DMX REFERENCE

LED TMH-H240

Eurolite



Manufacturer	Eurolite
GDTF file	Eurolite_LED_TMH-H240_73938.gdtf
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1 About this manual

This document describes the LED TMH-H240 by Eurolite. It was compiled from the GDTF file Eurolite_LED_TMH-H240_73938.gdtf from the GDTF-Share library.

File revision: “v1:001”.

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 Eurolite; 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	850 W
Weight	5.6 kg

DMX modes

Mode	Channels	Units in one universe	First start addresses
56ch Mode	56	9	1, 57, 113, 169, ...

No light? Check these channels

- 56ch Mode: CH 8 Dimmer above 0; CH 10 Strobe Frequency at 0–3 “Strobe Off”


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

Description in the GDTF file

“Moving head hybrid beam/wash/flower with 6 RGBW beams independently controllable, zoom, beam spread rotation, and a lot of channels! Enjoy!!”

“Notes: The beams won't display in GrandMA3 3D. Having done some tests with other variations of the profile, I think it's just too complex a fixture for the GMA3 3D to work out. If anyone gets it working, please let me know!”

- Versions:
- v1.000 Release version
- v1:001 Added text notes. Corrected Zoom default value

Range of movement



5 Installation

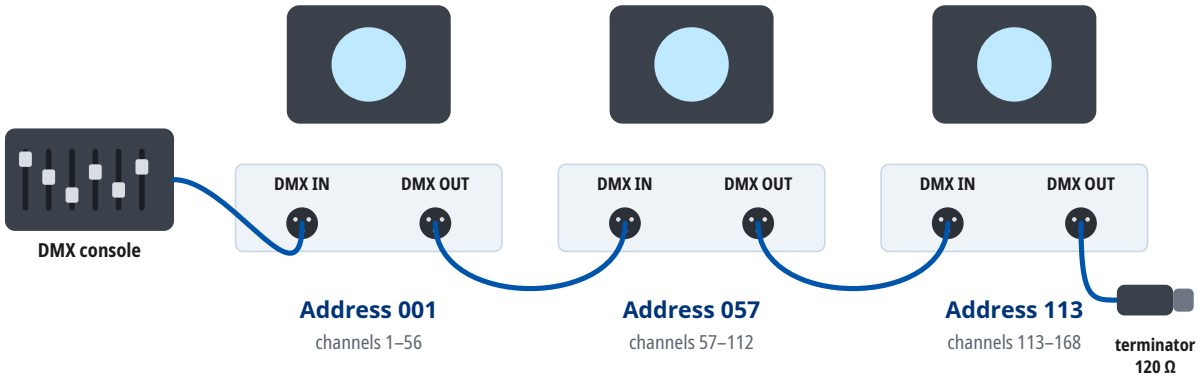
⚠ **WARNING**

- 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.
- Weight of the device: 5.6 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 56ch Mode: every unit occupies 56 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

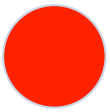
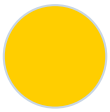
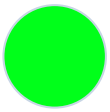
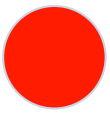
- The device occupies as many consecutive channels in the DMX universe as the selected DMX mode uses, starting at the set start address.
- Number of channels occupied in the DMX mode “56ch Mode”: 56.
- Choose start addresses so that the channels of individual devices do not overlap and the last occupied 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 “56ch Mode”, you can use, for example, the start addresses 1, 57, 113, 169.
- The DMX mode set on the device must match the fixture profile (personality) used in the controller.

8 Functions at a glance

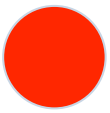
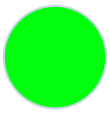
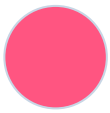
Functions in each DMX mode

	56ch Mode 56 channels
Pan / Tilt	1, 3
Dimmer	8
Shutter / strobe	10, 27
Color mixing	28 channels (11–56)
Color wheel	23
Zoom	6
Effects / macros	20–22, 24, 25
Pixel control	✓

Color wheel 1

1. 
   R / G increasing
   DMX 16–35
2. 
   Red decreasing / G
   DMX 36–55
3. 
   G / B increasing
   DMX 56–75
4.
   G decreasing / B
   DMX 76–95
5. 
   R increasing / B
   DMX 96–115
6. 
   R / Blue decreasing
   DMX 116–135
7. 
   R / G increasing / B increasing
   DMX 136–155
8.
   R decreasing / G decreasing / B
   DMX 156–175
9.
   R / B / G / W
   DMX 176–195
10.
    2800K
    DMX 196–200
11.
    3200K
    DMX 201–205
12.
    4000K
    DMX 206–210
13.
    4500K
    DMX 211–215
14.
    5000K
    DMX 216–220
15.
    5600K
    DMX 221–225
16.
    6500K
    DMX 226–230
17.
    7000K
    DMX 231–235
18.
    7500K
    DMX 236–240
19.
    8000K
    DMX 241–255
20.
    Color Temp Off
    DMX 0–16

Color wheel 2

1. 
   Preset Color 1
   DMX 10–19
2. 
   Preset Color 2
   DMX 20–29
3. 
   Preset Color 3
   DMX 30–39
4.
   Preset Color 4
   DMX 40–49
5.
   Preset Color 5
   DMX 50–59
6. 
   Preset Color 6
   DMX 60–69
7. 
   Preset Color 7
   DMX 70–79
8.
   Preset Color 8
   DMX 80–89
9.
   Preset Color 9
   DMX 90–99
10.
    Preset Color 10
    DMX 100–109
11.
    Preset Color 11
    DMX 110–119
12.
    Preset Color 12
    DMX 120–129
13.
    Preset Color 13
    DMX 130–139
14.
    Preset Color 14
    DMX 140–149
15.
    Preset Color 15
    DMX 150–159
16.
    Color Macro 16
    DMX 160–169
17.
    Color Macro 17
    DMX 170–179
18.
    Color Macro 18
    DMX 180–189
19.
    Color Macro 19
    DMX 190–199
20.
    Color Macro 20
    DMX 200–209
21.
    Color Macro 21
    DMX 210–219
22.
    Color Macro 22
    DMX 220–229
23.
    Color Macro 23
    DMX 230–239
24.
    Color Macro 24
    DMX 240–249

25

Color Macro 25
DMX 250–255

Gobo wheel

1



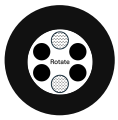
1
DMX 10–19

2



2
DMX 20–29

3



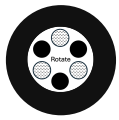
3
DMX 30–39

4



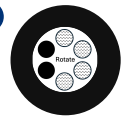
4
DMX 40–49

5



5
DMX 50–59

6



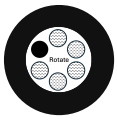
6
DMX 60–69

7



7
DMX 70–79

8



8
DMX 80–89

9



9
DMX 90–99

10



10
DMX 100–109

11



11
DMX 110–119

12



12
DMX 120–129

13



13
DMX 130–139

14



14
DMX 140–149

15



15
DMX 150–159

16



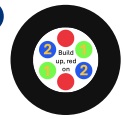
16
DMX 160–169

17



17
DMX 170–179

18



18
DMX 180–189

19



19
DMX 190–199

20



20
DMX 200–209

21



21
DMX 210–219

22



22
DMX 220–229

23



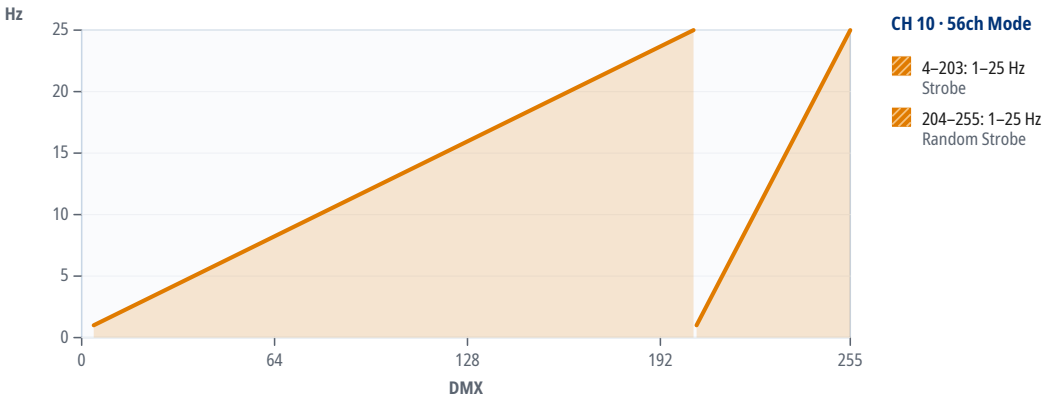
23
DMX 230–239

24

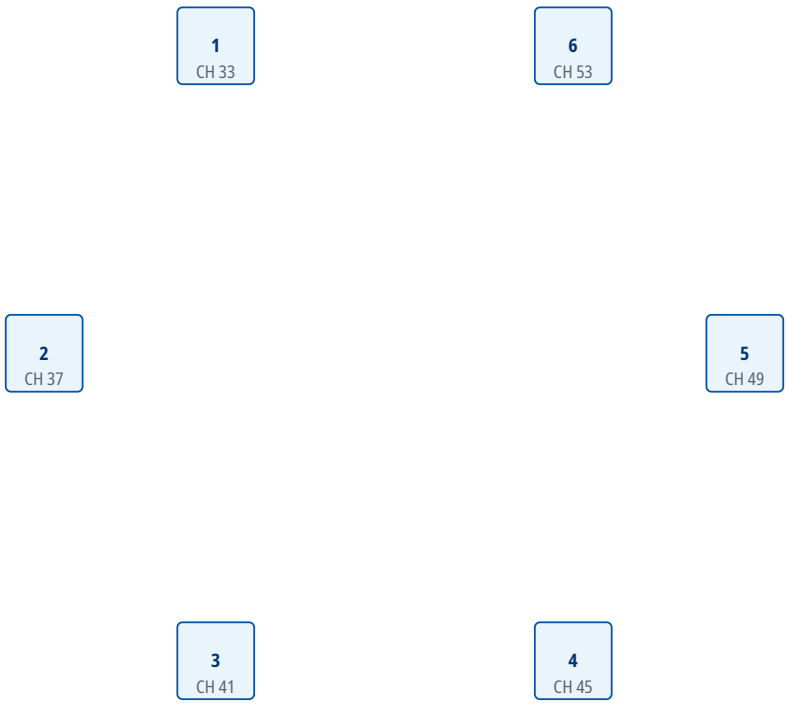


24
DMX 240–255

Strobe rate



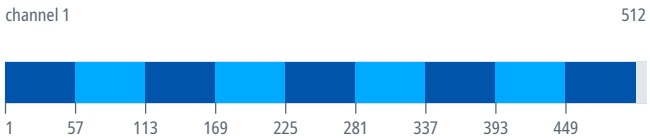
Cells (pixels)



6 cells where the GDTF file places them (seen from above), numbered by their first DMX channel (CH) in the mode “56ch Mode”.

9 DMX channels

Units in one DMX universe



56ch Mode
56 channels

up to 9 units
last address 449

Start addresses of 20 units in the mode “56ch Mode”

Unit	Start address	Unit	Start address	Unit	Start address	Unit	Start address
1	1	6	281	11	U2 · 57	16	U2 · 337
2	57	7	337	12	U2 · 113	17	U2 · 393
3	113	8	393	13	U2 · 169	18	U2 · 449
4	169	9	449	14	U2 · 225	19	U3 · 1
5	225	10	U2 · 1	15	U2 · 281	20	U3 · 57

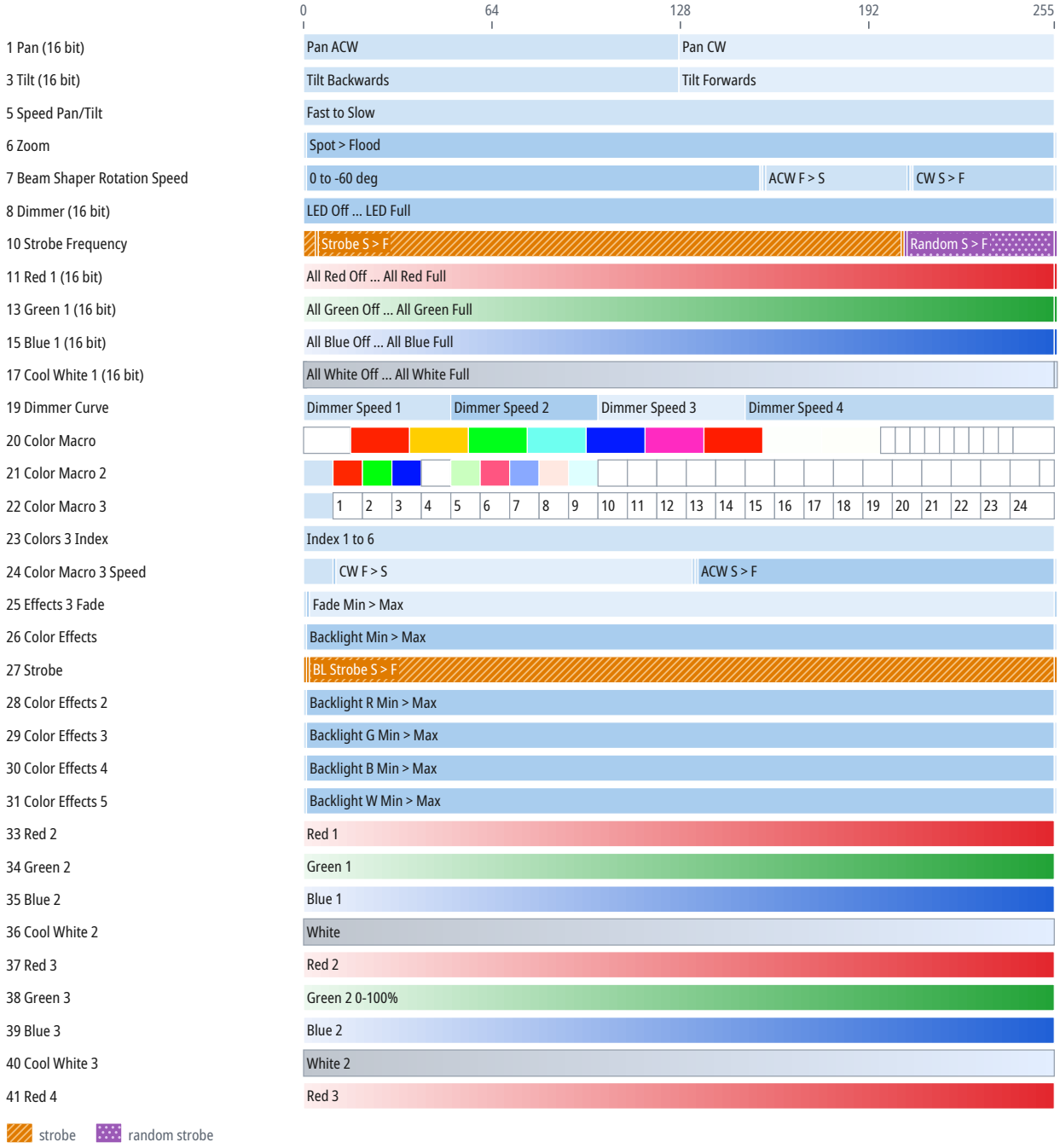
Where a DMX universe is full, the next units continue in the next universe: “U2 · 1” is address 1 in the second universe, counted from the universe of the first unit.

Mode 56ch Mode

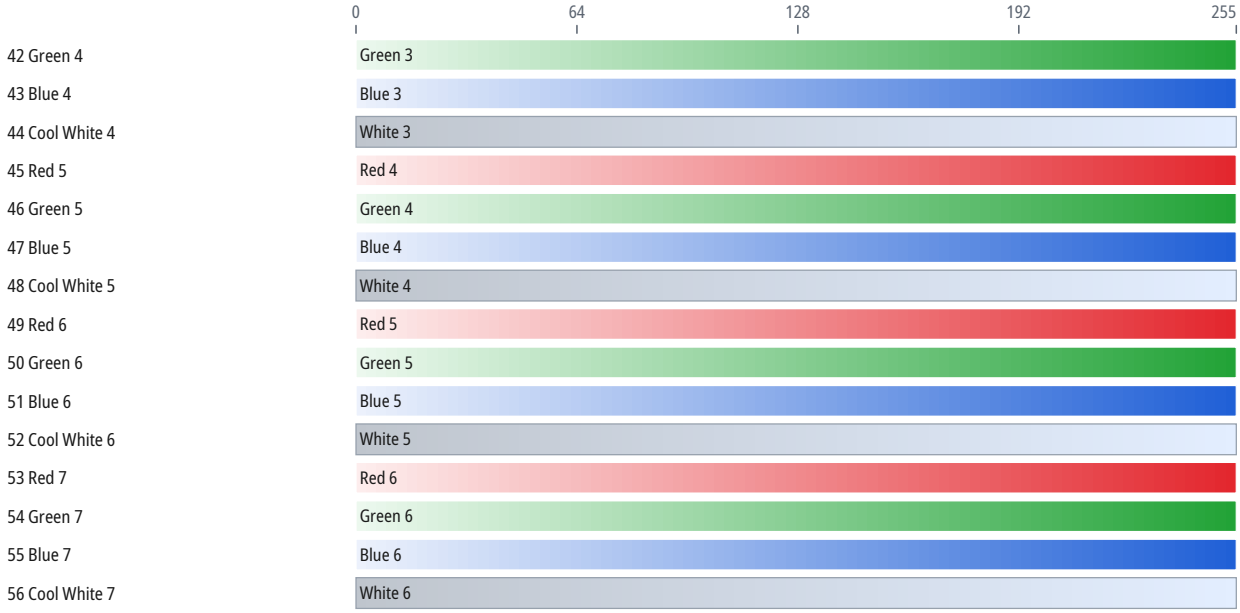
16-bit parameters use two channels, coarse and fine: value = 256 × coarse value + fine value.

If the device receives DMX in this mode but gives no light, check these channels: CH 8 Dimmer above 0; CH 10 Strobe Frequency at 0–3 “Strobe Off”. The GDTF file gives these values for a console's Highlight function: CH 8 Dimmer 255.

Channel functions at a glance



Channel functions at a glance



CH	Function	DMX	Description
1	Pan	0–127	Pan ACW
		128	Home
		128–255	Pan CW
2	Pan Fine	0–255	Fine adjustment of CH 1
3	Tilt	0–127	Tilt Backwards
		128	Home
		128–255	Tilt Forwards
4	Tilt Fine	0–255	Fine adjustment of CH 3
5	Speed Pan/Tilt		Pan/Tilt Speed
		0–255	Fast to Slow
6	Zoom		Zoom Spot to Flood
		0	Spot
		1–254	Spot > Flood
		255	Flood
7	Beam Shaper Rotation Speed	0	0 degrees
		1–154	0 to -60 deg
		155	-60 degrees
		156	ACW Fastest
		157–204	ACW F > S
		205	ACW Slowest
		206	CW Slowest
		207–254	CW S > F
		255	CW Fastest
8	Dimmer	0–255	LED Off ... LED Full
		255	LED Full

CH	Function	DMX	Description
9	Dimmer Fine	0–255	Fine adjustment of CH 8
10	Strobe Frequency	0–3	Strobe Off
		4	Strobe Slowest
		5–202	Strobe S > F
		203	Strobe Fastest
		204	Random Slowest
		205–254	Random S > F
		255	Random Fastest
11	Red 1		All Red
		0–255	All Red Off ... All Red Full
		255	All Red Full
12	Red 1 Fine	0–255	Fine adjustment of CH 11
13	Green 1		All Green
		0–255	All Green Off ... All Green Full
		255	All Green Full
14	Green 1 Fine	0–255	Fine adjustment of CH 13
15	Blue 1		All Blue
		0–255	All Blue Off ... All Blue Full
		255	All Blue Full
16	Blue 1 Fine	0–255	Fine adjustment of CH 15
17	Cool White 1	0–255	All White Off ... All White Full
		255	All White Full
18	Cool White 1 Fine	0–255	Fine adjustment of CH 17
19	Dimmer Curve		Dimmer Speed
		0–49	Dimmer Speed 1
		50–99	Dimmer Speed 2
		100–149	Dimmer Speed 3
		150–255	Dimmer Speed 4
20	Color Macro	0–15	Color Temp Off
		16–35	R / G increasing
		36–55	Red decreasing / G
		56–75	G / B increasing
		76–95	G decreasing / B
		96–115	R increasing / B
		116–135	R / Blue decreasing
		136–155	R / G increasing / B increasing
		156–175	R decreasing / G decreasing / B
		176–195	R / B / G / W
		196–200	2800K
		201–205	3200K
		206–210	4000K

CH	Function	DMX	Description
20	Color Macro (continued)	211–215	4500K
		216–220	5000K
		221–225	5600K
		226–230	6500K
		231–235	7000K
		236–240	7500K
		241–255	8000K
21	Color Macro 2	0–9	Presets Off
		10–19	Preset Color 1
		20–29	Preset Color 2
		30–39	Preset Color 3
		40–49	Preset Color 4
		50–59	Preset Color 5
		60–69	Preset Color 6
		70–79	Preset Color 7
		80–89	Preset Color 8
		90–99	Preset Color 9
		100–109	Preset Color 10
		110–119	Preset Color 11
		120–129	Preset Color 12
		130–139	Preset Color 13
		140–149	Preset Color 14
		150–159	Preset Color 15
		160–169	Color Macro 16
		170–179	Color Macro 17
		180–189	Color Macro 18
		190–199	Color Macro 19
		200–209	Color Macro 20
		210–219	Color Macro 21
		220–229	Color Macro 22
		230–239	Color Macro 23
		240–249	Color Macro 24
		250–255	Color Macro 25
22	Color Macro 3	0–9	Patterns Off
		10–19	1
		20–29	2
		30–39	3
		40–49	4
		50–59	5
		60–69	6
		70–79	7

CH	Function	DMX	Description
22	Color Macro 3 (continued)	80–89	8
		90–99	9
		100–109	10
		110–119	11
		120–129	12
		130–139	13
		140–149	14
		150–159	15
		160–169	16
		170–179	17
		180–189	18
		190–199	19
		200–209	20
		210–219	21
		220–229	22
		230–239	23
		240–255	24
23	Colors 3 Index		Colour Patterns Manual Index
		0–255	Index 1 to 6
24	Color Macro 3 Speed	0–9	Rotation Off
		10	CW Fastest
		11–131	CW F > S
		132	CW Slowest
		133	ACW Slowest
		134–254	ACW S > F
		255	ACW Fastest
25	Effects 3 Fade		Patterns Fade
		0	Patterns Fade Off
		1	Patterns Fade Min
		2–254	Fade Min > Max
		255	Patterns Fade Max
26	Color Effects		Backlight Dimmer
		0	Backlight Off
		1–254	Backlight Min > Max
		255	Backlight Max
27	Strobe	0	BL Strobe Off
		1	BL Strobe Slowest
		2–254	BL Strobe S > F
		255	BL Strobe Fastest
28	Color Effects 2		Backlight Red Dimmer
		0	Backlight R Off

CH	Function	DMX	Description
28	Color Effects 2 (continued)	1–254	Backlight R Min > Max
		255	Backlight R Max
29	Color Effects 3		Backlight Green Dimmer
		0	Backlight G Off
		1–254	Backlight G Min > Max
		255	Backlight G Max
30	Color Effects 4		Backlight Blue Dimmer
		0	Backlight B Off
		1–254	Backlight B Min > Max
		255	Backlight B Max
31	Color Effects 5		Backlight White Dimmer
		0	Backlight W Off
		1–254	Backlight W Min > Max
		255	Backlight W Max
33	Red 2		Red 1
		0–255	Red 1
34	Green 2		Green 1
		0–255	Green 1
35	Blue 2		Blue 1
		0–255	Blue 1
36	Cool White 2	0–255	White
37	Red 3		Red 2
		0–255	Red 2
38	Green 3		Green 2 0-100%
		0–255	Green 2 0-100%
39	Blue 3		Blue 2
		0–255	Blue 2
40	Cool White 3		White 2
		0–255	White 2
41	Red 4		Red 3
		0–255	Red 3
42	Green 4		Green 3
		0–255	Green 3
43	Blue 4		Blue 3
		0–255	Blue 3
44	Cool White 4		White 3
		0–255	White 3
45	Red 5		Red 4
		0–255	Red 4
46	Green 5		Green 4
		0–255	Green 4

CH	Function	DMX	Description
47	Blue 5		Blue 4
		0–255	Blue 4
48	Cool White 5		White 4
		0–255	White 4
49	Red 6		Red 5
		0–255	Red 5
50	Green 6		Green 5
		0–255	Green 5
51	Blue 6		Blue 5
		0–255	Blue 5
52	Cool White 6		White 5
		0–255	White 5
53	Red 7		Red 6
		0–255	Red 6
54	Green 7		Green 6
		0–255	Green 6
55	Blue 7		Blue 6
		0–255	Blue 6
56	Cool White 7		White 6
		0–255	White 6

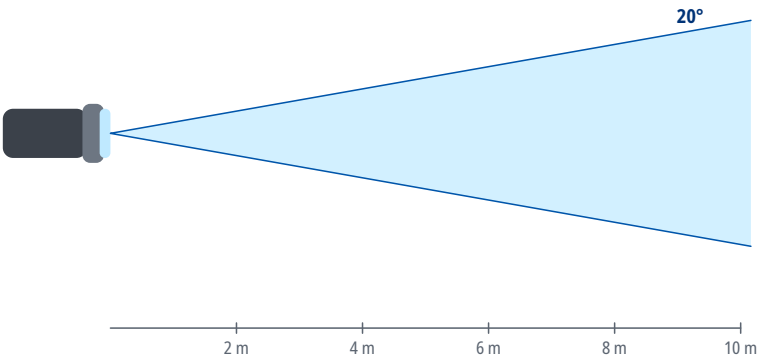
10 Technical specifications

Parameter	Value
Light	
Light source	LED
Movement	
Pan	540°
Tilt	240°
Control	
DMX connection	5-pin XLR IN/OUT, 3-pin XLR IN/OUT
RJ45 connectors	RJ45 IN
Electrical	
Power supply	100–240 V, 50/60 Hz
Power consumption	850 W
Power connectors	powerCON TRUE1 IN/OUT
Dimensions and construction	
Weight	5.6 kg
Operating environment	
Operating temperature	0 to 40 °C

Speeds and ranges

Parameter	Value
Strobe frequency	1–25 Hz
Beam shaper rotation	up to 60 °/s (10 rpm)

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.

Problem	Remedy
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.