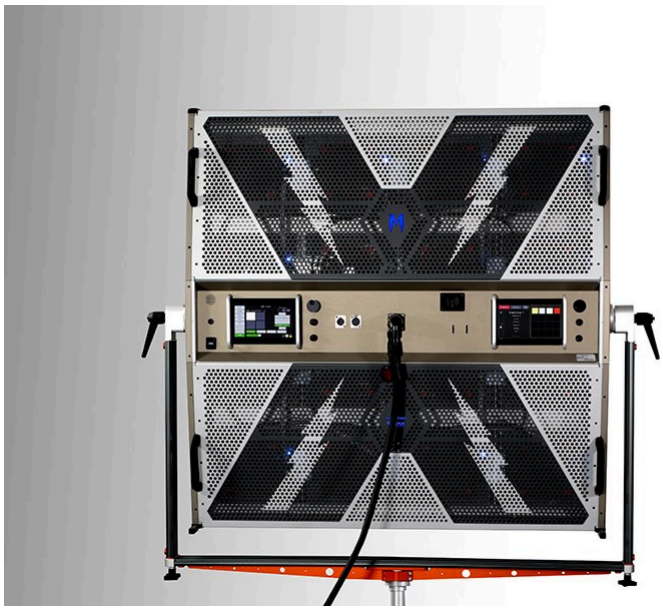
DMX REFERENCE

Masterpiece

Senna Masterpiece

Senna



Manufacturer	Senna
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1 About this manual

This document describes the Senna Masterpiece by Senna. It was compiled from the GDTF file Senna_Masterpiece_86960.gdtf from the GDTF-Share library.

File revision: “v0.94”.

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 Senna; 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	35 kg

DMX modes

Mode	Channels	Units in one universe	First start addresses
Mode 1 CCT 8Bit	4	128	1, 5, 9, 13, ...
Mode 2 CTC+ 8Bit	4	128	1, 5, 9, 13, ...
Mode 3 RGBW 8Bit	6	85	1, 7, 13, 19, ...
Mode 4 RGBW 16Bit	12	42	1, 13, 25, 37, ...
Mode 5 HSI 8Bit	3	170	1, 4, 7, 10, ...
Mode 6 HSI 16Bit	6	85	1, 7, 13, 19, ...
Mode 7 GEL	5	102	1, 6, 11, 16, ...
Mode 10 Effects	5	102	1, 6, 11, 16, ...
Mode 15 Ultimate 8Bit	7	73	1, 8, 15, 22, ...
Mode 11 CCT+RGBW 8Bit	9	56	1, 10, 19, 28, ...



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.

4 Installation

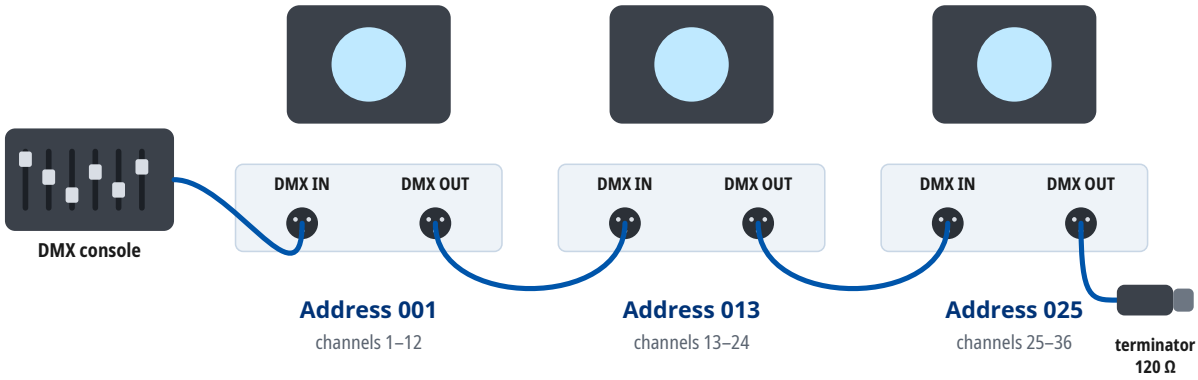
⚠ **WARNING**

- 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: 35 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 4 RGBW 16Bit: every unit occupies 12 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

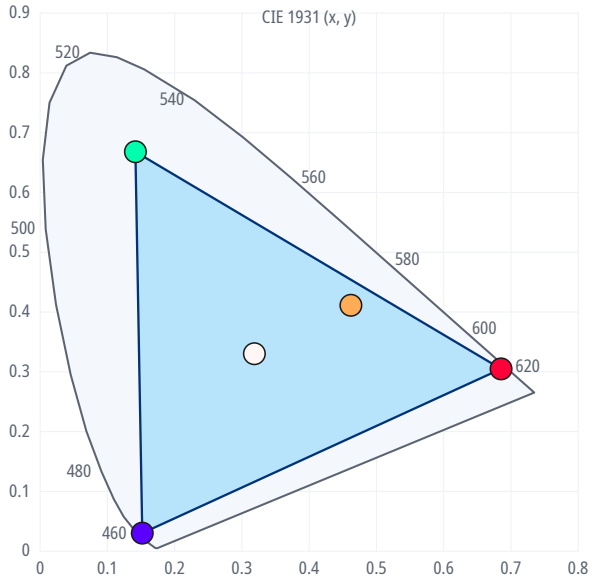
- The device occupies as many consecutive channels in the DMX universe as the selected DMX mode uses, starting at the set start address.
- Number of channels occupied in the DMX mode “Mode 4 RGBW 16Bit”: 12.
- Choose start addresses so that the channels of individual devices do not overlap and the last 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 “Mode 4 RGBW 16Bit”, you can use, for example, the start addresses 1, 13, 25, 37.
- 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

	Mode 1 CCT 8Bit 4 channels	Mode 2 CTC+ 8Bit 4 channels	Mode 3 RGBW 8Bit 6 channels	Mode 4 RGBW 16Bit 12 channels	Mode 5 HSI 8Bit 3 channels	Mode 6 HSI 16Bit 6 channels	Mode 7 GEL 5 channels	Mode 10 Effects 5 channels
Dimmer	1	1	1	1	1	1	1	1
Dimmer resolution	8 bit	8 bit	8 bit	16 bit	8 bit	16 bit	8 bit	8 bit
Color mixing			2–6	5× (3–11)				
Color temperature	2	2					3	
Effects / macros								2, 4

LED colors and the colors they mix

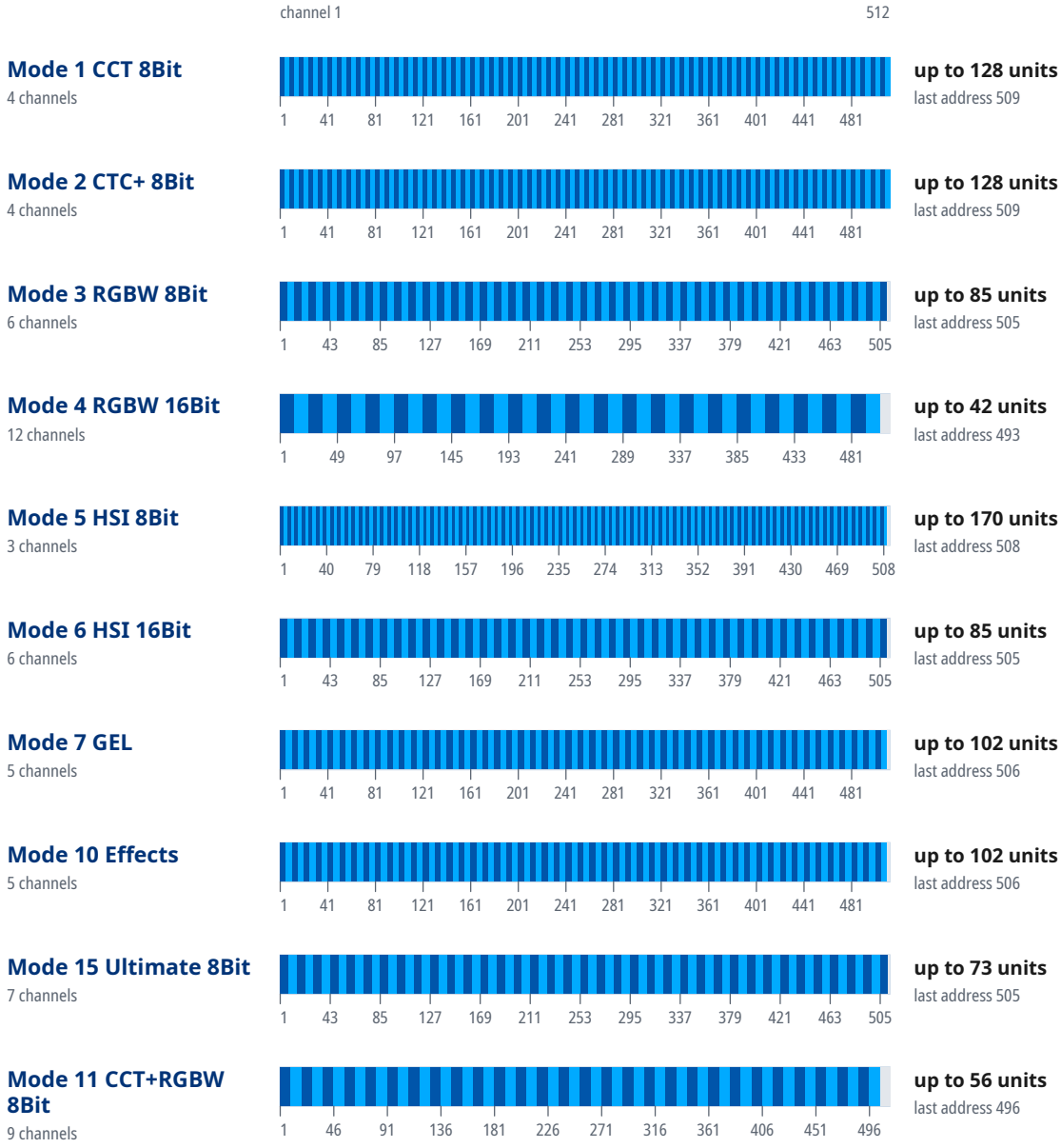


LED	x	y	nm
Red	0.685	0.305	630
Green	0.142	0.668	519
Blue	0.152	0.030	453
White	0.319	0.330	
Tungsten	0.462	0.411	

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

8 DMX channels

Units in one DMX universe



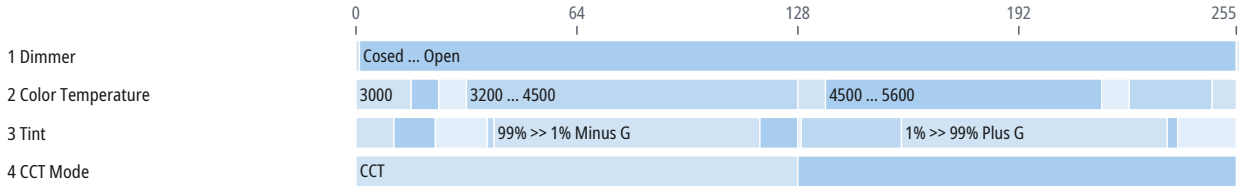
Start addresses of 20 units in the mode “Mode 4 RGBW 16Bit”

Unit	Start address	Unit	Start address	Unit	Start address	Unit	Start address
1	1	6	61	11	121	16	181
2	13	7	73	12	133	17	193
3	25	8	85	13	145	18	205
4	37	9	97	14	157	19	217
5	49	10	109	15	169	20	229

Mode 1 CCT 8Bit

The GDTF file gives these values for a console's Highlight function: CH 1 Dimmer 255, CH 2 Color Temperature 255.

Channel functions at a glance

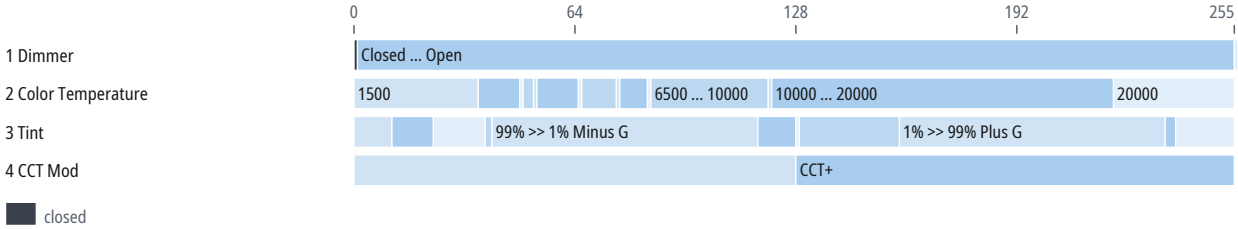


CH	Function	DMX	Description
1	Dimmer	0	Cosed
		1–254	Cosed ... Open
		255	Open
2	Color Temperature	0–15	3000
		16–23	3000 ... 3200
		24–31	3200
		32–127	3200 ... 4500
		128–135	4500
		136–215	4500 ... 5600
		216–223	5600
		224–247	5600 ... 6000
		248–255	6000
3	Tint	0–10	No Effect
		11–22	No Effect ... Full Minus G
		23–37	Full Minus G
		38–39	Full Minus G ... 99% >> 1% Minus G
		40–116	99% >> 1% Minus G
		117–127	99% >> 1% Minus G ... Neutral
		128	Neutral
		129–157	Neutral ... 1% >> 99% Plus G
		158–234	1% >> 99% Plus G
		235–237	1% >> 99% Plus G ... Full Plus G
		238–255	Full Plus G
4	CCT Mode	0–127	CCT
		128–255	CCT_Mode

Mode 2 CTC+ 8Bit

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 Color Temperature 255.

Channel functions at a glance

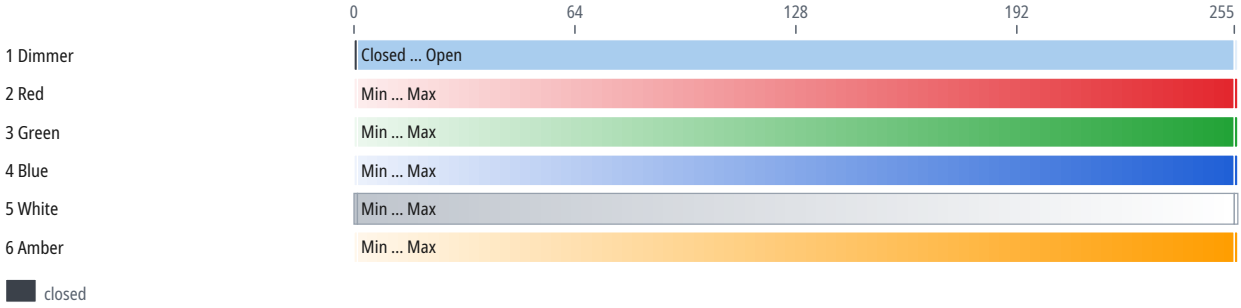


CH	Function	DMX	Description
1	Dimmer	0	Closed
		1–254	Closed ... Open
		255	Open
2	Color Temperature		CCT+
		0–35	1500
		36–47	1500 ... 2800
		48	2800
		49–51	2800 ... 3200
		52	3200
		53–64	3200 ... 4500
		65	4500
		66–75	4500 ... 5600
		76	5600
		77–84	5600 ... 6500
		85	6500
		86–119	6500 ... 10000
		120	10000
		121–219	10000 ... 20000
		220–255	20000
3	Tint		Same as CH 3 in the mode “Mode 1 CCT 8Bit” (p. 9)
4	CCT Mod	0–127	CCT_Mod 1
		128–255	CCT+

Mode 3 RGBW 8Bit

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 Red 255, CH 3 Green 255, CH 4 Blue 255, CH 5 White 255, CH 6 Amber 255.

Channel functions at a glance



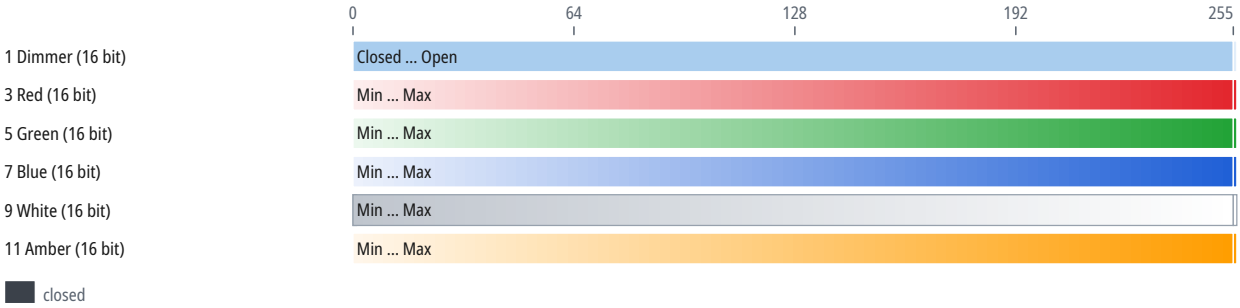
CH	Function	DMX	Description
1	Dimmer		Same as CH 1 in the mode “Mode 2 CTC+ 8Bit” (p. 10)
2	Red	0	Min
		1–254	Min ... Max
		255	Max
3	Green	0	Min
		1–254	Min ... Max
		255	Max
4	Blue	0	Min
		1–254	Min ... Max
		255	Max
5	White	0	Min
		1–254	Min ... Max
		255	Max
6	Amber	0	Min
		1–254	Min ... Max
		255	Max

Mode 4 RGBW 16Bit

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. 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, CH 11 Amber 255.

Channel functions at a glance

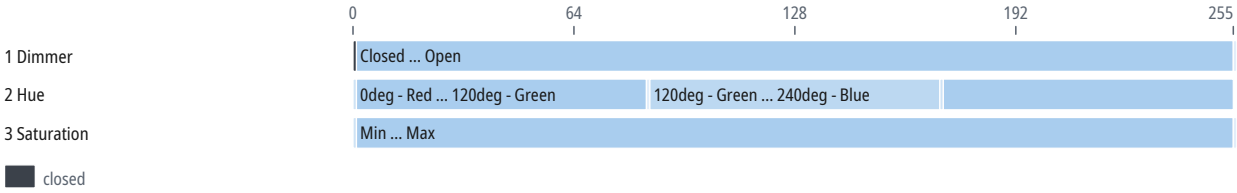


CH	Function	DMX	Description
1	Dimmer	0–255	Closed ... Open
		255	Open
2	Dimmer Fine	0–255	Fine adjustment of CH 1
3	Red	0–255	Min ... Max
		255	Max
4	Red Fine	0–255	Fine adjustment of CH 3
5	Green	0–255	Min ... Max
		255	Max
6	Green Fine	0–255	Fine adjustment of CH 5
7	Blue	0–255	Min ... Max
		255	Max
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
11	Amber	0–255	Min ... Max
		255	Max
12	Amber Fine	0–255	Fine adjustment of CH 11

Mode 5 HSI 8Bit

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



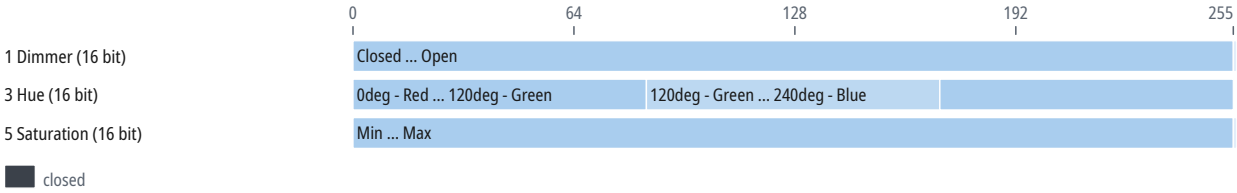
CH	Function	DMX	Description
1	Dimmer		Same as CH 1 in the mode “Mode 2 CTC+ 8Bit” (p. 10)
2	Hue	0	0deg - Red
		1–84	0deg - Red ... 120deg - Green
		85	120deg - Green
		86–169	120deg - Green ... 240deg - Blue
		170	240deg - Blue
		171–255	HSB_Hue 1
3	Saturation	0	Min
		1–254	Min ... Max
		255	Max

Mode 6 HSI 16Bit

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

Channel functions at a glance



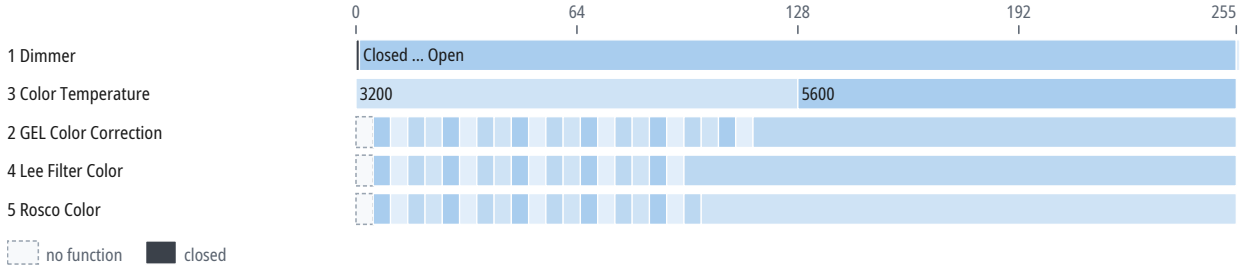
CH	Function	DMX	Description
1	Dimmer		Same as CH 1 in the mode “Mode 4 RGBW 16Bit” (p. 12)
2	Dimmer Fine	0–255	Fine adjustment of CH 1
3	Hue	0–85	0deg - Red ... 120deg - Green
		85–170	120deg - Green ... 240deg - Blue
		170	240deg - Blue
		170–255	HSB_Hue 1
4	Hue Fine	0–255	Fine adjustment of CH 3

CH	Function	DMX	Description
5	Saturation	0–255	Min … Max
		255	Max
6	Saturation Fine	0–255	Fine adjustment of CH 5

Mode 7 GEL

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		Same as CH 1 in the mode “Mode 2 CTC+ 8Bit” (p. 10)
2	GEL Color Correction	0–4	Off
		5–9	R223
		10–14	R206
		15–19	R205
		20–24	R285
		25–29	R204
		30–34	R287
		35–39	R218
		40–44	R203
		45–49	R202
		50–54	R281
		55–59	R201
		60–64	R200
		65–69	R278
		70–74	R246
		75–79	R245
		80–84	R244
		85–89	R279
		90–94	R249
		95–99	R248
		100–104	R247
		105–109	R241
		110–114	R242

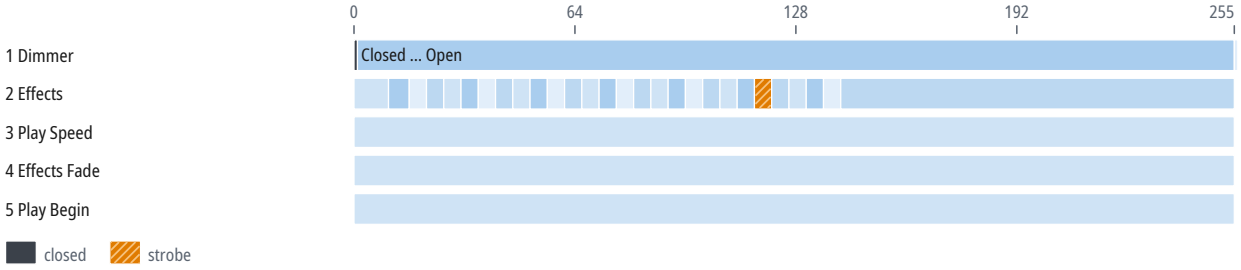
CH	Function	DMX	Description
2	GEL Color Correction (continued)	115–255	GEL_Color Correction 1
3	Color Temperature	0–127	3200
		128–255	5600
4	Lee Filter Color	0–4	Off
		5–9	L002
		10–14	L046
		15–19	L058
		20–24	L063
		25–29	L068
		30–34	L075
		35–39	L089
		40–44	L090
		45–49	L128
		50–54	L120
		55–59	L101
		60–64	L134
		65–69	L147
		70–74	L019
		75–79	L184
		80–84	L650
		85–89	L651
		90–94	L652
		95–255	Lee Filter Color 1
5	Rosco Color	0–4	Off
		5–9	R4730
		10–14	R4760
		15–19	R4790
		20–24	R4315
		25–29	R4330
		30–34	R4360
		35–39	R4390
		40–44	R4430
		45–49	R4460
		50–54	R4490
		55–59	R4515
		60–64	R4530
		65–69	R4560
		70–74	R41
		75–79	R42
		80–84	R44
		85–89	R65

CH	Function	DMX	Description
5	Rosco Color (continued)	90–94	R77
		95–99	R80
		100–255	Rosco Color 1

Mode 10 Effects

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



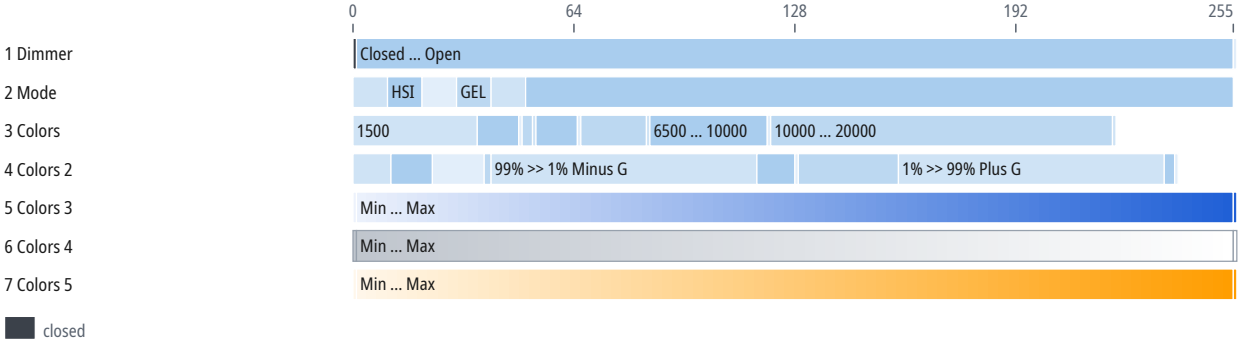
CH	Function	DMX	Description
1	Dimmer		Same as CH 1 in the mode “Mode 2 CTC+ 8Bit” (p. 10)
2	Effects	0–9	No Effect
		10–15	TV
		16–20	Welding
		21–25	Paparazzi
		26–30	Kachusha
		31–35	Fireworks
		36–40	Explosion
		41–45	Test
		46–50	Lighting
		51–55	Fire Single
		56–60	Fire Multi
		61–65	Candles
		66–70	Clouds
		71–75	Comet
		76–80	Sunrise
		81–85	Sunset
		86–90	Aurora
		91–95	Police
		96–100	Securyty
		101–105	Warning
		106–110	Firemen
		111–115	Color Chase
		116–120	Strobe

CH	Function	DMX	Description
2	Effects (continued)	121–125	Disco Ball
		126–130	Snake
		131–135	Snake Rev
		136–140	Snake W
		141–255	Effects 1 1
3	Play Speed	0–255	
4	Effects Fade	0–255	
5	Play Begin	0–255	

Mode 15 Ultimate 8Bit

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		Same as CH 1 in the mode “Mode 2 CTC+ 8Bit” (p. 10)
2	Mode	0–9	CCT+
		10–19	HSI
		20–29	RGBW
		30–39	GEL
		40–49	Effects
		50–255	Mode 1
3	Colors		When CH 2 is 0–9:
		0–35	1500
		36–47	1500 ... 2800
		48	2800
		49–51	2800 ... 3200
		52	3200
		53–64	3200 ... 4600
		65	4600
		66–84	4600 ... 6500
		85	6500
		86–119	6500 ... 10000

CH	Function	DMX	Description
3	Colors (continued)	120	10000
		121–219	10000 ... 20000
		220–255	20000
			When CH 2 is 10–19:
		0	0deg - Red
		1–84	0deg - Red ... 120deg - Green
		85	120deg - Green
		86–169	120deg - Green ... 240deg - Blue
		170	240deg - Blue
		171–255	HSI 8 Bit
			When CH 2 is 20–29:
		0	Min
		1–254	Min ... Max
		255	Max
			When CH 2 is 30–39:
		0–127	3200
		128	5600
		129–255	CTC
			When CH 2 is 40–49:
		0–255	No function
4	Colors 2		When CH 2 is 0–9:
		0–10	No Effect
		11–22	No Effect ... Full Minus G
		23–37	Full Minus G
		38–39	Full Minus G ... 99% >> 1% Minus G
		40–116	99% >> 1% Minus G
		117–127	99% >> 1% Minus G ... Neutral
		128	Neutral
		129–157	Neutral ... 1% >> 99% Plus G
		158–234	1% >> 99% Plus G
		235–237	1% >> 99% Plus G ... Full Plus G
		238–255	Full Plus G
			When CH 2 is 10–19:
		0	Min
		1–254	Min ... Max
		255	Max
			When CH 2 is 20–29:
		0	Min
		1–254	Min ... Max
		255	Max
			When CH 2 is 30–39:

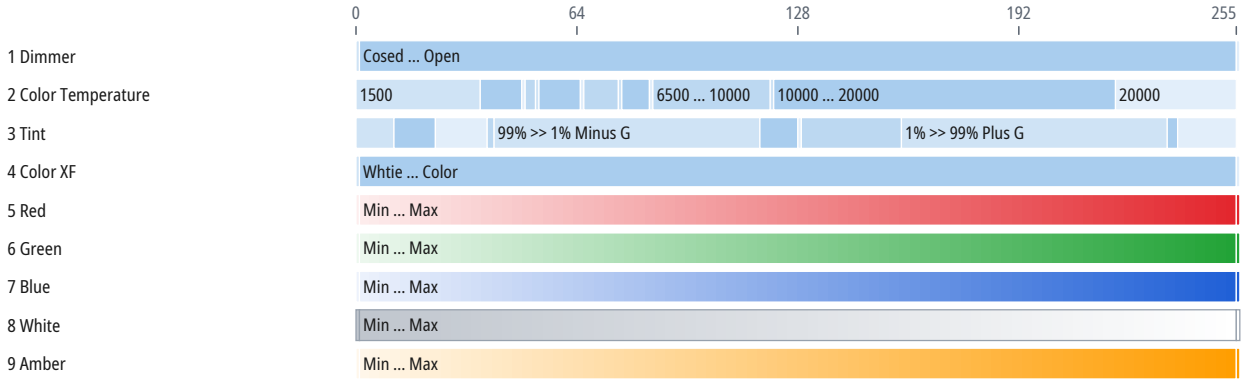
CH	Function	DMX	Description
4	Colors 2 (continued)	0–4	Off
		5–9	R223
		10–14	R206
		15–19	R205
		20–24	R285
		25–29	R204
		30–34	R287
		35–39	R218
		40–44	R203
		45–49	R202
		50–54	R281
		55–59	R201
		60–64	R200
		65–69	R278
		70–74	R246
		75–79	R245
		80–84	R244
		85–89	R279
		90–94	R249
		95–99	R248
		100–104	R247
		105–109	R241
		110–115	R242
		116–255	GEL_Color Correction
5	Colors 3		When CH 2 is 20–29:
		0	Min
		1–254	Min ... Max
		255	Max
			When CH 2 is 30–39:
		0–4	Off
		5–9	L002
		10–14	L046
		15–19	L058
		20–24	L063
		25–29	L068
		30–34	L075
		35–39	L089
		40–44	L090
		45–49	L128
		50–54	L120
		55–59	L101

CH	Function	DMX	Description
5	Colors 3 (continued)	60–64	L134
		65–69	L147
		70–74	L019
		75–79	L184
		80–84	L650
		85–89	L651
		90–95	L652
		96–255	Lee Filter Color
6	Colors 4		When CH 2 is 20–29:
		0	Min
		1–254	Min ... Max
		255	Max
			When CH 2 is 30–39:
		0–4	Off
		5–9	R4730
		10–14	R4760
		15–19	R4790
		20–24	R4315
		25–29	R4330
		30–34	R4360
		35–39	R4390
		40–44	R4430
		45–49	R4460
		50–54	R4490
		55–59	R4515
		60–64	R4530
		65–69	R4560
		70–74	R41
		75–79	R42
		80–84	R44
		85–89	R65
		90–94	R77
		95–99	R80
		100–255	Rosco Color
7	Colors 5		When CH 2 is 20–29:
		0	Min
		1–254	Min ... Max
		255	Max

Mode 11 CCT+RGBW 8Bit

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

Channel functions at a glance



CH	Function	DMX	Description
1	Dimmer		Same as CH 1 in the mode “Mode 1 CCT 8Bit” (p. 9)
2	Color Temperature		Same as CH 2 in the mode “Mode 2 CTC+ 8Bit” (p. 10)
3	Tint		Same as CH 3 in the mode “Mode 1 CCT 8Bit” (p. 9)
4	Color XF		White/Color XF
		0	Whtie
		1–254	Whtie ... Color
		255	Color
5	Red		Same as CH 2 in the mode “Mode 3 RGBW 8Bit” (p. 11)
6	Green		Same as CH 3 in the mode “Mode 3 RGBW 8Bit” (p. 11)
7	Blue		Same as CH 4 in the mode “Mode 3 RGBW 8Bit” (p. 11)
8	White		Same as CH 5 in the mode “Mode 3 RGBW 8Bit” (p. 11)
9	Amber		Same as CH 6 in the mode “Mode 3 RGBW 8Bit” (p. 11)

9 Technical specifications

Parameter	Value
Light	
Light source	LED
LED power	2,600 W
Luminous flux	120,000 lm
Color temperature	3,200 K
Optics	
Beam angle	60°
Control	
RDM	yes (manufacturer ID 0x21B6, device model ID 0x0301)
Dimensions and construction	
Weight	35 kg
Operating environment	
Operating temperature	-10 to 40 °C

Speeds and ranges

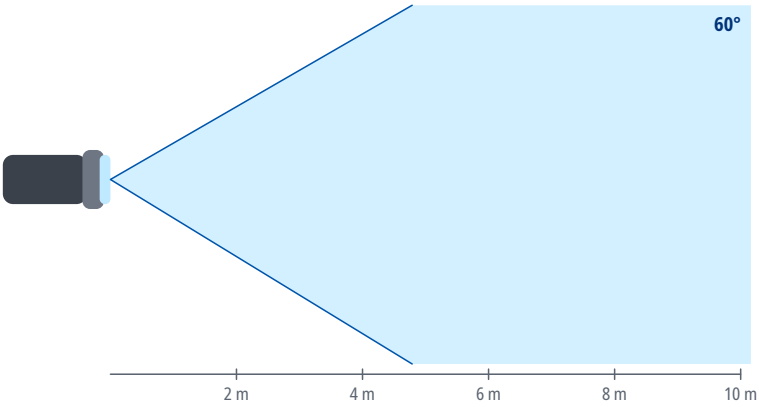
Parameter	Value
Color temperature range	1500–20000 K

Dimensions

weight 35 kg



Spot diameter



Distance	Ø 60°
2 m	2.3 m
4 m	4.6 m
6 m	6.9 m
8 m	9.2 m
10 m	11.5 m
15 m	17.3 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.