DMX REFERENCE

Fusion X

PhoceaLight



Manufacturer	PhoceaLight
GDTF file	PhoceaLight_Fusion_X_154319.gdtf
GDTF revision	Full Models · 2026-08-06
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1 About this manual

This document describes the Fusion X by PhoceaLight. It was compiled from the GDTF file PhoceaLight_Fusion_X_154319.gdtf from the GDTF-Share library.

File revision: “Full Models”.

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 PhoceaLight; 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	17.4 kg

DMX modes

Mode	Channels	Units in one universe	First start addresses
25channels	25	20	1, 26, 51, 76, ...
36channels	36	14	1, 37, 73, 109, ...

No light? Check these channels

- 25channels: CH 6 Shutter at 11–21, 127–137, 202–212 or 245–255 “open”; CH 7 Dimmer above 0
- 36channels: CH 6 Shutter at 11–21, 127–137, 202–212 or 245–255 “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.
- 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.

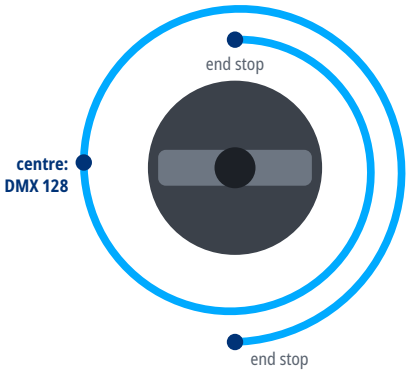
> ⚠ **WARNING**
>
> - The moving parts of the device (for example the head or arms) can move quickly and unexpectedly at any time – after power-on, during a reset, or on a command from the controller.
> - Keep yourself and any objects out of the range of movement. While the device is switched on, do 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

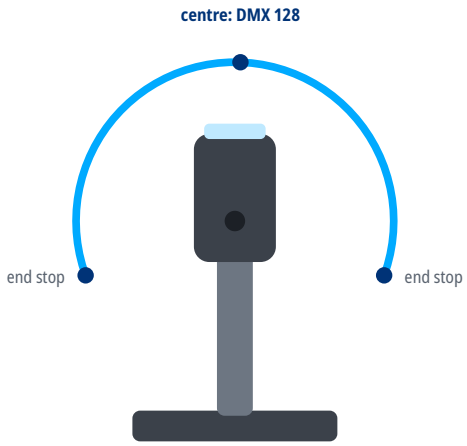
Pan 540°

top view



Tilt 220°

side view



5 Installation

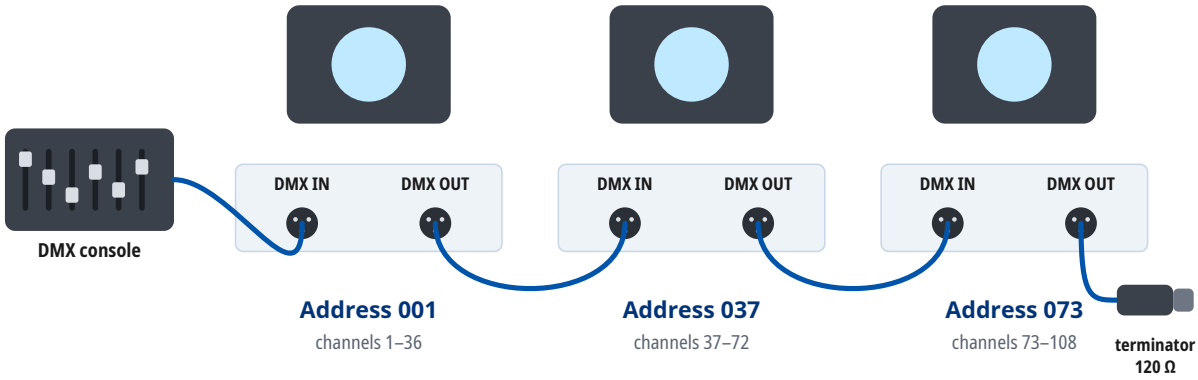
⚠ **WARNING**

- 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: 17.4 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 36channels: every unit occupies 36 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 “36channels”: 36.
- 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 “36channels”, you can use, for example, the start addresses 1, 37, 73, 109.
- The DMX mode set on the device must match the fixture profile (personality) used in the controller.

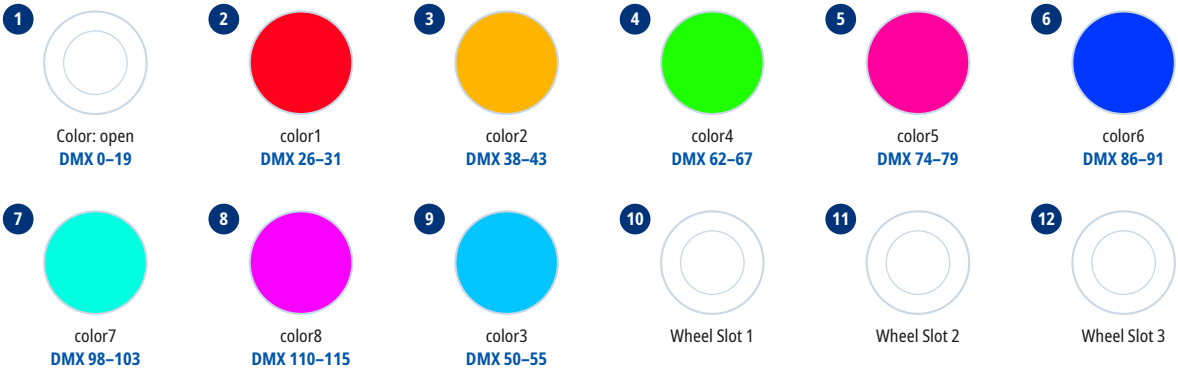
8 Functions at a glance

Functions in each DMX mode

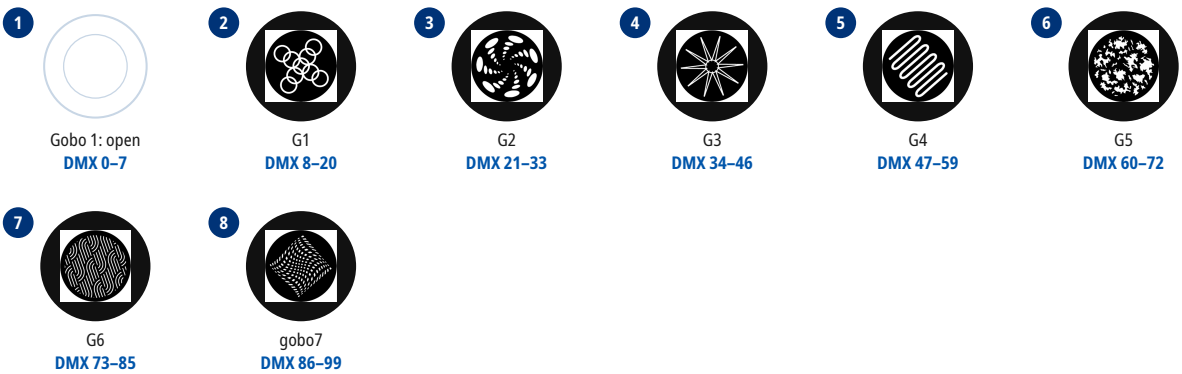
	25channels 25 channels	36channels 36 channels
Pan / Tilt	1, 3	1, 3
Dimmer	7	7
Dimmer resolution	8 bit	16 bit
Shutter / strobe	6	6
Color mixing	13–15	17, 19, 21
Color temperature	16	23
Color wheel	12	15
Gobo wheel	17–19	25, 26, 28
Gobo rotation	18	26 *
Prism	20–23	29, 30, 32, 33
Frost	24	35
Zoom	8	9
Focus	9	11

* The function works only when another channel switches it on; see the DMX table.

Color wheel



Gobo wheel 1



Prism 1

1
Open
DMX 0–127

2 
5 facets
5prism
DMX 128–255

Gobo wheel 2

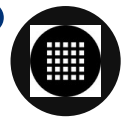
1
Gobo 2 index: OPEN
DMX 0–9

2 
G1
DMX 10–17

3 
G2
DMX 18–25

4 
G3
DMX 26–33

5 
G4
DMX 34–41

6 
G5
DMX 42–49

7 
G6
DMX 50–57

8 
G7
DMX 58–65

9 
G8
DMX 66–73

10 
G9
DMX 74–81

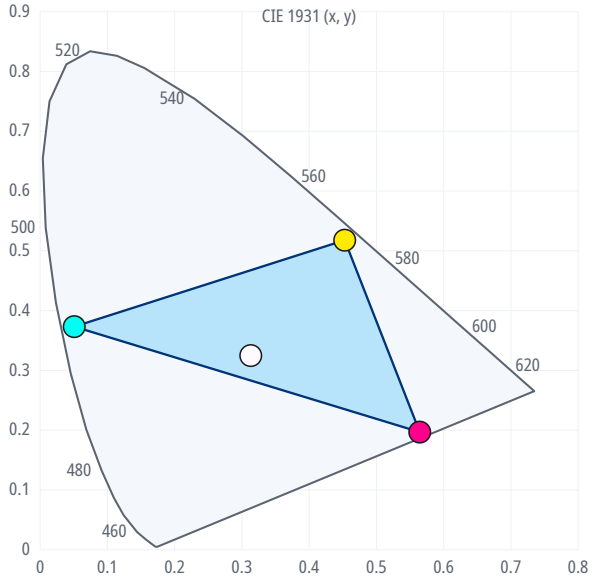
11 
gobo10
DMX 82–90

Prism 2

1
Open
DMX 0–127

2 
4 facets
T Prism
DMX 128–255

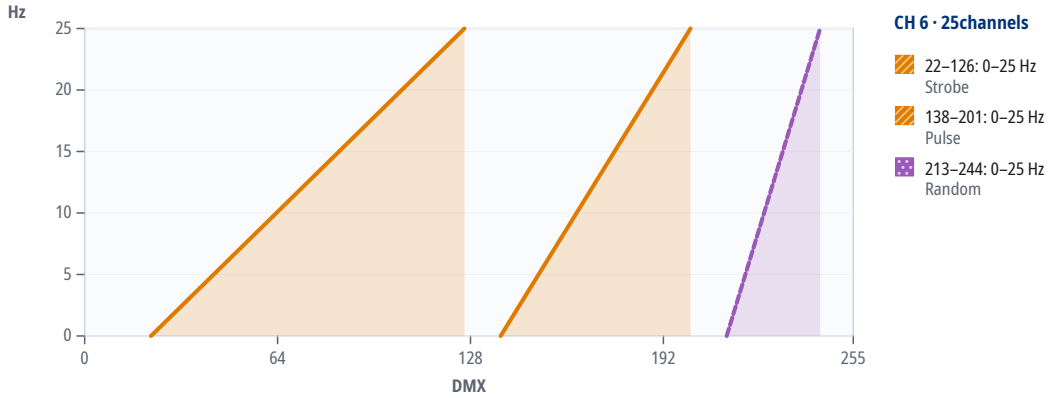
LED colors and the colors they mix



LED	x	y
White	0.313	0.325
C	0.051	0.373
M	0.564	0.197
Y	0.453	0.518

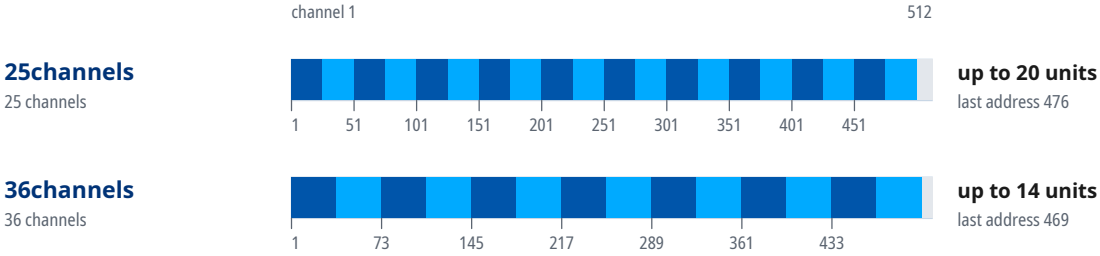
The shaded area holds the colors the LEDs can mix; the dots are the LED colors the GDTF file states.

Strobe rate



9 DMX channels

Units in one DMX universe



Start addresses of 20 units in the mode “36channels”

Unit	Start address	Unit	Start address	Unit	Start address	Unit	Start address
1	1	6	181	11	361	16	U2 · 37
2	37	7	217	12	397	17	U2 · 73
3	73	8	253	13	433	18	U2 · 109
4	109	9	289	14	469	19	U2 · 145
5	145	10	325	15	U2 · 1	20	U2 · 181

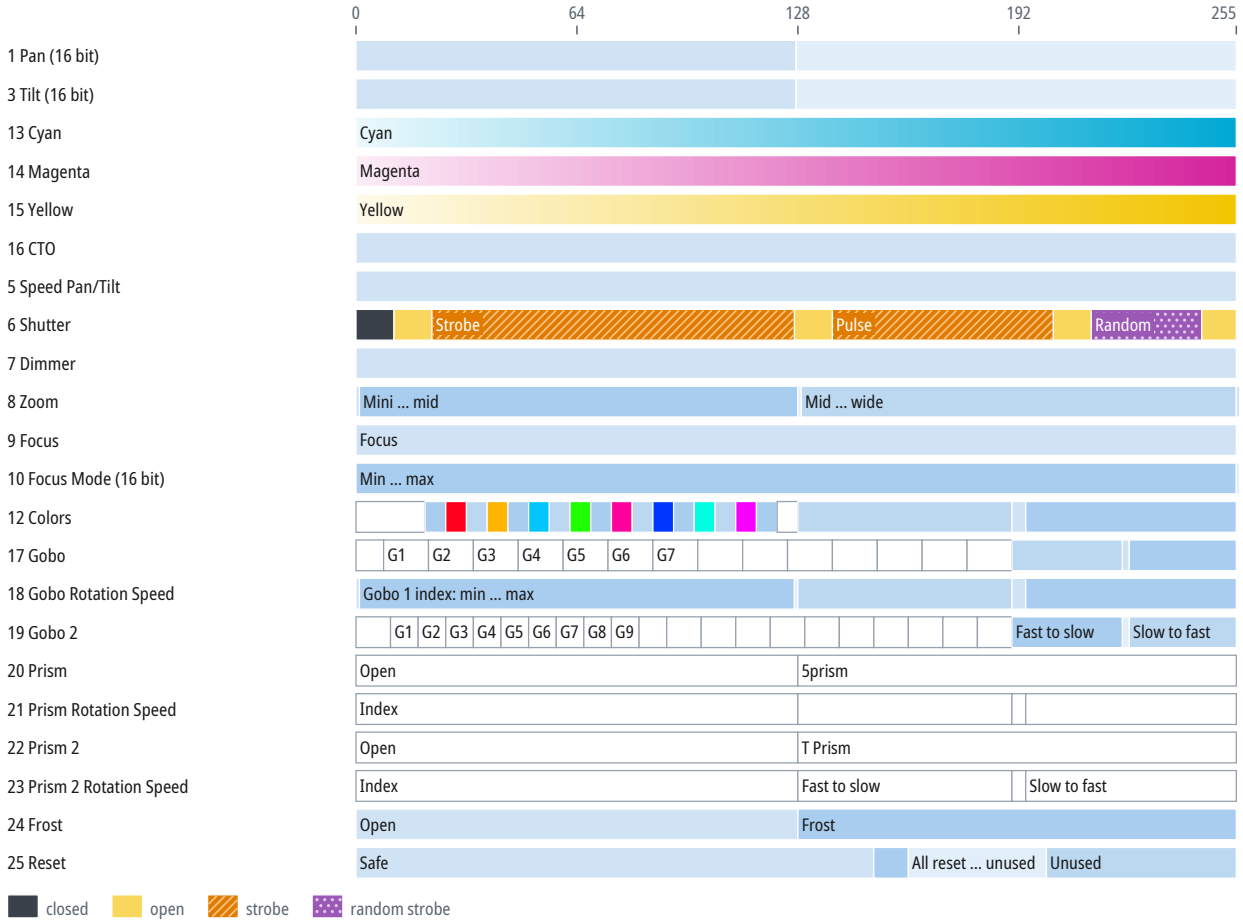
Where a DMX universe is full, the next units continue in the next universe: “U2 · 1” is address 1 in the second universe, counted from the universe of the first unit.

Mode 25channels

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 “open”; CH 7 Dimmer above 0. The GDTF file gives these values for a console's Highlight function: CH 6 Shutter 255, CH 7 Dimmer 255, CH 13 Cyan 0, CH 14 Magenta 0, CH 15 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
		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 (0–25 Hz)

CH	Function	DMX	Description
6	Shutter (continued)	127–137	Open
		138–201	Pulse (0–25 Hz)
		202–212	Open
		213–244	Random (0–25 Hz)
		245–255	Open
7	Dimmer	0–255	
8	Zoom	0	Mini
		1–127	Mini … mid
		128	Mid
		129–254	Mid … wide
		255	Wide
9	Focus	0–255	Focus
10	Focus Mode	0–255	Min … max
		255	Max
11	Focus Mode Fine	0–255	Fine adjustment of CH 10
12	Colors	0–19	Color: open
		20–25	Open … color1
		26–31	color1
		32–37	color1 … color2
		38–43	color2
		44–49	color2 … color3
		50–55	color3
		56–61	color3 … color4
		62–67	color4
		68–73	color4 … color5
		74–79	color5
		80–85	color5 … color6
		86–91	color6
		92–97	color6 … color7
		98–103	color7
		104–109	color7 … color8
		110–115	color8
		116–121	color8 … open
		122–127	Color: open
		128–189	Color 1 Wheel Spin: fast to slow (360–0 °/s)
		190–193	No rot
		194–255	Color 1 Wheel Spin: slow to fast (0–360 °/s)
13	Cyan	0–255	Cyan
14	Magenta	0–255	Magenta
15	Yellow	0–255	Yellow
16	CTO	0–255	6500–2700 K
17	Gobo	0–7	Gobo 1: open

CH	Function	DMX	Description
17	Gobo (continued)	8–20	G1
		21–33	G2
		34–46	G3
		47–59	G4
		60–72	G5
		73–85	G6
		86–98	G7
		99–111	G1 shake
		112–124	G2 shake
		125–137	G3 shake
		138–150	G4 shake
		151–163	G5 shake
		164–176	G6 shake
		177–189	G7 shake
		190–221	Gobo 1 Wheel Spin: fast to slow (180–0 °/s)
		222–223	No rotation
		224–255	Gobo 1 Wheel Spin: slow to fast (0–180 °/s)
18	Gobo Rotation Speed	0	Gobo 1 index: min
		1–126	Gobo 1 index: min … max
		127	Gobo 1 index: max
		128–189	Gobo 1 Select Spin>>: fast to slow (360–0 °/s)
		190–193	No rotation
		194–255	Gobo 1 Select Spin<<: slow to fast
19	Gobo 2	0–9	Gobo 2 index: OPEN
		10–17	G1
		18–25	G2
		26–33	G3
		34–41	G4
		42–49	G5
		50–57	G6
		58–65	G7
		66–73	G8
		74–81	G9
		82–89	G10
		90–99	G1 shake
		100–109	G2 shake
		110–119	G3 shake
		120–129	G4 shake
		130–139	G5 shake
		140–149	G6 shake
		150–159	G7 shake
		160–169	G8 shake

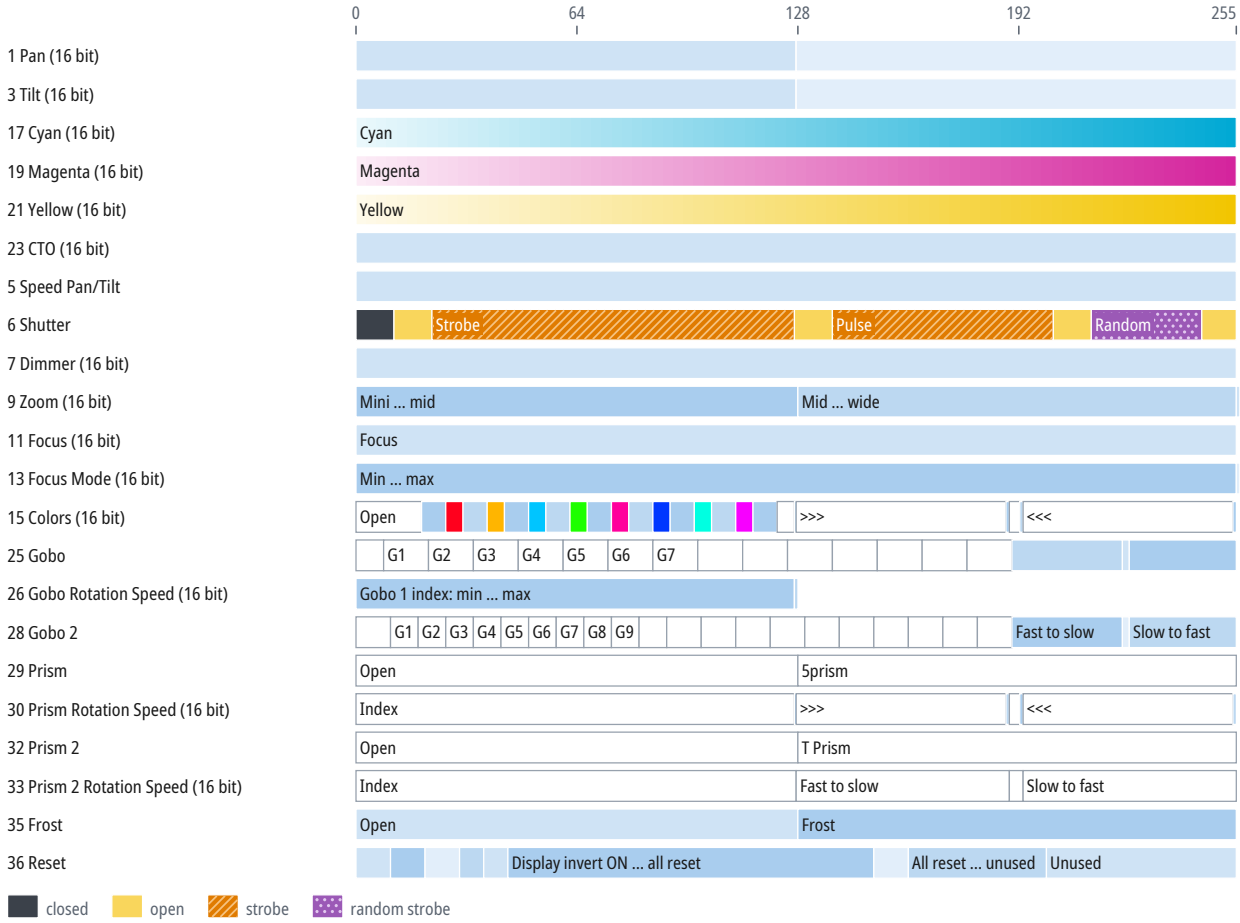
CH	Function	DMX	Description
19	Gobo 2 (continued)	170–179	G9 shake
		180–189	G10 shake
		190–221	Fast to slow
		222–223	NO rotation
		224–255	Slow to fast
20	Prism	0–127	Open
		128–255	5prism
21	Prism Rotation Speed	0–127	Index
		128–189	Prism 1 Pos Rotate: fast to slow (360–1 °/s)
		190–193	No rot
		194–255	Prism 1 Pos Rotate: slow to fast (1–360 °/s)
22	Prism 2	0–127	Open
		128–255	T Prism
23	Prism 2 Rotation Speed	0–127	Index
		128–189	Fast to slow (540–0 °/s)
		190–193	No rot
		194–255	Slow to fast (0–540 °/s)
24	Frost	0–127	Open
		128–255	Frost
25	Reset	0–149	Safe
		150–159	All reset
		160–199	All reset ... unused
		200–255	Unused

Mode 36channels

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 “open”; CH 7 Dimmer above 0. The GDTF file gives these values for a console's Highlight function: CH 6 Shutter 255, 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		Same as CH 1 in the mode “25channels” (p. 11)
2	Pan Fine	0–255	Fine adjustment of CH 1
3	Tilt		Same as CH 3 in the mode “25channels” (p. 11)
4	Tilt Fine	0–255	Fine adjustment of CH 3
5	Speed Pan/Tilt	0–255	
6	Shutter		Same as CH 6 in the mode “25channels” (p. 11)
7	Dimmer	0–255	
8	Dimmer Fine	0–255	Fine adjustment of CH 7
9	Zoom	0–128	Mini ... mid
		128–255	Mid ... wide
		255	Wide
10	Zoom Fine	0–255	Fine adjustment of CH 9

CH	Function	DMX	Description
11	Focus	0–255	Focus
12	Focus Fine	0–255	Fine adjustment of CH 11
13	Focus Mode		Same as CH 10 in the mode “25channels” (p. 12)
14	Focus Mode Fine	0–255	Fine adjustment of CH 13
15	Colors	0–19	Open
		19–26	Open ... color1
		26–31	color1
		31–38	color1 ... color2
		38–43	color2
		43–50	color2 ... color3
		50–55	color3
		55–62	color3 ... color4
		62–67	color4
		67–74	color4 ... color5
		74–79	color5
		79–86	color5 ... color6
		86–91	color6
		91–98	color6 ... color7
		98–103	color7
		103–110	color7 ... color8
		110–115	color8
		115–122	color8 ... open
		122–127	Open
		127	Open ... >>>
		128–189	>>>
		189	>>> ... =
		190–193	=
		193	= ... <<<
		194–255	<<<
16	Colors 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	6500–2700 K
24	CTO Fine	0–255	Fine adjustment of CH 23
25	Gobo		Same as CH 17 in the mode “25channels” (p. 12)
26	Gobo Rotation Speed		When CH 25 is 0–89:
		0–127	Gobo 1 index: min ... max
		127	Gobo 1 index: max

CH	Function	DMX	Description
26	Gobo Rotation Speed (continued)	127–190	Gobo 1 index
		190–255	No rotation
			When CH 25 is 10–89:
		128–189	Gobo 1 Select Spin>>: fast to slow (360–0 °/s)
		189–194	Gobo 1 Select Spin>>
		194–255	Gobo 1 Select Spin<<: slow to fast (0–360 °/s)
27	Gobo Rotation Speed Fine	0–255	Fine adjustment of CH 26
28	Gobo 2		Same as CH 19 in the mode “25channels” (p. 13)
29	Prism		Same as CH 20 in the mode “25channels” (p. 14)
30	Prism Rotation Speed	0–127	Index
		127	Index ... >>>
		128–189	>>> (360–0 °/s)
		189	>>> ... =
		190–193	=
		193	= ... <<<
		194–255	<<< (0–360 °/s)
31	Prism Rotation Speed Fine	0–255	Fine adjustment of CH 30
32	Prism 2		Same as CH 22 in the mode “25channels” (p. 14)
33	Prism 2 Rotation Speed		Same as CH 23 in the mode “25channels” (p. 14)
34	Prism 2 Rotation Speed Fine	0–255	Fine adjustment of CH 33
35	Frost		Same as CH 24 in the mode “25channels” (p. 14)
36	Reset	0–9	Unused
		10–19	Display off
		20–29	Display on
		30–36	Display invert OFF
		37–43	Display invert ON
		44–149	Display invert ON ... all reset
		150–159	All reset
		160–199	All reset ... unused
		200–255	Unused

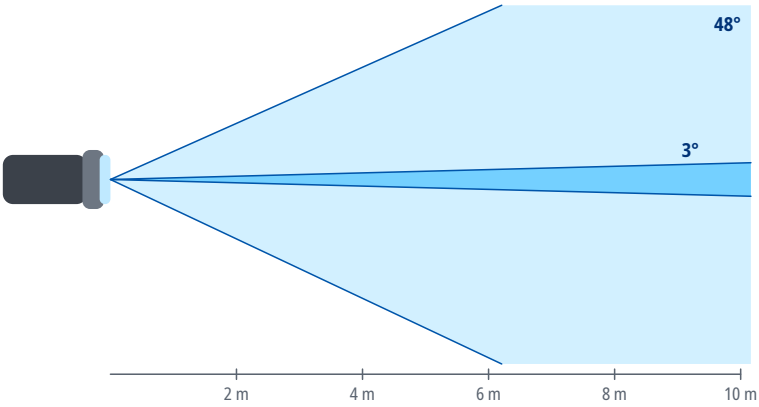
10 Technical specifications

Parameter	Value
Light	
Light source	LED
LED power	420 W
Luminous flux	120,000 lm
Color temperature	7,500 K
Color rendering index (CRI)	85
Optics	
Zoom	3–48°
Movement	
Pan	540°
Tilt	220°
Control	
DMX connection	5-pin XLR IN/OUT, 3-pin XLR IN/OUT
RJ45 connectors	RJ45 IN
Electrical	
Power supply	100–240 V, 50/60 Hz
Power consumption	850 W
Power connectors	powerCON TRUE1 IN/OUT
Dimensions and construction	
Weight	17.4 kg
Operating environment	
Operating temperature	0 to 40 °C

Speeds and ranges

Parameter	Value
Color temperature range	2700–6500 K
Strobe frequency	0–25 Hz
Color wheel rotation	up to 360 °/s (60 rpm)
Gobo wheel 1 rotation	up to 360 °/s (60 rpm)
Prism 1 rotation	up to 360 °/s (60 rpm)
Prism 2 rotation	up to 540 °/s (90 rpm)

Spot diameter



Distance	Ø 3°	Ø 48°
2 m	0.1 m	1.8 m
4 m	0.21 m	3.6 m
6 m	0.31 m	5.3 m
8 m	0.42 m	7.1 m
10 m	0.52 m	8.9 m
15 m	0.79 m	13.4 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.