DMX REFERENCE

SIX+ PAR L OPS

Elation

Manufacturer	Elation
GDTF file	Elation_SIX_PAR_L_OPS_168582.gdtf
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1 About this manual

This document describes the SIX+ PAR L OPS by Elation. It was compiled from the GDTF file Elation_SIX_PAR_L_OPS_168582.gdtf from the GDTF-Share library.

File revision: “26-09-11 Release”.

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 Elation; 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	5.6 kg
Ingress protection	IP65

DMX modes

Mode	Channels	Units in one universe	First start addresses
Dim 1CH	1	512	1, 2, 3, 4, ...
RGB 3CH	3	170	1, 4, 7, 10, ...
RGB Ext 9CH	9	56	1, 10, 19, 28, ...
Col 6CH	6	85	1, 7, 13, 19, ...
Col and Dim 9CH	9	56	1, 10, 19, 28, ...
CMY 11CH	11	46	1, 12, 23, 34, ...
CMY Ext 14CH	14	36	1, 15, 29, 43, ...
Std 14CH	14	36	1, 15, 29, 43, ...
Ext 20CH	20	25	1, 21, 41, 61, ...
6CH	6	85	1, 7, 13, 19, ...
7CH	7	73	1, 8, 15, 22, ...
8CH	8	64	1, 9, 17, 25, ...
12CH	12	42	1, 13, 25, 37, ...



Read the manual before use



Do not stare into the light

3 Safety instructions



Read the manual before use



Do not stare into the light

⚠ 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.

⚠ CAUTION

- The device is rated IP65 and may be used outdoors within the limits of this rating.
- This protection is effective only when all connectors are mated or closed with their protective caps and all seals are intact. Use cables and connectors with the same or a higher protection rating.
- Do not open the housing; opening it breaks the seals and the protection rating can no longer be guaranteed.
- Install the device so that water cannot collect around connectors and cable glands, and inspect seals and cables regularly.

⚠ 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.

⚠ WARNING

- This device emits ultraviolet (UV) radiation, which can harm the eyes and skin.
- Do not look directly into the light source and avoid prolonged exposure of the eyes and skin at close range. Install the device so that people are not exposed at close range.
- People with increased sensitivity to light, including those taking medication that increases this sensitivity, should avoid UV exposure.

> ⚠ **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.

4 Product description

Description in the GDTF file

“The SIX+ PAR L OPS includes the same features as the standard SIX+ PAR L model but adds a White Marine Grade exterior coating and Hard Wired (bare wire) IP-rated power and data cables and is designed for permanent marine/coastal environment installations. The SIX+ PAR L OPS is a compact and rugged LED fixture that features (14) 20W RGBMA+UV LED’s, which produce an ultra-wide color spectrum and high quality of light. The optical system has been carefully engineered to offer an even distribution of light and color homogenization within the beam. This fixture has been designed to offer ultimate flexibility, use it indoors or out, it’s IP65 rating can handle any environment. The fanless cooling system ensures silent operation allowing it to be installed in the most noise sensitive environments. With a six color LED array, the SIX+ PAR L is able to offer outstanding color rendering capabilities with a high CRI of 87. This, paired with its remotely variably LED refresh frequency allows it to be easily integrated into any TV and Film application. To expand the control capabilities on the SIX+ PAR L, precise color temperature control via a dedicated variable CCT control channel has been integrated. Programming a six-color LED fixture can be complicated so, a CMY emulation mode has been added for users that are more familiar with that color mixing system. Furthermore, an integrated library of calibrated color presets that match the most popular gel filters has been included.”

5 Installation

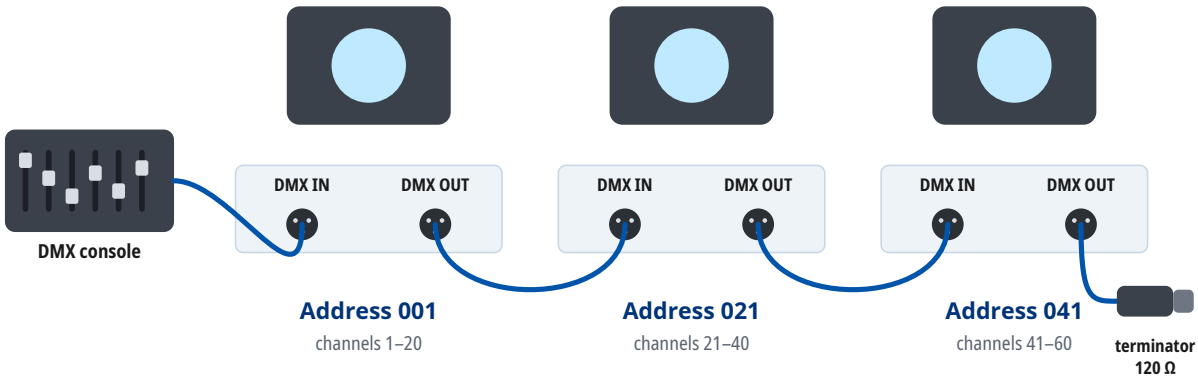
> ⚠ **WARNING**
> - Rigging must be carried out only by qualified persons in accordance with applicable regulations, in particular those for work at height.
> - The supporting structure and fixings must safely carry the weight of all suspended devices; verify their load capacity in advance.
> - Weight of the device: 5.6 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 Ext 20CH: every unit occupies 20 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

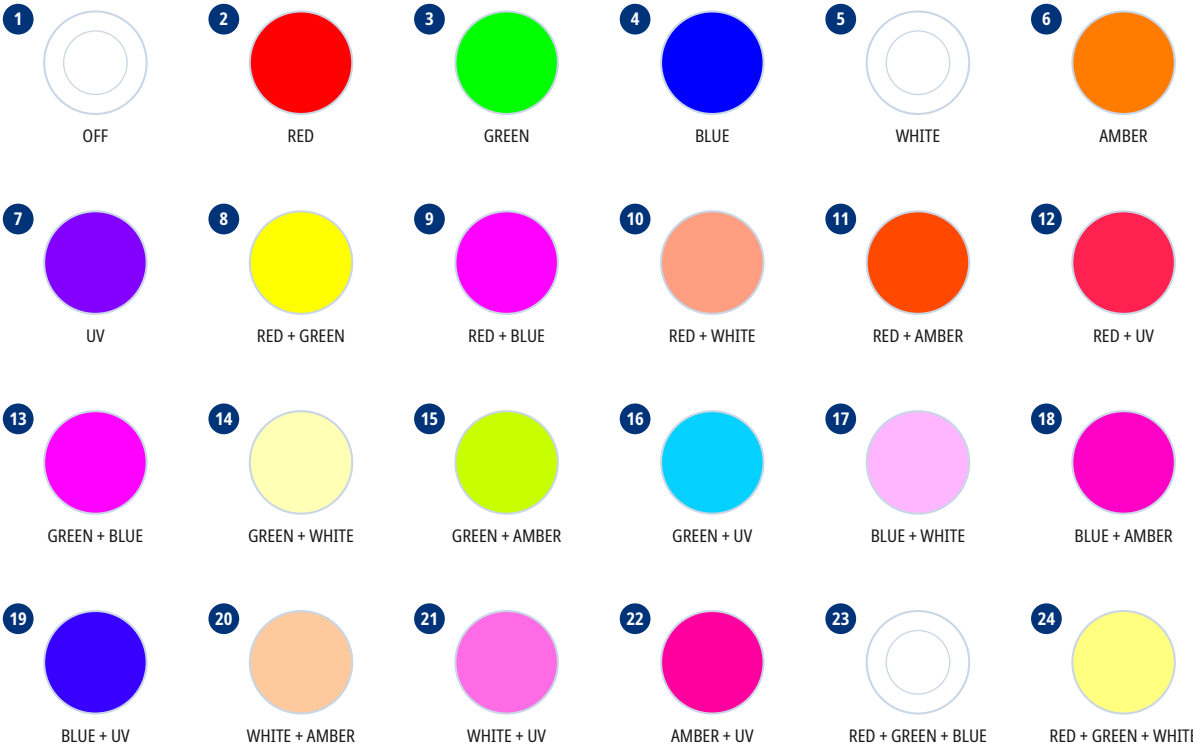
- The device occupies as many consecutive channels in the DMX universe as the selected DMX mode uses, starting at the set start address.
- Number of channels occupied in the DMX mode “Ext 20CH”: 20.
- Choose start addresses so that the channels of individual devices do not overlap and the last occupied 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 “Ext 20CH”, you can use, for example, the start addresses 1, 21, 41, 61.
- 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

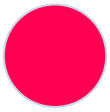
Functions in each DMX mode

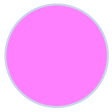
		Dim 1CH 1 channel	RGB 3CH 3 channels	RGB Ext 9CH 9 channels	Col 6CH 6 channels	Col and Dim 9CH 9 channels	CMY 11CH 11 channels	CMY Ext 14CH 14 channels	Std 14CH 14 channels
	Dimmer	1	✓	1	✓	1	1	1	1
	Dimmer resolution	8 bit		16 bit		16 bit	16 bit	16 bit	16 bit
	Shutter / strobe			3		3	3	3	3
	Color mixing		1–3	4, 6, 8	1–6	4–9	4–6	4, 6, 8	4–9
	Color temperature						7	10	10
	Color wheel						9	12	12

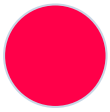
Color wheel 1



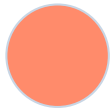
25  RED + GREEN + AMBER

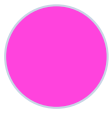
26  RED + GREEN + UV

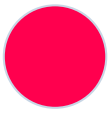
27  RED + BLUE + WHITE

28  RED + BLUE + AMBER

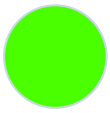
29  RED + BLUE + UV

30  RED + WHITE + AMBER

31  RED + WHITE + UV

32  RED + AMBER + UV

33 GREEN + BLUE + WHITE

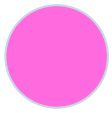
34  GREEN + BLUE + AMBER

35  GREEN + BLUE + UV

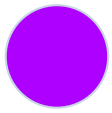
36 GREEN + WHITE + AMBER

37  GREEN + WHITE + UV

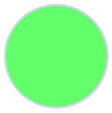
38 GREEN + AMBER + UV

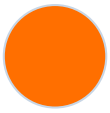
39  BLUE + WHITE + AMBER

40  BLUE + WHITE + UV

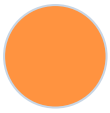
41  BLUE + AMBER + UV

42  WHITE + AMBER + UV

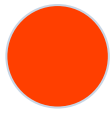
43  RED + GREEN + BLUE + WHITE

44  RED + GREEN + BLUE + AMBER

45  RED + GREEN + BLUE + UV

46  RED + GREEN +WHITE + AMBER

47  RED + GREEN + WHITE + UV

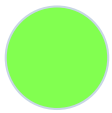
48  RED + GREEN + AMBER + UV

49  RED + BLUE + WHITE + AMBER

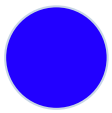
50  RED + BLUE + WHITE + UV

51  RED + BLUE + AMBER + UV

52  RED + WHITE + AMBER + UV

53  GREEN + BLUE + WHITE + AMBER

54  GREEN + BLUE + WHITE + UV

55  GREEN + BLUE + AMBER + UV

56 GREEN + WHITE + AMBER + UV

57  BLUE + WHITE + AMBER + UV

58  RED + GREEN + BLUE + WHITE + AMBER

59  RED + GREEN + BLUE + WHITE + UV

60  RED + GREEN + BLUE + AMBER + UV

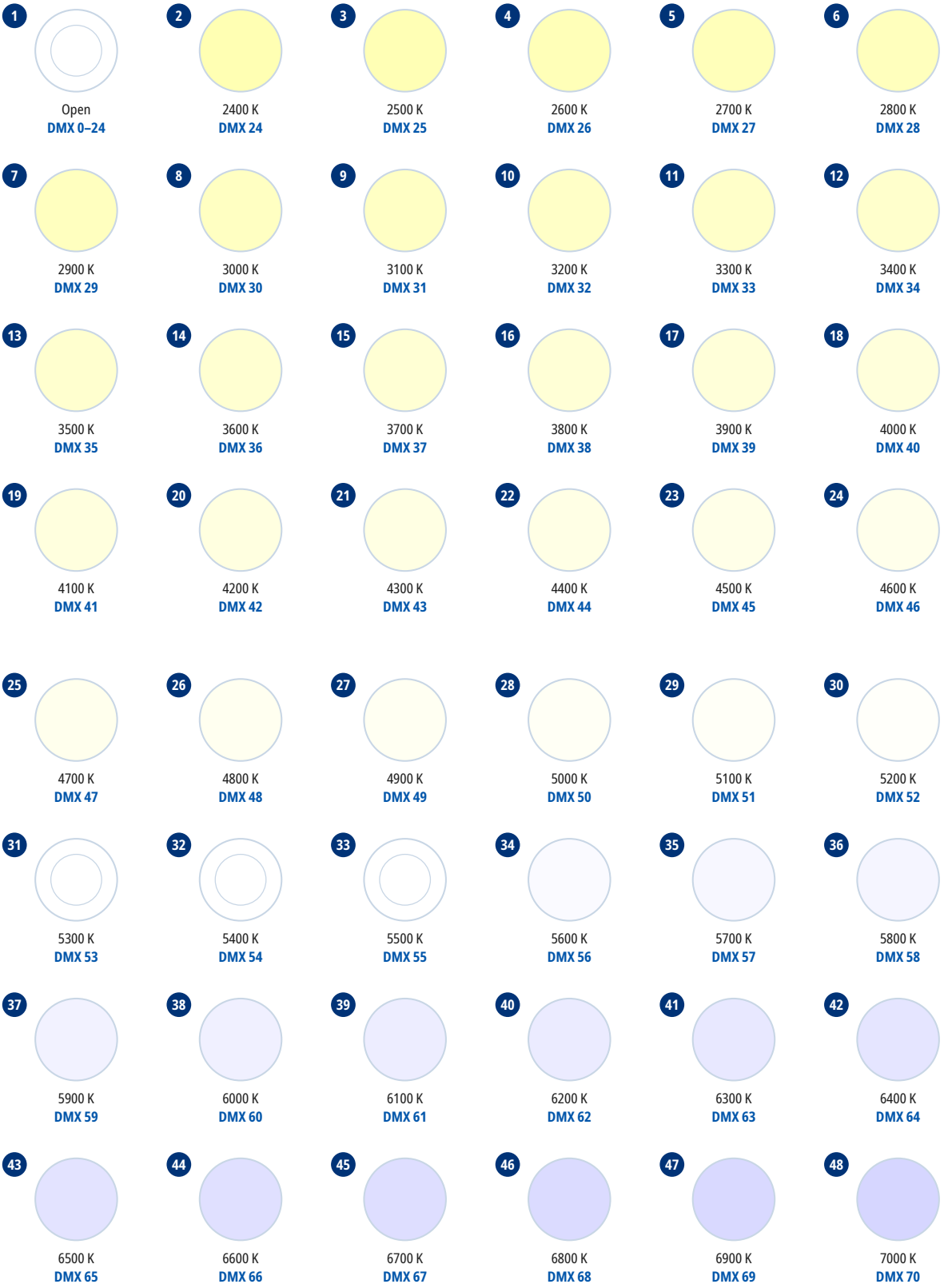
61  RED + GREEN + WHITE + AMBER + UV

62  RED + BLUE + WHITE + AMBER + UV

63  GREEN +BLUE + WHITE + AMBER + UV

64  RED + GREEN + BLUE + WHITE + AMBER + UV

Color wheel 2



49 7100 K **DMX 71**
50 7200 K **DMX 72**
51 7300 K **DMX 73**
52 7400 K **DMX 74**
53 7500 K **DMX 75**
54 7600 K **DMX 76**
55 7700 K **DMX 77**
56 7800 K **DMX 78**
57 7900 K **DMX 79**
58 8000 K **DMX 80**
59 8100 K **DMX 81**
60 8200 K **DMX 82**
61 8300 K **DMX 83**
62 8400 K **DMX 84**
63 8500 K **DMX 85–86**

Color wheel 3

1 Pale Yellow **DMX 1**
2 Straw **DMX 2**
3 Gold Tint **DMX 3**
4 Spring Yellow **DMX 4**
5 Medium Yellow **DMX 5**
6 Yellow **DMX 6**
7 Deep Amber **DMX 7**
8 Deep Straw **DMX 8**
9 Loving Amber **DMX 9**
10 Gold Amber **DMX 10**
11 Orange **DMX 11**
12 Deep Orange **DMX 12**
13 Dark Amber **DMX 13**
14 Millennium Gold **DMX 14**
15 Deep Golden Amber **DMX 15**
16 Scarlet **DMX 16**
17 Primary Red **DMX 17**
18 Bright Red **DMX 18**
19 Medium Red **DMX 19**
20 Fire **DMX 20**
21 Pink **DMX 21**
22 Medium Pink **DMX 22**
23 Dark Pink **DMX 23**
24 Bright Pink **DMX 24**

25 Bright Rose
DMX 25

26 Special Rose Pink
DMX 26

27 Vanity Fair
DMX 27

28 Magenta
DMX 28

29 Dark Magenta
DMX 29

30 Rose Purple
DMX 30

31 Mauve
DMX 31

32 Medium Purple
DMX 32

33 Lavender
DMX 33

34 Palace blue
DMX 34

35 Dark Blue
DMX 35

36 Medium Blue
DMX 36

37 Deep Blue
DMX 37

38 Daylight Blue
DMX 38

39 Slate Blue
DMX 39

40 Light Blue
DMX 40

41 Sky Blue
DMX 41

42 Pale Navy Blue
DMX 42

43 Marine Blue
DMX 43

44 Peacock Blue
DMX 44

45 Lagoon Blue
DMX 45

46 Medium Blue Green
DMX 46

47 Dark Yellow Green
DMX 47

48 Primary Green
DMX 48

49 Fern Green
DMX 49

50 Moss Green
DMX 50

51 Dark Green
DMX 51

52 Lime Green
DMX 52

53 Pale Green
DMX 53

54 Quarter CT Blue
DMX 54

55 Half CT Blue
DMX 55

56 Full CT Blue
DMX 56

57 Double CT Blue
DMX 57

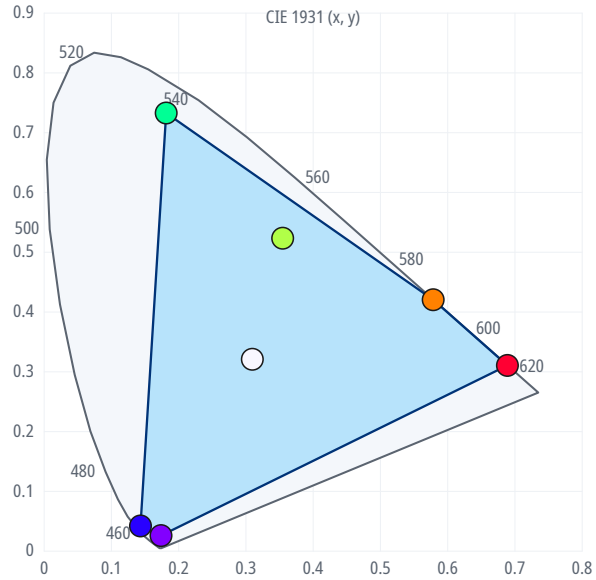
58 Quarter CT Orange
DMX 58

59 Half CT Orange
DMX 59

60 LEE 204 - Full C T Orange
DMX 60–61

61 Open
DMX 0–1

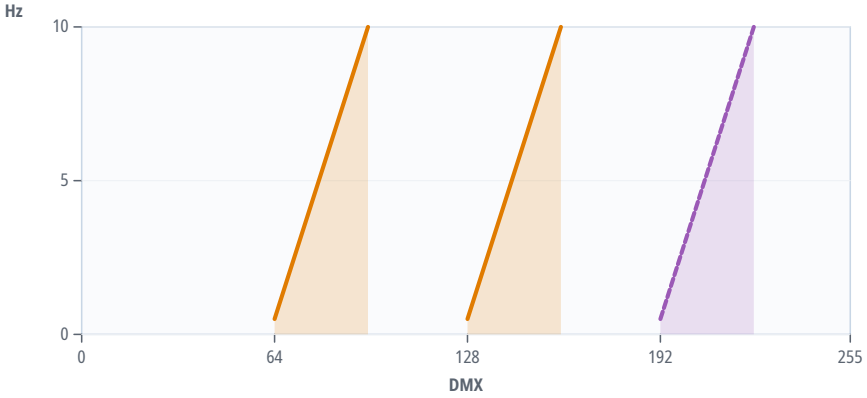
LED colors and the colors they mix



LED	x	y	nm
Red	0.689	0.311	457
Green	0.181	0.733	457
Blue	0.143	0.042	457
White	0.309	0.321	
Amber	0.578	0.421	457
UV	0.174	0.026	457
Lime	0.355	0.523	

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

Strobe rate



CH 3 · Std 14CH

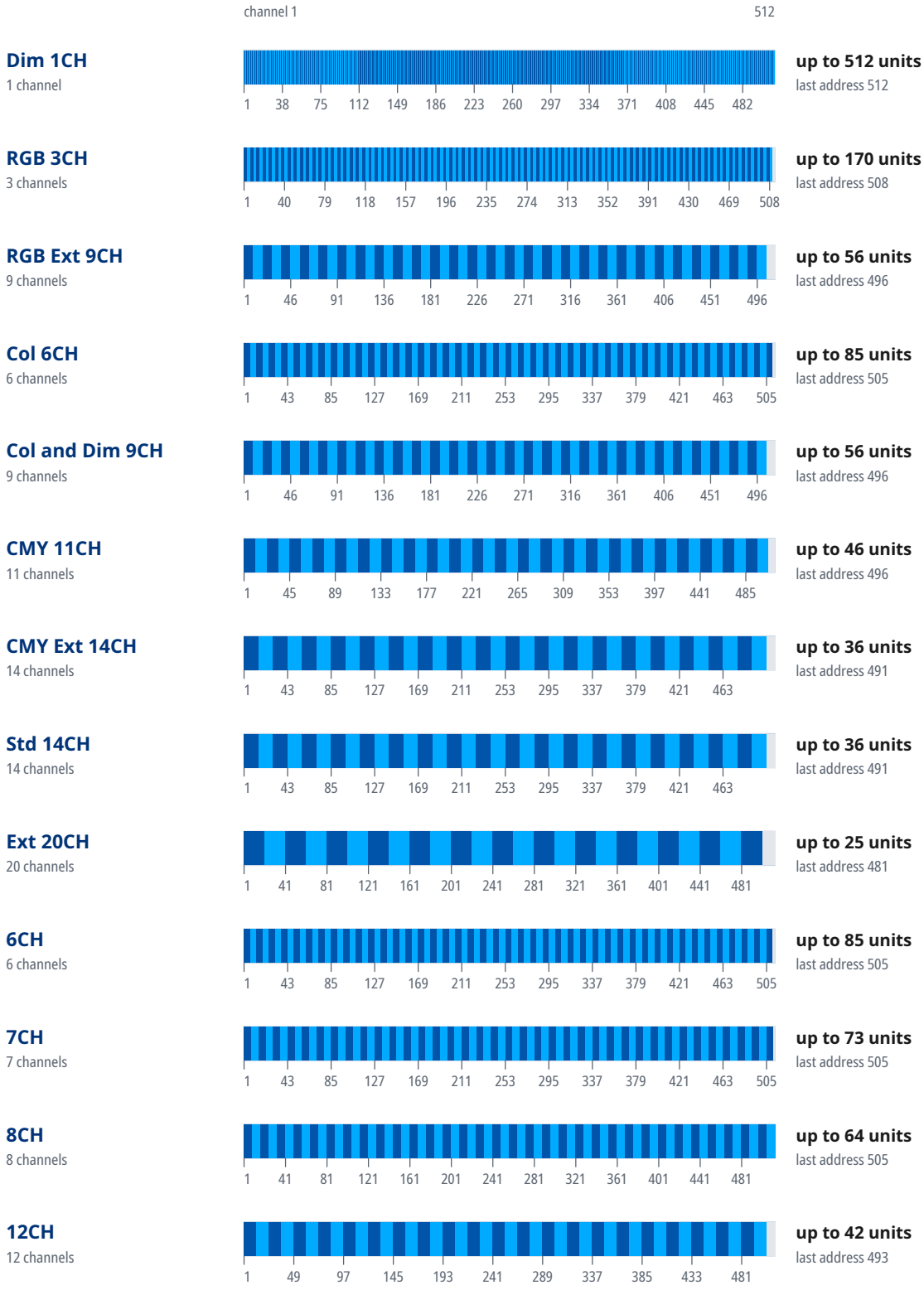
64–95: 0.5–10 Hz
Strobe Min to Max

128–159: 0.5–10 Hz
Strobe Pulse Min to Max

192–223: 0.5–10 Hz
Random Strobe Min to Max

9 DMX channels

Units in one DMX universe



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

Unit	Start address	Unit	Start address	Unit	Start address	Unit	Start address
1	1	6	101	11	201	16	301
2	21	7	121	12	221	17	321
3	41	8	141	13	241	18	341
4	61	9	161	14	261	19	361
5	81	10	181	15	281	20	381

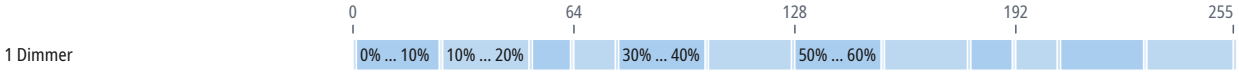
RDM personalities

Mode	Channels	RDM personality
Dim 1CH	1	1
RGB 3CH	3	2
RGB Ext 9CH	9	3
Col 6CH	6	4
Col and Dim 9CH	9	5
CMY 11CH	11	6
CMY Ext 14CH	14	7
Std 14CH	14	8
Ext 20CH	20	9
6CH	6	16
7CH	7	17
8CH	8	18
12CH	12	19

Mode Dim 1CH

The GDTF file gives these values for a console's Highlight function: CH 1 Dimmer 255.

Channel functions at a glance



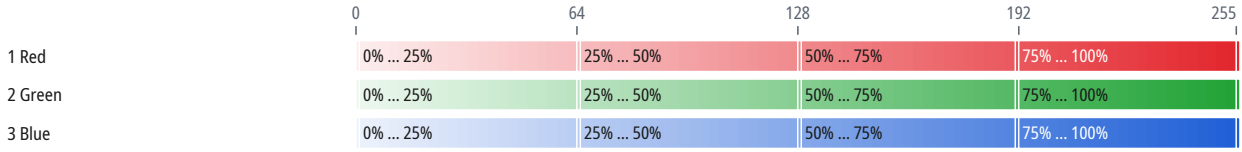
CH	Function	DMX	Description
1	Dimmer	0	0%
		1–24	0% ... 10%
		25	10%
		26–50	10% ... 20%
		51	20%
		52–62	20% ... 25%
		63	25%
		64–75	25% ... 30%
		76	30%
		77–101	30% ... 40%
		102	40%
		103–126	40% ... 50%

CH	Function	DMX	Description
1	Dimmer (continued)	127	50%
		128–152	50% … 60%
		153	60%
		154–177	60% … 70%
		178	70%
		179–190	70% … 75%
		191	75%
		192–203	75% … 80%
		204	80%
		205–228	80% … 90%
		229	90%
		230–254	90% … 100%
		255	100%

Mode RGB 3CH

The GDTF file gives these values for a console's Highlight function: CH 1 Red 255, CH 2 Green 255, CH 3 Blue 255.

Channel functions at a glance



CH	Function	DMX	Description
1	Red	0	0%
		1–63	0% … 25%
		64	25%
		65–127	25% … 50%
		128	50%
		129–190	50% … 75%
		191	75%
		192–254	75% … 100%
		255	100%
2	Green	0	0%
		1–63	0% … 25%
		64	25%
		65–127	25% … 50%
		128	50%
		129–190	50% … 75%
		191	75%
		192–254	75% … 100%
		255	100%

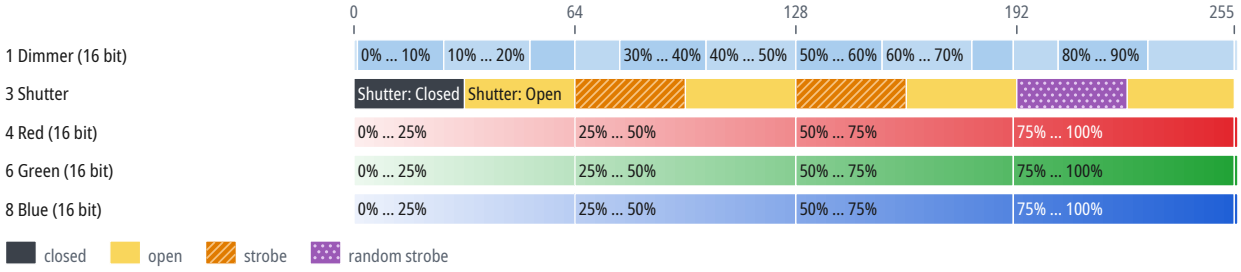
CH	Function	DMX	Description
3	Blue	0	0%
		1–63	0% … 25%
		64	25%
		65–127	25% … 50%
		128	50%
		129–190	50% … 75%
		191	75%
		192–254	75% … 100%
		255	100%

Mode RGB Ext 9CH

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 3 Shutter at 32–63, 96–127, 160–191 or 224–255 “Open”. The GDTF file gives these values for a console's Highlight function: CH 1 Dimmer 255, CH 3 Shutter 50, CH 4 Red 255, CH 6 Green 255, CH 8 Blue 255.

Channel functions at a glance



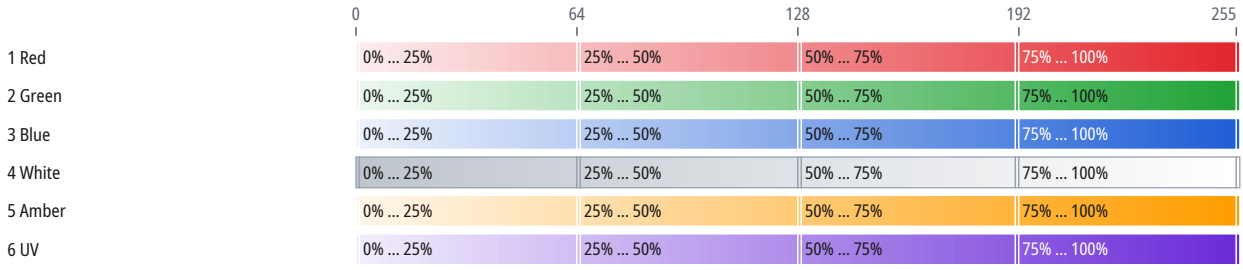
CH	Function	DMX	Description
1	Dimmer	0–1	0%
		1–26	0% … 10%
		26–51	10% … 20%
		51–64	20% … 25%
		64–77	25% … 30%
		77–102	30% … 40%
		102–128	40% … 50%
		128–153	50% … 60%
		153–179	60% … 70%
		179–191	70% … 75%
		191–204	75% … 80%
		204–230	80% … 90%
		230–255	90% … 100%
		255	100%
2	Dimmer Fine	0–255	Fine adjustment of CH 1
3	Shutter	0–31	Shutter: Closed
		32–63	Shutter: Open
		64–95	Strobe Min to Max (0.5–10 Hz)

CH	Function	DMX	Description
3	Shutter (continued)	96–127	Shutter Open: Open
		128–159	Strobe Pulse Min to Max (0.5–10 Hz)
		160–191	Shutter Open_: Open
		192–223	Random Strobe Min to Max (0.5–10 Hz)
		224–255	Shutter Open__: Open
4	Red	0–64	0% … 25%
		64–128	25% … 50%
		128–191	50% … 75%
		191–255	75% … 100%
		255	100%
5	Red Fine	0–255	Fine adjustment of CH 4
6	Green	0–64	0% … 25%
		64–128	25% … 50%
		128–191	50% … 75%
		191–255	75% … 100%
		255	100%
7	Green Fine	0–255	Fine adjustment of CH 6
8	Blue	0–64	0% … 25%
		64–128	25% … 50%
		128–191	50% … 75%
		191–255	75% … 100%
		255	100%
9	Blue Fine	0–255	Fine adjustment of CH 8

Mode Col 6CH

The GDTF file gives these values for a console's Highlight function: CH 1 Red 255, CH 2 Green 255, CH 3 Blue 255, CH 4 White 255, CH 5 Amber 255, CH 6 UV 255.

Channel functions at a glance



CH	Function	DMX	Description
1	Red		Same as CH 1 in the mode “RGB 3CH” (p. 15)
2	Green		Same as CH 2 in the mode “RGB 3CH” (p. 15)
3	Blue		Same as CH 3 in the mode “RGB 3CH” (p. 16)
4	White	0	0%
		1–63	0% … 25%
		64	25%

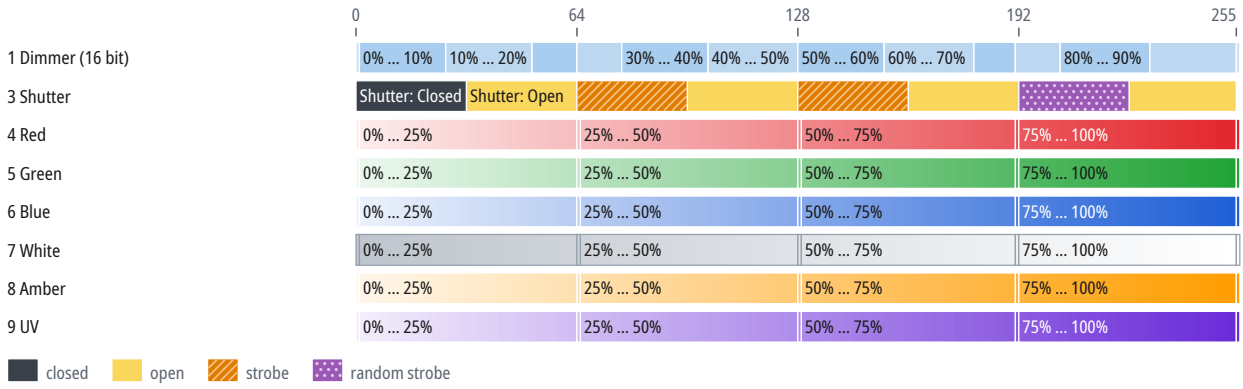
CH	Function	DMX	Description
4	White (continued)	65–127	25% … 50%
		128	50%
		129–190	50% … 75%
		191	75%
		192–254	75% … 100%
		255	100%
5	Amber	0	0%
		1–63	0% … 25%
		64	25%
		65–127	25% … 50%
		128	50%
		129–190	50% … 75%
		191	75%
		192–254	75% … 100%
		255	100%
6	UV	0	0%
		1–63	0% … 25%
		64	25%
		65–127	25% … 50%
		128	50%
		129–190	50% … 75%
		191	75%
		192–254	75% … 100%
		255	100%

Mode Col and Dim 9CH

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 3 Shutter at 32–63, 96–127, 160–191 or 224–255 “Open”. The GDTF file gives these values for a console's Highlight function: CH 1 Dimmer 255, CH 3 Shutter 50, CH 4 Red 255, CH 5 Green 255, CH 6 Blue 255, CH 7 White 255, CH 8 Amber 255, CH 9 UV 255.

Channel functions at a glance



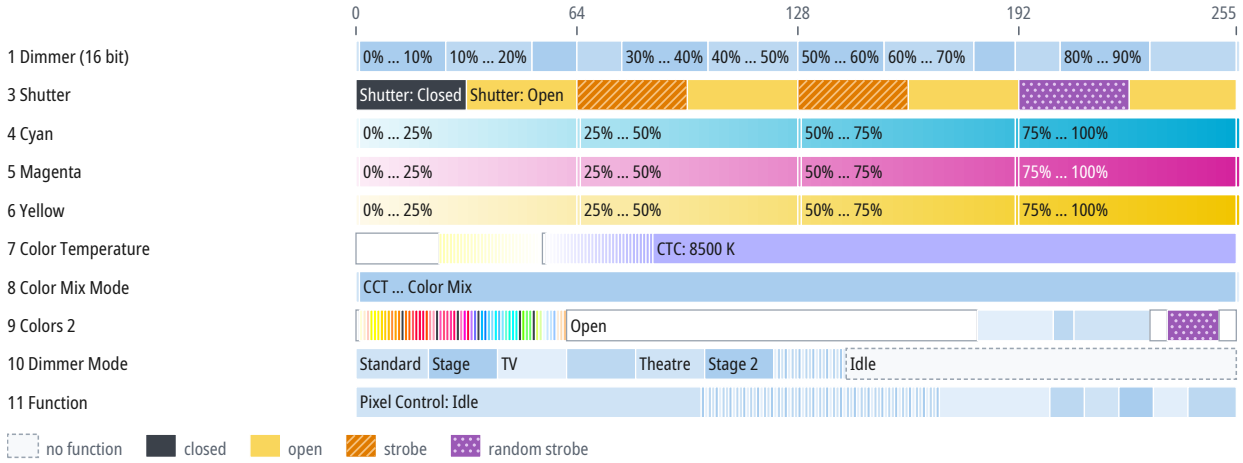
CH	Function	DMX	Description
1	Dimmer		Same as CH 1 in the mode “RGB Ext 9CH” (p. 16)
2	Dimmer Fine	0–255	Fine adjustment of CH 1
3	Shutter		Same as CH 3 in the mode “RGB Ext 9CH” (p. 16)
4	Red		Same as CH 1 in the mode “RGB 3CH” (p. 15)
5	Green		Same as CH 2 in the mode “RGB 3CH” (p. 15)
6	Blue		Same as CH 3 in the mode “RGB 3CH” (p. 16)
7	White		Same as CH 4 in the mode “Col 6CH” (p. 17)
8	Amber		Same as CH 5 in the mode “Col 6CH” (p. 18)
9	UV		Same as CH 6 in the mode “Col 6CH” (p. 18)

Mode CMY 11CH

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 3 Shutter at 32–63, 96–127, 160–191 or 224–255 “Open”. The GDTF file gives these values for a console's Highlight function: CH 1 Dimmer 255, CH 3 Shutter 50, CH 4 Cyan 0, CH 5 Magenta 0, CH 6 Yellow 0, CH 7 Color Temperature 0, CH 9 Colors 2 0.

Channel functions at a glance



CH	Function	DMX	Description
1	Dimmer		Same as CH 1 in the mode “RGB Ext 9CH” (p. 16)
2	Dimmer Fine	0–255	Fine adjustment of CH 1
3	Shutter		Same as CH 3 in the mode “RGB Ext 9CH” (p. 16)
4	Cyan	0	0%
		1–63	0% ... 25%
		64	25%
		65–127	25% ... 50%
		128	50%
		129–190	50% ... 75%
		191	75%
		192–254	75% ... 100%

CH	Function	DMX	Description
4	Cyan (continued)	255	100%
5	Magenta	0	0%
		1–63	0% … 25%
		64	25%
		65–127	25% … 50%
		128	50%
		129–190	50% … 75%
		191	75%
		192–254	75% … 100%
		255	100%
6	Yellow	0	0%
		1–63	0% … 25%
		64	25%
		65–127	25% … 50%
		128	50%
		129–190	50% … 75%
		191	75%
		192–254	75% … 100%
		255	100%
7	Color Temperature	0–23	CTC Open: Open
		24	2400 K
		25	2500 K
		26	2600 K
		27	2700 K
		28	2800 K
		29	2900 K
		30	3000 K
		31	3100 K
		32	3200 K
		33	3300 K
		34	3400 K
		35	3500 K
		36	3600 K
		37	3700 K
		38	3800 K
		39	3900 K
		40	4000 K
		41	4100 K
		42	4200 K
		43	4300 K
		44	4400 K

CH	Function	DMX	Description
7	Color Temperature (continued)	45	4500 K
		46	4600 K
		47	4700 K
		48	4800 K
		49	4900 K
		50	5000 K
		51	5100 K
		52	5200 K
		53	5300 K
		54	5400 K
		55	5500 K
		56	5600 K
		57	5700 K
		58	5800 K
		59	5900 K
		60	6000 K
		61	6100 K
		62	6200 K
		63	6300 K
		64	6400 K
		65	6500 K
		66	6600 K
		67	6700 K
		68	6800 K
		69	6900 K
		70	7000 K
		71	7100 K
		72	7200 K
		73	7300 K
		74	7400 K
		75	7500 K
		76	7600 K
		77	7700 K
		78	7800 K
		79	7900 K
		80	8000 K
		81	8100 K
		82	8200 K
		83	8300 K
		84	8400 K
		85	CTC continuous: 8500 K

CH	Function	DMX	Description
7	Color Temperature (continued)	86–255	CTC: 8500 K
8	Color Mix Mode		CCT and Color Mix
		0	CCT
		1–254	CCT ... Color Mix
		255	Color Mix
9	Colors 2	0	Open
		1	Pale Yellow
		2	Straw
		3	Gold Tint
		4	Spring Yellow
		5	Medium Yellow
		6	Yellow
		7	Deep Amber
		8	Deep Straw
		9	Loving Amber
		10	Gold Amber
		11	Orange
		12	Deep Orange
		13	Dark Amber
		14	Millennium Gold
		15	Deep Golden Amber
		16	Scarlet
		17	Primary Red
		18	Bright Red
		19	Medium Red
		20	Fire
		21	Pink
		22	Medium Pink
		23	Dark Pink
		24	Bright Pink
		25	Bright Rose
		26	Special Rose Pink
		27	Vanity Fair
		28	Magenta
		29	Dark Magenta
		30	Rose Purple
		31	Mauve
		32	Medium Purple
		33	Lavender
		34	Palace blue
		35	Dark Blue

CH	Function	DMX	Description
9	Colors 2 (continued)	36	Medium Blue
		37	Deep Blue
		38	Daylight Blue
		39	Slate Blue
		40	Light Blue
		41	Sky Blue
		42	Pale Navy Blue
		43	Marine Blue
		44	Peacock Blue
		45	Lagoon Blue
		46	Medium Blue Green
		47	Dark Yellow Green
		48	Primary Green
		49	Fern Green
		50	Moss Green
		51	Dark Green
		52	Lime Green
		53	Pale Green
		54	Quarter CT Blue
		55	Half CT Blue
		56	Full CT Blue
		57	Double CT Blue
		58	Quarter CT Orange
		59	Half CT Orange
		60	Full CT Orange
		61–179	Open
		180–201	CCW fast to slow (360–10 °/s)
		202–207	Color 1 Wheel Spin: Stop
		208–229	CCW slow to fast (10–360 °/s)
		230–234	Open
		235–249	Random Fast to Slow
		250–255	Open
10	Dimmer Mode	0–20	Standard
		21–40	Stage
		41–60	TV
		61–80	Architectural
		81–100	Theatre
		101–120	Stage 2
		121–130	0...9s
		131	1s
		132	1*5s
		133–141	2...10s

CH	Function	DMX	Description
10	Dimmer Mode (continued)	142–255	Idle
11	Function	0–99	Pixel Control: Idle
		100	900 Hz
		101	910 Hz
		102	920 Hz
		103	930 Hz
		104	940 Hz
		105	950 Hz
		106	960 Hz
		107	970 Hz
		108	980 Hz
		109	990 Hz
		110	1000 Hz
		111	1010 Hz
		112–113	1020 Hz (1020–1030 Hz)
		114	1040 Hz
		115	1050 Hz
		116	1060 Hz
		117	1070 Hz
		118	1080 Hz
		119	1090 Hz
		120	1100 Hz
		121	1110 Hz
		122	1120 Hz
		123	1130 Hz
		124	1140 Hz
		125	1150 Hz
		126	1160 Hz
		127	1170 Hz
		128	1180 Hz
		129	1190 Hz
		130	1200 Hz
		131	1210 Hz
		132	1220 Hz
		133	1230 Hz
		134	1240 Hz
		135	1250 Hz
		136	1260 Hz
		137	1270 Hz
		138	1280 Hz
		139	1290 Hz
		140	1300 Hz

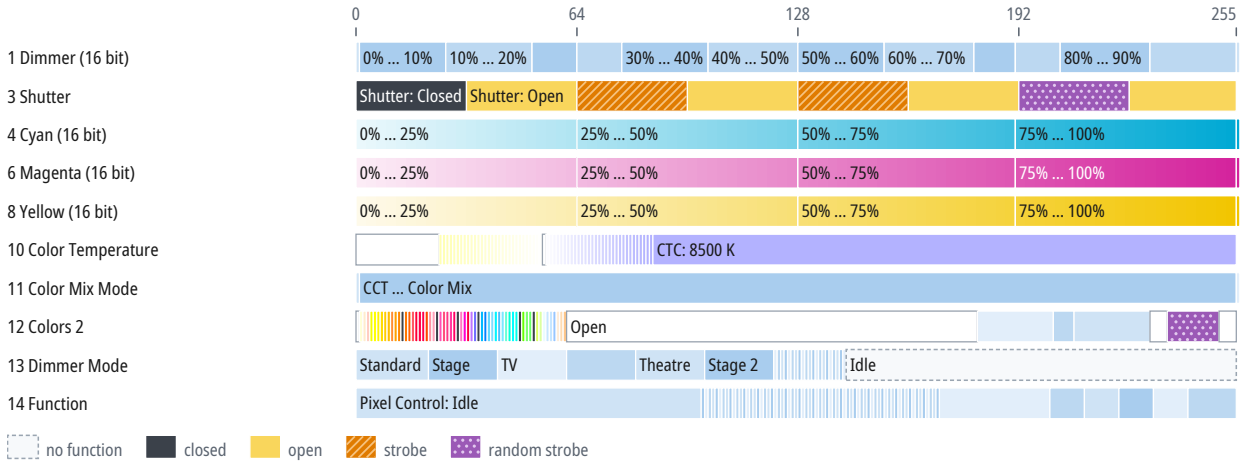
CH	Function	DMX	Description
11	Function (continued)	141	1310 Hz
		142	1320 Hz
		143	1330 Hz
		144	1340 Hz
		145	1350 Hz
		146	1360 Hz
		147	1370 Hz
		148	1380 Hz
		149	1390 Hz
		150	1400 Hz
		151	1410 Hz
		152	1420 Hz
		153	1430 Hz
		154	1440 Hz
		155	1450 Hz
		156	1460 Hz
		157	1470 Hz
		158	1480 Hz
		159	1490 Hz
		160	1500 Hz
		161	2500 Hz
		162	4000 Hz
		163	5000 Hz
		164	6000 Hz
		165	10000 Hz
		166	15000 Hz
		167	20000 Hz
		168	25000 Hz
		169–200	Dimmer Curve: Idle
		201–210	Curve Linear (default)
		211–220	Curve Square
		221–230	Curve Inverse Square
		231–240	Curve S-Curve
		241–255	Idle (4)

Mode CMY Ext 14CH

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 3 Shutter at 32–63, 96–127, 160–191 or 224–255 “Open”. The GDTF file gives these values for a console's Highlight function: CH 1 Dimmer 255, CH 3 Shutter 50, CH 4 Cyan 0, CH 6 Magenta 0, CH 8 Yellow 0, CH 10 Color Temperature 0, CH 12 Colors 2 0.

Channel functions at a glance



CH	Function	DMX	Description
1	Dimmer		Same as CH 1 in the mode “RGB Ext 9CH” (p. 16)
2	Dimmer Fine	0–255	Fine adjustment of CH 1
3	Shutter		Same as CH 3 in the mode “RGB Ext 9CH” (p. 16)
4	Cyan	0–64	0% … 25%
		64–128	25% … 50%
		128–191	50% … 75%
		191–255	75% … 100%
		255	100%
5	Cyan Fine	0–255	Fine adjustment of CH 4
6	Magenta	0–64	0% … 25%
		64–128	25% … 50%
		128–191	50% … 75%
		191–255	75% … 100%
		255	100%
7	Magenta Fine	0–255	Fine adjustment of CH 6
8	Yellow	0–64	0% … 25%
		64–128	25% … 50%
		128–191	50% … 75%
		191–255	75% … 100%
		255	100%
9	Yellow Fine	0–255	Fine adjustment of CH 8
10	Color Temperature		Same as CH 7 in the mode “CMY 11CH” (p. 20)

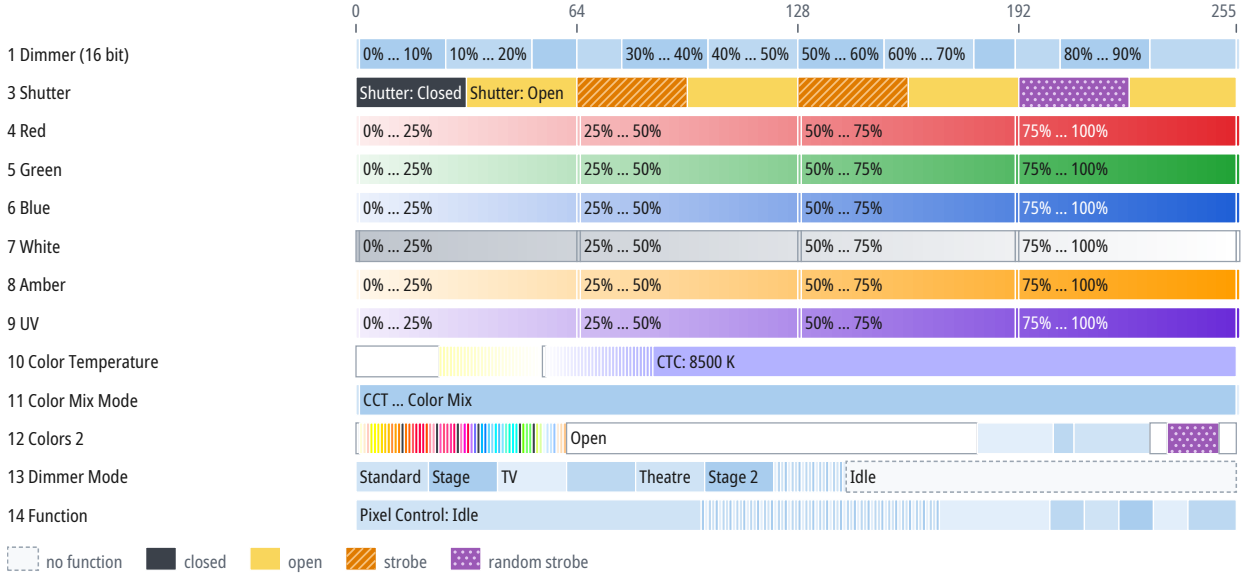
CH	Function	DMX	Description
11	Color Mix Mode		Same as CH 8 in the mode “CMY 11CH” (p. 22)
12	Colors 2		Same as CH 9 in the mode “CMY 11CH” (p. 22)
13	Dimmer Mode		Same as CH 10 in the mode “CMY 11CH” (p. 23)
14	Function		Same as CH 11 in the mode “CMY 11CH” (p. 24)

Mode Std 14CH

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 3 Shutter at 32–63, 96–127, 160–191 or 224–255 “Open”. The GDTF file gives these values for a console's Highlight function: CH 1 Dimmer 255, CH 3 Shutter 50, CH 4 Red 255, CH 5 Green 255, CH 6 Blue 255, CH 7 White 255, CH 8 Amber 255, CH 9 UV 255, CH 10 Color Temperature 0, CH 12 Colors 2 0.

Channel functions at a glance



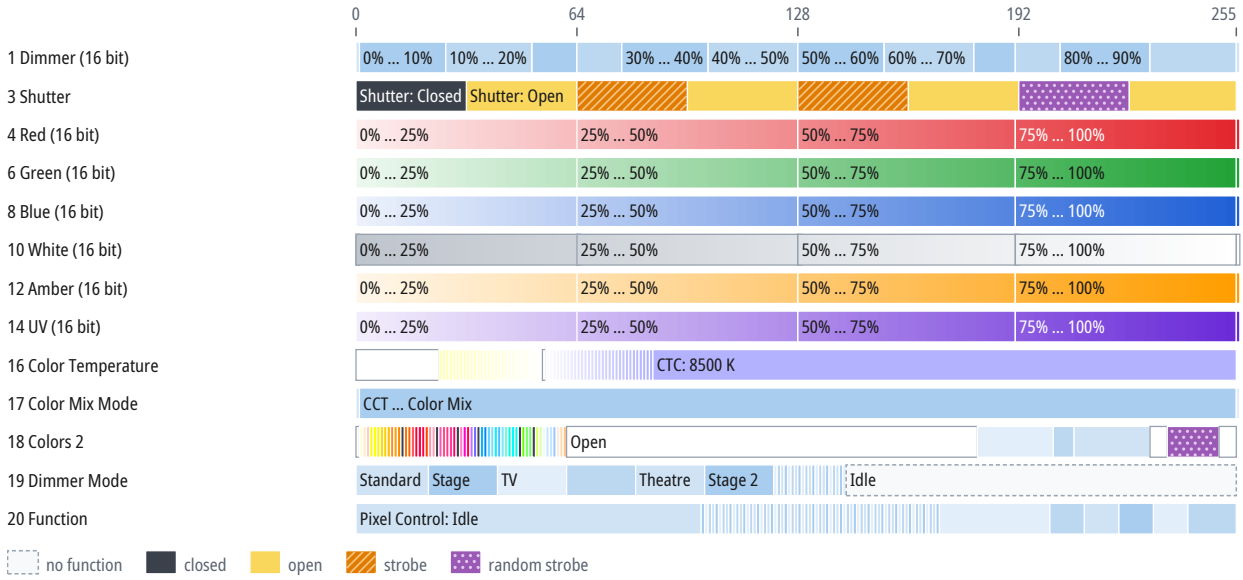
CH	Function	DMX	Description
1	Dimmer		Same as CH 1 in the mode “RGB Ext 9CH” (p. 16)
2	Dimmer Fine	0–255	Fine adjustment of CH 1
3	Shutter		Same as CH 3 in the mode “RGB Ext 9CH” (p. 16)
4	Red		Same as CH 1 in the mode “RGB 3CH” (p. 15)
5	Green		Same as CH 2 in the mode “RGB 3CH” (p. 15)
6	Blue		Same as CH 3 in the mode “RGB 3CH” (p. 16)
7	White		Same as CH 4 in the mode “Col 6CH” (p. 17)
8	Amber		Same as CH 5 in the mode “Col 6CH” (p. 18)
9	UV		Same as CH 6 in the mode “Col 6CH” (p. 18)
10	Color Temperature		Same as CH 7 in the mode “CMY 11CH” (p. 20)
11	Color Mix Mode		Same as CH 8 in the mode “CMY 11CH” (p. 22)
12	Colors 2		Same as CH 9 in the mode “CMY 11CH” (p. 22)
13	Dimmer Mode		Same as CH 10 in the mode “CMY 11CH” (p. 23)
14	Function		Same as CH 11 in the mode “CMY 11CH” (p. 24)

Mode Ext 20CH

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 3 Shutter at 32–63, 96–127, 160–191 or 224–255 “Open”. The GDTF file gives these values for a console's Highlight function: CH 1 Dimmer 255, CH 3 Shutter 50, CH 4 Red 255, CH 6 Green 255, CH 8 Blue 255, CH 10 White 255, CH 12 Amber 255, CH 14 UV 255, CH 16 Color Temperature 0, CH 18 Colors 2 0.

Channel functions at a glance



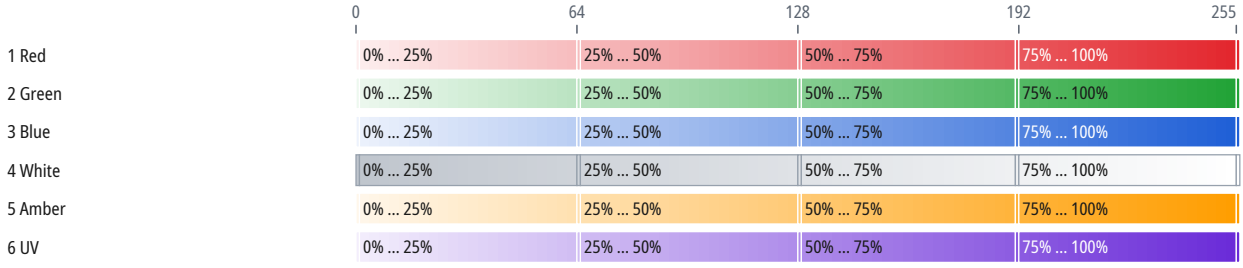
CH	Function	DMX	Description
1	Dimmer		Same as CH 1 in the mode “RGB Ext 9CH” (p. 16)
2	Dimmer Fine	0–255	Fine adjustment of CH 1
3	Shutter		Same as CH 3 in the mode “RGB Ext 9CH” (p. 16)
4	Red		Same as CH 4 in the mode “RGB Ext 9CH” (p. 17)
5	Red Fine	0–255	Fine adjustment of CH 4
6	Green		Same as CH 6 in the mode “RGB Ext 9CH” (p. 17)
7	Green Fine	0–255	Fine adjustment of CH 6
8	Blue		Same as CH 8 in the mode “RGB Ext 9CH” (p. 17)
9	Blue Fine	0–255	Fine adjustment of CH 8
10	White	0–64	0% … 25%
		64–128	25% … 50%
		128–191	50% … 75%
		191–255	75% … 100%
		255	100%
11	White Fine	0–255	Fine adjustment of CH 10
12	Amber	0–64	0% … 25%
		64–128	25% … 50%
		128–191	50% … 75%
		191–255	75% … 100%
		255	100%

CH	Function	DMX	Description
13	Amber Fine	0–255	Fine adjustment of CH 12
14	UV	0–64	0% … 25%
		64–128	25% … 50%
		128–191	50% … 75%
		191–255	75% … 100%
		255	100%
15	UV Fine	0–255	Fine adjustment of CH 14
16	Color Temperature		Same as CH 7 in the mode “CMY 11CH” (p. 20)
17	Color Mix Mode		Same as CH 8 in the mode “CMY 11CH” (p. 22)
18	Colors 2		Same as CH 9 in the mode “CMY 11CH” (p. 22)
19	Dimmer Mode		Same as CH 10 in the mode “CMY 11CH” (p. 23)
20	Function		Same as CH 11 in the mode “CMY 11CH” (p. 24)

Mode 6CH

The GDTF file gives these values for a console's Highlight function: CH 1 Red 255, CH 2 Green 255, CH 3 Blue 255, CH 4 White 255, CH 5 Amber 255, CH 6 UV 255.

Channel functions at a glance

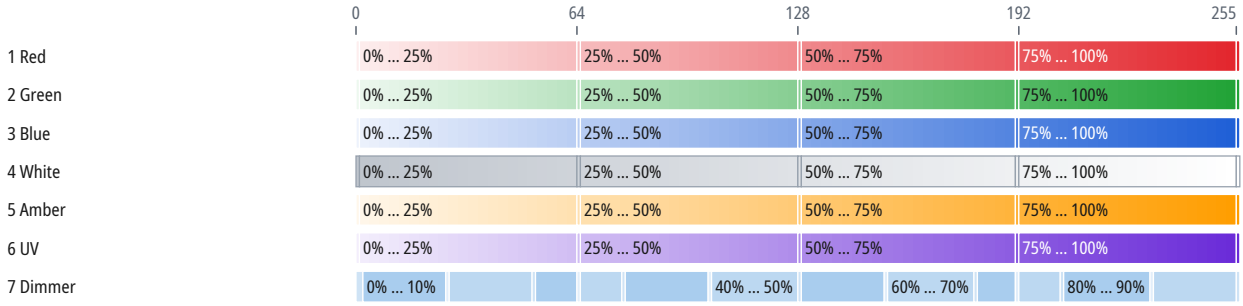


CH	Function	DMX	Description
1	Red		Same as CH 1 in the mode “RGB 3CH” (p. 15)
2	Green		Same as CH 2 in the mode “RGB 3CH” (p. 15)
3	Blue		Same as CH 3 in the mode “RGB 3CH” (p. 16)
4	White		Same as CH 4 in the mode “Col 6CH” (p. 17)
5	Amber		Same as CH 5 in the mode “Col 6CH” (p. 18)
6	UV		Same as CH 6 in the mode “Col 6CH” (p. 18)

Mode 7CH

The GDTF file gives these values for a console's Highlight function: CH 1 Red 255, CH 2 Green 255, CH 3 Blue 255, CH 4 White 255, CH 5 Amber 255, CH 6 UV 255, CH 7 Dimmer 255.

Channel functions at a glance



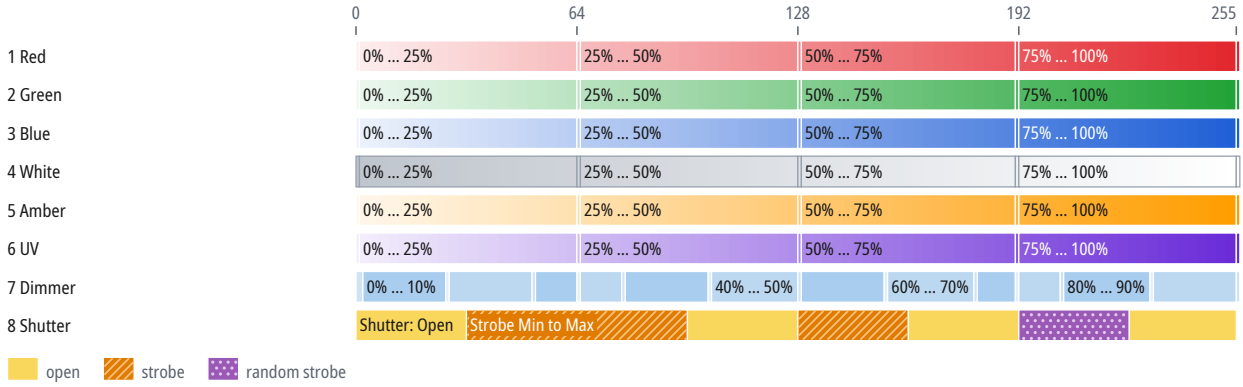
CH	Function	DMX	Description
1	Red		Same as CH 1 in the mode “RGB 3CH” (p. 15)
2	Green		Same as CH 2 in the mode “RGB 3CH” (p. 15)
3	Blue		Same as CH 3 in the mode “RGB 3CH” (p. 16)
4	White		Same as CH 4 in the mode “Col 6CH” (p. 17)
5	Amber		Same as CH 5 in the mode “Col 6CH” (p. 18)
6	UV		Same as CH 6 in the mode “Col 6CH” (p. 18)
7	Dimmer	0–1	0%
		2–25	0% … 10%
		26	10%
		27–50	10% … 20%
		51	20%
		52–63	20% … 25%
		64	25%
		65–76	25% … 30%
		77	30%
		78–101	30% … 40%
		102	40%
		103–127	40% … 50%
		128	50%
		129–152	50% … 60%
		153	60%
		154–178	60% … 70%
		179	70%
		180–190	70% … 75%
		191	75%
		192–203	75% … 80%
		204	80%
		205–229	80% … 90%

CH	Function	DMX	Description
7	Dimmer (continued)	230	90%
		231–254	90% … 100%
		255	100%

Mode 8CH

If the device receives DMX in this mode but gives no light, check these channels: CH 8 Shutter at 0–31, 96–127, 160–191 or 224–255 “Open”. The GDTF file gives these values for a console's Highlight function: CH 1 Red 255, CH 2 Green 255, CH 3 Blue 255, CH 4 White 255, CH 5 Amber 255, CH 6 UV 255, CH 7 Dimmer 255, CH 8 Shutter 0.

Channel functions at a glance

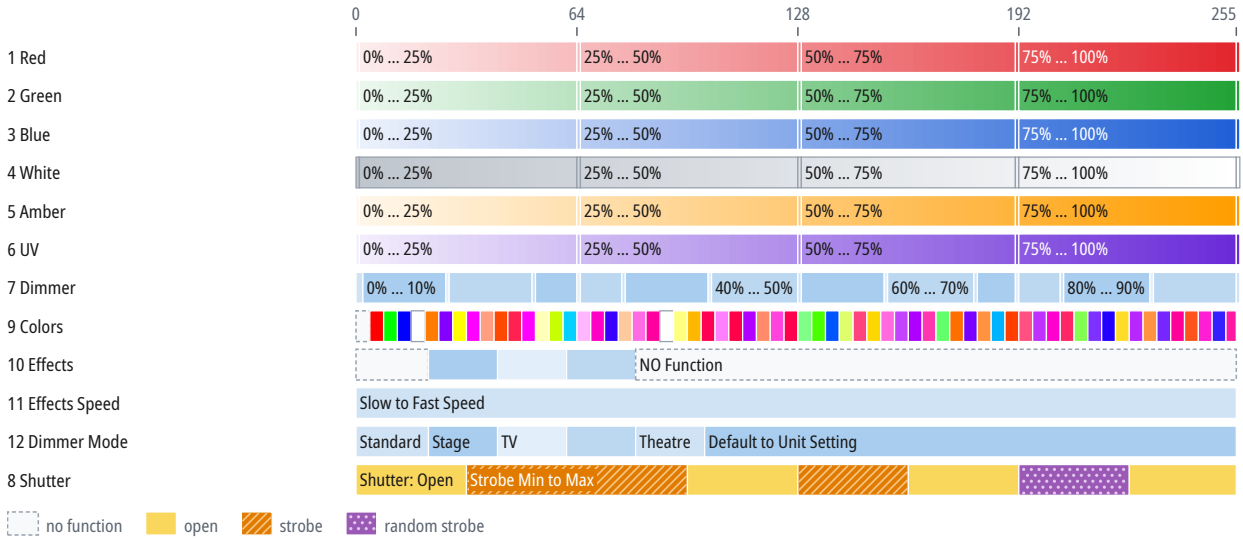


CH	Function	DMX	Description
1	Red		Same as CH 1 in the mode “RGB 3CH” (p. 15)
2	Green		Same as CH 2 in the mode “RGB 3CH” (p. 15)
3	Blue		Same as CH 3 in the mode “RGB 3CH” (p. 16)
4	White		Same as CH 4 in the mode “Col 6CH” (p. 17)
5	Amber		Same as CH 5 in the mode “Col 6CH” (p. 18)
6	UV		Same as CH 6 in the mode “Col 6CH” (p. 18)
7	Dimmer		Same as CH 7 in the mode “7CH” (p. 30)
8	Shutter	0–31	Shutter: Open
		32–95	Strobe Min to Max (0.5–10 Hz)
		96–127	Shutter Open: Open
		128–159	Strobe Pulse Min to Max (0.5–10 Hz)
		160–191	Shutter Open_: Open
		192–223	Random Strobe Min to Max (0.5–10 Hz)
		224–255	Shutter Open__: Open

Mode 12CH

If the device receives DMX in this mode but gives no light, check these channels: CH 8 Shutter at 0–31, 96–127, 160–191 or 224–255 “Open”. The GDTF file gives these values for a console's Highlight function: CH 1 Red 255, CH 2 Green 255, CH 3 Blue 255, CH 4 White 255, CH 5 Amber 255, CH 6 UV 255, CH 7 Dimmer 255, CH 8 Shutter 0.

Channel functions at a glance



CH	Function	DMX	Description
1	Red		Same as CH 1 in the mode “RGB 3CH” (p. 15)
2	Green		Same as CH 2 in the mode “RGB 3CH” (p. 15)
3	Blue		Same as CH 3 in the mode “RGB 3CH” (p. 16)
4	White		Same as CH 4 in the mode “Col 6CH” (p. 17)
5	Amber		Same as CH 5 in the mode “Col 6CH” (p. 18)
6	UV		Same as CH 6 in the mode “Col 6CH” (p. 18)
7	Dimmer		Same as CH 7 in the mode “7CH” (p. 30)
8	Shutter		Same as CH 8 in the mode “8CH” (p. 31)
9	Colors		Color Macro
		0–3	NO Function
		4–7	Color Macro 1
		8–11	Color Macro 2
		12–15	Color Macro 3
		16–19	Color Macro 4
		20–23	Color Macro 5
		24–27	Color Macro 6
		28–31	Color Macro 7
		32–35	Color Macro 8
		36–39	Color Macro 9
		40–43	Color Macro 10
		44–47	Color Macro 11
		48–51	Color Macro 12

CH	Function	DMX	Description
9	Colors (continued)	52–55	Color Macro 13
		56–59	Color Macro 14
		60–63	Color Macro 15
		64–67	Color Macro 16
		68–71	Color Macro 17
		72–75	Color Macro 18
		76–79	Color Macro 19
		80–83	Color Macro 20
		84–87	Color Macro 21
		88–91	Color Macro 22
		92–95	Color Macro 23
		96–99	Color Macro 24
		100–103	Color Macro 25
		104–107	Color Macro 26
		108–111	Color Macro 27
		112–115	Color Macro 28
		116–119	Color Macro 29
		120–123	Color Macro 30
		124–127	Color Macro 31
		128–131	Color Macro 32
		132–135	Color Macro 33
		136–139	Color Macro 34
		140–143	Color Macro 35
		144–147	Color Macro 36
		148–151	Color Macro 37
		152–155	Color Macro 38
		156–159	Color Macro 39
		160–163	Color Macro 40
		164–167	Color Macro 41
		168–171	Color Macro 42
		172–175	Color Macro 43
		176–179	Color Macro 44
		180–183	Color Macro 45
		184–187	Color Macro 46
		188–191	Color Macro 47
		192–195	Color Macro 48
		196–199	Color Macro 49
		200–203	Color Macro 50
		204–207	Color Macro 51
		208–211	Color Macro 52
		212–215	Color Macro 53
		216–219	Color Macro 54

CH	Function	DMX	Description
9	Colors (continued)	220–223	Color Macro 55
		224–227	Color Macro 56
		228–231	Color Macro 57
		232–235	Color Macro 58
		236–239	Color Macro 59
		240–243	Color Macro 60
		244–247	Color Macro 61
		248–251	Color Macro 62
		252–255	Color Macro 63
10	Effects		Auto Programs
		0–20	NO Function
		21–40	30 Color Chase
		41–60	6 Color Chase
		61–80	Color Fade Chase
		81–255	NO Function
11	Effects Speed		Auto Program Speed
		0–255	Slow to Fast Speed
12	Dimmer Mode	0–20	Standard
		21–40	Stage
		41–60	TV
		61–80	Architectural
		81–100	Theatre
		101–255	Default to Unit Setting

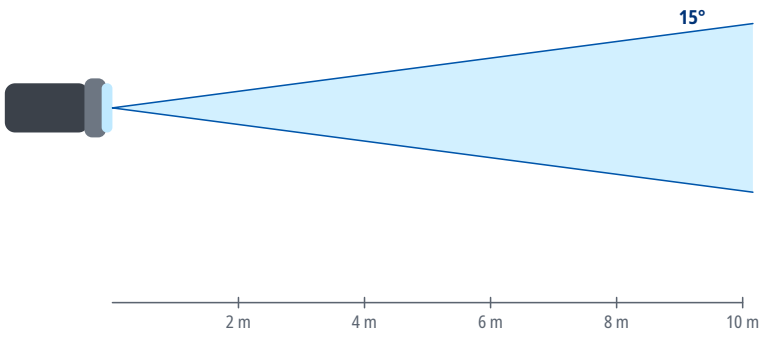
10 Technical specifications

Parameter	Value
Light source	LED
RDM	yes (manufacturer ID 0x22A6, device model ID 0x0032)
Weight	5.6 kg
Ingress protection	IP65
Meaning of the IP code (IEC 60529)	Dust-tight; protected against water jets
Operating temperature	-15 to 40 °C

Speeds and ranges

Parameter	Value
Color temperature range	2400–8500 K
Strobe frequency	0.5–10 Hz
LED frequency	900–25000 Hz
Color wheel 3 rotation	up to 7200 °/s (1200 rpm)

Spot diameter



Distance	Ø 15°
2 m	0.53 m
4 m	1.1 m
6 m	1.6 m
8 m	2.1 m
10 m	2.6 m
15 m	3.9 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.

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.