DMX REFERENCE

CL-400LS BEAM

CINDY



Manufacturer	CINDY
GDTF file	CINDY_CL-400LS_BEAM_142456.gdtf
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1 About this manual

This document describes the CL-400LS BEAM by CINDY. It was compiled from the GDTF file CINDY_CL-400LS_BEAM_142456.gdtf from the GDTF-Share library.

File revision: “Build No 1”.

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 CINDY; 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	29.2 kg

DMX modes

Mode	Channels	Units in one universe	First start addresses
18CH	18	28	1, 19, 37, 55, ...
16CH	16	32	1, 17, 33, 49, ...

No light? Check these channels

- 18CH: CH 8 Shutter at 4–7 or 216–255
- 16CH: CH 7 Shutter at 4–7 or 216–255



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

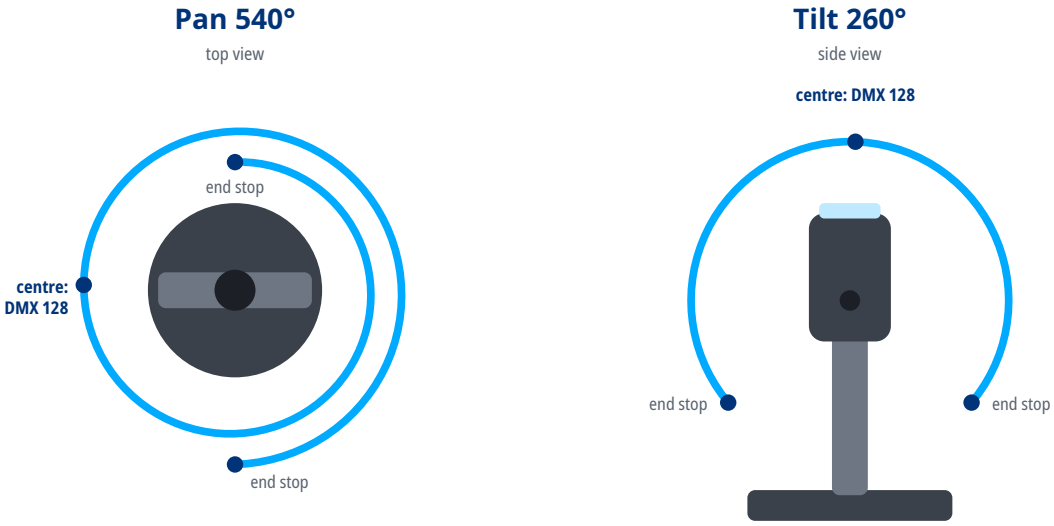
- Strobe and fast flashing light effects can trigger epileptic seizures in susceptible people (photosensitive epilepsy) and can cause nausea or disorientation.
- Inform the audience and performers in advance that strobe effects will be used, for example with a notice at the entrance, and do not use them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

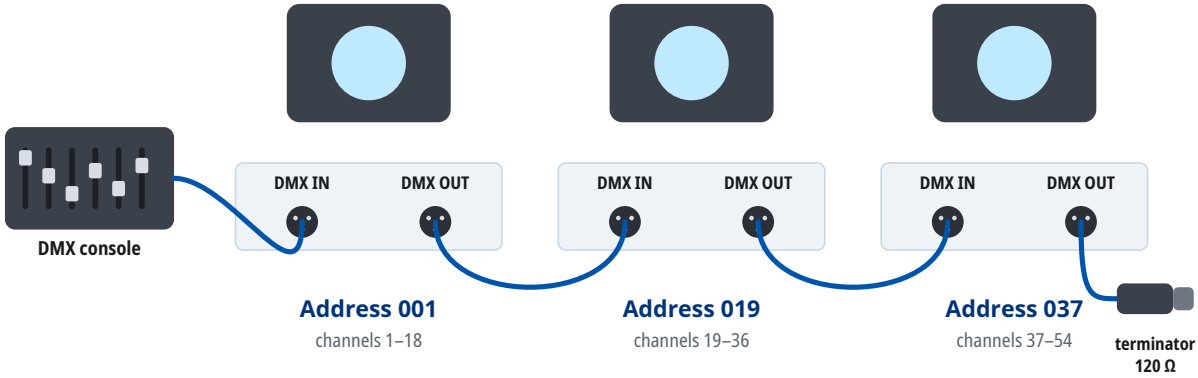
- Rigging must be carried out only by qualified persons in accordance with applicable regulations, in particular those for work at height.
- The supporting structure and fixings must safely carry the weight of all suspended devices; verify their load capacity in advance.
- Weight of the device: 29.2 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 18CH: 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 “18CH”: 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 “18CH”, 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.
- 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

		18CH 18 channels	16CH 16 channels
	Pan / Tilt	1, 3	1, 3
	Dimmer	6	6
	Dimmer resolution	16 bit	8 bit
	Shutter / strobe	8	7
	Color temperature	9	8
	Color wheel	10	9
	Gobo wheel	11	10
	Prism	12–15	11–14
	Focus	16	15

Color wheel



Gobo wheel

1

Open - Gobo Open
DMX 0–1

2

Gobo 1
DMX 2–3

3

Gobo 2
DMX 4–5

4

Gobo 3
DMX 6–7

5

Gobo 4
DMX 8–9

6

Gobo 5
DMX 10–11

7

Gobo 6
DMX 12–13

8

Gobo 7
DMX 14–15

9

Gobo 8
DMX 16–17

10

Gobo 9
DMX 18–19

11

Gobo 10
DMX 20–21

12

Gobo 11
DMX 22–23

13

Gobo 12
DMX 24–25

14

Gobo 13
DMX 26–27

15

Gobo 14
DMX 28–29

16

Gobo 15
DMX 30–31

17

Gobo 16
DMX 32–33

18

Gobo 17
DMX 34–35

19

Gobo18
DMX 36–37

20

STATIC GOBO: Gobo 19
DMX 38–39

21

STATIC GOBO: Gobo 20
DMX 40–41

22

STATIC GOBO: Gobo 21
DMX 42–43

23

STATIC GOBO: Gobo 22
DMX 44–45

24

STATIC GOBO: Gobo 23
DMX 46–47

25

STATIC GOBO: Gobo 24
DMX 48–49

26

STATIC GOBO: Gobo 25
DMX 50–51

27

STATIC GOBO: Gobo 26
DMX 52–53

28

STATIC GOBO: Gobo 27
DMX 54–55

29

STATIC GOBO: Gobo 28
DMX 56–59

Prism 1

1

Open
DMX 0–63

2

5 facets
Prism 1
DMX 63–125

3

24 facets
Prism 2
DMX 126–188

4

48 facets
Prism 3
DMX 189–255

Prism 2

1

Open
DMX 0–63

2

6 facets
Prism 2
DMX 63–125

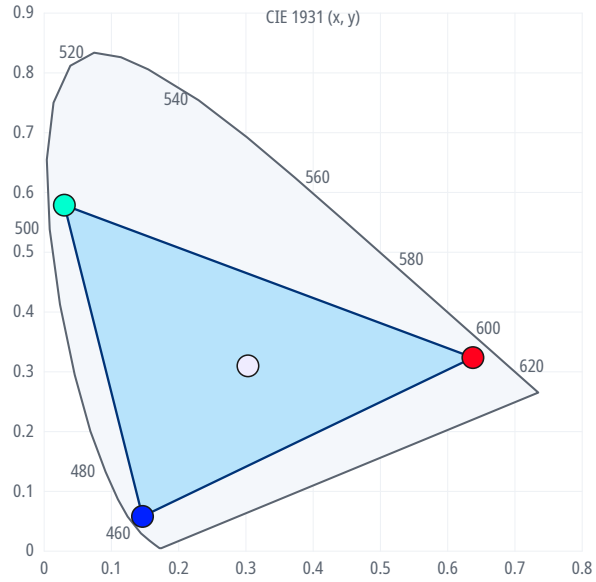
3

8 facets
Prism 5
DMX 126–188

4

Frost
DMX 189–255

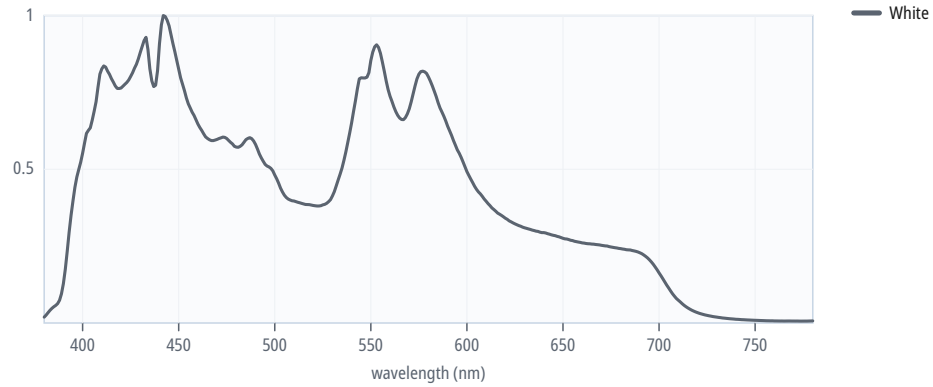
LED colors and the colors they mix



LED	x	y
White	0.303	0.310
Red	0.637	0.324
Mint	0.030	0.579
Blue	0.146	0.058

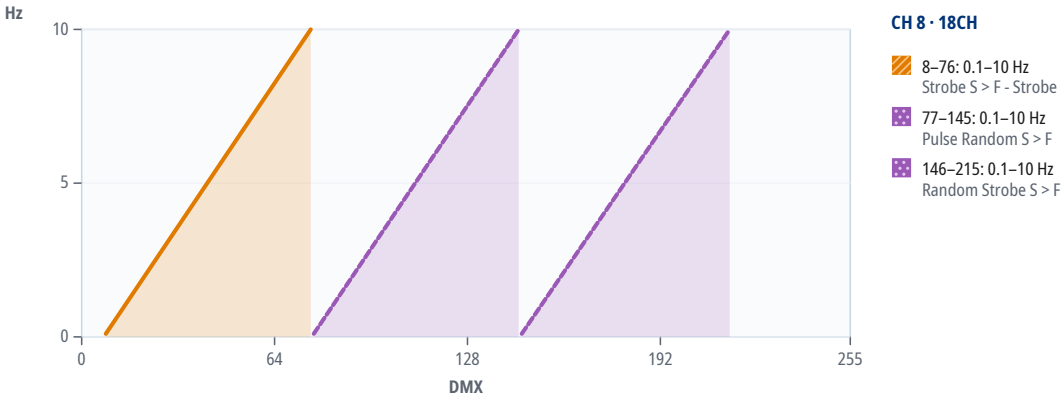
The shaded area holds the colors the LEDs can mix; the dots are the LED colors the GDTF file states.

Spectra of the light sources



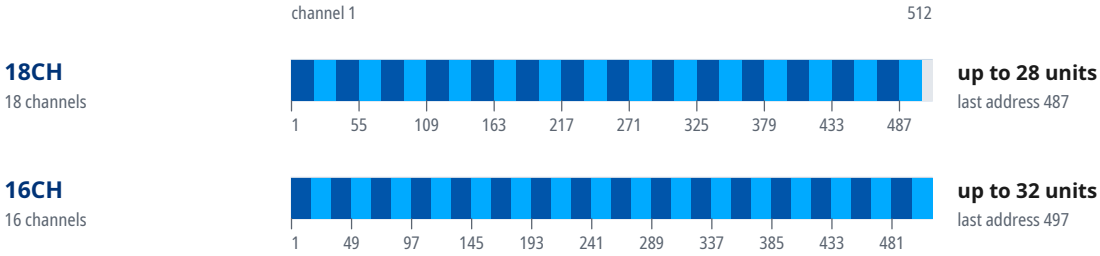
Relative spectrum of each light source as the GDTF file states it; each curve is scaled to its own maximum.

Strobe rate



9 DMX channels

Units in one DMX universe



Start addresses of 20 units in the mode “18CH”

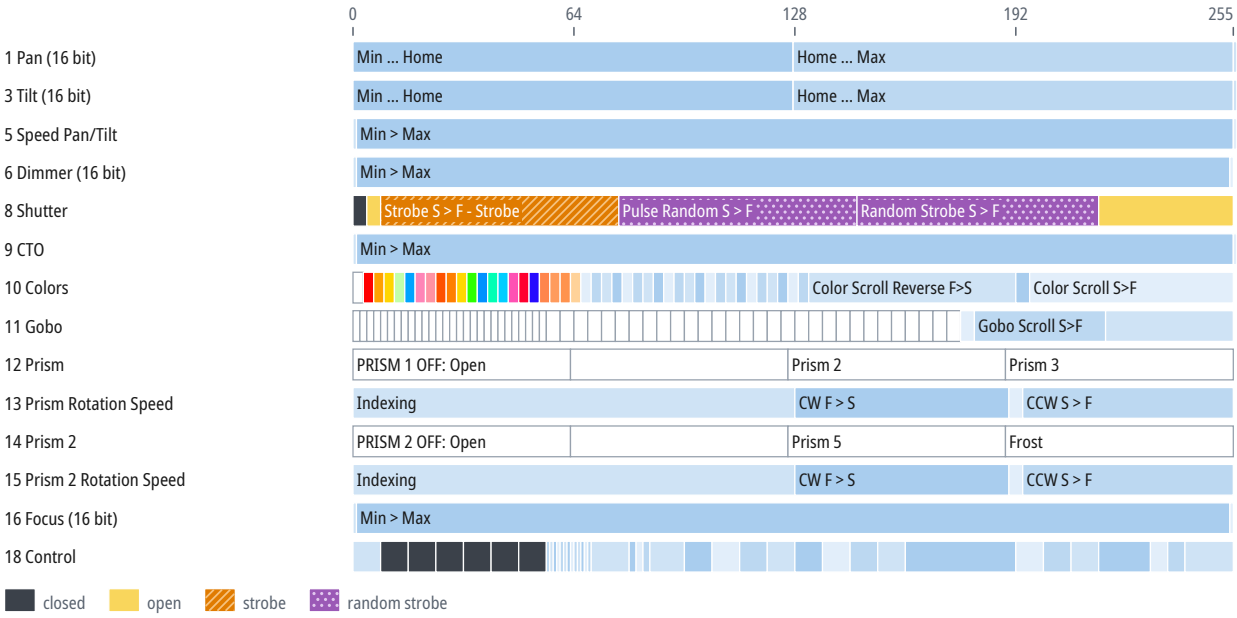
Unit	Start address	Unit	Start address	Unit	Start address	Unit	Start address
1	1	6	91	11	181	16	271
2	19	7	109	12	199	17	289
3	37	8	127	13	217	18	307
4	55	9	145	14	235	19	325
5	73	10	163	15	253	20	343

Mode 18CH

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 8 Shutter at 4–7 or 216–255. The GDTF file gives these values for a console's Highlight function: CH 6 Dimmer 255, CH 8 Shutter 255.

Channel functions at a glance



CH	Function	DMX	Description
1	Pan	0–127	Min ... Home
		127	Home
		128–255	Home ... Max
		255	Max
2	Pan Fine	0–255	Fine adjustment of CH 1
3	Tilt	0–127	Min ... Home
		127	Home
		128–255	Home ... Max
		255	Max
4	Tilt Fine	0–255	Fine adjustment of CH 3
5	Speed Pan/Tilt		P/T SPEED
		0	Min
		1–254	Min > Max
		255	Max
6	Dimmer	0	Min
		1–254	Min > Max
		255	Max
7	Dimmer Fine	0–255	Fine adjustment of CH 6
8	Shutter	0–3	Closed - Shutter Closed
		4–7	STROBE: Open - Shutter Open
		8–76	Strobe S > F - Strobe (0.1–10 Hz)
		77–145	Pulse Random S > F (0.1–10 Hz)
		146–215	Random Strobe S > F (0.1–10 Hz)
		216–255	Open - Shutter Open
9	CTO	0	Min
		1–254	Min > Max
		255	Max
10	Colors	0–2	White
		3–5	C1
		6–8	C2
		9–11	C3
		12–14	C4
		15–17	C5
		18–20	C6
		21–23	C7
		24–26	C8
		27–29	C9
		30–32	C10
		33–35	C11
		36–38	C12

CH	Function	DMX	Description
10	Colors (continued)	39–41	C13
		42–44	C14
		45–47	C15
		48–50	C16
		51–53	C17
		54–56	C18
		57–59	C19
		60–62	C20
		63–65	C21
		66–68	WHITE+C1
		69–71	C1+C2
		72–74	C2+C3
		75–77	C3+C4
		78–80	C4+C5
		81–83	C5+C6
		84–86	C6+C7
		87–89	C7+C8
		90–92	C8+C9
		93–95	C9+C10
		96–98	C10+C11
		99–101	C11+C12
		102–104	C12+C13
		105–107	C13+C14
		108–110	C14+C15
		111–113	C15+C16
		114–116	C16+C17
		117–119	C17+C18
		120–122	C18+C19
		123–125	C19+C20
		126–128	C20+C21
		129–131	C21+C22
		132–191	Color Scroll Reverse F>S
		192–195	COLOR SCROLL: Stop (0.14–0.86 °/s)
		196–255	Color Scroll S>F
11	Gobo	0–1	Open - Gobo Open
		2–3	Gobo 1
		4–5	Gobo 2
		6–7	Gobo 3
		8–9	Gobo 4
		10–11	Gobo 5
		12–13	Gobo 6

CH	Function	DMX	Description
11	Gobo (continued)	14–15	Gobo 7
		16–17	Gobo 8
		18–19	Gobo 9
		20–21	Gobo 10
		22–23	Gobo 11
		24–25	Gobo 12
		26–27	Gobo 13
		28–29	Gobo 14
		30–31	Gobo 15
		32–33	Gobo 16
		34–35	Gobo 17
		36–37	Gobo18
		38–39	STATIC GOBO: Gobo 19
		40–41	STATIC GOBO: Gobo 20
		42–43	STATIC GOBO: Gobo 21
		44–45	STATIC GOBO: Gobo 22
		46–47	STATIC GOBO: Gobo 23
		48–49	STATIC GOBO: Gobo 24
		50–51	STATIC GOBO: Gobo 25
		52–53	STATIC GOBO: Gobo 26
		54–55	STATIC GOBO: Gobo 27
		56–59	STATIC GOBO: Gobo 28
		60–63	STATIC GOBO: Open
		64–67	Gobo 1 Shake - Gobo Shake (0.1–10 Hz)
		68–71	Gobo 2 Shake - Gobo Shake (0.1–10 Hz)
		72–75	Gobo 3 Shake - Gobo Shake (0.1–10 Hz)
		76–79	Gobo 4 Shake - Gobo Shake (0.1–10 Hz)
		80–83	Gobo 5 Shake - Gobo Shake (0.1–10 Hz)
		84–87	Gobo 6 Shake - Gobo Shake (0.1–10 Hz)
		88–91	Gobo 7 Shake - Gobo Shake (0.1–10 Hz)
		92–95	Gobo 8 Shake - Gobo Shake (0.1–10 Hz)
		96–99	Gobo 9 Shake - Gobo Shake (0.1–10 Hz)
		100–103	Gobo 10 Shake - Gobo Shake (0.1–10 Hz)
		104–107	Gobo 11 Shake - Gobo Shake (0.1–10 Hz)
		108–111	Gobo 12 Shake - Gobo Shake (0.1–10 Hz)
		112–115	Gobo 13 Shake - Gobo Shake (0.1–10 Hz)
		116–119	Gobo 14 Shake - Gobo Shake (0.1–10 Hz)
		120–123	Gobo 15 Shake - Gobo Shake (0.1–10 Hz)
		124–127	Gobo 16 Shake - Gobo Shake (0.1–10 Hz)
		128–131	Gobo 17 Shake - Gobo Shake (0.1–10 Hz)
		132–135	Gobo 18 (0.1–10 Hz)

CH	Function	DMX	Description
11	Gobo (continued)	136–139	GOBO SHAKE: Gobo 19 (0.1–10 Hz)
		140–143	GOBO SHAKE: Gobo 20 (0.1–10 Hz)
		144–147	GOBO SHAKE: Gobo 21 (0.1–10 Hz)
		148–151	GOBO SHAKE: Gobo 22 (0.1–10 Hz)
		152–155	GOBO SHAKE: Gobo 23 (0.1–10 Hz)
		156–159	GOBO SHAKE: Gobo 24 (0.1–10 Hz)
		160–163	GOBO SHAKE: Gobo 25 (0.1–10 Hz)
		164–167	GOBO SHAKE: Gobo 26 (0.1–10 Hz)
		168–171	GOBO SHAKE: Gobo 27 (0.1–10 Hz)
		172–175	GOBO SHAKE: Gobo 28 (0.1–10 Hz)
		176–179	STATIC GOBO: Stop (80–0.1 °/s)
		180–217	Gobo Scroll S>F
		218–255	Reverse Gobo Scroll S>F (0.1–80 °/s)
12	Prism	0–62	PRISM 1 OFF: Open
		63–125	Prism 1
		126–188	Prism 2
		189–255	Prism 3
13	Prism Rotation Speed	0–127	Indexing (360°)
		128–189	CW F > S (655–0.1 °/s)
		190–193	PRISM 1 ROTATION: Stop
		194–255	CCW S > F (0.1–655 °/s)
14	Prism 2	0–62	PRISM 2 OFF: Open
		63–125	Prism 2
		126–188	Prism 5
		189–255	Frost
15	Prism 2 Rotation Speed	0–127	Indexing (360°)
		128–189	CW F > S (655–0.1 °/s)
		190–193	PRISM 2 ROTATION: Stop
		194–255	CCW S > F (0.1–655 °/s)
16	Focus	0	Min
		1–254	Min > Max
		255	Max
17	Focus Fine	0–255	Fine adjustment of CH 16
18	Control	0–7	No Func
		8–15	P/T - Blackout
		16–23	Color Wheel - Blackout
		24–31	Gobo - Blackout
		32–39	P/T/C - Blackout
		40–47	P/T/G - Blackout
		48–55	P/T/C/G - Blackout
		56	P/T/C/G - Blackout ... PWM 600Hz

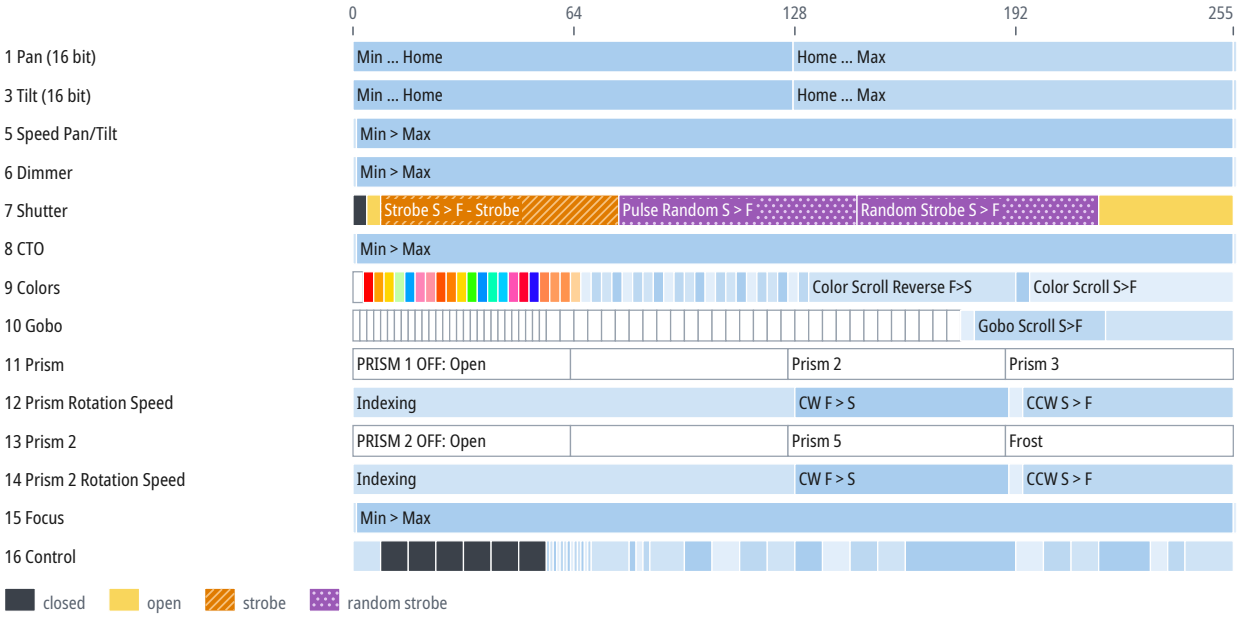
CH	Function	DMX	Description
18	Control (continued)	57	PWM 600Hz
		58	PWM 1200Hz
		59	PWM 2000Hz
		60	PWM 4000Hz
		61	PWM 6000Hz
		62	PWM 15000Hz
		63	PWM 15000Hz ... Dimmer Curve - Linear
		64	Dimmer Curve - Linear
		65	Dimmer Curve - Square
		66	Dimmer Curve - I Square
		67	Dimmer Curve - Scurve
		68	Dimmer Curve - Linear 2
		69–79	Dimmer Curve - Linear 2 ... Static Mode - Record and ON
		80–81	Static Mode - Record and ON
		82–83	Static Mode - ON
		84–85	Static Mode - OFF
		86–95	Static Mode - OFF ... Pan Reset
		96–103	Pan Reset
		104–111	Tilt Reset
		112–119	ColorWheel Reset
		120–127	Gobo Reset
		128–135	Gobo Reset ... Prism Reset
		136–143	Prism Reset
		144–151	Focus Reset
		152–159	All Reset
		160–191	All Reset ... Fan ECO
		192–199	Fan ECO
		200–207	Fan Full
		208–215	Fan Auto
		216–230	Fan Auto ... P/T Invert
		231–235	P/T Invert
		236–240	P/T Invert OFF
		241–255	Control

Mode 16CH

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 7 Shutter at 4–7 or 216–255. The GDTF file gives these values for a console's Highlight function: CH 6 Dimmer 255, CH 7 Shutter 255.

Channel functions at a glance



CH	Function	DMX	Description
1	Pan		Same as CH 1 in the mode “18CH” (p. 11)
2	Pan Fine	0–255	Fine adjustment of CH 1
3	Tilt		Same as CH 3 in the mode “18CH” (p. 11)
4	Tilt Fine	0–255	Fine adjustment of CH 3
5	Speed Pan/Tilt		Same as CH 5 in the mode “18CH” (p. 11)
6	Dimmer		Same as CH 6 in the mode “18CH” (p. 11)
7	Shutter		Same as CH 8 in the mode “18CH” (p. 11)
8	CTO		Same as CH 9 in the mode “18CH” (p. 11)
9	Colors		Same as CH 10 in the mode “18CH” (p. 11)
10	Gobo		Same as CH 11 in the mode “18CH” (p. 12)
11	Prism		Same as CH 12 in the mode “18CH” (p. 14)
12	Prism Rotation Speed		Same as CH 13 in the mode “18CH” (p. 14)
13	Prism 2		Same as CH 14 in the mode “18CH” (p. 14)
14	Prism 2 Rotation Speed		Same as CH 15 in the mode “18CH” (p. 14)
15	Focus		Same as CH 16 in the mode “18CH” (p. 14)
16	Control		Same as CH 18 in the mode “18CH” (p. 14)

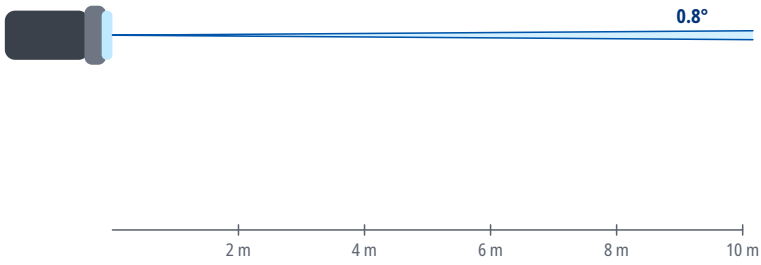
10 Technical specifications

Parameter	Value
Light	
Light source	LED
LED power	260 W
Luminous flux	9,600 lm
Color temperature	6,600 K
Color rendering index (CRI)	70
Optics	
Beam angle	0.8°
Movement	
Pan	540°
Tilt	260°
Control	
RDM	yes (manufacturer ID 0x3536, device model ID 0x06E9)
Dimensions and construction	
Weight	29.2 kg
Operating environment	
Operating temperature	-40 to 45 °C

Speeds and ranges

Parameter	Value
Strobe frequency	0.1–10 Hz
Color wheel rotation	up to 0.86 °/s (0.1 rpm)
Gobo wheel rotation	up to 80 °/s (13 rpm)
Prism 1 rotation	up to 655 °/s (109 rpm)
Prism 2 rotation	up to 655 °/s (109 rpm)

Spot diameter



Distance	Ø 0.8°
2 m	0.03 m
4 m	0.06 m
6 m	0.08 m
8 m	0.11 m
10 m	0.14 m
15 m	0.21 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.