DMX REFERENCE

Blade2iZoom

Mitek



Manufacturer	Mitek
GDTF file	Mitek_Blade2iZoom_86522.gdtf
GDTF revision	2015_02_15v11 · 2025-02-15
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1 About this manual

This document describes the Blade2iZoom by Mitek. It was compiled from the GDTF file Mitek_Blade2iZoom_86522.gdtf from the GDTF-Share library.

File revision: “2015_02_15v11”.

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.

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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

DMX modes

Mode	Channels	Units in one universe	First start addresses
24 Channels	24	21	1, 25, 49, 73, ...
29 Channels	29	17	1, 30, 59, 88, ...
105 Channels	105	4	1, 106, 211, 316

No light? Check these channels

- 24 Channels: CH 8 Dimmer above 0; CH 9 Shutter 1 at 0–9; CH 18 Shutter 2 at 0–9
- 29 Channels: CH 10 Shutter 1 at 0–9; CH 20 Shutter 2 at 0–9
- 105 Channels: CH 9 Dimmer 1 above 0; CH 10 Shutter 1 at 0–9; CH 19 Dimmer 2 above 0; CH 20 Shutter 2 at 0–9



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.

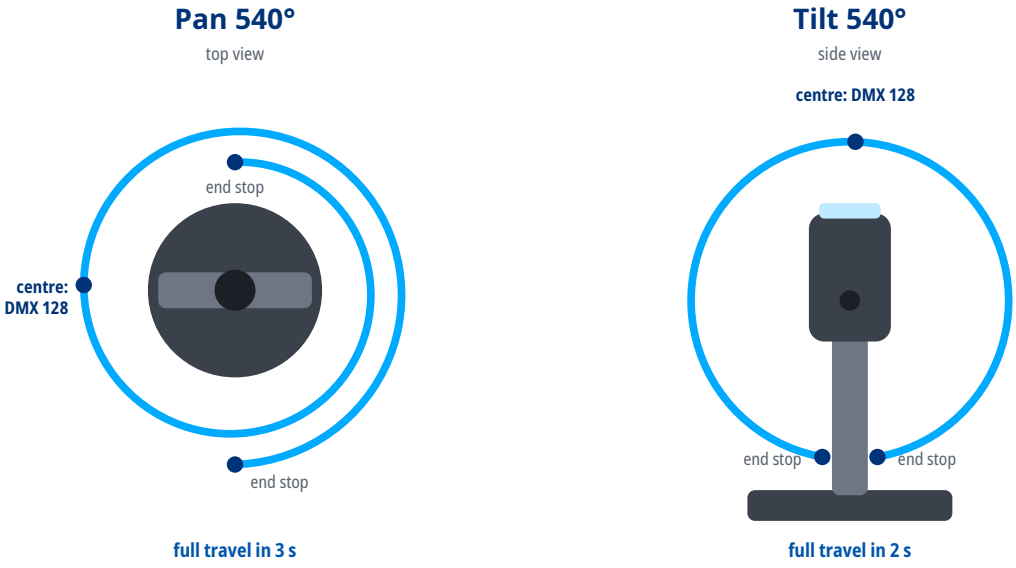
⚠ CAUTION

- 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

Range of movement



Full-travel times as stated in the GDTF file.

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.

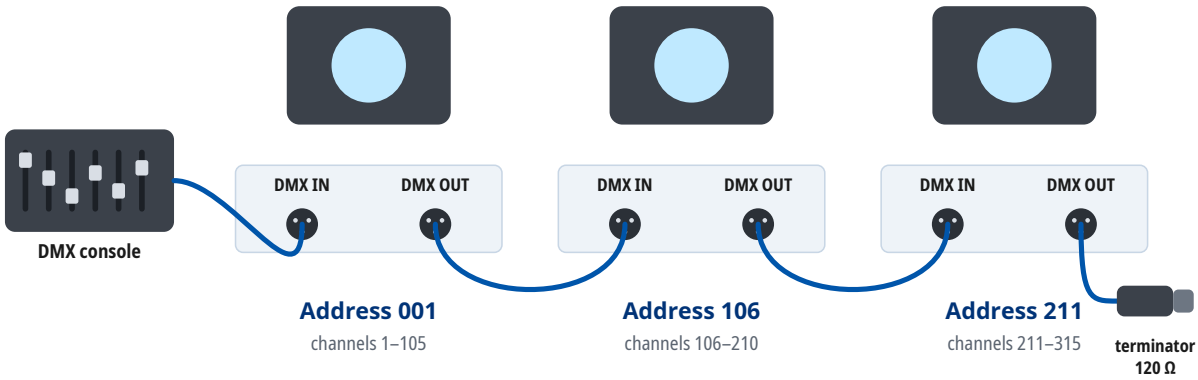
6 Connections

- 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 105 Channels: every unit occupies 105 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

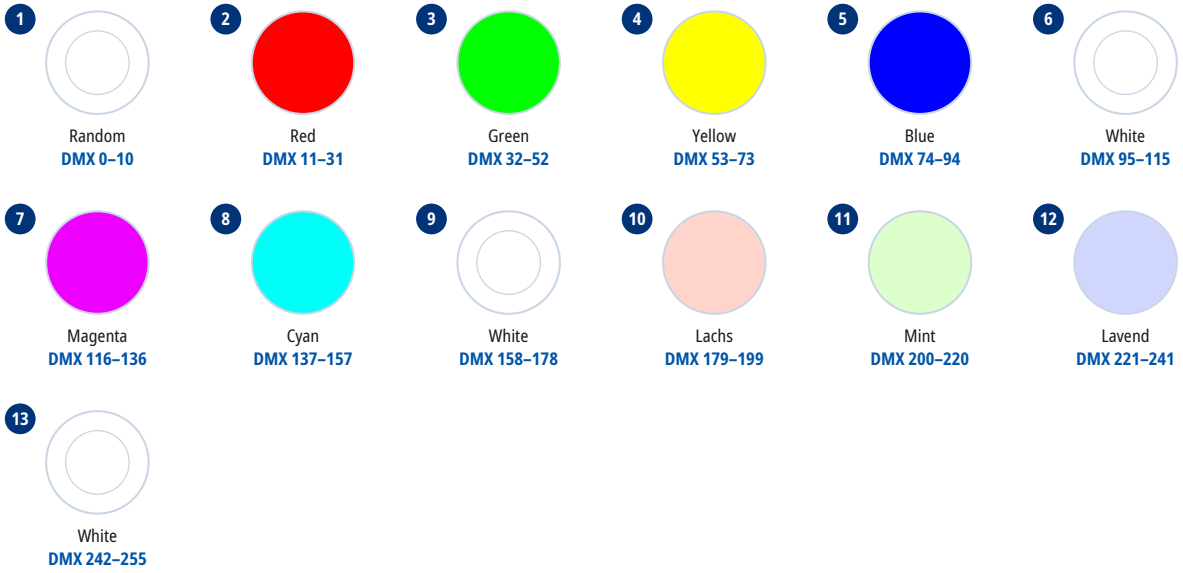
- The device occupies as many consecutive channels in the DMX universe as the selected DMX mode uses, starting at the set start address.
- Number of channels occupied in the DMX mode “105 Channels”: 105.
- Choose start addresses so that the channels of individual devices do not overlap and the last occupied 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 “105 Channels”, you can use, for example, the start addresses 1, 106, 211, 316.
- 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

	24 Channels 24 channels	29 Channels 29 channels	105 Channels 105 channels
Pan / Tilt	1, 3, 6, 7	1, 3, 7, 8	1, 3, 7, 8
Dimmer	8	9, 19	9, 19
Shutter / strobe	9, 18	10, 20	10, 20
Color mixing	10–13	11–14, 21–24	11–14, 21–24, 30–105
Color wheel	19		
Zoom	5	6	6
Pixel control			19 cells

Color wheel 1



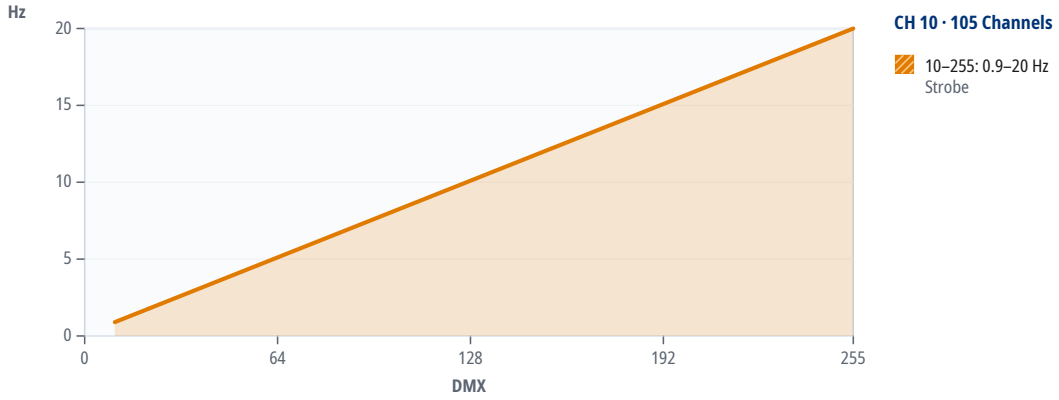
Color wheel 2

1 Black
2 Red
3 Green
4 Blue
5 White
6 Yellow
7 Lavend
8 White+Red
9 White+Green
10 White+Blue
11 White+Yellow
12 White+Lavend
13 White+Mint
14 White+White

Color wheel 3

1 Random
DMX 0–10
2 Red
DMX 11–31
3 Green
DMX 32–52
4 Yellow
DMX 53–73
5 Blue
DMX 74–94
6 Grey
DMX 95–115
7 Lavend
DMX 116–136
8 Mint
DMX 137–157
9 White
DMX 158–178
10 White+Red
DMX 179–199
11 White+Green
DMX 200–220
12 White+Blue
DMX 221–241
13 White
DMX 242–255

Strobe rate



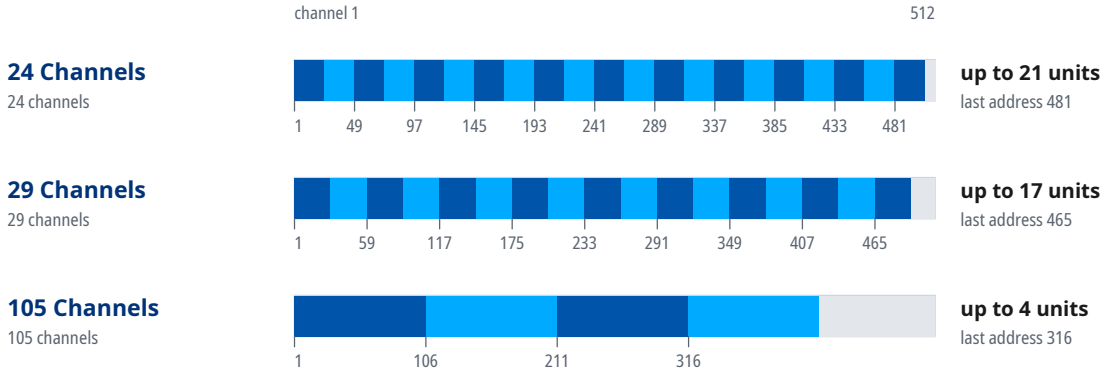
Cells (pixels)



14 cells where the GDTF file places them (seen from above), numbered by their first DMX channel (CH) in the mode “105 Channels”.

9 DMX channels

Units in one DMX universe



Start addresses of 20 units in the mode “105 Channels”

Unit	Start address	Unit	Start address	Unit	Start address	Unit	Start address
1	1	6	U2 · 106	11	U3 · 211	16	U4 · 316
2	106	7	U2 · 211	12	U3 · 316	17	U5 · 1
3	211	8	U2 · 316	13	U4 · 1	18	U5 · 106
4	316	9	U3 · 1	14	U4 · 106	19	U5 · 211
5	U2 · 1	10	U3 · 106	15	U4 · 211	20	U5 · 316

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 24 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 8 Dimmer above 0; CH 9 Shutter 1 at 0–9; CH 18 Shutter 2 at 0–9. The GDTF file gives these values for a console's Highlight function: CH 8 Dimmer 255, CH 9 Shutter 1 0, CH 10 Red 255, CH 11 Green 255, CH 12 Blue 255, CH 13 White 255, CH 16 Color Effects 1 0, CH 18 Shutter 2 0, CH 19 Colors 56, CH 22 Color Effects 2 0.

Channel functions at a glance



CH	Function	DMX	Description
1	Pan	0–127	Min ... Center
		128–255	Center ... Max
		255	Max
2	Pan Fine	0–255	Fine adjustment of CH 1
3	Tilt	0–127	Min ... Center
		128–255	Center ... Max
		255	Max
4	Tilt Fine	0–255	Fine adjustment of CH 3
5	Zoom	0	Wide
		1–254	Wide ... Narrow
		255	Narrow
6	Pan Rotation	0–127	No Rotation

CH	Function	DMX	Description
6	Pan Rotation (continued)	128	CW Fast
		129–188	CW Fast ... CW Slow
		189	CW Slow
		190–193	Stop
		194	CCW Slow
		195–254	CCW Slow ... CCW Fast
		255	CCW Fast
7	Tilt Rotation	0–127	No Rotation
		128	CW Fast
		129–188	CW Fast ... CW Slow
		189	CW Slow
		190–193	Stop
		194	CCW Slow
		195–254	CCW Slow ... CCW Fast
		255	CCW Fast
8	Dimmer	0	Closed
		1–254	Closed ... open
		255	Open
9	Shutter 1	0–9	Shutter 1: Open 1
		10	Min Strboe
		11–254	Min Strboe ... max Strobe
		255	Max Strobe
10	Red	0	Min
		1–254	Min ... max
		255	Max
11	Green	0	Min
		1–254	Min ... max
		255	Max
12	Blue	0	Min
		1–254	Min ... max
		255	Max
13	White	0	Min
		1–254	Min ... max
		255	Max
14	Background Color 1	0–10	Random
		11–31	Red
		32–52	Green
		53–73	Yellow
		74–94	Blue
		95–115	White
		116–136	Magenta
		137–157	Cyan

CH	Function	DMX	Description
14	Background Color 1 (continued)	158–178	White
		179–199	Lachs
		200–220	Mint
		221–241	Lavend
		242–255	White
15	Background dimmer 1	0	Min
		1–254	Min … max
		255	Max
16	Color Effects 1	0–20	No FX
		21–32	FX 1
		33–44	FX 2
		45–56	FX 3
		57–68	FX 4
		69–80	FX 5
		81–92	FX 6
		93–104	FX 7
		105–116	FX 8
		117–128	FX 9
		129–140	FX 10
		141–152	FX 11
		153–164	FX 12
		165–176	FX 13
		177–188	FX 14
		189–200	FX 15
		201–212	FX 16
		213–224	FX 17
		225–236	FX 18
		237–248	FX 19
		249–255	FX 20
17	Color Effects 1 Speed 1	0	Slow
		1–254	Slow … Fast
		255	Fast
18	Shutter 2	0–9	Shutter 1: Open 1
		10	Min Strobe
		11–254	Min Strobe … max Strobe
		255	Max Strobe
19	Colors	0–10	Black
		11–23	Red
		24–40	Green
		41–55	Blue
		56–70	White
		71–85	Yellow

CH	Function	DMX	Description
19	Colors (continued)	86–100	Lavend
		101–115	White+Red
		116–130	White+Green
		131–145	White+Blue
		146–160	White+Yellow
		161–175	White+Lavend
		176–190	White+Mint
		191–255	White+White
20	Background Color 2	0–10	Random
		11–31	Red
		32–52	Green
		53–73	Yellow
		74–94	Blue
		95–115	Grey
		116–136	Lavend
		137–157	Mint
		158–178	White
		179–199	White+Red
		200–220	White+Green
		221–241	White+Blue
		242–255	White
21	Background dimmer 2	0	Min
		1–254	Min ... max
		255	Max
22	Color Effects 2	0–20	No FX
		21–32	FX 1
		33–44	FX 2
		45–56	FX 3
		57–68	FX 4
		69–80	FX 5
		81–92	FX 6
		93–104	FX 7
		105–116	FX 8
		117–128	FX 9
		129–140	FX 10
		141–152	FX 11
		153–164	FX 12
		165–176	FX 13
		177–188	FX 14
		189–200	FX 15
		201–212	FX 16
		213–224	FX 17

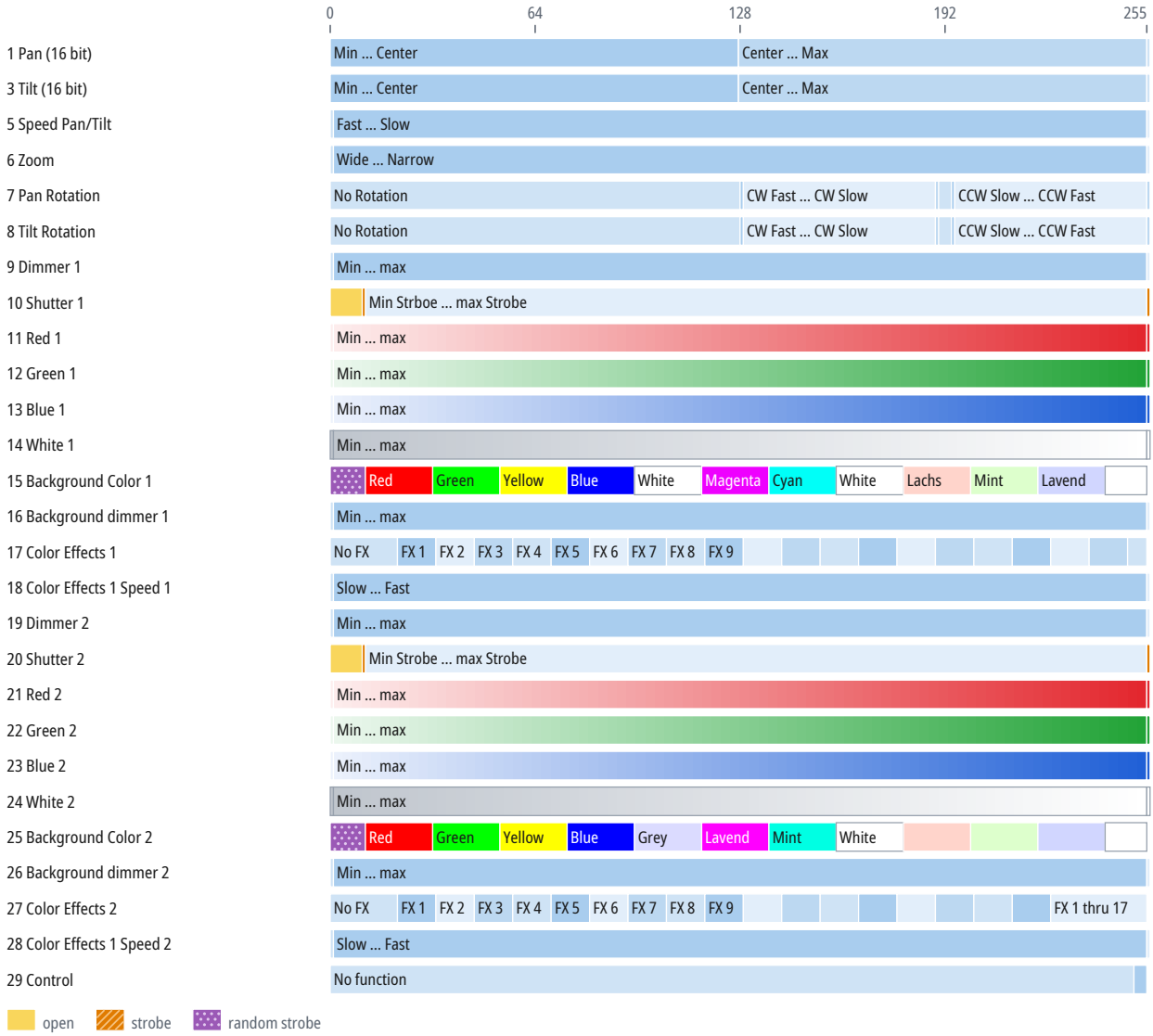
CH	Function	DMX	Description
22	Color Effects 2 (continued)	225–255	FX 1 thru 17
23	Color Effects 1 Speed 2	0	Slow
		1–254	Slow ... Fast
		255	Fast
24	Control	0–250	No function
		251–255	All Reset

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 10 Shutter 1 at 0–9; CH 20 Shutter 2 at 0–9. The GDTF file gives these values for a console's Highlight function: CH 9 Dimmer 1 255, CH 10 Shutter 1 0, CH 11 Red 1 255, CH 12 Green 1 255, CH 13 Blue 1 255, CH 14 White 1 255, CH 19 Dimmer 2 255, CH 20 Shutter 2 0, CH 21 Red 2 255, CH 22 Green 2 255, CH 23 Blue 2 255, CH 24 White 2 255, CH 27 Color Effects 2 0.

Channel functions at a glance



CH	Function	DMX	Description
1	Pan		Same as CH 1 in the mode “24 Channels” (p. 11)
2	Pan Fine	0–255	Fine adjustment of CH 1
3	Tilt		Same as CH 3 in the mode “24 Channels” (p. 11)
4	Tilt Fine	0–255	Fine adjustment of CH 3
5	Speed Pan/Tilt	0	Fast
		1–254	Fast ... Slow
		255	Slow
6	Zoom		Same as CH 5 in the mode “24 Channels” (p. 11)
7	Pan Rotation		Same as CH 6 in the mode “24 Channels” (p. 11)
8	Tilt Rotation		Same as CH 7 in the mode “24 Channels” (p. 12)
9	Dimmer 1	0	Min
		1–254	Min ... max
		255	Max
10	Shutter 1		Same as CH 9 in the mode “24 Channels” (p. 12)
11	Red 1	0	Min
		1–254	Min ... max
		255	Max
12	Green 1	0	Min
		1–254	Min ... max
		255	Max
13	Blue 1	0	Min
		1–254	Min ... max
		255	Max
14	White 1	0	Min
		1–254	Min ... max
		255	Max
15	Background Color 1		Same as CH 14 in the mode “24 Channels” (p. 12)
16	Background dimmer 1		Same as CH 15 in the mode “24 Channels” (p. 13)
17	Color Effects 1		Same as CH 16 in the mode “24 Channels” (p. 13)
18	Color Effects 1 Speed 1		Same as CH 17 in the mode “24 Channels” (p. 13)
19	Dimmer 2	0	Min
		1–254	Min ... max
		255	Max
20	Shutter 2		Same as CH 18 in the mode “24 Channels” (p. 13)
21	Red 2	0	Min
		1–254	Min ... max
		255	Max
22	Green 2	0	Min
		1–254	Min ... max
		255	Max
23	Blue 2	0	Min

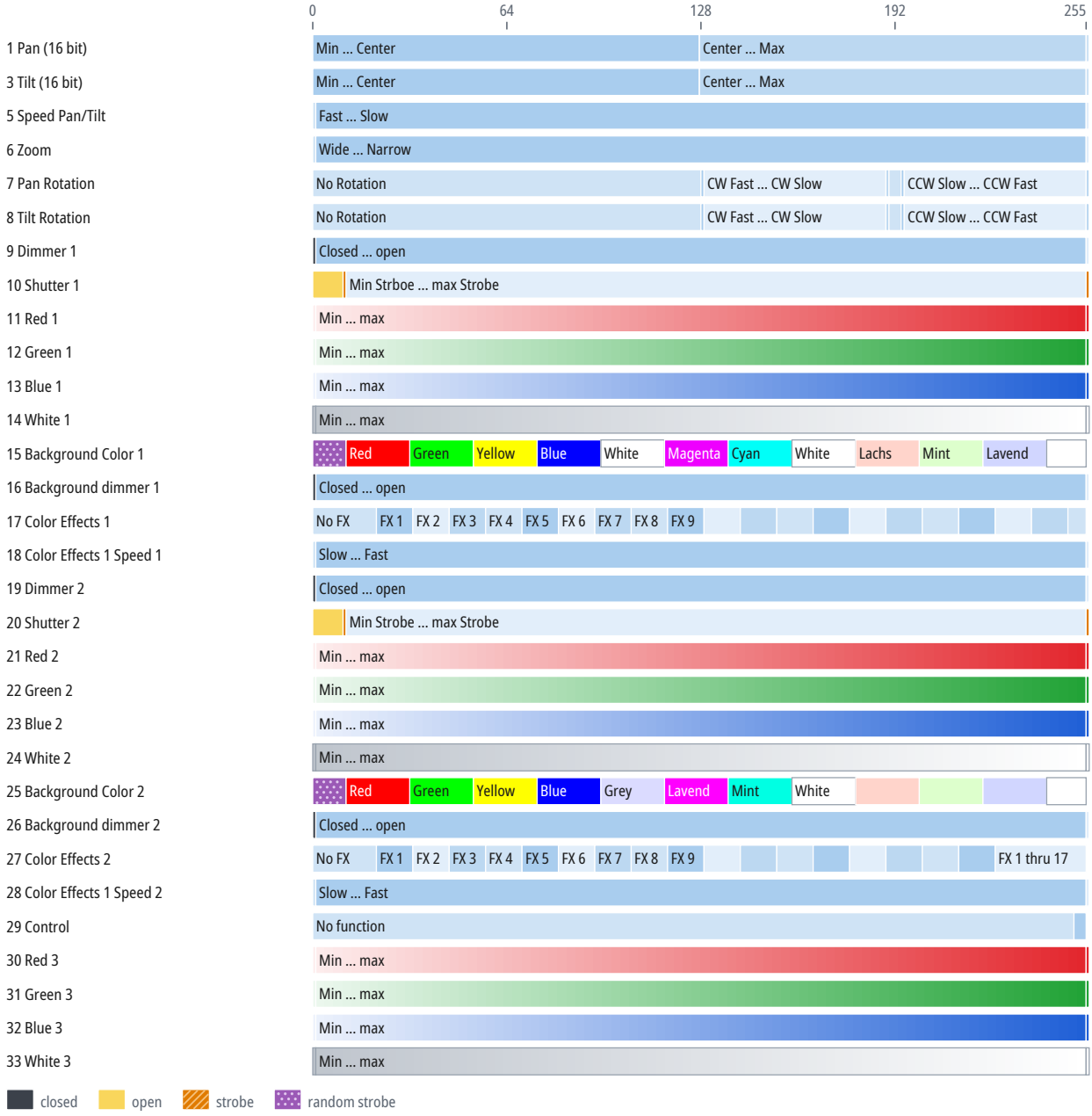
CH	Function	DMX	Description
23	Blue 2 (continued)	1–254	Min ... max
		255	Max
24	White 2	0	Min
		1–254	Min ... max
		255	Max
25	Background Color 2		Same as CH 20 in the mode “24 Channels” (p. 14)
26	Background dimmer 2		Same as CH 21 in the mode “24 Channels” (p. 14)
27	Color Effects 2		Same as CH 22 in the mode “24 Channels” (p. 14)
28	Color Effects 1 Speed 2		Same as CH 23 in the mode “24 Channels” (p. 15)
29	Control		Same as CH 24 in the mode “24 Channels” (p. 15)

Mode 105 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 9 Dimmer 1 above 0; CH 10 Shutter 1 at 0–9; CH 19 Dimmer 2 above 0; CH 20 Shutter 2 at 0–9. The GDTF file gives these values for a console's Highlight function: CH 9 Dimmer 1 255, CH 10 Shutter 1 0, CH 11 Red 1 255, CH 12 Green 1 255, CH 13 Blue 1 255, CH 14 White 1 255, CH 17 Color Effects 1 0, CH 19 Dimmer 2 255, CH 20 Shutter 2 0, CH 21 Red 2 255, CH 22 Green 2 255, CH 23 Blue 2 255, CH 24 White 2 255, CH 27 Color Effects 2 0, CH 30 Red 255 (the same in each of the 19 cells), CH 31 Green 255 (the same in each of the 19 cells), CH 32 Blue 255 (the same in each of the 19 cells), CH 33 White 255 (the same in each of the 19 cells).

Channel functions at a glance



CH	Function	DMX	Description
1	Pan		Same as CH 1 in the mode “24 Channels” (p. 11)
2	Pan Fine	0–255	Fine adjustment of CH 1
3	Tilt		Same as CH 3 in the mode “24 Channels” (p. 11)
4	Tilt Fine	0–255	Fine adjustment of CH 3
5	Speed Pan/Tilt		Same as CH 5 in the mode “29 Channels” (p. 16)
6	Zoom		Same as CH 5 in the mode “24 Channels” (p. 11)
7	Pan Rotation		Same as CH 6 in the mode “24 Channels” (p. 11)
8	Tilt Rotation		Same as CH 7 in the mode “24 Channels” (p. 12)
9	Dimmer 1	0	Closed
		1–254	Closed ... open
		255	Open
10	Shutter 1		Same as CH 9 in the mode “24 Channels” (p. 12)
11	Red 1		Same as CH 11 in the mode “29 Channels” (p. 16)
12	Green 1		Same as CH 12 in the mode “29 Channels” (p. 16)
13	Blue 1		Same as CH 13 in the mode “29 Channels” (p. 16)
14	White 1		Same as CH 14 in the mode “29 Channels” (p. 16)
15	Background Color 1		Same as CH 14 in the mode “24 Channels” (p. 12)
16	Background dimmer 1	0	Closed
		1–254	Closed ... open
		255	Open
17	Color Effects 1		Same as CH 16 in the mode “24 Channels” (p. 13)
18	Color Effects 1 Speed 1		Same as CH 17 in the mode “24 Channels” (p. 13)
19	Dimmer 2	0	Closed
		1–254	Closed ... open
		255	Open
20	Shutter 2		Same as CH 18 in the mode “24 Channels” (p. 13)
21	Red 2		Same as CH 21 in the mode “29 Channels” (p. 16)
22	Green 2		Same as CH 22 in the mode “29 Channels” (p. 16)
23	Blue 2		Same as CH 23 in the mode “29 Channels” (p. 16)
24	White 2		Same as CH 24 in the mode “29 Channels” (p. 17)
25	Background Color 2		Same as CH 20 in the mode “24 Channels” (p. 14)
26	Background dimmer 2	0	Closed
		1–254	Closed ... open
		255	Open
27	Color Effects 2		Same as CH 22 in the mode “24 Channels” (p. 14)
28	Color Effects 1 Speed 2		Same as CH 23 in the mode “24 Channels” (p. 15)
29	Control		Same as CH 24 in the mode “24 Channels” (p. 15)
30	Red 3		Color RGB_R 1
		0	Min
		1–254	Min ... max
		255	Max

CH	Function	DMX	Description
31	Green 3		Color RGB_G 1
		0	Min
		1–254	Min … max
		255	Max
32	Blue 3		Color RGB_B 1
		0	Min
		1–254	Min … max
		255	Max
33	White 3		Color RGB_W 1
		0	Min
		1–254	Min … max
		255	Max

CH 30–105: 19 cells of 4 channels each. Every cell works as cell 1 in the table above (CH 30–33); the table below gives each cell's channel numbers.

Cell	Red	Green	Blue	White	Cell	Red	Green	Blue	White
1	30	31	32	33	2	34	35	36	37
3	38	39	40	41	4	42	43	44	45
5	46	47	48	49	6	50	51	52	53
7	54	55	56	57	8	58	59	60	61
9	62	63	64	65	10	66	67	68	69
11	70	71	72	73	12	74	75	76	77
13	78	79	80	81	14	82	83	84	85
15	86	87	88	89	16	90	91	92	93
17	94	95	96	97	18	98	99	100	101
19	102	103	104	105					

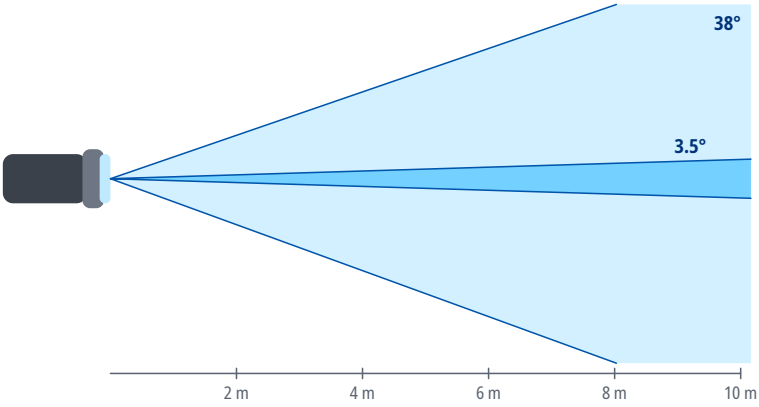
10 Technical specifications

Parameter	Value
Light source	discharge lamp
Zoom	3.5–38°
Pan	540°
Tilt	540°
Operating temperature	0 to 40 °C

Speeds and ranges

Parameter	Value
Strobe frequency	0.9–20 Hz

Spot diameter



Distance	Ø 3.5°	Ø 38°
2 m	0.12 m	1.4 m
4 m	0.24 m	2.8 m
6 m	0.37 m	4.1 m
8 m	0.49 m	5.5 m
10 m	0.61 m	6.9 m
15 m	0.92 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.