Pixel

USER MANUAL
vrs. 1.2 - 16.05.2023

coemar

Congratulations on having purchased a **Coemar** product. You have assured yourself of a fixture of the highest quality, both in componentry and in the technology used. We renew our invitation to you to complete the service information on the previous page, to expedite any request for service information or spares (in case of problems encountered either during, or subsequent to, installation). This information will assist in providing prompt and accurate advice from your **Coemar** service centre. Following the instructions and procedures outlined in this manual will ensure the maximum efficiency of this product for years to come.

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1. Packaging and transportation

1.1 Packaging
Open the packaging and make sure that no part of the equipment has suffered any damage during the transportation. In case of damage to the fixture, contact your currier and your supplier immediately by telephone, fax or email, and inform them you will formally notify them in writing through registered letter.

Packing list
Make sure the packaging contains:
1 Pixel
1 Instruction manual

1.2 Transportation
The **Pixel** must be transported exclusively in its original packaging or in an appropriate flight case.

2. General information

2.1 Important Safety information
Fire prevention:
1. Never locate the fixture on any flammable surface.
2. Minimum distance from flammable materials: 0,5m.
3. Minimum distance from the closet illuminable surface: 0,5m.
4. Replace any blown or damaged fuse only with those of identical values.
   Refer to the schematic diagram if there is any doubt.
5. Connect the projector to mains power protected by a thermal magnetic circuit breaker.

Prevention from electric shock:
1. Presence of high voltage inside of the fixture. Insulate the projector from mains supply before opening or performing any function which involves touching the inside of the fixture, including lamp replacement.
2. For the connection to the mains, adhere strictly to the guidelines outlined in this manual.

1. The level of technology of **Pixel** requires the use of specialized personnel for all service applications; refer all work to your authorized **Coemar** service center.
2. A good earth connection is essential for the proper functioning of the projector. Never connect the fixture if there is no earth connection.
3. Mains cables must not come into contact with other cables.
4. Do not operate the projector with wet hands or in an area where water is present.
5. The fixture must never be located in an exposed position, or in areas of extreme humidity.

Safety:

1. The projector must always be installed with bolts, clamps, or other fixing devices which are suitably rated to support the weight of the projector.
2. Always use a secondary safety fixing device with chain or steel wire of a suitable rating to sustain the weight of the unit in case of failure of the principal fixing point.
3. The external surfaces of the unit, at various points, may reach 60°C. Never handle the unit until at least 10 minutes have elapsed since the LED was turned off.
4. Never install the fixture in an enclosed area lacking sufficient air flow; the room temperature must not exceed 40°C.
5. The projector contains electronic and electrical components which must under no circumstances be in contact with water, oil or any other liquid. Failure to do so will compromise the proper functioning of the projector.

2.2 Warranty conditions
1. The fixture is under warranty for 24 months from the purchase date against factory defections.
2. Damage ought to unskillfulness, inappropriate use, or lack of suggested maintenance are excluded from the warranty.
3. Warranty expires when the projector is opened by unauthorized personnel.
4. Warranty doesn't include the replacement of the fixture.
5. Serial number and model of the fixture are necessary to retrieve informations and assistance from the dealer.

2.3 EC Norms
1. The fixture satisfies the essential requirements of the directive 2004/108/EC, 2006/95/EC, 2011/65/EC, 2002/96/EC & 2003/108/EC.
2. The fixture is in accordance with the standard EN 50419 (RoHS) and satisfies the requirements of the directive 2002/96/EC (WEEE).

3. Product specifications

3.1 Technical charateristics

Power supply	48Vac
Maximum current	0.25 A @ 48Vac
Power consumption	12W
Color temperature	RGBW
Weight	1 kg - 2.20 lbs
Maximum ambient temperature	35°C
IP rating	IP65

3.2 Dimensions
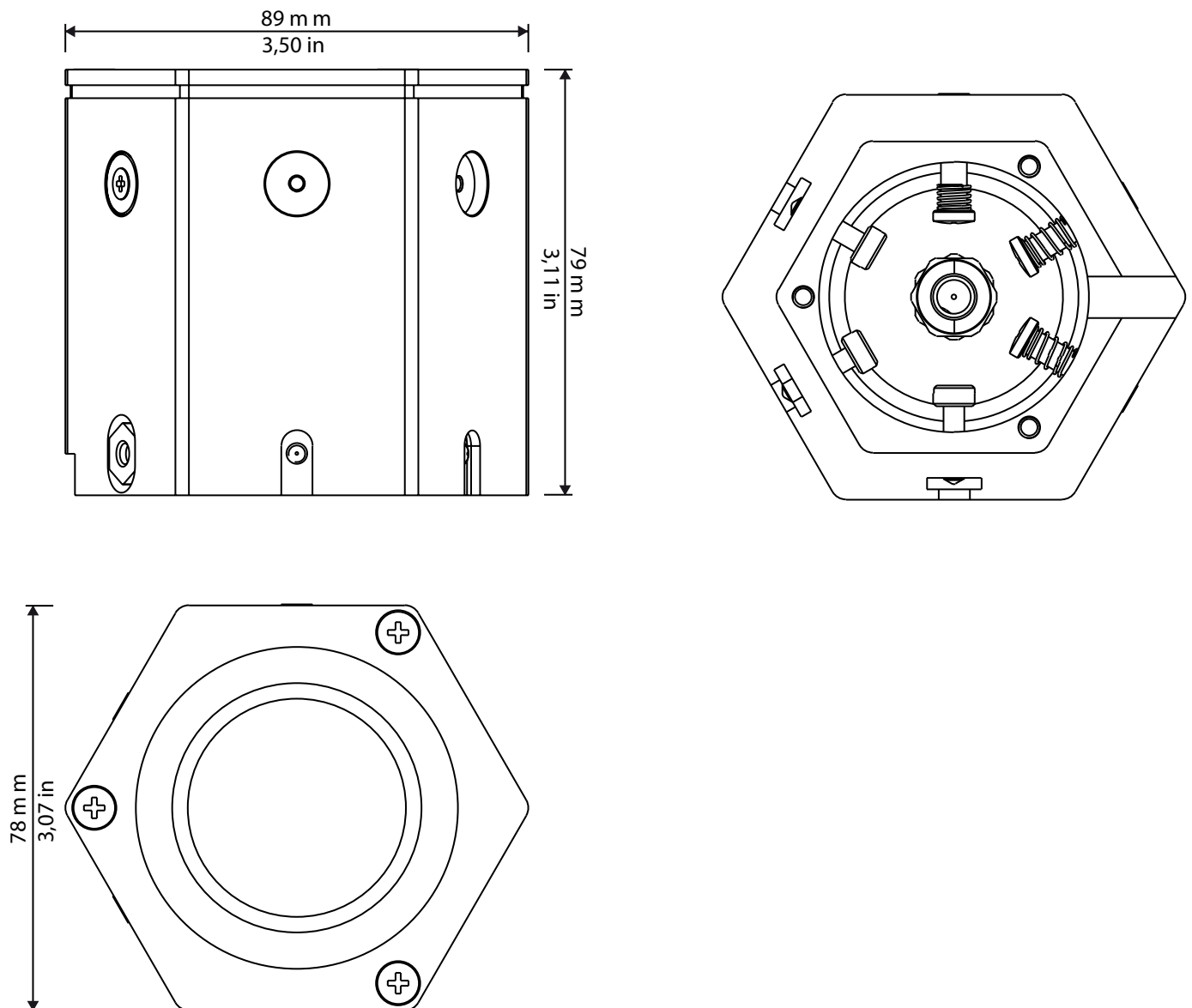
3.3 Unit's main components

Components description	
A	Cable gland
B	Spring
C	Docking accessory
D	Yoke
E	Fixing screw
F	Adjustment yoke screw
G	Cable hole
H	Fixing washer

*without yoke

*with yoke
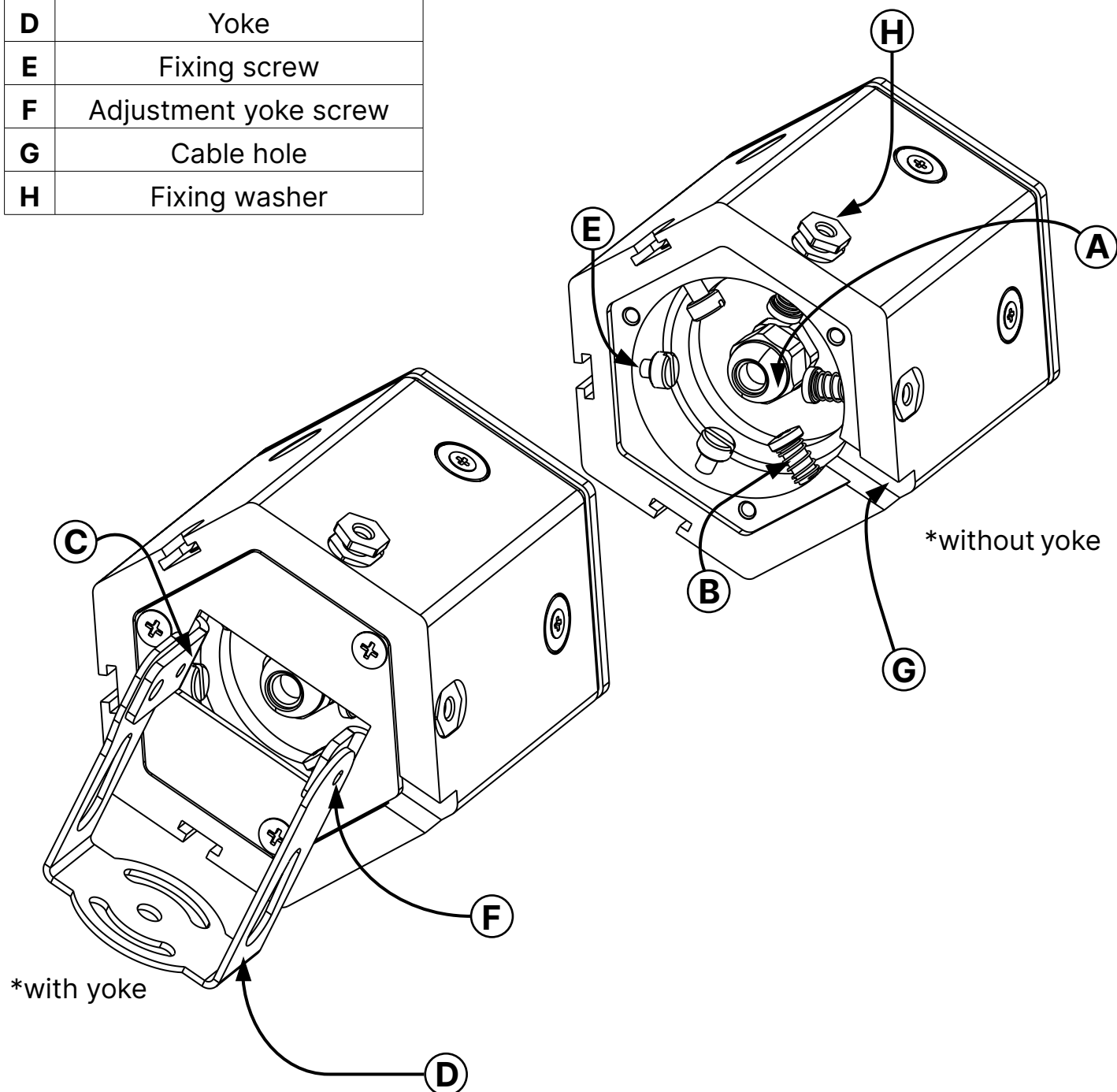
4. Installation

4.1 Mechanical installation

Pixel may be hung from an appropriate structure in any position or on tripod. If hanging the fixture from a lighting truss or similar, we recommend the use of an appropriate yoke "A", as shown in the following diagram.

> **Warning!!**
> Always ensure that your support structure and fixing (bolts, clamps, etc...) are rated to support the weight of the fixture.

A
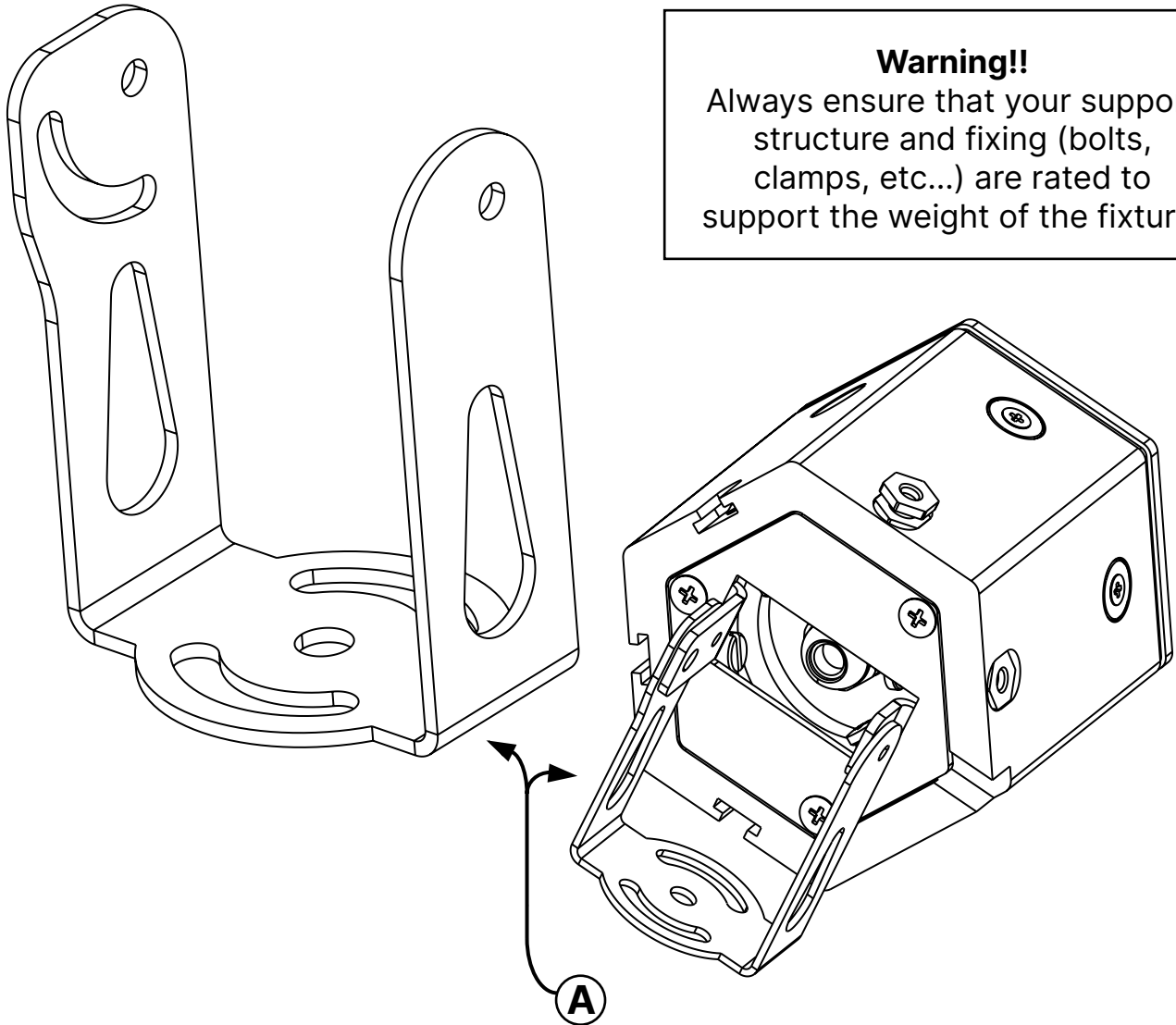
4.2 Fastening in series

Pixel can be connected in series with other **Pixel** up to a maximum of 32. Follow the instruction below.

- Position two **Pixel** one beside the other;
- Slide the two **Pixel** (in the direction shown below) until the fixing washer "A" will not be entered in the hole "B";
- Match the fixing washer's hole "C" with the fixing screw "D";
- Push the fixing screw "D" in the hole "C";

Now the two **Pixel** will be fixed together.
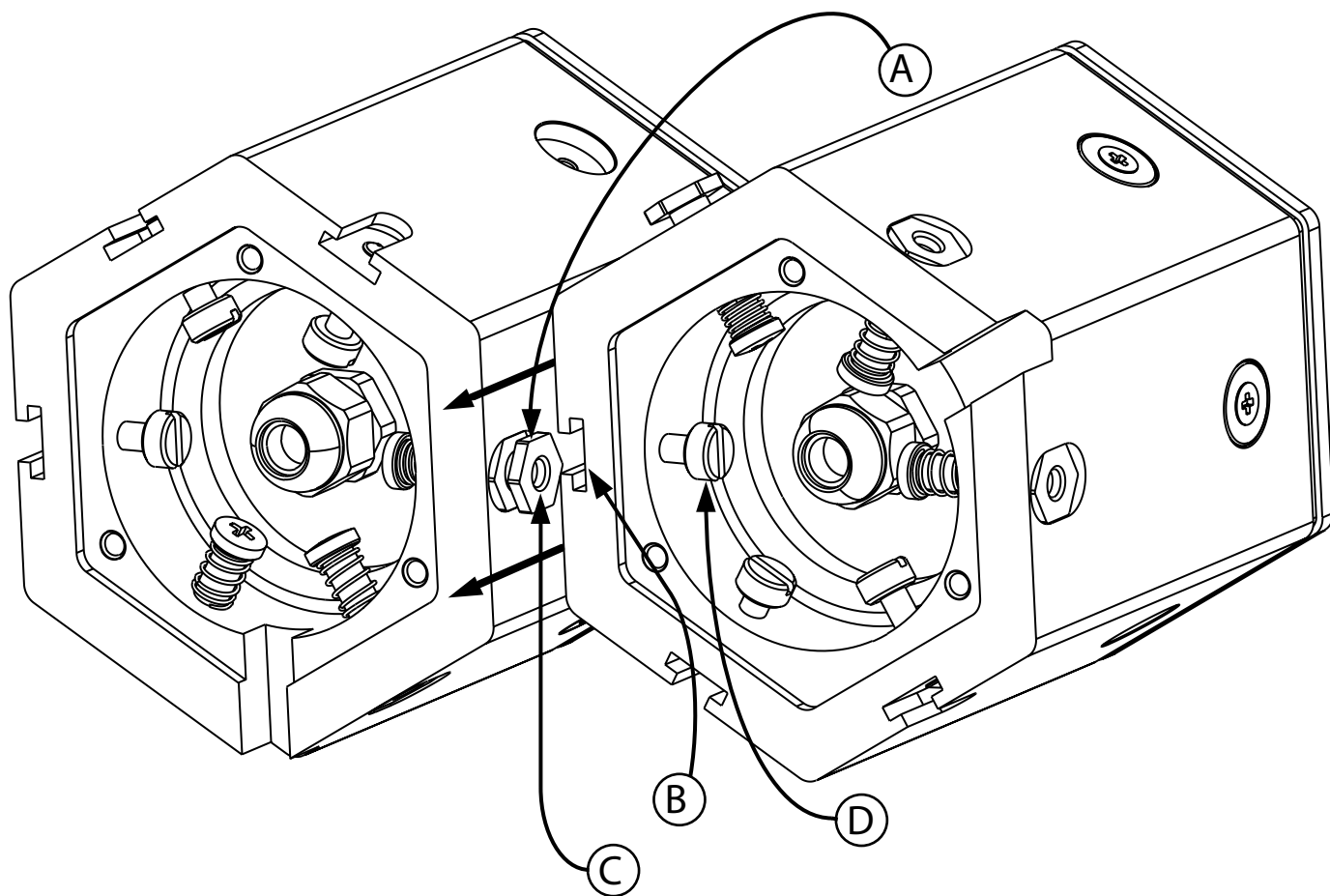
5. Powering up

5.1 Operating voltage and frequency

The unit may operates with a voltages of 48 Vdc. It is not needed to effect any setup procedures: **Pixel** will automatically adjust its operation to suit any frequency or voltage within this range.

5.2 Connection to mains power

Mains cable characteristics

The mains cable provided is thermally resistant, complying to the most recent International standards.

Note: in case of cable replacement, similar cable with comparable thermal resistant qualities must be used exclusively (cable PVC extrafles 1X10, AWM style 1569 105°, **Coemar** cod. RCVM01/N).

Connection to mains power

To connect **Pixel** to the main power follow the instruction below.
- Take your power supply Switching and the **RegoPixel** (Pag. 14)
- Connect the Switching to the power plug and than connect the RegoPixel to the Switching;
- Connect the **Pixel** to the **RegoPixel**.
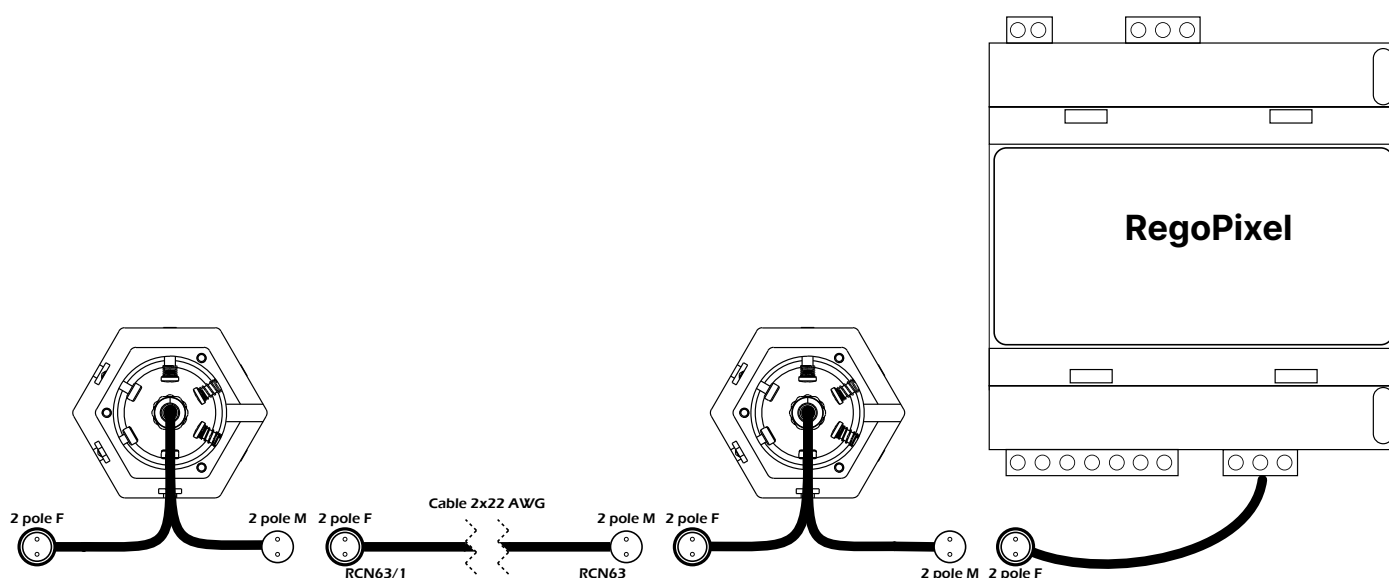
Warning!!
- The use of a thermal/magnetic circuit breaker is recommended. Strict adherence to regulatory norms is strongly recommended.
- Prior to connecting the device to mains power, ensure that the mains characteristics are within the recommended range for the use of **Pixel**.
- All cabling and connections should be carried out by a suitably qualified personnel.

6. Control signal connections

6.1 Control signal connection by XLR5 plugs

The digital control signal is transmitted to the projector via two pole cable screened according to the International standards for the transmission of DMX 512 data. The connection must be serial, by connecting the single output cable from the **Pixel** in the **RegoPixel**'s entrance "A", which will be connected to a console. The connectors provided with the **Pixel** are IP rating, ensuring protection against dust and water. In order to maintain this gradation they may only be connected to other connectors with IP rating.
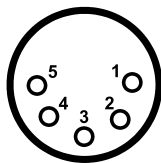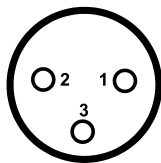
Pin 1 = Mass (GND)
Pin 2 = Data -
Pin 3 = Data +
Pin 4 = not connected
Pin 5 = not connected

> **Warning!**
> Make sure that screening and conductors are not in contact one another or with the metal housing of the connector.
> Pin#1 and housing must never be connected to the power supply unit.
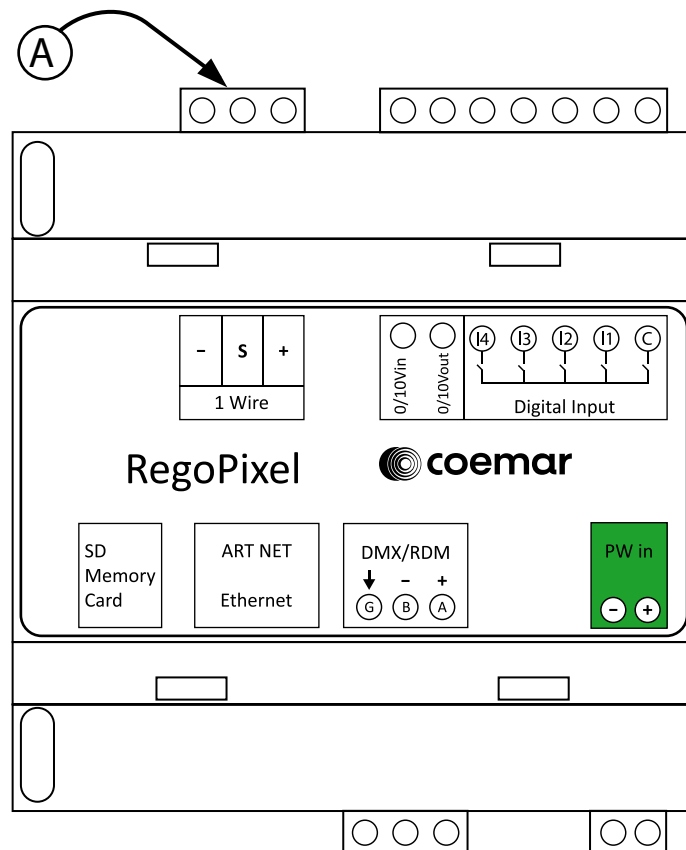
6.2 Saving the DMX signal

If you want to use the projector without a console is possible to memorize a DMX address removing the DMX signal when the projector is on, to keep the current values at the time when the signal is removed

7. Turning on the projector

After having followed the preceding steps described, proceed with the power supply and turn on the projector connecting it to the mains power.

7.1 DMX addressing

Every **Pixel** uses 4 address channels for its complete functioning and it is controlled with a DMX512 signal. The assignment of the DMX channel is automatically done by the **Pixel** at the moment it will be connected to **RegoPixel**; if you connect more **Pixels**, the signal will also be set automatically but with a "cascade" method, then the first to receive the signal will be the **Pixel** # 1 then # 2, and so on.
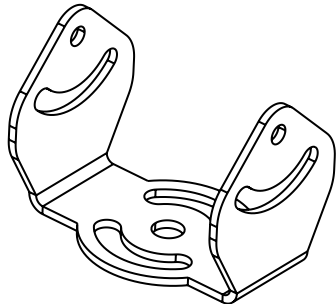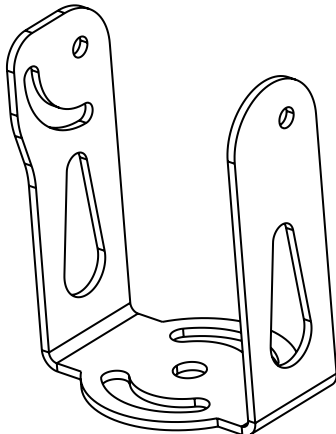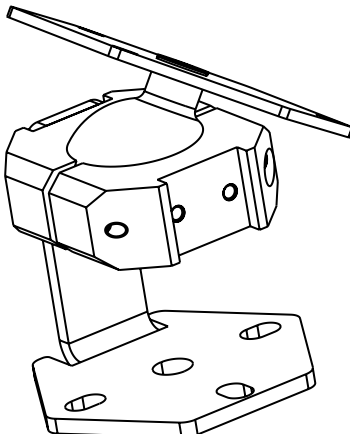
8. DMX chart

8.1 DMX chart 4 channels

channel	function	type of control	effect	decimal			percentage		
1	red	proportional	proportional control of the color percentage from 0 to 100%	0	-	255	0%	-	100%
2	green	proportional	proportional control of the color percentage from 0 to 100%	0	-	255	0%	-	100%
3	blue	proportional	proportional control of the color percentage from 0 to 100%	0	-	255	0%	-	100%
4	white	proportional	proportional control of the color percentage from 0 to 100%	0	-	255	0%	-	100%

9. Accessories and spare parts

All **Pixel**'s components are available as spare parts from your Coemar service centers. Specifying in detail the projector model and the replacement part requested, will help the service center to serve you in the best way.

Accessory name	Code	Detail
Short yoke	BC10031A003	
Long yoke	BC10031A004	
Spherical joint	BC10031A005	

10. RegoPixel

RegoPixel is DMX/RDM system with a power supply of 48 Vdc. It is not neccessary to polarize the conductors, thanks to this the cabling will be easier. The maximum number of connectable is 32 and a maximum of 8 byte of datas, while the maximum total charge allowed is 500W @ 24 Vdc. **RegoPixel** is compatible with ArtNet systems where it cam be used as node to a DMX universe, or it can be controlled through DMX remaining compatible with RDM, allowing all the possible action of setting DMX channels. **RegoPixel** is seen as a transparent object, it means that the signal goes directly to the single **Pixel**. **RegoPixel** can be used as a DMX recorder too, thanks to the SD card dadicated slot you can memorize one or more shows. The **RegoPixel** comunication is a Time Slot type where **RegoPixel** is the master that provides power and DMX to the modules.
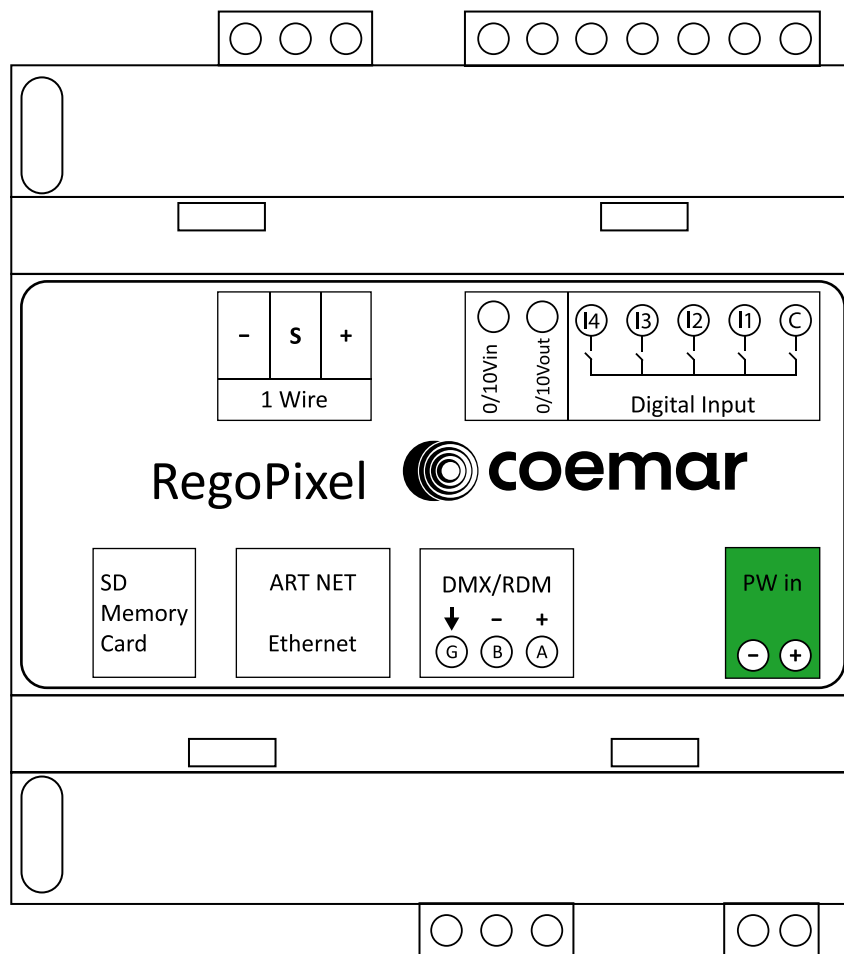
10.1 DMX In & Out Mode

RegoPixel can works as DMX receiver (DMX In Mode) or DMX generator (DMX Out Mode). The modality is selected through Ethernet command using the eSuite or JArtNet software. The default IP is 10.0.0.190. The status and the modality of functioning are indicated by the 5 LEDs, described after. When **RegoPixel** is in DMX In Mode, the device respond to all the standard RDM command (basic DMX address, DMX address of the single RegoPixel, etc. etc.). If Play of a show registered on the SD card will be started, the device become temporarily a DMX generator. If the device is in DMX Out Mode and you don't have an Ethernet connection, to bring it back in DMX In Mode, apply a DMX signal in the entrance and turn on the device.

10.2 Input description

The device has 4 digital input (IN1 - IN4) whose functionality is described below.

- Input IN1-IN2: Run prerecordered Shows on SD card, in according to table below. 0 = input false 1 = input true:

IN2	IN1	Function
0	0	Stop
0	1	Play show n.1
1	0	Play show n.2
1	1	Play show n.3

- IN3: Reserved for future use

- IN4: Command Play Stop / Play Start / Record Stop / Record Start on single button:

The input IN4 is useful in case you wish to record a show in one of the three available position. A short press produces the stop of an eventual Play/Record in progress. If the device is already in Stop, produces the start of the selected show on the inputs IN1 and IN2. If the inputs are both at rest, will start the show # 1 or the last show activated via Ethernet (1-999).
To launch a Play is not necessary to act on IN4, because the IN1 and IN2 perform this automatically when they change their status.

The input's functions don't prevent the regular functioning of the commands Play/Record imparted by eSuite or JArtNet. For this purpose, they act only on change in status.
You can leave unconnected inputs and also achieve operation of the Play/Record remotely via Ethernet, despite IN1 and IN2 are at 0 (condition which normally corresponds to Stop). The number of shows selected remotely via ArtNet (Ethernet 1-999) remains operative and you can run it in Play also through IN4 short activation. It is only lifted by acting on IN1 and IN2, because they select the show 1-3 according to their state.
The status of the IN1 and IN2 input can be altered in all the combinations; you don't need to pass by the Stop to activate the Play in a different show. The device provides to close preventively the file of an eventual show in progress, before to launch the new one.
In case you start the Play through an Ethernet command, the device remember the first status in case of the power supply's shutdown and it performs the show eventually previously activated; if the IN1 and IN2 entrance are different by 0, it will be activated the show slected by them.

10.3 Recording a show

To record a show in the SD card, follow the instruction below:
- Select the number of the show that you wish to record (1-3) acting on IN1 and IN2;
- If a show is present (so it is started in Play), stop it activating IN4 briefly;
- Give the signal to record on DMX In or ArtNet;
- Start the recording IN4 activating IN4 for more than 2 seconds;
- To terminate the recording, activate IN4 briefly.

10.4 Signaling LED

The yellow/red LEDs, on the Ethernet connector side, indicate the status of the Ethernet link (ArtNet):
- Both off = unconnected cable
- Red on/flashing = link at 10mbit LED 9
- Yellow on/flashing = link at 100mbit LED 10

LED status device

LED 3 = Green
LED 6 = Red
LED 7 = Yellow

*see the LED's table at page 17

At the start you'll see the LED 6 Red will blink during the bootloader loading, than the LED 7 Yellow, that indicates the direct DMX In fase, that can revoke an eventual DMX Out Mode status. At last, LED 3 Green or LED 6 Red will stay ON depending on the operating condition, described below:

- LED 3 Green ON = DMX Input Mode;
- LED 3 Green blinking = DMX in entrance;
- LED 6 Red ON = DMX Output Mode;
- LED 6 Red blinking = ArtNet in entrance;

If ArtNet is present but the device is in DMX In Mode, you will se the Green ON and Red blinking.
During the functioning, the Yellow LED will turn ON if the first channel DMX/ArtNet is ≥ 128 (receiving monitor).

LED signaling logic for the player:
- LED 3 Green slow blink = Play (SC card)
- LED 3 Green very slow blink = automatic Show
- LED 6 Red slow blink = Record; if DMX input is receiving data frames, the Green LED will flash at 25%.

If Play/Record is in pause, the respective LED will blink with duty 20% (pratically a slow blink).
If the SD card give mistake, the Red LED will flash slow with a duty of 90% for three seconds.

LED signaling table:

Condition	LED 6 / LED 3 RED	GREEN
DMX In Mode, no signal in entrance	off	on
DMX IN mode, DMX Engaged, trasmission ArtNet + **RegoPixel**	off	flash
DMX IN mode, ArtNet In available, trasmission **RegoPixel**	flash	on
DMX Out Mode, no signal in entrance	on	off
DMX Out, ArtNet IN, DMX Out + **RegoPixel**	flash	off
Universe filter on , 25% duty on Green	flash	flash 25%
SD card Record in progress; Green blink if DMX frames input	slow flash	
SD card PLAY	off	slow flash
Auto Show in progress	off	very slow flash
SD card error	slow 90%	off
Play or Record pause LED blink duty 20%		
Node during connection to pilot (normale at power-on)	on	on
Node not registered line problem	fast flash	fast flash
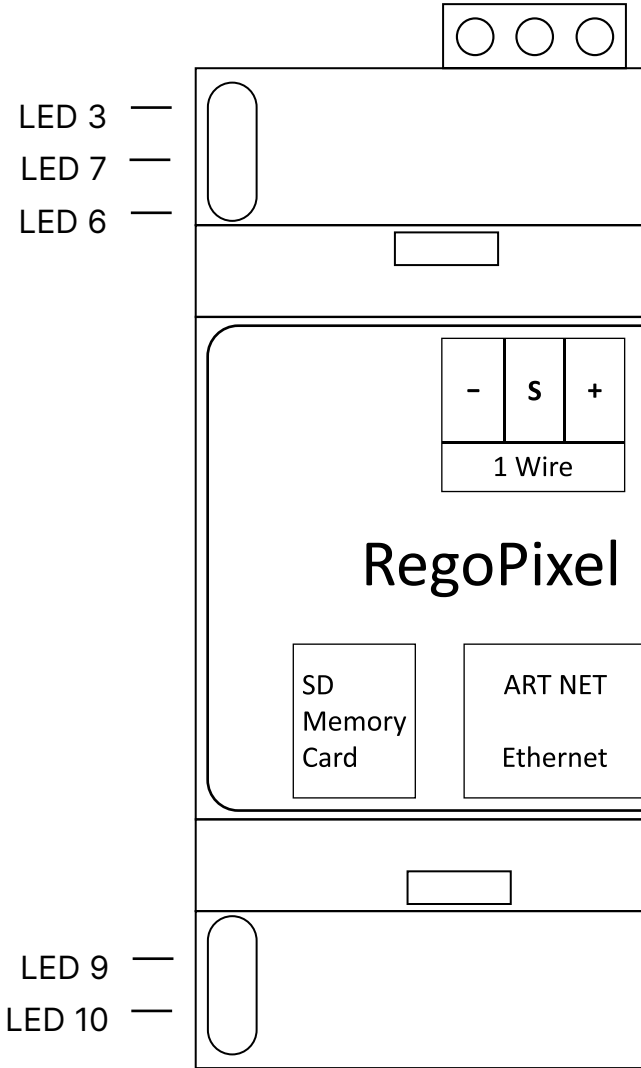
10.5 RDM setting screen

Slave discovery
Slave identification
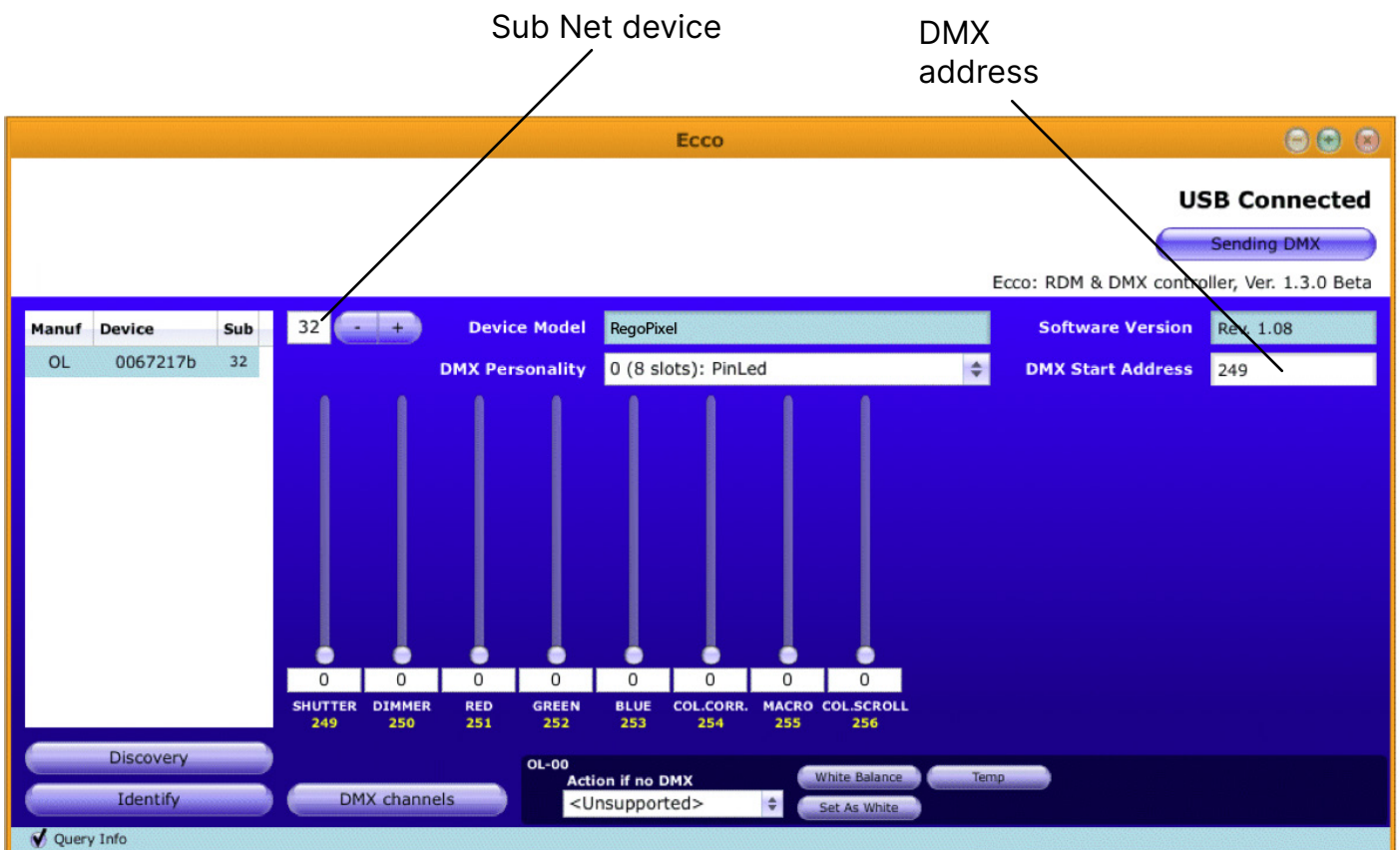
Sub Net device   DMX address

11. Maintenance

11.1 Firmware update
The fimware of **Pixel** can be updated through the RDM protocol (ANSI E1.20). Contact **Coemar** assistance to receive the software and the device updater.

11.2 Periodic cleaning
Lenses

Even a fine layer of dust can reduce the luminous output and alter the compactness of the beam. Regularly clean all filters and lenses using a soft cotton cloth, dampened with a specialist lens cleaning solution.

Cleaning of the unit

Use a soft brush or a common vacuum cleaner or a source of compressed air for removing dust. For the cleaning of the housing use a soft cloth and a non-aggressive cleaner. Check that the internal fans and heat exchanger must be perfectly clean.

11.3 Periodic controls
Mechanical components

Check the correct working of the mechanical parts and, if needed, replace them. Make sure the projector is not mechanically damaged. If necessary, replace the worn parts.

Electrical components

Check all electrical connections, in particular for correct grounding and correct attachment of all extractable connectors. Press the connectors if necessary and reposition as before.

12. F.A.Q. and answers

The following list shows common issues that may be simply solved. If issues persist, the unit must be repaired by qualified personnel or just contact your **Coemar** service near you.

Question	Possible solution
Pixel does not emitt light	**Projector not powered on:** • Make sure the power cord is plugged in or test the input voltage;
Pixel does not answer to DMX signal	**DMX signal may not reach Pixel:** • Inspect the cable connection, correct poor connections or inefficient repair or replace damaged cables;

User notes

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	Information on disposal of the equipment
	The equipment at the end of its useful life must be disposed of at an appropriate recycling center for waste electrical and electronic equipment. The treatment and disposal of environmentally friendly, helps prevent potential negative environmental and health and promote the reuse and / or recycling of materials making up the equipment. Illegal disposal by the user includes the application of administrative sanctions provided by law.

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