DMX REFERENCE

Allegro Z6

ADJ Allegro Z6

ADJ

Manufacturer	ADJ
GDTF file	ADJ_Allegro_Z6_48827.gdtf
GDTF revision	1.0 - 17CH en 37 CH (test V dimmer) · 2023-10-11
Generated	2026-11-23

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1 About this manual

This document describes the ADJ Allegro Z6 by ADJ. It was compiled from the GDTF file ADJ_Allegro_Z6_48827.gdtf from the GDTF-Share library.

File revision: “1.0 - 17CH en 37 CH (test V dimmer)”.

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 ADJ; 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

DMX modes

Mode	Channels	Units in one universe	First start addresses
17Ch	17	30	1, 18, 35, 52, ...
37Ch	37	13	1, 38, 75, 112, ...

No light? Check these channels

- 17Ch: CH 11 Shutter at 32, 96, 162, 224 “Open” or 33–63 or 97–127 or 160–161, 163–191 or 225–255; CH 12 Dimmer above 0
- 37Ch: CH 31 Shutter at 32, 96, 162, 224 “Open” or 33–63 or 97–127 or 160–161, 163–191 or 225–255; CH 32 Dimmer above 0



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.

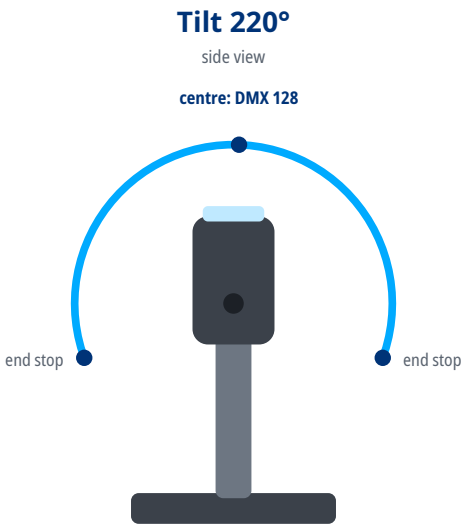
⚠ CAUTION

- 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



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.

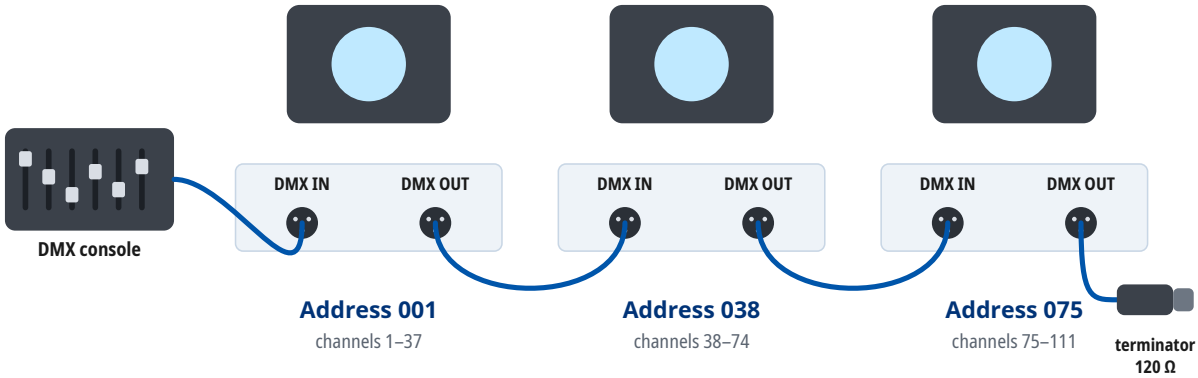
6 Connections

- 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 37Ch: every unit occupies 37 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

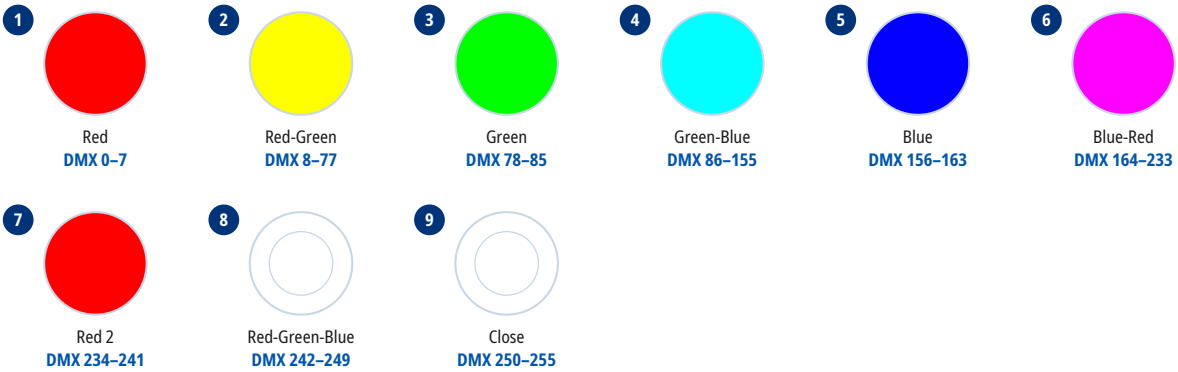
- The device occupies as many consecutive channels in the DMX universe as the selected DMX mode uses, starting at the set start address.
- Number of channels occupied in the DMX mode “37Ch”: 37.
- Choose start addresses so that the channels of individual devices do not overlap and the last occupied channel does not exceed 512. Devices with the same start address and mode respond identically.
- For several devices in a row in the DMX mode “37Ch”, you can use, for example, the start addresses 1, 38, 75, 112.
- The DMX mode set on the device must match the fixture profile (personality) used in the controller.

8 Functions at a glance

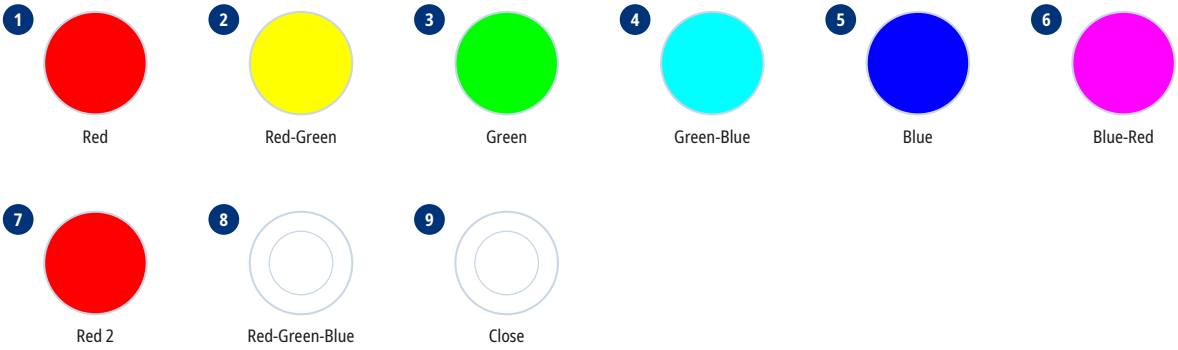
Functions in each DMX mode

	17Ch 17 channels	37Ch 37 channels
Pan / Tilt	1	1
Dimmer	12	32
Shutter / strobe	11	31
Color mixing	3–6	3–26
Color wheel	9, 10	29, 30
Zoom	14	34
Pixel control		✓

Color wheel 1



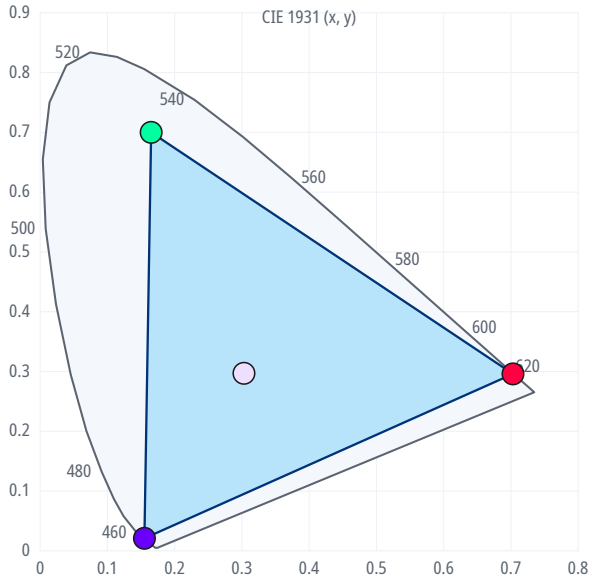
Color wheel 2



Color wheel 3

1. Close — DMX 0–15
2. 2700k Bulb — DMX 16–31
3. 3000k Halogen — DMX 32–47
4. 3300k Sunrise — DMX 48–63
5. 3600k — DMX 64–79
6. 3900k — DMX 80–95
7. 4200k Natural white — DMX 96–111
8. 4500k — DMX 112–127
9. 4800k Direct sunlight — DMX 128–143
10. 5100k — DMX 144–159
11. 5400k Day white — DMX 160–175
12. 5700k — DMX 176–191
13. 6000k Cloudy sky — DMX 192–207
14. 6300k — DMX 208–223
15. 6600k Full sun — DMX 224–239
16. 7000k Cool white — DMX 240–255

LED colors and the colors they mix



LED	x	y	nm
Red	0.703	0.296	627
Green	0.165	0.700	525
Blue	0.155	0.021	452
White	0.303	0.297	

The shaded area holds the colors the LEDs can mix; the dots are the LED colors the GDTF file states.

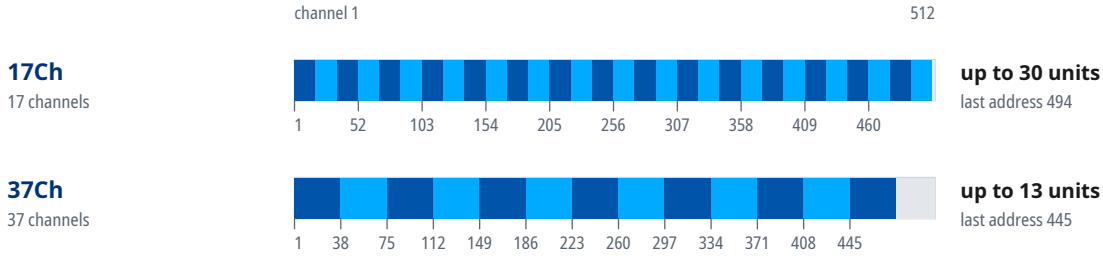
Cells (pixels)



6 cells where the GDTF file places them (seen from above), numbered in the file's order; the mode “37Ch” drives them together.

9 DMX channels

Units in one DMX universe



Start addresses of 20 units in the mode “37Ch”

Unit	Start address	Unit	Start address	Unit	Start address	Unit	Start address
1	1	6	186	11	371	16	U2 · 75
2	38	7	223	12	408	17	U2 · 112
3	75	8	260	13	445	18	U2 · 149
4	112	9	297	14	U2 · 1	19	U2 · 186
5	149	10	334	15	U2 · 38	20	U2 · 223

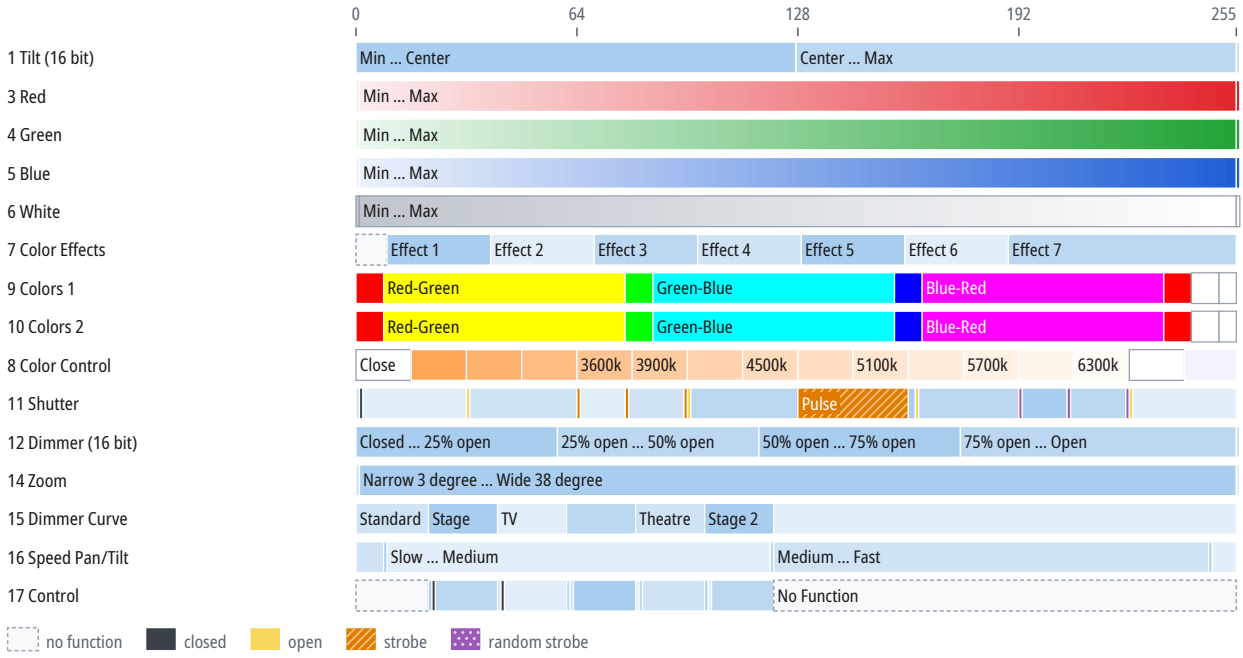
Where a DMX universe is full, the next units continue in the next universe: “U2 · 1” is address 1 in the second universe, counted from the universe of the first unit.

Mode 17Ch

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 11 Shutter at 32, 96, 162, 224 “Open” or 33–63 or 97–127 or 160–161, 163–191 or 225–255; CH 12 Dimmer above 0. The GDTF file gives these values for a console's Highlight function: CH 6 White 255, CH 11 Shutter 255, CH 12 Dimmer 255.

Channel functions at a glance



CH	Function	DMX	Description
1	Tilt	0–127	Min ... Center
		128–255	Center ... Max
		255	Max
2	Tilt Fine	0–255	Fine adjustment of CH 1
3	Red	0	Min
		1–254	Min ... Max
		255	Max
4	Green	0	Min
		1–254	Min ... Max
		255	Max
5	Blue	0	Min
		1–254	Min ... Max
		255	Max
6	White	0	Min
		1–254	Min ... Max
		255	Max
7	Color Effects		Color Effects Macros
		0–8	No function

CH	Function	DMX	Description
7	Color Effects (continued)	9–38	Effect 1
		39–68	Effect 2
		69–98	Effect 3
		99–128	Effect 4
		129–158	Effect 5
		159–188	Effect 6
		189–255	Effect 7
8	Color Control	0–15	Close
		16–31	2700k Bulb
		32–47	3000k Halogen
		48–63	3300k Sunrise
		64–79	3600k
		80–95	3900k
		96–111	4200k Natural white
		112–127	4500k
		128–143	4800k Direct sunlight
		144–159	5100k
		160–175	5400k Day white
		176–191	5700k
		192–207	6000k Cloudy sky
		208–223	6300k
		224–239	6600k Full sun
		240–255	7000k Cool white
9	Colors 1		Foreground color
		0–7	Red
		8–77	Red-Green
		78–85	Green
		86–155	Green-Blue
		156–163	Blue
		164–233	Blue-Red
		234–241	Red 2
		242–249	Red-Green-Blue
		250–255	Close
10	Colors 2		Foreground color
		0–7	Red
		8–77	Red-Green
		78–85	Green
		86–155	Green-Blue
		156–163	Blue
		164–233	Blue-Red
		234–241	Red 2
		242–249	Red-Green-Blue

CH	Function	DMX	Description
10	Colors 2 (continued)	250–255	Close
11	Shutter	0	Shutter Close 1
		1	Shutter Close: Close
		2–31	Shutter Close 1
		32	Shutter Open: Open
		33–63	Shutter Open 1
		64	Slow Strobe
		65–77	Slow Strobe ... Medium Strobe
		78	Medium Strobe
		79–94	Medium Strobe ... Fast Strobe
		95	Fast Strobe
		96	Shutter Open: Open
		97–127	Shutter Open 2
		128–159	Pulse
		160–161	Shutter Open 3
		162	Shutter Open: Open
		163–191	Shutter Open 3
		192	Random Strobe Slow
		193–205	Random Strobe Slow ... Random Strobe Medium
		206	Random Strobe Medium
		207–222	Random Strobe Medium ... Random Strobe Fast
		223	Random Strobe Fast
		224	Shutter Open: Open
		225–255	Shutter Open 4
12	Dimmer	0–58	Closed ... 25% open
		58–117	25% open ... 50% open
		117–175	50% open ... 75% open
		175–255	75% open ... Open
		255	Open
13	Dimmer Fine	0–255	Fine adjustment of CH 12
14	Zoom	0	Narrow 3 degree
		1–254	Narrow 3 degree ... Wide 38 degree
		255	Wide 38 degree
15	Dimmer Curve	0–20	Standard
		21–40	Stage
		41–60	TV
		61–80	Architectural
		81–100	Theatre
		101–120	Stage 2
		121–255	Dimmer Curve
16	Speed Pan/Tilt		Tilt Speed
		0–7	Auto speed

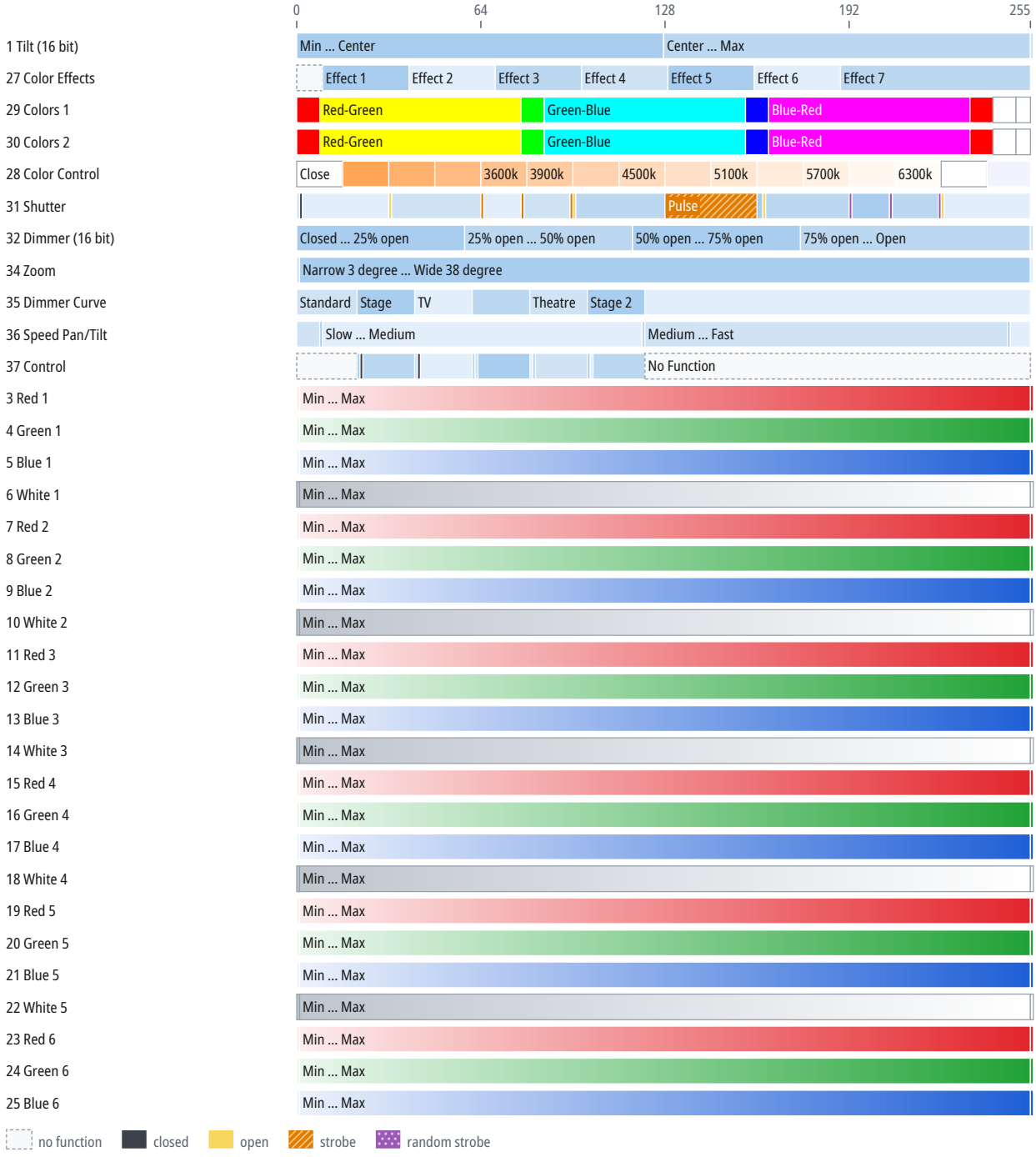
CH	Function	DMX	Description
16	Speed Pan/Tilt (continued)	8	Slow
		9–119	Slow ... Medium
		120	Medium
		121–246	Medium ... Fast
		247	Fast
		248–255	Tilt Speed
17	Control	0–20	No Function
		21–40	Enable Black Out with Tilt Move
		41–60	Disable Black Out with Tilt Move
		61–80	Reset All motors
		81–100	Reset Tilt motor
		101–120	Reset Zoom Motor
		121–255	No Function

Mode 37Ch

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 31 Shutter at 32, 96, 162, 224 “Open” or 33–63 or 97–127 or 160–161, 163–191 or 225–255; CH 32 Dimmer above 0. The GDTF file gives these values for a console's Highlight function: CH 6 White 1 255, CH 10 White 2 255, CH 14 White 3 255, CH 18 White 4 255, CH 22 White 5 255, CH 26 White 6 255, CH 31 Shutter 255, CH 32 Dimmer 255.

Channel functions at a glance



Channel functions at a glance



CH	Function	DMX	Description
1	Tilt		Same as CH 1 in the mode “17Ch” (p. 10)
2	Tilt Fine	0–255	Fine adjustment of CH 1
3	Red 1	0	Min
		1–254	Min ... Max
		255	Max
4	Green 1	0	Min
		1–254	Min ... Max
		255	Max
5	Blue 1	0	Min
		1–254	Min ... Max
		255	Max
6	White 1	0	Min
		1–254	Min ... Max
		255	Max
7	Red 2	0	Min
		1–254	Min ... Max
		255	Max
8	Green 2	0	Min
		1–254	Min ... Max
		255	Max
9	Blue 2	0	Min
		1–254	Min ... Max
		255	Max
10	White 2	0	Min
		1–254	Min ... Max
		255	Max
11	Red 3	0	Min
		1–254	Min ... Max
		255	Max
12	Green 3	0	Min
		1–254	Min ... Max
		255	Max
13	Blue 3	0	Min
		1–254	Min ... Max
		255	Max
14	White 3	0	Min
		1–254	Min ... Max

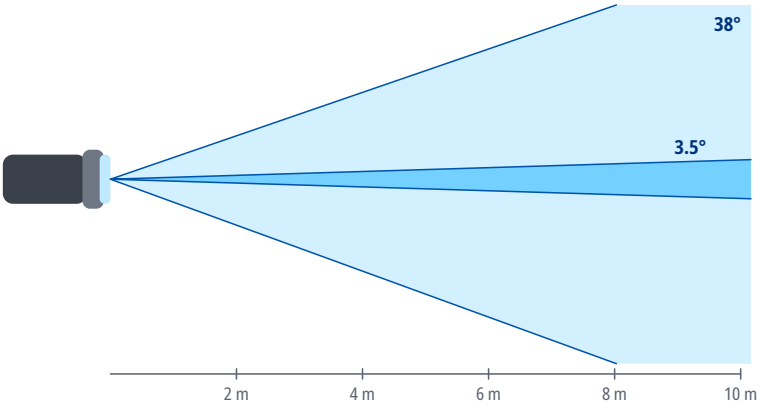
CH	Function	DMX	Description
14	White 3 (continued)	255	Max
15	Red 4	0	Min
		1–254	Min ... Max
		255	Max
16	Green 4	0	Min
		1–254	Min ... Max
		255	Max
17	Blue 4	0	Min
		1–254	Min ... Max
		255	Max
18	White 4	0	Min
		1–254	Min ... Max
		255	Max
19	Red 5	0	Min
		1–254	Min ... Max
		255	Max
20	Green 5	0	Min
		1–254	Min ... Max
		255	Max
21	Blue 5	0	Min
		1–254	Min ... Max
		255	Max
22	White 5	0	Min
		1–254	Min ... Max
		255	Max
23	Red 6	0	Min
		1–254	Min ... Max
		255	Max
24	Green 6	0	Min
		1–254	Min ... Max
		255	Max
25	Blue 6	0	Min
		1–254	Min ... Max
		255	Max
26	White 6	0	Min
		1–254	Min ... Max
		255	Max
27	Color Effects		Same as CH 7 in the mode “17Ch” (p. 10)
28	Color Control		Same as CH 8 in the mode “17Ch” (p. 11)
29	Colors 1		Same as CH 9 in the mode “17Ch” (p. 11)
30	Colors 2		Same as CH 10 in the mode “17Ch” (p. 11)

CH	Function	DMX	Description
31	Shutter		Same as CH 11 in the mode “17Ch” (p. 12)
32	Dimmer		Same as CH 12 in the mode “17Ch” (p. 12)
33	Dimmer Fine	0–255	Fine adjustment of CH 32
34	Zoom		Same as CH 14 in the mode “17Ch” (p. 12)
35	Dimmer Curve		Same as CH 15 in the mode “17Ch” (p. 12)
36	Speed Pan/Tilt		Same as CH 16 in the mode “17Ch” (p. 12)
37	Control		Same as CH 17 in the mode “17Ch” (p. 13)

10 Technical specifications

Parameter	Value
Light source	LED
Zoom	3.5–38°
Tilt	220°
Operating temperature	0 to 40 °C

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.