DMX REFERENCE

Cluster S1

CUE



Manufacturer	CUE
GDTF file	CUE_Cluster_S1_111701.gdtf
GDTF revision	Main RGB Shutter · 2025-09-23
Generated	2026-11-23

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1 About this manual

This document describes the Cluster S1 by CUE. It was compiled from the GDTF file CUE_Cluster_S1_111701.gdtf from the GDTF-Share library.

File revision: “Main RGB Shutter”.

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 CUE; 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
Power consumption	1,010 W
Weight	12.8 kg

DMX modes

Mode	Channels	Units in one universe	First start addresses
Pure Mode 8 Bit	138	3	1, 139, 277

No light? Check these channels

- Pure Mode 8 Bit: CH 28 Shutter 1 at 20–24 “Shutter Open” or 65–69, 85–89, 105–109, 125–129, 145–149, 165–169, 185–189, 205–209, 225–229, 245–255 “Open”; CH 56 Shutter 2 at 20–24 “Shutter Open” or 65–69, 85–89, 105–109, 125–129, 145–149, 165–169, 185–189, 205–209, 225–229, 245–255 “Open”; CH 58 Shutter 3 at 20–24 “Shutter Open” or 65–69, 85–89, 105–109, 125–129, 145–149, 165–169, 185–189, 205–209, 225–229, 245–255 “Open”


Read the manual before use


Risk of electric shock


Do not stare into the light


Indoor use only

3 Safety instructions


Read the manual before use


Risk of electric shock


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

- Connect the device only to a properly installed mains outlet with a protective earth (ground) contact. The outlet or other means of disconnection must remain easily accessible.
- Power supply: 100–240 V, 50/60 Hz. Before connecting, make sure that the mains voltage matches this value and the value on the rating plate of the device.
- Do not connect the device to a dimmer or to a dimmed circuit.
- Use only the original power cable or a cable with identical ratings. Protect the cable from damage, do not run it over sharp edges, and never unplug it by pulling on the cable.
- When connecting several devices to one circuit, do not exceed its permitted load.
- Do not touch the device with wet hands.

⚠ 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

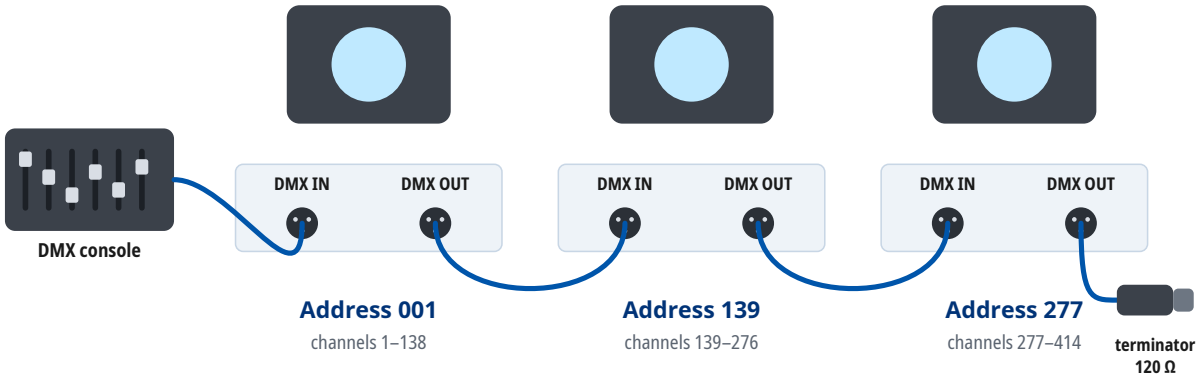
⚠ **WARNING**

- 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.
- Weight of the device: 12.8 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 Pure Mode 8 Bit: every unit occupies 138 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 “Pure Mode 8 Bit”: 138.
- 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 “Pure Mode 8 Bit”, you can use, for example, the start addresses 1, 139, 277.
- 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

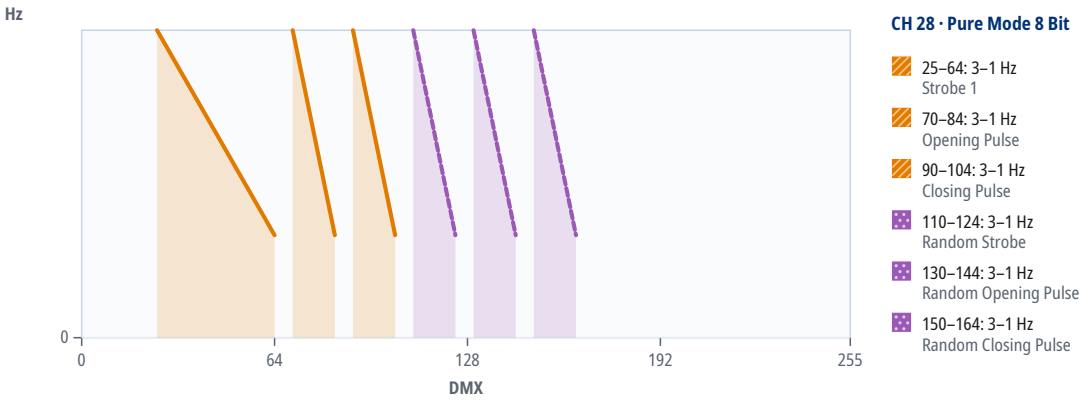
Functions in each DMX mode

	Pure Mode 8 Bit 138 channels
Dimmer	1–27, 30–55
Shutter / strobe	28, 29, 56–59
Color mixing	60–137
Pixel control	27 + 26 + 26 cells

Color wheel

1 LEE 002 Rose Pink
2 LEE 019 Fire
3 LEE 020 Medium Amber
4 LEE 022 Dark Amber
5 LEE 026 Bright Red
6 LEE 027 Medium Red
7 LEE 036 Medium Pink
8 LEE 052 Light Lavender
9 LEE 058 Lavender
10 LEE 068 Sky Blue
11 LEE 071 Tokyo Blue
12 LEE 088 Lime Green
13 LEE 089 Moss Green
14 LEE 101 Yellow
15 LEE 104 Deep Amber
16 LEE 105 Orange
17 LEE 106 Primary Red
18 LEE 113 Magenta
19 LEE 118 Light Blue
20 LEE 121 Green
21 LEE 126 Mauve
22 LEE 127 Smokey Pink
23 LEE 131 Marine Blue
24 LEE 132 Medium Blue
25 LEE 135 Deep Golden Amber
26 LEE 139 Primary Green
27 LEE 181 Congo Blue
28 LEE 323 Jade
29 LEE 343 Special Medium Lavender
30 LEE 707 Ultimate Violet
31 LEE 716 Mikkel Blue
32 LEE 738 JAS Green
33 LEE 795 Magical Magenta
34 LEE 798 Chrysalis Pink
35 LEE 799 Special KH Lavender

Strobe rate



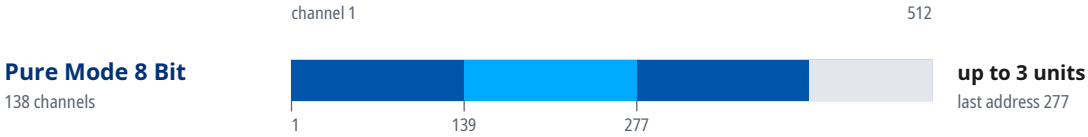
Cells (pixels)



26 cells in one row, left to right as the GDTF file places them (seen from above), wrapped after 13; numbered by their first DMX channel (CH) in the mode “Pure Mode 8 Bit”.

8 DMX channels

Units in one DMX universe



Start addresses of 20 units in the mode “Pure Mode 8 Bit”

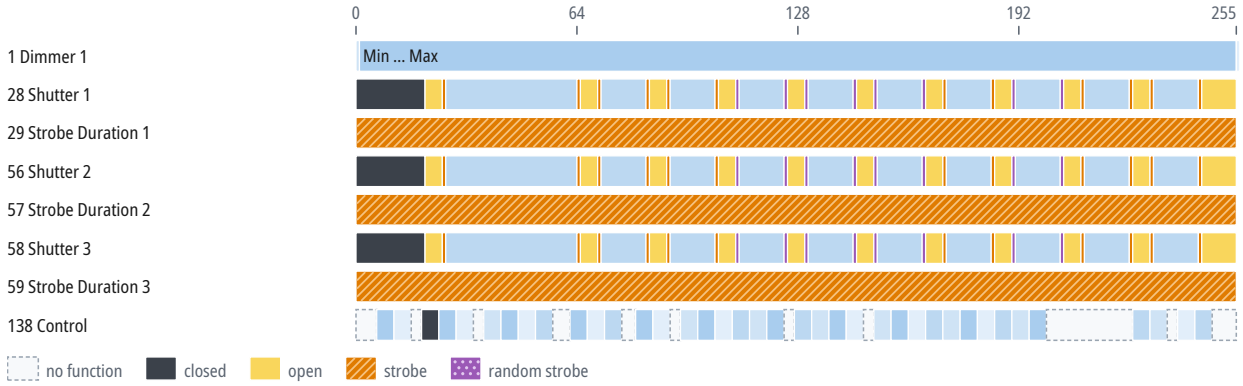
Unit	Start address	Unit	Start address	Unit	Start address	Unit	Start address
1	1	6	U2 · 277	11	U4 · 139	16	U6 · 1
2	139	7	U3 · 1	12	U4 · 277	17	U6 · 139
3	277	8	U3 · 139	13	U5 · 1	18	U6 · 277
4	U2 · 1	9	U3 · 277	14	U5 · 139	19	U7 · 1
5	U2 · 139	10	U4 · 1	15	U5 · 277	20	U7 · 139

Where a DMX universe is full, the next units continue in the next universe: “U2 · 1” is address 1 in the second universe, counted from the universe of the first unit.

Mode Pure Mode 8 Bit

If the device receives DMX in this mode but gives no light, check these channels: CH 28 Shutter 1 at 20–24 “Shutter Open” or 65–69, 85–89, 105–109, 125–129, 145–149, 165–169, 185–189, 205–209, 225–229, 245–255 “Open”; CH 56 Shutter 2 at 20–24 “Shutter Open” or 65–69, 85–89, 105–109, 125–129, 145–149, 165–169, 185–189, 205–209, 225–229, 245–255 “Open”; CH 58 Shutter 3 at 20–24 “Shutter Open” or 65–69, 85–89, 105–109, 125–129, 145–149, 165–169, 185–189, 205–209, 225–229, 245–255 “Open”. The GDTF file gives these values for a console's Highlight function: CH 1 Dimmer 255 (the same in each of the 27 cells), CH 30 Dimmer 255 (the same in each of the 26 cells), CH 60 Red 255 (the same in each of the 26 cells), CH 61 Green 255 (the same in each of the 26 cells), CH 62 Blue 255 (the same in each of the 26 cells).

Channel functions at a glance



CH	Function	DMX	Description
1	Dimmer 1	0	Min
		1–254	Min ... Max
		255	Max
28	Shutter 1	0–19	Shutter Close
		20–24	Shutter Open
		25	Fast Strobe (3–1 Hz)
		26–63	Fast Strobe ... Slow Strobe
		64	Slow Strobe
		65–69	Open
		70	Opening Pulse: Fast Pulse (3–1 Hz)
		71–83	Opening Pulse: Fast Pulse ... Slow Pulse
		84	Opening Pulse: Slow Pulse
		85–89	Open
		90	Closing Pulse: Fast Pulse (3–1 Hz)
		91–103	Closing Pulse: Fast Pulse ... Slow Pulse
		104	Closing Pulse: Slow Pulse
		105–109	Open
		110	Random Strobe: Fast Strobe (3–1 Hz)
		111–123	Random Strobe: Fast Strobe ... Slow Strobe
		124	Random Strobe: Slow Strobe
		125–129	Open

CH	Function	DMX	Description
28	Shutter 1 (continued)	130	Random Opening Pulse: Fast Pulse (3–1 Hz)
		131–143	Random Opening Pulse: Fast Pulse ... Slow Pulse
		144	Random Opening Pulse: Slow Pulse
		145–149	Open
		150	Random Closing Pulse: Fast Pulse (3–1 Hz)
		151–163	Random Closing Pulse: Fast Pulse ... Slow Pulse
		164	Random Closing Pulse: Slow Pulse
		165–169	Open
		170	Burst Pulse: Fast Pulse (3–1 Hz)
		171–183	Burst Pulse: Fast Pulse ... Slow Pulse
		184	Burst Pulse: Slow Pulse
		185–189	Open
		190	Random Burst Pulse: Fast Pulse (3–1 Hz)
		191–203	Random Burst Pulse: Fast Pulse ... Slow Pulse
		204	Random Burst Pulse: Slow Pulse
		205–209	Open
		210	Fast Sin Wave (3–1 Hz)
		211–223	Fast Sin Wave ... Slow Sin Wave
		224	Slow Sin Wave
		225–229	Open
		230	Fast Burst
		231–243	Fast Burst ... Slow Burst
		244	Slow Burst
		245–255	Open
29	Strobe Duration 1	0–255	
30	Dimmer 28	0	Min
		1–254	Min ... Max
		255	Max
56	Shutter 2	0–19	Shutter Close
		20–24	Shutter Open
		25	Fast Strobe (3–1 Hz)
		26–63	Fast Strobe ... Slow Strobe
		64	Slow Strobe
		65–69	Open
		70	Opening Pulse: Fast Pulse (3–1 Hz)
		71–83	Opening Pulse: Fast Pulse ... Slow Pulse
		84	Opening Pulse: Slow Pulse
		85–89	Open
		90	Closing Pulse: Fast Pulse (3–1 Hz)
		91–103	Closing Pulse: Fast Pulse ... Slow Pulse
		104	Closing Pulse: Slow Pulse
		105–109	Open

CH	Function	DMX	Description
56	Shutter 2 (continued)	110	Random Strobe: Fast Strobe (3–1 Hz)
		111–123	Random Strobe: Fast Strobe ... Slow Strobe
		124	Random Strobe: Slow Strobe
		125–129	Open
		130	Random Opening Pulse: Fast Pulse (3–1 Hz)
		131–143	Random Opening Pulse: Fast Pulse ... Slow Pulse
		144	Random Opening Pulse: Slow Pulse
		145–149	Open
		150	Random Closing Pulse: Fast Pulse (3–1 Hz)
		151–163	Random Closing Pulse: Fast Pulse ... Slow Pulse
		164	Random Closing Pulse: Slow Pulse
		165–169	Open
		170	Burst Pulse: Fast Pulse (3–1 Hz)
		171–183	Burst Pulse: Fast Pulse ... Slow Pulse
		184	Burst Pulse: Slow Pulse
		185–189	Open
		190	Random Burst Pulse: Fast Pulse (3–1 Hz)
		191–203	Random Burst Pulse: Fast Pulse ... Slow Pulse
		204	Random Burst Pulse: Slow Pulse
		205–209	Open
		210	Fast Sin Wave (3–1 Hz)
		211–223	Fast Sin Wave ... Slow Sin Wave
		224	Slow Sin Wave
		225–229	Open
		230	Fast Burst
		231–243	Fast Burst ... Slow Burst
		244	Slow Burst
		245–255	Open
57	Strobe Duration 2	0–255	
58	Shutter 3	0–19	Shutter Close
		20–24	Shutter Open
		25	Fast Strobe (3–1 Hz)
		26–63	Fast Strobe ... Slow Strobe
		64	Slow Strobe
		65–69	Open
		70	Opening Pulse: Fast Pulse (3–1 Hz)
		71–83	Opening Pulse: Fast Pulse ... Slow Pulse
		84	Opening Pulse: Slow Pulse
		85–89	Open
		90	Closing Pulse: Fast Pulse (3–1 Hz)
		91–103	Closing Pulse: Fast Pulse ... Slow Pulse
		104	Closing Pulse: Slow Pulse

CH	Function	DMX	Description
58	Shutter 3 (continued)	105–109	Open
		110	Random Strobe: Fast Strobe (3–1 Hz)
		111–123	Random Strobe: Fast Strobe ... Slow Strobe
		124	Random Strobe: Slow Strobe
		125–129	Open
		130	Random Opening Pulse: Fast Pulse (3–1 Hz)
		131–143	Random Opening Pulse: Fast Pulse ... Slow Pulse
		144	Random Opening Pulse: Slow Pulse
		145–149	Open
		150	Random Closing Pulse: Fast Pulse (3–1 Hz)
		151–163	Random Closing Pulse: Fast Pulse ... Slow Pulse
		164	Random Closing Pulse: Slow Pulse
		165–169	Open
		170	Burst Pulse: Fast Pulse (3–1 Hz)
		171–183	Burst Pulse: Fast Pulse ... Slow Pulse
		184	Burst Pulse: Slow Pulse
		185–189	Open
		190	Random Burst Pulse: Fast Pulse (3–1 Hz)
		191–203	Random Burst Pulse: Fast Pulse ... Slow Pulse
		204	Random Burst Pulse: Slow Pulse
		205–209	Open
		210	Fast Sin Wave (3–1 Hz)
		211–223	Fast Sin Wave ... Slow Sin Wave
		224	Slow Sin Wave
		225–229	Open
		230	Fast Burst
		231–243	Fast Burst ... Slow Burst
		244	Slow Burst
		245–255	Open
59	Strobe Duration 3	0–255	
60	Red 1	0	Min
		1–254	Min ... Max
		255	Max
61	Green 1	0	Min
		1–254	Min ... Max
		255	Max
62	Blue 1	0	Min
		1–254	Min ... Max
		255	Max
138	Control	0–5	No Function
		6–10	Display Backlight On
		11–15	Display Backlight Off

CH	Function	DMX	Description
138	Control (continued)	16–18	No Function
		19–23	DMX Fail Blackout
		24–28	DMX Fail Hold
		29–33	DMX Fail Emergency Light
		34–36	No Function
		37–41	Linear Dimmer Curve
		42–46	Exponential DImmer Curve
		47–51	Logarithimic Dimmer Curve
		52–56	S-Curve DImmer Curve
		57–61	No Function
		62–66	Fast Dimmer Response (LED)
		67–71	Medium Dimmer Response
		72–76	Slow Dimmer Response (Halogen)
		77–80	No Function
		81–85	Full Calibration (Colors and CCT)
		86–90	CCT Calibration (RAW Colors)
		91–93	No Function
		94–98	LED Frequency 800Hz
		99–103	LED Frequency 1200Hz
		104–108	LED Frequency 2000Hz
		109–113	LED Frequency 3600Hz
		114–118	LED Frequency 12kHz
		119–123	LED Frequency 25kHz
		124–126	No Function
		127–131	Fan Auto
		132–136	Fan Silent
		137–141	Fan Off
		142–146	Fan High Power
		147–149	No Function
		150–154	Invert RGB Panel Off
		155–159	Invert RGB Panel On
		160–164	Invert Single Tube 1 Off
		165–169	Invert Single Tube 1 On
		170–174	Invert Single Tube 2 Off
		175–179	Invert Single Tube 2 On
		180–184	Swap RGB Panels Off
		185–189	Swap RGB Panels On
		190–194	Swap Single Tubes Off
		195–199	Swap Single Tubes On
		200–224	No Function
		225–229	LED Mode - Illumination
		230–234	LED Mode - Boost

CH	Function	DMX	Description
138	Control (continued)	235–237	No Function
		238–242	Factory Reset
		243–247	User Reset
		248–255	No Function

CH 1–27: 27 cells of 1 channel each. Every cell works as cell 1 in the table above (CH 1); the table below gives each cell's channel numbers.

Cell	Dimmer	Cell	Dimmer	Cell	Dimmer	Cell	Dimmer	Cell	Dimmer	Cell	Dimmer
1	1	2	2	3	3	4	4	5	5	6	6
7	7	8	8	9	9	10	10	11	11	12	12
13	13	14	14	15	15	16	16	17	17	18	18
19	19	20	20	21	21	22	22	23	23	24	24
25	25	26	26	27	27						

CH 30–55: 26 cells of 1 channel each. Every cell works as cell 1 in the table above (CH 30); the table below gives each cell's channel numbers.

Cell	Dimmer	Cell	Dimmer	Cell	Dimmer	Cell	Dimmer	Cell	Dimmer	Cell	Dimmer
1	30	2	31	3	32	4	33	5	34	6	35
7	36	8	37	9	38	10	39	11	40	12	41
13	42	14	43	15	44	16	45	17	46	18	47
19	48	20	49	21	50	22	51	23	52	24	53
25	54	26	55								

CH 60–137: 26 cells of 3 channels each. Every cell works as cell 1 in the table above (CH 60–62); the table below gives each cell's channel numbers.

Cell	Red	Green	Blue	Cell	Red	Green	Blue	Cell	Red	Green	Blue
1	60	61	62	2	63	64	65	3	66	67	68
4	69	70	71	5	72	73	74	6	75	76	77
7	78	79	80	8	81	82	83	9	84	85	86
10	87	88	89	11	90	91	92	12	93	94	95
13	96	97	98	14	99	100	101	15	102	103	104
16	105	106	107	17	108	109	110	18	111	112	113
19	114	115	116	20	117	118	119	21	120	121	122
22	123	124	125	23	126	127	128	24	129	130	131
25	132	133	134	26	135	136	137				

9 Technical specifications

Parameter	Value
Light	
Light source	LED
Control	
DMX connection	5-pin XLR IN/OUT
RJ45 connectors	RJ45 IN/OUT
RDM	yes (manufacturer ID 0x6A6A, device model ID 0x0207)
Electrical	
Power supply	100–240 V, 50/60 Hz
Power consumption	1,010 W
Power connectors	powerCON TRUE1 IN/OUT
Dimensions and construction	
Weight	12.8 kg
Operating environment	
Operating temperature	-40 to 45 °C

Speeds and ranges

Parameter	Value
Strobe frequency	1–3 Hz

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.