GDTF Fixture Reference · by SOH

DMX REFERENCE

P-2

SGM P-2

SGM Light



Manufacturer	SGM Light
GDTF file	SGM_Light_P-2_95618.gdtf
GDTF revision	Release 1 · 2025-05-04
Generated	2026-11-24

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1 About this manual

This document describes the SGM P-2 by SGM Light. It was compiled from the GDTF file SGM_Light_P-2_95618.gdtf from the GDTF-Share library.

File revision: “Release 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 SGM Light; 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

DMX modes

Mode	Channels	Units in one universe	First start addresses
3 Channel RAW	3	170	1, 4, 7, 10, ...
4 Channel RAW	4	128	1, 5, 9, 13, ...
6 Channel CTC	6	85	1, 7, 13, 19, ...
6 Channel RAW	6	85	1, 7, 13, 19, ...
9 Channel RAW	9	56	1, 10, 19, 28, ...
10 Channel RAW	10	51	1, 11, 21, 31, ...
10 Channel CTC	10	51	1, 11, 21, 31, ...
12 Channel CTC	12	42	1, 13, 25, 37, ...
15 Channel RAW	15	34	1, 16, 31, 46, ...
22 Channel CTC	22	23	1, 23, 45, 67, ...



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 Installation

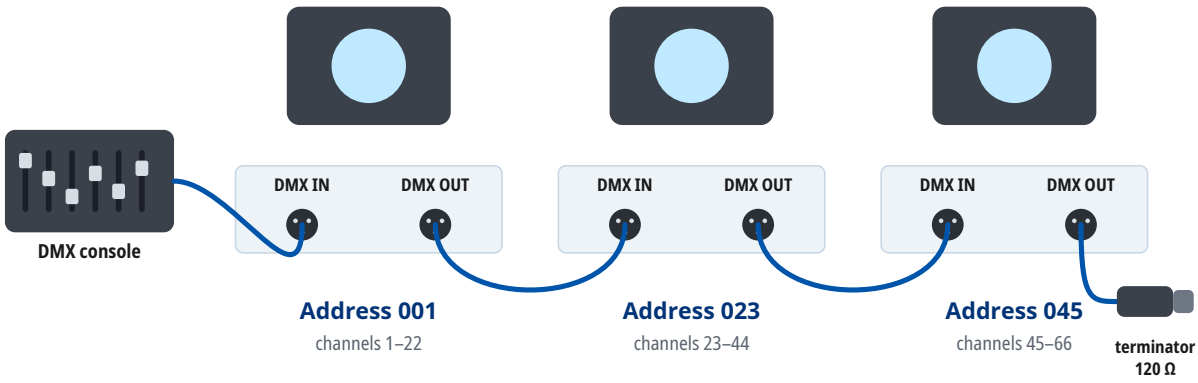
⚠ WARNING

- 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.
- 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 22 Channel CTC: every unit occupies 22 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 “22 Channel CTC”: 22.
- 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 “22 Channel CTC”, you can use, for example, the start addresses 1, 23, 45, 67.
- 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.

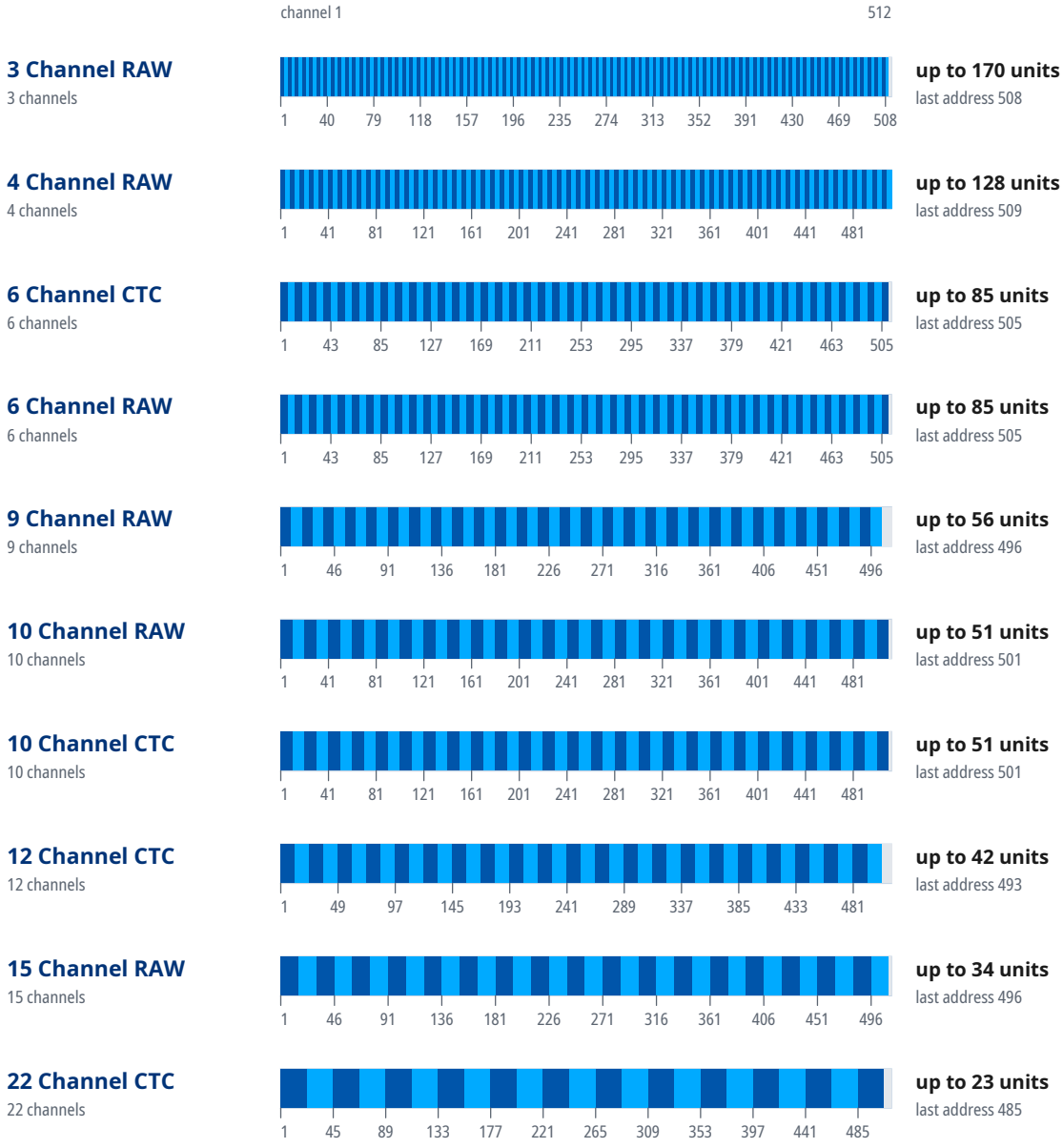
7 Functions at a glance

Functions in each DMX mode

	3 Channel RAW 3 channels	4 Channel RAW 4 channels	6 Channel CTC 6 channels	6 Channel RAW 6 channels	9 Channel RAW 9 channels	10 Channel RAW 10 channels	10 Channel CTC 10 channels	12 Channel CTC 12 channels
Dimmer	✓	✓	2	2	✓	1	2	2
Dimmer resolution			8 bit	8 bit		16 bit	16 bit	8 bit
Shutter / strobe			1	1			1	1
Color mixing	1–3	1–4	4–6	3–6	1–9	4× (3–9)	5, 7, 9	4–12
Color temperature			3				4	3
Pixel control								✓

8 DMX channels

Units in one DMX universe



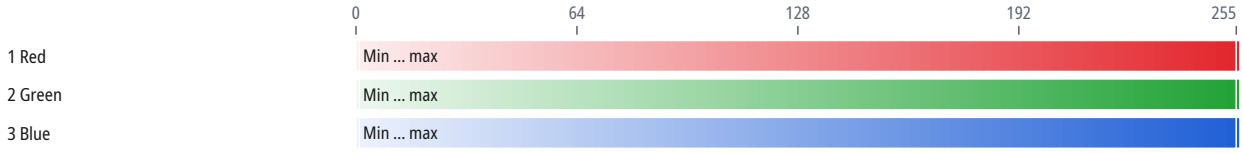
Start addresses of 20 units in the mode “22 Channel CTC”

Unit	Start address	Unit	Start address	Unit	Start address	Unit	Start address
1	1	6	111	11	221	16	331
2	23	7	133	12	243	17	353
3	45	8	155	13	265	18	375
4	67	9	177	14	287	19	397
5	89	10	199	15	309	20	419

Mode 3 Channel RAW

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

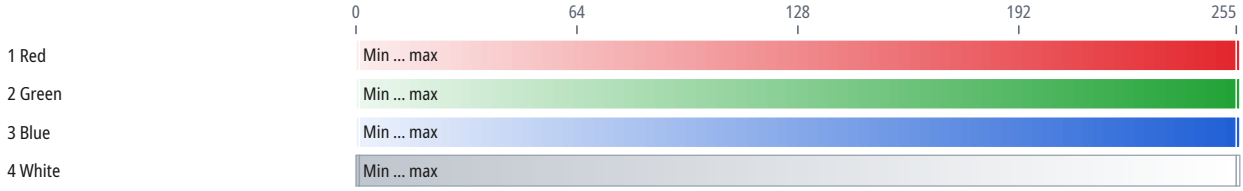


CH	Function	DMX	Description
1	Red	0	Min
		1–254	Min ... max
		255	Max
2	Green	0	Min
		1–254	Min ... max
		255	Max
3	Blue	0	Min
		1–254	Min ... max
		255	Max

Mode 4 Channel RAW

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

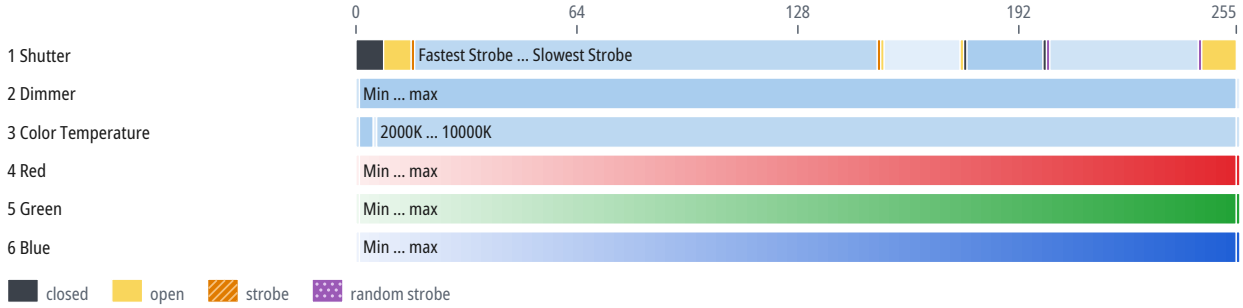


CH	Function	DMX	Description
1	Red		Same as CH 1 in the mode “3 Channel RAW” (p. 8)
2	Green		Same as CH 2 in the mode “3 Channel RAW” (p. 8)
3	Blue		Same as CH 3 in the mode “3 Channel RAW” (p. 8)
4	White	0	Min
		1–254	Min ... max
		255	Max

Mode 6 Channel CTC

If the device receives DMX in this mode but gives no light, check these channels: CH 1 Shutter at 8–15 or 245–255 “Open”. The GDTF file gives these values for a console's Highlight function: CH 1 Shutter 8, CH 2 Dimmer 255, CH 4 Red 255, CH 5 Green 255, CH 6 Blue 255.

Channel functions at a glance

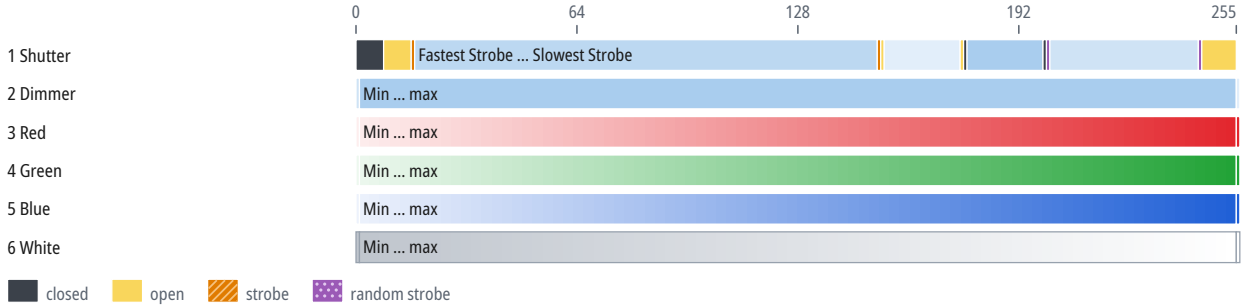


CH	Function	DMX	Description
1	Shutter	0–7	Shutter: Closed
		8–15	Shutter: Open
		16	Fastest Strobe
		17–150	Fastest Strobe ... Slowest Strobe
		151	Slowest Strobe
		152	Slowest Pulse Open
		153–174	Slowest Pulse Open ... Fastest Pulse Open
		175	Fastest Pulse Open
		176	Slowest Pulse Close
		177–198	Slowest Pulse Close ... Fastest Pulse Close
		199	Fastest Pulse Close
		200	Slowest Random
		201–243	Slowest Random ... Fastest Random
		244	Fastest Random
		245–255	Open
2	Dimmer	0	Min
		1–254	Min ... max
		255	Max
3	Color Temperature	0	5600K (Default)
		1–4	RAW
		5	2000K
		6–254	2000K ... 10000K
		255	10000K
4	Red		Same as CH 1 in the mode “3 Channel RAW” (p. 8)
5	Green		Same as CH 2 in the mode “3 Channel RAW” (p. 8)
6	Blue		Same as CH 3 in the mode “3 Channel RAW” (p. 8)

Mode 6 Channel RAW

If the device receives DMX in this mode but gives no light, check these channels: CH 1 Shutter at 8–15 or 245–255 “Open”. The GDTF file gives these values for a console's Highlight function: CH 1 Shutter 8, CH 2 Dimmer 255, CH 3 Red 255, CH 4 Green 255, CH 5 Blue 255, CH 6 White 255.

Channel functions at a glance

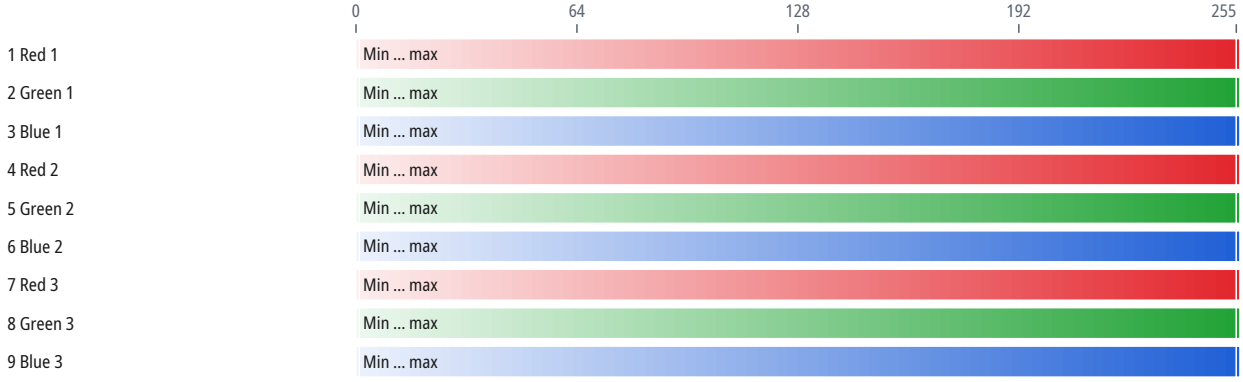


CH	Function	DMX	Description
1	Shutter		Same as CH 1 in the mode “6 Channel CTC” (p. 9)
2	Dimmer		Same as CH 2 in the mode “6 Channel CTC” (p. 9)
3	Red		Same as CH 1 in the mode “3 Channel RAW” (p. 8)
4	Green		Same as CH 2 in the mode “3 Channel RAW” (p. 8)
5	Blue		Same as CH 3 in the mode “3 Channel RAW” (p. 8)
6	White		Same as CH 4 in the mode “4 Channel RAW” (p. 8)

Mode 9 Channel RAW

The GDTF file gives these values for a console's Highlight function: CH 1 Red 1 255, CH 2 Green 1 255, CH 3 Blue 1 255, CH 4 Red 2 255, CH 5 Green 2 255, CH 6 Blue 2 255, CH 7 Red 3 255, CH 8 Green 3 255, CH 9 Blue 3 255.

Channel functions at a glance



CH	Function	DMX	Description
1	Red 1	0	Min
		1–254	Min ... max
		255	Max
2	Green 1	0	Min
		1–254	Min ... max

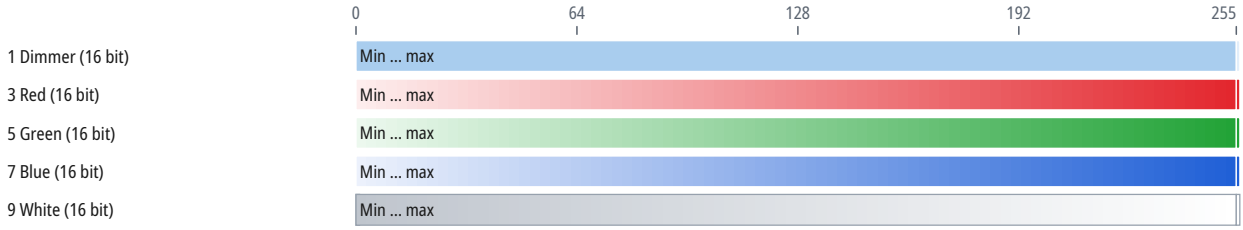
CH	Function	DMX	Description
2	Green 1 (continued)	255	Max
3	Blue 1	0	Min
		1–254	Min … max
		255	Max
4	Red 2	0	Min
		1–254	Min … max
		255	Max
5	Green 2	0	Min
		1–254	Min … max
		255	Max
6	Blue 2	0	Min
		1–254	Min … max
		255	Max
7	Red 3	0	Min
		1–254	Min … max
		255	Max
8	Green 3	0	Min
		1–254	Min … max
		255	Max
9	Blue 3	0	Min
		1–254	Min … max
		255	Max

Mode 10 Channel RAW

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 1 Dimmer 255, CH 3 Red 255, CH 5 Green 255, CH 7 Blue 255, CH 9 White 255.

Channel functions at a glance



CH	Function	DMX	Description
1	Dimmer	0–255	Min … max
		255	Max
2	Dimmer Fine	0–255	Fine adjustment of CH 1
3	Red	0–255	Min … max
		255	Max
4	Red Fine	0–255	Fine adjustment of CH 3

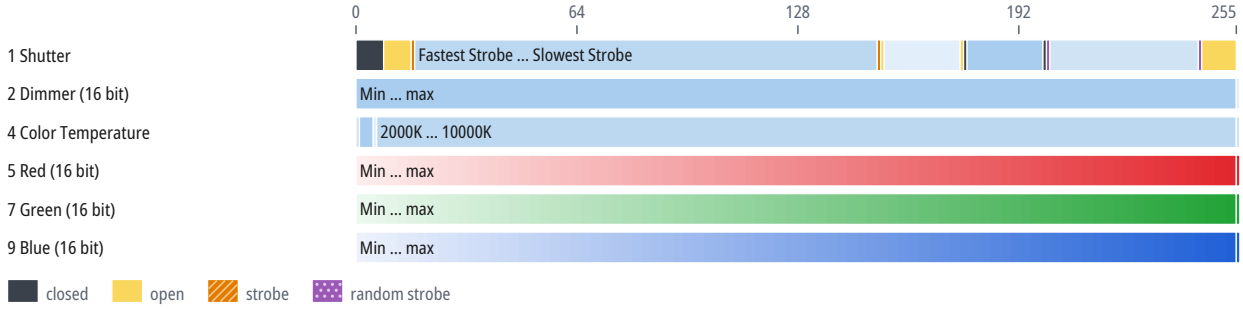
CH	Function	DMX	Description
5	Green	0–255	Min … max
		255	Max
6	Green Fine	0–255	Fine adjustment of CH 5
7	Blue	0–255	Min … max
		255	Max
8	Blue Fine	0–255	Fine adjustment of CH 7
9	White	0–255	Min … max
		255	Max
10	White Fine	0–255	Fine adjustment of CH 9

Mode 10 Channel CTC

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 Shutter at 8–15 or 245–255 “Open”. The GDTF file gives these values for a console's Highlight function: CH 1 Shutter 8, CH 2 Dimmer 255, CH 5 Red 255, CH 7 Green 255, CH 9 Blue 255.

Channel functions at a glance



CH	Function	DMX	Description
1	Shutter		Same as CH 1 in the mode “6 Channel CTC” (p. 9)
2	Dimmer		Same as CH 1 in the mode “10 Channel RAW” (p. 11)
3	Dimmer Fine	0–255	Fine adjustment of CH 2
4	Color Temperature		Same as CH 3 in the mode “6 Channel CTC” (p. 9)
5	Red		Same as CH 3 in the mode “10 Channel RAW” (p. 11)
6	Red Fine	0–255	Fine adjustment of CH 5
7	Green		Same as CH 5 in the mode “10 Channel RAW” (p. 12)
8	Green Fine	0–255	Fine adjustment of CH 7
9	Blue		Same as CH 7 in the mode “10 Channel RAW” (p. 12)
10	Blue Fine	0–255	Fine adjustment of CH 9

Mode 12 Channel CTC

If the device receives DMX in this mode but gives no light, check these channels: CH 1 Shutter at 8–15 or 245–255 “Open”. The GDTF file gives these values for a console's Highlight function: CH 1 Shutter 8, CH 2 Dimmer 255, CH 4 Red 1 255, CH 5 Green 1 255, CH 6 Blue 1 255, CH 7 Red 2 255, CH 8 Green 2 255, CH 9 Blue 2 255, CH 10 Red 3 255, CH 11 Green 3 255, CH 12 Blue 3 255.

Channel functions at a glance

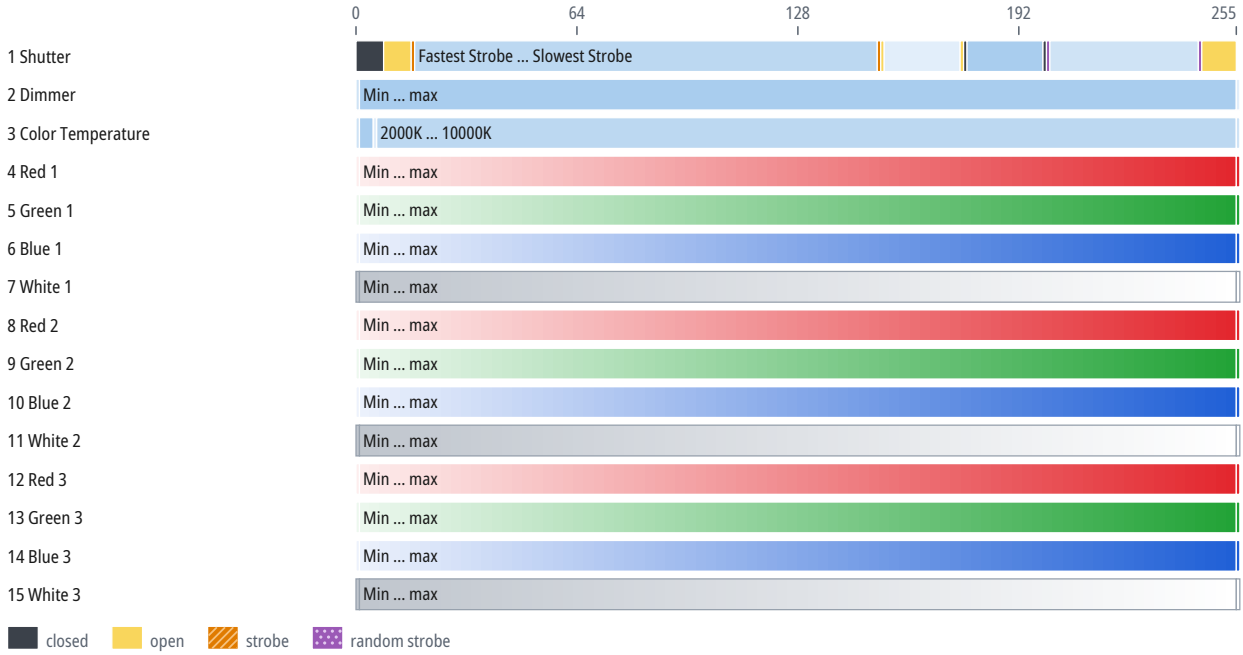


CH	Function	DMX	Description
1	Shutter		Same as CH 1 in the mode “6 Channel CTC” (p. 9)
2	Dimmer		Same as CH 2 in the mode “6 Channel CTC” (p. 9)
3	Color Temperature		Same as CH 3 in the mode “6 Channel CTC” (p. 9)
4	Red 1		Same as CH 1 in the mode “9 Channel RAW” (p. 10)
5	Green 1		Same as CH 2 in the mode “9 Channel RAW” (p. 10)
6	Blue 1		Same as CH 3 in the mode “9 Channel RAW” (p. 11)
7	Red 2		Same as CH 4 in the mode “9 Channel RAW” (p. 11)
8	Green 2		Same as CH 5 in the mode “9 Channel RAW” (p. 11)
9	Blue 2		Same as CH 6 in the mode “9 Channel RAW” (p. 11)
10	Red 3		Same as CH 7 in the mode “9 Channel RAW” (p. 11)
11	Green 3		Same as CH 8 in the mode “9 Channel RAW” (p. 11)
12	Blue 3		Same as CH 9 in the mode “9 Channel RAW” (p. 11)

Mode 15 Channel RAW

If the device receives DMX in this mode but gives no light, check these channels: CH 1 Shutter at 8–15 or 245–255 “Open”. The GDTF file gives these values for a console's Highlight function: CH 1 Shutter 8, CH 2 Dimmer 255, CH 4 Red 1 255, CH 5 Green 1 255, CH 6 Blue 1 255, CH 7 White 1 255, CH 8 Red 2 255, CH 9 Green 2 255, CH 10 Blue 2 255, CH 11 White 2 255, CH 12 Red 3 255, CH 13 Green 3 255, CH 14 Blue 3 255, CH 15 White 3 255.

Channel functions at a glance



CH	Function	DMX	Description
1	Shutter		Same as CH 1 in the mode “6 Channel CTC” (p. 9)
2	Dimmer		Same as CH 2 in the mode “6 Channel CTC” (p. 9)
3	Color Temperature		Same as CH 3 in the mode “6 Channel CTC” (p. 9)
4	Red 1		Same as CH 1 in the mode “9 Channel RAW” (p. 10)
5	Green 1		Same as CH 2 in the mode “9 Channel RAW” (p. 10)
6	Blue 1		Same as CH 3 in the mode “9 Channel RAW” (p. 11)
7	White 1	0	Min
		1–254	Min ... max
		255	Max
8	Red 2		Same as CH 4 in the mode “9 Channel RAW” (p. 11)
9	Green 2		Same as CH 5 in the mode “9 Channel RAW” (p. 11)
10	Blue 2		Same as CH 6 in the mode “9 Channel RAW” (p. 11)
11	White 2	0	Min
		1–254	Min ... max
		255	Max
12	Red 3		Same as CH 7 in the mode “9 Channel RAW” (p. 11)
13	Green 3		Same as CH 8 in the mode “9 Channel RAW” (p. 11)
14	Blue 3		Same as CH 9 in the mode “9 Channel RAW” (p. 11)

CH	Function	DMX	Description
15	White 3	0	Min
		1–254	Min … max
		255	Max

Mode 22 Channel CTC

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 Shutter at 8–15 or 245–255 “Open”. The GDTF file gives these values for a console's Highlight function: CH 1 Shutter 8, CH 2 Dimmer 255, CH 5 Red 1 255, CH 7 Green 1 255, CH 9 Blue 1 255, CH 11 Red 2 255, CH 13 Green 2 255, CH 15 Blue 2 255, CH 17 Red 3 255, CH 19 Green 3 255, CH 21 Blue 3 255.

Channel functions at a glance



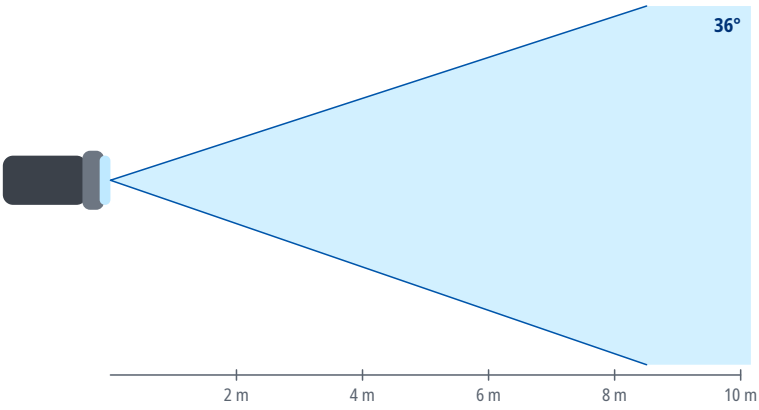
CH	Function	DMX	Description
1	Shutter		Same as CH 1 in the mode “6 Channel CTC” (p. 9)
2	Dimmer		Same as CH 1 in the mode “10 Channel RAW” (p. 11)
3	Dimmer Fine	0–255	Fine adjustment of CH 2
4	Color Temperature		Same as CH 3 in the mode “6 Channel CTC” (p. 9)
5	Red 1	0–255	Min … max
		255	Max
6	Red 1 Fine	0–255	Fine adjustment of CH 5
7	Green 1	0–255	Min … max
		255	Max
8	Green 1 Fine	0–255	Fine adjustment of CH 7
9	Blue 1	0–255	Min … max
		255	Max
10	Blue 1 Fine	0–255	Fine adjustment of CH 9
11	Red 2	0–255	Min … max
		255	Max
12	Red 2 Fine	0–255	Fine adjustment of CH 11
13	Green 2	0–255	Min … max

CH	Function	DMX	Description
13	Green 2 (continued)	255	Max
14	Green 2 Fine	0–255	Fine adjustment of CH 13
15	Blue 2	0–255	Min … max
		255	Max
16	Blue 2 Fine	0–255	Fine adjustment of CH 15
17	Red 3	0–255	Min … max
		255	Max
18	Red 3 Fine	0–255	Fine adjustment of CH 17
19	Green 3	0–255	Min … max
		255	Max
20	Green 3 Fine	0–255	Fine adjustment of CH 19
21	Blue 3	0–255	Min … max
		255	Max
22	Blue 3 Fine	0–255	Fine adjustment of CH 21

9 Technical specifications

Parameter	Value
Light source	LED
DMX connection	BNC IN/OUT
RDM	yes (manufacturer ID 0x5347, device model ID 0x0073)
Operating temperature	-40 to 50 °C

Spot diameter



Distance	Ø 36°
2 m	1.3 m
4 m	2.6 m
6 m	3.9 m
8 m	5.2 m
10 m	6.5 m
15 m	9.7 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.