DMX REFERENCE

Studio PAR DTW

Studio PAR DTW / CLPSTDTW

Cameo



Manufacturer	Cameo
GDTF file	Cameo_STUDIO_PAR_DTW_25772.gdtf
GDTF revision	Firmware 1U V103-GDTF 1.2 · 2022-06-15
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1 About this manual

This document describes the Studio PAR DTW / CLPSTDTW by Cameo. It was compiled from the GDTF file Cameo_STUDIO_PAR_DTW_25772.gdtf from the GDTF-Share library.

File revision: “Firmware 1U V103-GDTF 1.2”.

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	4.7 kg

DMX modes

Mode	Channels	Units in one universe	First start addresses
1CH Mode	1	512	1, 2, 3, 4, ...
2CH Mode	2	256	1, 3, 5, 7, ...
3 CH Mode Sound to Light	3	170	1, 4, 7, 10, ...
3CH Mode DIR	3	170	1, 4, 7, 10, ...
3CH Mode CCT	3	170	1, 4, 7, 10, ...
9CH Mode	9	56	1, 10, 19, 28, ...
13 CH Mode	13	39	1, 14, 27, 40, ...

No light? Check these channels

- 1CH Mode: CH 1 Dimmer above 0
- 2CH Mode: CH 1 Dimmer above 0
- 3 CH Mode Sound to Light: CH 1 Dimmer above 0
- 3CH Mode CCT: CH 1 Dimmer above 0; CH 2 Strobe at 0, 255 “Open” or 251–254
- 9CH Mode: CH 1 Dimmer above 0; CH 2 Strobe at 0, 255 “Open” or 251–254
- 13 CH Mode: CH 1 Dimmer above 0; CH 3 Strobe at 0, 255 “Open” or 251–254



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

“12x10 W WW,CW,A LED STUDIO PAR WITH DIM-TO-WARM CONTROL”

5 Installation

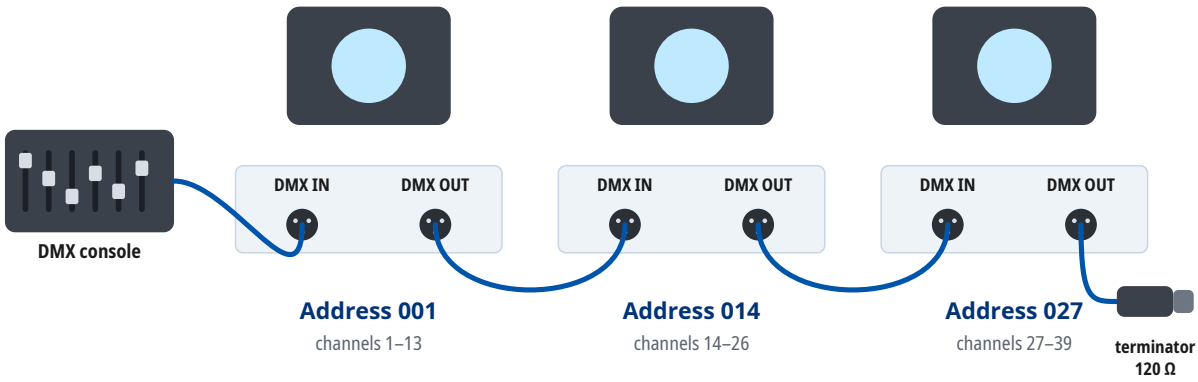
⚠ WARNING

- 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: 4.7 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 13 CH Mode: every unit occupies 13 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

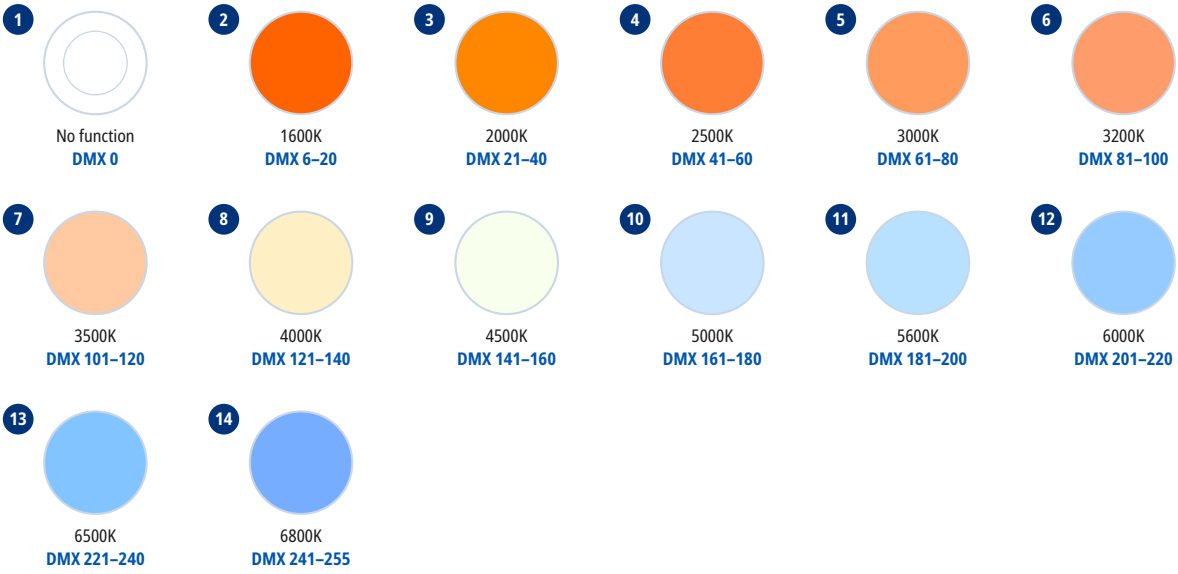
- The device occupies as many consecutive channels in the DMX universe as the selected DMX mode uses, starting at the set start address.
- Number of channels occupied in the DMX mode “13 CH Mode”: 13.
- Choose start addresses so that the channels of individual devices do not overlap and the last occupied 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 “13 CH Mode”, you can use, for example, the start addresses 1, 14, 27, 40.
- 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

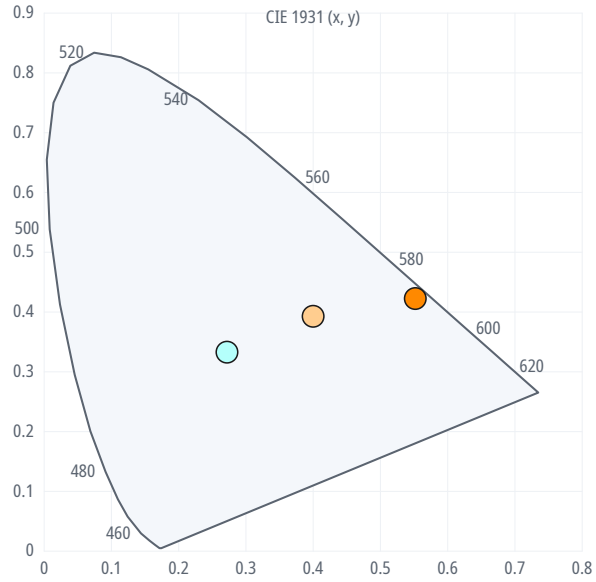
Functions in each DMX mode

	1CH Mode 1 channel	2CH Mode 2 channels	3 CH Mode Sound to Light 3 channels	3CH Mode DIR 3 channels	3CH Mode CCT 3 channels	9CH Mode 9 channels	13 CH Mode 13 channels
Dimmer	1	1	1	✓	1	1	1
Dimmer resolution	8 bit	8 bit	8 bit		8 bit	8 bit	16 bit
Shutter / strobe					2	2	3
Color mixing				1–3		3–5	4, 6, 8
Color temperature		2	2		3	7	11
Color wheel						6	10

Color wheel



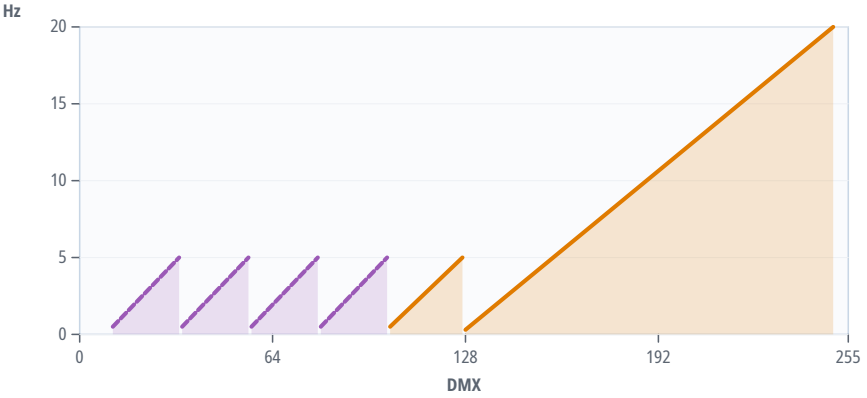
LED colors



LED	x	y
Cold White	0.272	0.333
Warm White	0.400	0.393
Amber	0.552	0.423

The dots are the LED colors the GDTF file states.

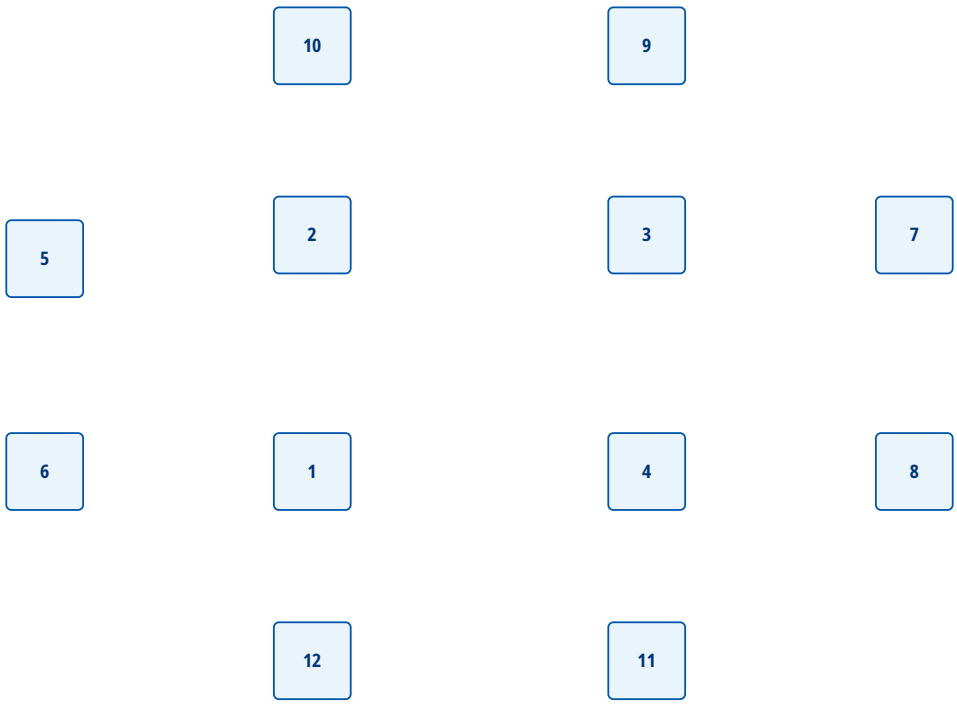
Strobe rate



CH 2 · 9CH Mode

- 11–33: 0.5–5 Hz
  Pulse Random
- 34–56: 0.5–5 Hz
  Ramp Up Random
- 57–79: 0.5–5 Hz
  Ramp Down Random
- 80–102: 0.5–5 Hz
  Random Strobe Effect
- 103–127: 0.5–5 Hz
  Strobe Break Effect
- 128–250: 0.3–20 Hz
  Strobe Slow to Fast

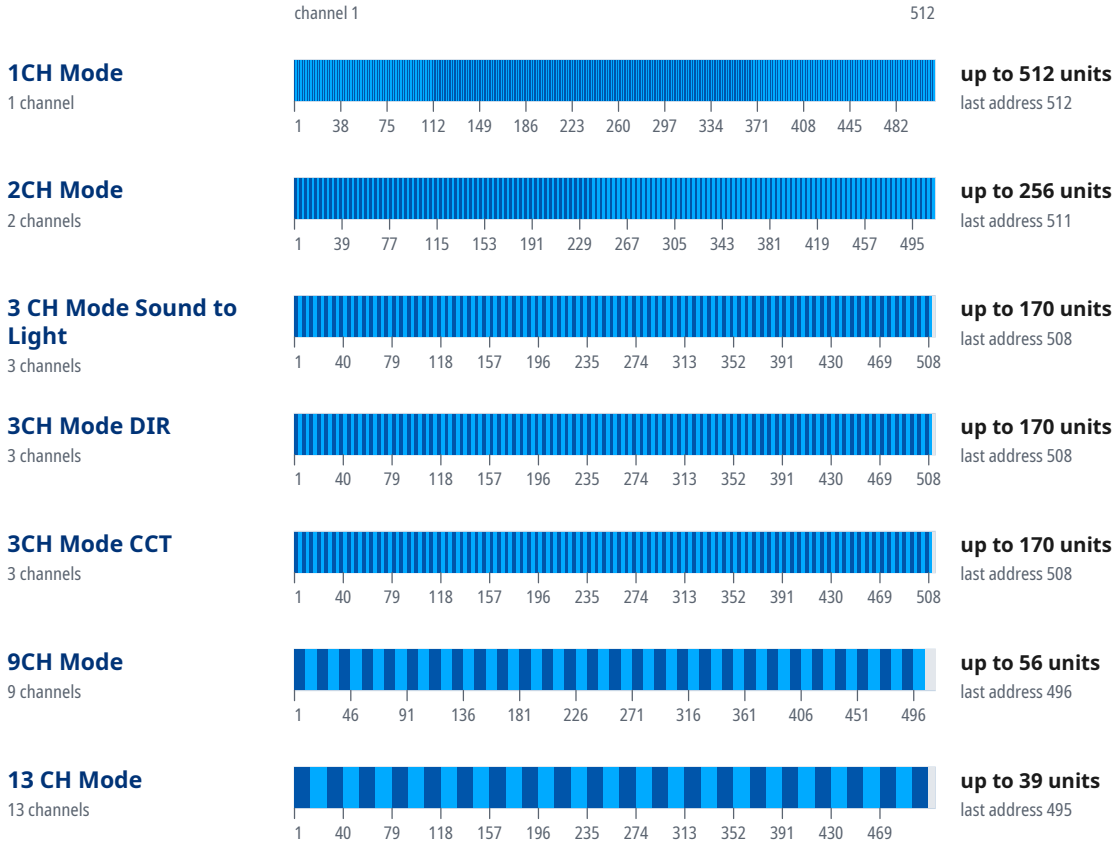
Cells (pixels)



12 cells where the GDTF file places them (seen from above), numbered in the file's order; the mode “9CH Mode” drives them together.

9 DMX channels

Units in one DMX universe



Start addresses of 20 units in the mode “13 CH Mode”

Unit	Start address	Unit	Start address	Unit	Start address	Unit	Start address
1	1	6	66	11	131	16	196
2	14	7	79	12	144	17	209
3	27	8	92	13	157	18	222
4	40	9	105	14	170	19	235
5	53	10	118	15	183	20	248

Mode 1CH Mode

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

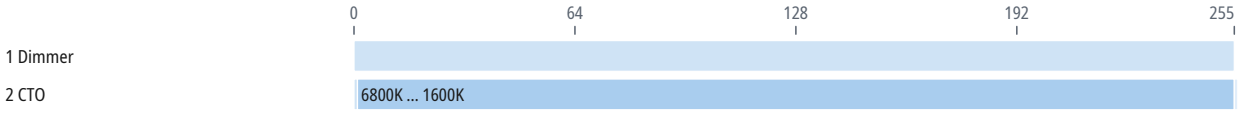


CH	Function	DMX	Description
1	Dimmer	0–255	

Mode 2CH Mode

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

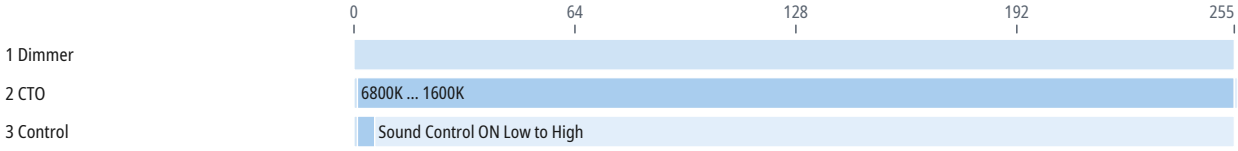


CH	Function	DMX	Description
1	Dimmer	0–255	
2	CTO		Colour Temperature
		0	6800K
		1–254	6800K ... 1600K
		255	1600K

Mode 3 CH Mode Sound to Light

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

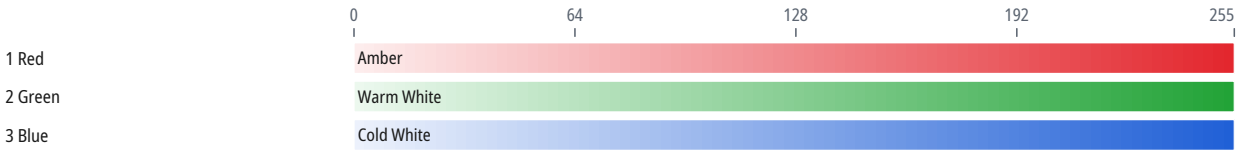


CH	Function	DMX	Description
1	Dimmer	0–255	
2	CTO		Same as CH 2 in the mode “2CH Mode” (p. 10)
3	Control	0	Sound Control OFF (Mic Sensitivity)
		1–5	Sound Control OFF (Mic Sensitivity) ... Sound Control ON Low to High
		6–255	Sound Control ON Low to High

Mode 3CH Mode DIR

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

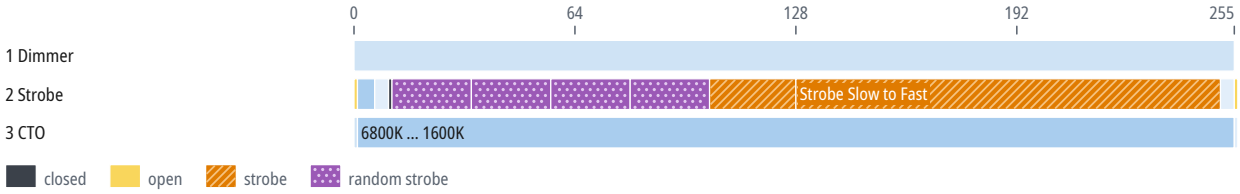


CH	Function	DMX	Description
1	Red	0–255	Amber
2	Green		Warm White
		0–255	Warm White
3	Blue		Cold White
		0–255	Cold White

Mode 3CH Mode CCT

If the device receives DMX in this mode but gives no light, check these channels: CH 1 Dimmer above 0; CH 2 Strobe at 0, 255 “Open” or 251–254. The GDTF file gives these values for a console's Highlight function: CH 1 Dimmer 255.

Channel functions at a glance

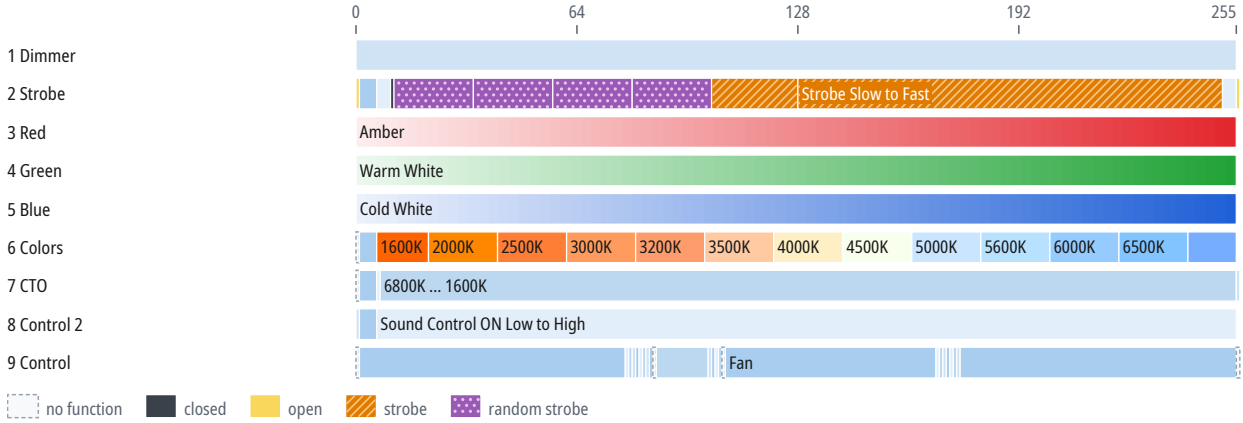


CH	Function	DMX	Description
1	Dimmer	0–255	
2	Strobe	0	Strobe Open: Open
		1–5	Strobe Open
		6–9	Strobe Closed
		10	Strobe Closed: Close
		11–33	Pulse Random (0.5–5 Hz)
		34–56	Ramp Up Random (0.5–5 Hz)
		57–79	Ramp Down Random (0.5–5 Hz)
		80–102	Random Strobe Effect (0.5–5 Hz)
		103–127	Strobe Break Effect (0.5–5 Hz)
		128–250	Strobe Slow to Fast (0.3–20 Hz)
		251–254	Open Strobe
		255	Open Strobe: Open
3	CTO		Same as CH 2 in the mode “2CH Mode” (p. 10)

Mode 9CH Mode

If the device receives DMX in this mode but gives no light, check these channels: CH 1 Dimmer above 0; CH 2 Strobe at 0, 255 “Open” or 251–254. The GDTF file gives these values for a console's Highlight function: CH 1 Dimmer 255, CH 3 Red 255, CH 4 Green 255, CH 5 Blue 255.

Channel functions at a glance



CH	Function	DMX	Description
1	Dimmer	0–255	
2	Strobe		Same as CH 2 in the mode “3CH Mode CCT” (p. 11)
3	Red	0–255	Amber
4	Green		Same as CH 2 in the mode “3CH Mode DIR” (p. 11)
5	Blue		Same as CH 3 in the mode “3CH Mode DIR” (p. 11)
6	Colors		CCT Macro
		0	No function
		1–5	No function ... 1600K
		6–20	1600K
		21–40	2000K
		41–60	2500K
		61–80	3000K
		81–100	3200K
		101–120	3500K
		121–140	4000K
		141–160	4500K
		161–180	5000K
		181–200	5600K
		201–220	6000K
		221–240	6500K
		241–255	6800K
7	CTO		Colour Temperature
		0	Off
		1–5	Off ... 6800K
		6	6800K

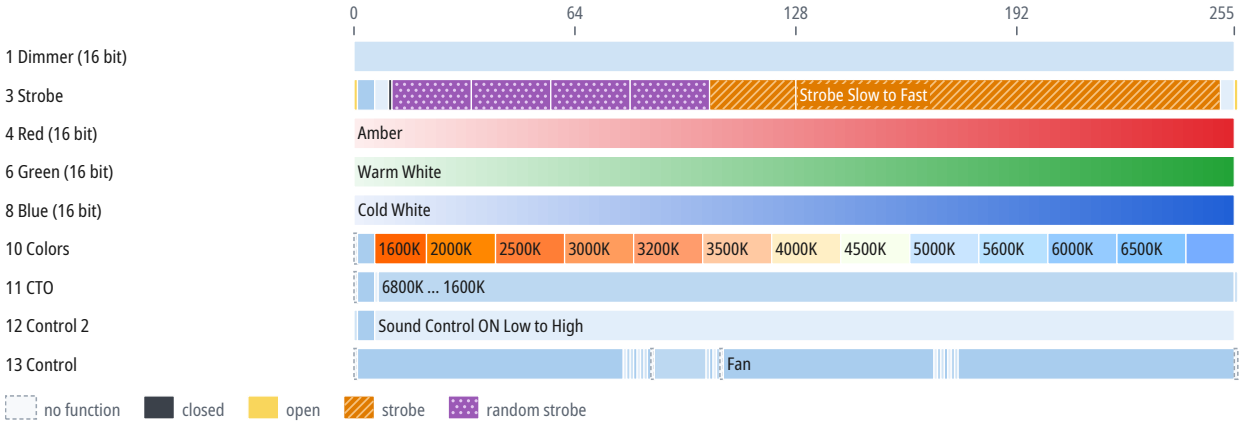
CH	Function	DMX	Description
7	CTO (continued)	7–254	6800K … 1600K
		255	1600K
8	Control 2	0	Sound Control OFF (Mic Sensitivity)
		1–5	Sound Control OFF (Mic Sensitivity) … Sound Control ON Low to High
		6–255	Sound Control ON Low to High
9	Control	0–77	No function
		78	Dimmer Response LED (Hold 3s)
		79	Dimmer Response LED (Hold 3s) … Dimmer Response Halogen (Hold 3s)
		80	Dimmer Response Halogen (Hold 3s)
		81	Dimmer Response Halogen (Hold 3s) … DTW (Redshift) on (Hold 3s)
		82	DTW (Redshift) on (Hold 3s)
		83	DTW (Redshift) on (Hold 3s) … DTW (Redshift) off (Hold 3s)
		84	DTW (Redshift) off (Hold 3s)
		85	DTW (Redshift) off (Hold 3s) … no function
		86	Tungsten Simulation: no function
		87–101	Tungsten Simulation
		102	Silent Fan (Hold 3s)
		103	Silent Fan (Hold 3s) … Auto Fan (Hold 3s)
		104	Auto Fan (Hold 3s)
		105	Auto Fan (Hold 3s) … no function
		106	Fan: no function
		107–167	Fan
		168	Dimmer Curve Linear (Hold 3s)
		169	Dimmer Curve Linear (Hold 3s) … Dimmer Curve Exponential (Hold 3s)
		170	Dimmer Curve Exponential (Hold 3s)
		171	Dimmer Curve Exponential (Hold 3s) … Dimmer Curve Logarithmic (Hold 3s)
		172	Dimmer Curve Logarithmic (Hold 3s)
		173	Dimmer Curve Logarithmic (Hold 3s) … Dimmer Curve S-Curve (Hold 3s)
		174	Dimmer Curve S-Curve (Hold 3s)
		175–254	Dimmer Curve S-Curve (Hold 3s) … no function
		255	Dimmer Curve: no function

Mode 13 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 Strobe at 0, 255 “Open” or 251–254. The GDTF file gives these values for a console's Highlight function: CH 1 Dimmer 255, CH 4 Red 255, CH 6 Green 255, CH 8 Blue 255.

Channel functions at a glance



CH	Function	DMX	Description
1	Dimmer	0–255	
2	Dimmer Fine	0–255	Fine adjustment of CH 1
3	Strobe		Same as CH 2 in the mode “3CH Mode CCT” (p. 11)
4	Red	0–255	Amber
5	Red Fine	0–255	Fine adjustment of CH 4
6	Green		Same as CH 2 in the mode “3CH Mode DIR” (p. 11)
7	Green Fine	0–255	Fine adjustment of CH 6
8	Blue		Same as CH 3 in the mode “3CH Mode DIR” (p. 11)
9	Blue Fine	0–255	Fine adjustment of CH 8
10	Colors		Same as CH 6 in the mode “9CH Mode” (p. 12)
11	CTO		Same as CH 7 in the mode “9CH Mode” (p. 12)
12	Control 2		Same as CH 8 in the mode “9CH Mode” (p. 13)
13	Control		Same as CH 9 in the mode “9CH Mode” (p. 13)

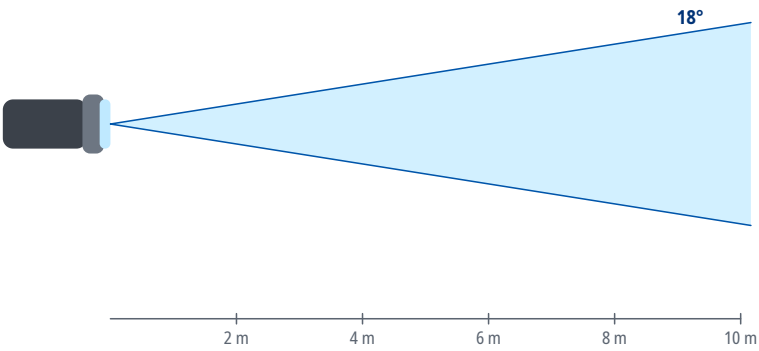
10 Technical specifications

Parameter	Value
Light source	LED
DMX connection	5-pin XLR IN/OUT, 3-pin XLR IN/OUT
RDM	yes (manufacturer ID 0x08A4, device model ID 0x0021)
Weight	4.7 kg
Operating temperature	0 to 40 °C

Speeds and ranges

Parameter	Value
Color temperature range	1600–6800 K
Strobe frequency	0.3–20 Hz

Spot diameter



Distance	Ø 18°
2 m	0.63 m
4 m	1.3 m
6 m	1.9 m
8 m	2.5 m
10 m	3.2 m
15 m	4.8 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.