DMX REFERENCE

LM250

Event Lighting



Manufacturer	Event Lighting
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1 About this manual

This document describes the LM250 by Event Lighting. It was compiled from the GDTF file Event_Lighting_LM250_138255.gdtf from the GDTF-Share library.

File revision: “1, Uploaded to GDTF Share.”.

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 Event 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	470 W

DMX modes

Mode	Channels	Units in one universe	First start addresses
16 Channel	16	32	1, 17, 33, 49, ...
14 Channel	14	36	1, 15, 29, 43, ...
18 Channel	18	28	1, 19, 37, 55, ...

No light? Check these channels

- 16 Channel: CH 9 Shutter at 32–63, 96–127, 160–191 or 224–255 “Open”; CH 10 Dimmer above 254
- 14 Channel: CH 7 Shutter at 32–63 “Open”; CH 8 Dimmer above 254
- 18 Channel: CH 9 Shutter at 32–63 “Open”; CH 10 Dimmer above 254


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

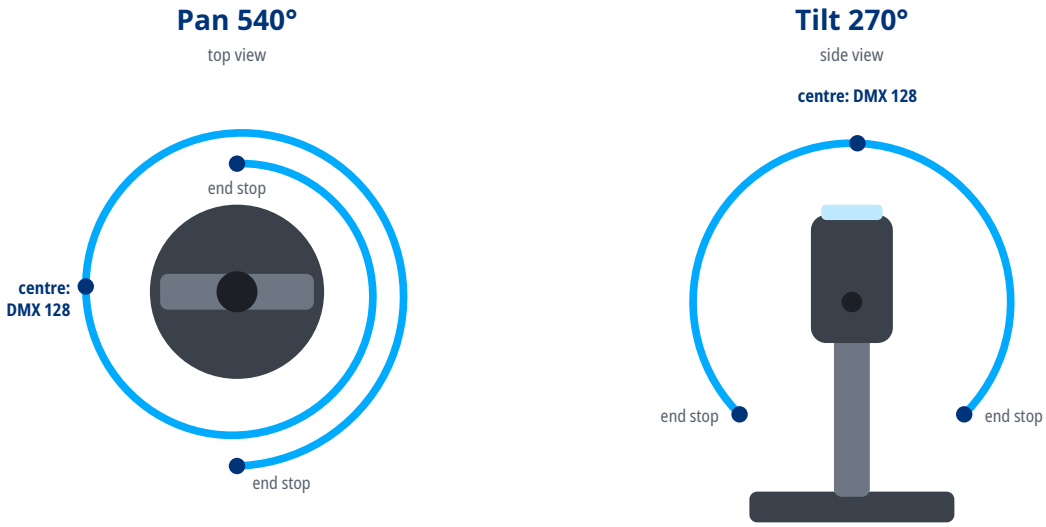
- This device emits intense light. Do not look directly into the light source or the beam at close range; doing so may damage your eyes.
- Do not aim the beam at the eyes of people or animals at close range, and do not view the light source through optical instruments (binoculars, camera lenses).
- Do 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.

> ⚠ **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



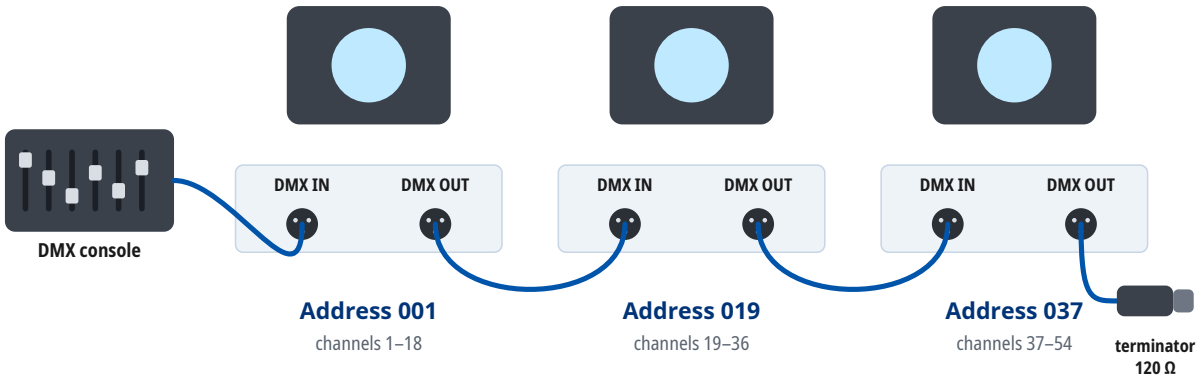
5 Installation

> ⚠ **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.
> - 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 18 Channel: every unit occupies 18 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 “18 Channel”: 18.
- 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 “18 Channel”, you can use, for example, the start addresses 1, 19, 37, 55.
- 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

	16 Channel 16 channels	14 Channel 14 channels	18 Channel 18 channels
Pan / Tilt	1, 3	1, 2	1, 3
Pan / Tilt resolution	16 bit	8 bit	16 bit
Dimmer	10	8	10
Shutter / strobe	9	7	9
Gobo wheel	8	6	8
Prism	13	11	13
Frost	14	12	14
Zoom	12	10	12
Focus	11	9	11

Color wheel



Gobo wheel 1

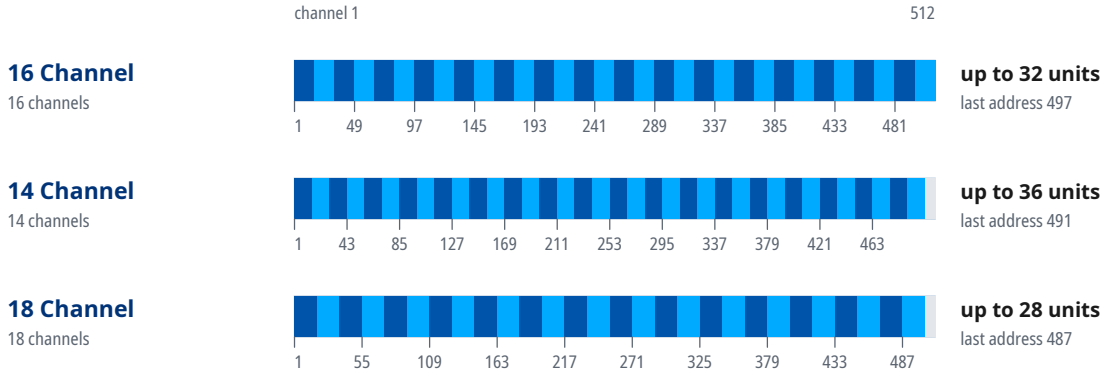
1	Open DMX 0–9	7	Gobo 6	13	Gobo 6 Shake
2	Gobo 1	8	Gobo 1 Shake	14	Rot CW DMX 190–255
3	Gobo 2	9	Gobo 2 Shake	15	Gobos DMX 10–69
4	Gobo 3	10	Gobo 3 Shake	16	Gobo Shake DMX 70–189
5	Gobo 4	11	Gobo 4 Shake		
6	Gobo 5	12	Gobo 5 Shake		

Gobo wheel 2

1	Open DMX 0–9	10	Gobo 9	19	Gobo 7 Shake
2	Gobo 1	11	Gobo 10	20	Gobo 8 Shake
3	Gobo 2	12	Gobo 11	21	Gobo 9 Shake
4	Gobo 3	13	Gobo 1 Shake	22	Gobo 10 Shake
5	Gobo 4	14	Gobo 2 Shake	23	Gobo 11 Shake
6	Gobo 5	15	Gobo 3 Shake	24	Rot CW DMX 230–255
7	Gobo 6	16	Gobo 4 Shake	25	Gobos DMX 10–119
8	Gobo 7	17	Gobo 5 Shake	26	Gobo Shake DMX 120–229
9	Gobo 8	18	Gobo 6 Shake		

9 DMX channels

Units in one DMX universe



Start addresses of 20 units in the mode “18 Channel”

Unit	Start address	Unit	Start address	Unit	Start address	Unit	Start address
1	1	6	91	11	181	16	271
2	19	7	109	12	199	17	289
3	37	8	127	13	217	18	307
4	55	9	145	14	235	19	325
5	73	10	163	15	253	20	343

RDM personalities

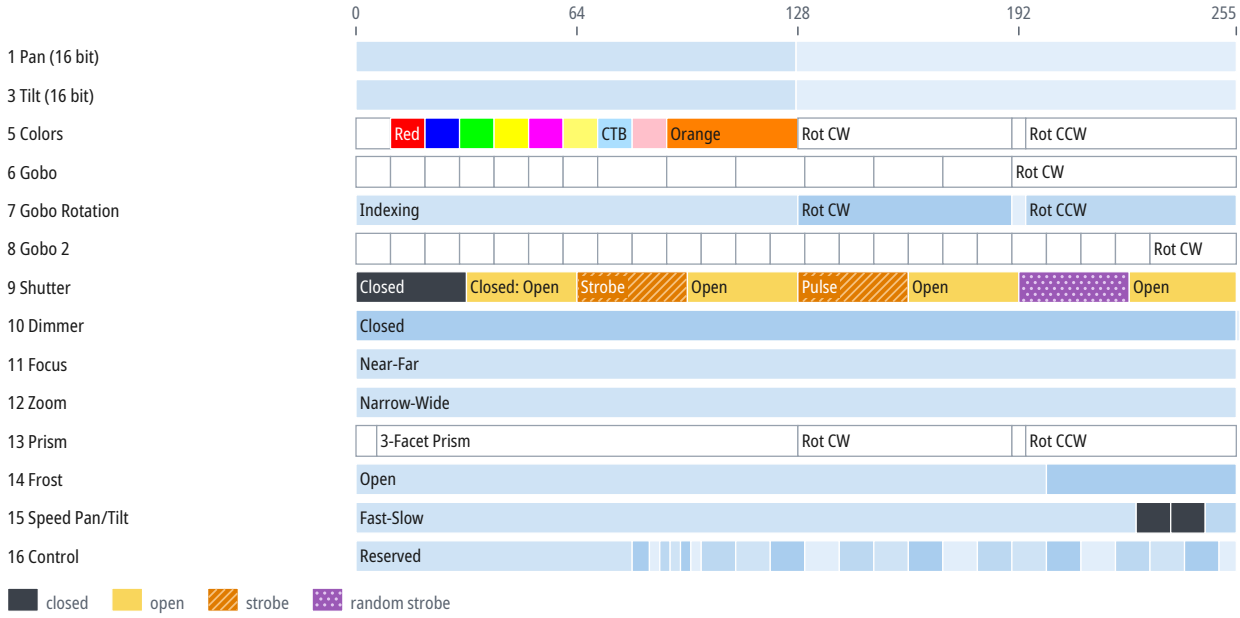
Mode	Channels	RDM personality
16 Channel	16	1
14 Channel	14	2
18 Channel	18	3

Mode 16 Channel

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 9 Shutter at 32–63, 96–127, 160–191 or 224–255 “Open”; CH 10 Dimmer above 254. The GDTF file gives these values for a console's Highlight function: CH 9 Shutter 255, CH 10 Dimmer 255.

Channel functions at a glance



CH	Function	DMX	Description
1	Pan	0–127	Pan
		128	Center
		128–255	Pan
2	Pan Fine	0–255	Fine adjustment of CH 1
3	Tilt	0–127	Tilt
		128	Center
		128–255	Tilt
4	Tilt Fine	0–255	Fine adjustment of CH 3
5	Colors	0–9	Open
		10–19	Red
		20–29	Blue
		30–39	Green
		40–49	Yellow
		50–59	Magenta
		60–69	CTO
		70–79	CTB
		80–89	Pink
		90–127	Orange
		128–189	Rot CW
		190–193	Stop

CH	Function	DMX	Description
5	Colors (continued)	194–255	Rot CCW
6	Gobo	0–9	Open
		10–19	Gobo 1
		20–29	Gobo 2
		30–39	Gobo 3
		40–49	Gobo 4
		50–59	Gobo 5
		60–69	Gobo 6
		70–89	Gobo 1 Shake
		90–109	Gobo 2 Shake
		110–129	Gobo 3 Shake
		130–149	Gobo 4 Shake
		150–169	Gobo 5 Shake
		170–189	Gobo 6 Shake
		190–255	Rot CW
7	Gobo Rotation	0–127	Indexing
		128–189	Rot CW
		190–193	Stop
		194–255	Rot CCW
8	Gobo 2	0–9	Open
		10–19	Gobo 1
		20–29	Gobo 2
		30–39	Gobo 3
		40–49	Gobo 4
		50–59	Gobo 5
		60–69	Gobo 6
		70–79	Gobo 7
		80–89	Gobo 8
		90–99	Gobo 9
		100–109	Gobo 10
		110–119	Gobo 11
		120–129	Gobo 1 Shake
		130–139	Gobo 2 Shake
		140–149	Gobo 3 Shake
		150–159	Gobo 4 Shake
		160–169	Gobo 5 Shake
		170–179	Gobo 6 Shake
		180–189	Gobo 7 Shake
		190–199	Gobo 8 Shake
		200–209	Gobo 9 Shake
		210–219	Gobo 10 Shake
		220–229	Gobo 11 Shake

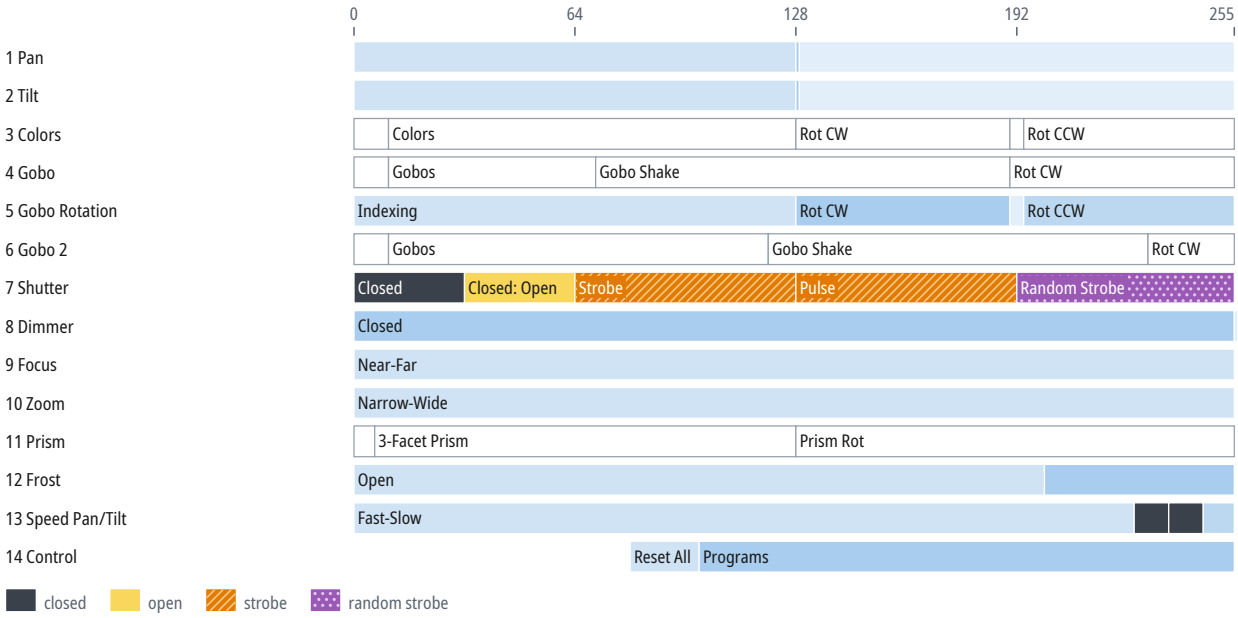
CH	Function	DMX	Description
8	Gobo 2 (continued)	230–255	Rot CW
9	Shutter	0–31	Closed
		32–63	Closed: Open
		64–95	Strobe
		96–127	Open
		128–159	Pulse
		160–191	Open
		192–223	Random Strobe
		224–255	Open
10	Dimmer	0–254	Closed
		255	Open
11	Focus	0–255	Near-Far
12	Zoom	0–255	Narrow-Wide
13	Prism	0–5	Open
		6–127	3-Facet Prism
		128–189	Rot CW
		190–193	Stop
		194–255	Rot CCW
14	Frost	0–199	Open
		200–255	Frost
15	Speed Pan/Tilt	0–225	Fast-Slow
		226–235	Blackout during Pan/Tilt
		236–245	Blackout during Color/Gobo
		246–255	Reserved
16	Control	0–79	Reserved
		80–84	Reset All
		85–87	Reset Pan/Tilt
		88–90	Reset Color
		91–93	Reset Gobo
		94–96	Reserved
		97–99	Reset Others
		100–109	Internal Program 1
		110–119	Internal Program 2
		120–129	Internal Program 3
		130–139	Internal Program 4
		140–149	Internal Program 5
		150–159	Internal Program 6
		160–169	Internal Program 7
		170–179	Internal Program 8
		180–189	Internal Sound Program 1
		190–199	Internal Sound Program 2
		200–209	Internal Sound Program 3

CH	Function	DMX	Description
16	Control (continued)	210–219	Internal Sound Program 4
		220–229	Internal Sound Program 5
		230–239	Internal Sound Program 6
		240–249	Internal Sound Program 7
		250–255	Internal Sound Program 8

Mode 14 Channel

If the device receives DMX in this mode but gives no light, check these channels: CH 7 Shutter at 32–63 “Open”; CH 8 Dimmer above 254. The GDTF file gives these values for a console's Highlight function: CH 8 Dimmer 255.

Channel functions at a glance



CH	Function	DMX	Description
1	Pan	0–127	Pan
		128	Center
		129–255	Pan
2	Tilt	0–127	Tilt
		128	Center
		129–255	Tilt
3	Colors	0–9	Open
		10–127	Colors
		128–189	Rot CW
		190–193	Stop
		194–255	Rot CCW
4	Gobo	0–9	Open
		10–69	Gobos
		70–189	Gobo Shake
		190–255	Rot CW

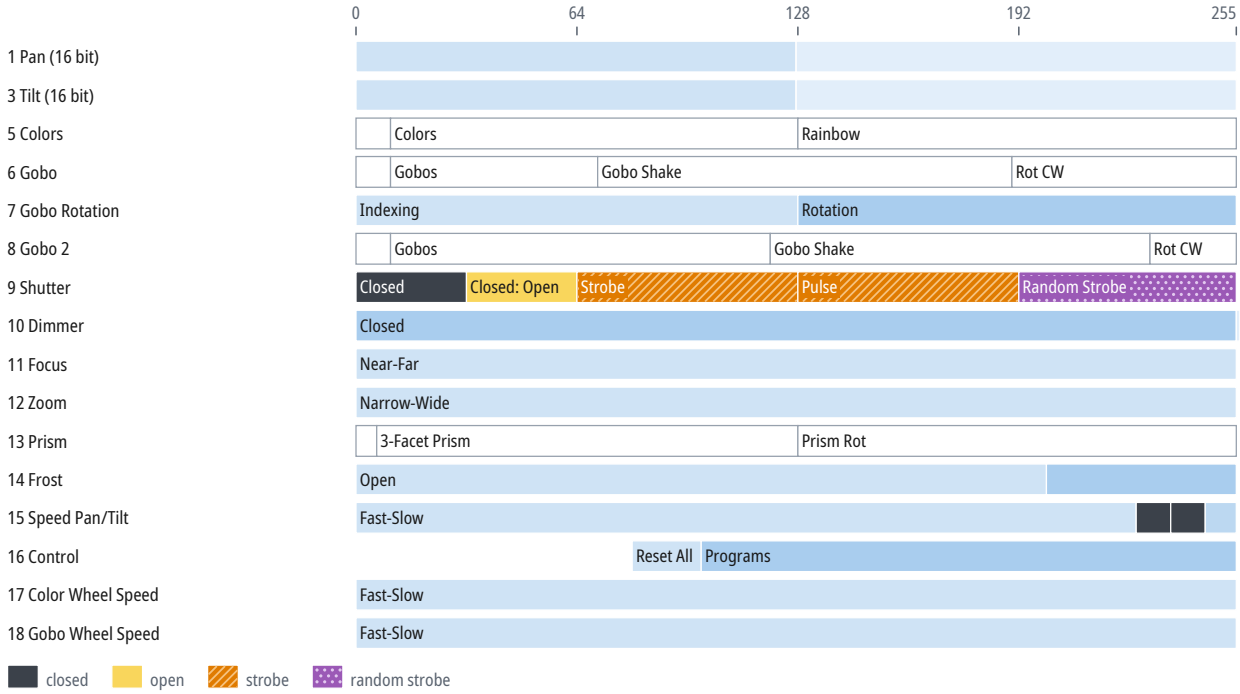
CH	Function	DMX	Description
5	Gobo Rotation		Same as CH 7 in the mode “16 Channel” (p. 10)
6	Gobo 2	0–9	Open
		10–119	Gobos
		120–229	Gobo Shake
		230–255	Rot CW
7	Shutter	0–31	Closed
		32–63	Closed: Open
		64–127	Strobe
		128–191	Pulse
		192–255	Random Strobe
8	Dimmer		Same as CH 10 in the mode “16 Channel” (p. 11)
9	Focus	0–255	Near-Far
10	Zoom	0–255	Narrow-Wide
11	Prism	0–5	Open
		6–127	3-Facet Prism
		128–255	Prism Rot
12	Frost		Same as CH 14 in the mode “16 Channel” (p. 11)
13	Speed Pan/Tilt		Same as CH 15 in the mode “16 Channel” (p. 11)
14	Control	80–99	Reset All
		100–255	Programs

Mode 18 Channel

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 9 Shutter at 32–63 “Open”; CH 10 Dimmer above 254. The GDTF file gives these values for a console's Highlight function: CH 10 Dimmer 255.

Channel functions at a glance



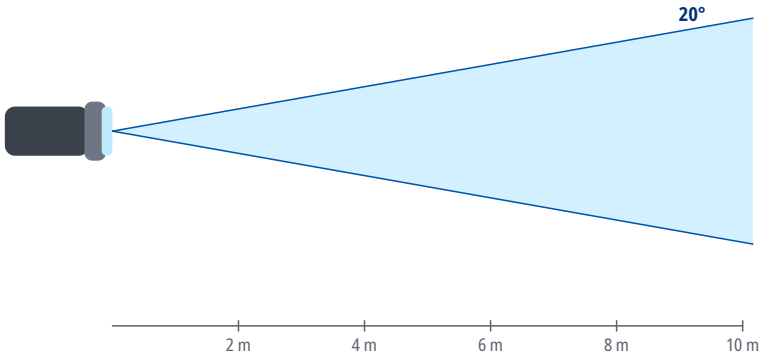
CH	Function	DMX	Description
1	Pan		Same as CH 1 in the mode “16 Channel” (p. 9)
2	Pan Fine	0–255	Fine adjustment of CH 1
3	Tilt		Same as CH 3 in the mode “16 Channel” (p. 9)
4	Tilt Fine	0–255	Fine adjustment of CH 3
5	Colors	0–9	Open
		10–127	Colors
		128–255	Rainbow
6	Gobo		Same as CH 4 in the mode “14 Channel” (p. 12)
7	Gobo Rotation	0–127	Indexing
		128–255	Rotation
8	Gobo 2		Same as CH 6 in the mode “14 Channel” (p. 13)
9	Shutter		Same as CH 7 in the mode “14 Channel” (p. 13)
10	Dimmer		Same as CH 10 in the mode “16 Channel” (p. 11)
11	Focus	0–255	Near-Far
12	Zoom	0–255	Narrow-Wide
13	Prism		Same as CH 11 in the mode “14 Channel” (p. 13)
14	Frost		Same as CH 14 in the mode “16 Channel” (p. 11)
15	Speed Pan/Tilt		Same as CH 15 in the mode “16 Channel” (p. 11)

CH	Function	DMX	Description
16	Control		Same as CH 14 in the mode “14 Channel” (p. 13)
17	Color Wheel Speed	0–255	Fast-Slow
18	Gobo Wheel Speed	0–255	Fast-Slow

10 Technical specifications

Parameter	Value
Light	
Light source	discharge lamp
Lamp power	280 W
Luminous flux	9,870 lm
Color temperature	7,000 K
Color rendering index (CRI)	75
Optics	
Beam angle	20°
Movement	
Pan	540°
Tilt	270°
Control	
DMX connection	5-pin XLR IN/OUT, 3-pin XLR IN/OUT
RJ45 connectors	RJ45
Electrical	
Power supply	100–240 V, 50/60 Hz
Power consumption	470 W
Power connectors	NAC3MPA IN

Spot diameter



Distance	Ø 20°
2 m	0.71 m
4 m	1.4 m
6 m	2.1 m
8 m	2.8 m
10 m	3.5 m
15 m	5.3 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.