DMX REFERENCE

LU400

Luminus

Manufacturer	Luminus
GDTF file	Luminus_LU400_129199.gdtf
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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 26 CH Mode 10
Mode 22CH Mode 14
10 Technical specifications 16
11 Maintenance and cleaning 16
12 Troubleshooting 17
13 Disposal 17

1 About this manual

This document describes the LU400 by Luminus. It was compiled from the GDTF file Luminus_LU400_129199.gdtf from the GDTF-Share library.

File revision: “Revision 1:0”.

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 Luminus; 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	29 kg

DMX modes

Mode	Channels	Units in one universe	First start addresses
26 CH Mode	26	19	1, 27, 53, 79, ...
22CH Mode	22	23	1, 23, 45, 67, ...

No light? Check these channels

- 26 CH Mode: CH 6 Dimmer above 0
- 22CH Mode: CH 5 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

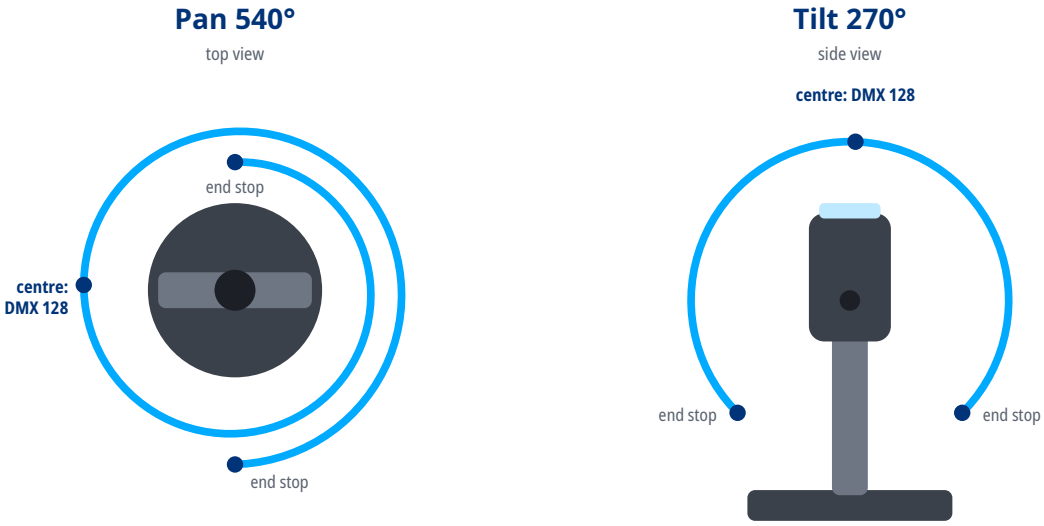
- Strobe and fast flashing light effects can trigger epileptic seizures in susceptible people (photosensitive epilepsy) and can cause nausea or disorientation.
- Inform the audience and performers in advance that strobe effects will be used, for example with a notice at the entrance, and do not use them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

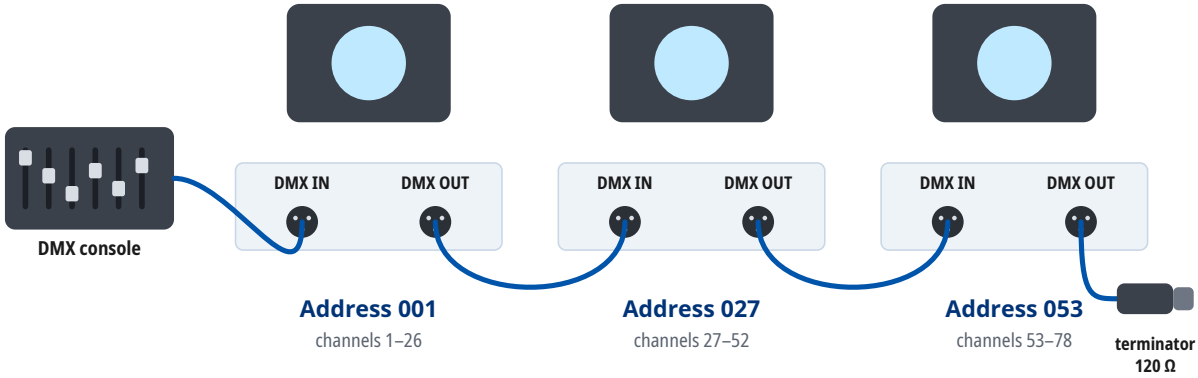
- Rigging must be carried out only by qualified persons in accordance with applicable regulations, in particular those for work at height.
- The supporting structure and fixings must safely carry the weight of all suspended devices; verify their load capacity in advance.
- Weight of the device: 29 kg.
- 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 26 CH Mode: every unit occupies 26 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 “26 CH Mode”: 26.
- 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 “26 CH Mode”, you can use, for example, the start addresses 1, 27, 53, 79.
- 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

	26 CH Mode 26 channels	22CH Mode 22 channels
Pan / Tilt	1, 3	1, 3
Dimmer	6	5
Shutter / strobe	7	6
Color mixing	9–11	8–10
Color temperature	12	11
Color wheel	8	
Gobo wheel	13–15	7, 12–14
Gobo rotation	13	7, 12
Prism	17–20	15–18
Frost	21	19
Zoom	23	20
Focus	24	21

Prism 1



1 — OFF
DMX 0–7

2 — 4 facets
ON
DMX 8–255

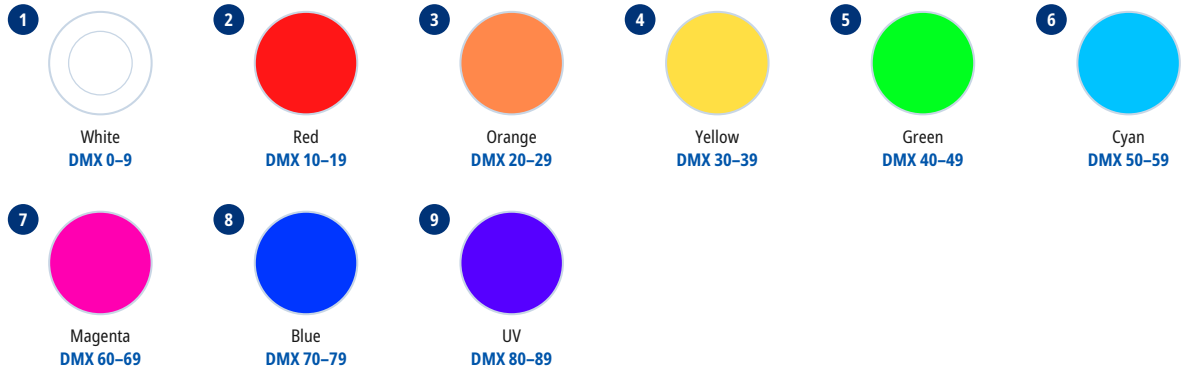
Prism 2



1 — OFF
DMX 0–7

2 — 4 facets
ON
DMX 8–255

Color wheel



1. White — DMX 0–9
2. Red — DMX 10–19
3. Orange — DMX 20–29
4. Yellow — DMX 30–39
5. Green — DMX 40–49
6. Cyan — DMX 50–59
7. Magenta — DMX 60–69
8. Blue — DMX 70–79
9. UV — DMX 80–89

Gobo wheel 1

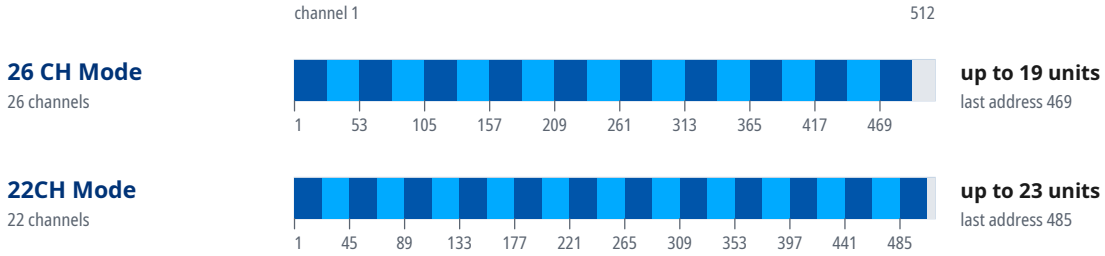
1	Wheel Slot 1	DMX 0–4	6	Gobo 1: Wheel Slot 6	DMX 25–29	11	Gobo 1: Wheel Slot 11	DMX 50–54
2	Gobo 1: Wheel Slot 2	DMX 5–9	7	Gobo 1: Wheel Slot 7	DMX 30–34	12	Gobo 1: Wheel Slot 12	DMX 55–59
3	Gobo 1: Wheel Slot 3	DMX 10–14	8	Gobo 1: Wheel Slot 8	DMX 35–39	13	Wheel Slot 13	DMX 60–65
4	Gobo 1: Wheel Slot 4	DMX 15–19	9	Gobo 1: Wheel Slot 9	DMX 40–44			
5	Gobo 1: Wheel Slot 5	DMX 20–24	10	Gobo 1: Wheel Slot 10	DMX 45–49			

Gobo wheel 2

1	Gobo 1 Wheel Index: Wheel Slot 1	DMX 10–19	4	Gobo 1 Wheel Index: Wheel Slot 4	DMX 40–49	7	Wheel Slot 7	DMX 70–80
2	Gobo 1 Wheel Index: Wheel Slot 2	DMX 20–29	5	Gobo 1 Wheel Index: Wheel Slot 5	DMX 50–59			
3	Gobo 1 Wheel Index: Wheel Slot 3	DMX 30–39	6	Gobo 1 Wheel Index: Wheel Slot 6	DMX 60–69			

9 DMX channels

Units in one DMX universe



Start addresses of 20 units in the mode “26 CH Mode”

Unit	Start address	Unit	Start address	Unit	Start address	Unit	Start address
1	1	6	131	11	261	16	391
2	27	7	157	12	287	17	417
3	53	8	183	13	313	18	443
4	79	9	209	14	339	19	469
5	105	10	235	15	365	20	U2 · 1

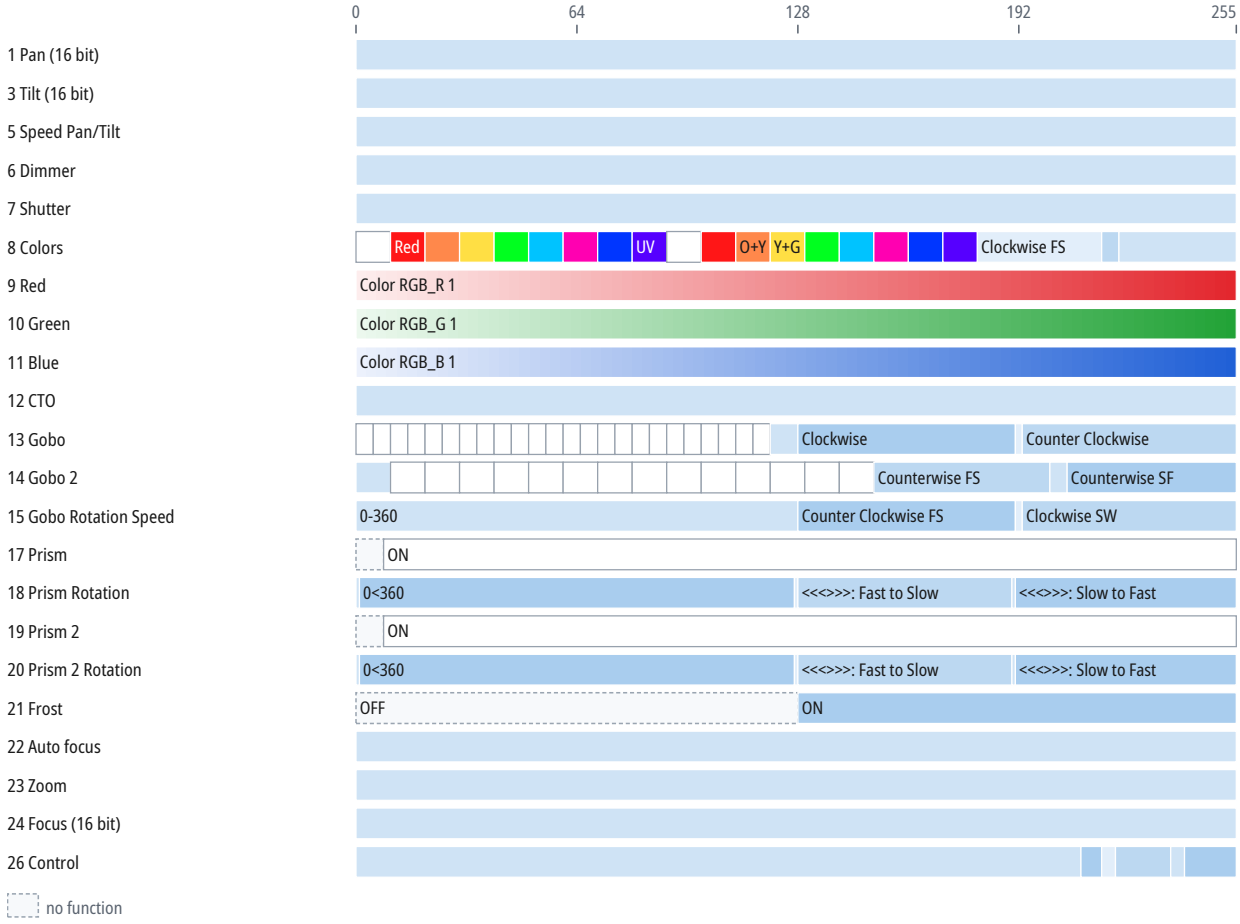
Where a DMX universe is full, the next units continue in the next universe: “U2 · 1” is address 1 in the second universe, counted from the universe of the first unit.

Mode 26 CH Mode

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. The GDTF file gives these values for a console's Highlight function: CH 6 Dimmer 255, CH 7 Shutter 255, CH 9 Red 0, CH 10 Green 0, CH 11 Blue 0.

Channel functions at a glance



CH	Function	DMX	Description
1	Pan	0–255	540°
2	Pan Fine	0–255	Fine adjustment of CH 1
3	Tilt	0–255	270°
4	Tilt Fine	0–255	Fine adjustment of CH 3
5	Speed Pan/Tilt	0–255	
6	Dimmer	0–255	
7	Shutter	0–255	
8	Colors	0–9	White
		10–19	Red
		20–29	Orange
		30–39	Yellow
		40–49	Green
		50–59	Cyan

CH	Function	DMX	Description
8	Colors (continued)	60–69	Magenta
		70–79	Blue
		80–89	UV
		90–99	W+R
		100–109	R+O
		110–119	O+Y
		120–129	Y+G
		130–139	G+C
		140–149	C+M
		150–159	M+B
		160–169	B+UV
		170–179	UV+CTO
		180–215	Clockwise FS
		216–220	Color 1 Wheel Spin: Stop
		221–255	Counter Clockwise SF
9	Red		Color RGB_R 1
		0–255	Color RGB_R 1
10	Green		Color RGB_G 1
		0–255	Color RGB_G 1
11	Blue		Color RGB_B 1
		0–255	Color RGB_B 1
12	CTO	0–255	
13	Gobo	0–4	Wheel Slot 1
		5–9	Gobo 1: Wheel Slot 2
		10–14	Gobo 1: Wheel Slot 3
		15–19	Gobo 1: Wheel Slot 4
		20–24	Gobo 1: Wheel Slot 5
		25–29	Gobo 1: Wheel Slot 6
		30–34	Gobo 1: Wheel Slot 7
		35–39	Gobo 1: Wheel Slot 8
		40–44	Gobo 1: Wheel Slot 9
		45–49	Gobo 1: Wheel Slot 10
		50–54	Gobo 1: Wheel Slot 11
		55–59	Gobo 1: Wheel Slot 12
		60–64	Wheel Slot 13
		65–69	Gobo 1 Select Shake: Wheel Slot 2 (0.077–0.154 Hz)
		70–74	Gobo 1 Select Shake: Wheel Slot 3 (0.154–0.231 Hz)
		75–79	Gobo 1 Select Shake: Wheel Slot 4 (0.231–0.308 Hz)
		80–84	Gobo 1 Select Shake: Wheel Slot 5 (0.308–0.385 Hz)
		85–89	Gobo 1 Select Shake: Wheel Slot 6 (0.385–0.462 Hz)
		90–94	Gobo 1 Select Shake: Wheel Slot 7 (0.462–0.538 Hz)
		95–99	Gobo 1 Select Shake: Wheel Slot 8 (0.538–0.615 Hz)

CH	Function	DMX	Description
13	Gobo (continued)	100–104	Gobo 1 Select Shake: Wheel Slot 9 (0.615–0.692 Hz)
		105–109	Gobo 1 Select Shake: Wheel Slot 10 (0.692–0.769 Hz)
		110–114	Gobo 1 Select Shake: Wheel Slot 11 (0.769–0.846 Hz)
		115–119	Gobo 1 Select Shake: Wheel Slot 12 (0.846–0.923 Hz)
		120–127	Gobo 1 Select Spin 3
		128–190	Clockwise
		191–192	Gobo 1 Select Spin: Stop
		193–255	Counter Clockwise
14	Gobo 2	0–9	White
		10–19	Gobo 1 Wheel Index: Wheel Slot 1
		20–29	Gobo 1 Wheel Index: Wheel Slot 2
		30–39	Gobo 1 Wheel Index: Wheel Slot 3
		40–49	Gobo 1 Wheel Index: Wheel Slot 4
		50–59	Gobo 1 Wheel Index: Wheel Slot 5
		60–69	Gobo 1 Wheel Index: Wheel Slot 6
		70–79	Gobo 1 Wheel Index: Wheel Slot 7
		80–89	Gobo 1 Select Shake: Wheel Slot 1 (0–0.143 Hz)
		90–99	Gobo 1 Select Shake: Wheel Slot 2 (0.143–0.286 Hz)
		100–109	Gobo 1 Select Shake: Wheel Slot 3 (0.286–0.429 Hz)
		110–119	Gobo 1 Select Shake: Wheel Slot 4 (0.429–0.571 Hz)
		120–129	Gobo 1 Select Shake: Wheel Slot 5 (0.571–0.714 Hz)
		130–139	Gobo 1 Select Shake: Wheel Slot 6 (0.714–0.857 Hz)
		140–149	Gobo 1 Select Shake: Wheel Slot 7 (0.857–1 Hz)
		150–200	Counterwise FS
		201–205	Gobo 1 Wheel Spin: Stop
		206–255	Counterwise SF
15	Gobo Rotation Speed		Gobo 2 1
		0–127	0-360
		128–190	Counter Clockwise FS
		191–192	Stop
		193–255	Clockwise SW
17	Prism	0–7	OFF
		8–255	ON
18	Prism Rotation	0	0
		1–126	0<360
		127	360
		128–189	<<<>>>: Fast to Slow
		190	<<<>>>: Stop
		191–255	<<<>>>: Slow to Fast
19	Prism 2	0–7	OFF
		8–255	ON
20	Prism 2 Rotation	0	0

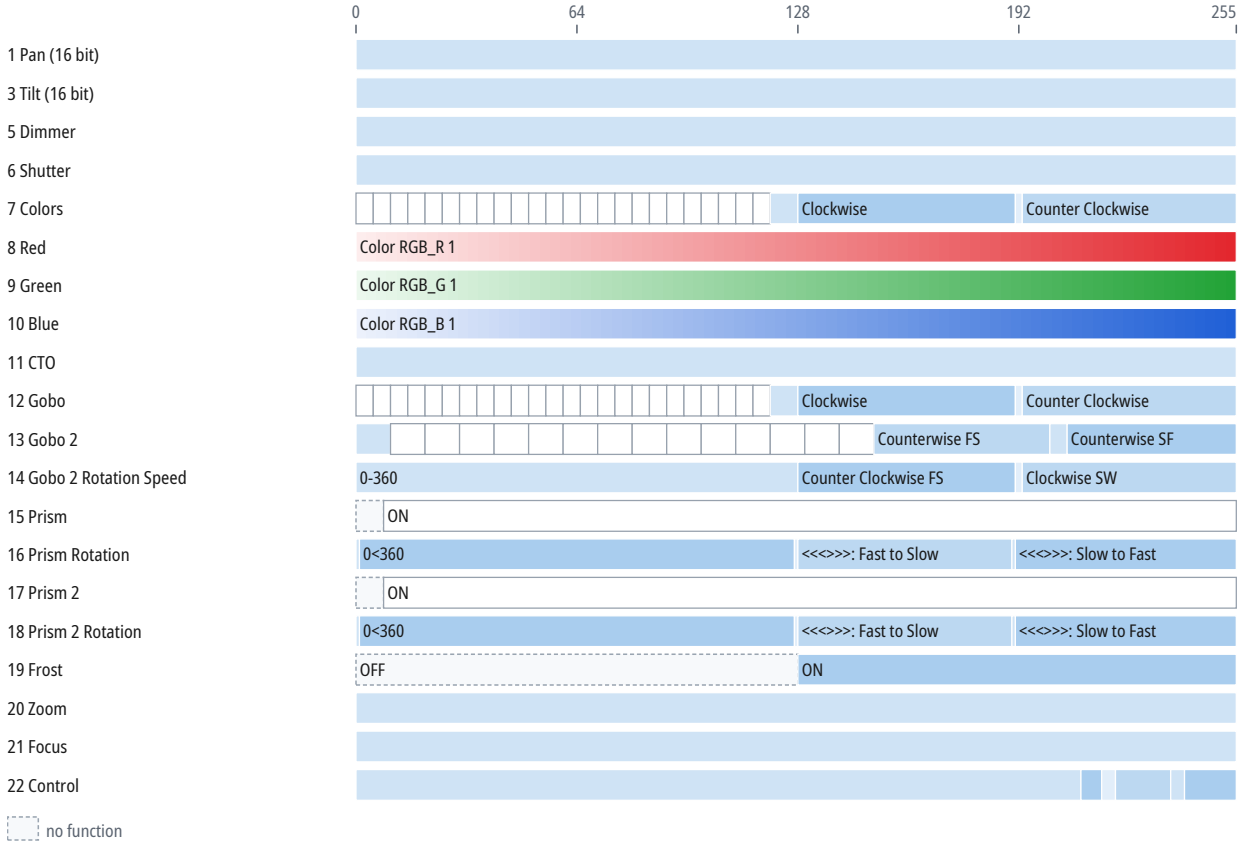
CH	Function	DMX	Description
20	Prism 2 Rotation (continued)	1–126	0<360
		127	360
		128–189	<<<>>>: Fast to Slow
		190	<<<>>>: Stop
		191–255	<<<>>>: Slow to Fast
21	Frost	0–127	OFF
		128–255	ON
22	Auto focus	0–255	
23	Zoom	0–255	4.5–50°
24	Focus	0–255	
25	Focus Fine	0–255	Fine adjustment of CH 24
26	Control	0–209	Control 1 1
		210–215	Reset XY
		216–219	Reset XY ... Reset effect
		220–235	Reset effect
		236–239	Reset effect ... Reset all
		240–255	Reset all

Mode 22CH Mode

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. The GDTF file gives these values for a console's Highlight function: CH 5 Dimmer 255, CH 6 Shutter 255, CH 8 Red 0, CH 9 Green 0, CH 10 Blue 0.

Channel functions at a glance



CH	Function	DMX	Description
1	Pan	0–255	540°
2	Pan Fine	0–255	Fine adjustment of CH 1
3	Tilt	0–255	270°
4	Tilt Fine	0–255	Fine adjustment of CH 3
5	Dimmer	0–255	
6	Shutter	0–255	
7	Colors	0–4	Wheel Slot 1
		5–9	Gobo 1: Wheel Slot 2
		10–14	Gobo 1: Wheel Slot 3
		15–19	Gobo 1: Wheel Slot 4
		20–24	Gobo 1: Wheel Slot 5
		25–29	Gobo 1: Wheel Slot 6
		30–34	Gobo 1: Wheel Slot 7
		35–39	Gobo 1: Wheel Slot 8

CH	Function	DMX	Description
7	Colors (continued)	40–44	Gobo 1: Wheel Slot 9
		45–49	Gobo 1: Wheel Slot 10
		50–54	Gobo 1: Wheel Slot 11
		55–59	Gobo 1: Wheel Slot 12
		60–64	Wheel Slot 13
		65–69	Gobo 1 Select Shake: Wheel Slot 2 (0.077–0.154 Hz)
		70–74	Gobo 1 Select Shake: Wheel Slot 3 (0.154–0.231 Hz)
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		110–114	Gobo 1 Select Shake: Wheel Slot 11 (0.769–0.846 Hz)
		115–119	Gobo 1 Select Shake: Wheel Slot 12 (0.846–0.923 Hz)
		120–127	Gobo 1 Select Spin 3
		128–190	Clockwise
		191–192	Gobo 1 Select Spin: Stop
		193–255	Counter Clockwise
8	Red		Same as CH 9 in the mode “26 CH Mode” (p. 11)
9	Green		Same as CH 10 in the mode “26 CH Mode” (p. 11)
10	Blue		Same as CH 11 in the mode “26 CH Mode” (p. 11)
11	CTO	0–255	
12	Gobo		Same as CH 13 in the mode “26 CH Mode” (p. 11)
13	Gobo 2		Same as CH 14 in the mode “26 CH Mode” (p. 12)
14	Gobo 2 Rotation Speed		Gobo 2 1
		0–127	0-360
		128–190	Counter Clockwise FS
		191–192	Stop
		193–255	Clockwise SW
15	Prism		Same as CH 17 in the mode “26 CH Mode” (p. 12)
16	Prism Rotation		Same as CH 18 in the mode “26 CH Mode” (p. 12)
17	Prism 2		Same as CH 19 in the mode “26 CH Mode” (p. 12)
18	Prism 2 Rotation		Same as CH 20 in the mode “26 CH Mode” (p. 12)
19	Frost		Same as CH 21 in the mode “26 CH Mode” (p. 13)
20	Zoom	0–255	4.5–50°
21	Focus	0–255	
22	Control		Same as CH 26 in the mode “26 CH Mode” (p. 13)

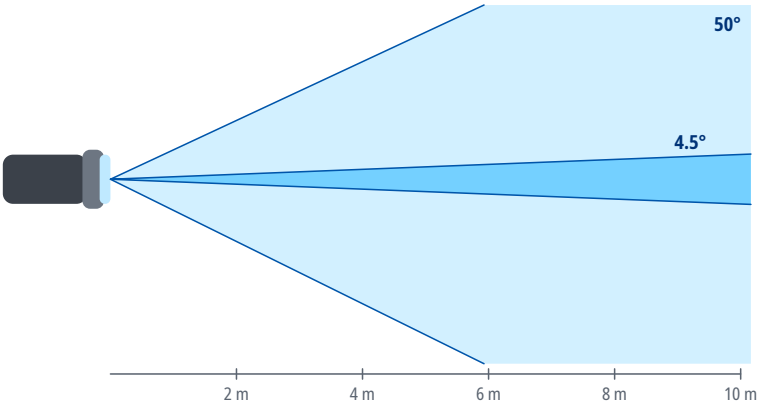
10 Technical specifications

Parameter	Value
Light	
Light source	LED
LED power	400 W
Luminous flux	52,500 lm
Color temperature	7,000 K
Color rendering index (CRI)	100
Optics	
Zoom	4.5–50°
Movement	
Pan	540°
Tilt	270°
Dimensions and construction	
Weight	29 kg
Operating environment	
Operating temperature	7,000 to 40 °C

Speeds and ranges

Parameter	Value
Gobo wheel 1 rotation	up to 9 °/s (1.5 rpm)
Prism 1 rotation	up to 171.9 °/s (29 rpm)
Prism 2 rotation	up to 171.9 °/s (29 rpm)

Spot diameter



Distance	Ø 4.5°	Ø 50°
2 m	0.16 m	1.9 m
4 m	0.31 m	3.7 m
6 m	0.47 m	5.6 m
8 m	0.63 m	7.5 m
10 m	0.79 m	9.3 m
15 m	1.2 m	14 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.