DMX REFERENCE

TB1440IP

Conic Designs



Manufacturer	Conic Designs
GDTF file	Conic_Designs_TB1440IP_168099.gdtf
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1 About this manual

This document describes the TB-1440-IP by Conic Designs. It was compiled from the GDTF file Conic_Designs_TB1440IP_168099.gdtf from the GDTF-Share library.

File revision: “Rev_1”.

The DMX modes, the channel functions and the technical data are given as the GDTF file states them. Installation, operation from the device's control panel, service and safety instructions are described in the manufacturer's original user manual, which takes precedence over this document.

This document was not issued or endorsed by Conic Designs; product names and trademarks belong to their owners.

Safety notices are marked with signal words according to the severity of the hazard: DANGER – an imminent hazard that will result in death or serious injury; WARNING – a potential hazard that could result in death or serious injury; CAUTION – a potential hazard that could result in minor injury or property damage; NOTE – additional information for correct and safe use.

> **NOTE** This product is designed for stage and effect lighting. It is not suitable for household room illumination.

2 Quick reference

Parameter	Value
Weight	9.2 kg
Ingress protection	IP65

DMX modes

Mode	Channels	Units in one universe	First start addresses
Small Mode 5ch	5	102	1, 6, 11, 16, ...
Simple Mode 11ch	11	46	1, 12, 23, 34, ...
62 Channel	62	8	1, 63, 125, 187, ...

No light? Check these channels

- Simple Mode 11ch: CH 2 Shutter at 2–4 or 251–255 “Shutter Open”
- 62 Channel: CH 2 Shutter at 2–4 or 251–255 “Shutter Open”



Read the manual before use



Do not stare into the light

3 Safety instructions



Read the manual before use



Do not stare into the light

⚠ WARNING

- This device is intended for professional use. Installation, connection, setup and maintenance must be carried out only by suitably qualified persons who have read this manual.
- Use the device only for its intended purpose and as described in this manual.
- Do not open the housing and do not modify or tamper with the device. Refer all repairs to an authorized service center.
- Do not use the device if its housing, power or data cable, or a connector is damaged, if the device has been dropped, or if liquid or a foreign object has entered it. In such a case, have it checked by a service center.
- Disconnect the device from the power supply before cleaning, maintenance or any work on the connections.
- After moving the device from a cold to a warm environment, let it reach room temperature before switching it on to prevent condensation inside.
- The device is not a toy; keep it out of the reach of children.

⚠ CAUTION

- The device is rated IP65 and may be used outdoors within the limits of this rating.
- This protection is effective only when all connectors are mated or closed with their protective caps and all seals are intact. Use cables and connectors with the same or a higher protection rating.
- Do not open the housing; opening it breaks the seals and the protection rating can no longer be guaranteed.
- Install the device so that water cannot collect around connectors and cable glands, and inspect seals and cables regularly.

⚠ CAUTION

- This device emits intense light. Do not look directly into the light source or the beam at close range; doing so may damage your eyes.
- Do not aim the beam at the eyes of people or animals at close range, and do not view the light source through optical instruments (binoculars, camera lenses).
- Do not aim the beam at flammable or heat-sensitive materials at close range.

⚠ CAUTION

- Strobe and fast flashing light effects can trigger epileptic seizures in susceptible people (photosensitive epilepsy) and can cause nausea or disorientation.
- Inform the audience and performers in advance that strobe effects will be used, for example with a notice at the entrance, and do not use them longer than necessary.

4 Product description

Description in the GDTF file

“The TB1440IP is a fantastic LED Bar light for usage indoors and outdoors with IP65 and 14 pcs of 40W 4in1 RGBW LEDs. It offers a variety of configurations such as 16x30W LED 4 in 1, 18x15W 4in1, 18x20W 6in1. Each LED has independent control. Its total of 72 DMX Channels makes for amazing color effects. Its 400Hz refresh rate makes it appropriate for TV studio use.”

5 Installation

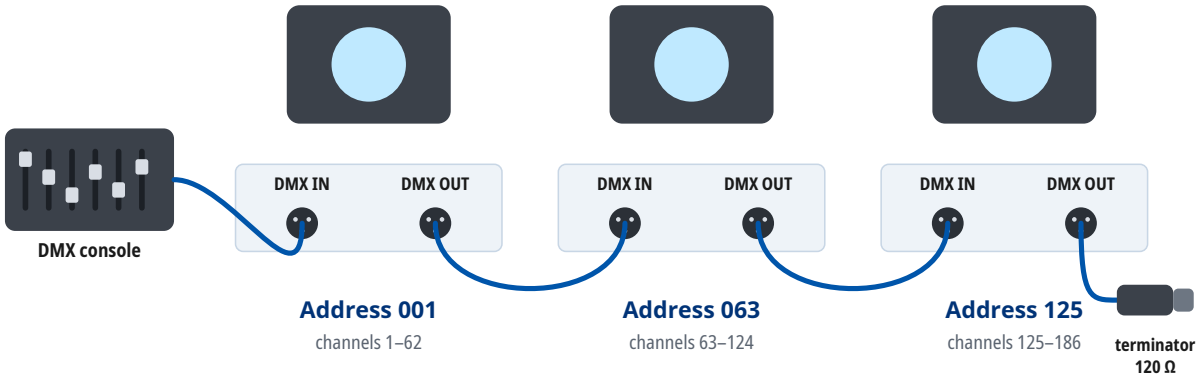
⚠ **WARNING**

- Rigging must be carried out only by qualified persons in accordance with applicable regulations, in particular those for work at height.
- The supporting structure and fixings must safely carry the weight of all suspended devices; verify their load capacity in advance.
- Weight of the device: 9.2 kg.
- Use suitable mounting hardware (for example truss clamps) and tighten all screw connections properly.
- Always secure the suspended device against falling with a safety cable of adequate load capacity, routed through a fixed point of the device and around the supporting structure.
- During installation and removal, keep people out of the area below the work position.
- Regularly inspect the fixings and the safety cable for damage, corrosion and loosening.

6 Connections

- Use shielded cable designed for DMX512 with an impedance of 110 Ω. Ordinary microphone cable is not suitable for DMX, especially over longer distances.
- Connect the devices in a daisy chain: connect the DMX OUT of one device to the DMX IN of the next. Do not split the line with Y-cables or wire it in a star; the line may be split only with a DMX splitter.
- Connect the shield to pin 1 only. Do not connect the shield (ground) to the metal shell of the connector; this can cause short circuits or erratic behavior.
- XLR pin assignment: pin 1 – shield (ground), pin 2 – Data- (Data Complement), pin 3 – Data+ (Data True). On 5-pin connectors, pins 4 and 5 are not connected; a 5-pin connector can be connected to a 3-pin one with a cable adapter.
- Terminate the end of the line (for impedance matching): plug an XLR connector with a 120 Ω, ¼ W resistor between pins 2 and 3 into the DMX OUT of the last device. This reduces the risk of erratic behavior.
- Connect no more than 32 devices to one DMX line. For more devices or longer runs, use a DMX splitter or booster.

DMX line



Mode 62 Channel: every unit occupies 62 channels from its address. At most 32 units on one line; for more units or longer runs use a DMX splitter. A 120 Ω terminator closes the last DMX OUT.

7 Operation

Setting the DMX address

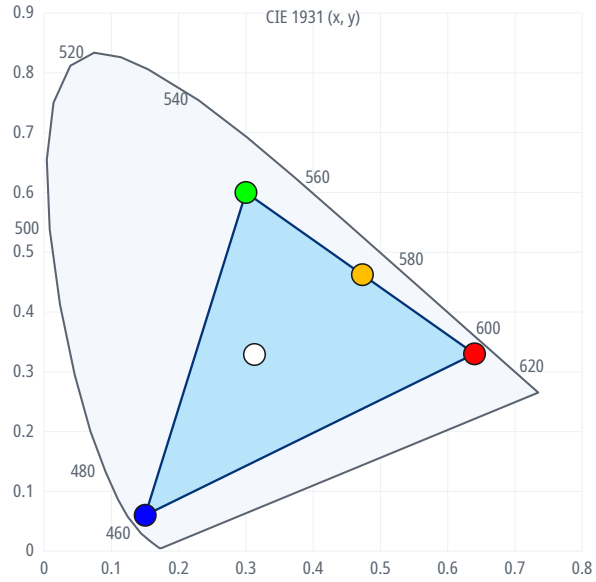
- The device occupies as many consecutive channels in the DMX universe as the selected DMX mode uses, starting at the set start address.
- Number of channels occupied in the DMX mode “62 Channel”: 62.
- Choose start addresses so that the channels of individual devices do not overlap and the last occupied channel does not exceed 512. Devices with the same start address and mode respond identically.
- For several devices in a row in the DMX mode “62 Channel”, you can use, for example, the start addresses 1, 63, 125, 187.
- The DMX mode set on the device must match the fixture profile (personality) used in the controller.

8 Functions at a glance

Functions in each DMX mode

	Small Mode 5ch 5 channels	Simple Mode 11ch 11 channels	62 Channel 62 channels
Dimmer	✓	1	1
Shutter / strobe	✓	2	2
Color mixing	1–5	7–11	7–62
Effects / macros		3, 4, 6	3, 4, 6
Pixel control			14 cells

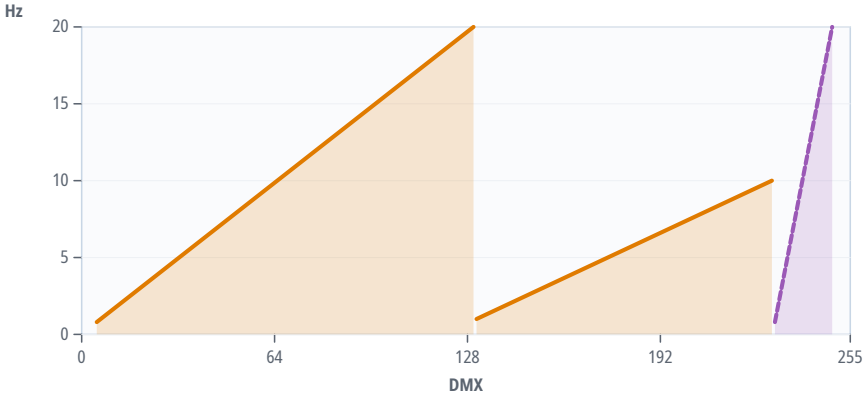
LED colors and the colors they mix



LED	x	y
Red	0.640	0.330
Green	0.300	0.600
Blue	0.150	0.060
White	0.313	0.329
Amber	0.473	0.463

The shaded area holds the colors the LEDs can mix; the dots are the LED colors the GDTF file states.

Strobe rate



CH 2 · 62 Channel

- 5–130: 0.8–20 Hz
  Strobe Slow to Fast
- 131–229: 1–10 Hz
  Pulse Slow to Fast
- 230–249: 0.8–20 Hz
  Random Strobe Slow To fast

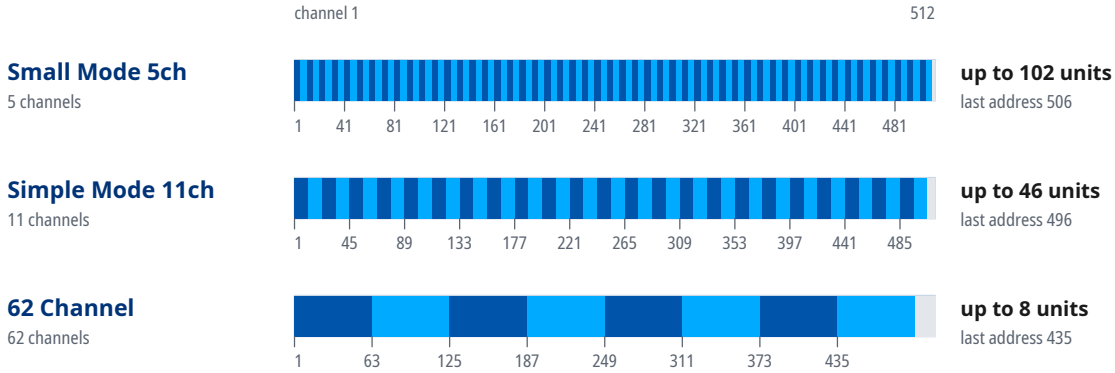
Cells (pixels)

1	2	3	4	5	6	7	8	9	10	11	12	13	14
CH 7	CH 11	CH 15	CH 19	CH 23	CH 27	CH 31	CH 35	CH 39	CH 43	CH 47	CH 51	CH 55	CH 59

14 cells where the GDTF file places them (seen from above), numbered by their first DMX channel (CH) in the mode “62 Channel”.

9 DMX channels

Units in one DMX universe



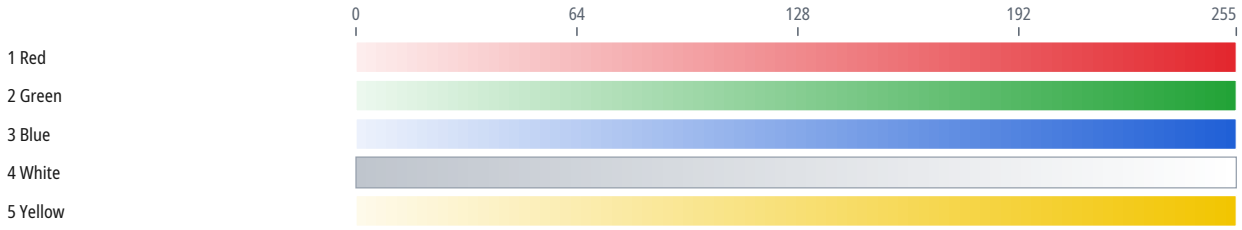
Start addresses of 20 units in the mode “62 Channel”

Unit	Start address	Unit	Start address	Unit	Start address	Unit	Start address
1	1	6	311	11	U2 · 125	16	U2 · 435
2	63	7	373	12	U2 · 187	17	U3 · 1
3	125	8	435	13	U2 · 249	18	U3 · 63
4	187	9	U2 · 1	14	U2 · 311	19	U3 · 125
5	249	10	U2 · 63	15	U2 · 373	20	U3 · 187

Where a DMX universe is full, the next units continue in the next universe: “U2 · 1” is address 1 in the second universe, counted from the universe of the first unit.

Mode Small Mode 5ch

Channel functions at a glance

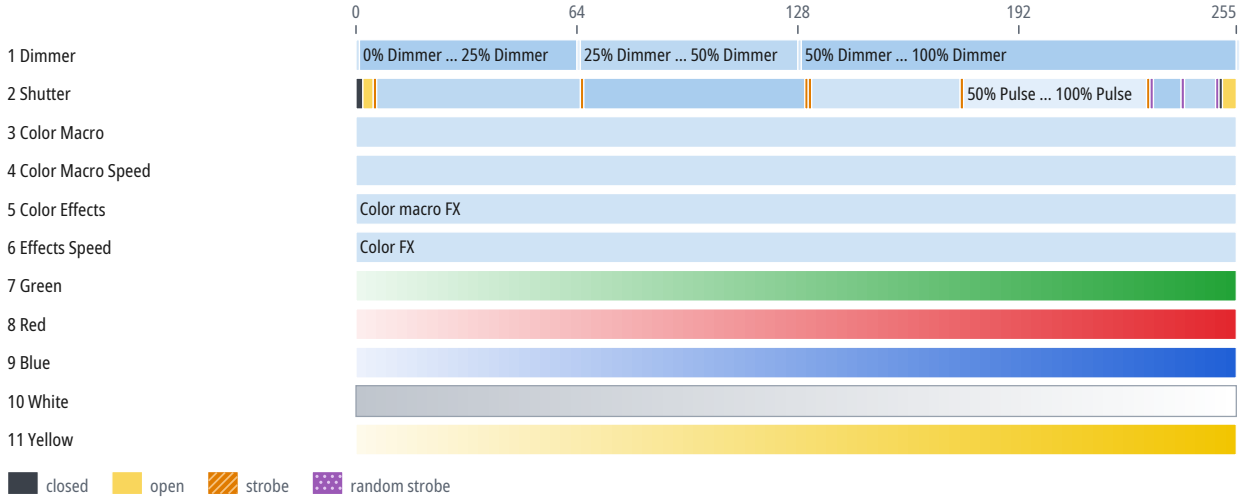


CH	Function	DMX	Description
1	Red	0–255	
2	Green	0–255	
3	Blue	0–255	
4	White	0–255	
5	Yellow	0–255	

Mode Simple Mode 11ch

If the device receives DMX in this mode but gives no light, check these channels: CH 2 Shutter at 2–4 or 251–255 “Shutter Open”. The GDTF file gives these values for a console's Highlight function: CH 7 Green 255, CH 8 Red 255, CH 9 Blue 255.

Channel functions at a glance



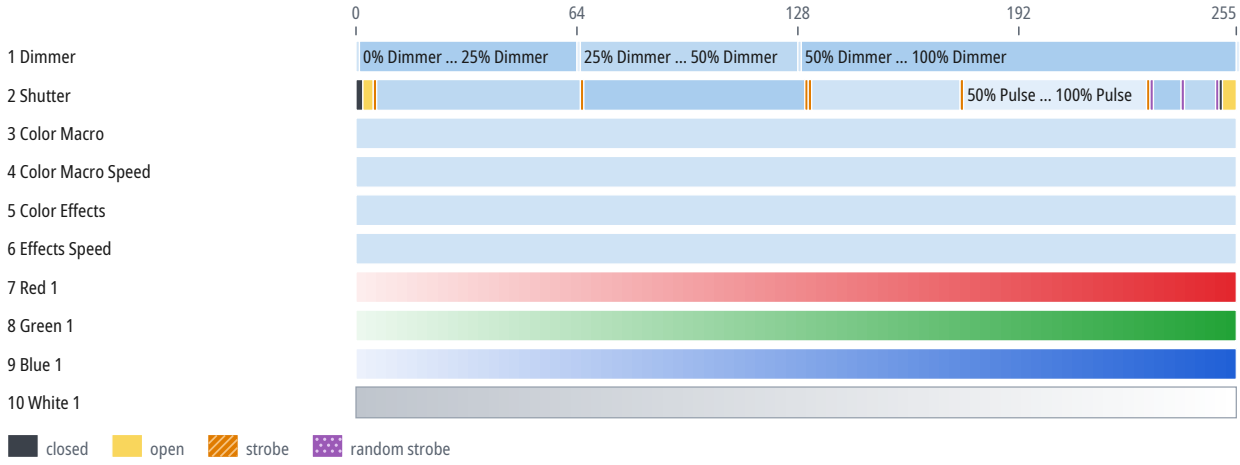
CH	Function	DMX	Description
1	Dimmer	0	0% Dimmer
		1–63	0% Dimmer ... 25% Dimmer
		64	25% Dimmer
		65–127	25% Dimmer ... 50% Dimmer
		128	50% Dimmer
		129–254	50% Dimmer ... 100% Dimmer
		255	100% Dimmer
2	Shutter	0–1	Shutter Open: Shutter Closed
		2–4	Shutter Open
		5	0% Min Strobe Speed
		6–64	0% Min Strobe Speed ... 50% Strobe Speed
		65	50% Strobe Speed
		66–129	50% Strobe Speed ... 100% Strobe Speed
		130	100% Strobe Speed
		131	0% Pulse
		132–174	0% Pulse ... 50% Pulse
		175	50% Pulse
		176–228	50% Pulse ... 100% Pulse
		229	100% Pulse
		230	0% Random Strobe
		231–238	0% Random Strobe ... 50% Random Strobe
		239	50% Random Strobe
		240–248	50% Random Strobe ... Empty Channel Set

CH	Function	DMX	Description
2	Shutter (continued)	249	Empty Channel Set
		250	Shutter Open: Shutter Closed
		251–255	Shutter Open
3	Color Macro	0–255	
4	Color Macro Speed	0–255	
5	Color Effects		Color macro FX
		0–255	Color macro FX
6	Effects Speed		Color FX
		0–255	Color FX
7	Green	0–255	
8	Red	0–255	
9	Blue	0–255	
10	White	0–255	
11	Yellow	0–255	

Mode 62 Channel

If the device receives DMX in this mode but gives no light, check these channels: CH 2 Shutter at 2–4 or 251–255 “Shutter Open”. The GDTF file gives these values for a console's Highlight function: CH 7 Red 255 (the same in each of the 14 cells), CH 8 Green 255 (the same in each of the 14 cells), CH 9 Blue 255 (the same in each of the 14 cells).

Channel functions at a glance



CH	Function	DMX	Description
1	Dimmer		Same as CH 1 in the mode “Simple Mode 11ch” (p. 9)
2	Shutter	0–1	Shutter Open: Shutter Closed
		2–4	Shutter Open
		5	0% Min Strobe Speed
		6–64	0% Min Strobe Speed ... 50% Strobe Speed
		65	50% Strobe Speed
		66–129	50% Strobe Speed ... 100% Strobe Speed
		130	100% Strobe Speed

CH	Function	DMX	Description
2	Shutter (continued)	131	0% Pulse
		132–174	0% Pulse ... 50% Pulse
		175	50% Pulse
		176–228	50% Pulse ... 100% Pulse
		229	100% Pulse
		230	0% Random Strobe
		231–238	0% Random Strobe ... 50% Random Strobe
		239	50% Random Strobe
		240–248	50% Random Strobe ... Empty Channel Set
		249	Empty Channel Set
		250	Shutter Open: Shutter Closed
		251–255	Shutter Open
3	Color Macro	0–255	
4	Color Macro Speed	0–255	
5	Color Effects	0–255	
6	Effects Speed	0–255	
7	Red 1	0–255	
8	Green 1	0–255	
9	Blue 1	0–255	
10	White 1	0–255	

CH 7–62: 14 cells of 4 channels each. Every cell works as cell 1 in the table above (CH 7–10); the table below gives each cell's channel numbers.

Cell	Red	Green	Blue	White	Cell	Red	Green	Blue	White
1	7	8	9	10	2	11	12	13	14
3	15	16	17	18	4	19	20	21	22
5	23	24	25	26	6	27	28	29	30
7	31	32	33	34	8	35	36	37	38
9	39	40	41	42	10	43	44	45	46
11	47	48	49	50	12	51	52	53	54
13	55	56	57	58	14	59	60	61	62

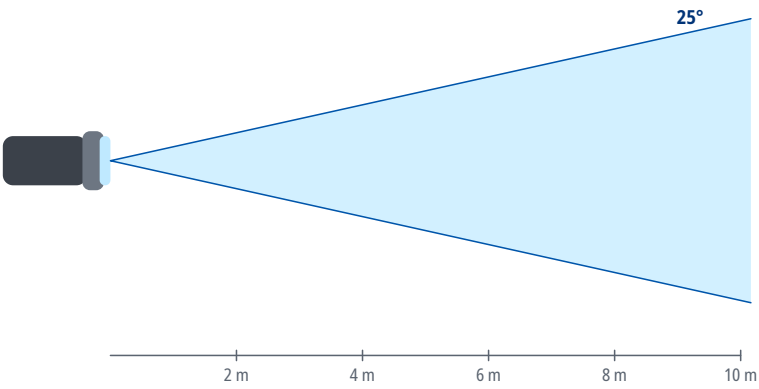
10 Technical specifications

Parameter	Value
Light source	LED
Weight	9.2 kg
Ingress protection	IP65
Meaning of the IP code (IEC 60529)	Dust-tight; protected against water jets
Operating temperature	0 to 40 °C

Speeds and ranges

Parameter	Value
Strobe frequency	0.8–20 Hz

Spot diameter



Distance	Ø 25°
2 m	0.89 m
4 m	1.8 m
6 m	2.7 m
8 m	3.5 m
10 m	4.4 m
15 m	6.7 m

Spot diameter square to the beam axis, calculated from the beam angle.

11 Maintenance and cleaning

- Before cleaning and maintenance, switch the device off, disconnect it from the power supply and let it cool down.
- Clean the housing with a soft, dry or slightly damp cloth. Do not use solvents, abrasive cleaners or pressure washers, and make sure no liquid gets into the device.
- Clean optical parts (lenses, front glass), if the device has any, with a soft lint-free cloth and a cleaner intended for optics or glass.
- Regularly inspect the housing, cables, connectors and fixings. Have damaged parts replaced by a service center.
- How often to clean depends on the environment; dust, smoke and fog make the device dirty much faster.

12 Troubleshooting

Problem	Remedy
The device does not switch on	Check the supply voltage, the cables and the fuse, if the device has one.
The device does not respond to DMX	Check the start address, the selected DMX mode and whether it matches the profile in the controller, the cable connection to DMX IN, and the controller output (universe).
The device behaves erratically or flickers	Check the terminator at the end of the line, the condition and wiring of the cables (shield on pin 1 only), the number of devices on the line (32 at most), and that the line is not split without a splitter.
Only some devices on the line respond	Check the cable and connectors between the last working and the first non-working device, and make sure all devices on the line are switched on.
Devices respond to the wrong channels or affect each other	Check that the addresses do not overlap and that the DMX mode on the devices matches the patch in the controller.
The device or the connected load does not light up although it receives DMX	Check the values of the dimmer, shutter and strobe channels against the DMX channel table. For the DMX modes for which the sources state it, the chapter DMX channels gives under the mode's heading which channels must be open.

13 Disposal

The crossed-out wheeled bin symbol on the product, in the manual or on the packaging means that the product must not be disposed of with unsorted household waste at the end of its life.

Take the end-of-life equipment to a collection point, for example a municipal collection site or a retailer. Proper disposal enables materials to be recycled and helps prevent possible negative effects on the environment and human health.

Follow the regulations applicable in your country; in the Czech Republic, take-back is governed by Act No. 542/2020 Coll., on End-of-Life Products.

Recycle the packaging materials according to their type.