DMX REFERENCE

PL-A800F

Polarlights



Manufacturer	Polarlights
GDTF file	Polarlights_PL-A800F_170014.gdtf
GDTF revision	PL-A800F · 2026-11-19
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1 About this manual

This document describes the PL-A800F by Polarlights. It was compiled from the GDTF file Polarlights_PL-A800F_170014.gdtf from the GDTF-Share library.

File revision: “PL-A800F”.

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 Polarlights; 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	38 kg

DMX modes

Mode	Channels	Units in one universe	First start addresses
36 Channel	36	14	1, 37, 73, 109, ...
46 Channel	46	11	1, 47, 93, 139, ...

No light? Check these channels

- 36 Channel: CH 6 Shutter at 252–255 “Open”; CH 7 Dimmer above 0
- 46 Channel: CH 6 Shutter at 252–255 “Open”; CH 7 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.

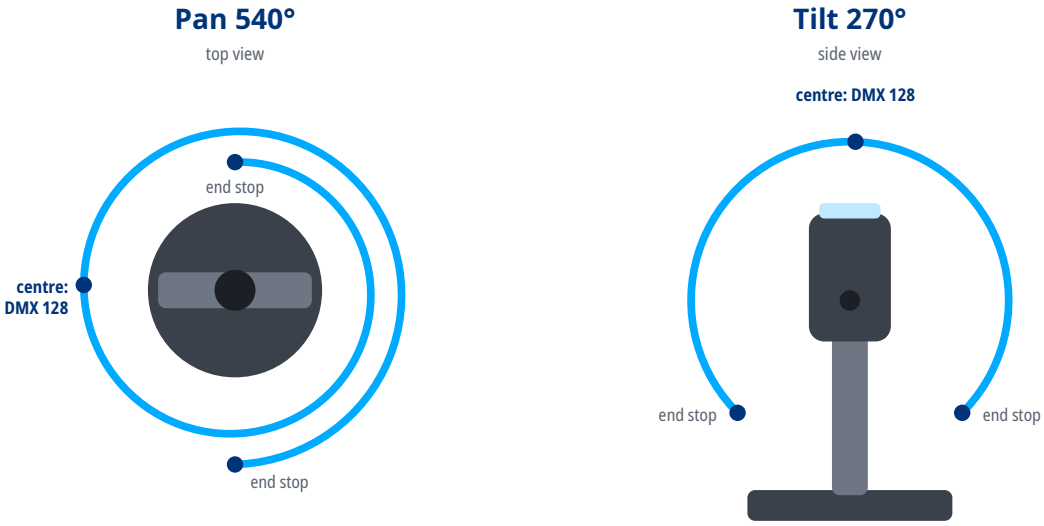
⚠ CAUTION

- 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

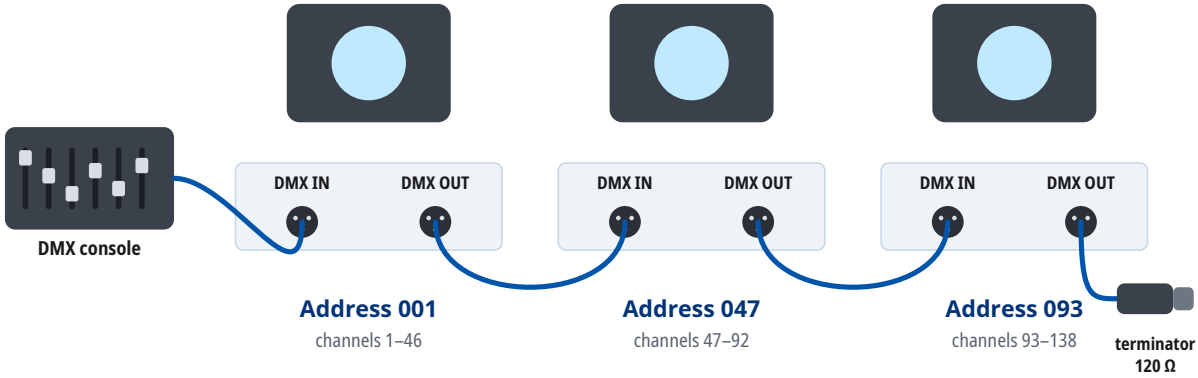
> ⚠ **WARNING**
>
> - Rigging must be carried out only by qualified persons in accordance with applicable regulations, in particular those for work at height.
> - The supporting structure and fixings must safely carry the weight of all suspended devices; verify their load capacity in advance.
> - Weight of the device: 38 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 46 Channel: every unit occupies 46 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

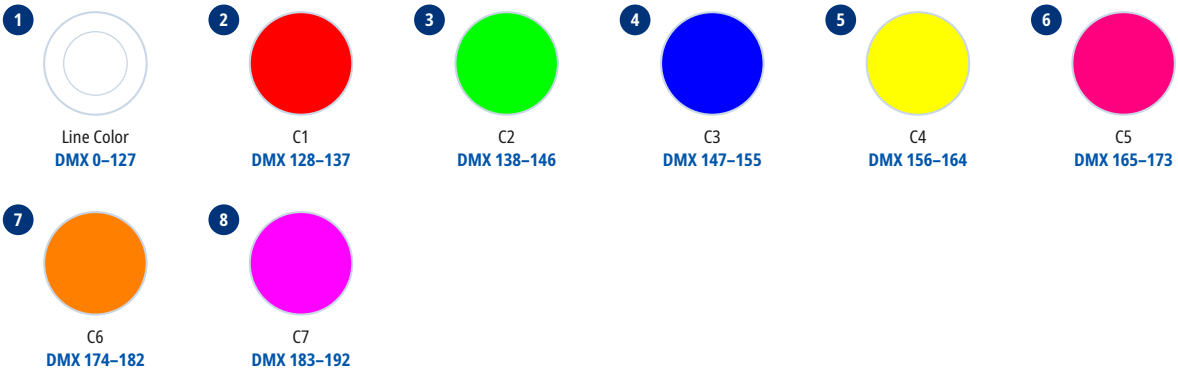
- The device occupies as many consecutive channels in the DMX universe as the selected DMX mode uses, starting at the set start address.
- Number of channels occupied in the DMX mode “46 Channel”: 46.
- Choose start addresses so that the channels of individual devices do not overlap and the last occupied 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 “46 Channel”, you can use, for example, the start addresses 1, 47, 93, 139.
- 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

	36 Channel 36 channels	46 Channel 46 channels
Pan / Tilt	1, 3	1, 3
Dimmer	7	7
Dimmer resolution	8 bit	16 bit
Shutter / strobe	6	6
Color mixing	8–10	9, 11, 13
Color temperature	11	15
Color wheel	12	17
Gobo wheel	14, 15	20, 21
Gobo rotation	16	22
Prism	22–24	30, 31, 33
Frost	25	35
Zoom	21	28
Focus	19	26
Iris	35	45
Animation wheel	17, 18	24, 25

Color wheel



Gobo wheel 1

1 
Gobo: Open
DMX 0–9

2 
G1-1
DMX 10–19

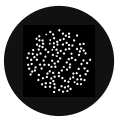
3 
G1-2
DMX 20–29

4 
G1-3
DMX 30–39

5 
G1-4
DMX 40–49

6 
G1-5
DMX 50–59

7 
G1-6
DMX 60–69

8 
G1-7
DMX 70–79

9 
G1-8
DMX 80–90

Gobo wheel 2

1 
Gobo: Open
DMX 0–9

2 
G2-1
DMX 10–19

3 
G2-2
DMX 20–29

4 
G2-3
DMX 30–39

5 
G2-4
DMX 40–49

6 
G2-5
DMX 50–59

7 
G2-6
DMX 60–70

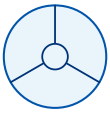
Animation wheel

1
Open

2 
Animation 1

Prism

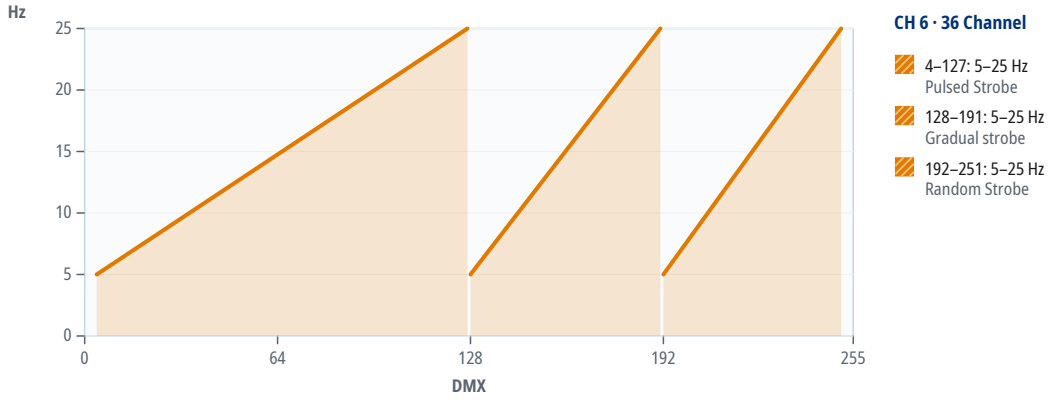
1
Open
DMX 0–63

2 
3 facets
Prism1
DMX 64–127

3 
3 facets
Prism 2
DMX 128–191

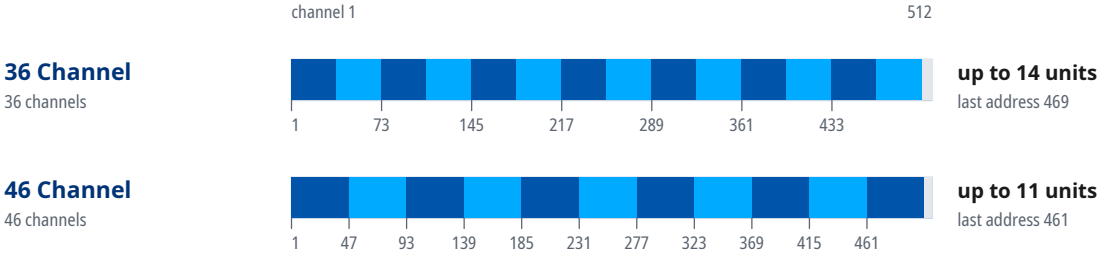
4 
9 facets
P1+P2
DMX 192–255

Strobe rate



9 DMX channels

Units in one DMX universe



Start addresses of 20 units in the mode “46 Channel”

Unit	Start address	Unit	Start address	Unit	Start address	Unit	Start address
1	1	6	231	11	461	16	U2 · 185
2	47	7	277	12	U2 · 1	17	U2 · 231
3	93	8	323	13	U2 · 47	18	U2 · 277
4	139	9	369	14	U2 · 93	19	U2 · 323
5	185	10	415	15	U2 · 139	20	U2 · 369

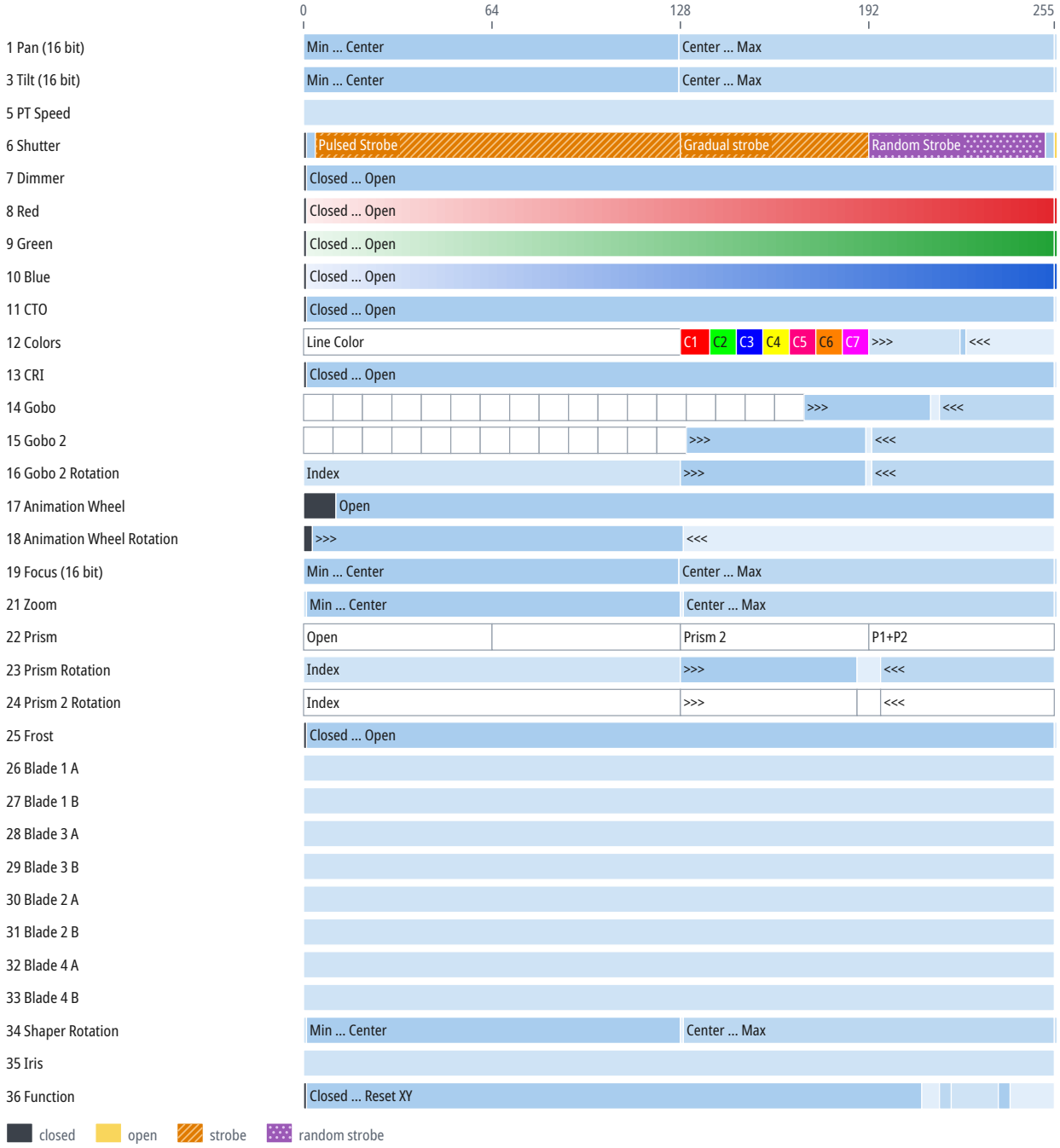
Where a DMX universe is full, the next units continue in the next universe: “U2 · 1” is address 1 in the second universe, counted from the universe of the first unit.

Mode 36 Channel

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 252–255 “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 12 Colors 0.

Channel functions at a glance



CH	Function	DMX	Description
1	Pan	0–127	Min ... Center
		127	Center
		128–255	Center ... Max

CH	Function	DMX	Description
1	Pan (continued)	255	Max
2	Pan Fine	0–255	Fine adjustment of CH 1
3	Tilt	0–127	Min … Center
		128–255	Center … Max
		255	Max
4	Tilt Fine	0–255	Fine adjustment of CH 3
5	PT Speed	0–255	
6	Shutter	0–3	Closed
		4–127	Pulsed Strobe (5–25 Hz)
		128–191	Gradual strobe (5–25 Hz)
		192–251	Random Strobe (5–25 Hz)
		252–255	Open
7	Dimmer	0	Closed
		1–254	Closed … Open
		255	Open
8	Red	0	Closed
		1–254	Closed … Open
		255	Open
9	Green	0	Closed
		1–254	Closed … Open
		255	Open
10	Blue	0	Closed
		1–254	Closed … Open
		255	Open
11	CTO	0	Closed
		1–254	Closed … Open
		255	Open
12	Colors	0–127	Line Color
		128–137	C1
		138–146	C2
		147–155	C3
		156–164	C4
		165–173	C5
		174–182	C6
		183–191	C7
		192–222	>>> (270–1 °/s)
		223–224	Color 1 Spin: Stop
		225–255	<<< (1–270 °/s)
13	CRI	0	Closed
		1–254	Closed … Open
		255	Open
14	Gobo	0–9	Gobo: Open

CH	Function	DMX	Description
14	Gobo (continued)	10–19	G1-1
		20–29	G1-2
		30–39	G1-3
		40–49	G1-4
		50–59	G1-5
		60–69	G1-6
		70–79	G1-7
		80–89	G1-8
		90–99	Shake G1-1
		100–109	Shake G1-2
		110–119	Shake G1-3
		120–129	Shake G1-4
		130–139	Shake G1-5
		140–149	Shake G1-6
		150–159	Shake G1-7
		160–169	Shake G1-8
		170–212	>>> (220–1 °/s)
		213–215	Gobo 1 Spin: Stop
		216–255	<<< (1–220 °/s)
15	Gobo 2	0–9	Gobo: Open
		10–19	G2-1
		20–29	G2-2
		30–39	G2-3
		40–49	G2-4
		50–59	G2-5
		60–69	G2-6
		70–79	Shake G2-1
		80–89	Shake G2-2
		90–99	Shake G2-3
		100–109	Shake G2-4
		110–119	Shake G2-5
		120–129	Shake G2-6
		130–190	>>> (220–1 °/s)
		191–192	Gobo 2 Spin: Stop
		193–255	<<< (1–220 °/s)
16	Gobo 2 Rotation	0–127	Index (360°)
		128–190	>>> (800–1 °/s)
		191–192	Gobo 2 Rot: Stop
		193–255	<<< (1–800 °/s)
17	Animation Wheel	0–10	Closed
		11–255	Open
18	Animation Wheel Rotation	0–2	Stop: Closed

CH	Function	DMX	Description
18	Animation Wheel Rotation (continued)	3–128	>>> (240–1 °/s)
		129–255	<<< (1–240 °/s)
19	Focus	0–127	Min ... Center
		128–255	Center ... Max
		255	Max
20	Focus Fine	0–255	Fine adjustment of CH 19
21	Zoom	0	Min
		1–127	Min ... Center
		128	Center
		129–254	Center ... Max
		255	Max
22	Prism		Prism 1
		0–63	Open
		64–127	Prism1
		128–191	Prism 2
		192–255	P1+P2
23	Prism Rotation	0–127	Index (360°)
		128–187	>>> (420–1 °/s)
		188–195	Prism 1 Rot: Stop
		196–255	<<< (1–420 °/s)
24	Prism 2 Rotation	0–127	Index (360°)
		128–187	>>> (420–1 °/s)
		188–195	Prism 2 Rot: Stop
		196–255	<<< (1–420 °/s)
25	Frost	0	Closed
		1–254	Closed ... Open
		255	Open
26	Blade 1 A	0–255	
27	Blade 1 B	0–255	
28	Blade 3 A	0–255	
29	Blade 3 B	0–255	
30	Blade 2 A	0–255	
31	Blade 2 B	0–255	
32	Blade 4 A	0–255	
33	Blade 4 B	0–255	
34	Shaper Rotation	0	Min
		1–127	Min ... Center
		128	Center
		129–254	Center ... Max
		255	Max
35	Iris	0–255	
36	Function	0	Closed

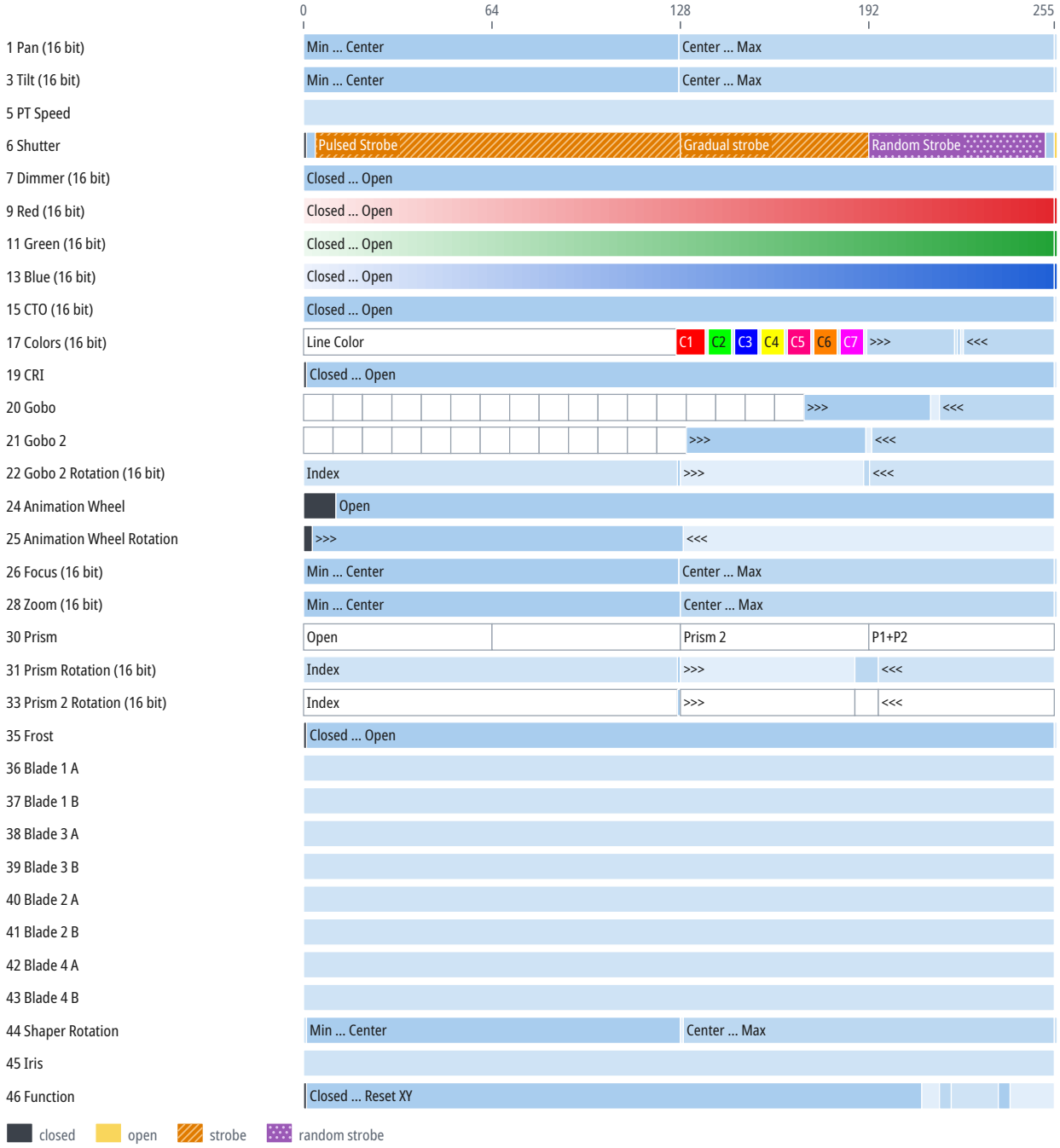
CH	Function	DMX	Description
36	Function (continued)	1–209	Closed ... Reset XY
		210–215	Reset XY
		216–219	Reset XY ... Reset Effect
		220–235	Reset Effect
		236–239	Reset Effect ... Reset ALL
		240–255	Reset ALL

Mode 46 Channel

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 252–255 “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 Colors 0.

Channel functions at a glance



CH	Function	DMX	Description
1	Pan		Same as CH 1 in the mode “36 Channel” (p. 10)
2	Pan Fine	0–255	Fine adjustment of CH 1
3	Tilt		Same as CH 3 in the mode “36 Channel” (p. 11)

CH	Function	DMX	Description
4	Tilt Fine	0–255	Fine adjustment of CH 3
5	PT Speed	0–255	
6	Shutter		Same as CH 6 in the mode “36 Channel” (p. 11)
7	Dimmer	0–255	Closed … Open
		255	Open
8	Dimmer Fine	0–255	Fine adjustment of CH 7
9	Red	0–255	Closed … Open
		255	Open
10	Red Fine	0–255	Fine adjustment of CH 9
11	Green	0–255	Closed … Open
		255	Open
12	Green Fine	0–255	Fine adjustment of CH 11
13	Blue	0–255	Closed … Open
		255	Open
14	Blue Fine	0–255	Fine adjustment of CH 13
15	CTO	0–255	Closed … Open
		255	Open
16	CTO Fine	0–255	Fine adjustment of CH 15
17	Colors	0–127	Line Color
		127–137	C1
		137	C1 … C2
		138–146	C2
		146	C2 … C3
		147–155	C3
		155	C3 … C4
		156–164	C4
		164	C4 … C5
		165–173	C5
		173	C5 … C6
		174–182	C6
		182	C6 … C7
		183–191	C7
		192–222	>>> (270–1 °/s)
		222	Color 1 Spin: >>> … Stop
		223–224	Color 1 Spin: Stop
		224	Color 1 Spin: Stop … <<<
		225–255	<<< (1–270 °/s)
18	Colors Fine	0–255	Fine adjustment of CH 17
19	CRI		Same as CH 13 in the mode “36 Channel” (p. 11)
20	Gobo		Same as CH 14 in the mode “36 Channel” (p. 11)
21	Gobo 2		Same as CH 15 in the mode “36 Channel” (p. 12)
22	Gobo 2 Rotation	0–127	Index

CH	Function	DMX	Description
22	Gobo 2 Rotation (continued)	127–128	Gobo 2 Index
		128–190	>>> (800–1 °/s)
		191–192	Gobo 2 Rot: Stop
		193–255	<<< (1–800 °/s)
23	Gobo 2 Rotation Fine	0–255	Fine adjustment of CH 22
24	Animation Wheel		Same as CH 17 in the mode “36 Channel” (p. 12)
25	Animation Wheel Rotation		Same as CH 18 in the mode “36 Channel” (p. 12)
26	Focus		Same as CH 19 in the mode “36 Channel” (p. 13)
27	Focus Fine	0–255	Fine adjustment of CH 26
28	Zoom	0–128	Min ... Center
		128–255	Center ... Max
		255	Max
29	Zoom Fine	0–255	Fine adjustment of CH 28
30	Prism		Same as CH 22 in the mode “36 Channel” (p. 13)
31	Prism Rotation	0–127	Index
		127–128	Prism 1 Index
		128–187	>>> (420–1 °/s)
		188–195	Prism 1 Rot: Stop
		196–255	<<< (1–420 °/s)
32	Prism Rotation Fine	0–255	Fine adjustment of CH 31
33	Prism 2 Rotation	0–127	Index
		127–128	Prism 2 Index
		128–187	>>> (420–1 °/s)
		188–195	Prism 2 Rot: Stop
		196–255	<<< (1–420 °/s)
34	Prism 2 Rotation Fine	0–255	Fine adjustment of CH 33
35	Frost		Same as CH 25 in the mode “36 Channel” (p. 13)
36	Blade 1 A	0–255	
37	Blade 1 B	0–255	
38	Blade 3 A	0–255	
39	Blade 3 B	0–255	
40	Blade 2 A	0–255	
41	Blade 2 B	0–255	
42	Blade 4 A	0–255	
43	Blade 4 B	0–255	
44	Shaper Rotation		Same as CH 34 in the mode “36 Channel” (p. 13)
45	Iris	0–255	
46	Function		Same as CH 36 in the mode “36 Channel” (p. 13)

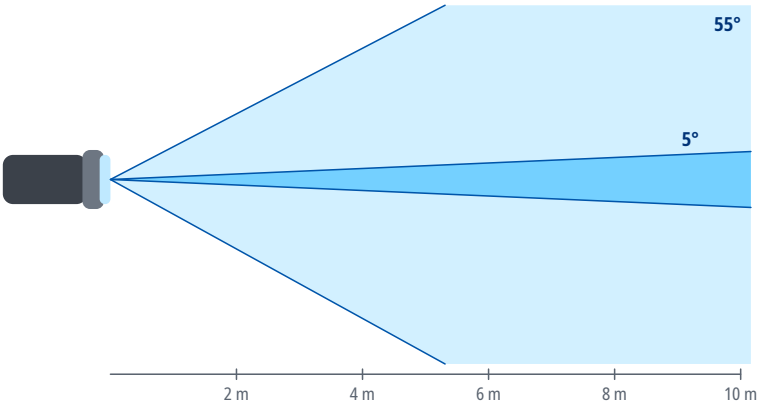
10 Technical specifications

Parameter	Value
Light	
Light source	discharge lamp
Lamp power	1,000 W
Luminous flux	10,000 lm
Color temperature	6,500 K
Color rendering index (CRI)	93
Optics	
Zoom	5–55°
Movement	
Pan	540°
Tilt	270°
Dimensions and construction	
Weight	38 kg
Operating environment	
Operating temperature	-20 to 40 °C

Speeds and ranges

Parameter	Value
Color temperature range	2800–6500 K
Strobe frequency	5–25 Hz
Color wheel rotation	up to 270 °/s (45 rpm)
Gobo wheel 1 rotation	up to 220 °/s (37 rpm)
Gobo wheel 2 rotation	up to 220 °/s (37 rpm)
Gobo 2 rotation	up to 800 °/s (133 rpm)
Prism rotation	up to 420 °/s (70 rpm)
Prism rotation	up to 420 °/s (70 rpm)
Animation wheel rotation	up to 240 °/s (40 rpm)

Spot diameter



Distance	Ø 5°	Ø 55°
2 m	0.17 m	2.1 m
4 m	0.35 m	4.2 m
6 m	0.52 m	6.2 m
8 m	0.7 m	8.3 m
10 m	0.87 m	10.4 m
15 m	1.3 m	15.6 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.