DMX REFERENCE

BigHero 330

BigHero

LiteLees

Manufacturer	LiteLees
GDTF file	LiteLEES_BigHero_330_47482.gdtf
GDTF revision	v2.0 · 2023-09-17
Generated	2026-11-24

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1 About this manual

This document describes the BigHero by LiteLees. It was compiled from the GDTF file LiteLEES_BigHero_330_47482.gdtf from the GDTF-Share library.

File revision: “v2.0”.

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 LiteLees; 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	15 kg

DMX modes

Mode	Channels	Units in one universe	First start addresses
Default	18	28	1, 19, 37, 55, ...

No light? Check these channels

- Default: CH 17 Shutter at 32–63, 96–127, 160–191 or 224–255 “Open”; CH 18 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

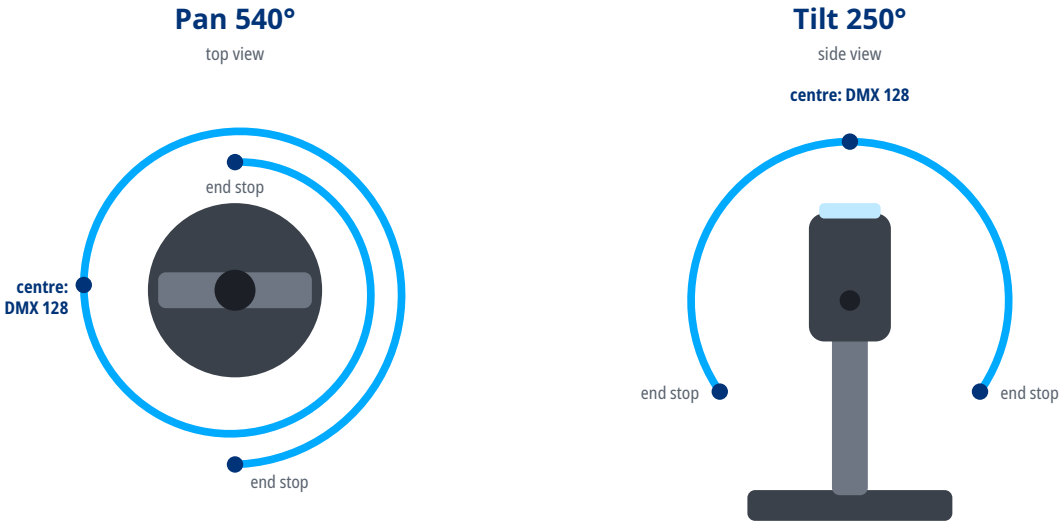
- Strobe and fast flashing light effects can trigger epileptic seizures in susceptible people (photosensitive epilepsy) and can cause nausea or disorientation.
- Inform the audience and performers in advance that strobe effects will be used, for example with a notice at the entrance, and do not use them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

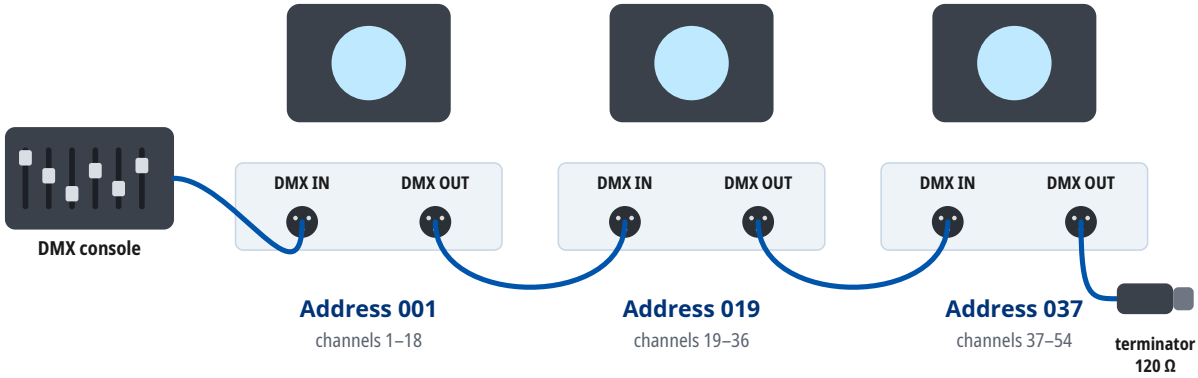
- Rigging must be carried out only by qualified persons in accordance with applicable regulations, in particular those for work at height.
- The supporting structure and fixings must safely carry the weight of all suspended devices; verify their load capacity in advance.
- Weight of the device: 15 kg.
- 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 Default: every unit occupies 18 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

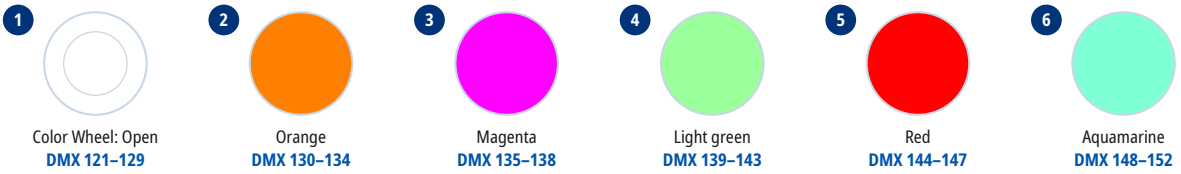
- The device occupies as many consecutive channels in the DMX universe as the selected DMX mode uses, starting at the set start address.
- Number of channels occupied in the DMX mode “Default”: 18.
- Choose start addresses so that the channels of individual devices do not overlap and the last occupied 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 “Default”, you can use, for example, the start addresses 1, 19, 37, 55.
- 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

	Default 18 channels
Pan / Tilt	1, 3
Dimmer	18
Shutter / strobe	17
Color wheel	7
Gobo wheel	8, 9
Gobo rotation	10
Prism	11–13
Frost	14
Zoom	15
Focus	16

Color wheel



1 Color Wheel: Open
DMX 121–129

2 Orange
DMX 130–134

3 Magenta
DMX 135–138

4 Light green
DMX 139–143

5 Red
DMX 144–147

6 Aquamarine
DMX 148–152

7 Cyan
DMX 153–157

8 Lavender
DMX 158–161

9 3200k
DMX 162–166

10 Light yellow
DMX 167–171

11 Deep green
DMX 172–176

12 Yellow
DMX 177–180

13 Pink
DMX 181–185

14 dark blue
DMX 186–190

Prism 1



1 Open
DMX 0–128

2 8 facets
8 facet
DMX 129–255

Prism 2

1
Open
DMX 0–127

2 
24 facets
24 facet
DMX 128–255

Gobo wheel 1

1
Static Gobo: Open
DMX 0–3

2 
Static Gobo: Iris 1
DMX 4–9

3 
Static Gobo: Iris 2
DMX 10–15

4 
Static Gobo: Iris 3
DMX 16–21

5 
Static Gobo: Iris 4
DMX 22–27

6 
Static Gobo: Gobo 1
DMX 28–33

7 
Static Gobo: Gobo 2
DMX 34–39

8 
Static Gobo: Gobo 3
DMX 40–45

9 
Static Gobo: Gobo 4
DMX 46–51

10 
Static Gobo: Gobo 5
DMX 52–57

11 
Static Gobo: Gobo 6
DMX 58–63

12
Static Gobo: Gobo 7
DMX 64–69

13 
Static Gobo: Gobo 8
DMX 70–75

14 
Static Gobo: Gobo 9
DMX 76–81

15 
Static Gobo: Gobo 10
DMX 82–87

16 
Static Gobo: Gobo 11
DMX 88–93

17 
Static Gobo: Gobo 12
DMX 94–99

18 
Gobo13
DMX 100–106

Gobo wheel 2

1
Rotating Gobo: Open
DMX 0–3

2 
Rotating Gobo: Iris 1
DMX 4–12

3 
Rotating Gobo: Iris 2
DMX 13–21

4 
Rotating Gobo: Iris 3
DMX 22–30

5 
Rotating Gobo: Iris 4
DMX 31–39

6 
Rotating Gobo: Gobo 1
DMX 40–48

7 
Rotating Gobo: Gobo 2
DMX 49–57

8 
Rotating Gobo: Gobo 3
DMX 58–66

9 
Rotating Gobo: Gobo 4
DMX 67–75

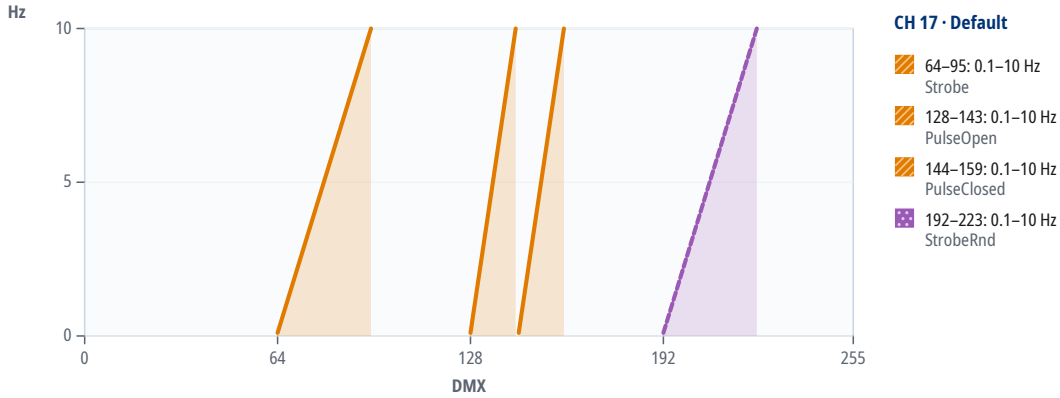
10 
Rotating Gobo: Gobo 5
DMX 76–84

11 
Rotating Gobo: Gobo 6
DMX 85–93

12 
Rotating Gobo: Gobo 7
DMX 94–102

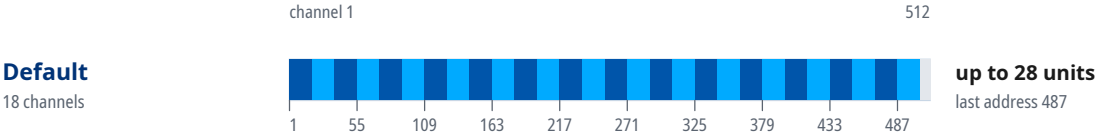
13 
Gobo 12
DMX 103–112

Strobe rate



9 DMX channels

Units in one DMX universe



Start addresses of 20 units in the mode “Default”

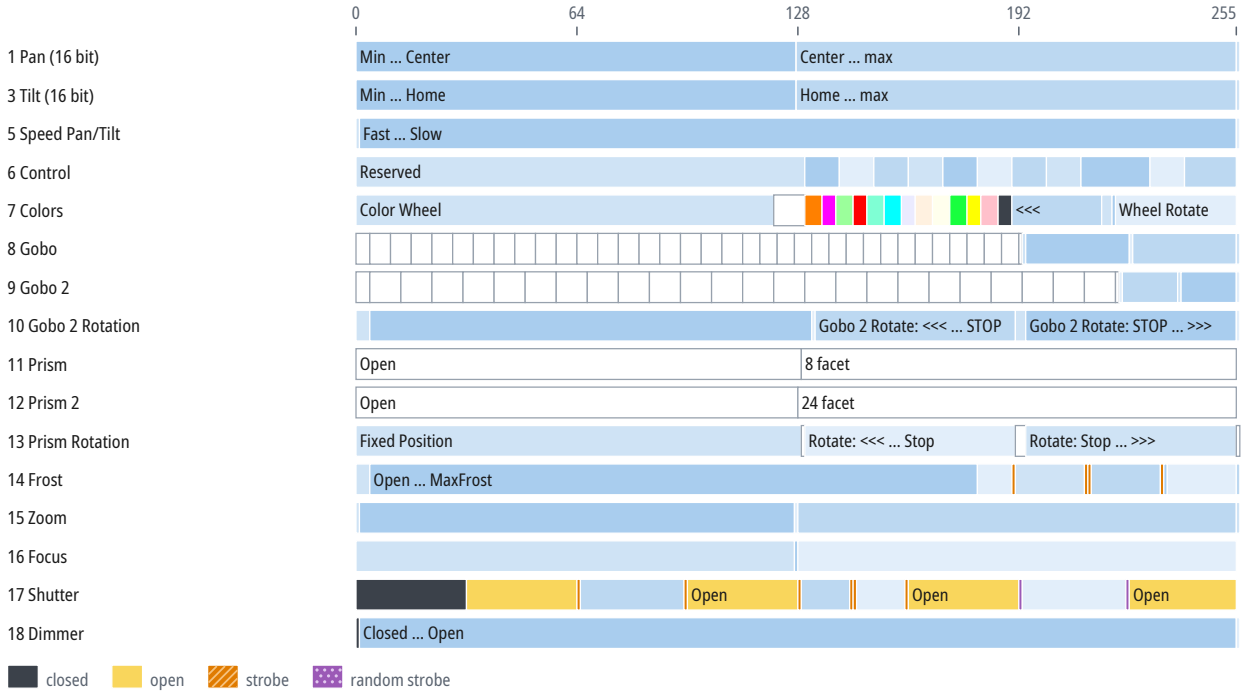
Unit	Start address	Unit	Start address	Unit	Start address	Unit	Start address
1	1	6	91	11	181	16	271
2	19	7	109	12	199	17	289
3	37	8	127	13	217	18	307
4	55	9	145	14	235	19	325
5	73	10	163	15	253	20	343

Mode Default

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 17 Shutter at 32–63, 96–127, 160–191 or 224–255 “Open”; CH 18 Dimmer above 0. The GDTF file gives these values for a console's Highlight function: CH 7 Colors 0, CH 17 Shutter 40, CH 18 Dimmer 255.

Channel functions at a glance



CH	Function	DMX	Description
1	Pan	0–127	Min ... Center
		128–255	Center ... max
		255	Max
2	Pan Fine	0–255	Fine adjustment of CH 1
3	Tilt	0–127	Min ... Home
		128–255	Home ... max
		255	Max
4	Tilt Fine	0–255	Fine adjustment of CH 3
5	Speed Pan/Tilt	0	Fast
		1–254	Fast ... Slow
		255	Slow
6	Control	0–129	Reserved
		130–139	Lamp ON
		140–149	Pan/Tilt reset
		150–159	Color reset
		160–169	Dimmer/Shutter reset
		170–179	Zoom/Focus reset
		180–189	Zoom/Focus reset ... Reserved

CH	Function	DMX	Description
6	Control (continued)	190–199	Reserved
		200–209	Total reset
		210–229	Reserved
		230–239	Lamp OFF
		240–255	Reserved
7	Colors	0–120	Color Wheel
		121–129	Color Wheel: Open
		130–134	Orange
		135–138	Magenta
		139–143	Light green
		144–147	Red
		148–152	Aquamarine
		153–157	Cyan
		158–161	Lavender
		162–166	3200k
		167–171	Light yellow
		172–176	Deep green
		177–180	Yellow
		181–185	Pink
		186–189	Dark blue
		190–215	<<< (up to 360 °/s (60 rpm))
		216–218	Wheel Rotate: Stop
		219	>>> (1–360 °/s)
		220–255	Wheel Rotate
8	Gobo	0–3	Static Gobo: Open
		4–9	Static Gobo: Iris 1
		10–15	Static Gobo: Iris 2
		16–21	Static Gobo: Iris 3
		22–27	Static Gobo: Iris 4
		28–33	Static Gobo: Gobo 1
		34–39	Static Gobo: Gobo 2
		40–45	Static Gobo: Gobo 3
		46–51	Static Gobo: Gobo 4
		52–57	Static Gobo: Gobo 5
		58–63	Static Gobo: Gobo 6
		64–69	Static Gobo: Gobo 7
		70–75	Static Gobo: Gobo 8
		76–81	Static Gobo: Gobo 9
		82–87	Static Gobo: Gobo 10
		88–93	Static Gobo: Gobo 11
		94–99	Static Gobo: Gobo 12
		100–105	Static Gobo: Gobo13

CH	Function	DMX	Description
8	Gobo (continued)	106–111	Gobo Shake: Iris 1 (0.1–10 Hz)
		112–116	Gobo Shake: Iris 2 (0.1–10 Hz)
		117–121	Gobo Shake: Iris 3 (0.1–10 Hz)
		122–126	Gobo Shake: Iris 4 (0.1–10 Hz)
		127–131	Gobo Shake: Gobo 1 (0.1–10 Hz)
		132–136	Gobo Shake: Gobo 2 (0.1–10 Hz)
		137–141	Gobo Shake: Gobo 3 (0.1–10 Hz)
		142–146	Gobo Shake: Gobo 4 (0.1–10 Hz)
		147–151	Gobo Shake: Gobo 5 (0.1–10 Hz)
		152–156	Gobo Shake: Gobo 6 (0.1–10 Hz)
		157–161	Gobo Shake: Gobo 7 (0.1–10 Hz)
		162–166	Gobo Shake: Gobo 8 (0.1–10 Hz)
		167–171	Gobo Shake: Gobo 9 (0.1–10 Hz)
		172–176	Gobo Shake: Gobo 10 (0.1–10 Hz)
		177–181	Gobo Shake: Gobo 11 (0.1–10 Hz)
		182–186	Gobo Shake: Gobo 12 (0.1–10 Hz)
		187–191	Gobo Shake: Gobo13 (0.1–10 Hz)
		192	Open
		193	<<<
		194–223	Gobo 1 Wheel Spin: <<< ... STOP
		224	Gobo 1 Wheel Spin: STOP
		225–254	Gobo 1 Wheel Spin: STOP ... >>>
		255	>>>
9	Gobo 2	0–3	Rotating Gobo: Open
		4–12	Rotating Gobo: Iris 1
		13–21	Rotating Gobo: Iris 2
		22–30	Rotating Gobo: Iris 3
		31–39	Rotating Gobo: Iris 4
		40–48	Rotating Gobo: Gobo 1
		49–57	Rotating Gobo: Gobo 2
		58–66	Rotating Gobo: Gobo 3
		67–75	Rotating Gobo: Gobo 4
		76–84	Rotating Gobo: Gobo 5
		85–93	Rotating Gobo: Gobo 6
		94–102	Rotating Gobo: Gobo 7
		103–111	Rotating Gobo: Gobo 8
		112–120	Gobo Shake: Iris 1 (0.1–10 Hz)
		121–129	Gobo Shake: Iris 2 (0.1–10 Hz)
		130–138	Gobo Shake: Iris 3 (0.1–10 Hz)
		139–147	Gobo Shake: Iris 4 (0.1–10 Hz)
		148–156	Gobo Shake: Gobo 1 (0.1–10 Hz)
		157–165	Gobo Shake: Gobo 2 (0.1–10 Hz)

CH	Function	DMX	Description
9	Gobo 2 (continued)	166–174	Gobo Shake: Gobo 3 (0.1–10 Hz)
		175–183	Gobo Shake: Gobo 4 (0.1–10 Hz)
		184–192	Gobo Shake: Gobo 5 (0.1–10 Hz)
		193–201	Gobo Shake: Gobo 6 (0.1–10 Hz)
		202–210	Gobo Shake: Gobo 7 (0.1–10 Hz)
		211–219	Gobo Shake: Gobo 8 (0.1–10 Hz)
		220	Open
		221	<<<
		222–237	Gobo 2 Wheel Spin: <<< ... STOP
		238	Gobo 2 Wheel Spin: STOP
		239–254	Gobo 2 Wheel Spin: STOP ... >>>
		255	>>>
10	Gobo 2 Rotation	0–3	NoRotation
		4–131	Gobo 2 Pos
		132	<<<
		133–190	Gobo 2 Rotate: <<< ... STOP
		191–193	Gobo 2 Rotate: STOP
		194–254	Gobo 2 Rotate: STOP ... >>>
		255	>>>
11	Prism		8 Facet Prism
		0–128	Open
		129–255	8 facet
12	Prism 2		24 Facet Prism
		0–127	Open
		128–255	24 facet
13	Prism Rotation	0–128	Fixed Position
		129	<<<
		130–190	Rotate: <<< ... Stop
		191–193	Rotate: Stop
		194–254	Rotate: Stop ... >>>
		255	>>>
14	Frost	0–3	Frost: Open
		4–179	Open ... MaxFrost
		180–189	MaxFrost
		190	Pulse Close: Slow
		191–210	Pulse Close: Slow ... Fast
		211	Pulse Close: Fast
		212	Pulse Open: Slow
		213–232	Pulse Open: Slow ... Fast
		233	Pulse Open: Fast
		234	Ramp: Slow
		235–254	Ramp: Slow ... Fast

CH	Function	DMX	Description
14	Frost (continued)	255	Ramp: Fast
15	Zoom	0	Empty Channel Set
		1–126	Zoom 1
		127	Empty Channel Set
		128–254	Zoom 1
		255	Empty Channel Set
16	Focus	0–126	Focus 1 1
		127	Center
		128–255	Focus 1 1
17	Shutter	0–31	Open/Close: Closed
		32–63	Open/Close: Open
		64	Strobe: Slow
		65–94	Strobe: Slow ... Fast
		95	Strobe: Fast
		96–127	Open
		128	Pulse Open: Slow
		129–142	Pulse Open: Slow ... Fast
		143	Pulse Open: Fast
		144	Pulse Closed: Slow
		145–158	Pulse Closed: Slow ... Fast
		159	Pulse Closed: Fast
		160–191	Open
		192	Strobe Rnd: Slow
		193–222	Strobe Rnd: Slow ... Fast
		223	Strobe Rnd: Fast
		224–255	Open
18	Dimmer	0	Closed
		1–254	Closed ... Open
		255	Open

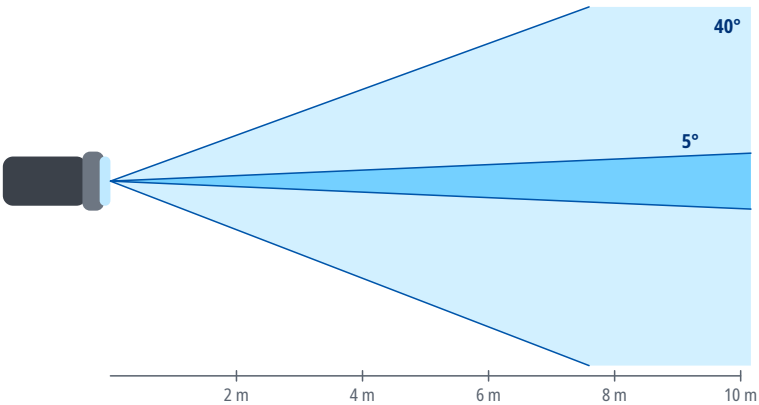
10 Technical specifications

Parameter	Value
Light	
Light source	discharge lamp
Lamp power	330 W
Luminous flux	16,000 lm
Color temperature	8,000 K
Color rendering index (CRI)	100
Optics	
Zoom	5–40°
Movement	
Pan	540°
Tilt	250°
Dimensions and construction	
Weight	15 kg
Operating environment	
Operating temperature	0 to 40 °C

Speeds and ranges

Parameter	Value
Strobe frequency	0.1–10 Hz
Color wheel rotation	up to 360 °/s (60 rpm)
Gobo wheel 1 rotation	up to 360 °/s (60 rpm)
Gobo wheel 2 rotation	up to 360 °/s (60 rpm)
Gobo 2 rotation	up to 360 °/s (60 rpm)
Prism 1 rotation	up to 360 °/s (60 rpm)

Spot diameter



Distance	Ø 5°	Ø 40°
2 m	0.17 m	1.5 m
4 m	0.35 m	2.9 m
6 m	0.52 m	4.4 m
8 m	0.7 m	5.8 m
10 m	0.87 m	7.3 m
15 m	1.3 m	10.9 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.