DMX REFERENCE

MC15 FS

EK Lights



Manufacturer	EK Lights
GDTF file	EK_Lights_MC15_FS_146475.gdtf
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1 About this manual

This document describes the MC15 FS by EK Lights. It was compiled from the GDTF file EK_Lights_MC15_FS_146475.gdtf from the GDTF-Share library.

File revision: “260422”.

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 EK Lights; 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	47 kg

DMX modes

Mode	Channels	Units in one universe	First start addresses
RGBCAM 50CH	50	10	1, 51, 101, 151, ...
CMY 44CH	44	11	1, 45, 89, 133, ...
XY 42CH	42	12	1, 43, 85, 127, ...

No light? Check these channels

- RGBCAM 50CH: CH 5 Shutter at 0–10, 83–93, 164–174 or 245–255 “Open”
- CMY 44CH: CH 5 Shutter at 0–10, 83–93, 164–174 or 245–255 “Open”
- XY 42CH: CH 5 Shutter at 0–10, 83–93, 164–174 or 245–255 “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

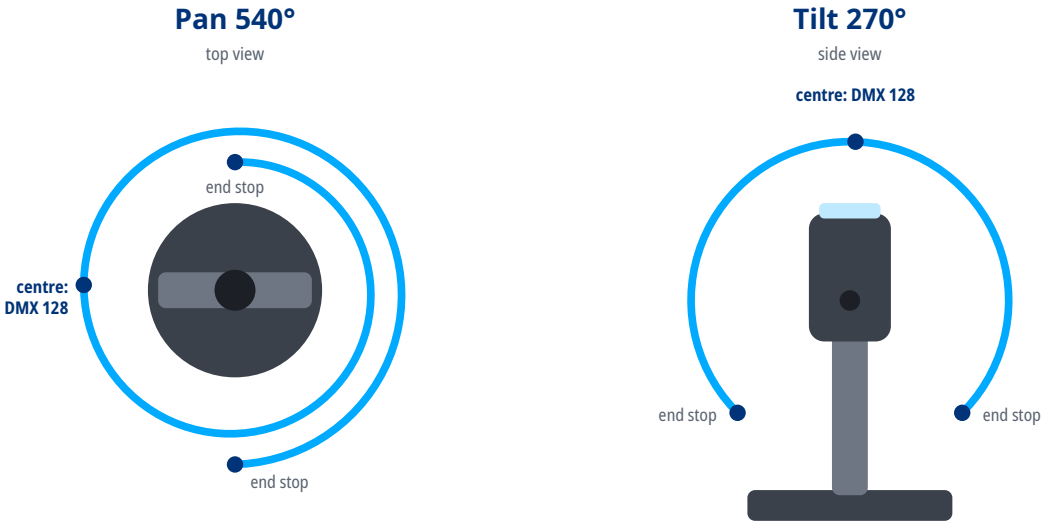
- Strobe and fast flashing light effects can trigger epileptic seizures in susceptible people (photosensitive epilepsy) and can cause nausea or disorientation.
- Inform the audience and performers in advance that strobe effects will be used, for example with a notice at the entrance, and do not use them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

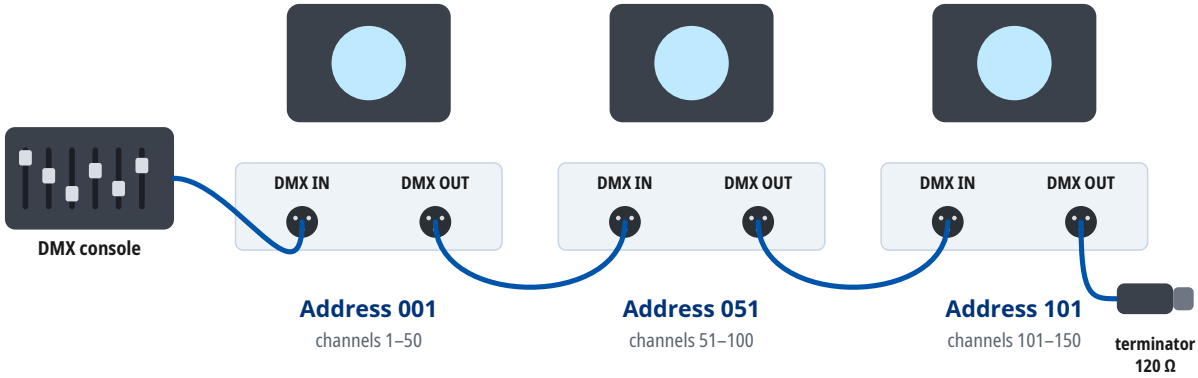
- Rigging must be carried out only by qualified persons in accordance with applicable regulations, in particular those for work at height.
- The supporting structure and fixings must safely carry the weight of all suspended devices; verify their load capacity in advance.
- Weight of the device: 47 kg.
- 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 RGBCAM 50CH: every unit occupies 50 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

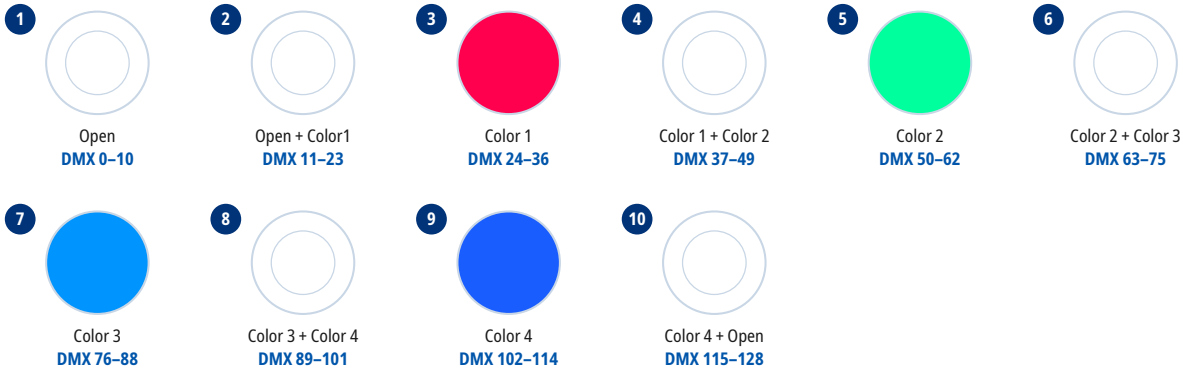
- The device occupies as many consecutive channels in the DMX universe as the selected DMX mode uses, starting at the set start address.
- Number of channels occupied in the DMX mode “RGBCAM 50CH”: 50.
- Choose start addresses so that the channels of individual devices do not overlap and the last occupied 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 “RGBCAM 50CH”, you can use, for example, the start addresses 1, 51, 101, 151.
- 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

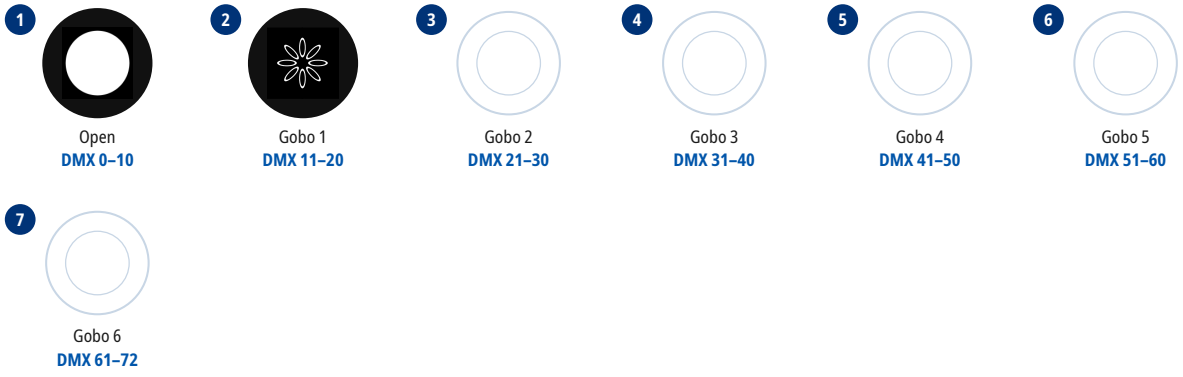
Functions in each DMX mode

	RGBCAM 50CH 50 channels	CMY 44CH 44 channels	XY 42CH 42 channels
Pan / Tilt	1, 3	1, 3	1, 3
Dimmer	6	6	6
Shutter / strobe	5	5	5
Color mixing	6× (11–21)	11, 13, 15	
Color temperature	8	8	8
Color wheel	23	17	15
Gobo wheel	24, 26	18, 20	16, 18
Gobo rotation	25, 27	19, 21	17, 19
Prism	28–31	22–25	20–23
Frost	32	26	24
Zoom	38	32	30
Focus	36, 40	30, 34	28, 32
Iris	35	29	27
Animation wheel	33, 34	27, 28	25, 26

Color wheel 1



Gobo wheel 1



Gobo wheel 2

1 
Open
DMX 0–10

2 
Gobo 1
DMX 11–20

3
Gobo 2
DMX 21–30

4
Gobo 3
DMX 31–40

5
Gobo 4
DMX 41–50

6
Gobo 5
DMX 51–60

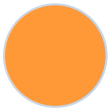
7
Gobo 6
DMX 61–72

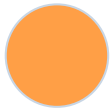
Color wheel 2

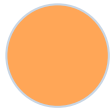
1 
1800K
DMX 0

2 
1800K - 1900K
DMX 1–3

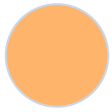
3 
1900K - 2000K
DMX 4–6

4 
2000K - 2100K
DMX 7–9

5 
2100K - 2200K
DMX 10–12

6 
2200K - 2300K
DMX 13–15

7 
2300K - 2400K
DMX 16–18

8 
2400K - 2500K
DMX 19–21

9 
2500K - 2600K
DMX 22–24

10
2600K - 2700K
DMX 25–27

11
2700K - 2800K
DMX 28–30

12
2800K - 2900K
DMX 31–33

13 
2900K - 3000K
DMX 34–36

14 
3000K - 3100K
DMX 37–39

15 
3100K - 3200K
DMX 40–42

16
3200K - 3300K
DMX 43–45

17
3300K - 3400K
DMX 46–48

18
3400K - 3500K
DMX 49–51

19
3500K - 3600K
DMX 52–54

20
3600K - 3700K
DMX 55–57

21
3700K - 3800K
DMX 58–60

22
3800K - 3900K
DMX 61–63

23
3900K - 4000K
DMX 64–66

24
4000K - 4100K
DMX 67–69

25
4100K - 4200K
DMX 70–72

26
4200K - 4300K
DMX 73–75

27
4300K - 4400K
DMX 76–78

28
4400K - 4500K
DMX 79–81

29
4500K - 4600K
DMX 82–84

30
4600K - 4700K
DMX 85–87

31
4700K - 4800K
DMX 88–90

32
4800K - 4900K
DMX 91–93

33
4900K - 5000K
DMX 94–96

34
5000K - 5100K
DMX 97–99

35
5100K - 5200K
DMX 100–102

36
5200K - 5300K
DMX 103–105

37
5300K - 5400K
DMX 106–108

38
5400K - 5500K
DMX 109–111

39
5500K - 5600K
DMX 112–114

40
5600K - 5700K
DMX 115–117

41
5700K - 5800K
DMX 118–120

42
5800K - 5900K
DMX 121–123

43
5900K - 6000K
DMX 124–127

44
6000K - 6500K
DMX 128–144

45
6500K - 7000K
DMX 145–160

46
7000K - 7500K
DMX 161–176

47
7500K - 8000K
DMX 177–192

48
8000K - 8500K
DMX 193–208

49
8500K - 9000K
DMX 209–224

50
9000K - 9500K
DMX 225–240

51 
9500K - 10000K
DMX 241–255

Prism 1

1
Open
DMX 0–127

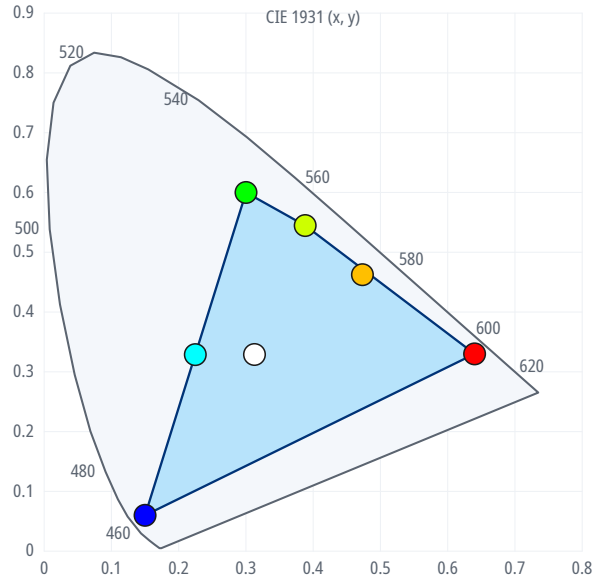
2 
4 facets
Prism
DMX 128–255

Prism 2

1
Open
DMX 0–127

2 
6 facets
Prism
DMX 128–255

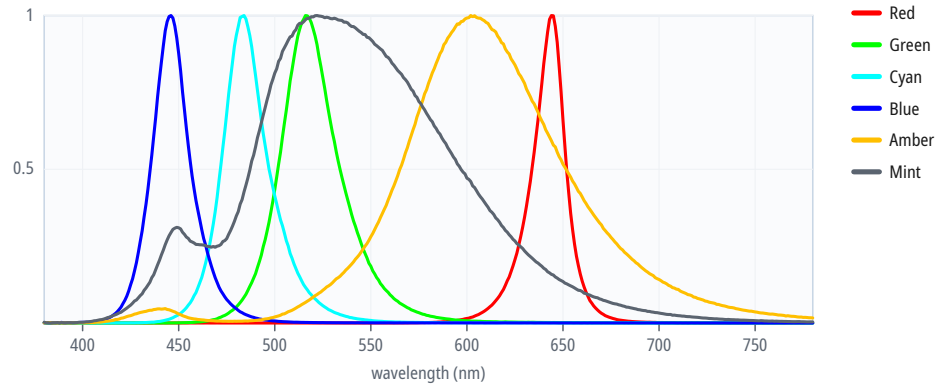
LED colors and the colors they mix



LED	x	y	nm
Red	0.640	0.330	630
Green	0.300	0.600	520
Cyan	0.225	0.329	483
Blue	0.150	0.060	451
Amber	0.473	0.463	588
Mint	0.388	0.545	550
Emitter 1	0.313	0.329	

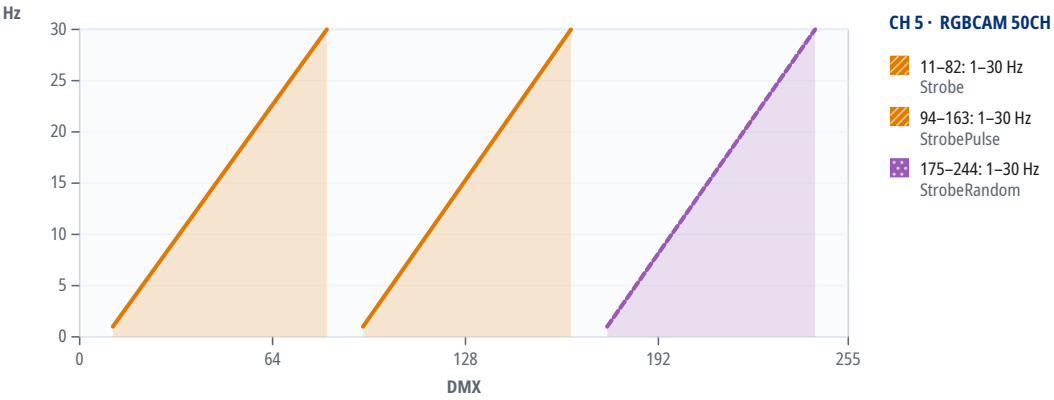
The shaded area holds the colors the LEDs can mix; the dots are the LED colors the GDTF file states.

Spectra of the light sources



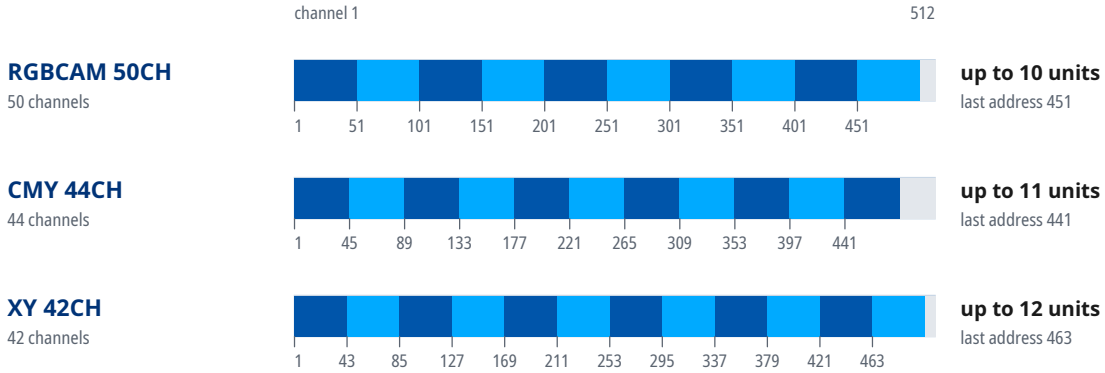
Relative spectrum of each light source as the GDTF file states it; each curve is scaled to its own maximum.

Strobe rate



9 DMX channels

Units in one DMX universe



Start addresses of 20 units in the mode “RGBCAM 50CH”

Unit	Start address	Unit	Start address	Unit	Start address	Unit	Start address
1	1	6	251	11	U2 · 1	16	U2 · 251
2	51	7	301	12	U2 · 51	17	U2 · 301
3	101	8	351	13	U2 · 101	18	U2 · 351
4	151	9	401	14	U2 · 151	19	U2 · 401
5	201	10	451	15	U2 · 201	20	U2 · 451

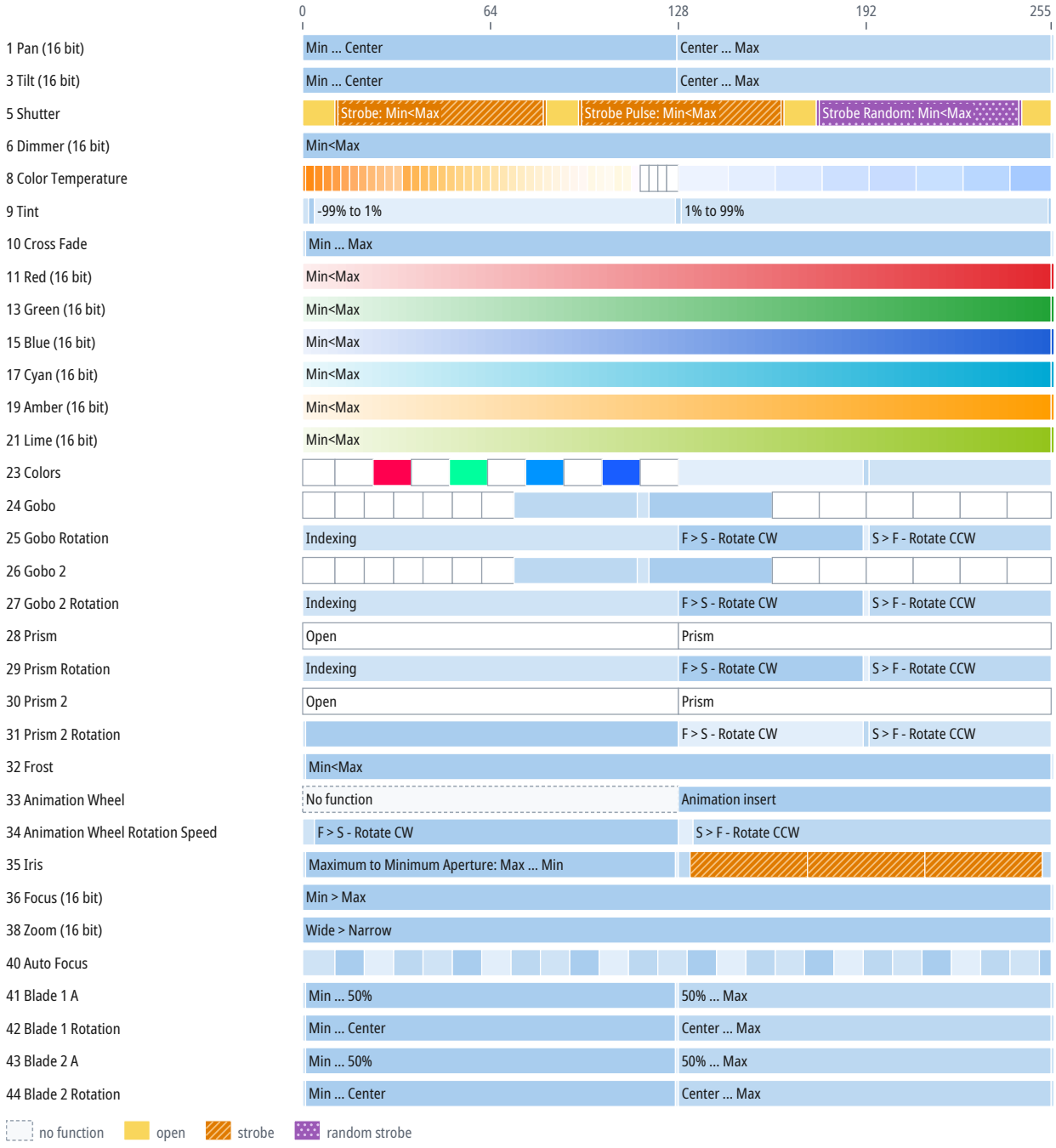
Where a DMX universe is full, the next units continue in the next universe: “U2 · 1” is address 1 in the second universe, counted from the universe of the first unit.

Mode RGBCAM 50CH

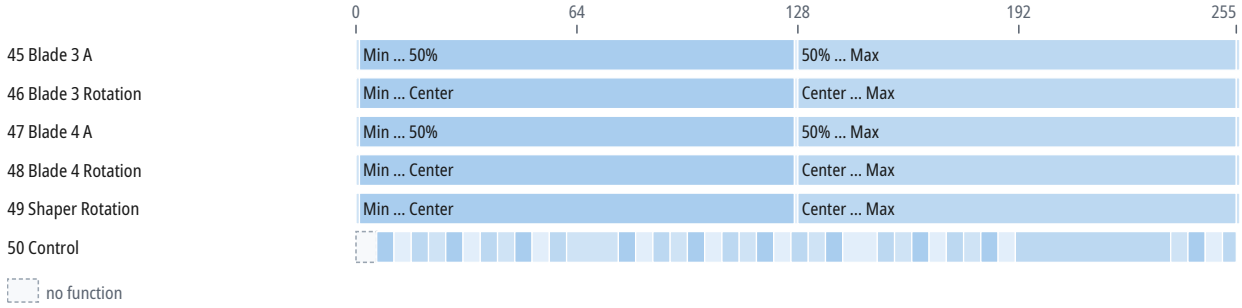
16-bit parameters use two channels, coarse and fine: value = 256 × coarse value + fine value.

If the device receives DMX in this mode but gives no light, check these channels: CH 5 Shutter at 0–10, 83–93, 164–174 or 245–255 “Open”. The GDTF file gives these values for a console's Highlight function: CH 6 Dimmer 255, CH 11 Red 255, CH 13 Green 255, CH 15 Blue 255, CH 17 Cyan 255, CH 19 Amber 255, CH 21 Lime 255.

Channel functions at a glance



Channel functions at a glance



CH	Function	DMX	Description
1	Pan	0–127	Min ... Center
		128–255	Center ... Max
		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	Shutter	0–10	Open
		11	Strobe: Min
		12–81	Strobe: Min<Max
		82	Strobe: Max
		83–93	Open
		94	Strobe Pulse: Min
		95–162	Strobe Pulse: Min<Max
		163	Strobe Pulse: Max
		164–174	Open
		175	Strobe Random: Min
		176–243	Strobe Random: Min<Max
		244	Strobe Random: Max
		245–255	Open
6	Dimmer	0	Min
		0–255	Min<Max
		255	Max
7	Dimmer Fine	0–255	Fine adjustment of CH 6
8	Color Temperature	0	1800K
		1–3	1800K - 1900K (2820–2861 K)
		4–6	1900K - 2000K (2882–2922 K)
		7–9	2000K - 2100K (2943–2984 K)
		10–12	2100K - 2200K (3004–3045 K)
		13–15	2200K - 2300K (3065–3106 K)
		16–18	2300K - 2400K (3126–3167 K)

CH	Function	DMX	Description
8	Color Temperature (continued)	19–21	2400K - 2500K (3187–3228 K)
		22–24	2500K - 2600K (3249–3289 K)
		25–27	2600K - 2700K (3310–3351 K)
		28–30	2700K - 2800K (3371–3412 K)
		31–33	2800K - 2900K (3432–3473 K)
		34–36	2900K - 3000K (3493–3534 K)
		37–39	3000K - 3100K (3555–3595 K)
		40–42	3100K - 3200K (3616–3656 K)
		43–45	3200K - 3300K (3677–3718 K)
		46–48	3300K - 3400K (3738–3779 K)
		49–51	3400K - 3500K (3799–3840 K)
		52–54	3500K - 3600K (3860–3901 K)
		55–57	3600K - 3700K (3922–3962 K)
		58–60	3700K - 3800K (3983–4024 K)
		61–63	3800K - 3900K (4044–4085 K)
		64–66	3900K - 4000K (4105–4146 K)
		67–69	4000K - 4100K (4166–4207 K)
		70–72	4100K - 4200K (4227–4268 K)
		73–75	4200K - 4300K (4289–4329 K)
		76–78	4300K - 4400K (4350–4391 K)
		79–81	4400K - 4500K (4411–4452 K)
		82–84	4500K - 4600K (4472–4513 K)
		85–87	4600K - 4700K (4533–4574 K)
		88–90	4700K - 4800K (4595–4635 K)
		91–93	4800K - 4900K (4656–4696 K)
		94–96	4900K - 5000K (4717–4758 K)
		97–99	5000K - 5100K (4778–4819 K)
		100–102	5100K - 5200K (4839–4880 K)
		103–105	5200K - 5300K (4900–4941 K)
		106–108	5300K - 5400K (4962–5002 K)
		109–111	5400K - 5500K (5023–5064 K)
		112–114	5500K - 5600K (5084–5125 K)
		115–117	5600K - 5700K (5145–5186 K)
		118–120	5700K - 5800K (5206–5247 K)
		121–123	5800K - 5900K (5267–5308 K)
		124–127	5900K - 6000K (5329–5390 K)
		128–144	6000K - 6500K (5410–5736 K)
		145–160	6500K - 7000K (5757–6063 K)
		161–176	7000K - 7500K (6083–6389 K)
		177–192	7500K - 8000K (6409–6715 K)
		193–208	8000K - 8500K (6736–7042 K)
		209–224	8500K - 9000K (7062–7368 K)

CH	Function	DMX	Description
8	Color Temperature (continued)	225–240	9000K - 9500K (7388–7694 K)
		241–255	9500K - 10000K (7715–8000 K)
9	Tint	0–1	No Effect
		2–3	Full Minus Green
		4–126	-99% to 1%
		127–128	No Effect
		129–253	1% to 99%
		254–255	Full Plus Green
10	Cross Fade	0	Min
		1–254	Min ... Max
		255	Max
11	Red	0	Min
		0–255	Min<Max
		255	Max
12	Red Fine	0–255	Fine adjustment of CH 11
13	Green	0	Min
		0–255	Min<Max
		255	Max
14	Green Fine	0–255	Fine adjustment of CH 13
15	Blue	0	Min
		0–255	Min<Max
		255	Max
16	Blue Fine	0–255	Fine adjustment of CH 15
17	Cyan	0	Min
		0–255	Min<Max
		255	Max
18	Cyan Fine	0–255	Fine adjustment of CH 17
19	Amber	0	Min
		0–255	Min<Max
		255	Max
20	Amber Fine	0–255	Fine adjustment of CH 19
21	Lime	0	Min
		0–255	Min<Max
		255	Max
22	Lime Fine	0–255	Fine adjustment of CH 21
23	Colors	0–10	Color Wheel: Open
		11–23	Open + Color1
		24–36	Color 1
		37–49	Color 1 + Color 2
		50–62	Color 2
		63–75	Color 2 + Color 3
		76–88	Color 3

CH	Function	DMX	Description
23	Colors (continued)	89–101	Color 3 + Color 4
		102–114	Color 4
		115–127	Color 4 + Open
		128–190	Color Wheel Spin: Fast to Slow(Forward Spin) (720–0.1 °/s)
		191–192	Color Wheel Spin: Stop (Stop Rotation)
		193–255	Color Wheel Spin: Slow to Fast(Revers Spin) (0.1–720 °/s)
24	Gobo	0–10	Gobo: Open
		11–20	Gobo 1
		21–30	Gobo 2
		31–40	Gobo 3
		41–50	Gobo 4
		51–60	Gobo 5
		61–71	Gobo 6
		72–113	Gobo 1 Wheel Spin: Fast to Slow(Revers Spin) (720–0.1 °/s)
		114–117	Gobo 1 Wheel Spin: Stop (Stop Rotation)
		118–159	Gobo 1 Wheel Spin: Slow to Fast(Forward Spin) (0.1–720 °/s)
		160–175	Gobo1 Shak (0.1–10 Hz)
		176–191	Gobo2 Shak (0.1–10 Hz)
		192–207	Gobo3 Shak (0.1–10 Hz)
		208–223	Gobo4 Shak (0.1–10 Hz)
		224–239	Gobo5 Shak (0.1–10 Hz)
		240–255	Gobo6 Shak (0.1–10 Hz)
25	Gobo Rotation	0–127	Indexing (540°)
		128–190	F > S - Rotate CW (720–0.1 °/s)
		191–192	Gobo 1 Pos Rotate: Stop
		193–255	S > F - Rotate CCW (0.1–720 °/s)
26	Gobo 2	0–10	Gobo: Open
		11–20	Gobo 1
		21–30	Gobo 2
		31–40	Gobo 3
		41–50	Gobo 4
		51–60	Gobo 5
		61–71	Gobo 6
		72–113	Gobo 2 Wheel Spin: Fast to Slow(Revers Spin) (720–0.1 °/s)
		114–117	Gobo 2 Wheel Spin: Stop (Stop Rotation)
		118–159	Gobo 2 Wheel Spin: Slow to Fast(Forward Spin) (0.1–720 °/s)
		160–175	Gobo1 Shak (0.1–10 Hz)
		176–191	Gobo2 Shak (0.1–10 Hz)
		192–207	Gobo3 Shak (0.1–10 Hz)
		208–223	Gobo4 Shak (0.1–10 Hz)
		224–239	Gobo5 Shak (0.1–10 Hz)
		240–255	Gobo6 Shak (0.1–10 Hz)

CH	Function	DMX	Description
27	Gobo 2 Rotation	0–127	Indexing (540°)
		128–190	F > S - Rotate CW (720–0.1 °/s)
		191–192	Gobo 2 Pos Rotate: Stop
		193–255	S > F - Rotate CCW (0.1–720 °/s)
28	Prism	0–127	Open
		128–255	Prism
29	Prism Rotation	0–127	Indexing (540°)
		128–190	F > S - Rotate CW (270–0.1 °/s)
		191–192	Prism 1 Pos Rotate: Stop
		193–255	S > F - Rotate CCW (0.1–270 °/s)
30	Prism 2	0–127	Open
		128–255	Prism
31	Prism 2 Rotation	0	Indexing
		1–127	Prism 2 Pos
		128–190	F > S - Rotate CW (270–0.1 °/s)
		191–192	Prism 2 Pos Rotate: Stop
		193–255	S > F - Rotate CCW (0.1–270 °/s)
32	Frost	0	Min
		1–254	Min<Max
		255	Max
33	Animation Wheel	0–127	No function
		128–255	Animation insert
34	Animation Wheel Rotation Speed		Animation Wheel Pos
		0–3	Open
		4–127	F > S - Rotate CW (655–0.1 °/s)
		128–132	Stop
		133–255	S > F - Rotate CCW (0.1–655 °/s)
35	Iris	0	Maximum to Minimum Aperture: Max
		1–126	Maximum to Minimum Aperture: Max ... Min
		127	Maximum to Minimum Aperture: Min
		128–131	Maximum Aperture
		132–171	Slow to Fast Pulsation
		172–211	Slow to Fast Pulsation Fast Opening
		212–251	Slow to Fast Pulsation Fast Closing
		252–255	Maximum Aperture
36	Focus	0	Min
		0–255	Min > Max
		255	Max
37	Focus Fine	0–255	Fine adjustment of CH 36
38	Zoom	0	Wide
		0–255	Wide > Narrow
		255	Narrow

CH	Function	DMX	Description
39	Zoom Fine	0–255	Fine adjustment of CH 38
40	Auto Focus	0–10	Auto Focus OFF
		11–20	Hole: 4 metres
		21–30	Hole: 6 metres
		31–40	Hole: 8 metres
		41–50	Hole: 10 metres
		51–60	Hole: 12 metres
		61–70	Hole: 14 metres
		71–80	Hole: 16 metres
		81–90	Hole: 18 metres
		91–100	RGobo: 4 metres
		101–110	RGobo: 6 metres
		111–120	RGobo: 8 metres
		121–130	RGobo: 10 metres
		131–140	RGobo: 12 metres
		141–150	RGobo: 14 metres
		151–160	RGobo: 16 metres
		161–170	RGobo: 18 metres
		171–180	RGobo: 4 metres
		181–190	RGobo: 6 metres
		191–200	RGobo: 8 metres
		201–210	RGobo: 10 metres
		211–220	RGobo: 12 metres
		221–230	RGobo: 14 metres
		231–240	RGobo: 16 metres
		241–250	RGobo: 18 metres
		251–255	Auto Focus OFF
41	Blade 1 A	0	Min
		1–126	Min ... 50%
		127	50%
		128–254	50% ... Max
		255	Max
42	Blade 1 Rotation	0	Min
		1–126	Min ... Center
		127	Center
		128–254	Center ... Max
		255	Max
43	Blade 2 A	0	Min
		1–126	Min ... 50%
		127	50%
		128–254	50% ... Max
		255	Max

CH	Function	DMX	Description
44	Blade 2 Rotation	0	Min
		1–126	Min ... Center
		127	Center
		128–254	Center ... Max
		255	Max
45	Blade 3 A	0	Min
		1–126	Min ... 50%
		127	50%
		128–254	50% ... Max
		255	Max
46	Blade 3 Rotation	0	Min
		1–126	Min ... Center
		127	Center
		128–254	Center ... Max
		255	Max
47	Blade 4 A	0	Min
		1–126	Min ... 50%
		127	50%
		128–254	50% ... Max
		255	Max
48	Blade 4 Rotation	0	Min
		1–126	Min ... Center
		127	Center
		128–254	Center ... Max
		255	Max
49	Shaper Rotation	0	Min
		1–126	Min ... Center
		127	Center
		128–254	Center ... Max
		255	Max
50	Control	0–5	No Function
		6–10	Dimmer Mode Auto
		11–15	Dimmer Mode Off
		16–20	Dimmer Mode 1
		21–25	Dimmer Mode 2
		26–30	Dimmer Mode 3
		31–35	Linear
		36–40	Square
		41–45	Inverse Square
		46–50	Curve S
		51–55	LEDFrequency: Reserve
		56–60	1200 Hz

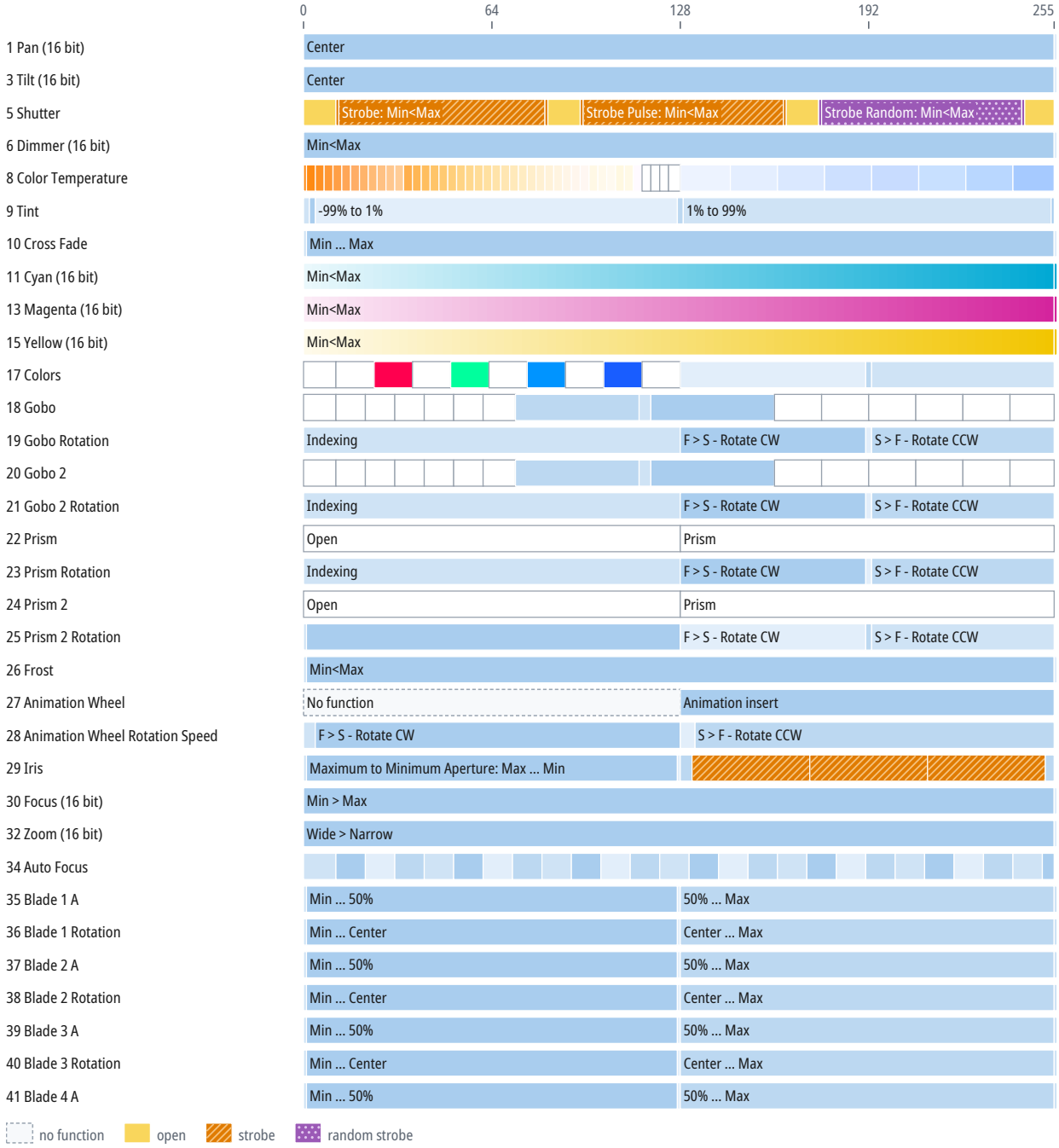
CH	Function	DMX	Description
50	Control (continued)	61–75	LEDFrequency: Reserve
		76–80	25000Hz
		81–85	Pan Inverse Off
		86–90	Pan Inverse On
		91–95	Tilt Inverse Off
		96–100	Tilt Inverse On
		101–105	Swap Pan Tilt Off
		106–110	Swap Pan Tilt On
		111–115	Fan Auto
		116–120	Fan On
		121–125	Fan Off
		126–130	Fan Silent
		131–135	Color Calibration Off
		136–140	Factory Calibration
		141–150	Reserve
		151–155	Red Shift ON
		156–160	Red Shift OFF
		161–165	Framing Shutter Independent Mode
		166–170	Framing Shutter Mixed Mode
		171–175	All Control
		176–180	XY Control
		181–185	ALL follow spot XY off
		186–190	ALL follow spot Follow spot priority
		191–240	Reserve
		241–245	Head Reset
		246–250	Pan/Tilt Reset
		251–255	Complete Reset

Mode CMY 44CH

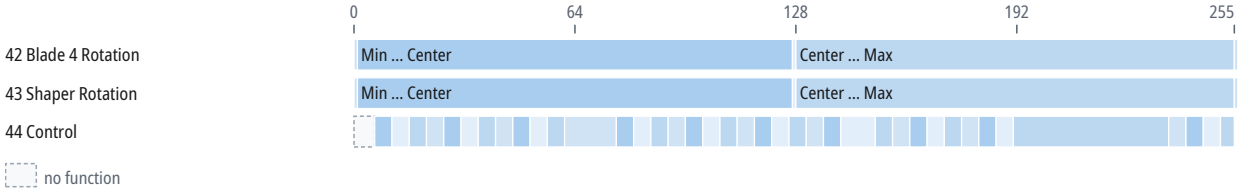
16-bit parameters use two channels, coarse and fine: value = 256 × coarse value + fine value.

If the device receives DMX in this mode but gives no light, check these channels: CH 5 Shutter at 0–10, 83–93, 164–174 or 245–255 “Open”. The GDTF file gives these values for a console's Highlight function: CH 6 Dimmer 255, CH 11 Cyan 0, CH 13 Magenta 0, CH 15 Yellow 0.

Channel functions at a glance



Channel functions at a glance



CH	Function	DMX	Description
1	Pan	0	Min
		0–255	Center
		255	Max
2	Pan Fine	0–255	Fine adjustment of CH 1
3	Tilt	0	Min
		0–255	Center
		255	Max
4	Tilt Fine	0–255	Fine adjustment of CH 3
5	Shutter		Same as CH 5 in the mode “RGBCAM 50CH” (p. 13)
6	Dimmer		Same as CH 6 in the mode “RGBCAM 50CH” (p. 13)
7	Dimmer Fine	0–255	Fine adjustment of CH 6
8	Color Temperature		Same as CH 8 in the mode “RGBCAM 50CH” (p. 13)
9	Tint		Same as CH 9 in the mode “RGBCAM 50CH” (p. 15)
10	Cross Fade		Same as CH 10 in the mode “RGBCAM 50CH” (p. 15)
11	Cyan	0	Min
		0–255	Min<Max
		255	Max
12	Cyan Fine	0–255	Fine adjustment of CH 11
13	Magenta	0	Min
		0–255	Min<Max
		255	Max
14	Magenta Fine	0–255	Fine adjustment of CH 13
15	Yellow	0	Min
		0–255	Min<Max
		255	Max
16	Yellow Fine	0–255	Fine adjustment of CH 15
17	Colors		Same as CH 23 in the mode “RGBCAM 50CH” (p. 15)
18	Gobo		Same as CH 24 in the mode “RGBCAM 50CH” (p. 16)
19	Gobo Rotation		Same as CH 25 in the mode “RGBCAM 50CH” (p. 16)
20	Gobo 2		Same as CH 26 in the mode “RGBCAM 50CH” (p. 16)
21	Gobo 2 Rotation		Same as CH 27 in the mode “RGBCAM 50CH” (p. 17)
22	Prism		Same as CH 28 in the mode “RGBCAM 50CH” (p. 17)
23	Prism Rotation		Same as CH 29 in the mode “RGBCAM 50CH” (p. 17)
24	Prism 2		Same as CH 30 in the mode “RGBCAM 50CH” (p. 17)
25	Prism 2 Rotation		Same as CH 31 in the mode “RGBCAM 50CH” (p. 17)

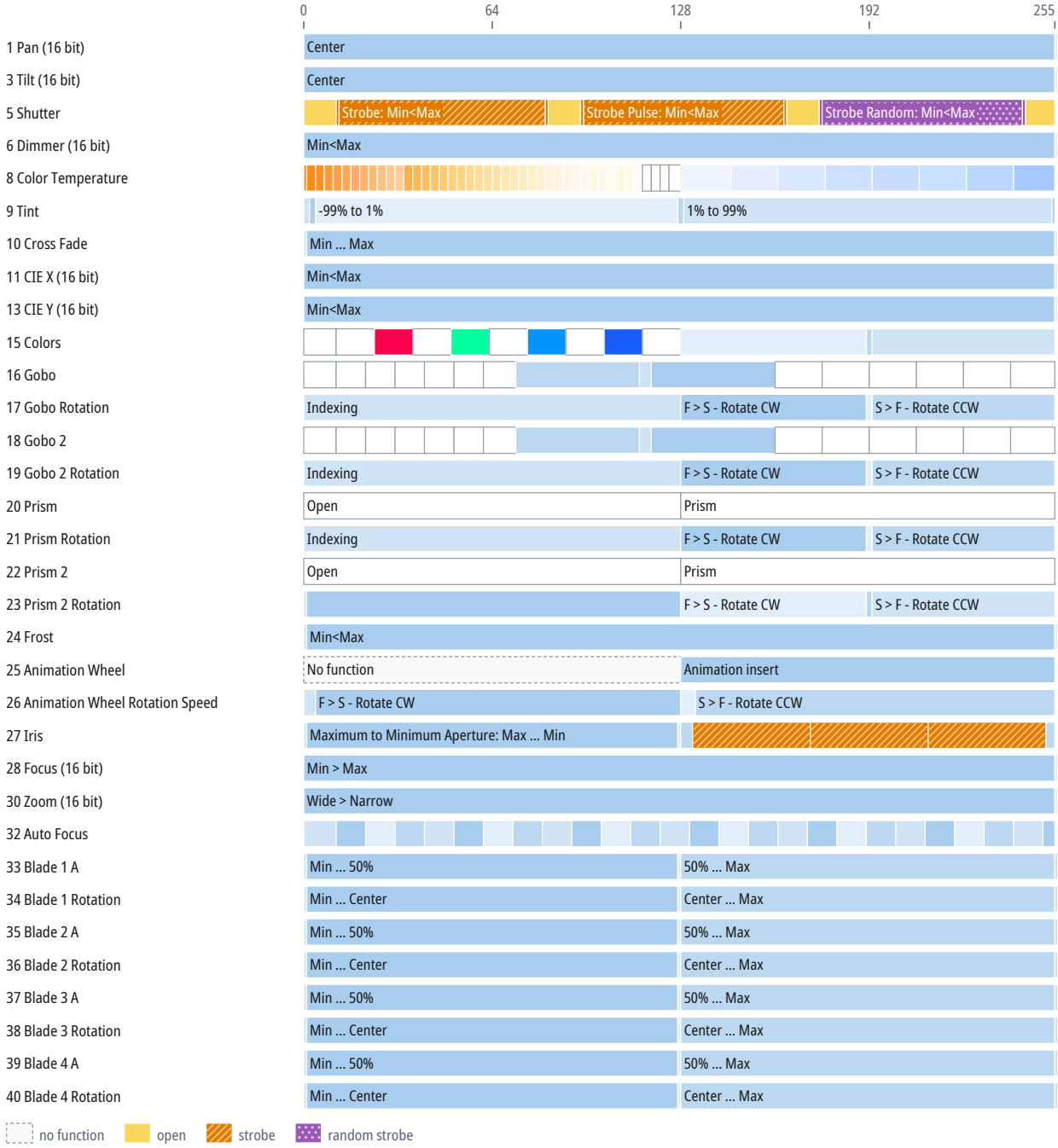
CH	Function	DMX	Description
26	Frost		Same as CH 32 in the mode “RGBCAM 50CH” (p. 17)
27	Animation Wheel		Same as CH 33 in the mode “RGBCAM 50CH” (p. 17)
28	Animation Wheel Rotation Speed		Same as CH 34 in the mode “RGBCAM 50CH” (p. 17)
29	Iris		Same as CH 35 in the mode “RGBCAM 50CH” (p. 17)
30	Focus		Same as CH 36 in the mode “RGBCAM 50CH” (p. 17)
31	Focus Fine	0–255	Fine adjustment of CH 30
32	Zoom		Same as CH 38 in the mode “RGBCAM 50CH” (p. 17)
33	Zoom Fine	0–255	Fine adjustment of CH 32
34	Auto Focus		Same as CH 40 in the mode “RGBCAM 50CH” (p. 18)
35	Blade 1 A		Same as CH 41 in the mode “RGBCAM 50CH” (p. 18)
36	Blade 1 Rotation		Same as CH 42 in the mode “RGBCAM 50CH” (p. 18)
37	Blade 2 A		Same as CH 43 in the mode “RGBCAM 50CH” (p. 18)
38	Blade 2 Rotation		Same as CH 44 in the mode “RGBCAM 50CH” (p. 19)
39	Blade 3 A		Same as CH 45 in the mode “RGBCAM 50CH” (p. 19)
40	Blade 3 Rotation		Same as CH 46 in the mode “RGBCAM 50CH” (p. 19)
41	Blade 4 A		Same as CH 47 in the mode “RGBCAM 50CH” (p. 19)
42	Blade 4 Rotation		Same as CH 48 in the mode “RGBCAM 50CH” (p. 19)
43	Shaper Rotation		Same as CH 49 in the mode “RGBCAM 50CH” (p. 19)
44	Control		Same as CH 50 in the mode “RGBCAM 50CH” (p. 19)

Mode XY 42CH

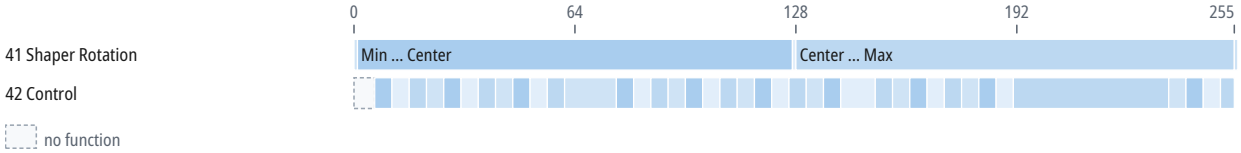
16-bit parameters use two channels, coarse and fine: value = 256 × coarse value + fine value.

If the device receives DMX in this mode but gives no light, check these channels: CH 5 Shutter at 0–10, 83–93, 164–174 or 245–255 “Open”. The GDTF file gives these values for a console's Highlight function: CH 6 Dimmer 255.

Channel functions at a glance



Channel functions at a glance



CH	Function	DMX	Description
1	Pan		Same as CH 1 in the mode “CMY 44CH” (p. 22)
2	Pan Fine	0–255	Fine adjustment of CH 1
3	Tilt		Same as CH 3 in the mode “CMY 44CH” (p. 22)
4	Tilt Fine	0–255	Fine adjustment of CH 3
5	Shutter		Same as CH 5 in the mode “RGBCAM 50CH” (p. 13)
6	Dimmer		Same as CH 6 in the mode “RGBCAM 50CH” (p. 13)
7	Dimmer Fine	0–255	Fine adjustment of CH 6
8	Color Temperature		Same as CH 8 in the mode “RGBCAM 50CH” (p. 13)
9	Tint		Same as CH 9 in the mode “RGBCAM 50CH” (p. 15)
10	Cross Fade		Same as CH 10 in the mode “RGBCAM 50CH” (p. 15)
11	CIE X	0	Min
		0–255	Min<Max
		255	Max
12	CIE X Fine	0–255	Fine adjustment of CH 11
13	CIE Y	0	Min
		0–255	Min<Max
		255	Max
14	CIE Y Fine	0–255	Fine adjustment of CH 13
15	Colors		Same as CH 23 in the mode “RGBCAM 50CH” (p. 15)
16	Gobo		Same as CH 24 in the mode “RGBCAM 50CH” (p. 16)
17	Gobo Rotation		Same as CH 25 in the mode “RGBCAM 50CH” (p. 16)
18	Gobo 2		Same as CH 26 in the mode “RGBCAM 50CH” (p. 16)
19	Gobo 2 Rotation		Same as CH 27 in the mode “RGBCAM 50CH” (p. 17)
20	Prism		Same as CH 28 in the mode “RGBCAM 50CH” (p. 17)
21	Prism Rotation		Same as CH 29 in the mode “RGBCAM 50CH” (p. 17)
22	Prism 2		Same as CH 30 in the mode “RGBCAM 50CH” (p. 17)
23	Prism 2 Rotation		Same as CH 31 in the mode “RGBCAM 50CH” (p. 17)
24	Frost		Same as CH 32 in the mode “RGBCAM 50CH” (p. 17)
25	Animation Wheel		Same as CH 33 in the mode “RGBCAM 50CH” (p. 17)
26	Animation Wheel Rotation Speed		Same as CH 34 in the mode “RGBCAM 50CH” (p. 17)
27	Iris		Same as CH 35 in the mode “RGBCAM 50CH” (p. 17)
28	Focus		Same as CH 36 in the mode “RGBCAM 50CH” (p. 17)
29	Focus Fine	0–255	Fine adjustment of CH 28
30	Zoom		Same as CH 38 in the mode “RGBCAM 50CH” (p. 17)
31	Zoom Fine	0–255	Fine adjustment of CH 30

CH	Function	DMX	Description
32	Auto Focus		Same as CH 40 in the mode “RGBCAM 50CH” (p. 18)
33	Blade 1 A		Same as CH 41 in the mode “RGBCAM 50CH” (p. 18)
34	Blade 1 Rotation		Same as CH 42 in the mode “RGBCAM 50CH” (p. 18)
35	Blade 2 A		Same as CH 43 in the mode “RGBCAM 50CH” (p. 18)
36	Blade 2 Rotation		Same as CH 44 in the mode “RGBCAM 50CH” (p. 19)
37	Blade 3 A		Same as CH 45 in the mode “RGBCAM 50CH” (p. 19)
38	Blade 3 Rotation		Same as CH 46 in the mode “RGBCAM 50CH” (p. 19)
39	Blade 4 A		Same as CH 47 in the mode “RGBCAM 50CH” (p. 19)
40	Blade 4 Rotation		Same as CH 48 in the mode “RGBCAM 50CH” (p. 19)
41	Shaper Rotation		Same as CH 49 in the mode “RGBCAM 50CH” (p. 19)
42	Control		Same as CH 50 in the mode “RGBCAM 50CH” (p. 19)

10 Technical specifications

Parameter	Value
Light	
Light source	LED
LED power	2,100 W
Luminous flux	34,664 lm
Color temperature	8,000 K
Color rendering index (CRI)	98
Optics	
Zoom	4.4–52°
Movement	
Pan	540°
Tilt	270°
Control	
RDM	yes (manufacturer ID 0x0030, device model ID 0xF0CA)
Dimensions and construction	
Weight	47 kg
Operating environment	
Operating temperature	-10 to 45 °C

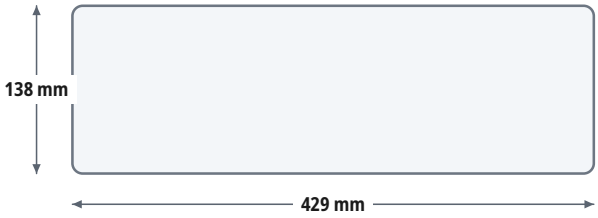
Speeds and ranges

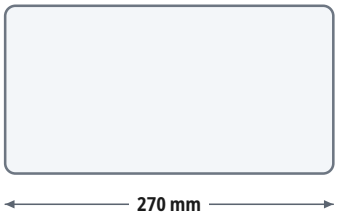
Parameter	Value
Strobe frequency	1–30 Hz
Color wheel 1 rotation	up to 720 °/s (120 rpm)
Gobo wheel 1 rotation	up to 720 °/s (120 rpm)
Gobo wheel 2 rotation	up to 720 °/s (120 rpm)
Gobo 1 rotation	up to 720 °/s (120 rpm)
Gobo 2 rotation	up to 720 °/s (120 rpm)

Parameter	Value
Prism 1 rotation	up to 270 °/s (45 rpm)
Prism 2 rotation	up to 270 °/s (45 rpm)
Animation wheel rotation	up to 655 °/s (109 rpm)

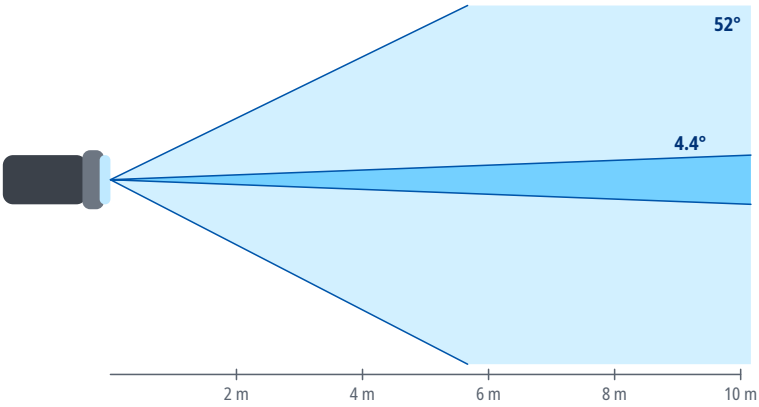
Dimensions

weight 47 kg





Spot diameter



Distance	Ø 4.4°	Ø 52°
2 m	0.15 m	2 m
4 m	0.31 m	3.9 m
6 m	0.46 m	5.9 m
8 m	0.61 m	7.8 m
10 m	0.77 m	9.8 m
15 m	1.2 m	14.6 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.