DMX REFERENCE

XB480

XBLACK

Manufacturer	XBLACK
GDTF file	XBLACK_XB480_116730.gdtf
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1 About this manual

This document describes the XB480 by XBLACK. It was compiled from the GDTF file XBLACK_XB480_116730.gdtf from the GDTF-Share library.

File revision: “VER1”.

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 XBLACK; 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
Power consumption	850 W
Weight	30 kg
Ingress protection	IP20

DMX modes

Mode	Channels	Units in one universe	First start addresses
54 CHANNEL	54	9	1, 55, 109, 163, ...

No light? Check these channels

- 54 CHANNEL: CH 6 Shutter at 11–21, 127–137, 202–212 or 245–255 “SHUTTER OPEN”; CH 7 Dimmer above 0


Read the manual before use


Risk of electric shock


Do not stare into the light



Indoor use only

3 Safety instructions


Read the manual before use


Risk of electric shock


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

- Connect the device only to a properly installed mains outlet with a protective earth (ground) contact. The outlet or other means of disconnection must remain easily accessible.
- Power supply: 100–240 V, 50/60 Hz. Before connecting, make sure that the mains voltage matches this value and the value on the rating plate of the device.
- Do not connect the device to a dimmer or to a dimmed circuit.
- Use only the original power cable or a cable with identical ratings. Protect the cable from damage, do not run it over sharp edges, and never unplug it by pulling on the cable.
- When connecting several devices to one circuit, do not exceed its permitted load.
- Do not touch the device with wet hands.

⚠ 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.
- Ingress protection rating: IP20.
- 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.

> ⚠ **WARNING**
>
> - The moving parts of the device (for example the head or arms) can move quickly and unexpectedly at any time – after power-on, during a reset, or on a command from the controller.
> - Keep yourself and any objects out of the range of movement. While the device is switched on, do not touch the moving parts, move them by hand, or obstruct their movement; this can cause injury (pinching) and damage the drive.
> - Do not carry the device by its moving parts. If the device has a transport lock, engage it before transport and release it before switching on.

4 Product description

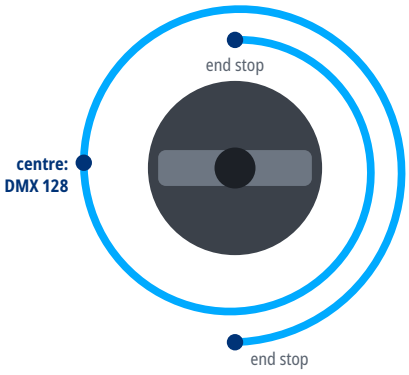
Description in the GDTF file

“The XB480 is a 600 watt 22,000 lumen hybrid performance moving head profile and wash light that is IP20 rated for indoor use.”

Range of movement

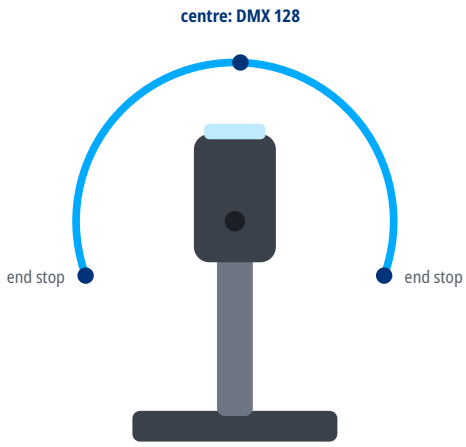
Pan 540°

top view



Tilt 220°

side view



5 Installation

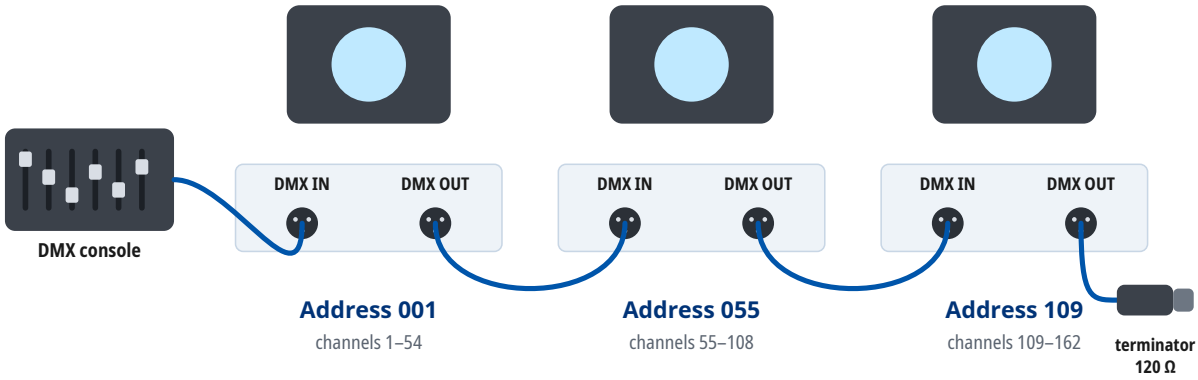
⚠ **WARNING**

- 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: 30 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 54 CHANNEL: every unit occupies 54 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 “54 CHANNEL”: 54.
- 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 “54 CHANNEL”, you can use, for example, the start addresses 1, 55, 109, 163.
- 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

	54 CHANNEL 54 channels
Pan / Tilt	1, 3
Dimmer	7
Color mixing	17, 19, 21
Color temperature	23
Color wheel	15
Gobo wheel	25, 26, 28, 29
Prism	32, 33
Frost	35
Zoom	9
Focus	11, 13
Iris	30

Color wheel



Gobo wheel 1

1 Wheel Slot 1	4 Wheel Slot 4	7 Wheel Slot 7
2 Wheel Slot 2	5 Wheel Slot 5	8 Wheel Slot 8
3 Wheel Slot 3	6 Wheel Slot 6	

Gobo wheel 2

1 Wheel Slot 1	4 Wheel Slot 4	7 Wheel Slot 7
2 Wheel Slot 2	5 Wheel Slot 5	8 Wheel Slot 8
3 Wheel Slot 3	6 Wheel Slot 6	9 Wheel Slot 9

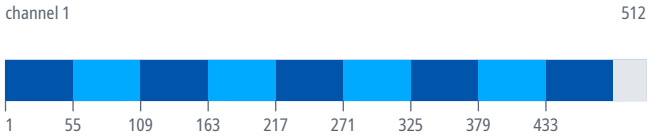
Gobo wheel 3

1 Wheel Slot 1	4 Wheel Slot 4	7 Wheel Slot 7
2 Wheel Slot 2	5 Wheel Slot 5	8 Wheel Slot 8
3 Wheel Slot 3	6 Wheel Slot 6	9 Wheel Slot 9

9 DMX channels

Units in one DMX universe

54 CHANNEL
54 channels



up to 9 units
last address 433

Start addresses of 20 units in the mode “54 CHANNEL”

Unit	Start address	Unit	Start address	Unit	Start address	Unit	Start address
1	1	6	271	11	U2 · 55	16	U2 · 325
2	55	7	325	12	U2 · 109	17	U2 · 379
3	109	8	379	13	U2 · 163	18	U2 · 433
4	163	9	433	14	U2 · 217	19	U3 · 1
5	217	10	U2 · 1	15	U2 · 271	20	U3 · 55

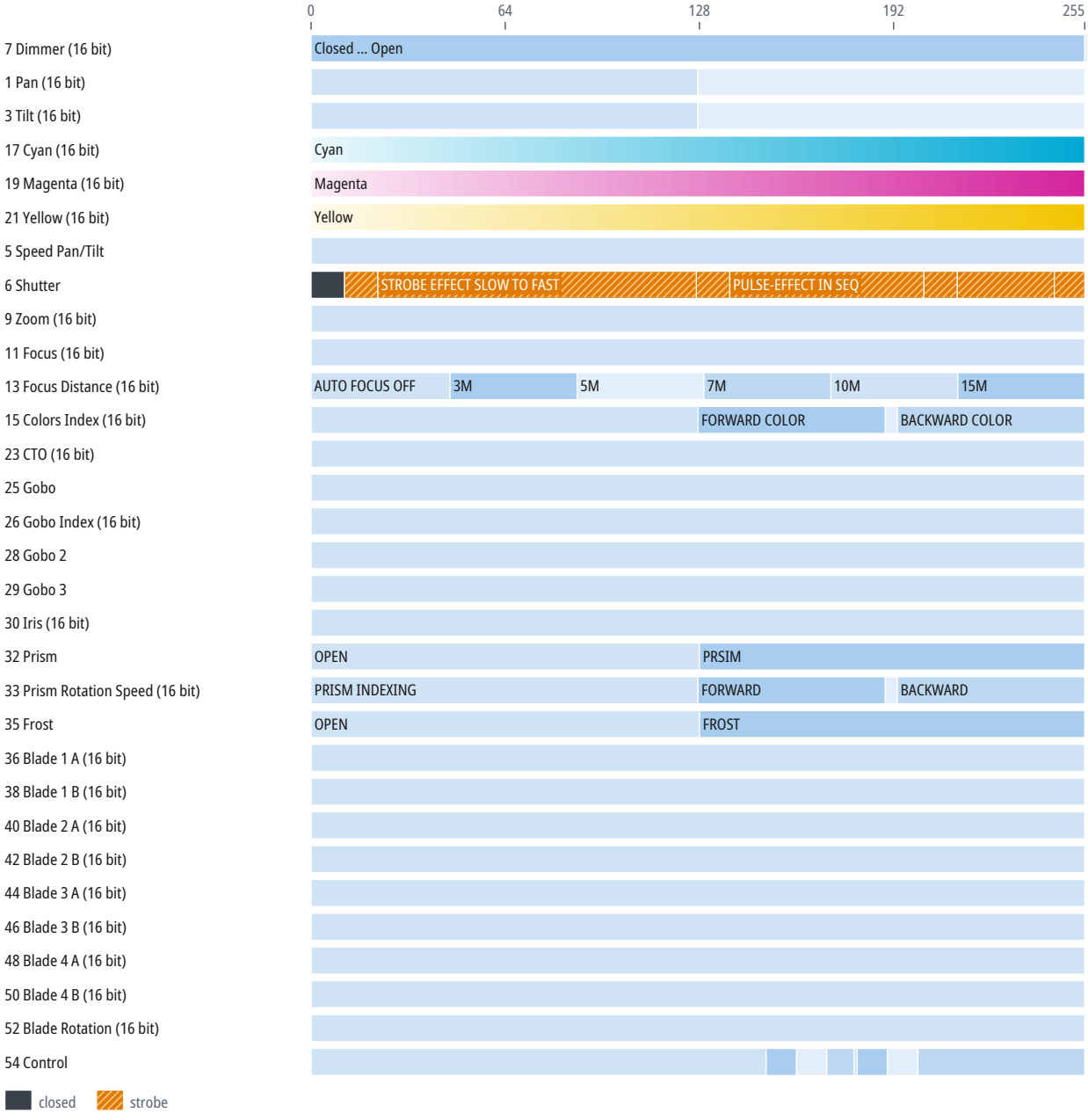
Where a DMX universe is full, the next units continue in the next universe: “U2 · 1” is address 1 in the second universe, counted from the universe of the first unit.

Mode 54 CHANNEL

16-bit parameters use two channels, coarse and fine: value = 256 × coarse value + fine value.

If the device receives DMX in this mode but gives no light, check these channels: CH 6 Shutter at 11–21, 127–137, 202–212 or 245–255 “SHUTTER OPEN”; CH 7 Dimmer above 0. The GDTF file gives these values for a console's Highlight function: CH 7 Dimmer 255, CH 17 Cyan 0, CH 19 Magenta 0, CH 21 Yellow 0.

Channel functions at a glance



CH	Function	DMX	Description
1	Pan	0–127	Pan 1
		128	Home
		128–255	Pan 1
2	Pan Fine	0–255	Fine adjustment of CH 1
3	Tilt	0–127	Tilt 1

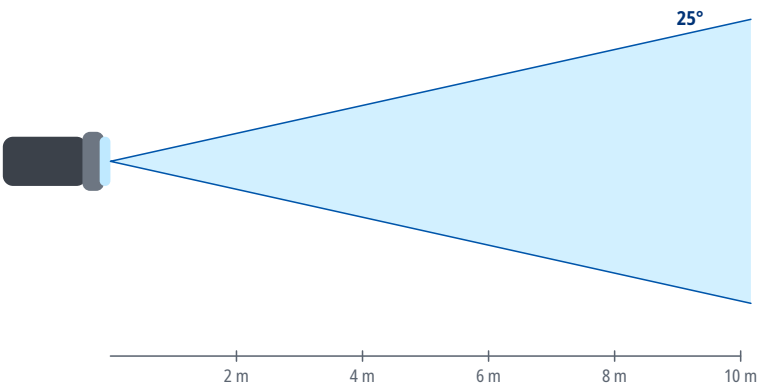
CH	Function	DMX	Description
3	Tilt (continued)	128	Home
		128–255	Tilt 1
4	Tilt Fine	0–255	Fine adjustment of CH 3
5	Speed Pan/Tilt	0–255	
6	Shutter	0–10	SHUTTER CLOSED
		11–21	SHUTTER OPEN
		22–126	STROBE EFFECT SLOW TO FAST
		127–137	SHUTTER OPEN
		138–201	PULSE-EFFECT IN SEQ
		202–212	SHUTTER OPEN
		213–244	RANDOM STROBE EFFECT SLOW TO FAST
		245–255	SHUTTER OPEN
7	Dimmer	0–255	Closed ... Open
		255	Open
8	Dimmer Fine	0–255	Fine adjustment of CH 7
9	Zoom	0–255	
10	Zoom Fine	0–255	Fine adjustment of CH 9
11	Focus	0–255	
12	Focus Fine	0–255	Fine adjustment of CH 11
13	Focus Distance	0–45	AUTO FOCUS OFF
		46–87	3M
		88–129	5M
		130–171	7M
		172–213	10M
		214–255	15M
14	Focus Distance Fine	0–255	Fine adjustment of CH 13
15	Colors Index	0–127	Color 1 Wheel Index 1
		128–189	FORWARD COLOR
		190–193	NO ROTATION
		194–255	BACKWARD COLOR
16	Colors Index Fine	0–255	Fine adjustment of CH 15
17	Cyan	0–255	Cyan
18	Cyan Fine	0–255	Fine adjustment of CH 17
19	Magenta	0–255	Magenta
20	Magenta Fine	0–255	Fine adjustment of CH 19
21	Yellow	0–255	Yellow
22	Yellow Fine	0–255	Fine adjustment of CH 21
23	CTO	0–255	
24	CTO Fine	0–255	Fine adjustment of CH 23
25	Gobo	0–255	
26	Gobo Index	0–255	
27	Gobo Index Fine	0–255	Fine adjustment of CH 26

CH	Function	DMX	Description
28	Gobo 2	0–255	
29	Gobo 3	0–255	
30	Iris	0–255	
31	Iris Fine	0–255	Fine adjustment of CH 30
32	Prism	0–127	OPEN
		128–255	PRSIM
33	Prism Rotation Speed	0–127	PRISM INDEXING
		128–189	FORWARD
		190–193	NO ROT
		194–255	BACKWARD
34	Prism Rotation Speed Fine	0–255	Fine adjustment of CH 33
35	Frost	0–127	OPEN
		128–255	FROST
36	Blade 1 A	0–255	
37	Blade 1 A Fine	0–255	Fine adjustment of CH 36
38	Blade 1 B	0–255	
39	Blade 1 B Fine	0–255	Fine adjustment of CH 38
40	Blade 2 A	0–255	
41	Blade 2 A Fine	0–255	Fine adjustment of CH 40
42	Blade 2 B	0–255	
43	Blade 2 B Fine	0–255	Fine adjustment of CH 42
44	Blade 3 A	0–255	
45	Blade 3 A Fine	0–255	Fine adjustment of CH 44
46	Blade 3 B	0–255	
47	Blade 3 B Fine	0–255	Fine adjustment of CH 46
48	Blade 4 A	0–255	
49	Blade 4 A Fine	0–255	Fine adjustment of CH 48
50	Blade 4 B	0–255	
51	Blade 4 B Fine	0–255	Fine adjustment of CH 50
52	Blade Rotation	0–255	
53	Blade Rotation Fine	0–255	Fine adjustment of CH 52
54	Control	0–149	Control 1 1
		150–159	ALL MOTOR RESET
		160–169	SCAN MOTOR RESET
		170–178	SCAN MOTOR RESET ... COLORS MOTOR RESET
		179	COLORS MOTOR RESET
		180–189	GOBO MOTOR RESET
		190–199	OTHER MOTOR RESET
		200–255	Control 1 1

10 Technical specifications

Parameter	Value
Light	
Light source	LED
LED power	700 W
Luminous flux	1,000 lm
Color temperature	6,000 K
Color rendering index (CRI)	85
Optics	
Beam angle	25°
Movement	
Pan	540°
Tilt	220°
Control	
DMX connection	5-pin XLR IN/OUT, 3-pin XLR IN/OUT
Electrical	
Power supply	100–240 V, 50/60 Hz
Power consumption	850 W
Power connectors	powerCON TRUE1 IN
Dimensions and construction	
Weight	30 kg
Operating environment	
Ingress protection	IP20
Meaning of the IP code (IEC 60529)	Protected against contact with a finger and solid objects of 12.5 mm diameter and larger; no protection against water
Operating temperature	0 to 40 °C

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.
Movement is reversed	Check whether Pan/Tilt inversion is enabled in the device menu or in the controller.
Moving parts do not reach the correct position after power-on or transport	Switch the device off and on again to reset the position, and make sure the transport lock, if any, is released. If this does not help, contact a service center.
Movement is jerky	Check the value of the Pan/Tilt speed channel, if the device has one, and the stability of the DMX signal.

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.