DMX REFERENCE

LF4808

BETOPPER

Manufacturer	BETOPPER
GDTF file	BETOPPER_LF4808_144803.gdtf
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1 About this manual

This document describes the LF4808 by BETOPPER. It was compiled from the GDTF file BETOPPER_LF4808_144803.gdtf from the GDTF-Share library.

File revision: “Initial version - Created by CGLights, Uploaded to GDTF Share.”.

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 BETOPPER; 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

DMX modes

Mode	Channels	Units in one universe	First start addresses
4CH	4	128	1, 5, 9, 13, ...
15CH	15	34	1, 16, 31, 46, ...
152CH	152	3	1, 153, 305

No light? Check these channels

- 15CH: CH 11 Shutter at 0–1 “No strobe”


Read the manual before use


Do not stare into the light


Indoor use only

3 Safety instructions



Read the manual before use



Do not stare into the light



Indoor use only

⚠ 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.

⚠ WARNING

- This device is designed for indoor use only. Protect it from rain, splashing water, moisture and dust, and do not place containers with liquids on it.
- Do not operate the device in high humidity, near water, or where condensation can form on it.

⚠ 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 Installation

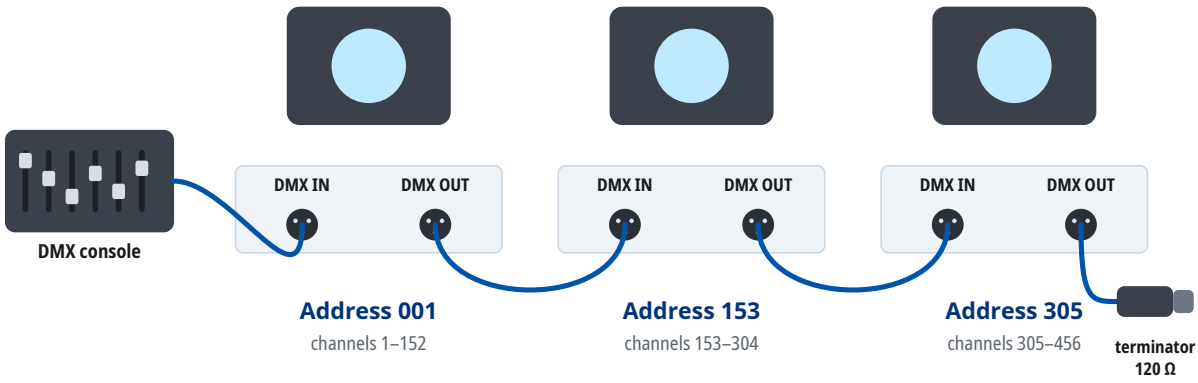
⚠ WARNING

- 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.
- 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.

5 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 152CH: every unit occupies 152 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.

6 Operation

Setting the DMX address

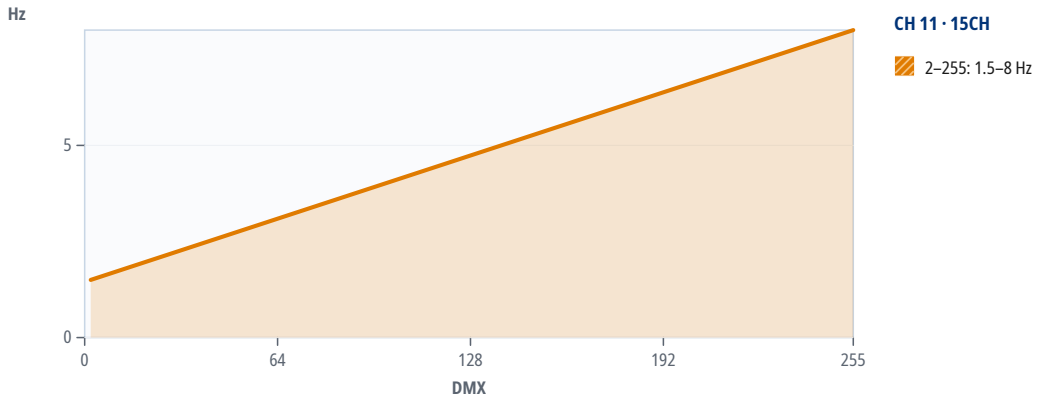
- The device occupies as many consecutive channels in the DMX universe as the selected DMX mode uses, starting at the set start address.
- Number of channels occupied in the DMX mode “152CH”: 152.
- Choose start addresses so that the channels of individual devices do not overlap and the last occupied 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 “152CH”, you can use, for example, the start addresses 1, 153, 305.
- The DMX mode set on the device must match the fixture profile (personality) used in the controller.

7 Functions at a glance

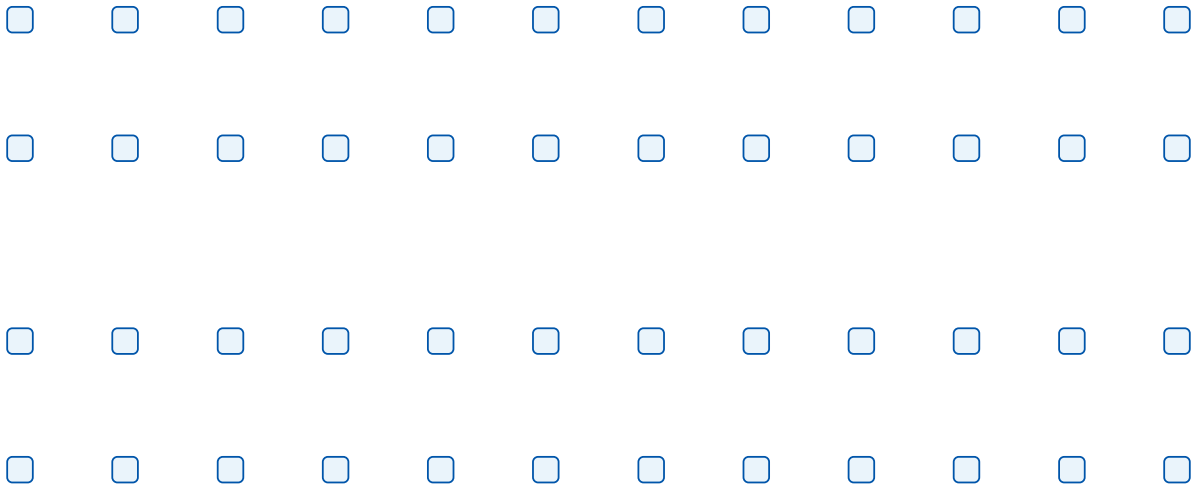
Functions in each DMX mode

	4CH 4 channels	15CH 15 channels	152CH 152 channels
Dimmer	✓	1	✓
Shutter / strobe		11	
Color mixing	1–4	2–5	1–152

Strobe rate



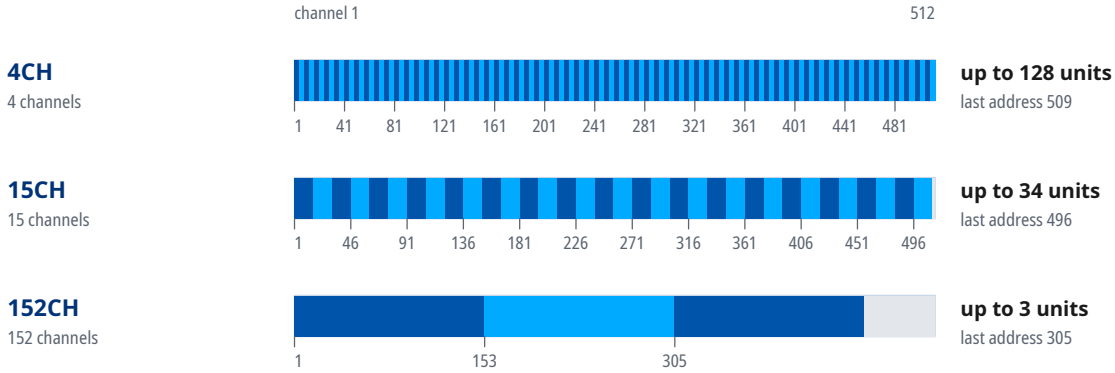
Cells (pixels)



Cells where the GDTF file places them (seen from above), 48 in all in the mode “15CH”.

8 DMX channels

Units in one DMX universe



Start addresses of 20 units in the mode “152CH”

Unit	Start address	Unit	Start address	Unit	Start address	Unit	Start address
1	1	6	U2 · 305	11	U4 · 153	16	U6 · 1
2	153	7	U3 · 1	12	U4 · 305	17	U6 · 153
3	305	8	U3 · 153	13	U5 · 1	18	U6 · 305
4	U2 · 1	9	U3 · 305	14	U5 · 153	19	U7 · 1
5	U2 · 153	10	U4 · 1	15	U5 · 305	20	U7 · 153

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 4CH

The GDTF file gives these values for a console's Highlight function: CH 1 Red 255, CH 2 Green 255, CH 3 Blue 255, CH 4 White 255.

CH	Function	DMX	Description
1	Red	0	Min
		1–254	Min … Max
		255	Max
2	Green	0	Min
		1–254	Min … Max
		255	Max
3	Blue	0	Min
		1–254	Min … Max
		255	Max
4	White	0	Min
		1–254	Min … Max
		255	Max

Mode 15CH

If the device receives DMX in this mode but gives no light, check these channels: CH 11 Shutter at 0–1 “No strobe”. The GDTF file gives these values for a console's Highlight function: CH 1 Dimmer 255, CH 2 Red 255, CH 3 Green 255, CH 4 Blue 255, CH 5 White 255.

CH	Function	DMX	Description
1	Dimmer	0–254	Min
		255	Max
2	Red		Same as CH 1 in the mode “4CH” (p. 7)
3	Green		Same as CH 2 in the mode “4CH” (p. 7)
4	Blue		Same as CH 3 in the mode “4CH” (p. 7)
5	White		Same as CH 4 in the mode “4CH” (p. 7)
6	Dummy 1	0–255	
7	RGB Pattern	0–3	No pattern
		4–7	Pattern 1
		8–11	Pattern 2
		12–15	Pattern 3
		16–19	Pattern 4
		20–23	Pattern 5
		24–27	Pattern 6
		28–31	Pattern 7
		32–35	Pattern 8
		36–39	Pattern 9
		40–43	Pattern 10
		44–47	Pattern 11
		48–51	Pattern 12
		52–55	Pattern 13
		56–59	Pattern 14
		60–63	Pattern 15
		64–67	Pattern 16
		68–71	Pattern 17
		72–75	Pattern 18
		76–79	Pattern 19
		80–83	Pattern 20
		84–87	Pattern 21
		88–91	Pattern 22
		92–95	Pattern 23
		96–99	Pattern 24
		100–103	Pattern 25
		104–107	Pattern 26
		108–111	Pattern 27
		112–115	Pattern 28
		116–119	Pattern 29

CH	Function	DMX	Description
7	RGB Pattern (continued)	120–123	Pattern 30
		124–127	Pattern 31
		128–131	Pattern 32
		132–135	Pattern 33
		136–139	Pattern 34
		140–143	Pattern 35
		144–147	Pattern 36
		148–151	Pattern 37
		152–155	Pattern 38
		156–159	Pattern 39
		160–163	Pattern 40
		164–167	Pattern 41
		168–171	Pattern 42
		172–175	Pattern 43
		176–179	Pattern 44
		180–183	Pattern 45
		184–187	Pattern 46
		188–191	Pattern 47
		192–195	Pattern 48
		196–199	Pattern 49
		200–203	Pattern 50
		204–207	Pattern 51
		208–211	Pattern 52
		212–215	Pattern 53
		216–219	Pattern 54
		220–223	Pattern 55
		224–227	Pattern 56
		228–231	Pattern 57
		232–235	Pattern 58
		236–239	Pattern 59
		240–243	Pattern 60
		244–247	Pattern 61
		248–251	Pattern 62
		252–255	Pattern 63
8	RGB Pattern Speed	0	RGB Pattern Speed
		1–126	Min CW ... Max CW
		127	Max CW
		128	Min CCW
		129–254	Min CCW ... Max CCW
		255	Max CCW
9	W Pattern	0–3	No pattern
		4–7	Pattern 1

CH	Function	DMX	Description
9	W Pattern (continued)	8–11	Pattern 2
		12–15	Pattern 3
		16–19	Pattern 4
		20–23	Pattern 5
		24–27	Pattern 6
		28–31	Pattern 7
		32–35	Pattern 8
		36–39	Pattern 9
		40–43	Pattern 10
		44–47	Pattern 11
		48–51	Pattern 12
		52–55	Pattern 13
		56–59	Pattern 14
		60–63	Pattern 15
		64–67	Pattern 16
		68–71	Pattern 17
		72–75	Pattern 18
		76–79	Pattern 19
		80–83	Pattern 20
		84–87	Pattern 21
		88–91	Pattern 22
		92–95	Pattern 23
		96–99	Pattern 24
		100–103	Pattern 25
		104–107	Pattern 26
		108–111	Pattern 27
		112–115	Pattern 28
		116–119	Pattern 29
		120–123	Pattern 30
		124–127	Pattern 31
		128–131	Pattern 32
		132–135	Pattern 33
		136–139	Pattern 34
		140–143	Pattern 35
		144–147	Pattern 36
		148–151	Pattern 37
		152–155	Pattern 38
		156–159	Pattern 39
		160–163	Pattern 40
		164–167	Pattern 41
		168–171	Pattern 42
		172–175	Pattern 43

CH	Function	DMX	Description
9	W Pattern (continued)	176–179	Pattern 44
		180–183	Pattern 45
		184–187	Pattern 46
		188–191	Pattern 47
		192–195	Pattern 48
		196–199	Pattern 49
		200–203	Pattern 50
		204–207	Pattern 51
		208–211	Pattern 52
		212–215	Pattern 53
		216–219	Pattern 54
		220–223	Pattern 55
		224–227	Pattern 56
		228–231	Pattern 57
		232–235	Pattern 58
		236–239	Pattern 59
		240–243	Pattern 60
		244–247	Pattern 61
		248–251	Pattern 62
		252–255	Pattern 63
10	W Pattern Speed	0	W Pattern Speed
		1–126	Min CW ... Max CW
		127	Max CW
		128	Min CCW
		129–254	Min CCW ... Max CCW
		255	Max CCW
11	Shutter	0–1	No strobe
		2	Shutter 1 Strobe: Min
		3–254	Shutter 1 Strobe: Min ... Max
		255	Shutter 1 Strobe: Max
12	RGBW Pattern	0–3	No pattern
		4–7	Pattern 1
		8–11	Pattern 2
		12–15	Pattern 3
		16–19	Pattern 4
		20–23	Pattern 5
		24–27	Pattern 6
		28–31	Pattern 7
		32–35	Pattern 8
		36–39	Pattern 9
		40–43	Pattern 10
		44–47	Pattern 11

CH	Function	DMX	Description
12	RGBW Pattern (continued)	48–51	Pattern 12
		52–55	Pattern 13
		56–59	Pattern 14
		60–63	Pattern 15
		64–67	Pattern 16
		68–71	Pattern 17
		72–75	Pattern 18
		76–79	Pattern 19
		80–83	Pattern 20
		84–87	Pattern 21
		88–91	Pattern 22
		92–95	Pattern 23
		96–99	Pattern 24
		100–103	Pattern 25
		104–107	Pattern 26
		108–111	Pattern 27
		112–115	Pattern 28
		116–119	Pattern 29
		120–123	Pattern 30
		124–127	Pattern 31
		128–131	Pattern 32
		132–135	Pattern 33
		136–139	Pattern 34
		140–143	Pattern 35
		144–147	Pattern 36
		148–151	Pattern 37
		152–155	Pattern 38
		156–159	Pattern 39
		160–163	Pattern 40
		164–167	Pattern 41
		168–171	Pattern 42
		172–175	Pattern 43
		176–179	Pattern 44
		180–183	Pattern 45
		184–187	Pattern 46
		188–191	Pattern 47
		192–195	Pattern 48
		196–199	Pattern 49
		200–203	Pattern 50
		204–207	Pattern 51
		208–211	Pattern 52
		212–215	Pattern 53

CH	Function	DMX	Description
12	RGBW Pattern (continued)	216–219	Pattern 54
		220–223	Pattern 55
		224–227	Pattern 56
		228–231	Pattern 57
		232–235	Pattern 58
		236–239	Pattern 59
		240–243	Pattern 60
		244–247	Pattern 61
		248–251	Pattern 62
		252–255	Pattern 63
13	RGBW Pattern Speed	0	RGBW Pattern Speed
		1–126	Min CW ... Max CW
		127	Max CW
		128	Min CCW
		129–254	Min CCW ... Max CCW
		255	Max CCW
14	Dummy 2	0–255	
15	Dummy 3	0–255	

Mode 152CH

The GDTF file gives these values for a console's Highlight function: CH 1 Red 255 (the same in each of the 48 cells), CH 2 Green 255 (the same in each of the 48 cells), CH 3 Blue 255 (the same in each of the 48 cells), CH 145 White 255 (the same in each of the 8 cells).

CH	Function	DMX	Description
1	Red 1	0	Min
		1–254	Min ... Max
		255	Max
2	Green 1	0	Min
		1–254	Min ... Max
		255	Max
3	Blue 1	0	Min
		1–254	Min ... Max
		255	Max
145	White 1	0	Min
		1–254	Min ... Max
		255	Max

CH 1–144: 48 cells of 3 channels each. Every cell works as cell 1 in the table above (CH 1–3); the table below gives each cell's channel numbers.

Cell	Red	Green	Blue	Cell	Red	Green	Blue	Cell	Red	Green	Blue
1	1	2	3	2	4	5	6	3	7	8	9
4	10	11	12	5	13	14	15	6	16	17	18
7	19	20	21	8	22	23	24	9	25	26	27

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

CH 145–152: 8 cells of 1 channel each. Every cell works as cell 1 in the table above (CH 145); the table below gives each cell's channel numbers.

Cell	White	Cell	White	Cell	White	Cell	White	Cell	White	Cell	White
1	145	2	146	3	147	4	148	5	149	6	150
7	151	8	152								

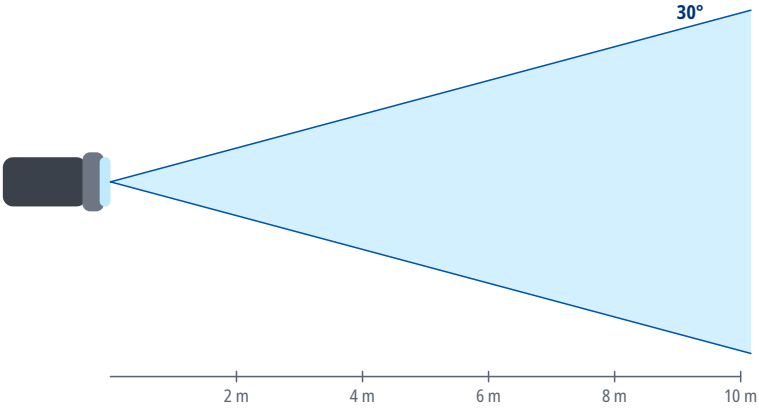
9 Technical specifications

Parameter	Value
Light source	discharge lamp
Operating temperature	0 to 40 °C

Speeds and ranges

Parameter	Value
Strobe frequency	1.5–8 Hz

Spot diameter



Distance	Ø 30°
2 m	1.1 m
4 m	2.1 m
6 m	3.2 m
8 m	4.3 m
10 m	5.4 m
15 m	8 m

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

10 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.

11 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.

12 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.