DMX REFERENCE

OPUS S5 FELIX

OPUS S5 Spot Moving Head

FELUX



Manufacturer	FELUX
GDTF file	FELUX_OPUS_S5_FELIX_49877.gdtf
GDTF revision	OPUS S5 FELIX · 2023-10-30
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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 6
7 Operation 6
8 Functions at a glance 7
9 DMX channels 10
Mode 33CH Mode Extended 11
Mode 27CH Mode Standard 17
10 Technical specifications 19
11 Maintenance and cleaning 20
12 Troubleshooting 20
13 Disposal 21

1 About this manual

This document describes the OPUS S5 Spot Moving Head by FELUX. It was compiled from the GDTF file FELUX_OPUS_S5_FELIX_49877.gdtf from the GDTF-Share library.

File revision: “OPUS S5 FELIX”.

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 FELUX; 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	24 kg

DMX modes

Mode	Channels	Units in one universe	First start addresses
33CH Mode Extended	33	15	1, 34, 67, 100, ...
27CH Mode Standard	27	18	1, 28, 55, 82, ...

No light? Check these channels

- 33CH Mode Extended: CH 5 Dimmer above 0; CH 7 Shutter at 0–5 or 251–255 “open”; CH 32 Dimmer Curve above 5
- 27CH Mode Standard: CH 5 Dimmer above 0; CH 7 Shutter at 0–5 or 251–255 “open”; CH 26 Dimmer Curve above 5



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.

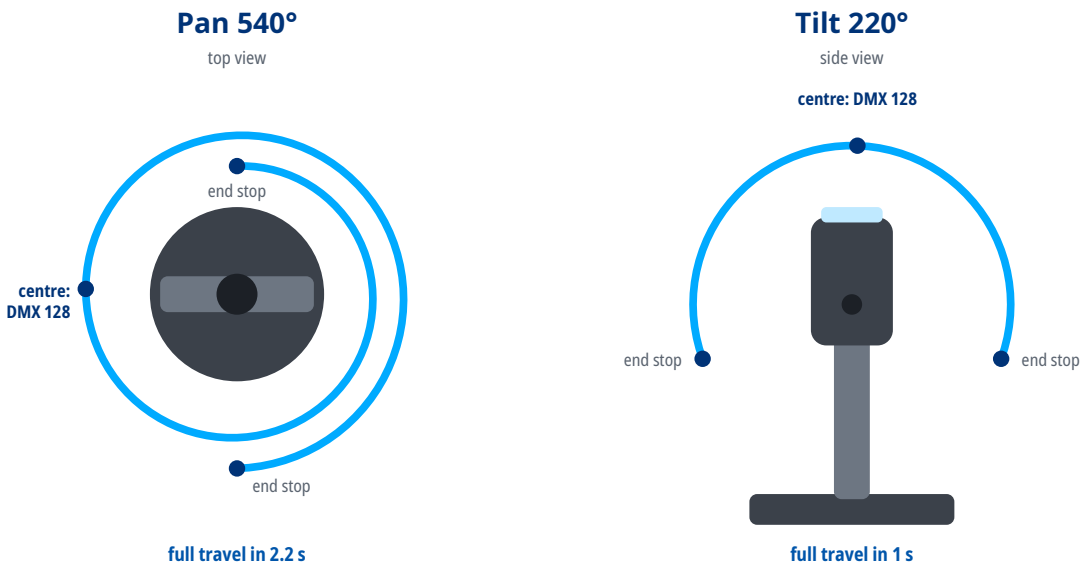
> ⚠ **WARNING**
>
> - The moving parts of the device (for example the head or arms) can move quickly and unexpectedly at any time – after power-on, during a reset, or on a command from the controller.
> - Keep yourself and any objects out of the range of movement. While the device is switched on, do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

Description in the GDTF file

“Spot Moving Head with 17.500 lm / 39.000 Lux (@ 5 m) / CMY / ColorWheel / Linear CTO / rot. Gobowheel / stat. Gobowheel / Prisma / Frost / Iris / Zoom /Fokus”

Range of movement



Full-travel times as stated in the GDTF file.

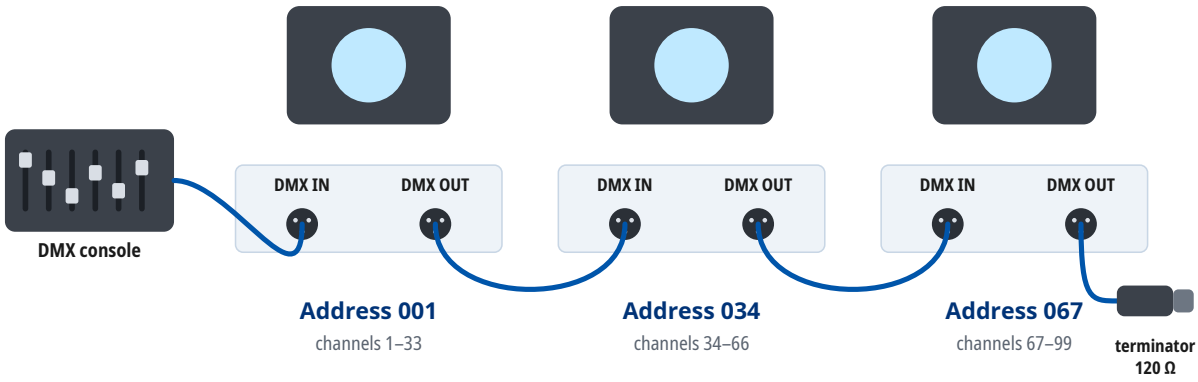
5 Installation

> ⚠ **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: 24 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 33CH Mode Extended: every unit occupies 33 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

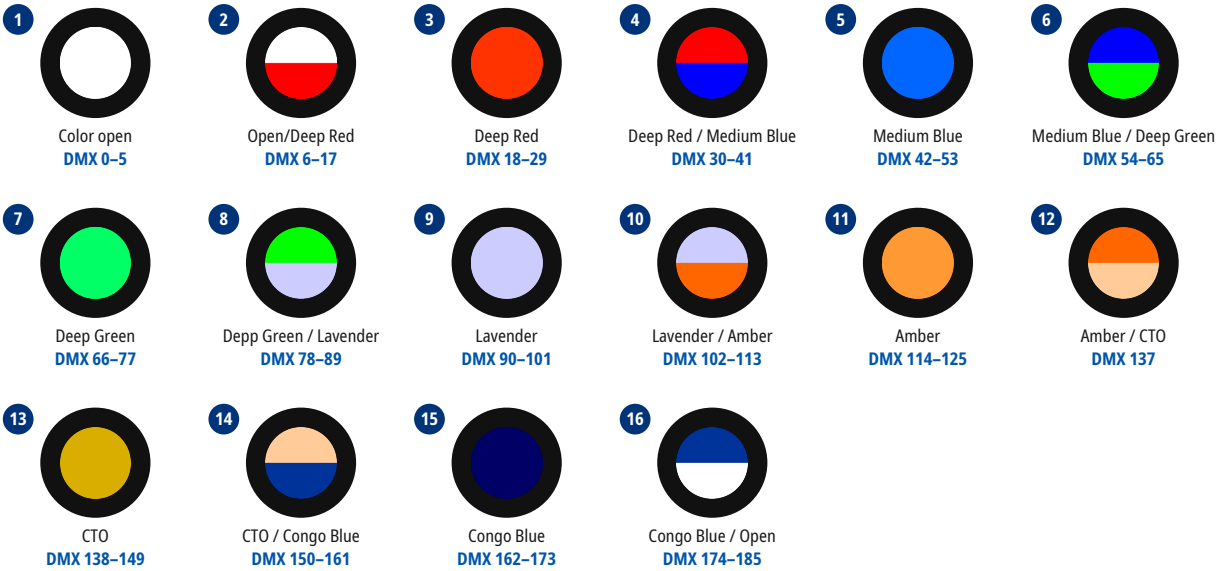
- The device occupies as many consecutive channels in the DMX universe as the selected DMX mode uses, starting at the set start address.
- Number of channels occupied in the DMX mode “33CH Mode Extended”: 33.
- Choose start addresses so that the channels of individual devices do not overlap and the last 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 “33CH Mode Extended”, you can use, for example, the start addresses 1, 34, 67, 100.
- The DMX mode set on the device must match the fixture profile (personality) used in the controller.
- The device supports RDM (Remote Device Management), two-way communication with the controller over the DMX line.

8 Functions at a glance

Functions in each DMX mode

	33CH Mode Extended 33 channels	27CH Mode Standard 27 channels
Pan / Tilt	1, 3	1, 3
Dimmer	5	5
Shutter / strobe	7	7
Color mixing	8, 10, 12	8–10
Color temperature	14	11
Color wheel	16	12
Gobo wheel	17, 20	13, 16
Gobo rotation	18	14
Prism	26, 27	20, 21
Frost	28	22
Zoom	21	17
Focus	23	18
Iris	25	19
Animation wheel	29	23

Gobo wheel 1



Gobo wheel 2

1 
Select: Open
DMX 0–5

2 
Gobo 1
DMX 6–18

3 
Gobo 2
DMX 19–31

4 
Gobo 3
DMX 32–44

5 
Gobo 4
DMX 45–57

6 
Gobo 5
DMX 58–70

7 
Gobo 6
DMX 71–83

8 
Gobo 7
DMX 84–97

Gobo wheel 3

1 
Fix Gobos: Open
DMX 0–5

2 
Gobo 1
DMX 6–17

3 
Gobo 2
DMX 18–29

4 
Gobo 3
DMX 30–41

5 
Gobo 4
DMX 42–53

6 
Gobo 5
DMX 54–65

7 
Gobo 6
DMX 66–77

8 
Gobo 7
DMX 78–89

9 
Gobo 8
DMX 90–102

Prism

1
Open
DMX 0–5

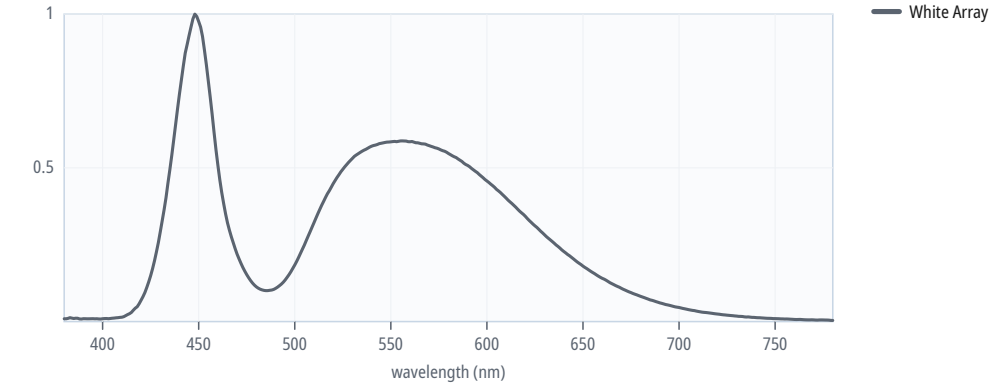
2 
6 facets
Prism 2 (6 Facet)
DMX 131–255

3 
3 facets
Prism 1 (3 Facet)
DMX 6–130

Animation wheel

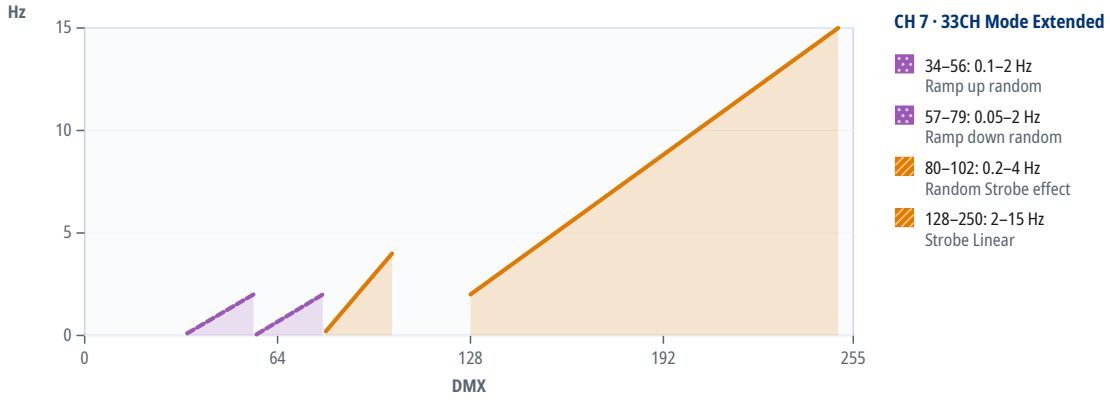
1 
Wheel rot Off
DMX 0–5

Spectra of the light sources



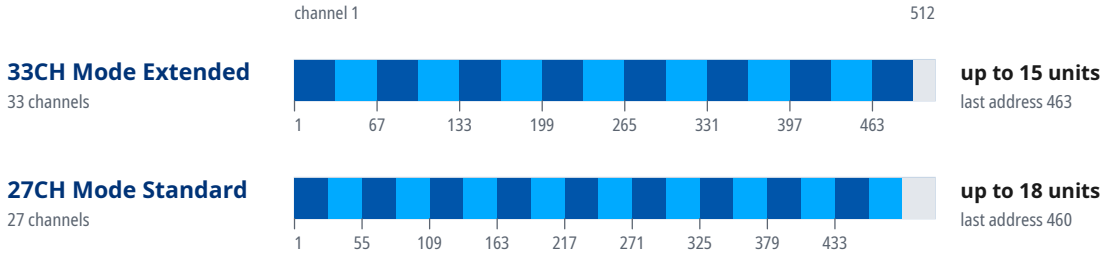
Relative spectrum of each light source as the GDTF file states it; each curve is scaled to its own maximum.

Strobe rate



9 DMX channels

Units in one DMX universe



Start addresses of 20 units in the mode “33CH Mode Extended”

Unit	Start address	Unit	Start address	Unit	Start address	Unit	Start address
1	1	6	166	11	331	16	U2 · 1
2	34	7	199	12	364	17	U2 · 34
3	67	8	232	13	397	18	U2 · 67
4	100	9	265	14	430	19	U2 · 100
5	133	10	298	15	463	20	U2 · 133

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 33CH Mode Extended

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 5 Dimmer above 0; CH 7 Shutter at 0–5 or 251–255 “open”; CH 32 Dimmer Curve above 5. The GDTF file gives these values for a console's Highlight function: CH 5 Dimmer 255, CH 8 Cyan 0, CH 10 Magenta 0, CH 12 Yellow 0, CH 14 CTO 0, CH 16 Colors 0.

Channel functions at a glance



CH	Function	DMX	Description
1	Pan	0–127	Pan
		128	Home
		128–255	Pan
2	Pan Fine	0–255	Fine adjustment of CH 1
3	Tilt	0–127	Tilt
		128	Home
		128–255	Tilt
4	Tilt Fine	0–255	Fine adjustment of CH 3
5	Dimmer	0–255	
6	Dimmer Fine	0–255	Fine adjustment of CH 5
7	Shutter	0–5	Strobe: open

CH	Function	DMX	Description
7	Shutter (continued)	6–10	Strobe: closed
		11–22	Ramp up/down random
		23	Ramp up/down random: Slow
		24–32	Ramp up/down random: Slow ... Fast
		33	Ramp up/down random: Fast
		34–45	Ramp up random
		46	Ramp up random: Slow
		47–55	Ramp up random: Slow ... Fast
		56	Ramp up random: Fast
		57–68	Ramp down random
		69	Ramp down random: Slow
		70–78	Ramp down random: Slow ... Fast
		79	Ramp down random: Fast
		80	Random Strobe effect: Slow
		81–101	Random Strobe effect: Slow ... Fast
		102	Random Strobe effect: Fast
		103	5s short burst with break
		104–126	5s short burst with break ... 1s short burst with break
		127	1s short burst with break
		128	Slow 1Hz
		129–249	1-20Hz (0.31–19.9 Hz)
		250	Fast 20Hz
		251–255	Strobe open: open
8	Cyan	0–255	Cyan
9	Cyan Fine	0–255	Fine adjustment of CH 8
10	Magenta	0–255	Magenta
11	Magenta Fine	0–255	Fine adjustment of CH 10
12	Yellow	0–255	Yellow
13	Yellow Fine	0–255	Fine adjustment of CH 12
14	CTO	0–255	KW (6500K) ... WW (2600K)
		255	WW (2600K)
15	CTO Fine	0–255	Fine adjustment of CH 14
16	Colors	0–5	Color open
		6–17	Open/Deep Red
		18–29	Deep Red
		30–41	Deep Red / Medium Blue
		42–53	Medium Blue
		54–65	Medium Blue / Deep Green
		66–77	Deep Green
		78–89	Depp Green / Lavender
		90–101	Lavender
		102–113	Lavender / Amber

CH	Function	DMX	Description
16	Colors (continued)	114–125	Amber
		126–136	Amber ... Amber / CTO
		137	Amber / CTO
		138–149	CTO
		150–161	CTO / Congo Blue
		162–173	Congo Blue
		174–185	Congo Blue / Open
		186–192	Color open
		193	Spin: forward slow (10–560 °/s)
		194–254	Spin: forward slow ... backwards slow
		255	Spin: backwards slow (560–10 °/s)
17	Gobo	0–5	Select: Open
		6–18	Gobo 1
		19–31	Gobo 2
		32–44	Gobo 3
		45–57	Gobo 4
		58–70	Gobo 5
		71–83	Gobo 6
		84–96	Gobo 7
		97–109	Shake Gobo 1
		110–122	Shake Gobo 2
		123–135	Shake Gobo 3
		136–148	Shake Gobo 4
		149–161	Shake Gobo 5
		162–174	Shake Gobo 6
		175–190	Shake Gobo 7
		191	Gobo open: open
		192	Gobo open
		193	Forward solw
		194–254	Forward solw ... backward slow
		255	Wheel rotation: backward slow
18	Gobo Rotation	0–46	Left
		46	Mid
		46–128	Right
		129–191	Gobo Pos Rotate: forward (10–800 °/s)
		192	Rotation stop
		193–255	Gobo Pos Rotate: backward (800–10 °/s)
19	Gobo Rotation Fine	0–255	Fine adjustment of CH 18
20	Gobo 2	0–5	Fix Gobos: Open
		6–17	Gobo 1
		18–29	Gobo 2
		30–41	Gobo 3

CH	Function	DMX	Description
20	Gobo 2 (continued)	42–53	Gobo 4
		54–65	Gobo 5
		66–77	Gobo 6
		78–89	Gobo 7
		90–101	Gobo 8
		102–113	Shake Gobo 1
		114–125	Shake Gobo 2
		126–137	Shake Gobo 3
		138–149	Shake Gobo 4
		150–161	Shake Gobo 5
		162–173	Shake Gobo 6
		174–185	Shake Gobo 7
		186	Shake Gobo 8
		187–191	Shake
		192	Open
		193	Gobo Wheel rotation fwd: forward slow
		194–254	Gobo Wheel rotation fwd: forward slow ... backward slow
		255	Gobo Wheel rotation fwd: backward slow
21	Zoom	0–127	Narrow ... Mid
		127–255	Mid ... Wide
		255	Wide
22	Zoom Fine	0–255	Fine adjustment of CH 21
23	Focus	0–255	Focus
24	Focus Fine	0–255	Fine adjustment of CH 23
25	Iris	0	Iris: Open
		1–191	Mid
		192	Iris: Close
		193	Puls with Dim: slow
		194–200	Puls with Dim: slow ... fast
		201	Puls with Dim: fast
		202	Puls without Dim: slow
		203–209	Puls without Dim: slow ... fast
		210	Puls without Dim: fast
		211	Puls Random without Dim: slow
		212–218	Puls Random without Dim: slow ... fast
		219	Puls Random without Dim: fast
		220	Ramp up with Dim: slow
		221–227	Ramp up with Dim: slow ... fast
		228	Ramp up with Dim: fast
		229	Ramp up without Dim: slow
		230–236	Ramp up without Dim: slow ... fast
		237	Ramp up without Dim: fast

CH	Function	DMX	Description
25	Iris (continued)	238	Ramp down with Dim: slow
		239–245	Ramp down with Dim: slow ... fast
		246	Ramp down with Dim: fast
		247	Ramp down without Dim: slow
		248–254	Ramp down without Dim: slow ... fast
		255	Ramp down without Dim: fast
26	Prism		Prisma select
		0–5	Open
		6–130	Prism 1 (3 Facet)
		131–255	Prism 2 (6 Facet)
27	Prism Rotation	0–5	Prism Rot Off
		6–128	Prism position 0 to 540
		129	Prism Rotation: forward slow
		130–254	Prism Rotation: forward slow ... backward slow
		255	Prism Rotation: backward slow
28	Frost	0	Open
		1–254	Open ... Frost
		255	Frost
29	Animation Wheel	0–5	Wheel rot Off
		6–128	Wheel Position 0 to 540
		129	Wheel rot Slow to Fast CW
		130–191	Wheel rot Slow to Fast CW ... Wheel rot Stop
		192	Wheel rot Stop
		193–255	Wheel rot Slow to Fast CCW
30	Position Effect		Pan/Tilt Macro
		0–5	Off
		6–40	PAN small > big
		41–75	TILT small > big
		76–110	PAN / TILT small > big
		111–145	PAN / TILT (invers) small > big
		146–180	Circle small > big
		181–215	Circle (invers) small > big
		216–255	Random small > big
31	Position Effect Speed		Pan/Tilt Speed
		0	Fast
		1–254	Fast ... Slow
		255	Slow
32	Dimmer Curve	0–5	No function
		6–63	Linear Dimmer Curve
		64–127	Exponential Dimmer Curve
		128–191	Logarithmic Dimmer Curve
		192–255	S-Curve Dimmer Curve

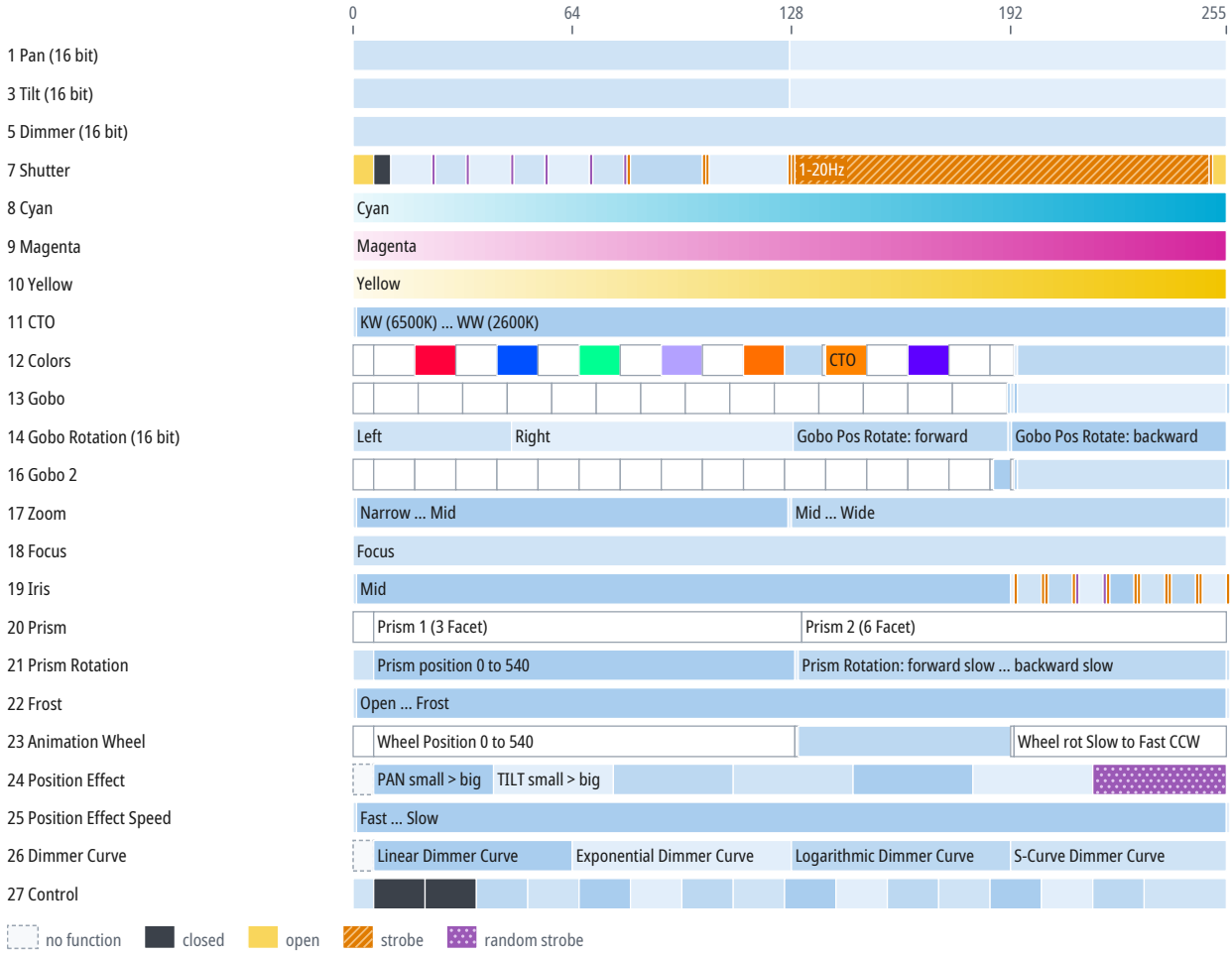
CH	Function	DMX	Description
33	Control	0–5	Control off
		6–20	Blackout while moving on (hold 3s)
		21–35	Blackout while moving off (hold 5s)
		36–50	Invert Pan on (hold 3s)
		51–65	Invert Pan off (hold 5s)
		66–80	Invert Tilt on (hold 3s)
		81–95	Invert Tilt off (hold 5s)
		96–110	Auto Fan (Hold 3s)
		111–125	Silent Fan (Hold 5s)
		126–140	PWM 650 Hz (hold 3s)
		141–155	PWM 1530 Hz (hold 3s)
		156–170	PWM 3600 Hz (hold 3s)
		171–185	PWM 12kHz (hold 3s)
		186–200	PWM 25kHz (hold 3s)
		201–215	Reset Pan / Tilt (Hold 3s)
		216–230	Reset only Head (Hold 3s)
		231–255	Reset All Functions (Hold 3s)

Mode 27CH Mode Standard

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 5 Dimmer above 0; CH 7 Shutter at 0–5 or 251–255 “open”; CH 26 Dimmer Curve above 5. The GDTF file gives these values for a console's Highlight function: CH 5 Dimmer 255, CH 8 Cyan 0, CH 9 Magenta 0, CH 10 Yellow 0, CH 11 CTO 0, CH 12 Colors 0.

Channel functions at a glance



CH	Function	DMX	Description
1	Pan		Same as CH 1 in the mode “33CH Mode Extended” (p. 11)
2	Pan Fine	0–255	Fine adjustment of CH 1
3	Tilt		Same as CH 3 in the mode “33CH Mode Extended” (p. 11)
4	Tilt Fine	0–255	Fine adjustment of CH 3
5	Dimmer	0–255	
6	Dimmer Fine	0–255	Fine adjustment of CH 5
7	Shutter		Same as CH 7 in the mode “33CH Mode Extended” (p. 11)
8	Cyan	0–255	Cyan
9	Magenta	0–255	Magenta
10	Yellow	0–255	Yellow
11	CTO	0	KW (6500K)

CH	Function	DMX	Description
11	CTO (continued)	1–254	KW (6500K) ... WW (2600K)
		255	WW (2600K)
12	Colors		Same as CH 16 in the mode “33CH Mode Extended” (p. 12)
13	Gobo		Same as CH 17 in the mode “33CH Mode Extended” (p. 13)
14	Gobo Rotation		Same as CH 18 in the mode “33CH Mode Extended” (p. 13)
15	Gobo Rotation Fine	0–255	Fine adjustment of CH 14
16	Gobo 2		Same as CH 20 in the mode “33CH Mode Extended” (p. 13)
17	Zoom	0	Narrow
		1–126	Narrow ... Mid
		127	Mid
		128–254	Mid ... Wide
		255	Wide
18	Focus	0–255	Focus
19	Iris		Same as CH 25 in the mode “33CH Mode Extended” (p. 14)
20	Prism		Same as CH 26 in the mode “33CH Mode Extended” (p. 15)
21	Prism Rotation		Same as CH 27 in the mode “33CH Mode Extended” (p. 15)
22	Frost		Same as CH 28 in the mode “33CH Mode Extended” (p. 15)
23	Animation Wheel		Same as CH 29 in the mode “33CH Mode Extended” (p. 15)
24	Position Effect		Same as CH 30 in the mode “33CH Mode Extended” (p. 15)
25	Position Effect Speed		Same as CH 31 in the mode “33CH Mode Extended” (p. 15)
26	Dimmer Curve		Same as CH 32 in the mode “33CH Mode Extended” (p. 15)
27	Control		Same as CH 33 in the mode “33CH Mode Extended” (p. 16)

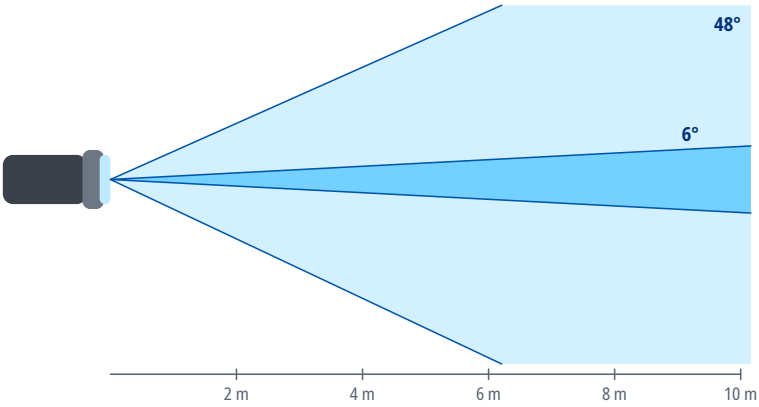
10 Technical specifications

Parameter	Value
Light	
Light source	LED
LED power	380 W
Luminous flux	17,000 lm
Color temperature	6,700 K
Color rendering index (CRI)	71
Optics	
Zoom	6–48°
Movement	
Pan	540°
Tilt	220°
Control	
DMX connection	5-pin XLR IN/OUT, 3-pin XLR IN/OUT
RJ45 connectors	RJ45 IN/OUT
RDM	yes (manufacturer ID 0x08A4, device model ID 0x003A)
Electrical	
Power connectors	powerCON TRUE1 IN/OUT
Dimensions and construction	
Weight	24 kg
Operating environment	
Operating temperature	-10 to 45 °C

Speeds and ranges

Parameter	Value
Color temperature range	2600–6500 K
Strobe frequency	2–15 Hz
Color wheel 1 rotation	up to 560 °/s (93 rpm)
Gobo wheel 2 rotation	up to 800 °/s (133 rpm)
Gobo wheel 3 rotation	up to 800 °/s (133 rpm)
Gobo 2 rotation	up to 800 °/s (133 rpm)
Prism rotation	up to 500 °/s (83 rpm)

Spot diameter



Distance	Ø 6°	Ø 48°
2 m	0.21 m	1.8 m
4 m	0.42 m	3.6 m
6 m	0.63 m	5.3 m
8 m	0.84 m	7.1 m
10 m	1 m	8.9 m
15 m	1.6 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.