DMX REFERENCE

Tiger E7R

BeamZ E7R Moving Head

BeamZ



Manufacturer	BeamZ
GDTF file	BeamZ_Tiger_E7R_73375.gdtf
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1 About this manual

This document describes the BeamZ E7R Moving Head by BeamZ. It was compiled from the GDTF file BeamZ_Tiger_E7R_73375.gdtf from the GDTF-Share library.

File revision: “Final”.

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 BeamZ; 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	16.7 kg

DMX modes

Mode	Channels	Units in one universe	First start addresses
16 Channels	16	32	1, 17, 33, 49, ...
16 Ch	16	32	1, 17, 33, 49, ...

No light? Check these channels

- 16 Channels: CH 3 Dimmer above 0
- 16 Ch: CH 8 Dimmer above 0


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

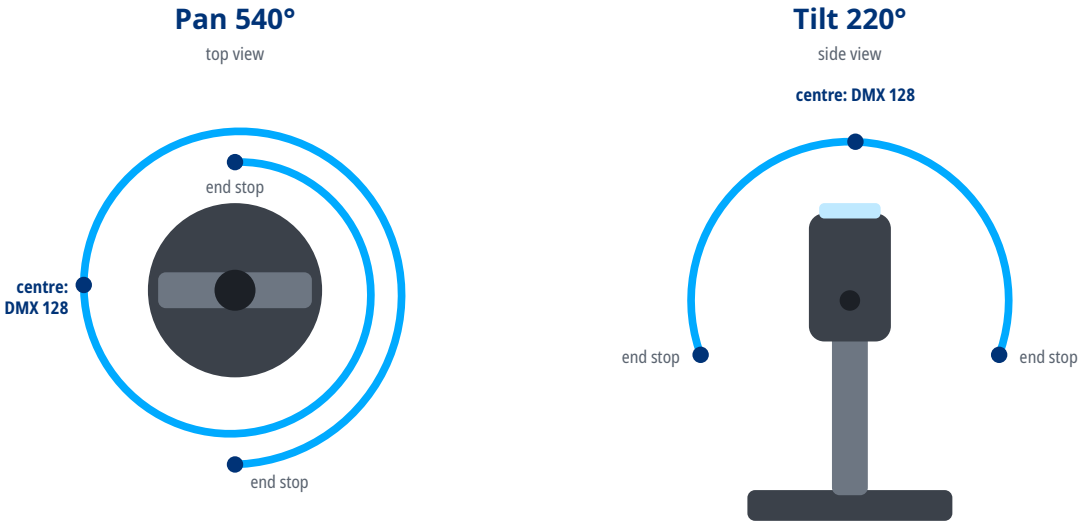
- Strobe and fast flashing light effects can trigger epileptic seizures in susceptible people (photosensitive epilepsy) and can cause nausea or disorientation.
- Inform the audience and performers in advance that strobe effects will be used, for example with a notice at the entrance, and do not use them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

⚠ 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

Range of movement



5 Installation

⚠ WARNING

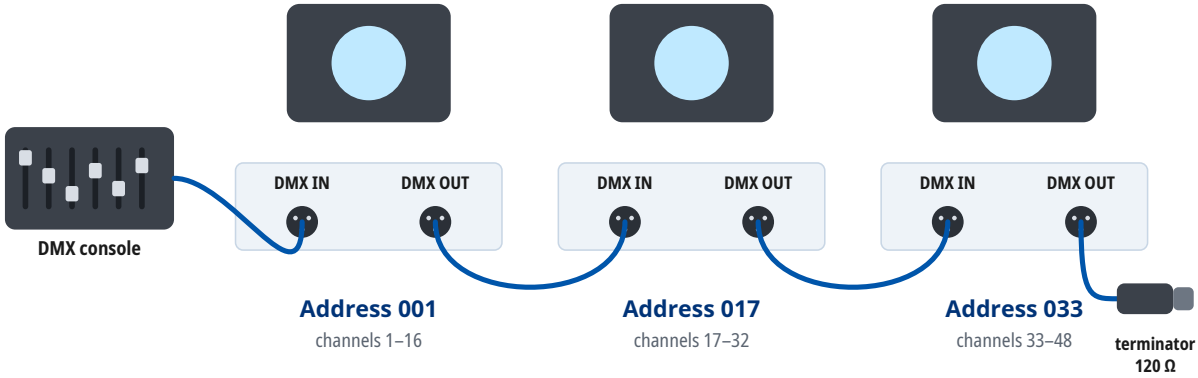
- Rigging must be carried out only by qualified persons in accordance with applicable regulations, in particular those for work at height.
- The supporting structure and fixings must safely carry the weight of all suspended devices; verify their load capacity in advance.
- Weight of the device: 16.7 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 16 Channels: every unit occupies 16 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 “16 Channels”: 16.
- 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 “16 Channels”, you can use, for example, the start addresses 1, 17, 33, 49.
- 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

	16 Channels 16 channels	16 Ch 16 channels
Pan / Tilt	10, 12	1, 2
Dimmer	3	8
Shutter / strobe		7
Color wheel	1	9
Gobo wheel	4	11, 12
Prism	5, 6	14, 15
Frost	8	6
Focus	9	13
Effects / macros	14	

Color wheel



Gobo wheel 1

1
Gobo 1: Open
DMX 0–4

2 
Gobo 1
DMX 5–9

3 
Gobo 2
DMX 10–14

4 
Gobo 3
DMX 15–19

5 
Gobo 4
DMX 20–24

6 
Gobo 5
DMX 25–29

7 
Gobo 6
DMX 30–34

8 
Gobo 7
DMX 35–39

9 
Gobo 8
DMX 40–44

10 
Gobo 9
DMX 45–49

11 
Gobo 10
DMX 50–54

12 
Gobo 11
DMX 55–59

13 
Gobo 12
DMX 60–64

14 
Gobo 13
DMX 65–69

15 
Gobo 14
DMX 70–74

16 
Gobo 15
DMX 75–79

17 
Gobo 16
DMX 80–84

18 
Gobo 17
DMX 85–90

Prism

1 
16 facets
No function
DMX 0–127

2 
16 facets
Prism inserted
DMX 128–255

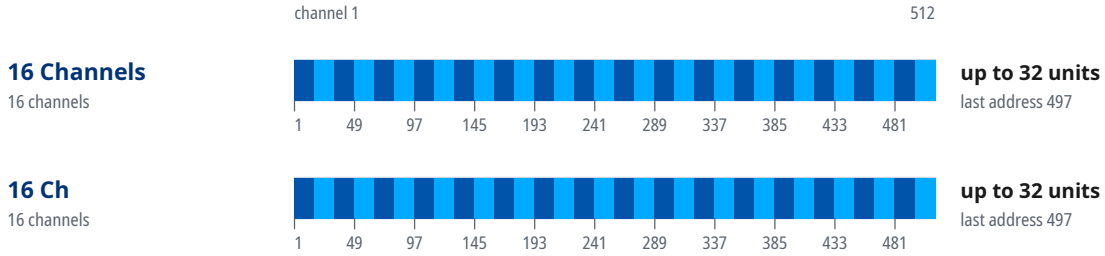
Gobo wheel 2

1
Open

2 
Frost

9 DMX channels

Units in one DMX universe



Start addresses of 20 units in the mode “16 Channels”

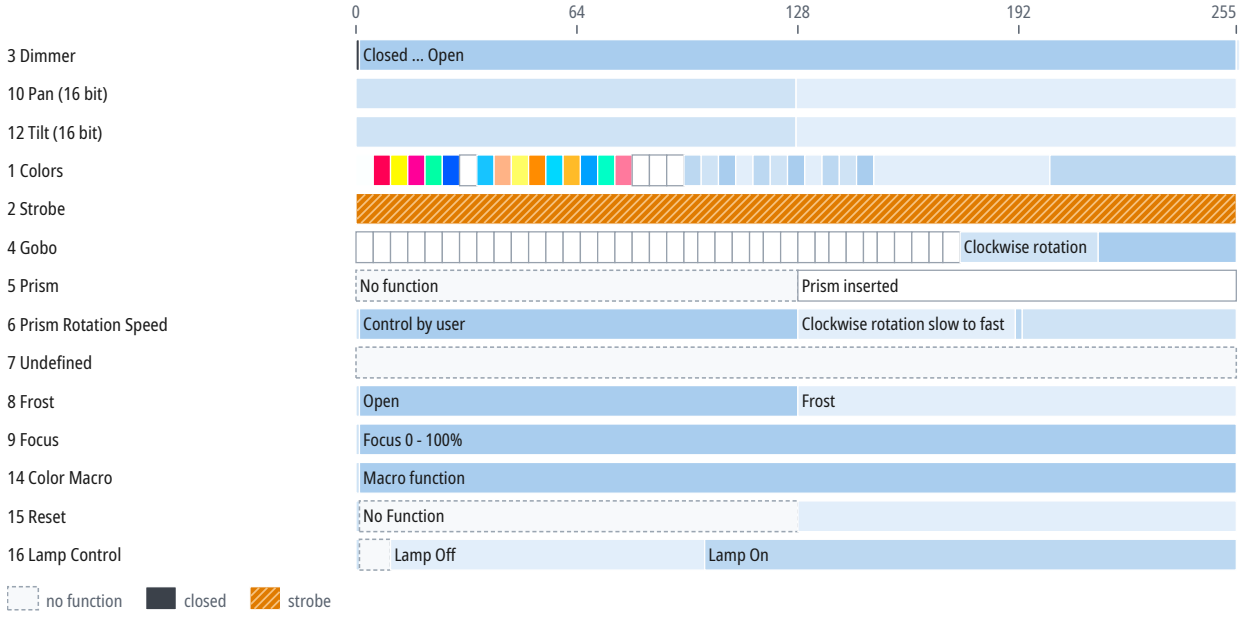
Unit	Start address	Unit	Start address	Unit	Start address	Unit	Start address
1	1	6	81	11	161	16	241
2	17	7	97	12	177	17	257
3	33	8	113	13	193	18	273
4	49	9	129	14	209	19	289
5	65	10	145	15	225	20	305

Mode 16 Channels

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 3 Dimmer above 0. The GDTF file gives these values for a console's Highlight function: CH 3 Dimmer 255.

Channel functions at a glance



CH	Function	DMX	Description
1	Colors	0–4	White
		5–9	White + Red
		10–14	Red

CH	Function	DMX	Description
1	Colors (continued)	15–19	Red + Orange
		20–24	Orange
		25–29	Orange + Aquamarine
		30–34	Aquamarine
		35–39	Aquamarine + Green
		40–44	Green
		45–49	Green + CTO1
		50–54	CTO1
		55–59	CTO 1+ Fluorescent Violet
		60–64	Fluorescent Violet
		65–69	Fluorescent Violet + Pink
		70–74	Pink
		75–79	Pink + Cyan
		80–84	Cyan
		85–89	Cyan + Yellow
		90–94	Yellow
		95–99	Yellow + Light green
		100–104	Light green
		105–109	Light green + Magenta
		110–114	Magenta
		115–119	Magenta + Lavender
		120–124	Lavender
		125–129	Lavender + Warm white
		130–134	CTO2
		135–139	CTO2 + CTB8000
		140–144	CTB8000
		145–149	CTB8000 + White (open)
		150–200	Counter clockwise rotation slow to fast
		201–255	Clockwise rotation slow to fast
2	Strobe	0–255	
3	Dimmer	0	Closed
		1–254	Closed ... Open
		255	Open
4	Gobo	0–4	Gobo 1: Open
		5–9	Gobo 1
		10–14	Gobo 2
		15–19	Gobo 3
		20–24	Gobo 4
		25–29	Gobo 5
		30–34	Gobo 6
		35–39	Gobo 7
		40–44	Gobo 8

CH	Function	DMX	Description
4	Gobo (continued)	45–49	Gobo 9
		50–54	Gobo 10
		55–59	Gobo 11
		60–64	Gobo 12
		65–69	Gobo 13
		70–74	Gobo 14
		75–79	Gobo 15
		80–84	Gobo 16
		85–89	Gobo 17
		90–94	Goboshake: Open
		95–98	Jitter Gobo 1
		99–103	Jitter Gobo 2
		104–108	Jitter Gobo 3
		109–113	Jitter Gobo 4
		114–117	Jitter Gobo 5
		118–122	Jitter Gobo 6
		123–127	Jitter Gobo 7
		128–132	Jitter Gobo 8
		133–136	Jitter Gobo 9
		137–141	Jitter Gobo 10
		142–146	Jitter Gobo 11
		147–150	Jitter Gobo 12
		151–155	Jitter Gobo 13
		156–160	Jitter Gobo 14
		161–165	Jitter Gobo 15
		166–169	Jitter Gobo 16
		170–174	Jitter Gobo 17
		175–214	Clockwise rotation
		215–255	Counter clockwise rotation
5	Prism	0–127	No function
		128–255	Prism inserted
6	Prism Rotation Speed	0	Prism 1 Pos Rotate 1
		1–127	Control by user (0–0.5 °/s)
		128–190	Clockwise rotation slow to fast (0.5–0.75 °/s)
		191–192	Stop
		193–255	Counter clockwise rotation slow to fast (0.76–1 °/s)
7	Undefined	0–255	
8	Frost	0	Frost 1 1
		1–127	Open
		128–255	Frost
9	Focus	0	Focus 1 1
		1–255	Focus 0 - 100%

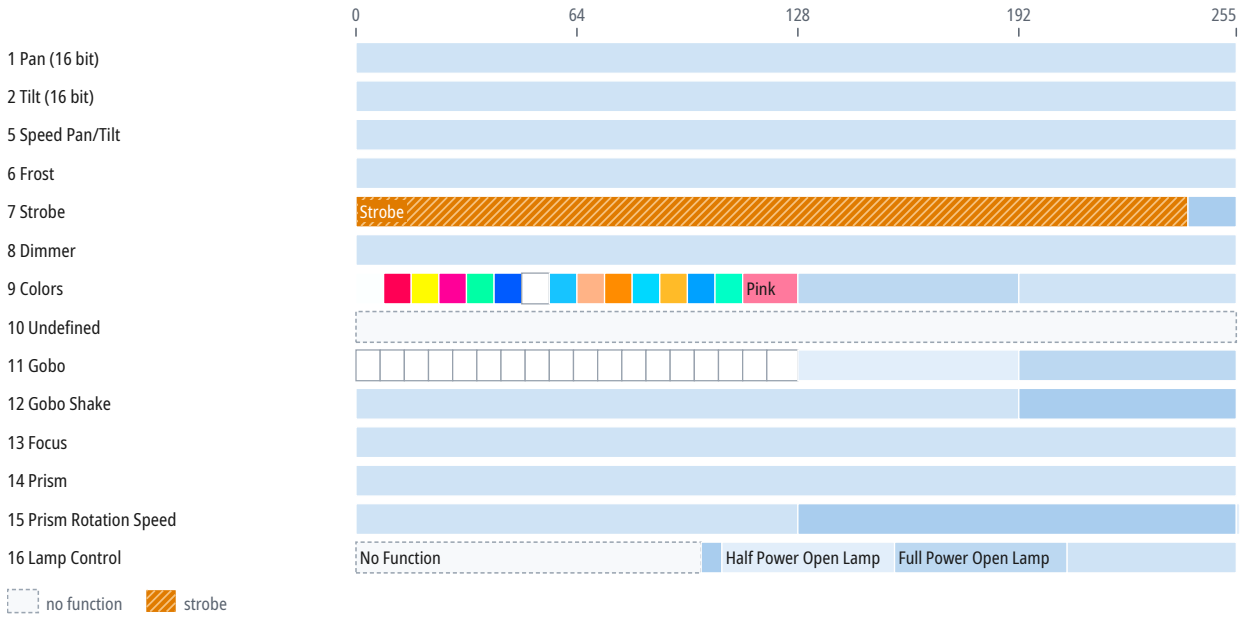
CH	Function	DMX	Description
10	Pan	0–127	Pan 1
		128	Home
		128–255	Pan 1
11	Pan Fine	0–255	Fine adjustment of CH 10
12	Tilt	0–127	Tilt 1
		128	Home
		128–255	Tilt 1
13	Tilt Fine	0–255	Fine adjustment of CH 12
14	Color Macro	0	Color Macro 1 1
		1–255	Macro function
15	Reset	0	Complete reset
		1–127	No Function
		128–255	Fixture Global Reset 1
16	Lamp Control	0	Lamp Control 1
		1–9	No Function
		10–100	Lamp Off
		101–255	Lamp On

Mode 16 Ch

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 8 Dimmer above 0.

Channel functions at a glance



CH	Function	DMX	Description
1	Pan	0–255	540°
2	Tilt	0–255	220°
3	Pan Fine	0–255	Fine adjustment of CH 1

CH	Function	DMX	Description
4	Tilt Fine	0–255	Fine adjustment of CH 2
5	Speed Pan/Tilt	0–255	
6	Frost	0–255	
7	Strobe	0–240	Strobe (0–30 Hz)
		241–255	Shutter 1 2
8	Dimmer	0–255	
9	Colors	0–7	White
		8–15	Red
		16–23	Yellow 1
		24–31	Magenta
		32–39	Green
		40–47	Blue
		48–55	White 1
		56–63	Aquamarine
		64–71	Warm White
		72–79	Orange
		80–87	Blue with White Dot
		88–95	Orange 1
		96–103	Blue 1
		104–111	Grass Green
		112–127	Pink
		128–191	Color 1 Wheel Spin 2
		192–255	Color 1 Wheel Spin 3
10	Undefined	0–255	
11	Gobo	0–6	Gobo 1: Open
		7–13	Gobo 1
		14–20	Gobo 2
		21–27	Gobo 3
		28–34	Gobo 4
		35–41	Gobo 5
		42–48	Gobo 6
		49–55	Gobo 7
		56–62	Gobo 8
		63–69	Gobo 9
		70–76	Gobo 10
		77–83	Gobo 11
		84–90	Gobo 12
		91–97	Gobo 13
		98–104	Gobo 14
		105–111	Gobo 15
		112–118	Gobo 16
		119–127	Gobo 17

CH	Function	DMX	Description
11	Gobo (continued)	128–191	Gobo 1 Wheel Spin 2
		192–255	Gobo 1 Wheel Spin 3
12	Gobo Shake	0–191	Gobo 1 Wheel Shake 1
		192–255	Gobo 1 Wheel Shake 2
13	Focus	0–255	
14	Prism	0–255	
15	Prism Rotation Speed	0–127	Prism 1 Pos
		128–254	Prism 1 Pos Rotate 2
		255	Prism 1 Pos Rotate 3
16	Lamp Control	0–99	No Function
		100–105	Close Lamp
		106–155	Half Power Open Lamp
		156–205	Full Power Open Lamp
		206–255	Fixture Calibration Reset 2

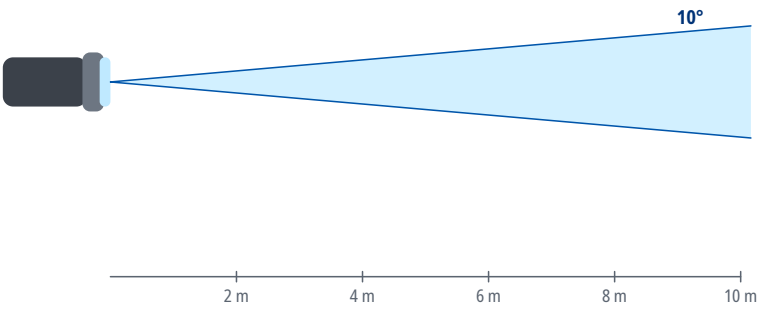
10 Technical specifications

Parameter	Value
Light	
Light source	LED
LED power	230 W
Luminous flux	10,000 lm
Color temperature	8,000 K
Color rendering index (CRI)	100
Optics	
Beam angle	10°
Movement	
Pan	540°
Tilt	220°
Dimensions and construction	
Weight	16.7 kg
Operating environment	
Operating temperature	0 to 40 °C

Speeds and ranges

Parameter	Value
Strobe frequency	0–30 Hz
Prism rotation	up to 1 °/s (0.2 rpm)

Spot diameter



Distance	Ø 10°
2 m	0.35 m
4 m	0.7 m
6 m	1 m
8 m	1.4 m
10 m	1.7 m
15 m	2.6 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.