DMX REFERENCE

ROOT PAR 4

ROOT Par 4 7x4W RGBW LED Par

Cameo



Manufacturer	Cameo
GDTF file	Cameo_Root_PAR_4_121027.gdtf
GDTF revision	Final_Version_1 · 2025-12-13
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1 About this manual

This document describes the ROOT Par 4 7x4W RGBW LED Par by Cameo. It was compiled from the GDTF file Cameo_Root_PAR_4_121027.gdtf from the GDTF-Share library.

File revision: “Final_Version_1”.

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	1.8 kg

DMX modes

Mode	Channels	Units in one universe	First start addresses
2CH	2	256	1, 3, 5, 7, ...
4CH1	4	128	1, 5, 9, 13, ...
4CH2	4	128	1, 5, 9, 13, ...
6CH	6	85	1, 7, 13, 19, ...
9CH	9	56	1, 10, 19, 28, ...
5CH	5	102	1, 6, 11, 16, ...
D3CH	3	170	1, 4, 7, 10, ...
D5CH1	5	102	1, 6, 11, 16, ...
D5CH2	5	102	1, 6, 11, 16, ...
D7CH	6	85	1, 7, 13, 19, ...
D10CH	10	51	1, 11, 21, 31, ...
D6CH	6	85	1, 7, 13, 19, ...


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.

4 Product description

Description in the GDTF file

“7 x 4W LED RGBW Indoor Spotlight with 3-PIN DMX & Power Twist connectors 7850 lx/1m 36,5° beam with IR Remote”

5 Installation

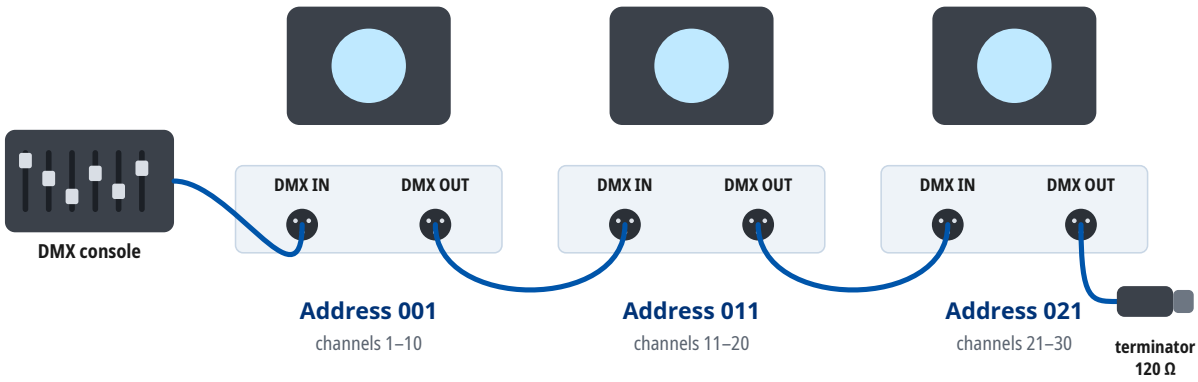
⚠ WARNING

- 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: 1.75 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 D10CH: every unit occupies 10 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 “D10CH”: 10.
- 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 “D10CH”, you can use, for example, the start addresses 1, 11, 21, 31.
- The DMX mode set on the device must match the fixture profile (personality) used in the controller.

8 Functions at a glance

Functions in each DMX mode

	2CH 2 channels	4CH1 4 channels	4CH2 4 channels	6CH 6 channels	9CH 9 channels	5CH 5 channels	D3CH 3 channels	D5CH1 5 channels
Dimmer	1	1		1	1	1	1	1
Shutter / strobe		2		2	3	2		2
Color mixing			1–4	3–6	4–7			
Color wheel	2	3			8	4, 5	2	3
Effects / macros		4			9	5		4

Color wheel

1 Red
DMX 6–13

2 Amber
DMX 14–21

3 Yellow Warm
DMX 22–29

4 Yellow
DMX 30–37

5 Green
DMX 38–45

6 Turquoise
DMX 46–53

7 Cyan
DMX 54–61

8 Blue
DMX 62–69

9 Lavender
DMX 70–77

10 Mauve
DMX 78–85

11 Magenta
DMX 86–93

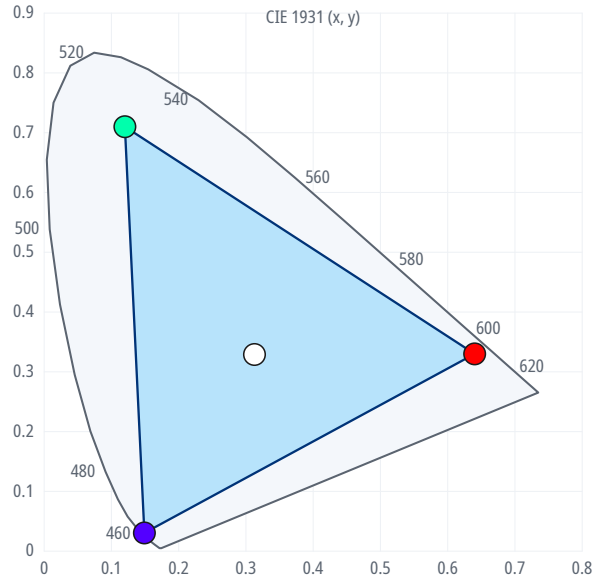
12 Pink
DMX 94–101

13 Warm White
DMX 102–109

14 White
DMX 110–117

15 Cold White
DMX 118–126

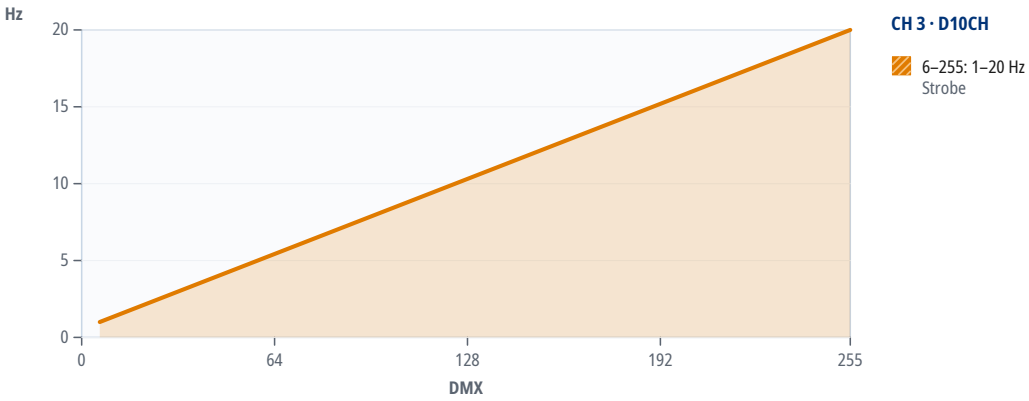
LED colors and the colors they mix



LED	x	y
Red	0.640	0.330
Green	0.120	0.710
Blue	0.149	0.030
White	0.313	0.329

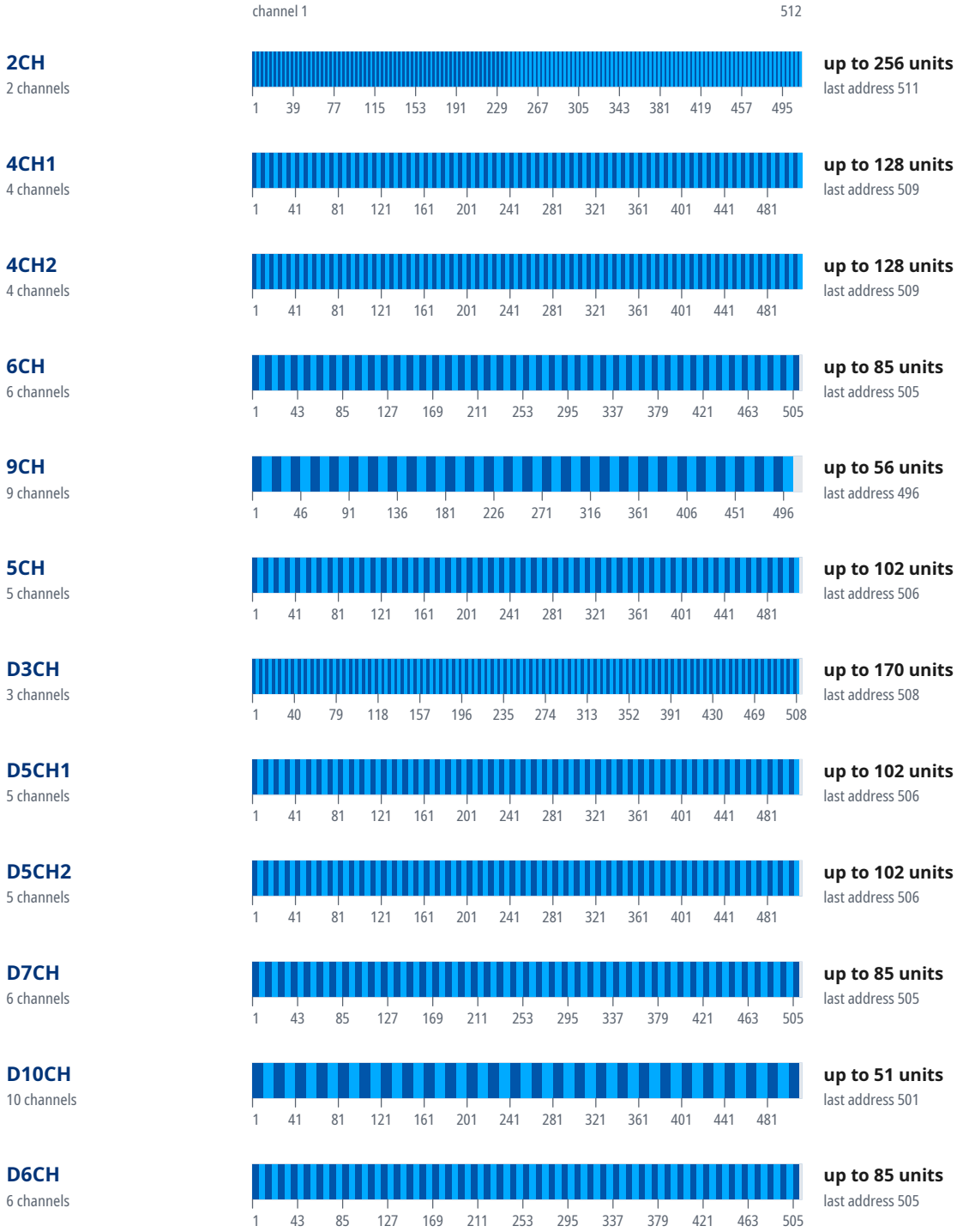
The shaded area holds the colors the LEDs can mix; the dots are the LED colors the GDTF file states.

Strobe rate



9 DMX channels

Units in one DMX universe



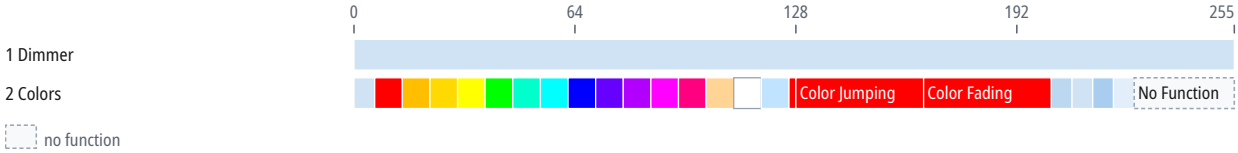
Start addresses of 20 units in the mode “D10CH”

Unit	Start address	Unit	Start address	Unit	Start address	Unit	Start address
1	1	6	51	11	101	16	151
2	11	7	61	12	111	17	161
3	21	8	71	13	121	18	171
4	31	9	81	14	131	19	181
5	41	10	91	15	141	20	191

Mode 2CH

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 2 Colors 0.

Channel functions at a glance



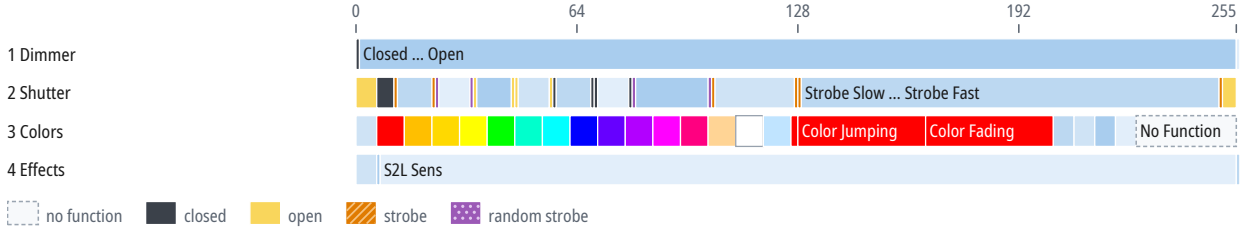
CH	Function	DMX	Description
1	Dimmer	0–255	
2	Colors	0–5	Color OFF
		6–13	Red
		14–21	Amber
		22–29	Yellow Warm
		30–37	Yellow
		38–45	Green
		46–53	Turquoise
		54–61	Cyan
		62–69	Blue
		70–77	Lavender
		78–85	Mauve
		86–93	Magenta
		94–101	Pink
		102–109	Warm White
		110–117	White
		118–125	Cold White
		126–127	Effects Stop
		128–164	Color Jumping (1–100 °/s)
		165–201	Color Fading (1–100 °/s)
		202–207	User Color 1
		208–213	User Color 2

CH	Function	DMX	Description
2	Colors (continued)	214–219	User Color 3
		220–225	User Color 4
		226–255	No Function

Mode 4CH1

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 251–255 “Open”. The GDTF file gives these values for a console's Highlight function: CH 1 Dimmer 255, CH 2 Shutter 0, CH 3 Colors 0.

Channel functions at a glance



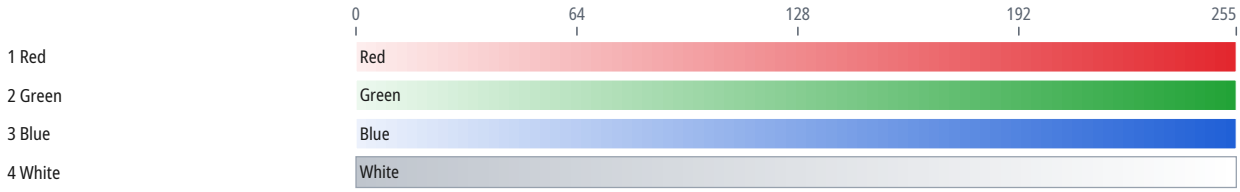
CH	Function	DMX	Description
1	Dimmer	0	Closed
		1–254	Closed ... Open
		255	Open
2	Shutter	0–5	Shutter: Open
		6–10	Shutter: Closed
		11	Pulse Slow
		12–21	Pulse Slow ... Pulse Fast
		22	Pulse Fast
		23	Random Pulse Slow
		24–32	Random Pulse Slow ... Random Pulse Fast
		33	Random Pulse Fast
		34	Pulse Open Slow
		35–44	Pulse Open Slow ... Pulse Open Fast
		45	Pulse Open Fast
		46	Random Pulse Open Slow
		47–55	Random Pulse Open Slow ... Random Pulse Open Fast
		56	Random Pulse Open Fast
		57	Pulse Close Slow
		58–67	Pulse Close Slow ... Pulse Close Fast
		68	Pulse Close Fast
		69	Random Pulse Close Slow
		70–78	Random Pulse Close Slow ... Random Pulse Close Fast
		79	Random Pulse Close Fast
		80–102	Strobe Random (1–20 Hz)

CH	Function	DMX	Description
2	Shutter (continued)	103	Strobe Burst 5s Break
		104–126	Strobe Burst 5s Break ... Strobe Burst 1s Break
		127	Strobe Burst 1s Break
		128	Strobe Slow
		129–249	Strobe Slow ... Strobe Fast
		250	Strobe Fast
		251–255	Shutter: Open
3	Colors		Same as CH 2 in the mode “2CH” (p. 9)
4	Effects	0–5	S2L OFF
		6	S2L Sens Low
		7–254	S2L Sens
		255	S2L Sens High

Mode 4CH2

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.

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

Mode 6CH

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 “Open”. The GDTF file gives these values for a console's Highlight function: CH 1 Dimmer 255, CH 2 Shutter 0, CH 3 Red 255, CH 4 Green 255, CH 5 Blue 255, CH 6 White 255.

Channel functions at a glance

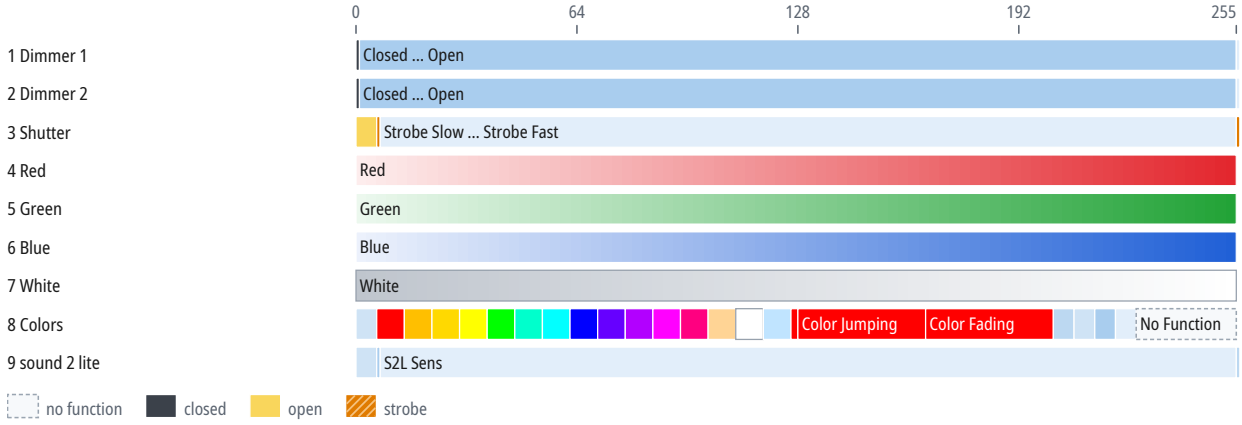


CH	Function	DMX	Description
1	Dimmer		Same as CH 1 in the mode “4CH1” (p. 10)
2	Shutter	0–5	Shutter: Open
		6	Strobe Slow
		7–254	Strobe Slow ... Strobe Fast
		255	Strobe Fast
3	Red	0–255	Red
4	Green	0–255	Green
5	Blue	0–255	Blue
6	White	0–255	White

Mode 9CH

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

Channel functions at a glance



CH	Function	DMX	Description
1	Dimmer 1	0	Closed
		1–254	Closed ... Open
		255	Open
2	Dimmer 2		Dimmer Fine
		0	Closed
		1–254	Closed ... Open
		255	Open
3	Shutter	0–5	Shutter Closed: Open
		6	Strobe Slow
		7–254	Strobe Slow ... Strobe Fast
		255	Strobe Fast
4	Red	0–255	Red
5	Green	0–255	Green

CH	Function	DMX	Description
6	Blue	0–255	Blue
7	White	0–255	White
8	Colors		Same as CH 2 in the mode “2CH” (p. 9)
9	sound 2 lite	0–5	S2L OFF
		6	S2L Sens Low
		7–254	S2L Sens
		255	S2L Sens High

Mode 5CH

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 “Open”. The GDTF file gives these values for a console's Highlight function: CH 1 Dimmer 255, CH 2 Shutter 0, CH 4 Colors 1 0, CH 5 Colors 2 0.

Channel functions at a glance



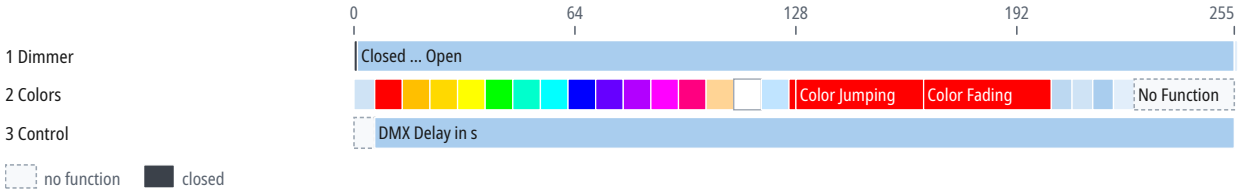
CH	Function	DMX	Description
1	Dimmer		Same as CH 1 in the mode “4CH1” (p. 10)
2	Shutter		Same as CH 2 in the mode “6CH” (p. 12)
3	Colors Mode	0–5	Color Preset 1
		6–26	Color Jump Slow
		27–127	Color Jump Fast
		128–148	Color Fade Slow
		149–255	Color Fade Fast
4	Colors 1	0–5	Color OFF
		6–13	Red
		14–21	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

CH	Function	DMX	Description
4	Colors 1 (continued)	102–109	Warm White
		110–117	White
		118–125	Cold White
		126–201	No Function
		202–207	User Color 1
		208–213	User Color 2
		214–219	User Color 3
		220–225	User Color 4
		226–255	UV
5	Colors 2	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
		126–201	No Function
		202–207	User Color 1
		208–213	User Color 2
		214–219	User Color 3
		220–225	User Color 4
		226–255	UV

Mode D3CH

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, CH 2 Colors 0.

Channel functions at a glance



CH	Function	DMX	Description
1	Dimmer		Same as CH 1 in the mode “4CH1” (p. 10)
2	Colors		Same as CH 2 in the mode “2CH” (p. 9)
3	Control	0–5	No Function
		6–255	DMX Delay in s

Mode D5CH1

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 251–255 “Open”. The GDTF file gives these values for a console's Highlight function: CH 1 Dimmer 255, CH 2 Shutter 0, CH 3 Colors 0.

Channel functions at a glance

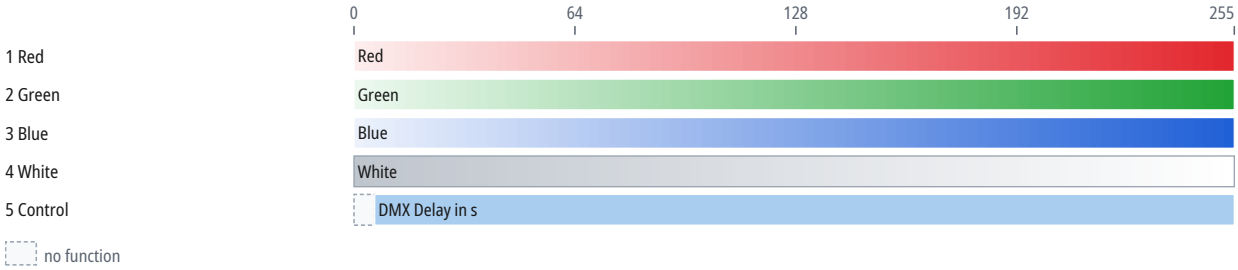


CH	Function	DMX	Description
1	Dimmer		Same as CH 1 in the mode “4CH1” (p. 10)
2	Shutter		Same as CH 2 in the mode “4CH1” (p. 10)
3	Colors		Same as CH 2 in the mode “2CH” (p. 9)
4	Effects		Same as CH 4 in the mode “4CH1” (p. 11)
5	Control		Same as CH 3 in the mode “D3CH” (p. 15)

Mode D5CH2

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.

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	Control		Same as CH 3 in the mode “D3CH” (p. 15)

Mode D7CH

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 “Open”. The GDTF file gives these values for a console's Highlight function: CH 1 Dimmer 255, CH 2 Shutter 0, CH 3 Red 255, CH 4 Green 255, CH 5 Blue 255, CH 6 White 255.

Channel functions at a glance

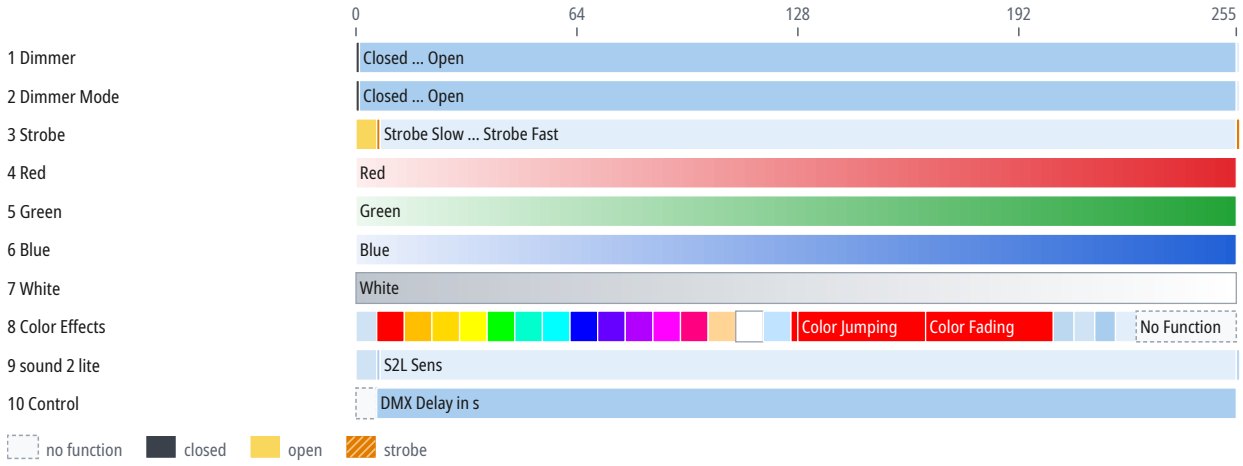


CH	Function	DMX	Description
1	Dimmer		Same as CH 1 in the mode “4CH1” (p. 10)
2	Shutter	0–5	Shutter Closed: Open
		6	Strobe Slow
		7–254	Strobe Slow ... Strobe Fast
		255	Strobe Fast
3	Red	0–255	Red
4	Green	0–255	Green
5	Blue	0–255	Blue
6	White	0–255	White

Mode D10CH

If the device receives DMX in this mode but gives no light, check these channels: CH 1 Dimmer above 0; CH 2 Dimmer Mode above 0; CH 3 Strobe at 0–5 “Open”. The GDTF file gives these values for a console's Highlight function: CH 1 Dimmer 255, CH 2 Dimmer Mode 255, CH 3 Strobe 0, CH 4 Red 255, CH 5 Green 255, CH 6 Blue 255, CH 7 White 255, CH 8 Color Effects 0.

Channel functions at a glance



CH	Function	DMX	Description
1	Dimmer		Same as CH 1 in the mode “4CH1” (p. 10)
2	Dimmer Mode		Dimmer Fine
		0	Closed
		1–254	Closed ... Open
		255	Open
3	Strobe	0–5	Shutter Closed: Open
		6	Strobe Slow
		7–254	Strobe Slow ... Strobe Fast
		255	Strobe Fast
4	Red	0–255	Red
5	Green	0–255	Green
6	Blue	0–255	Blue
7	White	0–255	White
8	Color Effects	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

CH	Function	DMX	Description
8	Color Effects (continued)	86–93	Magenta
		94–101	Pink
		102–109	Warm White
		110–117	White
		118–125	Cold White
		126–127	Effects Stop
		128–164	Color Jumping (1–100 °/s)
		165–201	Color Fading (1–100 °/s)
		202–207	User Color 1
		208–213	User Color 2
		214–219	User Color 3
		220–225	User Color 4
		226–255	No Function
9	sound 2 lite		Same as CH 9 in the mode “9CH” (p. 13)
10	Control		Same as CH 3 in the mode “D3CH” (p. 15)

Mode D6CH

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 “Open”. The GDTF file gives these values for a console's Highlight function: CH 1 Dimmer 255, CH 2 Shutter 0, CH 4 Colors 1 0, CH 5 Colors 2 0.

Channel functions at a glance



CH	Function	DMX	Description
1	Dimmer		Same as CH 1 in the mode “4CH1” (p. 10)
2	Shutter		Same as CH 2 in the mode “6CH” (p. 12)
3	Colors Mode		Same as CH 3 in the mode “5CH” (p. 13)
4	Colors 1		Same as CH 4 in the mode “5CH” (p. 13)
5	Colors 2		Same as CH 5 in the mode “5CH” (p. 14)
6	Control		Same as CH 3 in the mode “D3CH” (p. 15)

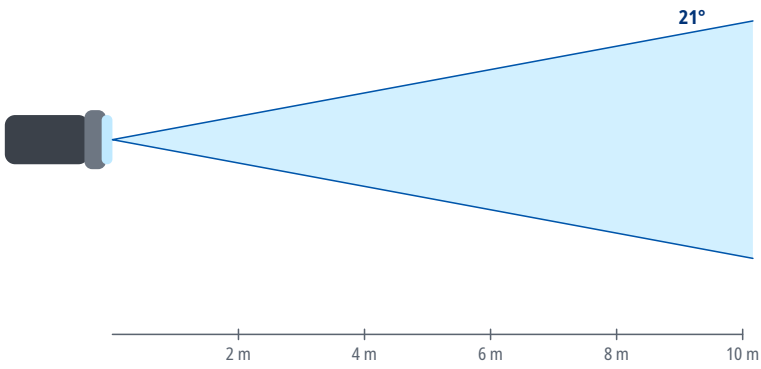
10 Technical specifications

Parameter	Value
Light	
Light source	LED
LED power	58 W
Luminous flux	1,800 lm
Color temperature	6,500 K
Color rendering index (CRI)	100
Optics	
Beam angle	21°
Control	
DMX connection	3-pin XLR IN/OUT
Dimensions and construction	
Weight	1.8 kg
Operating environment	
Operating temperature	0 to 40 °C

Speeds and ranges

Parameter	Value
Strobe frequency	1–20 Hz
Color wheel rotation	up to 100 °/s (17 rpm)

Spot diameter



Distance	Ø 21°
2 m	0.74 m
4 m	1.5 m
6 m	2.2 m
8 m	3 m
10 m	3.7 m
15 m	5.6 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.

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.