DMX REFERENCE

BTX-Hawk

Briteq



Manufacturer	Briteq
GDTF file	Briteq_BTX-Hawk_58407.gdtf
GDTF revision	20240227_MisDat · 2024-02-27
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Contents

1 About this manual 2
2 Quick reference 3
3 Safety instructions 4
4 Product description 5
5 Installation 5
6 Connections 5
7 Operation 6
8 Functions at a glance 7
9 DMX channels 9
Mode 15 CH 9
Mode 13 CH 13
10 Technical specifications 14
11 Maintenance and cleaning 15
12 Troubleshooting 15
13 Disposal 16

1 About this manual

This document describes the BTX-Hawk by Briteq. It was compiled from the GDTF file Briteq_BTX-Hawk_58407.gdtf from the GDTF-Share library.

File revision: “20240227_MisDat”.

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 Briteq; 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	15.5 kg

DMX modes

Mode	Channels	Units in one universe	First start addresses
15 CH	15	34	1, 16, 31, 46, ...
13 CH	13	39	1, 14, 27, 40, ...

No light? Check these channels

- 15 CH: CH 6 Dimmer above 0; CH 7 Shutter at 8–15, 132–139, 182–189, 232–239 or 248–255 “Open”
- 13 CH: CH 4 Dimmer above 0; CH 5 Shutter at 8–15, 132–139, 182–189, 232–239 or 248–255 “Open”


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

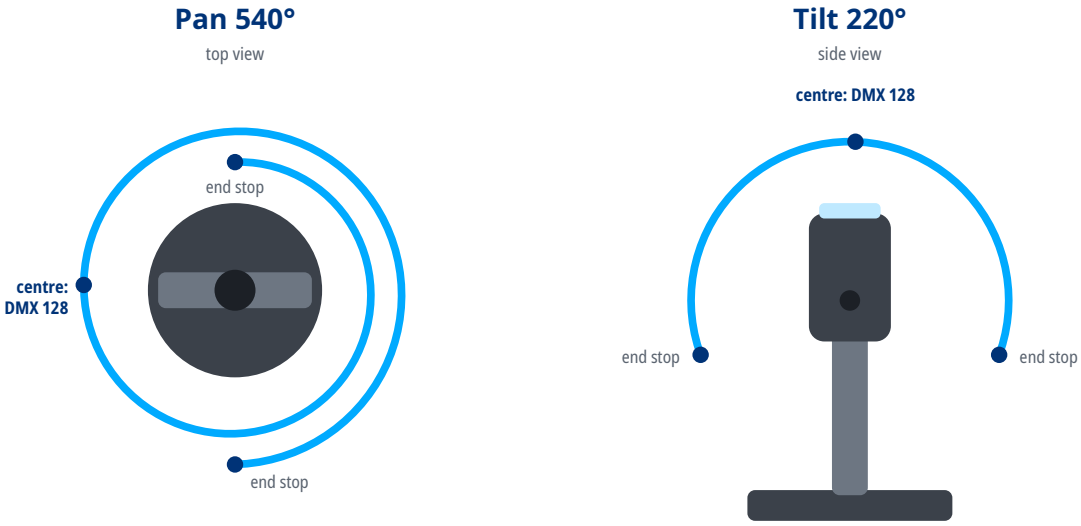
- Strobe and fast flashing light effects can trigger epileptic seizures in susceptible people (photosensitive epilepsy) and can cause nausea or disorientation.
- Inform the audience and performers in advance that strobe effects will be used, for example with a notice at the entrance, and do not use them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

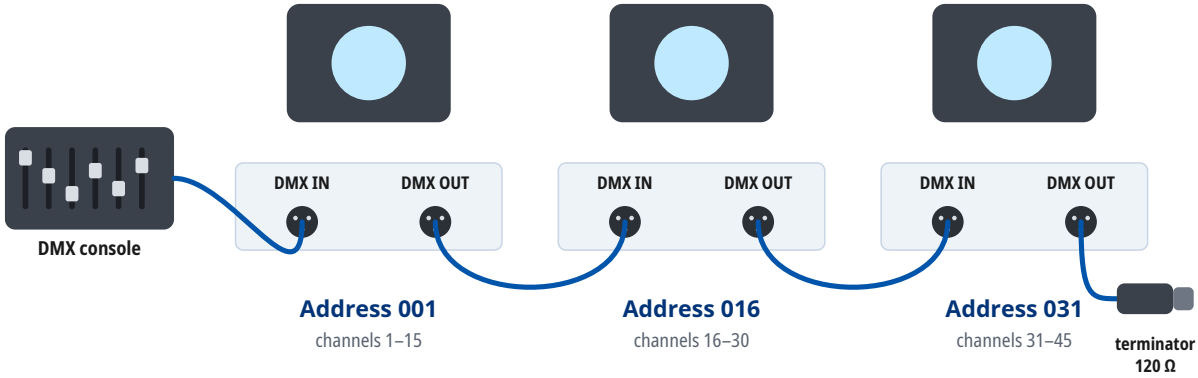
- Rigging must be carried out only by qualified persons in accordance with applicable regulations, in particular those for work at height.
- The supporting structure and fixings must safely carry the weight of all suspended devices; verify their load capacity in advance.
- Weight of the device: 15.5 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 15 CH: every unit occupies 15 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 “15 CH”: 15.
- 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 “15 CH”, you can use, for example, the start addresses 1, 16, 31, 46.
- 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

	15 CH 15 channels	13 CH 13 channels
Pan / Tilt	1, 3	1, 2
Pan / Tilt resolution	16 bit	8 bit
Dimmer	6	4
Shutter / strobe	7	5
Color wheel	8	6
Gobo wheel	9, 11	7, 9
Gobo rotation	10	8
Prism	12, 13	10, 11
Focus	14	12

Color wheel

1. Color 1: Open
   DMX 0–7
2. Yellow
   DMX 15–22
3. Pink
   DMX 30–37
4. Magenta
   DMX 45–52
5. Blue
   DMX 60–67
6. Green
   DMX 75–82
7. Orange
   DMX 91–97
8. Red
   DMX 105–113

Gobo wheel 1

1. Gobo 1: Open
   DMX 0–6
2. Gobo 1
   DMX 7–13
3. Gobo 2
   DMX 14–20
4. Gobo 3
   DMX 21–27
5. Gobo 4
   DMX 28–34
6. Gobo 5
   DMX 35–41
7. Gobo 6
   DMX 42–48
8. Rotate gobo 7
   DMX 49–56

Gobo wheel 2

1 Gobo: Open
DMX 0–7



2 Static gobo 1
DMX 8–14

3 Static gobo 2
DMX 15–21



4 Static gobo 3
DMX 22–28



5 Static gobo 4
DMX 29–35



6 Static gobo 5
DMX 36–42



7 Static gobo 6
DMX 43–49



8 Static gobo 7
DMX 50–56



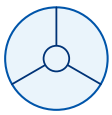
9 Static gobo 8
DMX 57–63



10 Static gobo 9
DMX 64–72

Prism

1 3 facets
3-facet
DMX 32–63

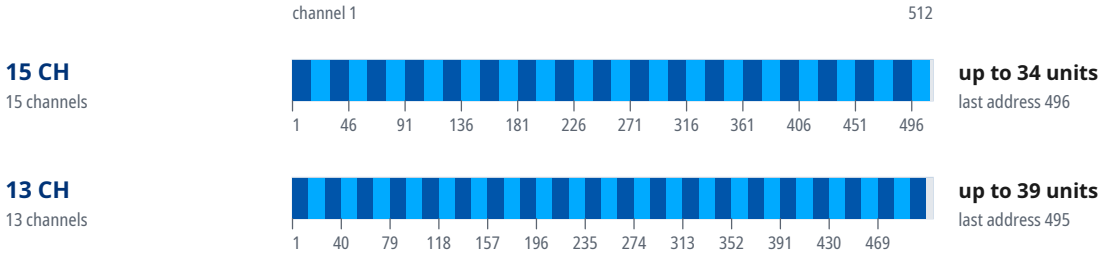


2 Lineair
DMX 64–95

3 Frost
DMX 96–127

9 DMX channels

Units in one DMX universe



Start addresses of 20 units in the mode “15 CH”

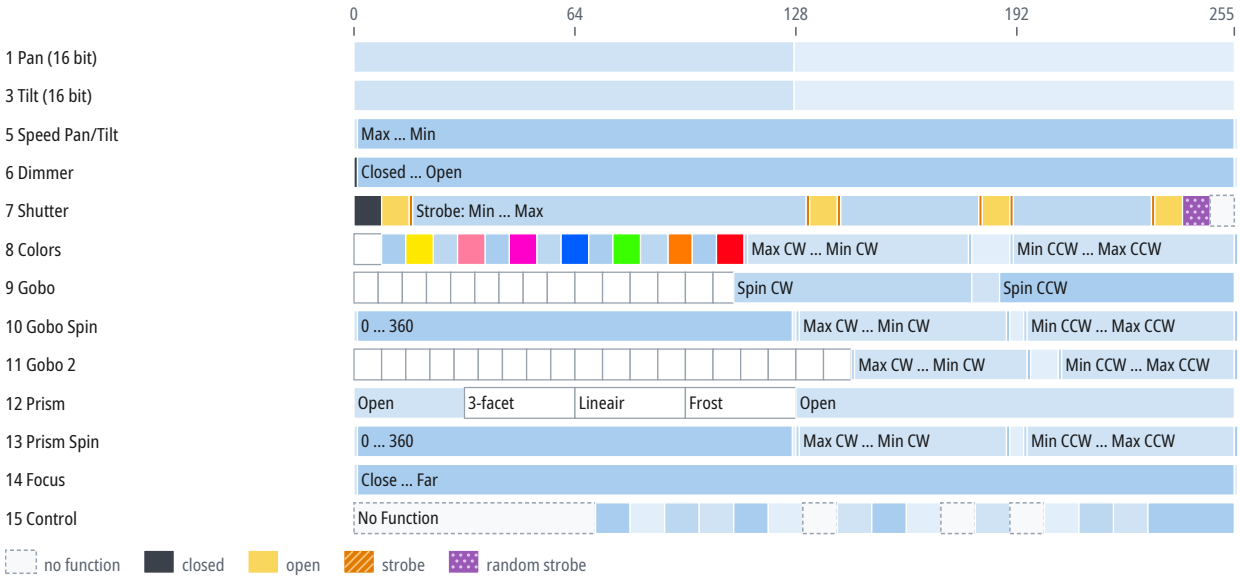
Unit	Start address	Unit	Start address	Unit	Start address	Unit	Start address
1	1	6	76	11	151	16	226
2	16	7	91	12	166	17	241
3	31	8	106	13	181	18	256
4	46	9	121	14	196	19	271
5	61	10	136	15	211	20	286

Mode 15 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 6 Dimmer above 0; CH 7 Shutter at 8–15, 132–139, 182–189, 232–239 or 248–255 “Open”. The GDTF file gives these values for a console's Highlight function: CH 6 Dimmer 255, CH 8 Colors 20.

Channel functions at a glance



CH	Function	DMX	Description
1	Pan	0–127	Pan 1
		128	Home
		128–255	Pan 1

CH	Function	DMX	Description
2	Pan Fine	0–255	Fine adjustment of CH 1
3	Tilt	0–127	Tilt 1
		128	Home
		128–255	Tilt 1
4	Tilt Fine	0–255	Fine adjustment of CH 3
5	Speed Pan/Tilt	0	Max
		1–254	Max ... Min
		255	Min
6	Dimmer	0	Closed
		1–254	Closed ... Open
		255	Open
7	Shutter	0–7	Shutter: Closed
		8–15	Shutter: Open
		16	Strobe: Min
		17–130	Strobe: Min ... Max
		131	Strobe: Max
		132–139	Strobe: Open
		140	Pulse Close: Min
		141–180	Pulse Close: Min ... Max
		181	Pulse Close: Max
		182–189	Pulse Close: Open
		190	Pulse Open: Min
		191–230	Pulse Open: Min ... Max
		231	Pulse Open: Max
		232–239	Pulse Open: Open
		240–247	Random
		248–255	Random: Open
8	Colors	0–7	Color 1: Open
		8–14	White/Yellow
		15–22	Yellow
		23–29	Yellow/Pink
		30–37	Pink
		38–44	Pink/Magenta
		45–52	Magenta
		53–59	Magenta/Blue
		60–67	Blue
		68–74	Blue/Green
		75–82	Green
		83–90	Green/Orange
		91–97	Orange
		98–104	Orange/Red
		105–112	Red

CH	Function	DMX	Description
8	Colors (continued)	113	Max CW
		114–177	Max CW ... Min CW
		178	Min CW
		179–189	Color 1 Wheel Spin: Stop (0.46–0.54 °/s)
		190	Min CCW
		191–254	Min CCW ... Max CCW
		255	Max CCW
9	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
		56–63	Gobo 1 - Shake
		64–71	Gobo 2 - Shake
		72–79	Gobo 3 - Shake
		80–87	Gobo 4 - Shake
		88–95	Gobo 5 - Shake
		96–103	Gobo 6 - Shake
		104–109	Gobo 7 - Shake
		110–178	Spin CW
		179–186	Gobo 1 Wheel Spin: Stop
		187–255	Spin CCW
10	Gobo Spin	0	0
		1–126	0 ... 360
		127	360
		128	Max CW
		129–188	Max CW ... Min CW
		189	Min CW
		190–193	Gobo 1 Select Spin: Stop
		194	Min CCW
		195–254	Min CCW ... Max CCW
		255	Max CCW
11	Gobo 2	0–7	Gobo: Open
		8–14	Static gobo 1
		15–21	Static gobo 2
		22–28	Static gobo 3
		29–35	Static gobo 4
		36–42	Static gobo 5
		43–49	Static gobo 6

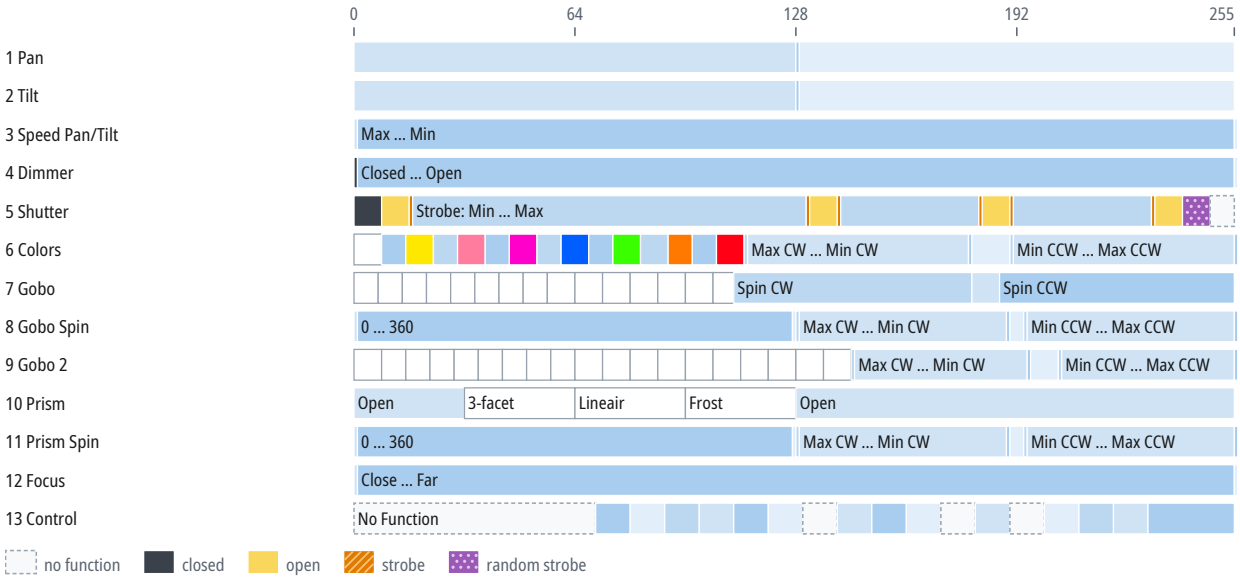
CH	Function	DMX	Description
11	Gobo 2 (continued)	50–56	Static gobo 7
		57–63	Static gobo 8
		64–71	Static gobo 9
		72–79	Gobo 2 Select Shake: Static gobo 1
		80–87	Gobo 2 Select Shake: Static gobo 2
		88–95	Gobo 2 Select Shake: Static gobo 3
		96–103	Gobo 2 Select Shake: Static gobo 4
		104–111	Gobo 2 Select Shake: Static gobo 5
		112–119	Gobo 2 Select Shake: Static gobo 6
		120–127	Gobo 2 Select Shake: Static gobo 7
		128–135	Gobo 2 Select Shake: Static gobo 8
		136–143	Gobo 2 Select Shake: Static gobo 9
		144	Max CW
		145–194	Max CW ... Min CW
		195	Min CW
		196–203	Gobo 2 Wheel Spin: Stop
		204	Min CCW
		205–254	Min CCW ... Max CCW
		255	Max CCW
12	Prism	0–31	Open
		32–63	3-facet
		64–95	Lineair
		96–127	Frost
		128–255	Open
13	Prism Spin	0	0
		1–126	0 ... 360
		127	360
		128	Max CW
		129–188	Max CW ... Min CW
		189	Min CW
		190–193	Prism 1 Select Spin: Stop (0.49–0.51 °/s)
		194	Min CCW
		195–254	Min CCW ... Max CCW
		255	Max CCW
14	Focus	0	Close
		1–254	Close ... Far
		255	Far
15	Control	0–69	No Function
		70–79	Activate BO on Pan/Tilt
		80–89	Disable BO on Pan/Tilt
		90–99	Activate BO on Color
		100–109	Disable BO on Color

CH	Function	DMX	Description
15	Control (continued)	110–119	Activate BO on Gobo
		120–129	Disable BO on Gobo
		130–139	No Function
		140–149	Pan/Tilt reset
		150–159	Color reset
		160–169	Gobo reset
		170–179	No Function
		180–189	Focus reset
		190–199	No Function
		200–209	Reset All
		210–219	Activate BO on Pan/Tilt or Color/Gobo
		220–229	Disable BO on Pan/Tilt of Color/Gobo
		230–255	Activate Sound Mode

Mode 13 CH

If the device receives DMX in this mode but gives no light, check these channels: CH 4 Dimmer above 0; CH 5 Shutter at 8–15, 132–139, 182–189, 232–239 or 248–255 “Open”. The GDTF file gives these values for a console's Highlight function: CH 4 Dimmer 255.

Channel functions at a glance



CH	Function	DMX	Description
1	Pan	0–127	Pan 1
		128	Home
		129–255	Pan 1
2	Tilt	0–127	Tilt 1
		128	Home
		129–255	Tilt 1
3	Speed Pan/Tilt		Same as CH 5 in the mode “15 CH” (p. 10)
4	Dimmer		Same as CH 6 in the mode “15 CH” (p. 10)

CH	Function	DMX	Description
5	Shutter		Same as CH 7 in the mode “15 CH” (p. 10)
6	Colors		Same as CH 8 in the mode “15 CH” (p. 10)
7	Gobo		Same as CH 9 in the mode “15 CH” (p. 11)
8	Gobo Spin		Same as CH 10 in the mode “15 CH” (p. 11)
9	Gobo 2		Same as CH 11 in the mode “15 CH” (p. 11)
10	Prism		Same as CH 12 in the mode “15 CH” (p. 12)
11	Prism Spin		Same as CH 13 in the mode “15 CH” (p. 12)
12	Focus		Same as CH 14 in the mode “15 CH” (p. 12)
13	Control		Same as CH 15 in the mode “15 CH” (p. 12)

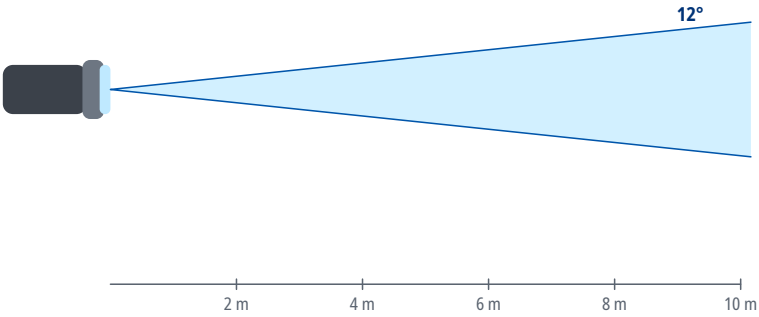
10 Technical specifications

Parameter	Value
Light	
Light source	LED
LED power	180 W
Luminous flux	49,500 lm
Color temperature	6,000 K
Color rendering index (CRI)	100
Optics	
Beam angle	12°
Movement	
Pan	540°
Tilt	220°
Control	
DMX connection	5-pin XLR IN/OUT, 3-pin XLR IN
Dimensions and construction	
Weight	15.5 kg
Operating environment	
Operating temperature	0 to 40 °C

Speeds and ranges

Parameter	Value
Color wheel rotation	up to 0.54 °/s (0.1 rpm)
Gobo wheel 1 rotation	up to 360 °/s (60 rpm)
Prism rotation	up to 360 °/s (60 rpm)

Spot diameter



Distance	Ø 12°
2 m	0.42 m
4 m	0.84 m
6 m	1.3 m
8 m	1.7 m
10 m	2.1 m
15 m	3.2 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.