DMX REFERENCE

DROP B1

DROP B1 (CLDROPB1)

Cameo



Manufacturer	Cameo
GDTF file	Cameo_DROP_B1_54649.gdtf
GDTF revision	V1.0 · 2024-01-04
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1 About this manual

This document describes the DROP B1 (CLDROPB1) by Cameo. It was compiled from the GDTF file Cameo_DROP_B1_54649.gdtf from the GDTF-Share library.

File revision: “V1.0”.

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 Cameo; 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	1 kg

DMX modes

Mode	Channels	Units in one universe	First start addresses
19 CH Mode	20	25	1, 21, 41, 61, ...
12 CH Mode 1	13	39	1, 14, 27, 40, ...
12 CH Mode 2	13	39	1, 14, 27, 40, ...
6 CH RGBWAUV	7	73	1, 8, 15, 22, ...
3 CH	4	128	1, 5, 9, 13, ...
2 CH	3	170	1, 4, 7, 10, ...

No light? Check these channels

- 19 CH Mode: CH 1 Dimmer above 0; CH 3 Shutter at 0–5 or 255 “Open”
- 12 CH Mode 1: CH 1 Dimmer above 0; CH 3 Shutter at 0–5 or 255 “Open”
- 3 CH: CH 1 Dimmer above 0; CH 2 Shutter at 0–5 or 255 “Open”
- 2 CH: CH 1 Dimmer above 0



Read the manual before use



Do not stare into the light



Indoor use only

3 Safety instructions



Read the manual before use



Do not stare into the light



Indoor use only

⚠ WARNING

- This device is intended for professional use. Installation, connection, setup and maintenance must be carried out only by suitably qualified persons who have read this manual.
- Use the device only for its intended purpose and as described in this manual.
- Do not open the housing and do not modify or tamper with the device. Refer all repairs to an authorized service center.
- Do not use the device if its housing, power or data cable, or a connector is damaged, if the device has been dropped, or if liquid or a foreign object has entered it. In such a case, have it checked by a service center.
- Disconnect the device from the power supply before cleaning, maintenance or any work on the connections.
- After moving the device from a cold to a warm environment, let it reach room temperature before switching it on to prevent condensation inside.
- The device is not a toy; keep it out of the reach of children.

⚠ WARNING

- This device is designed for indoor use only. Protect it from rain, splashing water, moisture and dust, and do not place containers with liquids on it.
- Do not operate the device in high humidity, near water, or where condensation can form on it.

⚠ CAUTION

- This device emits intense light. Do not look directly into the light source or the beam at close range; doing so may damage your eyes.
- Do not aim the beam at the eyes of people or animals at close range, and do not view the light source through optical instruments (binoculars, camera lenses).
- Do not aim the beam at flammable or heat-sensitive materials at close range.

⚠ 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 Installation

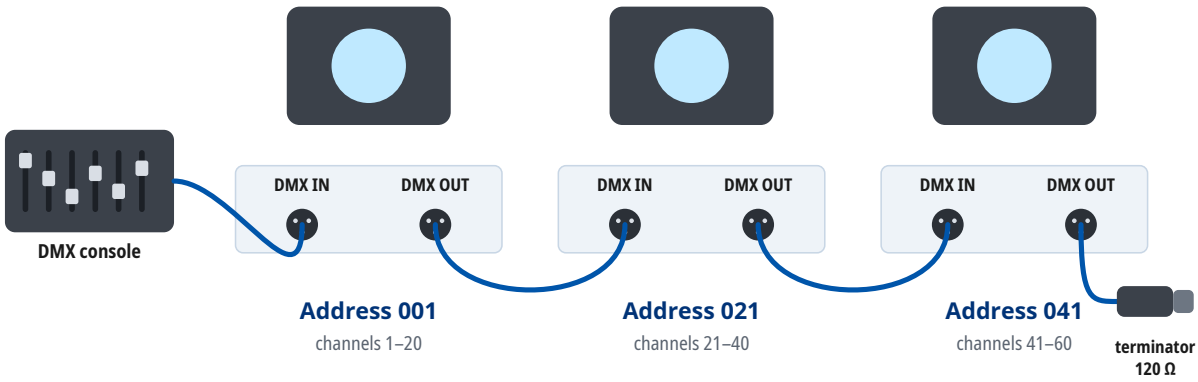
⚠ WARNING

- 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: 1 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.

5 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 19 CH Mode: 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.

6 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 “19 CH Mode”: 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 “19 CH Mode”, 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.

7 Functions at a glance

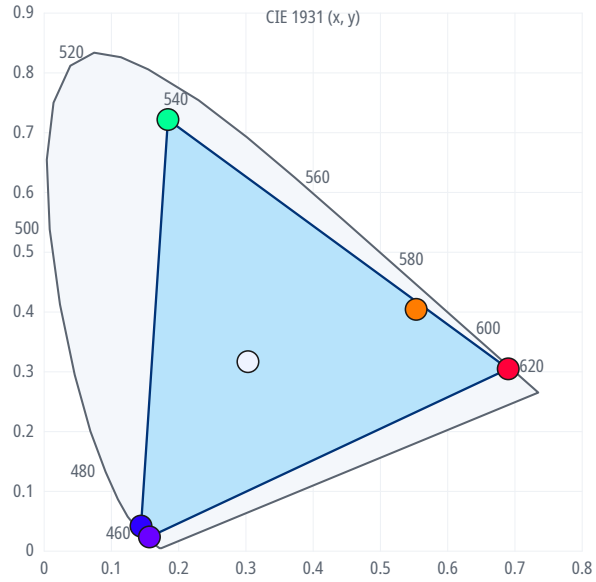
Functions in each DMX mode

	19 CH Mode 20 channels	12 CH Mode 1 13 channels	12 CH Mode 2 13 channels	6 CH RGBWAUV 7 channels	3 CH 4 channels	2 CH 3 channels
Pan / Tilt	✓	✓	✓	✓	✓	✓
Dimmer	1	1			1	1
Dimmer resolution	16 bit	16 bit			8 bit	8 bit
Shutter / strobe	3	3			2	
Color mixing	6× (4–14)	4–9	6× (1–11)	1–6		
Color temperature	18	12				2
Color wheel	16	10			3	

Color wheel

1. Color off — DMX 0–5
2. Red — DMX 6–13
3. Amber — DMX 14–21
4. Yellow warm — DMX 22–29
5. Yellow — DMX 30–37
6. Green — DMX 38–45
7. Turquoise — DMX 46–53
8. Cyan — DMX 54–61
9. Blue — DMX 62–69
10. Lavender — DMX 70–77
11. Mauve — DMX 78–85
12. Magenta — DMX 86–93
13. Pink — DMX 94–101
14. Warm white — DMX 102–109
15. White — DMX 110–117
16. Cold white — DMX 118–126

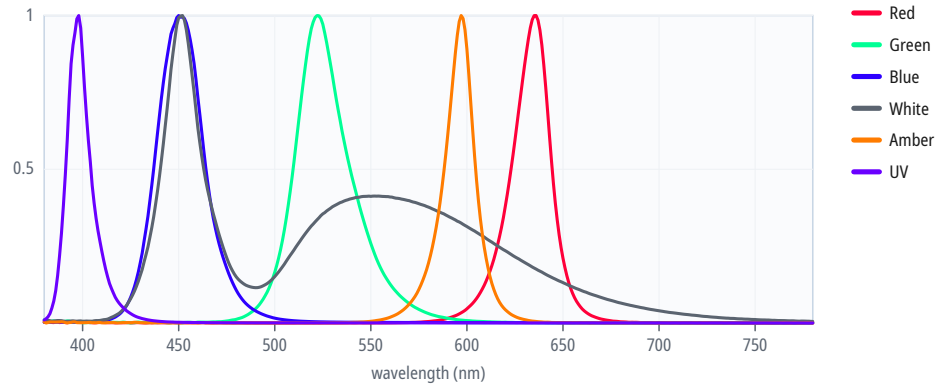
LED colors and the colors they mix



LED	x	y	nm
Red	0.690	0.305	629
Green	0.184	0.722	515
Blue	0.144	0.042	465
White	0.303	0.317	
Amber	0.553	0.405	
UV	0.157	0.024	

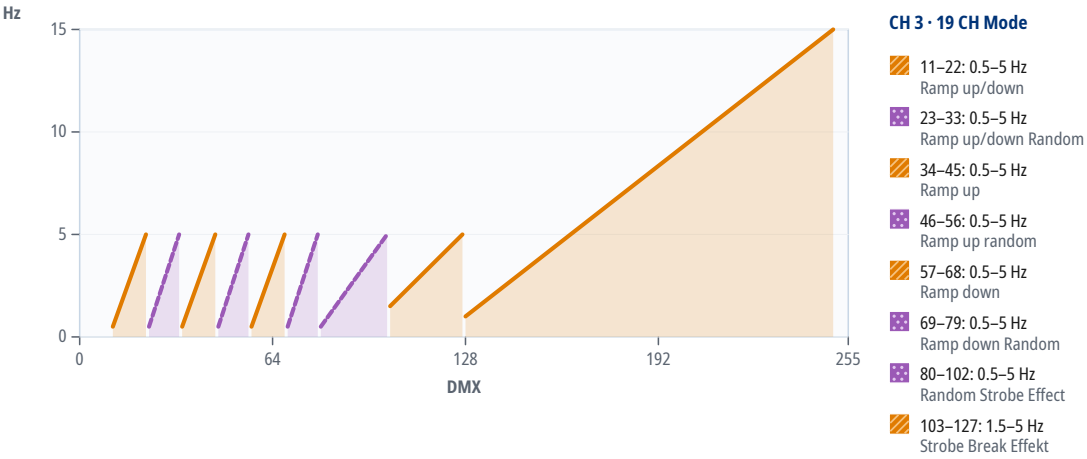
The shaded area holds the colors the LEDs can mix; the dots are the LED colors the GDTF file states.

Spectra of the light sources



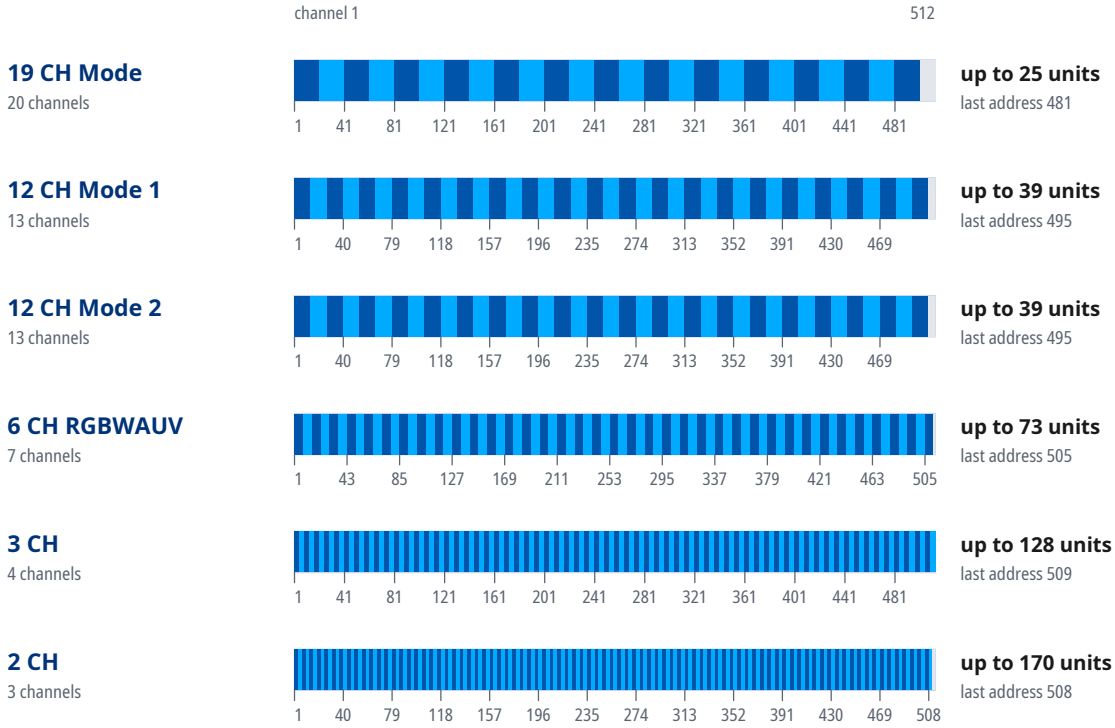
Relative spectrum of each light source as the GDTF file states it; each curve is scaled to its own maximum.

Strobe rate



8 DMX channels

Units in one DMX universe



Start addresses of 20 units in the mode “19 CH Mode”

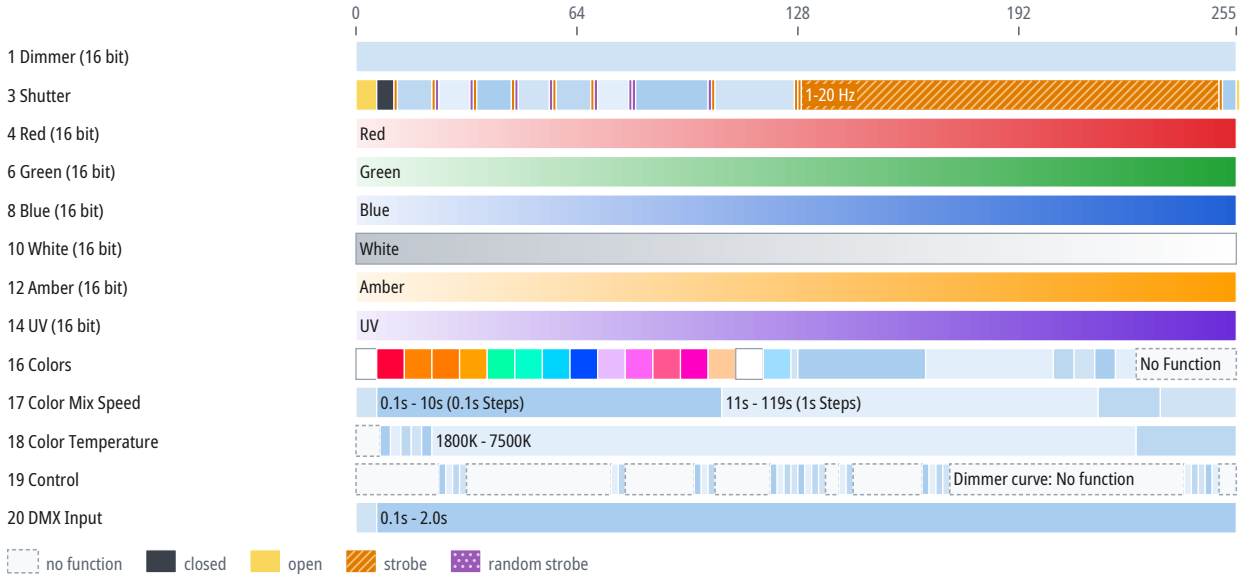
Unit	Start address	Unit	Start address	Unit	Start address	Unit	Start address
1	1	6	101	11	201	16	301
2	21	7	121	12	221	17	321
3	41	8	141	13	241	18	341
4	61	9	161	14	261	19	361
5	81	10	181	15	281	20	381

Mode 19 CH Mode

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 1 Dimmer above 0; CH 3 Shutter at 0–5 or 255 “Open”. The GDTF file gives these values for a console's Highlight function: CH 1 Dimmer 255, CH 10 White 255, CH 17 Color Mix Speed 0.

Channel functions at a glance



CH	Function	DMX	Description
1	Dimmer	0–255	
2	Dimmer Fine	0–255	Fine adjustment of CH 1
3	Shutter	0–5	Strobe open close: Open (react to dimmer CH1)
		6–10	Strobe open close: Close
		11	Ramp up/down: Slow
		12–21	Ramp up/down: Slow ... Fast2
		22	Ramp up/down: Fast2
		23	Ramp up/down Random: Slow
		24–32	Ramp up/down Random: Slow ... Fast
		33	Ramp up/down Random: Fast
		34	Ramp up: Slow
		35–44	Ramp up: Slow ... Fast
		45	Ramp up: Fast
		46	Ramp up random: Slow
		47–55	Ramp up random: Slow ... Fast
		56	Ramp up random: Fast
		57	Ramp down: Slow
		58–67	Ramp down: Slow ... Fast
		68	Ramp down: Fast
		69	Ramp down Random: Slow
		70–78	Ramp down Random: Slow ... Fast

CH	Function	DMX	Description
3	Shutter (continued)	79	Ramp down Random: Fast
		80	Random Strobe Effect: Slow
		81–101	Random Strobe Effect: Slow ... Fast
		102	Random Strobe Effect: Fast
		103	5s Short burst with break
		104–126	5s Short burst with break ... 1s Short burst with break
		127	1s Short burst with break
		128	Slow 1Hz
		129–249	1-20 Hz (1.1–19.9 Hz)
		250	Fast 20Hz
		251–254	Strobe open
		255	Strobe open: Open
4	Red	0–255	Red
5	Red Fine	0–255	Fine adjustment of CH 4
6	Green	0–255	Green
7	Green Fine	0–255	Fine adjustment of CH 6
8	Blue	0–255	Blue
9	Blue Fine	0–255	Fine adjustment of CH 8
10	White	0–255	White
11	White Fine	0–255	Fine adjustment of CH 10
12	Amber	0–255	Amber
13	Amber Fine	0–255	Fine adjustment of CH 12
14	UV	0–255	UV
15	UV Fine	0–255	Fine adjustment of CH 14
16	Colors	0–5	Color off
		6–13	Red
		14–21	Amber
		22–29	Yellow warm
		30–37	Yellow
		38–45	Green
		46–53	Turquoise
		54–61	Cyan
		62–69	Blue
		70–77	Lavender
		78–85	Mauve
		86–93	Magenta
		94–101	Pink
		102–109	Warm white
		110–117	White
		118–125	Cold white
		126–127	Color Jumping Stop
		128–164	Color Jumping Speed slow -> fast

CH	Function	DMX	Description
16	Colors (continued)	165–201	Color Fading Speed slow -> fast
		202–207	User Color_1
		208–213	User Color_2
		214–219	User Color_3
		220–225	User Color_4
		226–255	No Function
17	Color Mix Speed		Color Preset Crossfade
		0–5	0s
		6–105	0.1s - 10s (0.1s Steps)
		106–214	11s - 119s (1s Steps)
		215–232	2m - 4m50s (10s Steps)
		233–255	5m - 27m (1m Steps)
18	Color Temperature	0–6	Off
		7–9	Bulb White (2700K)
		10–12	Halogen White (3200K)
		13–15	Neutral White (4000K)
		16–18	Studio White (5600K)
		19–21	Daylight White (6500K)
		22–225	1800K - 7500K (1800–7500 K)
		226–255	CTC 1
19	Control	0–23	Record User Color: No function
		24–25	Record User Color 1 (hold 3s)
		26–27	Record User Color 2 (hold 3s)
		28–29	Record User Color 3 (hold 3s)
		30–31	Record User Color 4 (hold 3s)
		32–73	Dimmer Response: No function
		74–75	Dimmer Response LED (hold 1.5s)
		76–77	Dimmer Response Halogen (hold 1.5s)
		78–97	Fan: No function
		98–99	Silent Fan (hold 3s)
		100–101	Auto Fan (hold 3s)
		102–103	Fan Off (hold 3s)
		104–119	PWM: No function
		120–121	PWM 1 (650 Hz) (hold 3s)
		122–123	PWM 2 (1530 Hz) (hold 3s)
		124–125	PWM 3(3600 Hz) (hold 3s)
		126–127	PWM 4 (12000 Hz) (hold 3s)
		128–129	PWM 5 (18900 Hz) (hold 3s)
		130–131	PWM 6 (25000 Hz) (hold 3s)
		132–133	RAW (hold 3s)
		134–135	User Calibrated (hold 3s)
		136–139	Calibration: No function

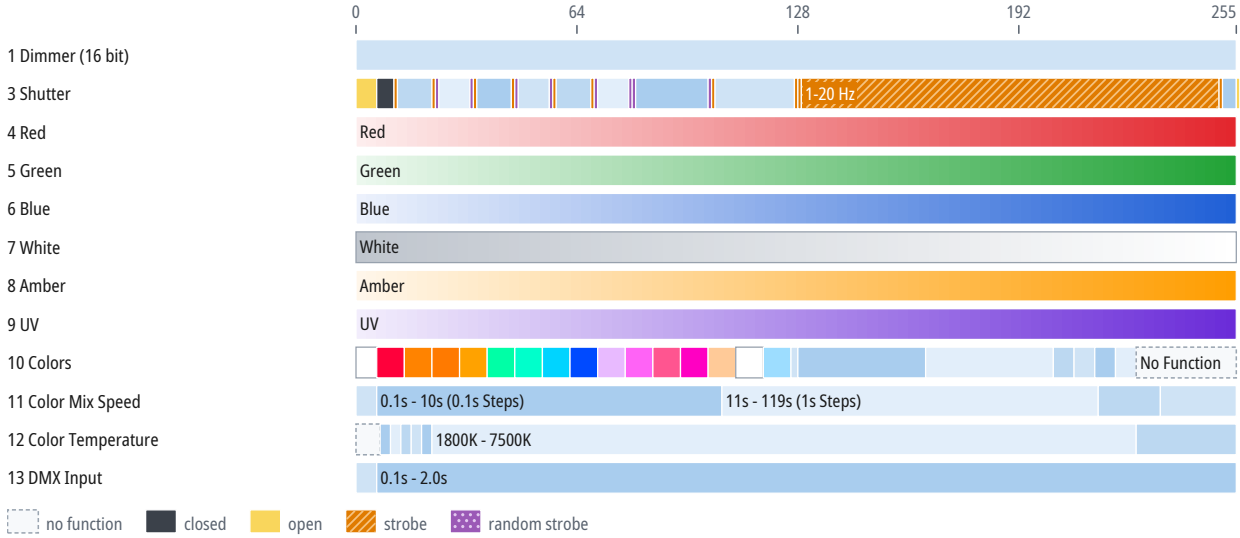
CH	Function	DMX	Description
19	Control (continued)	140–141	Display on (hold 3s)
		142–143	Display off (hold 3s)
		144–163	Display: No function
		164–165	Dimmer Curve Linear (hold 3s)
		166–167	Dimmer Curve Exponential (hold 3s)
		168–169	Dimmer Curve Logarithmic (hold 3s)
		170–171	Dimmer Curve S-Curve (hold 3s)
		172–239	Dimmer curve: No function
		240–241	Factory Default set (except DMX-Address;DMX-Mode) (hold 3s)
		242–243	Factory Default set (except DMX-Address;DMX-Mode) (hold 3s) ... Default A-User set (hold 3s)
		244–245	Default A-User set (hold 3s)
		246–247	Default B-User set (hold 3s)
		248–249	Default C-User set (hold 3s)
		250–255	Default: No function
20	DMX Input	0–5	No Delay
		6–255	0.1s - 2.0s

Mode 12 CH Mode 1

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 1 Dimmer above 0; CH 3 Shutter at 0–5 or 255 “Open”. The GDTF file gives these values for a console's Highlight function: CH 1 Dimmer 255, CH 7 White 255, CH 11 Color Mix Speed 0.

Channel functions at a glance



CH	Function	DMX	Description
1	Dimmer	0–255	
2	Dimmer Fine	0–255	Fine adjustment of CH 1
3	Shutter		Same as CH 3 in the mode “19 CH Mode” (p. 9)

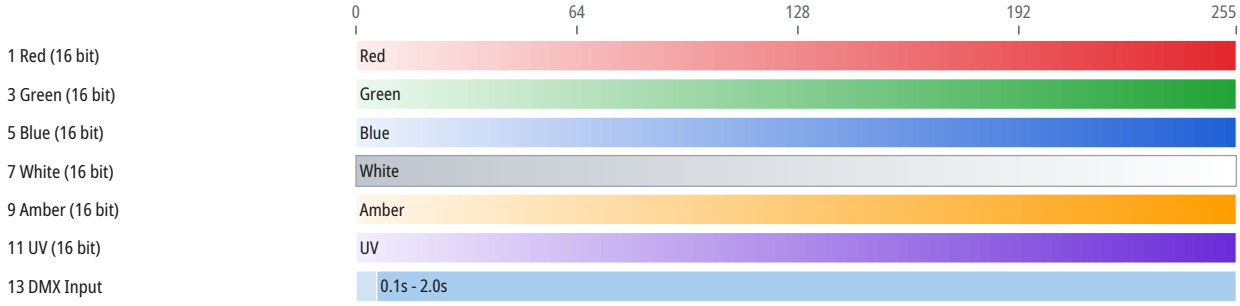
CH	Function	DMX	Description
4	Red	0–255	Red
5	Green	0–255	Green
6	Blue	0–255	Blue
7	White	0–255	White
8	Amber	0–255	Amber
9	UV	0–255	UV
10	Colors		Same as CH 16 in the mode “19 CH Mode” (p. 10)
11	Color Mix Speed		Same as CH 17 in the mode “19 CH Mode” (p. 11)
12	Color Temperature		Same as CH 18 in the mode “19 CH Mode” (p. 11)
13	DMX Input		Same as CH 20 in the mode “19 CH Mode” (p. 12)

Mode 12 CH Mode 2

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

The GDTF file gives these values for a console's Highlight function: CH 7 White 255.

Channel functions at a glance

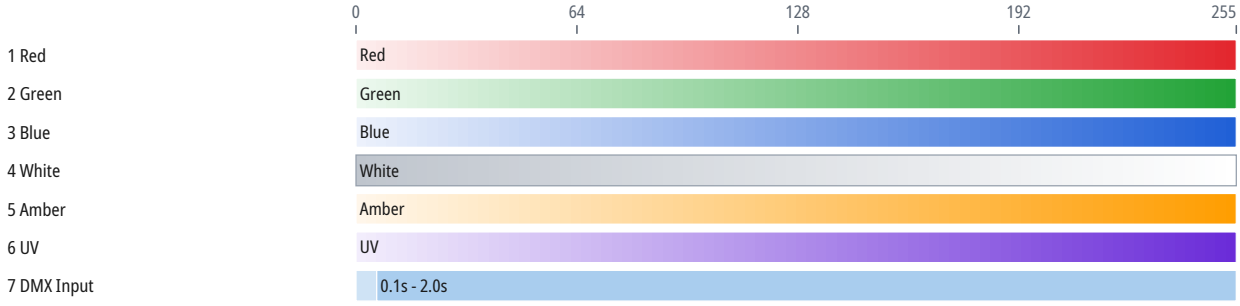


CH	Function	DMX	Description
1	Red	0–255	Red
2	Red Fine	0–255	Fine adjustment of CH 1
3	Green	0–255	Green
4	Green Fine	0–255	Fine adjustment of CH 3
5	Blue	0–255	Blue
6	Blue Fine	0–255	Fine adjustment of CH 5
7	White	0–255	White
8	White Fine	0–255	Fine adjustment of CH 7
9	Amber	0–255	Amber
10	Amber Fine	0–255	Fine adjustment of CH 9
11	UV	0–255	UV
12	UV Fine	0–255	Fine adjustment of CH 11
13	DMX Input		Same as CH 20 in the mode “19 CH Mode” (p. 12)

Mode 6 CH RGBWAUV

The GDTF file gives these values for a console's Highlight function: CH 4 White 255.

Channel functions at a glance

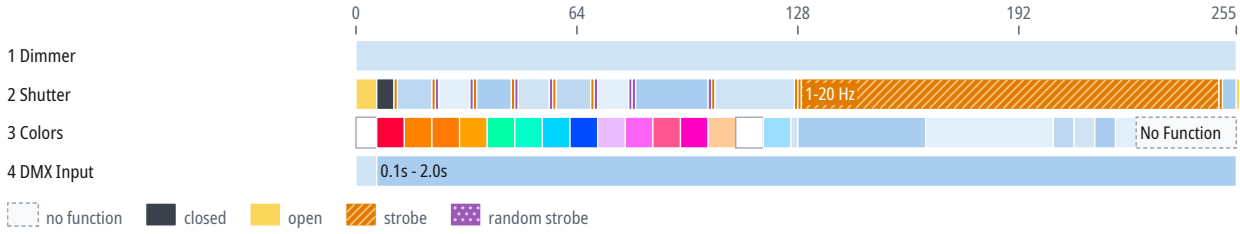


CH	Function	DMX	Description
1	Red	0–255	Red
2	Green	0–255	Green
3	Blue	0–255	Blue
4	White	0–255	White
5	Amber	0–255	Amber
6	UV	0–255	UV
7	DMX Input		Same as CH 20 in the mode “19 CH Mode” (p. 12)

Mode 3 CH

If the device receives DMX in this mode but gives no light, check these channels: CH 1 Dimmer above 0; CH 2 Shutter at 0–5 or 255 “Open”. The GDTF file gives these values for a console's Highlight function: CH 1 Dimmer 255.

Channel functions at a glance

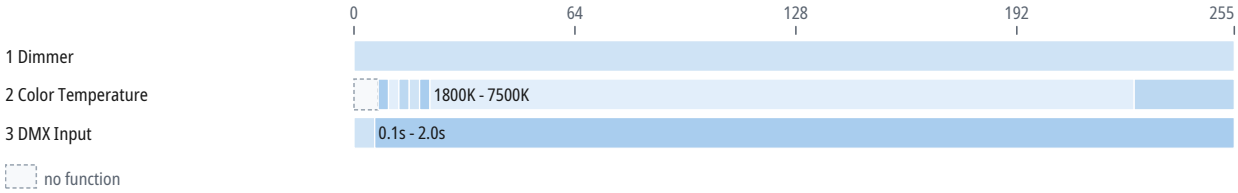


CH	Function	DMX	Description
1	Dimmer	0–255	
2	Shutter		Same as CH 3 in the mode “19 CH Mode” (p. 9)
3	Colors		Same as CH 16 in the mode “19 CH Mode” (p. 10)
4	DMX Input		Same as CH 20 in the mode “19 CH Mode” (p. 12)

Mode 2 CH

If the device receives DMX in this mode but gives no light, check these channels: CH 1 Dimmer above 0. 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	0–255	
2	Color Temperature		Same as CH 18 in the mode “19 CH Mode” (p. 11)
3	DMX Input		Same as CH 20 in the mode “19 CH Mode” (p. 12)

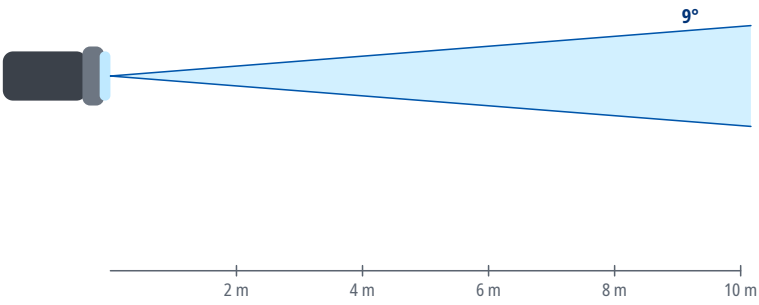
9 Technical specifications

Parameter	Value
Light source	LED
DMX connection	3-pin XLR IN/OUT
Power connectors	IEC 60320-C7/C8 IN
Weight	1 kg
Operating temperature	0 to 40 °C

Speeds and ranges

Parameter	Value
Color temperature range	1800–7500 K
Strobe frequency	1–15 Hz

Spot diameter



Distance	Ø 9°
2 m	0.31 m
4 m	0.63 m
6 m	0.94 m
8 m	1.3 m
10 m	1.6 m
15 m	2.4 m

Spot diameter square to the beam axis, calculated from the beam angle.

10 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.

11 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.

12 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.