DMX REFERENCE

IP TMH-B250

LED IP TMH-B250 Moving-Head Beam

Eurolite



Manufacturer	Eurolite
GDTF file	Eurolite_IP_TMH-B250_136749.gdtf
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1 About this manual

This document describes the LED IP TMH-B250 Moving-Head Beam by Eurolite. It was compiled from the GDTF file Eurolite_IP_TMH-B250_136749.gdtf from the GDTF-Share library.

File revision: “SteinigkeAZ”.

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
Weight	16.4 kg
Ingress protection	IP65

DMX modes

Mode	Channels	Units in one universe	First start addresses
16ch	16	32	1, 17, 33, 49, …

No light? Check these channels

- 16ch: CH 14 Shutter at 8–15, 182–189, 232–239 or 248–255 “open”; CH 15 Dimmer above 0



Read the manual before use



Do not stare into the light

3 Safety instructions



Read the manual before use



Do not stare into the light

⚠ 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.

⚠ CAUTION

- The device is rated IP65 and may be used outdoors within the limits of this rating.
- This protection is effective only when all connectors are mated or closed with their protective caps and all seals are intact. Use cables and connectors with the same or a higher protection rating.
- Do not open the housing; opening it breaks the seals and the protection rating can no longer be guaranteed.
- Install the device so that water cannot collect around connectors and cable glands, and inspect seals and cables regularly.

⚠ 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

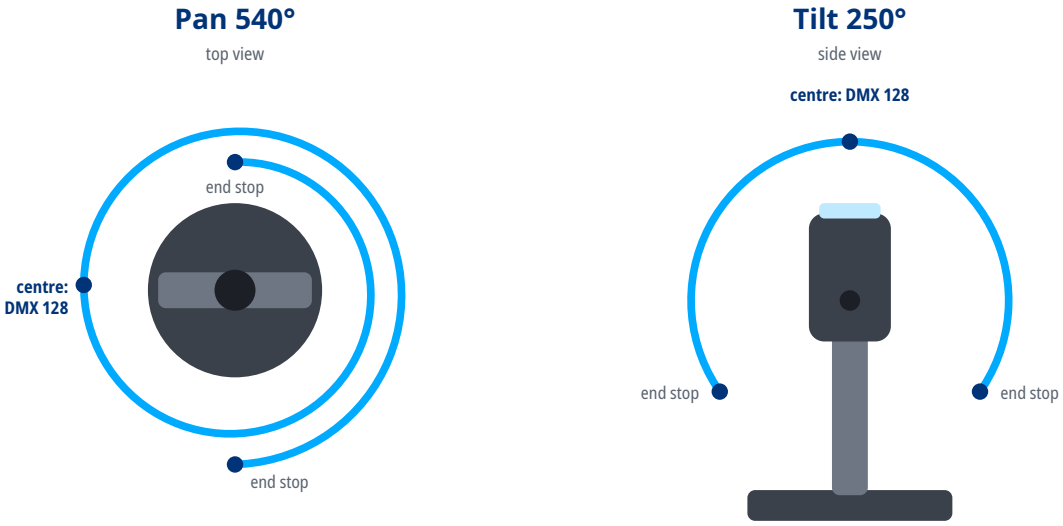
- Strobe and fast flashing light effects can trigger epileptic seizures in susceptible people (photosensitive epilepsy) and can cause nausea or disorientation.
- Inform the audience and performers in advance that strobe effects will be used, for example with a notice at the entrance, and do not use them 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

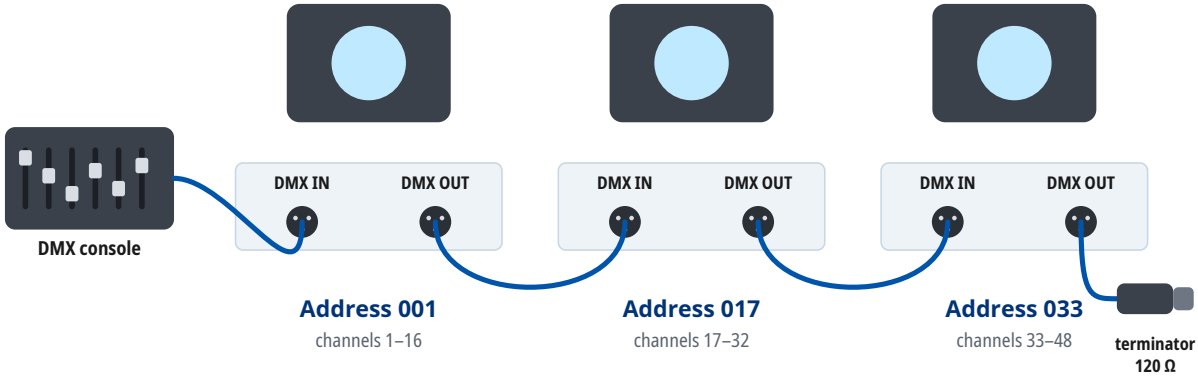
- Rigging must be carried out only by qualified persons in accordance with applicable regulations, in particular those for work at height.
- The supporting structure and fixings must safely carry the weight of all suspended devices; verify their load capacity in advance.
- Weight of the device: 16.35 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.

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 16ch: every unit occupies 16 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 “16ch”: 16.
- 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 “16ch”, you can use, for example, the start addresses 1, 17, 33, 49.
- 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

	16ch 16 channels
Pan / Tilt	1, 3
Dimmer	15
Shutter / strobe	14
Color wheel	6
Gobo wheel	7
Prism	9–12
Frost	8
Focus	13

Gobo wheel 1



25 
Pink + light green
DMX 90–94

26 
Light green + dark blue
DMX 100–104

27 
Dark blue + red orange
DMX 110–114

28 
Red orange + CTO
DMX 120–124

29 
CTO/CTB1
DMX 130–134

30 
CTB 1 + CTB 2
DMX 140–144

31 
CTB 2 + open
DMX 150–154

32
Wheel Slot 2

Gobo wheel 2

1
Open
DMX 0–9

2 
Gobo 1
DMX 10–14

3 
Gobo 2
DMX 15–19

4 
Gobo 3
DMX 20–24

5 
Gobo 4
DMX 25–29

6 
Gobo 5
DMX 30–34

7 
Gobo 6
DMX 35–39

8 
Gobo 7
DMX 40–44

9 
Gobo 8
DMX 45–49

10 
Gobo 9
DMX 50–54

11 
Gobo 10
DMX 55–59

12 
Gobo 11
DMX 60–64

13 
Gobo 12
DMX 65–69

14 
Gobo 13
DMX 70–74

15 
Rotation backward
DMX 140–198

Prism 1

1 
8 facets
Prism 8-fold
DMX 8–255

Prism 2

1 
24 facets
Prism 24-fold
DMX 8–255

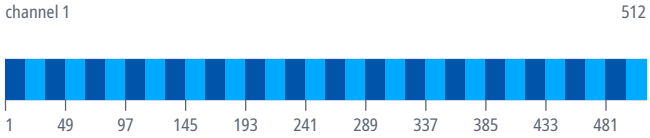
Gobo wheel 3



Rainbow filter
DMX 128–255

9 DMX channels

Units in one DMX universe



16ch
16 channels

up to 32 units
last address 497

Start addresses of 20 units in the mode “16ch”

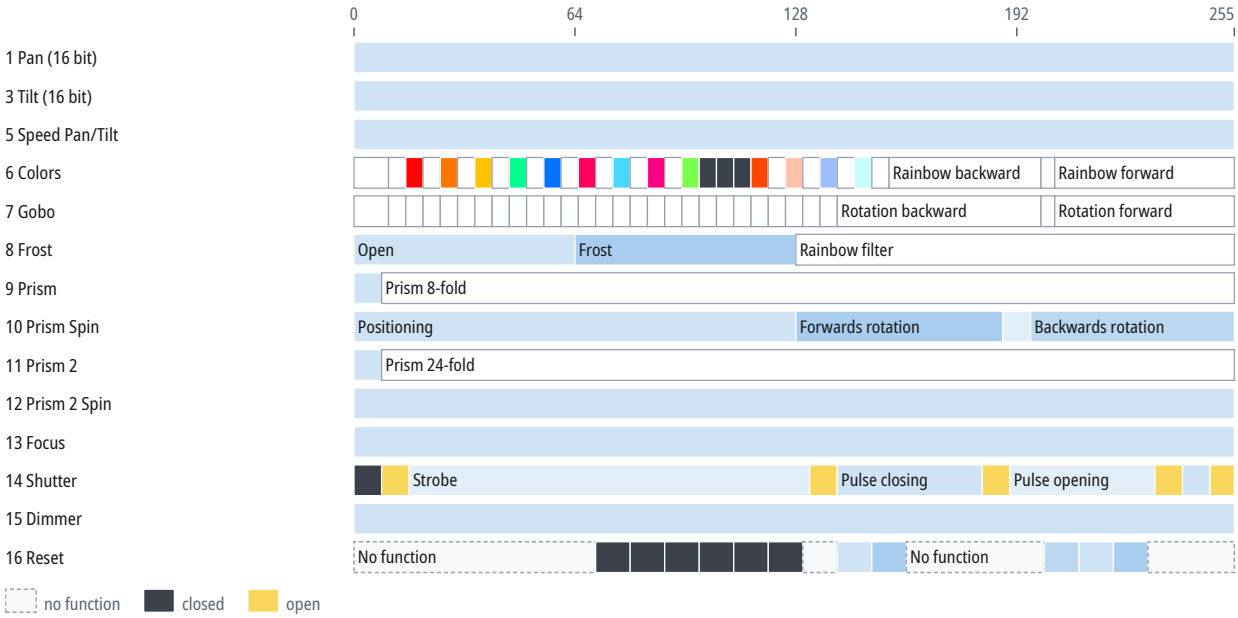
Unit	Start address	Unit	Start address	Unit	Start address	Unit	Start address
1	1	6	81	11	161	16	241
2	17	7	97	12	177	17	257
3	33	8	113	13	193	18	273
4	49	9	129	14	209	19	289
5	65	10	145	15	225	20	305

Mode 16ch

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 14 Shutter at 8–15, 182–189, 232–239 or 248–255 “open”; CH 15 Dimmer above 0.

Channel functions at a glance



CH	Function	DMX	Description
1	Pan	0–255	540°
2	Pan Fine	0–255	Fine adjustment of CH 1
3	Tilt	0–255	250°
4	Tilt Fine	0–255	Fine adjustment of CH 3
5	Speed Pan/Tilt	0–255	
6	Colors	0–9	Open
		10–14	Open + red
		15–19	Red
		20–24	Red + orange
		25–29	Orange
		30–34	Orange + yellow
		35–39	Yellow
		40–44	Yellow + green
		45–49	Green
		50–54	Green + blue
		55–59	Blue
		60–64	Blue + wine red
		65–69	Wine red
		70–74	Wine red + light blue
		75–79	Light blue
		80–84	Light blue + pink
		85–89	Pink
		90–94	Pink + light green
		95–99	Light green
		100–104	Light green + dark blue
		105–109	Dark blue
		110–114	Dark blue + red orange
		115–119	Red orange
		120–124	Red orange + CTO
		125–129	CTO
		130–134	CTO/CTB1
		135–139	CTB 1
		140–144	CTB 1 + CTB 2
		145–149	CTB 2
		150–154	CTB 2 + open
		155–198	Rainbow backward
		199–202	Stop
		203–255	Rainbow forward
7	Gobo	0–9	Open
		10–14	Gobo 1
		15–19	Gobo 2

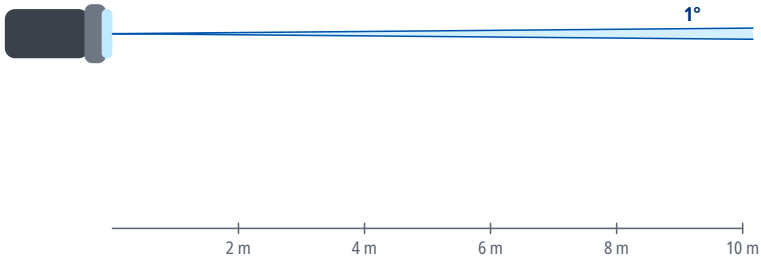
CH	Function	DMX	Description
7	Gobo (continued)	20–24	Gobo 3
		25–29	Gobo 4
		30–34	Gobo 5
		35–39	Gobo 6
		40–44	Gobo 7
		45–49	Gobo 8
		50–54	Gobo 9
		55–59	Gobo 10
		60–64	Gobo 11
		65–69	Gobo 12
		70–74	Gobo 13
		75–79	Gobo 1 shake
		80–84	Gobo 2 shake
		85–89	Gobo 3 shake
		90–94	Gobo 4 shake
		95–99	Gobo 5 shake
		100–104	Gobo 6 shake
		105–109	Gobo 7 shake
		110–114	Gobo 8 shake
		115–119	Gobo 9 shake
		120–124	Gobo 10 shake
		125–129	Gobo 11 shake
		130–134	Gobo 12 shake
		135–139	Gobo 13 shake
		140–198	Rotation backward
		199–202	Stop
		203–255	Rotation forward
8	Frost	0–63	Open
		64–127	Frost
		128–255	Rainbow filter
9	Prism	0–7	Open
		8–255	Prism 8-fold
10	Prism Spin	0–127	Positioning
		128–187	Forwards rotation
		188–195	Stop
		196–255	Backwards rotation
11	Prism 2	0–7	Open
		8–255	Prism 24-fold
12	Prism 2 Spin	0–255	
13	Focus	0–255	
14	Shutter	0–7	Closed
		8–15	Open

CH	Function	DMX	Description
14	Shutter (continued)	16–131	Strobe
		132–139	No function
		140–181	Pulse closing
		182–189	Open
		190–231	Pulse opening
		232–239	Open
		240–247	Strobe random
		248–255	Open
15	Dimmer	0–255	
16	Reset	0–69	No function
		70–79	Move Blackout on
		80–89	Move Blackout off
		90–99	Colorchange Blackout on
		100–109	Colochange Blackout off
		110–119	Gobochange Blackout on
		120–129	Gobochange Blackout off
		130–139	No function
		140–149	Reset pan/tilt
		150–159	Reset effects
		160–199	No function
		200–209	RESET ALL
		210–219	All changes Black Out on
		220–229	All changes Black Out off
		230–255	No function

10 Technical specifications

Parameter	Value
Light	
Light source	LED
LED power	700 W
Luminous flux	1,000 lm
Color temperature	6,000 K
Color rendering index (CRI)	85
Optics	
Beam angle	1°
Movement	
Pan	540°
Tilt	250°
Dimensions and construction	
Weight	16.4 kg
Operating environment	
Ingress protection	IP65
Meaning of the IP code (IEC 60529)	Dust-tight; protected against water jets
Operating temperature	0 to 40 °C

Spot diameter



Distance	Ø 1°
2 m	0.03 m
4 m	0.07 m
6 m	0.1 m
8 m	0.14 m
10 m	0.17 m
15 m	0.26 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.