DMX REFERENCE

MBAR 408 DOUBLE

MARK



Manufacturer	MARK
GDTF file	MARK_MBAR_408_DOUBLE_118863.gdtf
GDTF revision	ALL OK · 2025-11-25
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1 About this manual

This document describes the MBAR 408 DOUBLE by MARK. It was compiled from the GDTF file MARK_MBAR_408_DOUBLE_118863.gdtf from the GDTF-Share library.

File revision: “ALL OK”.

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 MARK; 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	6.2 kg

DMX modes

Mode	Channels	Units in one universe	First start addresses
16 CHANNELS	16	32	1, 17, 33, 49, ...
29 CHANNELS	29	17	1, 30, 59, 88, ...
86 CHANNELS	86	5	1, 87, 173, 259, ...

No light? Check these channels

- 16 CHANNELS: CH 6 Dimmer 1 above 0; CH 7 Shutter at 0–4 “Open”; CH 15 Dimmer 2 above 0
- 29 CHANNELS: CH 6 Dimmer 1 above 0; CH 7 Shutter 1 at 0–4 “Open”; CH 14 Dimmer 2 above 0; CH 16 Dimmer 3 above 1; CH 17 Shutter 2 at 0–4 “Open”; CH 23 Dimmer 4 above 0; CH 25 Shutter 3 at 0–4 “Open”; CH 26 Dimmer 5 above 0
- 86 CHANNELS: CH 78 Dimmer above 0 (the same in each of the 8 cells)


Read the manual before use


Do not stare into the light


Indoor use only

3 Safety instructions



Read the manual before use



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

- 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

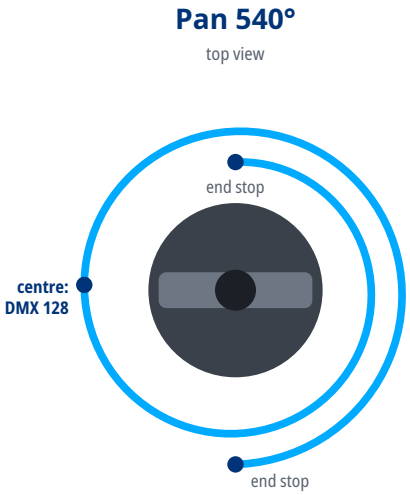
- The moving parts of the device (for example the head or arms) can move quickly and unexpectedly at any time – after power-on, during a reset, or on a command from the controller.
- Keep yourself and any objects out of the range of movement. While the device is switched on, do not touch the moving parts, 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

“Barra de iluminación que incluye 6x LEDs RGBW 4en1 40W c.u. + 56x LEDs 1W blanco+ 224x RGB 0.5W.”

Range of movement



5 Installation

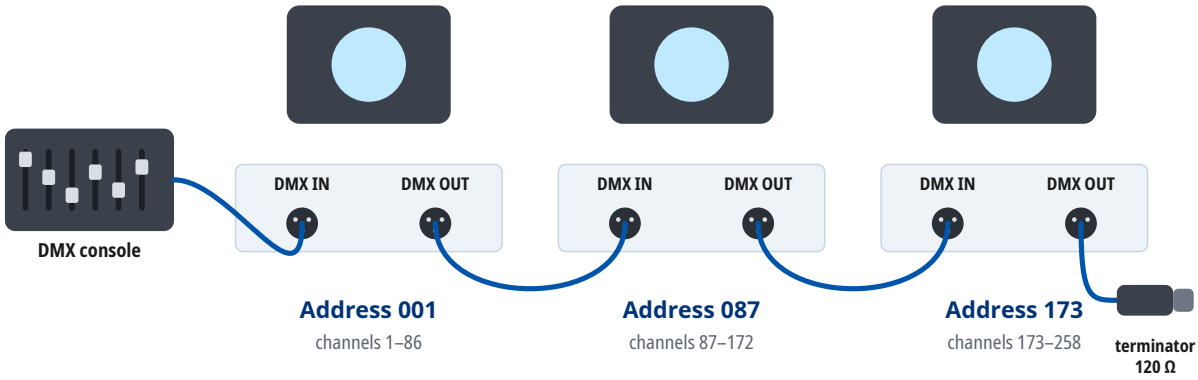
⚠ WARNING

- 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: 6.2 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 86 CHANNELS: every unit occupies 86 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 “86 CHANNELS”: 86.
- 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 “86 CHANNELS”, you can use, for example, the start addresses 1, 87, 173, 259.
- 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 CHANNELS 16 channels	29 CHANNELS 29 channels	86 CHANNELS 86 channels
Pan / Tilt	1, 3, 4	1, 3, 4	1, 3, 4
Dimmer	6, 15	5 channels (6–26)	78–85
Shutter / strobe	7	7, 17, 25	
Color mixing	8–14	8–11, 18–20	6–77
Effects / macros		27, 28	
Pixel control	✓	✓	

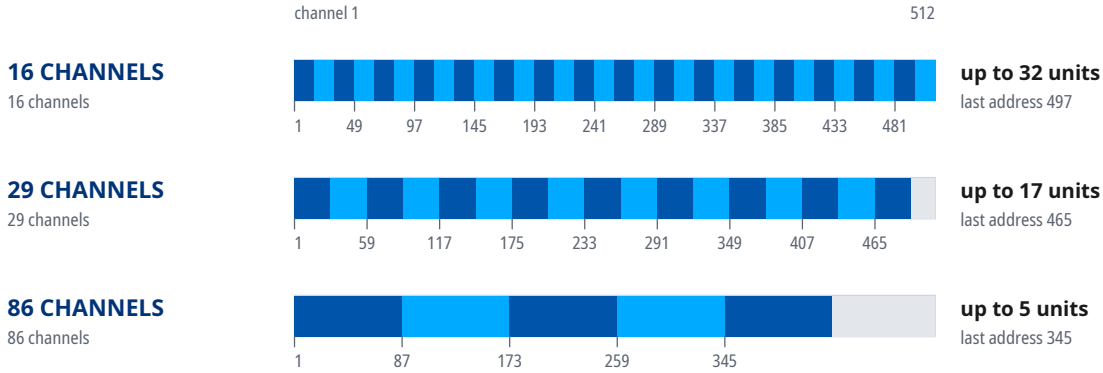
Cells (pixels)

1 CH 1	2 CH 4	3 CH 7	4 CH 10	5 CH 13	6 CH 16	7 CH 19	8 CH 22
9 CH 25	10 CH 28	11 CH 31	12 CH 34	13 CH 37	14 CH 40	15 CH 43	16 CH 46

16 cells where the GDTF file places them (seen from above), numbered by their first DMX channel (CH) in the mode “29 CHANNELS”.

9 DMX channels

Units in one DMX universe



Start addresses of 20 units in the mode “86 CHANNELS”

Unit	Start address	Unit	Start address	Unit	Start address	Unit	Start address
1	1	6	U2 · 1	11	U3 · 1	16	U4 · 1
2	87	7	U2 · 87	12	U3 · 87	17	U4 · 87
3	173	8	U2 · 173	13	U3 · 173	18	U4 · 173
4	259	9	U2 · 259	14	U3 · 259	19	U4 · 259
5	345	10	U2 · 345	15	U3 · 345	20	U4 · 345

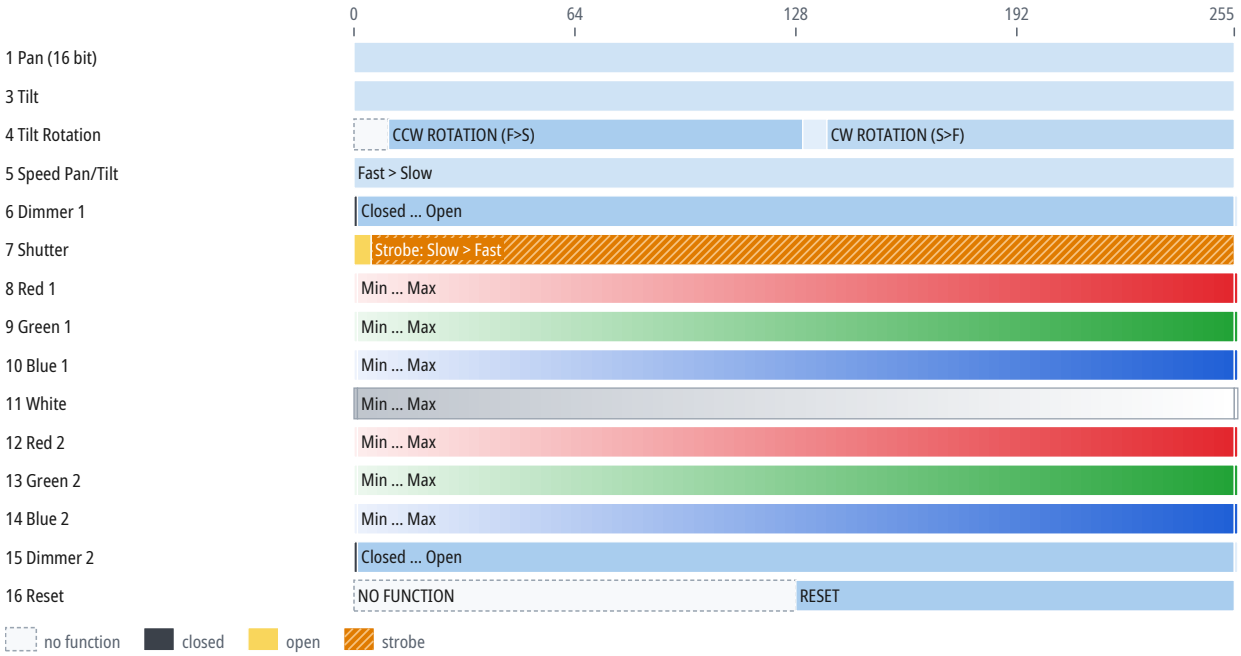
Where a DMX universe is full, the next units continue in the next universe: “U2 · 1” is address 1 in the second universe, counted from the universe of the first unit.

Mode 16 CHANNELS

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 6 Dimmer 1 above 0; CH 7 Shutter at 0–4 “Open”; CH 15 Dimmer 2 above 0. The GDTF file gives these values for a console's Highlight function: CH 6 Dimmer 1 255, CH 7 Shutter 0, CH 8 Red 1 255, CH 9 Green 1 255, CH 10 Blue 1 255, CH 11 White 255, CH 12 Red 2 255, CH 13 Green 2 255, CH 14 Blue 2 255.

Channel functions at a glance



CH	Function	DMX	Description
1	Pan	0–255	PAN (540°)
2	Pan Fine	0–255	Fine adjustment of CH 1
3	Tilt	0–255	
4	Tilt Rotation		Tilt Infinite Mode
		0–9	NO FUNCTION
		10–129	CCW ROTATION (F>S)
		130–136	STOP ROTATION
		137–255	CW ROTATION (S>F)
5	Speed Pan/Tilt	0–255	Fast > Slow
6	Dimmer 1	0	Closed
		1–254	Closed ... Open
		255	Open
7	Shutter	0–4	Open
		5–255	Strobe: Slow > Fast
8	Red 1	0	Min
		1–254	Min ... Max
		255	Max
9	Green 1	0	Min

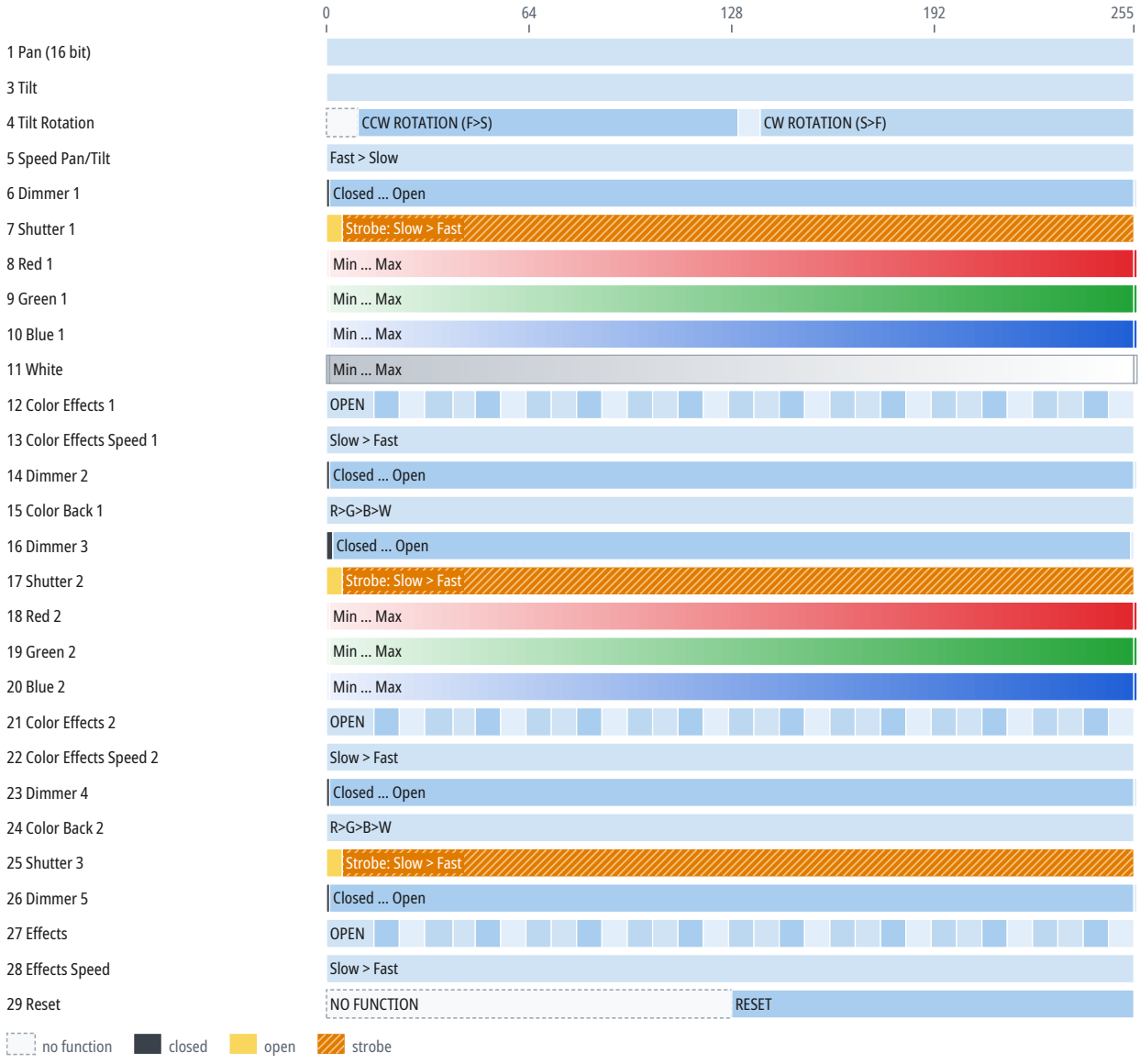
CH	Function	DMX	Description
9	Green 1 (continued)	1–254	Min ... Max
		255	Max
10	Blue 1	0	Min
		1–254	Min ... Max
		255	Max
11	White	0	Min
		1–254	Min ... Max
		255	Max
12	Red 2	0	Min
		1–254	Min ... Max
		255	Max
13	Green 2	0	Min
		1–254	Min ... Max
		255	Max
14	Blue 2	0	Min
		1–254	Min ... Max
		255	Max
15	Dimmer 2		Beam Dimmer
		0	Closed
		1–254	Closed ... Open
		255	Open
16	Reset	0–127	NO FUNCTION
		128–255	RESET

Mode 29 CHANNELS

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 6 Dimmer 1 above 0; CH 7 Shutter 1 at 0–4 “Open”; CH 14 Dimmer 2 above 0; CH 16 Dimmer 3 above 1; CH 17 Shutter 2 at 0–4 “Open”; CH 23 Dimmer 4 above 0; CH 25 Shutter 3 at 0–4 “Open”; CH 26 Dimmer 5 above 0. The GDTF file gives these values for a console's Highlight function: CH 6 Dimmer 1 255, CH 7 Shutter 1 0, CH 8 Red 1 255, CH 9 Green 1 255, CH 10 Blue 1 255, CH 11 White 255, CH 16 Dimmer 3 255, CH 17 Shutter 2 0, CH 18 Red 2 255, CH 19 Green 2 255, CH 20 Blue 2 255, CH 25 Shutter 3 0.

Channel functions at a glance



CH	Function	DMX	Description
1	Pan	0–255	PAN (540°)
2	Pan Fine	0–255	Fine adjustment of CH 1
3	Tilt	0–255	
4	Tilt Rotation		Same as CH 4 in the mode “16 CHANNELS” (p. 9)
5	Speed Pan/Tilt	0–255	Fast > Slow

CH	Function	DMX	Description
6	Dimmer 1		B Eye Dimmer
		0	Closed
		1–254	Closed ... Open
		255	Open
7	Shutter 1	0–4	Open
		5–255	Strobe: Slow > Fast
8	Red 1		Same as CH 8 in the mode “16 CHANNELS” (p. 9)
9	Green 1		Same as CH 9 in the mode “16 CHANNELS” (p. 9)
10	Blue 1		Same as CH 10 in the mode “16 CHANNELS” (p. 10)
11	White		Same as CH 11 in the mode “16 CHANNELS” (p. 10)
12	Color Effects 1		Color FX BEye
		0–14	OPEN
		15–22	MACRO 1
		23–30	MACRO 2
		31–39	MACRO 3
		40–46	MACRO 4
		47–54	MACRO 5
		55–62	MACRO 6
		63–70	MACRO 7
		71–78	MACRO 8
		79–86	MACRO 9
		87–94	MACRO 10
		95–102	MACRO 11
		103–110	MACRO 12
		111–118	MACRO 13
		119–126	MACRO 14
		127–134	MACRO 15
		135–142	MACRO 16
		143–150	MACRO 17
		151–158	MACRO 18
		159–166	MACRO 19
		167–174	MACRO 20
		175–182	MACRO 21
		183–190	MACRO 22
		191–198	MACRO 23
		199–206	MACRO 24
		207–214	MACRO 25
		215–222	MACRO 26
		223–230	MACRO 27
		231–238	MACRO 28
		239–246	MACRO 29
		247–255	MACRO 30

CH	Function	DMX	Description
13	Color Effects Speed 1	0–255	Slow > Fast
14	Dimmer 2		Dimmer BG
		0	Closed
		1–254	Closed ... Open
		255	Open
15	Color Back 1	0–255	R>G>B>W
16	Dimmer 3		LED Dimmer
		0–1	Closed
		2–253	Closed ... Open
		254–255	Open
17	Shutter 2	0–4	Open
		5–255	Strobe: Slow > Fast
18	Red 2		Same as CH 12 in the mode “16 CHANNELS” (p. 10)
19	Green 2		Same as CH 13 in the mode “16 CHANNELS” (p. 10)
20	Blue 2		Same as CH 14 in the mode “16 CHANNELS” (p. 10)
21	Color Effects 2		Color FX LED
		0–14	OPEN
		15–22	MACRO 1
		23–30	MACRO 2
		31–39	MACRO 3
		40–46	MACRO 4
		47–54	MACRO 5
		55–62	MACRO 6
		63–70	MACRO 7
		71–78	MACRO 8
		79–86	MACRO 9
		87–94	MACRO 10
		95–102	MACRO 11
		103–110	MACRO 12
		111–118	MACRO 13
		119–126	MACRO 14
		127–134	MACRO 15
		135–142	MACRO 16
		143–150	MACRO 17
		151–158	MACRO 18
		159–166	MACRO 19
		167–174	MACRO 20
		175–182	MACRO 21
		183–190	MACRO 22
		191–198	MACRO 23
		199–206	MACRO 24
		207–214	MACRO 25

CH	Function	DMX	Description
21	Color Effects 2 (continued)	215–222	MACRO 26
		223–230	MACRO 27
		231–238	MACRO 28
		239–246	MACRO 29
		247–255	MACRO 30
22	Color Effects Speed 2	0–255	Slow > Fast
23	Dimmer 4		Dimmer BG
		0	Closed
		1–254	Closed ... Open
		255	Open
24	Color Back 2	0–255	R>G>B>W
25	Shutter 3	0–4	Open
		5–255	Strobe: Slow > Fast
26	Dimmer 5		Beam Dimmer
		0	Closed
		1–254	Closed ... Open
		255	Open
27	Effects		Beam FX
		0–14	OPEN
		15–22	MACRO 1
		23–30	MACRO 2
		31–39	MACRO 3
		40–46	MACRO 4
		47–54	MACRO 5
		55–62	MACRO 6
		63–70	MACRO 7
		71–78	MACRO 8
		79–86	MACRO 9
		87–94	MACRO 10
		95–102	MACRO 11
		103–110	MACRO 12
		111–118	MACRO 13
		119–126	MACRO 14
		127–134	MACRO 15
		135–142	MACRO 16
		143–150	MACRO 17
		151–158	MACRO 18
		159–166	MACRO 19
		167–174	MACRO 20
		175–182	MACRO 21
		183–190	MACRO 22
		191–198	MACRO 23

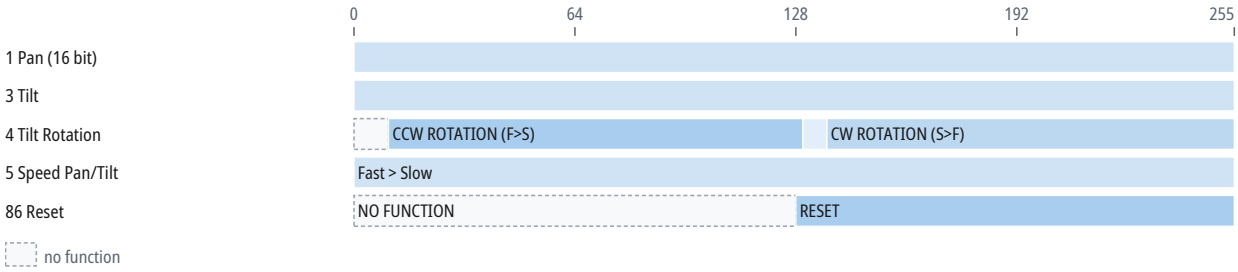
CH	Function	DMX	Description
27	Effects (continued)	199–206	MACRO 24
		207–214	MACRO 25
		215–222	MACRO 26
		223–230	MACRO 27
		231–238	MACRO 28
		239–246	MACRO 29
		247–255	MACRO 30
28	Effects Speed	0–255	Slow > Fast
29	Reset		Same as CH 16 in the mode “16 CHANNELS” (p. 10)

Mode 86 CHANNELS

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 78 Dimmer above 0 (the same in each of the 8 cells). The GDTF file gives these values for a console's Highlight function: CH 6 Red 1 255, CH 7 Green 1 255, CH 8 Blue 1 255, CH 9 White 1 255, CH 10 Red 2 255, CH 11 Green 2 255, CH 12 Blue 2 255, CH 13 White 2 255, CH 14 Red 3 255, CH 15 Green 3 255, CH 16 Blue 3 255, CH 17 White 3 255, CH 18 Red 4 255, CH 19 Green 4 255, CH 20 Blue 4 255, CH 21 White 4 255, CH 22 Red 5 255, CH 23 Green 5 255, CH 24 Blue 5 255, CH 25 White 5 255, CH 26 Red 6 255, CH 27 Green 6 255, CH 28 Blue 6 255, CH 29 White 6 255, CH 30 Red 255 (the same in each of the 16 cells), CH 31 Green 255 (the same in each of the 16 cells), CH 32 Blue 255 (the same in each of the 16 cells).

Channel functions at a glance



CH	Function	DMX	Description
1	Pan	0–255	PAN (540°)
2	Pan Fine	0–255	Fine adjustment of CH 1
3	Tilt	0–255	
4	Tilt Rotation		Same as CH 4 in the mode “16 CHANNELS” (p. 9)
5	Speed Pan/Tilt	0–255	Fast > Slow
6	Red 1		Same as CH 8 in the mode “16 CHANNELS” (p. 9)
7	Green 1		Same as CH 9 in the mode “16 CHANNELS” (p. 9)
8	Blue 1		Same as CH 10 in the mode “16 CHANNELS” (p. 10)
9	White 1	0	Min
		1–254	Min ... Max
		255	Max
10	Red 2		Same as CH 12 in the mode “16 CHANNELS” (p. 10)
11	Green 2		Same as CH 13 in the mode “16 CHANNELS” (p. 10)
12	Blue 2		Same as CH 14 in the mode “16 CHANNELS” (p. 10)

CH	Function	DMX	Description
13	White 2	0	Min
		1–254	Min … Max
		255	Max
14	Red 3	0	Min
		1–254	Min … Max
		255	Max
15	Green 3	0	Min
		1–254	Min … Max
		255	Max
16	Blue 3	0	Min
		1–254	Min … Max
		255	Max
17	White 3	0	Min
		1–254	Min … Max
		255	Max
18	Red 4	0	Min
		1–254	Min … Max
		255	Max
19	Green 4	0	Min
		1–254	Min … Max
		255	Max
20	Blue 4	0	Min
		1–254	Min … Max
		255	Max
21	White 4	0	Min
		1–254	Min … Max
		255	Max
22	Red 5	0	Min
		1–254	Min … Max
		255	Max
23	Green 5	0	Min
		1–254	Min … Max
		255	Max
24	Blue 5	0	Min
		1–254	Min … Max
		255	Max
25	White 5	0	Min
		1–254	Min … Max
		255	Max
26	Red 6	0	Min
		1–254	Min … Max
		255	Max

CH	Function	DMX	Description
27	Green 6	0	Min
		1–254	Min … Max
		255	Max
28	Blue 6	0	Min
		1–254	Min … Max
		255	Max
29	White 6	0	Min
		1–254	Min … Max
		255	Max
30	Red 7	0	Min
		1–254	Min … Max
		255	Max
31	Green 7	0	Min
		1–254	Min … Max
		255	Max
32	Blue 7	0	Min
		1–254	Min … Max
		255	Max
78	Dimmer 1		Beam Dimmer
		0	Closed
		1–254	Closed … Open
		255	Open
86	Reset		Same as CH 16 in the mode “16 CHANNELS” (p. 10)

CH 30–77: 16 cells of 3 channels each. Every cell works as cell 1 in the table above (CH 30–32); the table below gives each cell's channel numbers.

Cell	Red	Green	Blue	Cell	Red	Green	Blue	Cell	Red	Green	Blue
1	30	31	32	2	33	34	35	3	36	37	38
4	39	40	41	5	42	43	44	6	45	46	47
7	48	49	50	8	51	52	53	9	54	55	56
10	57	58	59	11	60	61	62	12	63	64	65
13	66	67	68	14	69	70	71	15	72	73	74
16	75	76	77								

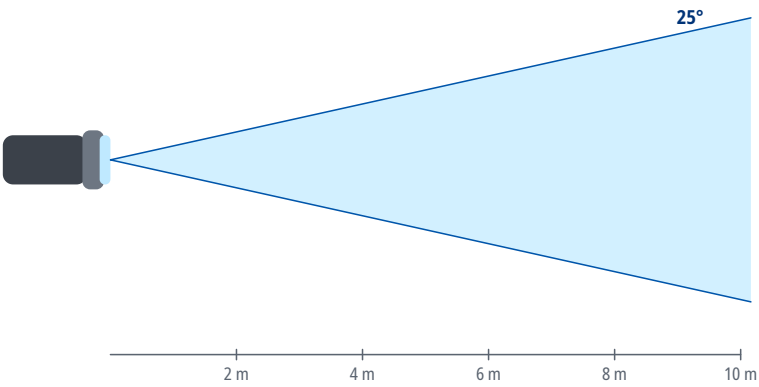
CH 78–85: 8 cells of 1 channel each. Every cell works as cell 1 in the table above (CH 78); the table below gives each cell's channel numbers.

Cell	Dimmer	Cell	Dimmer	Cell	Dimmer	Cell	Dimmer	Cell	Dimmer	Cell	Dimmer
1	78	2	79	3	80	4	81	5	82	6	83
7	84	8	85								

10 Technical specifications

Parameter	Value
Light source	LED
Pan	540°
Weight	6.2 kg
Operating temperature	0 to 40 °C

Spot diameter



Distance	Ø 25°
2 m	0.89 m
4 m	1.8 m
6 m	2.7 m
8 m	3.5 m
10 m	4.4 m
15 m	6.7 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.

Problem	Remedy
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.