFE!

The electric connection must only be carried out by a qualified electrician!

The occupation of the connection-cables is as follows:

Cable	Pin	International
Brown	Live	L
Blue	Neutral	N
Yellow/Green	Earth	

The earth has to be connected!

If the device will be directly connected with the local power supply network, a disconnection switch with a minimum opening of 3 mm at every pole has to be included in the permanent electrical installation.

The device must only be connected with an electric installation carried out in compliance with the IEC-standards. The electric installation must be equipped with a Residual Current Device (RCD) with a maximum fault current of 30 mA.

## OPERATION

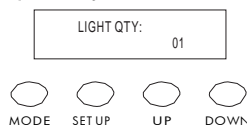
After connecting the device to the mains, the controller starts running. This unit has two operating modes. It can be run DMX-controlled or as a Stand Alone-unit.

Start your LED Controller. "WELCOME TO USE" appears on the LC-display and the unit is carrying out a self-test.

### Navigate through the menu

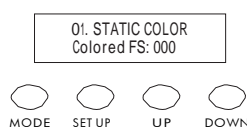
Press MODE to navigate through the 6 points of the main menu of the LED PSI-1 DMX.

#### 1. LIGHT QTY - Luminaries quantity



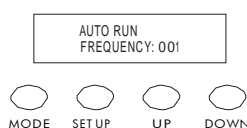
Under this point of the menu, you can define the number of LED luminaries connected to the LED PSI-1 DMX. For an ideal performance, always connect an even number of LED luminaries (4, 6, 8, 10, and 12) to this controller.

#### 2. 01- 14 - Internal programs



Under this point of the menu, you can select one of 14 internal programs (chasers). A chaser is a sequence of different steps that will be called up one after another in a continuous loop. The chaser speed (SP) and the strobe speed (FS) is also adjustable. Use the button SET UP to jump from input value to input value and define the values with buttons UP/DOWN.

#### 3. AUTO RUN - Automatic Color-Change



With this point of the menu, you can activate the automatic color-change. In Auto Mode the chasers are called up automatically in a continuous loop. The frequency of the loops can be defined via buttons UP/DOWN between 001 and 100.

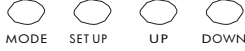
#### 4. DMX MODE - DMX-controlled mode

Under this point of the menu, you can define the DMX starting address and the DMX mode.

##### Setting DMX starting address

DMX MODE  
DMX address: 001

Set a value between 001 and 512 via buttons UP/DOWN.



##### Setting DMX mode

DMX MODE  
Channel No.: 05

Press SET UP and select a value (5, 9, 13, 17, 25, and 49) via buttons UP/DOWN.



#### DMX protocol

The DMX operating mode is defined via the first DMX channel. If a DMX value between 251 and 255 is selected for the first DMX channel, the following protocol applies to the device:

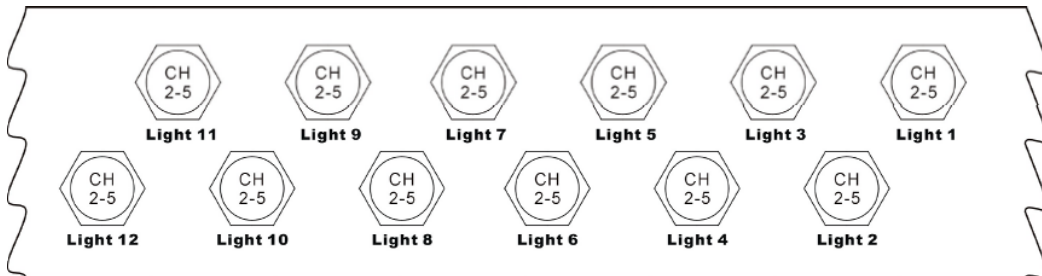
CH1	CH2		CH3	CH4	CH5
251-255	DMX value	Function	Speed 0-255	Strobe 11-255 (0-28Hz)	No Function 0-10
	0-10	Black Out			
	11-21	Red			
	22-32	Yellow			
	33-43	Green			
	44-54	Cyan			
	55-65	Blue			
	66-76	Purple			
	77-87	White			
	88-98	Slow Dream			
	99-109	Fast Dream			
	110-120	Color Fade	No Function		
	121-131	Color-Change			
	132-142	Flow1			
	143-153	Flow2			
	154-164	Flow3			
	165-175	Flow4			
	176-186	Double Flow1			
	187-197	Double Flow 2			
	198-208	Multi-Color			
209-219	2-color Flow1				
220-230	2-color Flow2	Set color 0-255			

	231-255	Sound-controlled	Sensitivity 0-255	No Function	No Function
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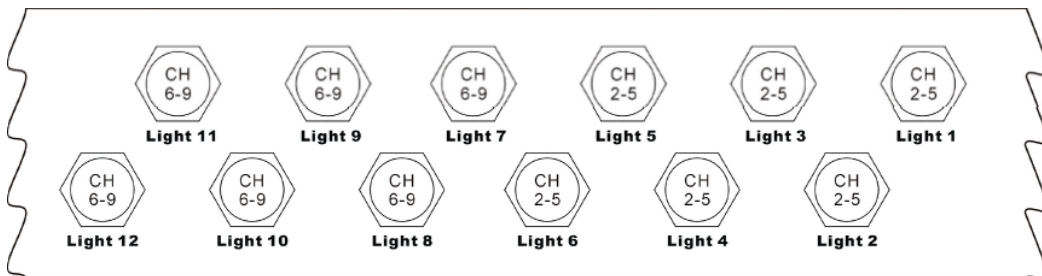
If a DMX value between 0 and 250 is selected for the first DMX channel, the following protocol applies to the device:

CH1	CH2	CH3	CH4	CH5	up to CH49
0-250-Dimmer (0-100%)	0-10-No func 0-255-Strobe	0-255-Red	0-255-Green	0-255-Blue	...

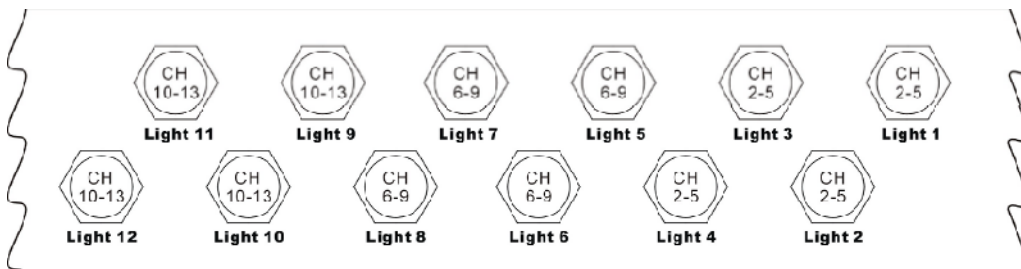
5-channel mode: Dimmer and 4 channels per spot: Strobe, Red, Green, and Blue



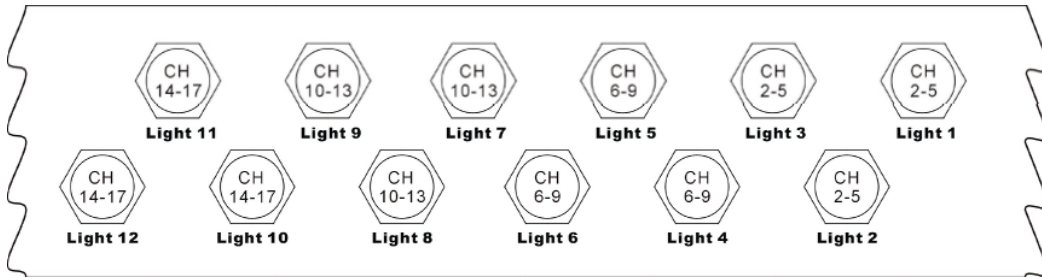
9-channel mode: Dimmer and 4 channels for a group of 6 spots: Strobe, Red, Green, and Blue



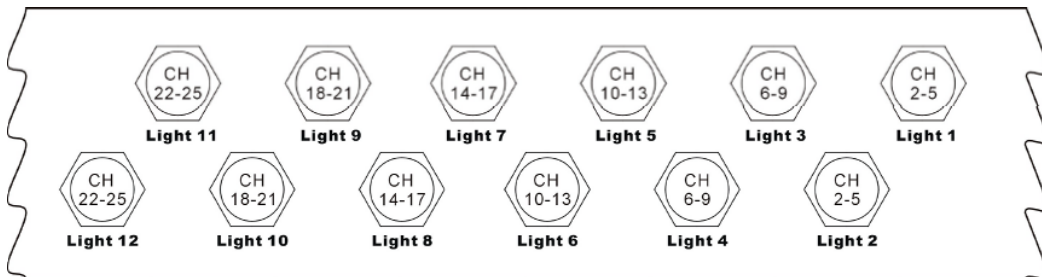
13-channel mode: Dimmer and 4 channels for a group of 4 spots: Strobe, Red, Green, and Blue



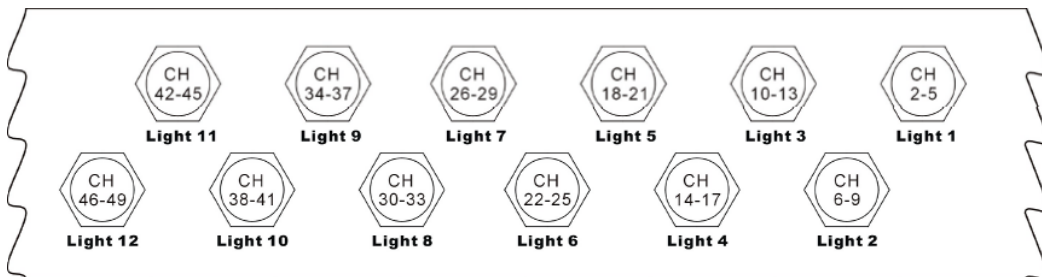
17-channel mode: Dimmer and 4 channels for a group of 3 spots: Strobe, Red, Green, and Blue



25-channel mode: Dimmer and 4 channels for a group of 2 spots: Strobe, Red, Green, and Blue



49-channel mode: Dimmer and 4 channels for each spot: Strobe, Red, Green, and Blue



### 5. SLAVE MODE



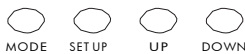
With this point of the menu, you can activate the slave mode.



### 6. SOUND MODE - Sound-controlled mode



With this point of the menu, you can activate the slave mode. Via buttons UP/DOWN, you can define the input level between 0 and 31.



## CLEANING AND MAINTENANCE



### DANGER TO LIFE!

Disconnect from mains before starting maintenance operation!

We recommend a frequent cleaning of the device. Please use a soft lint-free and moistened cloth. Never use alcohol or solvents!

There are no serviceable parts inside the device except for the fuse. Maintenance and service operations are only to be carried out by authorized dealers.

### Replacing the fuse

If the fine-wire fuse of the device fuses, only replace the fuse by a fuse of same type and rating.

Before replacing the fuse, unplug mains lead.

- Step 1: Open the fuse holder on the rear panel with a fitting screwdriver.
- Step 2: Remove the old fuse from the fuse holder.
- Step 3: Install the new fuse in the fuse holder.
- Step 4: Replace the fuse holder in the housing.

If the power supply cable of this device becomes damaged, it has to be replaced by a special power supply cable available at your dealer.

Should you need any spare parts, please use genuine parts.

## TECHNICAL SPECIFICATIONS

Power supply:	100-240 V AC, 50/60 Hz ~
Max. power output:	320 W
Max. current:	26.4 A
Output voltage:	12 V DC
Max. output/channel:	27 W
Max. current/channel:	2.2 A
Number of control-channels:	12
Integrated programs:	49
Fuse:	F 4 A, 230 V
DMX output:	3-pin female XLR socket
DMX input:	3-pin male XLR socket
Dimensions (WxDxH):	110 x 46 x 7 mm
Weight:	5 kg
Accessory:	
Extension cord for PSI-1, 10m,	No. 51930446
Extension cord for PSI-1, 5m,	No. 51930447
Extension cord for PSI-1, 2m,	No. 51930448

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