GDTF Fixture Reference · by SOH

DMX REFERENCE

V3BSW

CKC Lighting



Manufacturer	CKC Lighting
GDTF file	CKC_Lighting_V3BSW_81791.gdtf
GDTF revision	V002 · 2024-12-27
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1 About this manual

This document describes the V3BSW by CKC Lighting. It was compiled from the GDTF file CKC_Lighting_V3BSW_81791.gdtf from the GDTF-Share library.

File revision: “V002”.

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 CKC Lighting; 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	488 W
Weight	20.8 kg

DMX modes

Mode	Channels	Units in one universe	First start addresses
Extended 30CH	30	17	1, 31, 61, 91, ...
Standard 25ch	25	20	1, 26, 51, 76, ...

No light? Check these channels

- Extended 30CH: CH 26 Dimmer above 0; CH 28 Shutter at 32–63 “open” or 96–127 or 160–191 or 224–255
- Standard 25ch: CH 21 Dimmer above 0; CH 23 Shutter at 32–63 “open” or 96–127 or 160–191 or 224–255


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: 90–240 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.

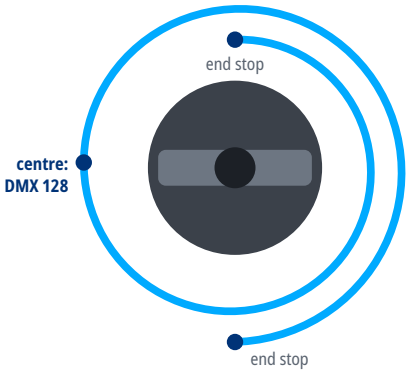
> ⚠ **WARNING**
>
> - The moving parts of the device (for example the head or arms) can move quickly and unexpectedly at any time – after power-on, during a reset, or on a command from the controller.
> - Keep yourself and any objects out of the range of movement. While the device is switched on, do not touch the moving parts, move them by hand, or obstruct their movement; this can cause injury (pinching) and damage the drive.
> - Do not carry the device by its moving parts. If the device has a transport lock, engage it before transport and release it before switching on.

4 Product description

Range of movement

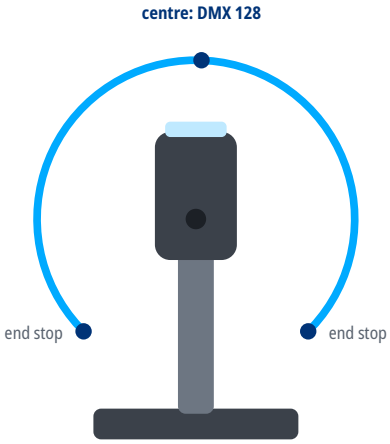
Pan 540°

top view



Tilt 270°

side view



5 Installation

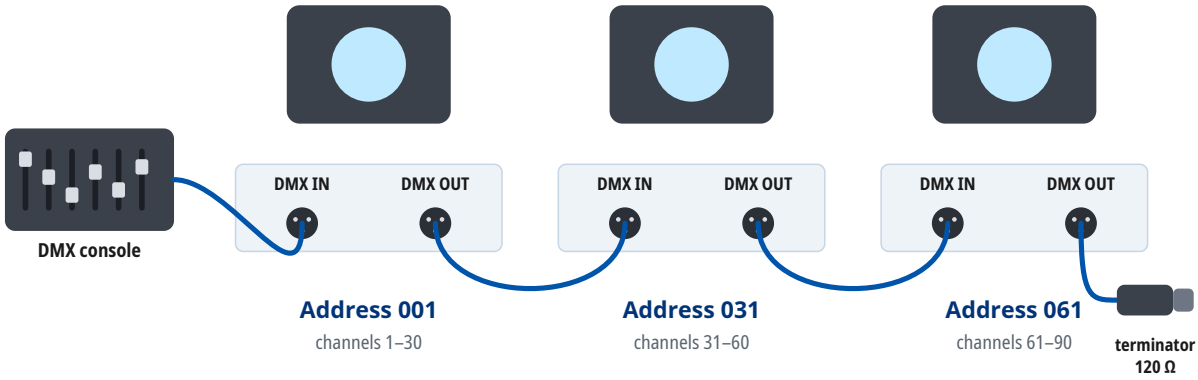
⚠ **WARNING**

- 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: 20.8 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.

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 Extended 30CH: every unit occupies 30 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

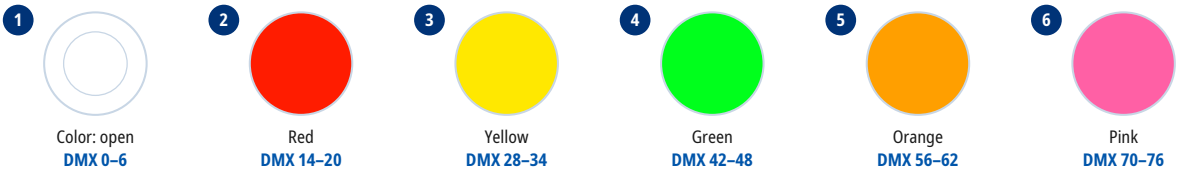
- The device occupies as many consecutive channels in the DMX universe as the selected DMX mode uses, starting at the set start address.
- Number of channels occupied in the DMX mode “Extended 30CH”: 30.
- Choose start addresses so that the channels of individual devices do not overlap and the last occupied 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 “Extended 30CH”, you can use, for example, the start addresses 1, 31, 61, 91.
- 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

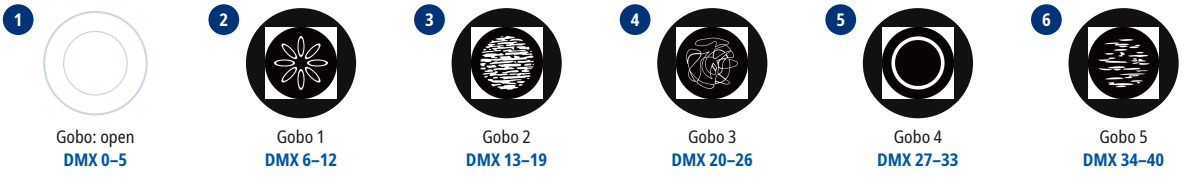
	Extended 30CH 30 channels	Standard 25ch 25 channels
Pan / Tilt	1, 3	1, 3
Dimmer	26	21
Shutter / strobe	28	23
Color mixing	6, 8, 10	6–8
Color wheel	12	9
Gobo wheel	13, 16	10, 13
Gobo rotation	13, 14	10, 11
Prism	17–19	14–16
Frost	25	20
Zoom	20	17
Focus	22	18
Iris	24	19

Color wheel



1 Color: open DMX 0–6
2 Red DMX 14–20
3 Yellow DMX 28–34
4 Green DMX 42–48
5 Orange DMX 56–62
6 Pink DMX 70–76
7 CTO DMX 84–90
8 High CRI DMX 98–104
9 Blue DMX 112–118

Gobo wheel 1



1 Gobo: open DMX 0–5
2 Gobo 1 DMX 6–12
3 Gobo 2 DMX 13–19
4 Gobo 3 DMX 20–26
5 Gobo 4 DMX 27–33
6 Gobo 5 DMX 34–40
7 Gobo 6 DMX 41–47
8 Gobo 7 DMX 48–54
9 Gobo 1-8 DMX 55–62

Gobo wheel 2

1
Gobo: Open
DMX 0–5

2 
Gobo 1
DMX 6–14

3 
Gobo 2
DMX 15–23

4 
Gobo 3
DMX 24–32

5 
Gobo 4
DMX 33–41

6 
Gobo 5
DMX 42–50

7 
Gobo 6
DMX 51–59

8 
Gobo 7
DMX 60–68

9 
Gobo 8
DMX 69–77

10 
Gobo 9
DMX 78–86

11 
Gobo2-10
DMX 87–96

Prism 1

1
No Prism
DMX 0–5

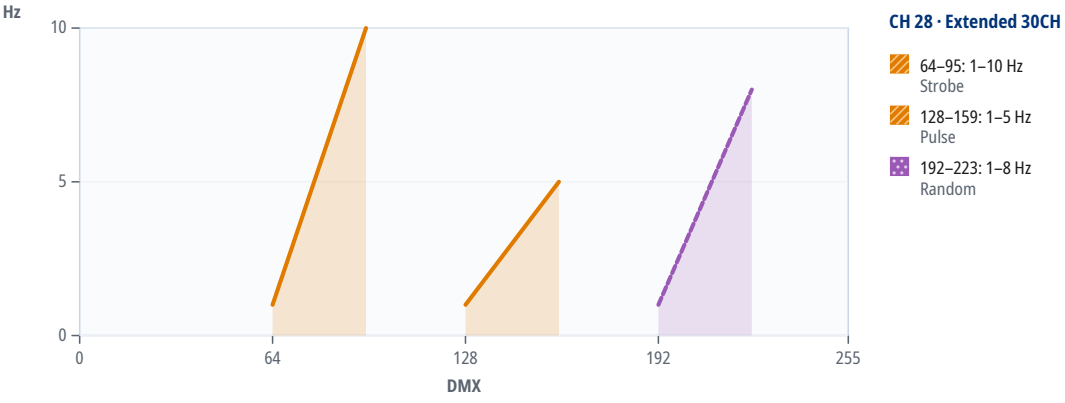
2 
8 facets
Prism1
DMX 6–86

Prism 2

1
Prism 1 + 2
DMX 171–255

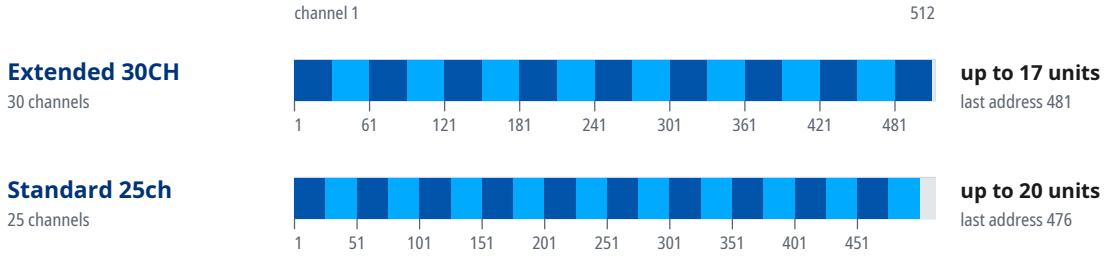
2 
6 facets
Prism 2
DMX 86–170

Strobe rate



9 DMX channels

Units in one DMX universe



Start addresses of 20 units in the mode “Extended 30CH”

Unit	Start address	Unit	Start address	Unit	Start address	Unit	Start address
1	1	6	151	11	301	16	451
2	31	7	181	12	331	17	481
3	61	8	211	13	361	18	U2 · 1
4	91	9	241	14	391	19	U2 · 31
5	121	10	271	15	421	20	U2 · 61

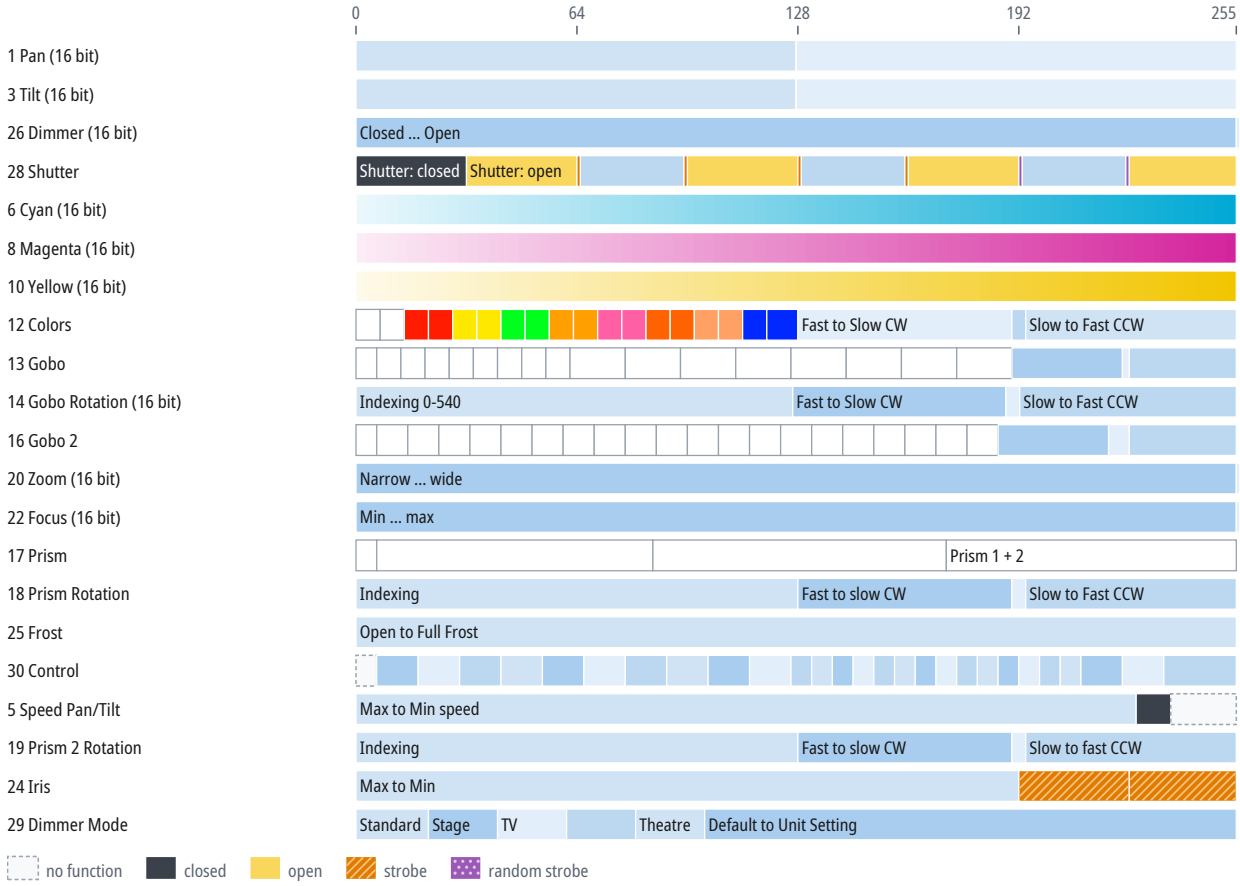
Where a DMX universe is full, the next units continue in the next universe: “U2 · 1” is address 1 in the second universe, counted from the universe of the first unit.

Mode Extended 30CH

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 26 Dimmer above 0; CH 28 Shutter at 32–63 “open” or 96–127 or 160–191 or 224–255.

Channel functions at a glance



CH	Function	DMX	Description
1	Pan	0–127	Pan 1
		128	Center
		128–255	Pan 1
2	Pan Fine	0–255	Fine adjustment of CH 1
3	Tilt	0–127	Tilt 1
		128	Center
		128–255	Tilt 1
4	Tilt Fine	0–255	Fine adjustment of CH 3
5	Speed Pan/Tilt		P/T Speed
		0–225	Max to Min speed
		226–235	Blackout by movement
		236–255	No function
6	Cyan	0–255	
7	Cyan Fine	0–255	Fine adjustment of CH 6

CH	Function	DMX	Description
8	Magenta	0–255	
9	Magenta Fine	0–255	Fine adjustment of CH 8
10	Yellow	0–255	
11	Yellow Fine	0–255	Fine adjustment of CH 10
12	Colors	0–6	Color: open
		7–13	White/Red
		14–20	Red
		21–27	Red/Yellow
		28–34	Yellow
		35–41	Yellow/Green
		42–48	Green
		49–55	Green/Orange
		56–62	Orange
		63–69	Orange/Pink
		70–76	Pink
		77–83	Pink/CTO
		84–90	CTO
		91–97	CTO/ HCRI
		98–104	High CRI
		105–111	High CRI/Blue
		112–118	Blue
		119–127	Blue/White
		128–189	Fast to Slow CW (180–7.09 °/s)
		190–193	Spin: Stop
		194–255	Slow to Fast CCW (7.09–180 °/s)
13	Gobo	0–5	Gobo: open
		6–12	Gobo 1
		13–19	Gobo 2
		20–26	Gobo 3
		27–33	Gobo 4
		34–40	Gobo 5
		41–47	Gobo 6
		48–54	Gobo 7
		55–61	Gobo 8
		62–77	Gobo 1 shake (1–10 Hz)
		78–93	Gobo 2 shake (1–10 Hz)
		94–109	Gobo 3 shake (1–10 Hz)
		110–125	Gobo 4 shake (1–10 Hz)
		126–141	Gobo 5 shake (1–10 Hz)
		142–157	Gobo 6 shake (1–10 Hz)
		158–173	Gobo 7 shake (1–10 Hz)
		174–189	Gobo 8 shake (1–10 Hz)

CH	Function	DMX	Description
13	Gobo (continued)	190–221	Fast to Slow CW (180–8.31 °/s)
		222–223	Spin: Stop
		224–255	Slow to Fast CCW (8.31–180 °/s)
14	Gobo Rotation	0–127	Indexing 0-540 (540°)
		127–189	Fast to Slow CW (180–6.98 °/s)
		189–193	Pos Rotate: Stop
		193–255	Slow to Fast CCW (6.98–180 °/s)
15	Gobo Rotation Fine	0–255	Fine adjustment of CH 14
16	Gobo 2	0–5	Gobo: Open
		6–14	Gobo 1
		15–23	Gobo 2
		24–32	Gobo 3
		33–41	Gobo 4
		42–50	Gobo 5
		51–59	Gobo 6
		60–68	Gobo 7
		69–77	Gobo 8
		78–86	Gobo 9
		87–95	Gobo 10
		96–104	Gobo 1 shake (1–10 Hz)
		105–113	Gobo 2 shake (1–10 Hz)
		114–122	Gobo 3 shake (1–10 Hz)
		123–131	Gobo 4 shake (1–10 Hz)
		132–140	Gobo 5 shake (1–10 Hz)
		141–149	Gobo 6 shake (1–10 Hz)
		150–158	Gobo 7 shake (1–10 Hz)
		159–167	Gobo 8 shake (1–10 Hz)
		168–176	Gobo 9 shake (1–10 Hz)
		177–185	Gobo 10 shake (1–10 Hz)
		186–217	Fast to Slow CW (180–18.3 °/s)
		218–223	Spin: Stop
		224–255	Slow to Fast CCW (18.3–180 °/s)
17	Prism	0–5	No Prism
		6–85	Prism 1
		86–170	Prism 2
		171–255	Prism 1 + 2
18	Prism Rotation	0–127	Indexing (540°)
		128–189	Fast to slow CW (180–7.09 °/s)
		190–193	No rotation
		194–255	Slow to Fast CCW (7.09–180 °/s)
19	Prism 2 Rotation	0–127	Indexing (540°)
		128–189	Fast to slow CW (180–7.09 °/s)

CH	Function	DMX	Description
19	Prism 2 Rotation (continued)	190–193	No rotation
		194–255	Slow to fast CCW (7.09–180 °/s)
20	Zoom	0–255	Narrow ... wide
		255	Wide
21	Zoom Fine	0–255	Fine adjustment of CH 20
22	Focus	0–255	Min ... max
		255	Max
23	Focus Fine	0–255	Fine adjustment of CH 22
24	Iris	0–191	Max to Min
		192–223	Pulse opening fast to slow
		224–255	Pulse closing slow to fast
25	Frost	0–255	Open to Full Frost
26	Dimmer	0–255	Closed ... Open
		255	Open
27	Dimmer Fine	0–255	Fine adjustment of CH 26
28	Shutter	0–31	Shutter: closed
		32–63	Shutter: open
		64	Min Strobe
		65–94	Min Strobe ... max Strobe
		95	Max Strobe
		96–127	Shutter open(2)
		128	Min pulse
		129–158	Min pulse ... max pulse
		159	Max pulse
		160–191	Shutter open(3)
		192	Min Random
		193–222	Min Random ... max Random
		223	Max Random
		224–255	Shutter open(4)
29	Dimmer Mode	0–20	Standard
		21–40	Stage
		41–60	TV
		61–80	Architectural
		81–100	Theatre
		101–255	Default to Unit Setting
30	Control	0–5	No function
		6–17	Invert Pan on (Hold 3s)
		18–29	Invert Pan off (Hold 5s)
		30–41	Invert Tilt on (Hold 3s)
		42–53	Invert Tilt off (Hold 3s)
		54–65	Fan Silent(Hold 3s)
		66–77	Fan Auto(Hold 3s)

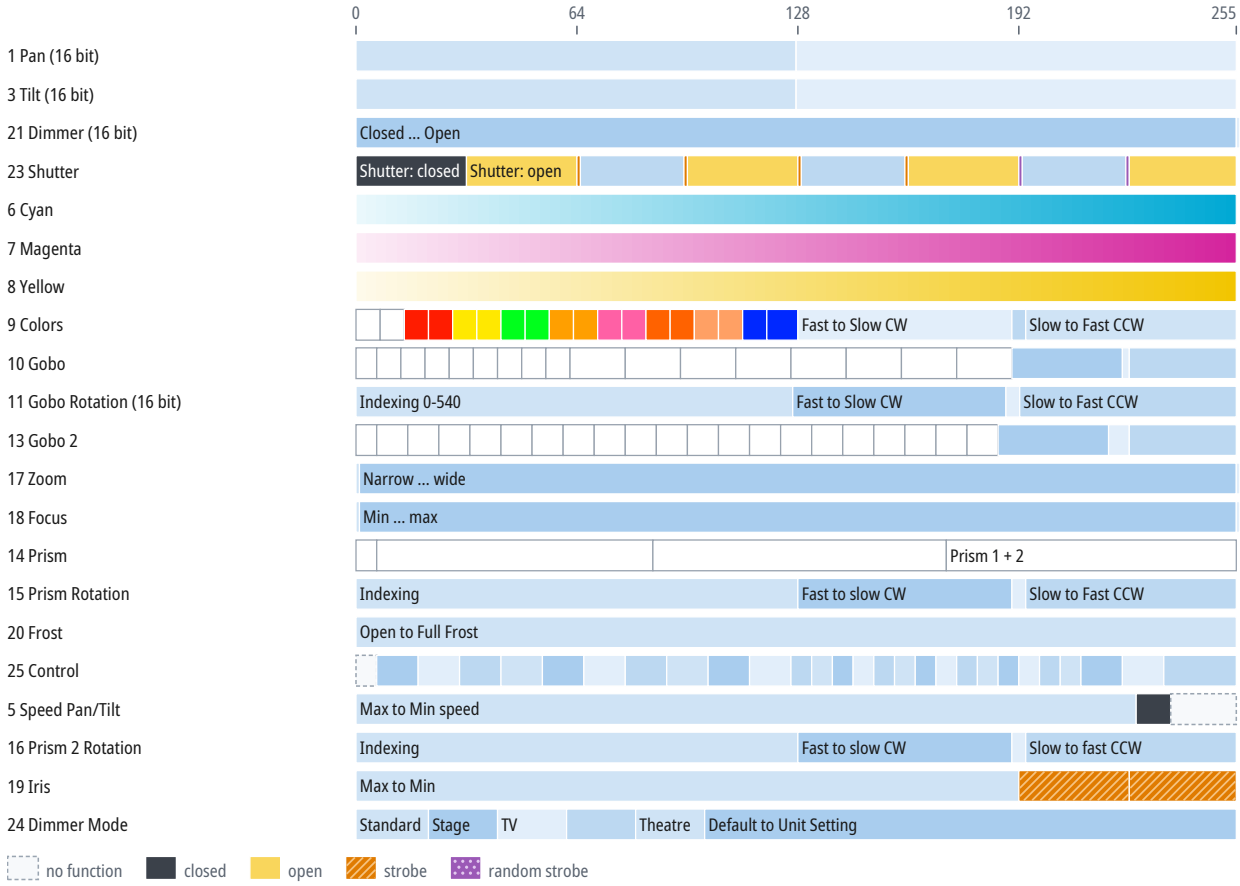
CH	Function	DMX	Description
30	Control (continued)	78–89	Dimmer Curve Linear(Hold 3s)
		90–101	Dimmer Curve Square(Hold 3s)
		102–113	Dimmer Curve I-Square(Hold 3s)
		114–125	Dimmer Curve S-Curve(Hold 3s)
		126–131	900 Hz(Hold 3s)
		132–137	1000 Hz(Hold 3s)
		138–143	1100 Hz(Hold 3s)
		144–149	1200 Hz(Hold 3s)
		150–155	1300 Hz(Hold 3s)
		156–161	1400 Hz(Hold 3s)
		162–167	1500 Hz(Hold 3s)
		168–173	2500 Hz(Hold 3s)
		174–179	4000 Hz(Hold 3s)
		180–185	5000 Hz(Hold 3s)
		186–191	10000 Hz(Hold 3s)
		192–197	15000 Hz(Hold 3s)
		198–203	20000 Hz(Hold 3s)
		204–209	25000 Hz(Hold 3s)
		210–221	Reset Pan/Tilt (Hold 3s)
		222–233	Reset only Head(Hold 3s)
		234–255	Reset All Functions(Hold 3s)

Mode Standard 25ch

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 21 Dimmer above 0; CH 23 Shutter at 32–63 “open” or 96–127 or 160–191 or 224–255.

Channel functions at a glance



CH	Function	DMX	Description
1	Pan		Same as CH 1 in the mode “Extended 30CH” (p. 11)
2	Pan Fine	0–255	Fine adjustment of CH 1
3	Tilt		Same as CH 3 in the mode “Extended 30CH” (p. 11)
4	Tilt Fine	0–255	Fine adjustment of CH 3
5	Speed Pan/Tilt		Same as CH 5 in the mode “Extended 30CH” (p. 11)
6	Cyan	0–255	
7	Magenta	0–255	
8	Yellow	0–255	
9	Colors		Same as CH 12 in the mode “Extended 30CH” (p. 12)
10	Gobo		Same as CH 13 in the mode “Extended 30CH” (p. 12)
11	Gobo Rotation		Same as CH 14 in the mode “Extended 30CH” (p. 13)
12	Gobo Rotation Fine	0–255	Fine adjustment of CH 11
13	Gobo 2		Same as CH 16 in the mode “Extended 30CH” (p. 13)
14	Prism		Same as CH 17 in the mode “Extended 30CH” (p. 13)

CH	Function	DMX	Description
15	Prism Rotation		Same as CH 18 in the mode “Extended 30CH” (p. 13)
16	Prism 2 Rotation		Same as CH 19 in the mode “Extended 30CH” (p. 13)
17	Zoom	0	Narrow
		1–254	Narrow ... wide
		255	Wide
18	Focus	0	Min
		1–254	Min ... max
		255	Max
19	Iris		Same as CH 24 in the mode “Extended 30CH” (p. 14)
20	Frost	0–255	Open to Full Frost
21	Dimmer		Same as CH 26 in the mode “Extended 30CH” (p. 14)
22	Dimmer Fine	0–255	Fine adjustment of CH 21
23	Shutter		Same as CH 28 in the mode “Extended 30CH” (p. 14)
24	Dimmer Mode		Same as CH 29 in the mode “Extended 30CH” (p. 14)
25	Control		Same as CH 30 in the mode “Extended 30CH” (p. 14)

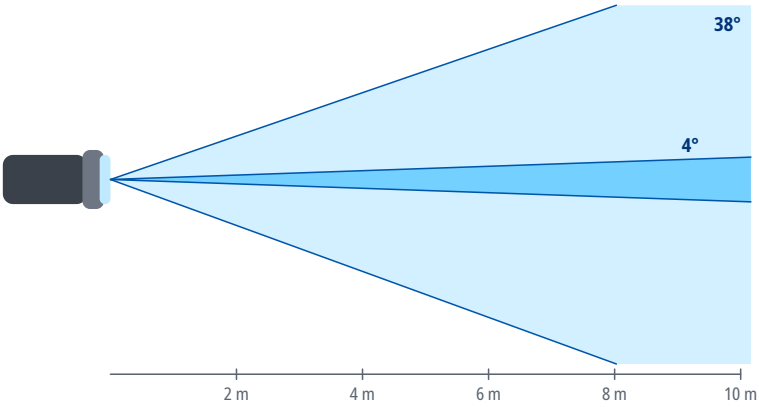
10 Technical specifications

Parameter	Value
Light	
Light source	LED
LED power	300 W
Luminous flux	12,000 lm
Color temperature	6,700 K
Color rendering index (CRI)	72
Optics	
Zoom	4–38°
Movement	
Pan	540°
Tilt	270°
Control	
DMX connection	5-pin XLR IN/OUT, 3-pin XLR IN/OUT
Electrical	
Power supply	90–240 V, 50/60 Hz
Power consumption	488 W
Power connectors	powerCON TRUE1 IN
Dimensions and construction	
Weight	20.8 kg
Operating environment	
Operating temperature	-40 to 45 °C

Speeds and ranges

Parameter	Value
Strobe frequency	1–10 Hz
Color wheel rotation	up to 180 °/s (30 rpm)
Gobo wheel 1 rotation	up to 180 °/s (30 rpm)
Gobo wheel 2 rotation	up to 180 °/s (30 rpm)
Gobo 1 rotation	up to 180 °/s (30 rpm)
Prism 1 rotation	up to 180 °/s (30 rpm)
Prism 2 rotation	up to 180 °/s (30 rpm)

Spot diameter



Distance	Ø 4°	Ø 38°
2 m	0.14 m	1.4 m
4 m	0.28 m	2.8 m
6 m	0.42 m	4.1 m
8 m	0.56 m	5.5 m
10 m	0.7 m	6.9 m
15 m	1 m	10.3 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.
Movement is reversed	Check whether Pan/Tilt inversion is enabled in the device menu or in the controller.
Moving parts do not reach the correct position after power-on or transport	Switch the device off and on again to reset the position, and make sure the transport lock, if any, is released. If this does not help, contact a service center.
Movement is jerky	Check the value of the Pan/Tilt speed channel, if the device has one, and the stability of the DMX signal.

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.