DMX REFERENCE

PL-P3740MAX

Polarlights



Manufacturer	Polarlights
GDTF file	Polarlights_PL-P3740MAX_167942.gdtf
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1 About this manual

This document describes the PL-P3740MAX by Polarlights. It was compiled from the GDTF file Polarlights_PL-P3740MAX_167942.gdtf from the GDTF-Share library.

File revision: “PL-P3740MAX”.

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	25.9 kg

DMX modes

Mode	Channels	Units in one universe	First start addresses
22 Channel	22	23	1, 23, 45, 67, ...
35 Channel	35	14	1, 36, 71, 106, ...
36 Channel	36	14	1, 37, 73, 109, ...
133 Channel	133	3	1, 134, 267
170 Channel	170	3	1, 171, 341
147 Channel	147	3	1, 148, 295

No light? Check these channels

- 22 Channel: CH 11 Shutter at 104–107 or 208–212 or 252–255 “Open”; CH 12 Dimmer above 0
- 35 Channel: CH 11 Shutter at 104–107 or 208–212 or 252–255 “Open”; CH 12 Dimmer above 0; CH 33 Foreground Strobe at 255 “Open”; CH 34 Back Shutter at 255 “Open”
- 36 Channel: CH 11 Shutter at 104–107 or 208–212 or 252–255 “Open”; CH 12 Dimmer above 0; CH 33 Foreground Strobe at 255 “Open”; CH 34 Back Shutter at 255 “Open”
- 133 Channel: CH 11 Shutter at 104–107 or 208–212 or 252–255 “Open”; CH 12 Dimmer above 0
- 170 Channel: CH 11 Shutter at 104–107 or 208–212 or 252–255 “Open”; CH 12 Dimmer above 0
- 147 Channel: CH 11 Shutter at 104–107 or 208–212 or 252–255 “Open”; CH 12 Dimmer above 0; CH 33 Foreground Strobe at 255 “Open”; CH 34 Back Shutter at 255 “Open”


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

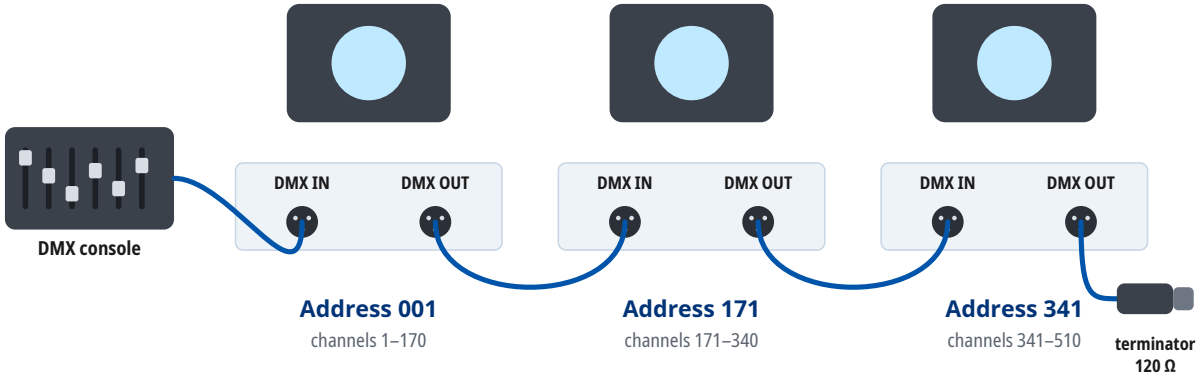
- Rigging must be carried out only by qualified persons in accordance with applicable regulations, in particular those for work at height.
- The supporting structure and fixings must safely carry the weight of all suspended devices; verify their load capacity in advance.
- Weight of the device: 25.9 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 170 Channel: every unit occupies 170 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

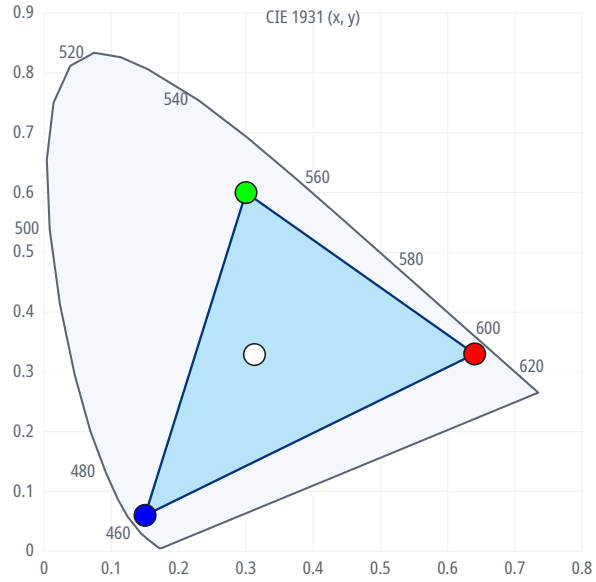
- The device occupies as many consecutive channels in the DMX universe as the selected DMX mode uses, starting at the set start address.
- Number of channels occupied in the DMX mode “170 Channel”: 170.
- Choose start addresses so that the channels of individual devices do not overlap and the last occupied 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 “170 Channel”, you can use, for example, the start addresses 1, 171, 341.
- 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

	22 Channel 22 channels	35 Channel 35 channels	36 Channel 36 channels	133 Channel 133 channels	170 Channel 170 channels	147 Channel 147 channels
Pan / Tilt	14, 16	14, 16	14, 16	14, 16	14, 16	14, 16
Dimmer	12	12	12	12	12	12
Shutter / strobe	11	11	11	11	11	11
Color mixing	4× (1–7)	4× (1–7)	4× (1–7)	115 channels (1–133)	152 channels (1–170)	115 channels (1–147)
Color temperature	9	9	9	9	9	9
Color wheel	10	10	10	10	10	10
Zoom	20	20	20	20	20	20
Pixel control				37 cells	37 cells	37 cells

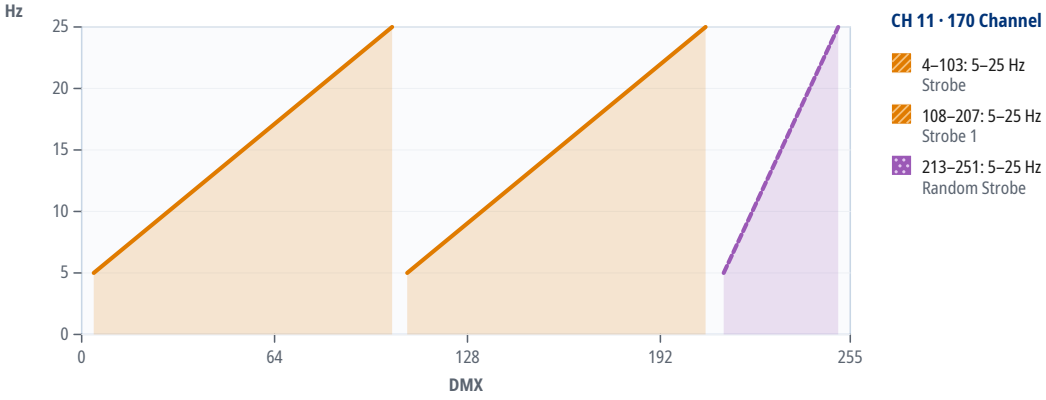
LED colors and the colors they mix



LED	x	y
Red	0.640	0.330
Green	0.300	0.600
Blue	0.150	0.060
White	0.313	0.329

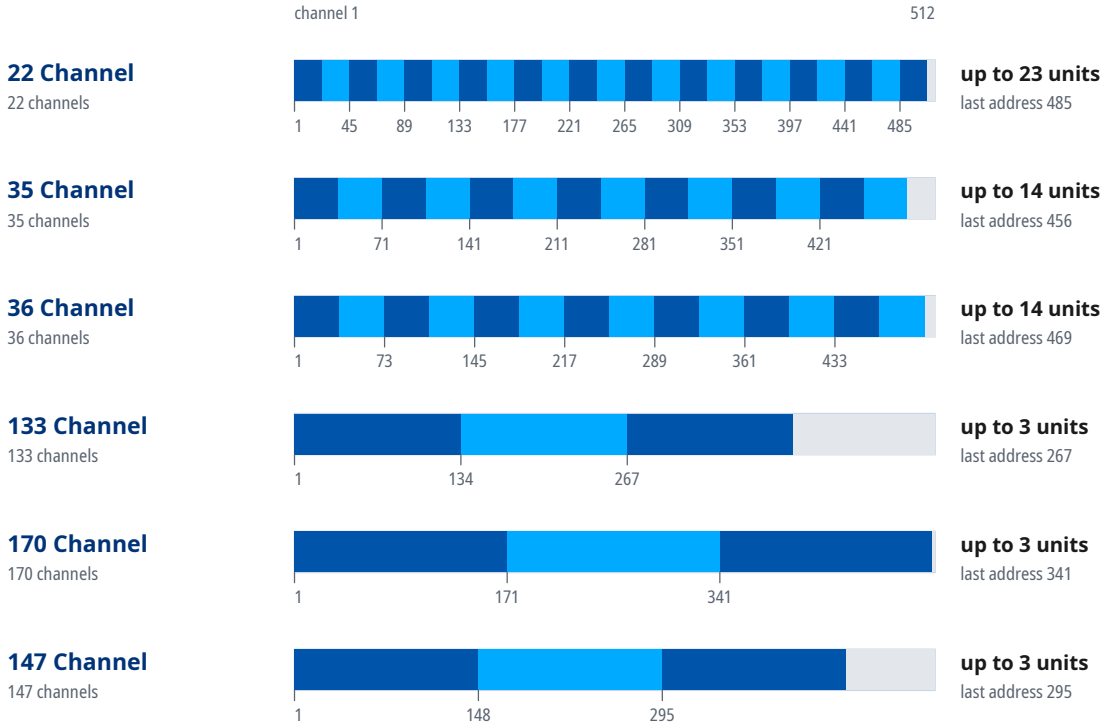
The shaded area holds the colors the LEDs can mix; the dots are the LED colors the GDTF file states.

Strobe rate



9 DMX channels

Units in one DMX universe



Start addresses of 20 units in the mode “170 Channel”

Unit	Start address	Unit	Start address	Unit	Start address	Unit	Start address
1	1	6	U2 · 341	11	U4 · 171	16	U6 · 1
2	171	7	U3 · 1	12	U4 · 341	17	U6 · 171
3	341	8	U3 · 171	13	U5 · 1	18	U6 · 341
4	U2 · 1	9	U3 · 341	14	U5 · 171	19	U7 · 1
5	U2 · 171	10	U4 · 1	15	U5 · 341	20	U7 · 171

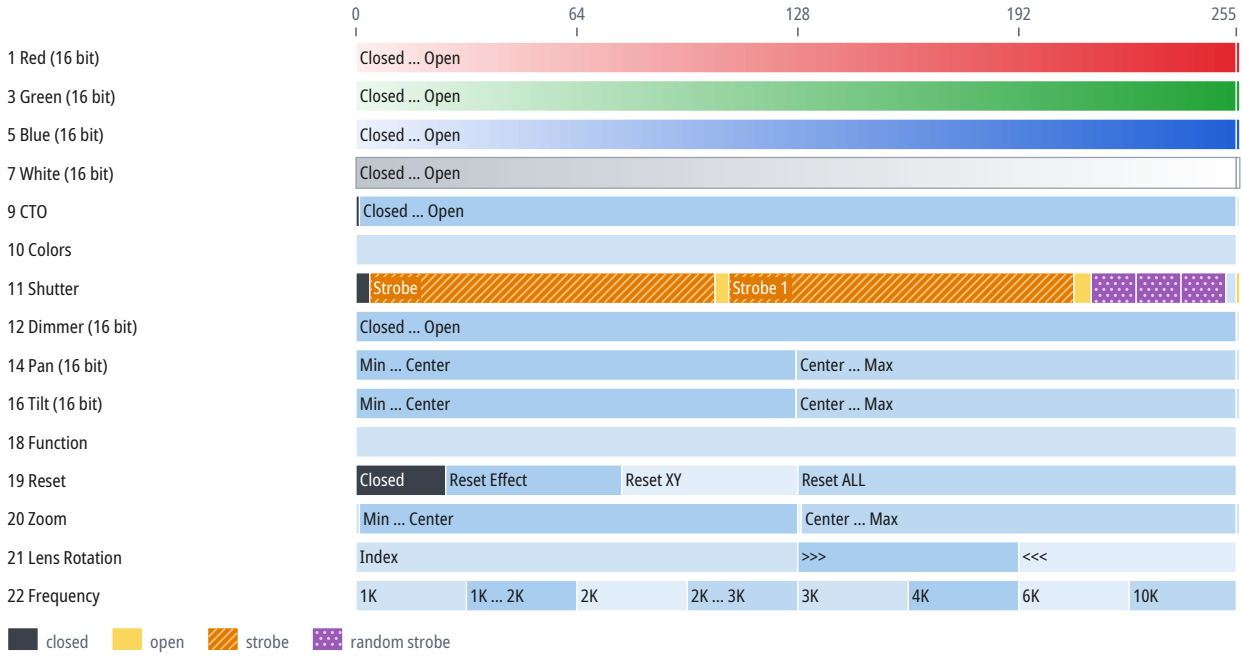
Where a DMX universe is full, the next units continue in the next universe: “U2 · 1” is address 1 in the second universe, counted from the universe of the first unit.

Mode 22 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 11 Shutter at 104–107 or 208–212 or 252–255 “Open”; CH 12 Dimmer above 0. The GDTF file gives these values for a console's Highlight function: CH 1 Red 255, CH 3 Green 255, CH 5 Blue 255, CH 11 Shutter 255, CH 12 Dimmer 255.

Channel functions at a glance



CH	Function	DMX	Description
1	Red	0–255	Closed ... Open
		255	Open
2	Red Fine	0–255	Fine adjustment of CH 1
3	Green	0–255	Closed ... Open
		255	Open
4	Green Fine	0–255	Fine adjustment of CH 3
5	Blue	0–255	Closed ... Open
		255	Open
6	Blue Fine	0–255	Fine adjustment of CH 5
7	White	0–255	Closed ... Open
		255	Open
8	White Fine	0–255	Fine adjustment of CH 7
9	CTO	0	Closed
		1–254	Closed ... Open
		255	Open
10	Colors	0–255	
11	Shutter	0–3	Closed
		4–103	Strobe (5–25 Hz)

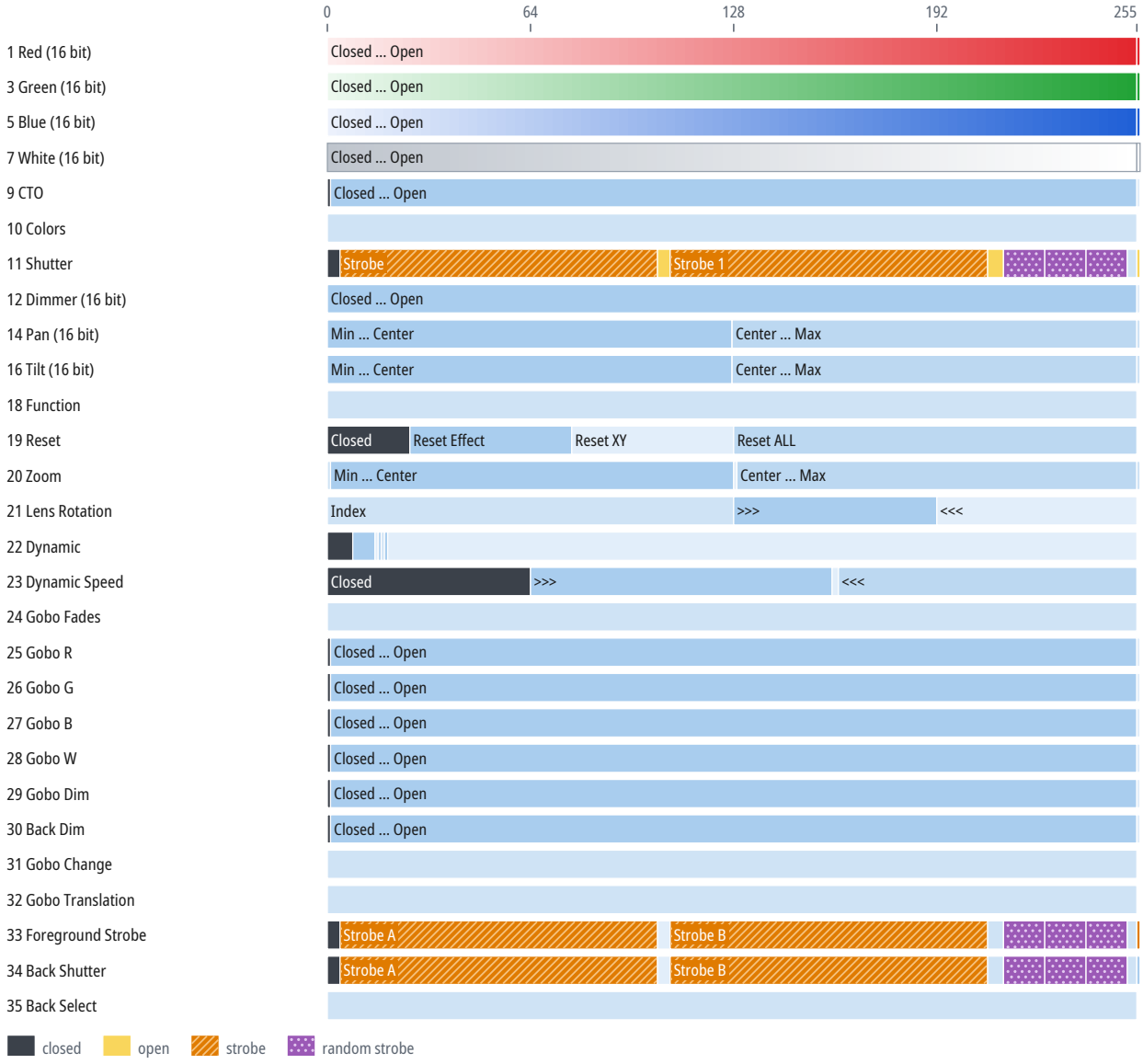
CH	Function	DMX	Description
11	Shutter (continued)	104–107	Open 1
		108–207	Strobe 1 (5–25 Hz)
		208–212	Open 2
		213–225	Low Random Strobe
		226–238	Medium Random Strobe
		239–251	Fast Random Strobe
		252–255	Open
12	Dimmer	0–255	Closed ... Open
		255	Open
13	Dimmer Fine	0–255	Fine adjustment of CH 12
14	Pan	0–127	Min ... Center
		127	Center
		128–255	Center ... Max
		255	Max
15	Pan Fine	0–255	Fine adjustment of CH 14
16	Tilt	0–127	Min ... Center
		128–255	Center ... Max
		255	Max
17	Tilt Fine	0–255	Fine adjustment of CH 16
18	Function	0–255	
19	Reset	0–25	Closed
		26–76	Reset Effect
		77–127	Reset XY
		128–255	Reset ALL
20	Zoom	0	Min
		1–127	Min ... Center
		128	Center
		129–254	Center ... Max
		255	Max
21	Lens Rotation	0–127	Index
		128–191	>>>
		192–255	<<<
22	Frequency	0–31	1K
		32–63	1K ... 2K
		64–95	2K
		96–127	2K ... 3K
		128–159	3K
		160–191	4K
		192–223	6K
		224–255	10K

Mode 35 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 11 Shutter at 104–107 or 208–212 or 252–255 “Open”; CH 12 Dimmer above 0; CH 33 Foreground Strobe at 255 “Open”; CH 34 Back Shutter at 255 “Open”. The GDTF file gives these values for a console's Highlight function: CH 1 Red 255, CH 3 Green 255, CH 5 Blue 255, CH 11 Shutter 255, CH 12 Dimmer 255.

Channel functions at a glance



CH	Function	DMX	Description
1	Red		Same as CH 1 in the mode “22 Channel” (p. 9)
2	Red Fine	0–255	Fine adjustment of CH 1
3	Green		Same as CH 3 in the mode “22 Channel” (p. 9)
4	Green Fine	0–255	Fine adjustment of CH 3
5	Blue		Same as CH 5 in the mode “22 Channel” (p. 9)
6	Blue Fine	0–255	Fine adjustment of CH 5

CH	Function	DMX	Description
7	White		Same as CH 7 in the mode “22 Channel” (p. 9)
8	White Fine	0–255	Fine adjustment of CH 7
9	CTO		Same as CH 9 in the mode “22 Channel” (p. 9)
10	Colors	0–255	
11	Shutter		Same as CH 11 in the mode “22 Channel” (p. 9)
12	Dimmer		Same as CH 12 in the mode “22 Channel” (p. 10)
13	Dimmer Fine	0–255	Fine adjustment of CH 12
14	Pan		Same as CH 14 in the mode “22 Channel” (p. 10)
15	Pan Fine	0–255	Fine adjustment of CH 14
16	Tilt		Same as CH 16 in the mode “22 Channel” (p. 10)
17	Tilt Fine	0–255	Fine adjustment of CH 16
18	Function	0–255	
19	Reset		Same as CH 19 in the mode “22 Channel” (p. 10)
20	Zoom		Same as CH 20 in the mode “22 Channel” (p. 10)
21	Lens Rotation		Same as CH 21 in the mode “22 Channel” (p. 10)
22	Dynamic	0–7	Closed
		8–14	Closed ... Dynamic 1
		15	Dynamic 1
		16	Dynamic 2
		17	Dynamic 3
		18	Dynamic 4
		19–255	Dynamic 1
23	Dynamic Speed	0–63	Closed
		64–158	>>>
		159–160	Stop
		161–255	<<<
24	Gobo Fades	0–255	
25	Gobo R	0	Closed
		1–254	Closed ... Open
		255	Open
26	Gobo G	0	Closed
		1–254	Closed ... Open
		255	Open
27	Gobo B	0	Closed
		1–254	Closed ... Open
		255	Open
28	Gobo W	0	Closed
		1–254	Closed ... Open
		255	Open
29	Gobo Dim	0	Closed
		1–254	Closed ... Open
		255	Open

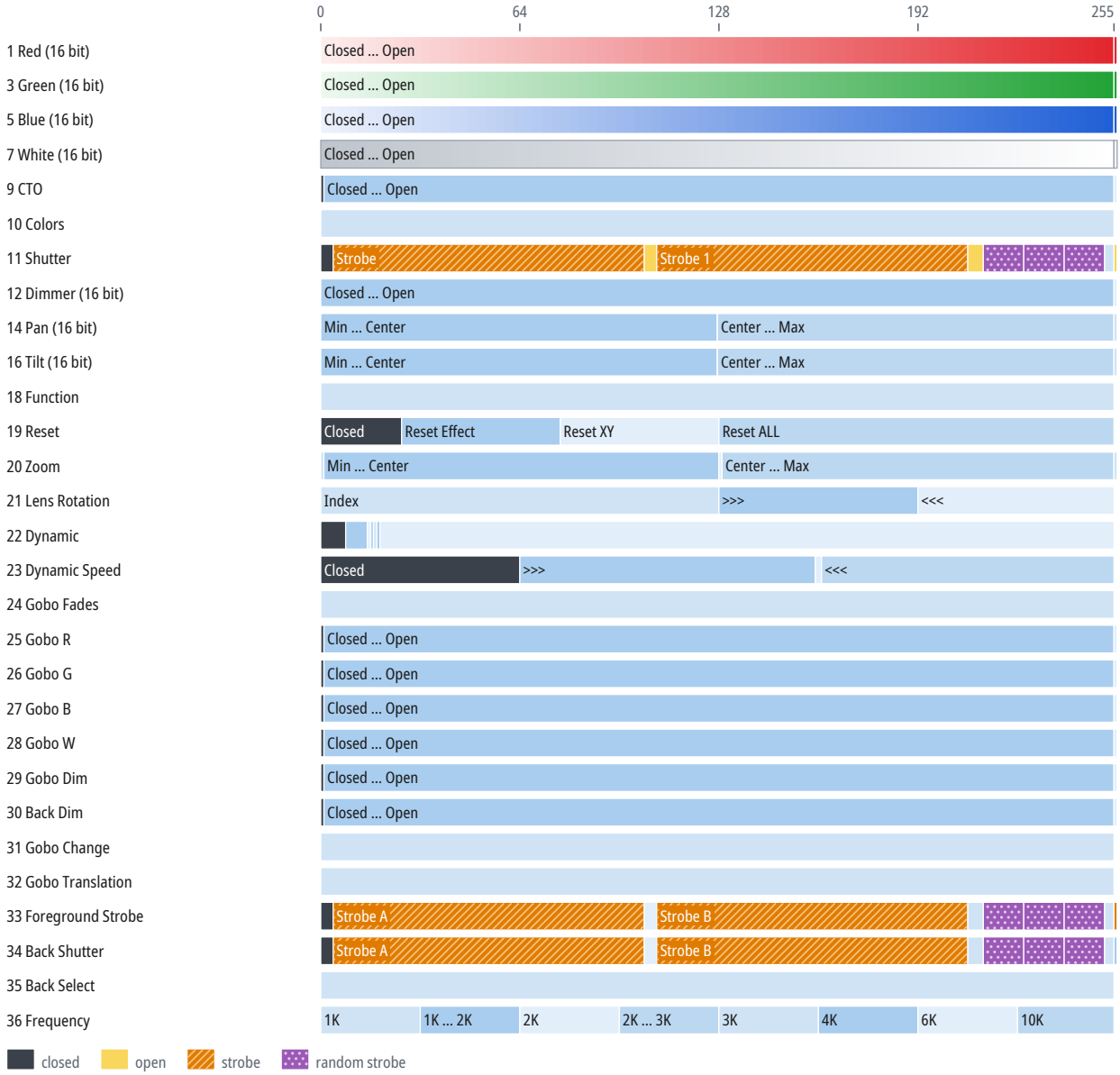
CH	Function	DMX	Description
30	Back Dim	0	Closed
		1–254	Closed ... Open
		255	Open
31	Gobo Change	0–255	
32	Gobo Translation	0–255	
33	Foreground Strobe	0–3	Closed
		4–103	Strobe A
		104–107	Strobe A ... Strobe B
		108–207	Strobe B
		208–212	Strobe B ... Low Random Strobe
		213–225	Low Random Strobe
		226–238	Medium Random Strobe
		239–251	Fast Random Strobe
		252–254	Fast Random Strobe ... Open
		255	Open
34	Back Shutter	0–3	Closed
		4–103	Strobe A
		104–107	Strobe A ... Strobe B
		108–207	Strobe B
		208–212	Strobe B ... Low Random Strobe
		213–225	Low Random Strobe
		226–238	Medium Random Strobe
		239–251	Fast Random Strobe
		252–254	Fast Random Strobe ... Open
		255	Open
35	Back Select	0–255	

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 11 Shutter at 104–107 or 208–212 or 252–255 “Open”; CH 12 Dimmer above 0; CH 33 Foreground Strobe at 255 “Open”; CH 34 Back Shutter at 255 “Open”. The GDTF file gives these values for a console's Highlight function: CH 1 Red 255, CH 3 Green 255, CH 5 Blue 255, CH 11 Shutter 255, CH 12 Dimmer 255.

Channel functions at a glance



CH	Function	DMX	Description
1	Red		Same as CH 1 in the mode “22 Channel” (p. 9)
2	Red Fine	0–255	Fine adjustment of CH 1
3	Green		Same as CH 3 in the mode “22 Channel” (p. 9)
4	Green Fine	0–255	Fine adjustment of CH 3
5	Blue		Same as CH 5 in the mode “22 Channel” (p. 9)

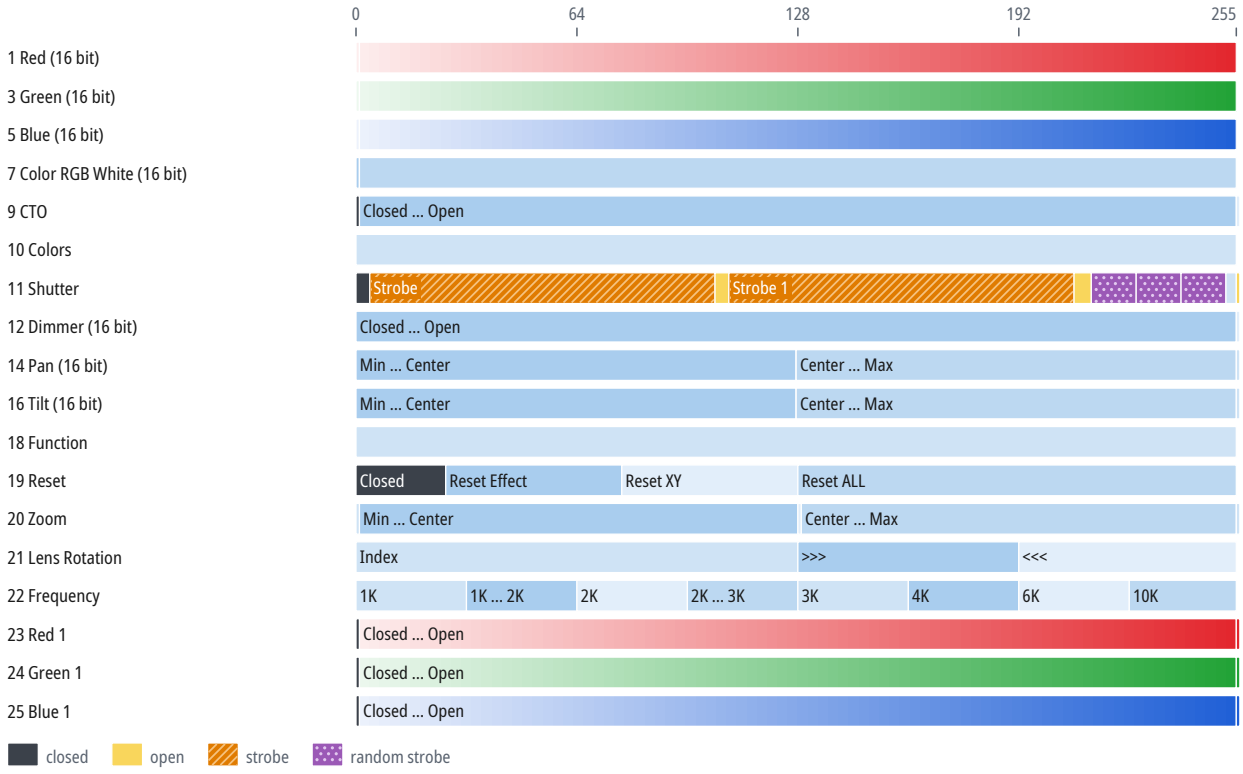
CH	Function	DMX	Description
6	Blue Fine	0–255	Fine adjustment of CH 5
7	White		Same as CH 7 in the mode “22 Channel” (p. 9)
8	White Fine	0–255	Fine adjustment of CH 7
9	CTO		Same as CH 9 in the mode “22 Channel” (p. 9)
10	Colors	0–255	
11	Shutter		Same as CH 11 in the mode “22 Channel” (p. 9)
12	Dimmer		Same as CH 12 in the mode “22 Channel” (p. 10)
13	Dimmer Fine	0–255	Fine adjustment of CH 12
14	Pan		Same as CH 14 in the mode “22 Channel” (p. 10)
15	Pan Fine	0–255	Fine adjustment of CH 14
16	Tilt		Same as CH 16 in the mode “22 Channel” (p. 10)
17	Tilt Fine	0–255	Fine adjustment of CH 16
18	Function	0–255	
19	Reset		Same as CH 19 in the mode “22 Channel” (p. 10)
20	Zoom		Same as CH 20 in the mode “22 Channel” (p. 10)
21	Lens Rotation		Same as CH 21 in the mode “22 Channel” (p. 10)
22	Dynamic		Same as CH 22 in the mode “35 Channel” (p. 12)
23	Dynamic Speed		Same as CH 23 in the mode “35 Channel” (p. 12)
24	Gobo Fades	0–255	
25	Gobo R		Same as CH 25 in the mode “35 Channel” (p. 12)
26	Gobo G		Same as CH 26 in the mode “35 Channel” (p. 12)
27	Gobo B		Same as CH 27 in the mode “35 Channel” (p. 12)
28	Gobo W		Same as CH 28 in the mode “35 Channel” (p. 12)
29	Gobo Dim		Same as CH 29 in the mode “35 Channel” (p. 12)
30	Back Dim		Same as CH 30 in the mode “35 Channel” (p. 13)
31	Gobo Change	0–255	
32	Gobo Translation	0–255	
33	Foreground Strobe		Same as CH 33 in the mode “35 Channel” (p. 13)
34	Back Shutter		Same as CH 34 in the mode “35 Channel” (p. 13)
35	Back Select	0–255	
36	Frequency		Same as CH 22 in the mode “22 Channel” (p. 10)

Mode 133 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 11 Shutter at 104–107 or 208–212 or 252–255 “Open”; CH 12 Dimmer above 0. The GDTF file gives these values for a console's Highlight function: CH 11 Shutter 255, CH 12 Dimmer 255, CH 23 Red 255 (the same in each of the 37 cells), CH 24 Green 255 (the same in each of the 37 cells), CH 25 Blue 255 (the same in each of the 37 cells).

Channel functions at a glance



CH	Function	DMX	Description
1	Red	0	Closed ... Open
		0	Open
		1–255	Color RGB_Red 1
2	Red Fine	0–255	Fine adjustment of CH 1
3	Green	0	Closed ... Open
		0	Open
		1–255	Color RGB_Green 1
4	Green Fine	0–255	Fine adjustment of CH 3
5	Blue	0	Closed ... Open
		0	Open
		1–255	Color RGB_Blue 1
6	Blue Fine	0–255	Fine adjustment of CH 5
7	Color RGB White	0	Closed ... Open
		0	Open

CH	Function	DMX	Description
7	Color RGB White (continued)	1–255	Color RGB_White 1
8	Color RGB White Fine	0–255	Fine adjustment of CH 7
9	CTO		Same as CH 9 in the mode “22 Channel” (p. 9)
10	Colors	0–255	
11	Shutter		Same as CH 11 in the mode “22 Channel” (p. 9)
12	Dimmer		Same as CH 12 in the mode “22 Channel” (p. 10)
13	Dimmer Fine	0–255	Fine adjustment of CH 12
14	Pan		Same as CH 14 in the mode “22 Channel” (p. 10)
15	Pan Fine	0–255	Fine adjustment of CH 14
16	Tilt		Same as CH 16 in the mode “22 Channel” (p. 10)
17	Tilt Fine	0–255	Fine adjustment of CH 16
18	Function	0–255	
19	Reset		Same as CH 19 in the mode “22 Channel” (p. 10)
20	Zoom		Same as CH 20 in the mode “22 Channel” (p. 10)
21	Lens Rotation		Same as CH 21 in the mode “22 Channel” (p. 10)
22	Frequency		Same as CH 22 in the mode “22 Channel” (p. 10)
23	Red 1	0	Closed
		1–254	Closed ... Open
		255	Open
24	Green 1	0	Closed
		1–254	Closed ... Open
		255	Open
25	Blue 1	0	Closed
		1–254	Closed ... Open
		255	Open

CH 23–133: 37 cells of 3 channels each. Every cell works as cell 1 in the table above (CH 23–25); the table below gives each cell's channel numbers.

Cell	Red	Green	Blue	Cell	Red	Green	Blue	Cell	Red	Green	Blue
1	23	24	25	2	26	27	28	3	29	30	31
4	32	33	34	5	35	36	37	6	38	39	40
7	41	42	43	8	44	45	46	9	47	48	49
10	50	51	52	11	53	54	55	12	56	57	58
13	59	60	61	14	62	63	64	15	65	66	67
16	68	69	70	17	71	72	73	18	74	75	76
19	77	78	79	20	80	81	82	21	83	84	85
22	86	87	88	23	89	90	91	24	92	93	94
25	95	96	97	26	98	99	100	27	101	102	103
28	104	105	106	29	107	108	109	30	110	111	112
31	113	114	115	32	116	117	118	33	119	120	121
34	122	123	124	35	125	126	127	36	128	129	130
37	131	132	133								

Mode 170 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 11 Shutter at 104–107 or 208–212 or 252–255 “Open”; CH 12 Dimmer above 0. The GDTF file gives these values for a console's Highlight function: CH 11 Shutter 255, CH 12 Dimmer 255, CH 23 Red 255 (the same in each of the 37 cells), CH 24 Green 255 (the same in each of the 37 cells), CH 25 Blue 255 (the same in each of the 37 cells).

Channel functions at a glance



CH	Function	DMX	Description
1	Red		Same as CH 1 in the mode “133 Channel” (p. 16)
2	Red Fine	0–255	Fine adjustment of CH 1
3	Green		Same as CH 3 in the mode “133 Channel” (p. 16)
4	Green Fine	0–255	Fine adjustment of CH 3
5	Blue		Same as CH 5 in the mode “133 Channel” (p. 16)
6	Blue Fine	0–255	Fine adjustment of CH 5
7	Color RGB White		Same as CH 7 in the mode “133 Channel” (p. 16)
8	Color RGB White Fine	0–255	Fine adjustment of CH 7
9	CTO		Same as CH 9 in the mode “22 Channel” (p. 9)
10	Colors	0–255	
11	Shutter		Same as CH 11 in the mode “22 Channel” (p. 9)
12	Dimmer		Same as CH 12 in the mode “22 Channel” (p. 10)
13	Dimmer Fine	0–255	Fine adjustment of CH 12
14	Pan		Same as CH 14 in the mode “22 Channel” (p. 10)

CH	Function	DMX	Description
15	Pan Fine	0–255	Fine adjustment of CH 14
16	Tilt		Same as CH 16 in the mode “22 Channel” (p. 10)
17	Tilt Fine	0–255	Fine adjustment of CH 16
18	Function	0–255	
19	Reset		Same as CH 19 in the mode “22 Channel” (p. 10)
20	Zoom		Same as CH 20 in the mode “22 Channel” (p. 10)
21	Lens Rotation		Same as CH 21 in the mode “22 Channel” (p. 10)
22	Frequency		Same as CH 22 in the mode “22 Channel” (p. 10)
23	Red 1	0	Closed
		1–254	Closed ... Open
		255	Open
24	Green 1	0	Closed
		1–254	Closed ... Open
		255	Open
25	Blue 1	0	Closed
		1–254	Closed ... Open
		255	Open
26	White 1	0	Closed
		1–254	Closed ... Open
		255	Open

CH 23–170: 37 cells of 4 channels each. Every cell works as cell 1 in the table above (CH 23–26); the table below gives each cell's channel numbers.

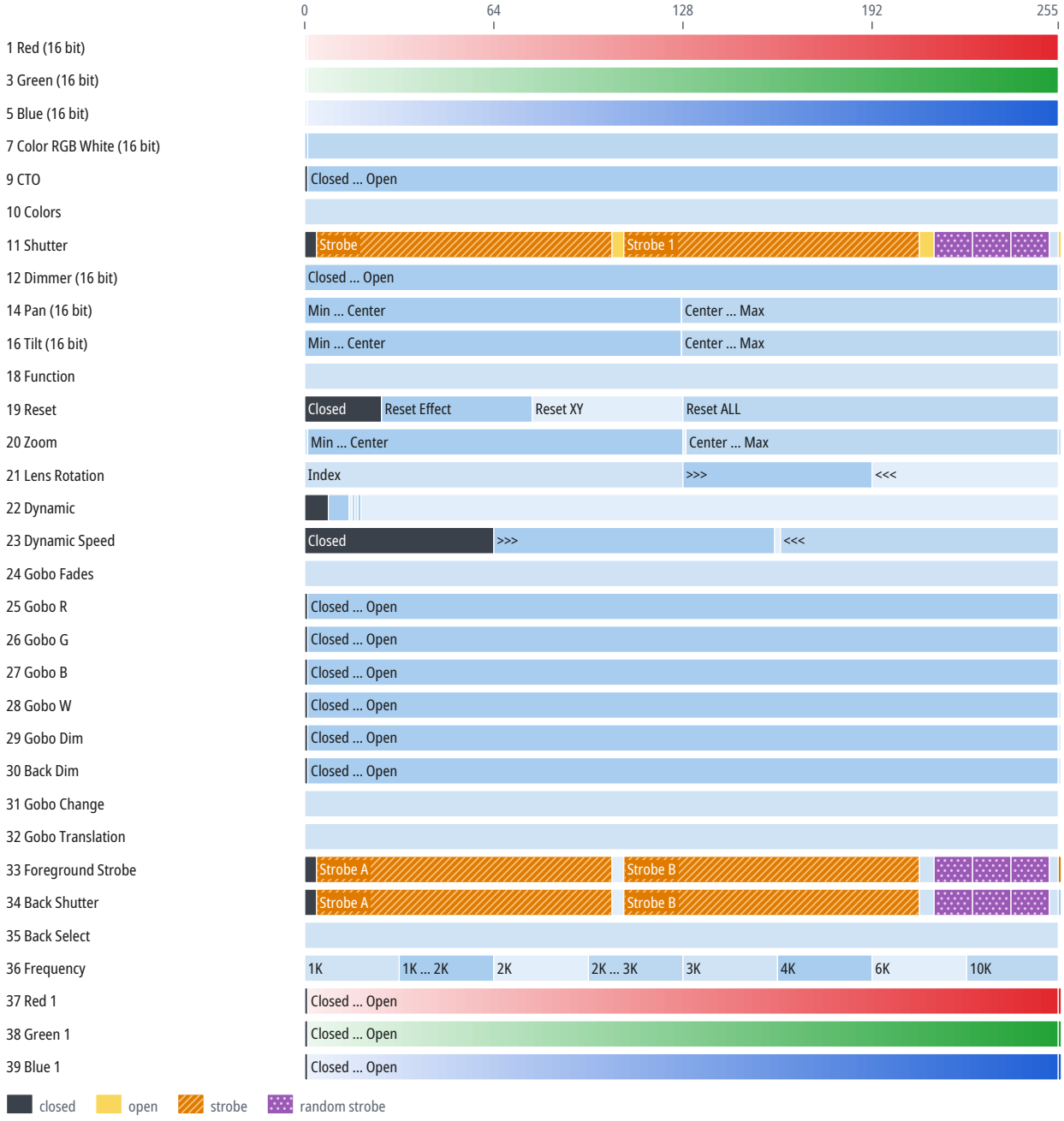
Cell	Red	Green	Blue	White	Cell	Red	Green	Blue	White
1	23	24	25	26	2	27	28	29	30
3	31	32	33	34	4	35	36	37	38
5	39	40	41	42	6	43	44	45	46
7	47	48	49	50	8	51	52	53	54
9	55	56	57	58	10	59	60	61	62
11	63	64	65	66	12	67	68	69	70
13	71	72	73	74	14	75	76	77	78
15	79	80	81	82	16	83	84	85	86
17	87	88	89	90	18	91	92	93	94
19	95	96	97	98	20	99	100	101	102
21	103	104	105	106	22	107	108	109	110
23	111	112	113	114	24	115	116	117	118
25	119	120	121	122	26	123	124	125	126
27	127	128	129	130	28	131	132	133	134
29	135	136	137	138	30	139	140	141	142
31	143	144	145	146	32	147	148	149	150
33	151	152	153	154	34	155	156	157	158
35	159	160	161	162	36	163	164	165	166
37	167	168	169	170					

Mode 147 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 11 Shutter at 104–107 or 208–212 or 252–255 “Open”; CH 12 Dimmer above 0; CH 33 Foreground Strobe at 255 “Open”; CH 34 Back Shutter at 255 “Open”. The GDTF file gives these values for a console's Highlight function: CH 11 Shutter 255, CH 12 Dimmer 255, CH 37 Red 255 (the same in each of the 37 cells), CH 38 Green 255 (the same in each of the 37 cells), CH 39 Blue 255 (the same in each of the 37 cells).

Channel functions at a glance



CH	Function	DMX	Description
1	Red		Same as CH 1 in the mode “133 Channel” (p. 16)
2	Red Fine	0–255	Fine adjustment of CH 1
3	Green		Same as CH 3 in the mode “133 Channel” (p. 16)

CH	Function	DMX	Description
4	Green Fine	0–255	Fine adjustment of CH 3
5	Blue		Same as CH 5 in the mode “133 Channel” (p. 16)
6	Blue Fine	0–255	Fine adjustment of CH 5
7	Color RGB White		Same as CH 7 in the mode “133 Channel” (p. 16)
8	Color RGB White Fine	0–255	Fine adjustment of CH 7
9	CTO		Same as CH 9 in the mode “22 Channel” (p. 9)
10	Colors	0–255	
11	Shutter		Same as CH 11 in the mode “22 Channel” (p. 9)
12	Dimmer		Same as CH 12 in the mode “22 Channel” (p. 10)
13	Dimmer Fine	0–255	Fine adjustment of CH 12
14	Pan		Same as CH 14 in the mode “22 Channel” (p. 10)
15	Pan Fine	0–255	Fine adjustment of CH 14
16	Tilt		Same as CH 16 in the mode “22 Channel” (p. 10)
17	Tilt Fine	0–255	Fine adjustment of CH 16
18	Function	0–255	
19	Reset		Same as CH 19 in the mode “22 Channel” (p. 10)
20	Zoom		Same as CH 20 in the mode “22 Channel” (p. 10)
21	Lens Rotation		Same as CH 21 in the mode “22 Channel” (p. 10)
22	Dynamic		Same as CH 22 in the mode “35 Channel” (p. 12)
23	Dynamic Speed		Same as CH 23 in the mode “35 Channel” (p. 12)
24	Gobo Fades	0–255	
25	Gobo R		Same as CH 25 in the mode “35 Channel” (p. 12)
26	Gobo G		Same as CH 26 in the mode “35 Channel” (p. 12)
27	Gobo B		Same as CH 27 in the mode “35 Channel” (p. 12)
28	Gobo W		Same as CH 28 in the mode “35 Channel” (p. 12)
29	Gobo Dim		Same as CH 29 in the mode “35 Channel” (p. 12)
30	Back Dim		Same as CH 30 in the mode “35 Channel” (p. 13)
31	Gobo Change	0–255	
32	Gobo Translation	0–255	
33	Foreground Strobe		Same as CH 33 in the mode “35 Channel” (p. 13)
34	Back Shutter		Same as CH 34 in the mode “35 Channel” (p. 13)
35	Back Select	0–255	
36	Frequency		Same as CH 22 in the mode “22 Channel” (p. 10)
37	Red 1	0	Closed
		1–254	Closed ... Open
		255	Open
38	Green 1	0	Closed
		1–254	Closed ... Open
		255	Open
39	Blue 1	0	Closed
		1–254	Closed ... Open
		255	Open

CH 37–147: 37 cells of 3 channels each. Every cell works as cell 1 in the table above (CH 37–39); the table below gives each cell's channel numbers.

Cell	Red	Green	Blue	Cell	Red	Green	Blue	Cell	Red	Green	Blue
1	37	38	39	2	40	41	42	3	43	44	45
4	46	47	48	5	49	50	51	6	52	53	54
7	55	56	57	8	58	59	60	9	61	62	63
10	64	65	66	11	67	68	69	12	70	71	72
13	73	74	75	14	76	77	78	15	79	80	81
16	82	83	84	17	85	86	87	18	88	89	90
19	91	92	93	20	94	95	96	21	97	98	99
22	100	101	102	23	103	104	105	24	106	107	108
25	109	110	111	26	112	113	114	27	115	116	117
28	118	119	120	29	121	122	123	30	124	125	126
31	127	128	129	32	130	131	132	33	133	134	135
34	136	137	138	35	139	140	141	36	142	143	144
37	145	146	147								

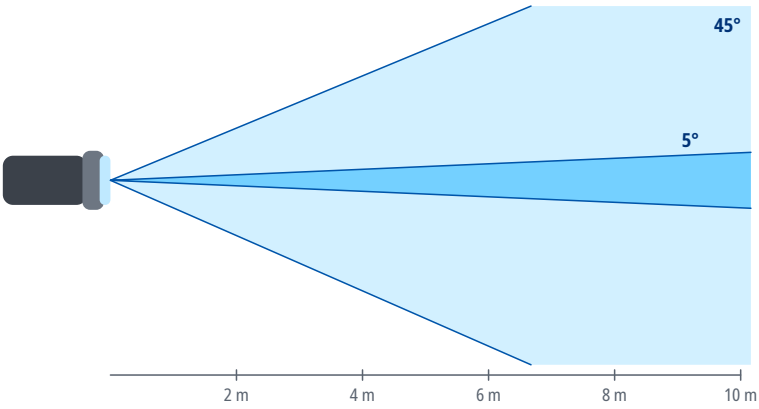
10 Technical specifications

Parameter	Value
Light source	discharge lamp
Zoom	5–45°
Pan	540°
Tilt	215°
Weight	25.9 kg
Operating temperature	-10 to 40 °C

Speeds and ranges

Parameter	Value
Color temperature range	3200–6500 K
Strobe frequency	5–25 Hz

Spot diameter



Distance	Ø 5°	Ø 45°
2 m	0.17 m	1.7 m
4 m	0.35 m	3.3 m
6 m	0.52 m	5 m
8 m	0.7 m	6.6 m
10 m	0.87 m	8.3 m
15 m	1.3 m	12.4 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.