DMX REFERENCE

ACME XP-470 BSW

ACME



Manufacturer	ACME
GDTF file	ACME_ACME_XP-470_BSW_73265.gdtf
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1 About this manual

This document describes the ACME XP-470 BSW by ACME. It was compiled from the GDTF file ACME_ACME_XP-470_BSW_73265.gdtf from the GDTF-Share library.

File revision: “ACME XP-470 BSW”.

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 ACME; 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	28.5 kg

DMX modes

Mode	Channels	Units in one universe	First start addresses
28 DMX	28	18	1, 29, 57, 85, ...
24 DMX	24	21	1, 25, 49, 73, ...
21DMX	21	24	1, 22, 43, 64, ...
20 DMX	20	25	1, 21, 41, 61, ...

No light? Check these channels

- 28 DMX: CH 3 Shutter at 104–107 “Open” or 208–212 or 252–255; CH 4 Dimmer above 0
- 24 DMX: CH 3 Shutter at 104–107 “Open” or 208–212 or 252–255; CH 4 Dimmer above 0
- 21DMX: CH 20 Shutter at 104–107 “Open” or 208–212 or 252–255; CH 21 Dimmer above 0
- 20 DMX: CH 3 Shutter at 104–107 “Open” or 208–212 or 252–255; CH 4 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

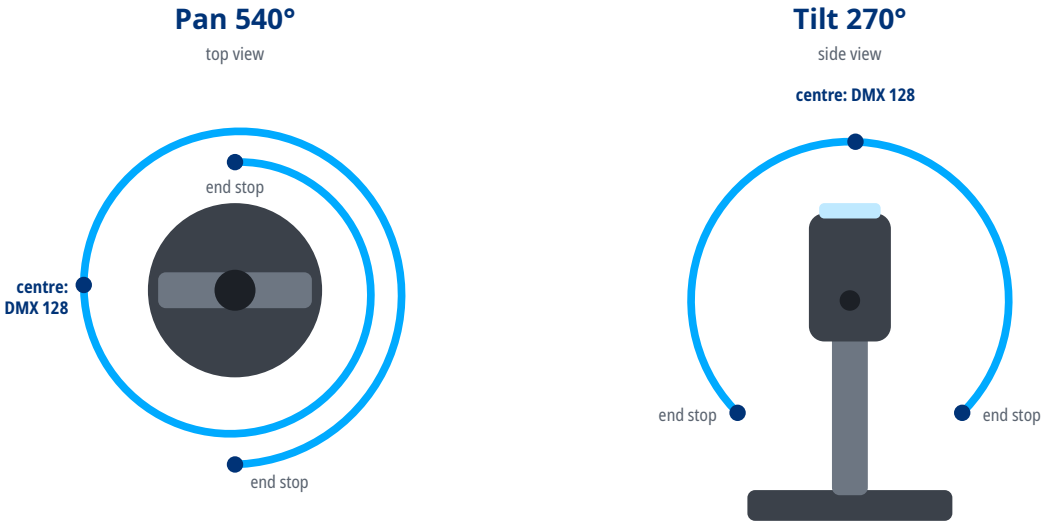
- Strobe and fast flashing light effects can trigger epileptic seizures in susceptible people (photosensitive epilepsy) and can cause nausea or disorientation.
- Inform the audience and performers in advance that strobe effects will be used, for example with a notice at the entrance, and do not use them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

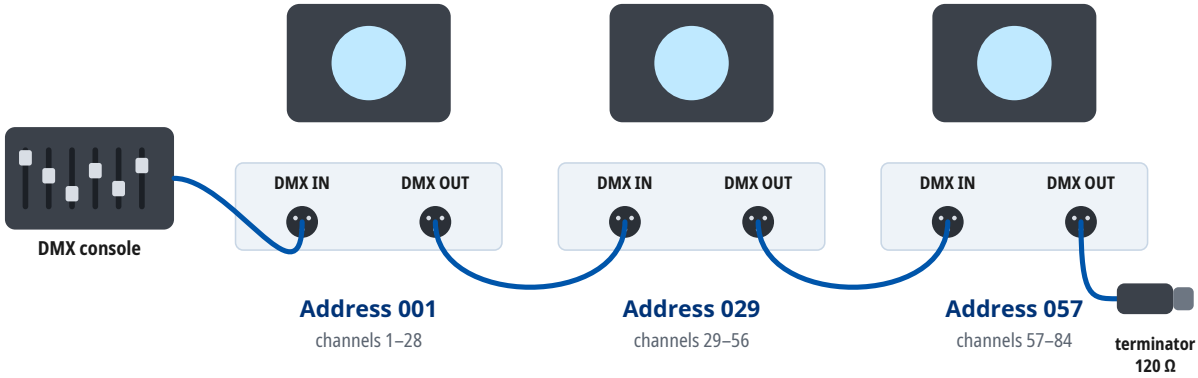
- Rigging must be carried out only by qualified persons in accordance with applicable regulations, in particular those for work at height.
- The supporting structure and fixings must safely carry the weight of all suspended devices; verify their load capacity in advance.
- Weight of the device: 28.5 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 28 DMX: every unit occupies 28 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

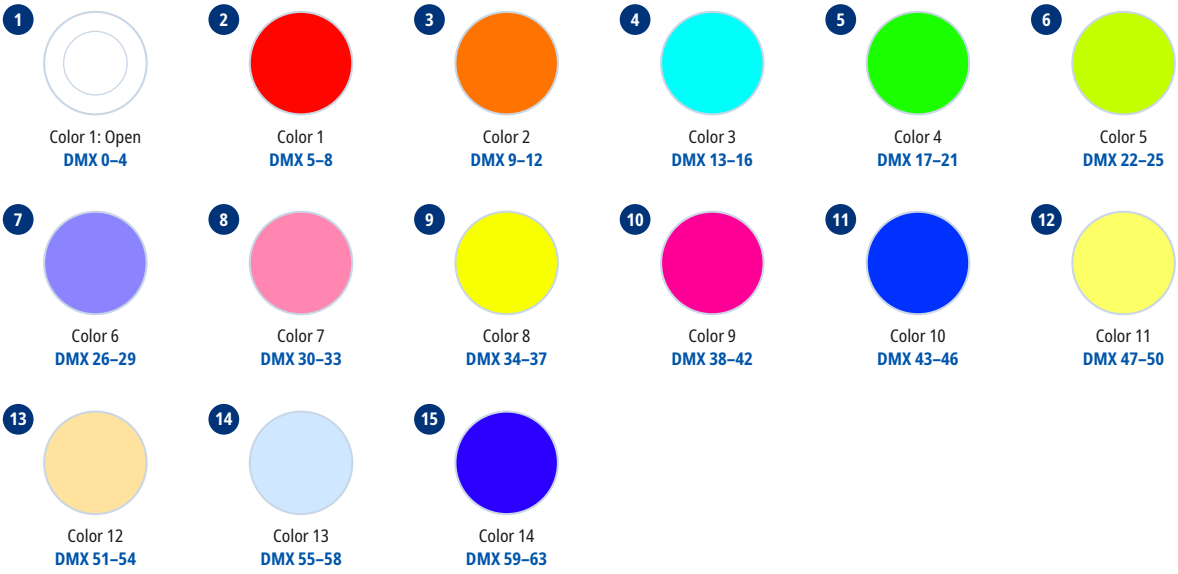
- The device occupies as many consecutive channels in the DMX universe as the selected DMX mode uses, starting at the set start address.
- Number of channels occupied in the DMX mode “28 DMX”: 28.
- Choose start addresses so that the channels of individual devices do not overlap and the last occupied 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 “28 DMX”, you can use, for example, the start addresses 1, 29, 57, 85.
- 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

	28 DMX 28 channels	24 DMX 24 channels	21DMX 21 channels	20 DMX 20 channels
Pan / Tilt	17, 19	17, 19	1, 3	14, 16
Dimmer	4	4	21	4
Dimmer resolution	16 bit	16 bit	8 bit	16 bit
Shutter / strobe	3	3	20	3
Color wheel	1	1	7	1
Gobo wheel	6, 7	6–8	9, 10, 12	6–8
Gobo rotation	8	8	10	8
Prism	10, 11	10, 11	13–15	10, 11
Frost	2, 12	2, 12	8, 18	2, 12
Zoom	13	13	16	
Focus	14	14	17	13

Color wheel



Gobo wheel 1

1
Gobo 1: Open
DMX 0–3

2 
Gobo 1
DMX 4–7

3 
Gobo 2
DMX 8–11

4 
Gobo 3
DMX 12–15

5 
Gobo 4
DMX 16–18

6 
Gobo 5
DMX 19–22

7 
Gobo 6
DMX 23–26

8 
Gobo 7
DMX 27–30

9 
Gobo 8
DMX 31–34

10 
Gobo 9
DMX 35–37

11 
Gobo 10
DMX 38–41

12 
Gobo 11
DMX 42–45

13 
Gobo 12
DMX 46–49

14 
Gobo 13
DMX 50–53

15 
Gobo 14
DMX 54–55

16 
Gobo 15
DMX 56–60

17 
Gobo 16
DMX 61–64

18 
Gobo 17
DMX 65–68

19 
Gobo 18
DMX 69–72

Gobo wheel 2

1
Gobo 2: Open
DMX 0–18

2 
Gobo 1
DMX 19–37

3 
Gobo 2
DMX 38–55

4 
Gobo 3
DMX 56–74

5 
Gobo 4
DMX 75–92

6 
Gobo 5
DMX 93–111

7 
Gobo 6
DMX 112–130

8 
Gobo 7

Prism 1

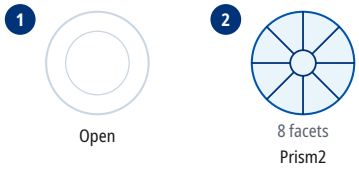
1
Open
DMX 0–11

2 
16 facets
Prism 1
DMX 11–133

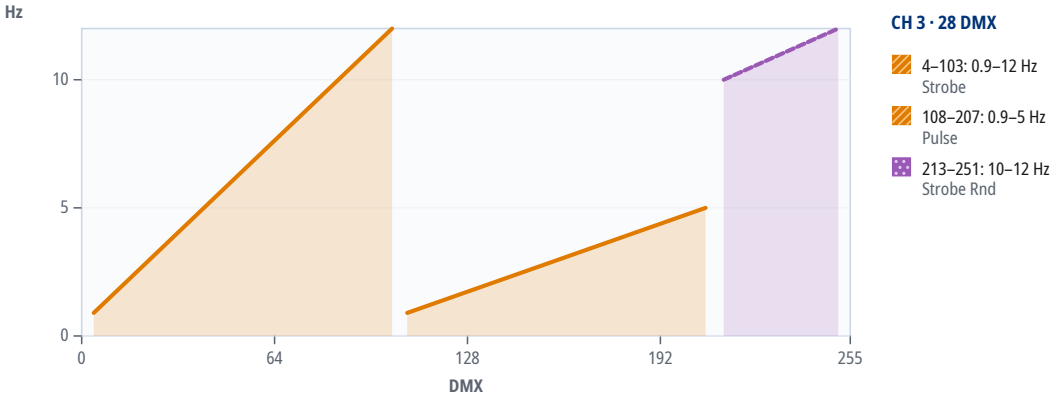
3 
8 facets
Prism 2
DMX 133–224

4 
24 facets
Prism 3
DMX 224–240

Prism 2

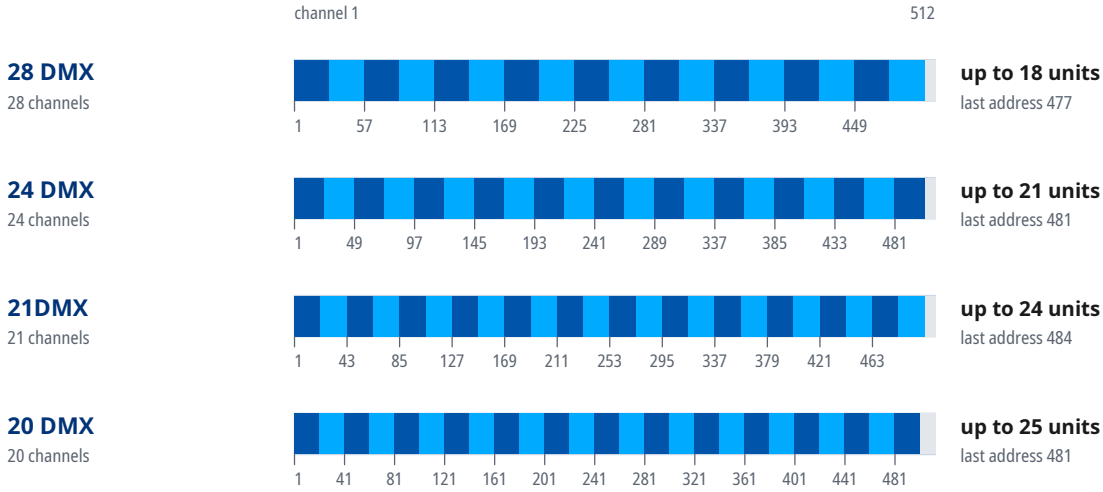


Strobe rate



9 DMX channels

Units in one DMX universe



Start addresses of 20 units in the mode “28 DMX”

Unit	Start address	Unit	Start address	Unit	Start address	Unit	Start address
1	1	6	141	11	281	16	421
2	29	7	169	12	309	17	449
3	57	8	197	13	337	18	477
4	85	9	225	14	365	19	U2 · 1
5	113	10	253	15	393	20	U2 · 29

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 28 DMX

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 3 Shutter at 104–107 “Open” or 208–212 or 252–255; CH 4 Dimmer above 0. The GDTF file gives these values for a console's Highlight function: CH 1 Colors 0, CH 3 Shutter 105, CH 4 Dimmer 255.

Channel functions at a glance



CH	Function	DMX	Description
1	Colors	0–4	Color 1: Open
		5–8	Color 1
		9–12	Color 2
		13–16	Color 3
		17–21	Color 4
		22–25	Color 5
		26–29	Color 6
		30–33	Color 7
		34–37	Color 8
		38–42	Color 9
		43–46	Color 10
		47–50	Color 11

CH	Function	DMX	Description
1	Colors (continued)	51–54	Color 12
		55–58	Color 13
		59–63	Color 14
		64–127	Color 1: Open2
		128	Max CCW
		129–188	Max CCW ... min CCW
		189	Min CCW
		190–193	Stop
		194	Min CW
		195–254	Min CW ... max CW
		255	Max CW
2	Frost 2	0–127	Closed
		128–255	Soft
3	Shutter	0–3	Closed
		4	Min Strobe
		5–102	Min Strobe ... max Strobe
		103	Max Strobe
		104–107	Open
		108	Min Pulse
		109–206	Min Pulse ... max Pulse
		207	Max Pulse
		208–212	Open 2
		213–251	Strobe Rnd (10–12 Hz)
		252–255	Open 3
4	Dimmer	0–255	
5	Dimmer Fine	0–255	Fine adjustment of CH 4
6	Gobo	0–3	Gobo 1: Open
		4–7	Gobo 1
		8–11	Gobo 2
		12–15	Gobo 3
		16–18	Gobo 4
		19–22	Gobo 5
		23–26	Gobo 6
		27–30	Gobo 7
		31–34	Gobo 8
		35–37	Gobo 9
		38–41	Gobo 10
		42–45	Gobo 11
		46–49	Gobo 12
		50–53	Gobo 13
		54–55	Gobo 14
		56–60	Gobo 15

CH	Function	DMX	Description
6	Gobo (continued)	61–64	Gobo 16
		65–68	Gobo 17
		69–71	Gobo 18
		72	Max CCW
		73–112	Max CCW ... min CCW
		113	Min CCW
		114–117	Stop
		118	Min CW
		119–158	Min CW ... max CW
		159	Max CW
		160–165	Gobo 1 Shake
		166–170	Gobo2 Shake
		171–175	Gobo3 Shake
		176–181	Gobo4 Shake
		182–186	Gobo5 Shake
		187–191	Gobo6 Shake
		192–197	Gobo7 Shake
		198–202	Gobo8 Shake
		203–207	Gobo9 Shake
		208–214	Gobo10 Shake
		215–218	Gobo11 Shake
		219–223	Gobo12 Shake
		224–229	Gobo13 Shake
		230–234	Gobo14 Shake
		235–239	Gobo15 Shake
		240–245	Gobo16 Shake
		246–250	Gobo17 Shake
		251–255	Gobo18 Shake
7	Gobo 2	0–18	Gobo 2: Open
		19–37	Gobo 1
		38–55	Gobo 2
		56–74	Gobo 3
		75–92	Gobo 4
		93–111	Gobo 5
		112–129	Gobo 6
		130–150	Gobo1Shake
		151–171	Gobo 2 Shake
		172–192	Gobo3 Shake
		193–213	Gobo4 Shake
		214–234	Gobo5 Shake
		235–255	Gobo6 Shake
8	Gobo 2 Rotation Speed	0	Gobo 2 Index: Open

CH	Function	DMX	Description
8	Gobo 2 Rotation Speed (continued)	0–1	Open ... Index0 100%
		1–127	Index0 100%
		128–190	Max CCW ... min CCW
		190	Min CCW
		190–193	Stop
		193–255	Min CW ... max CW
		255	Max CW
9	Gobo 2 Rotation Speed Fine	0–255	Fine adjustment of CH 8
10	Prism	0–10	Open
		11–132	Prism 1
		133–223	Prism 2
		224–239	Prism 1+2 R1
		240–255	Prism 1+2 R2
11	Prism Rotation Speed	0	Prism 1 Index: Open
		1–127	Prism Index
		128	Max CCW
		129–189	Max CCW ... min CCW
		190	Min CCW
		191–192	Stop
		193	Min CW
		194–254	Min CW ... max CW
		255	Max CW
12	Frost	0–255	
13	Zoom	0	Narrow
		1–254	Narrow ... Wide
		255	Wide
14	Focus	0–255	
15	Focus Fine	0–255	Fine adjustment of CH 14
16	Focus Mode	0–127	Auto Focus
		128–191	Beam Mode
		192–255	Frost Mode
17	Pan	0–127	Min ... Center
		127	Center
		128–255	Center ... Max
		255	Max
18	Pan Fine	0–255	Fine adjustment of CH 17
19	Tilt	0–127	Min ... Center
		128–255	Center ... Max
		255	Max
20	Tilt Fine	0–255	Fine adjustment of CH 19
21	Function	0–11	Safe
		12–24	Fast PT

CH	Function	DMX	Description
21	Function (continued)	25–37	Normal PT
		38–114	Safe2
		115–127	Soft Auto
		128–140	Soft Disable
		141–153	Soft Enable
		154–166	Focus Disable
		167–179	Focus Near
		180–192	Focus Medium
		193–205	Focus Far
		206–255	Safe3
22	Intensity Reset	0–25	Idle
		26–76	Reset Zoom
		77–127	Reset PT
		128–255	Reset All
23	Lamp Control	0–25	Safe
		26–100	LAMP Off
		101–255	LAMP On
24	Zoom Mode	0–7	Macro Off
		8–15	Standby
		16–35	Zoom Iin Fade
		36–55	Zoom out Fade
		56–75	Zoom in/out
		76–95	Zoom in Rnd
		96–115	Zoom out Rnd
		116–135	Standby black2
		136–175	Zoom in Fade2
		176–195	Zoom in/out2
		196–215	Zoom in Rnd2
		216–225	Zoom out Rnd2
		226–255	Standby black3
25	Speed Pan/Tilt	0–255	
26	Color Wheel Speed	0–255	
27	Dimmer Speed	0–255	
28	Gobo Wheel Speed	0–255	

Mode 24 DMX

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 3 Shutter at 104–107 “Open” or 208–212 or 252–255; CH 4 Dimmer above 0. The GDTF file gives these values for a console's Highlight function: CH 3 Shutter 105, CH 4 Dimmer 255.

Channel functions at a glance



CH	Function	DMX	Description
1	Colors		Same as CH 1 in the mode “28 DMX” (p. 11)
2	Frost 2		Same as CH 2 in the mode “28 DMX” (p. 12)
3	Shutter		Same as CH 3 in the mode “28 DMX” (p. 12)
4	Dimmer	0–255	
5	Dimmer Fine	0–255	Fine adjustment of CH 4
6	Gobo		Same as CH 6 in the mode “28 DMX” (p. 12)
7	Gobo 2		Same as CH 7 in the mode “28 DMX” (p. 13)
8	Gobo 2 Rotation Speed		Same as CH 8 in the mode “28 DMX” (p. 13)
9	Gobo 2 Rotation Speed Fine	0–255	Fine adjustment of CH 8
10	Prism		Same as CH 10 in the mode “28 DMX” (p. 14)
11	Prism Rotation Speed		Same as CH 11 in the mode “28 DMX” (p. 14)
12	Frost	0–255	
13	Zoom		Same as CH 13 in the mode “28 DMX” (p. 14)
14	Focus	0–255	
15	Focus Fine	0–255	Fine adjustment of CH 14

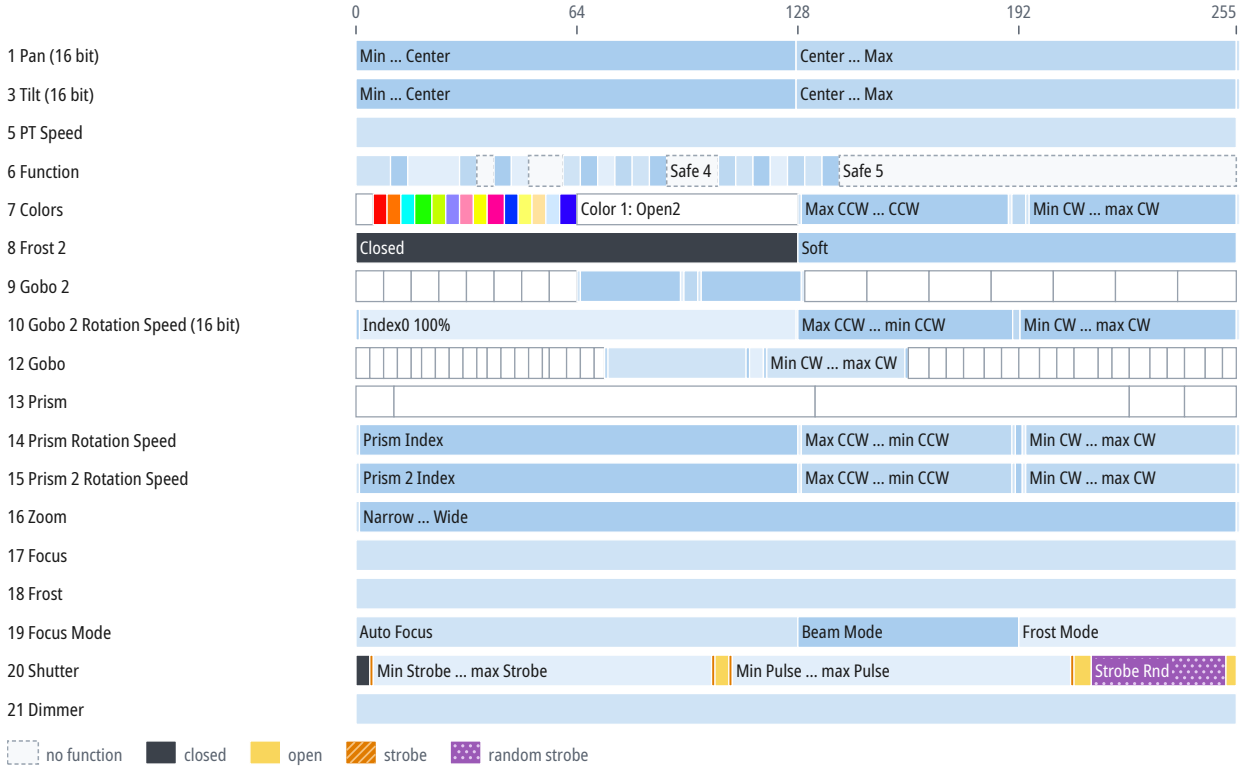
CH	Function	DMX	Description
16	Focus Mode		Same as CH 16 in the mode “28 DMX” (p. 14)
17	Pan		Same as CH 17 in the mode “28 DMX” (p. 14)
18	Pan Fine	0–255	Fine adjustment of CH 17
19	Tilt		Same as CH 19 in the mode “28 DMX” (p. 14)
20	Tilt Fine	0–255	Fine adjustment of CH 19
21	Function		Same as CH 21 in the mode “28 DMX” (p. 14)
22	Intensity Reset		Same as CH 22 in the mode “28 DMX” (p. 15)
23	Lamp Control		Same as CH 23 in the mode “28 DMX” (p. 15)
24	Zoom Mode		Same as CH 24 in the mode “28 DMX” (p. 15)

Mode 21DMX

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 20 Shutter at 104–107 “Open” or 208–212 or 252–255; CH 21 Dimmer above 0. The GDTF file gives these values for a console's Highlight function: CH 20 Shutter 105, CH 21 Dimmer 255.

Channel functions at a glance



CH	Function	DMX	Description
1	Pan		Same as CH 17 in the mode “28 DMX” (p. 14)
2	Pan Fine	0–255	Fine adjustment of CH 1
3	Tilt		Same as CH 19 in the mode “28 DMX” (p. 14)
4	Tilt Fine	0–255	Fine adjustment of CH 3
5	PT Speed	0–255	
6	Function	0–9	Safe

CH	Function	DMX	Description
6	Function (continued)	10–14	Reset All
		15–29	Reset Eff
		30–34	Reset PT
		35–39	Safe 2
		40–44	Lamp On
		45–49	Lamp Off
		50–59	Safe 3
		60–64	Curve Square Law
		65–69	Curve Inverse
		70–74	Curve Line
		75–79	Curve S
		80–84	PT Fast
		85–89	PT Slow
		90–104	Safe 4
		105–109	Focus Disable
		110–114	Focus Near
		115–119	Focus Medium
		120–124	Focus Far
		125–129	Soft Disable
		130–134	Soft Near
		135–139	Soft Enable
		140–255	Safe 5
7	Colors	0–4	Color 1: Open
		5–8	Color 1
		9–12	Color 2
		13–16	Color 3
		17–21	Color 4
		22–25	Color 5
		26–29	Color 6
		30–33	Color 7
		34–37	Color 8
		38–42	Color 9
		43–46	Color 10
		47–50	Color 11
		51–54	Color 12
		55–58	Color 13
		59–63	Color 14
		64–127	Color 1: Open2
		128	Max CCW
		129–188	Max CCW ... CCW
		189	CCW
		190–193	Stop

CH	Function	DMX	Description
7	Colors (continued)	194	Min CW
		195–254	Min CW ... max CW
		255	Max CW
8	Frost 2		Same as CH 2 in the mode “28 DMX” (p. 12)
9	Gobo 2	0–7	Gobo 2: Open
		8–15	Gobo 1
		16–23	Gobo 2
		24–31	Gobo 3
		32–39	Gobo 4
		40–47	Gobo 5
		48–55	Gobo 6
		56–63	Gobo 7
		64	Max CCW
		65–93	Max CCW ... min CCW
		94	Min CCW
		95–98	Stop
		99	Min CW
		100–128	Min CW ... max CW
		129	Max CW
		130–147	Gobo1 Shake
		148–165	Gobo 2 Shake
		166–183	Gobo3 Shake
		184–201	Gobo4 Shake
		202–219	Gobo5 Shake
		220–237	Gobo6 Shake
		238–255	Gobo7 Shake
10	Gobo 2 Rotation Speed		Same as CH 8 in the mode “28 DMX” (p. 13)
11	Gobo 2 Rotation Speed Fine	0–255	Fine adjustment of CH 10
12	Gobo		Same as CH 6 in the mode “28 DMX” (p. 12)
13	Prism		Same as CH 10 in the mode “28 DMX” (p. 14)
14	Prism Rotation Speed		Same as CH 11 in the mode “28 DMX” (p. 14)
15	Prism 2 Rotation Speed	0	Prism 2 Index: Open
		1–127	Prism 2 Index
		128	Max CCW
		129–189	Max CCW ... min CCW
		190	Min CCW
		191–192	Stop
		193	Min CW
		194–254	Min CW ... max CW
		255	Max CW
16	Zoom		Same as CH 13 in the mode “28 DMX” (p. 14)
17	Focus	0–255	

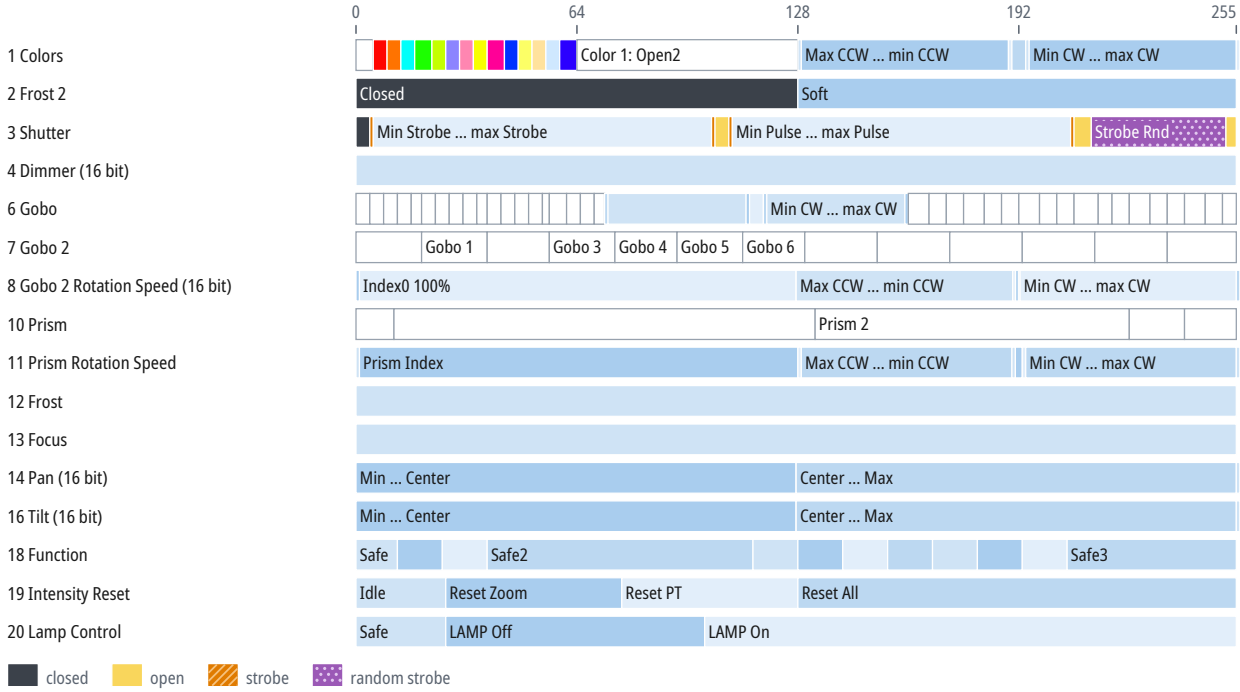
CH	Function	DMX	Description
18	Frost	0–255	
19	Focus Mode		Same as CH 16 in the mode “28 DMX” (p. 14)
20	Shutter		Same as CH 3 in the mode “28 DMX” (p. 12)
21	Dimmer	0–255	

Mode 20 DMX

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 3 Shutter at 104–107 “Open” or 208–212 or 252–255; CH 4 Dimmer above 0. The GDTF file gives these values for a console's Highlight function: CH 3 Shutter 105, CH 4 Dimmer 255.

Channel functions at a glance



CH	Function	DMX	Description
1	Colors		Same as CH 1 in the mode “28 DMX” (p. 11)
2	Frost 2		Same as CH 2 in the mode “28 DMX” (p. 12)
3	Shutter		Same as CH 3 in the mode “28 DMX” (p. 12)
4	Dimmer	0–255	
5	Dimmer Fine	0–255	Fine adjustment of CH 4
6	Gobo		Same as CH 6 in the mode “28 DMX” (p. 12)
7	Gobo 2		Same as CH 7 in the mode “28 DMX” (p. 13)
8	Gobo 2 Rotation Speed		Same as CH 8 in the mode “28 DMX” (p. 13)
9	Gobo 2 Rotation Speed Fine	0–255	Fine adjustment of CH 8
10	Prism		Same as CH 10 in the mode “28 DMX” (p. 14)
11	Prism Rotation Speed		Same as CH 11 in the mode “28 DMX” (p. 14)
12	Frost	0–255	
13	Focus	0–255	

CH	Function	DMX	Description
14	Pan		Same as CH 17 in the mode “28 DMX” (p. 14)
15	Pan Fine	0–255	Fine adjustment of CH 14
16	Tilt		Same as CH 19 in the mode “28 DMX” (p. 14)
17	Tilt Fine	0–255	Fine adjustment of CH 16
18	Function		Same as CH 21 in the mode “28 DMX” (p. 14)
19	Intensity Reset		Same as CH 22 in the mode “28 DMX” (p. 15)
20	Lamp Control		Same as CH 23 in the mode “28 DMX” (p. 15)

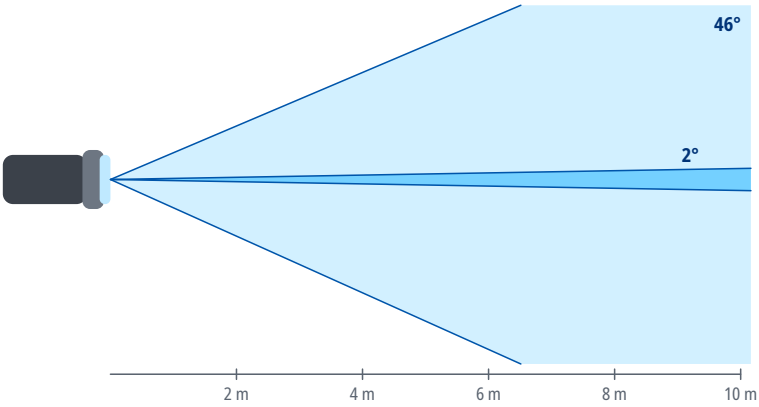
10 Technical specifications

Parameter	Value
Light	
Light source	LED
LED power	470 W
Luminous flux	5,000 lm
Color temperature	6,000 K
Color rendering index (CRI)	95
Optics	
Zoom	2–46°
Movement	
Pan	540°
Tilt	270°
Dimensions and construction	
Weight	28.5 kg
Operating environment	
Operating temperature	0 to 40 °C

Speeds and ranges

Parameter	Value
Strobe frequency	0.9–12 Hz
Color wheel rotation	up to 120 °/s (20 rpm)
Gobo wheel 1 rotation	up to 220 °/s (37 rpm)
Gobo wheel 2 rotation	up to 360 °/s (60 rpm)
Gobo 2 rotation	up to 380 °/s (63 rpm)
Prism 1 rotation	up to 280 °/s (47 rpm)
Prism 1 rotation	up to 280 °/s (47 rpm)

Spot diameter



Distance	Ø 2°	Ø 46°
2 m	0.07 m	1.7 m
4 m	0.14 m	3.4 m
6 m	0.21 m	5.1 m
8 m	0.28 m	6.8 m
10 m	0.35 m	8.5 m
15 m	0.52 m	12.7 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.
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.