DMX REFERENCE

Aml 560

User Test



Manufacturer	User Test
GDTF file	User_Test_Aml_560_106035.gdtf
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1 About this manual

This document describes the Aml 560 by User Test. It was compiled from the GDTF file User_Test_Aml_560_106035.gdtf from the GDTF-Share library.

File revision: “final”.

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 User Test; 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	19.5 kg

DMX modes

Mode	Channels	Units in one universe	First start addresses
Mode 5 27 DMX	29	17	1, 30, 59, 88, ...

No light? Check these channels

- Mode 5 27 DMX: CH 9 Dimmer 1 above 0; CH 10 Shutter at 0–5 “open”; CH 16 Dimmer 2 above 0; CH 19 Dimmer 3 above 0; CH 20 Strobe Effect at 0–5 “No Effect”; CH 26 Dimmer 4 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.

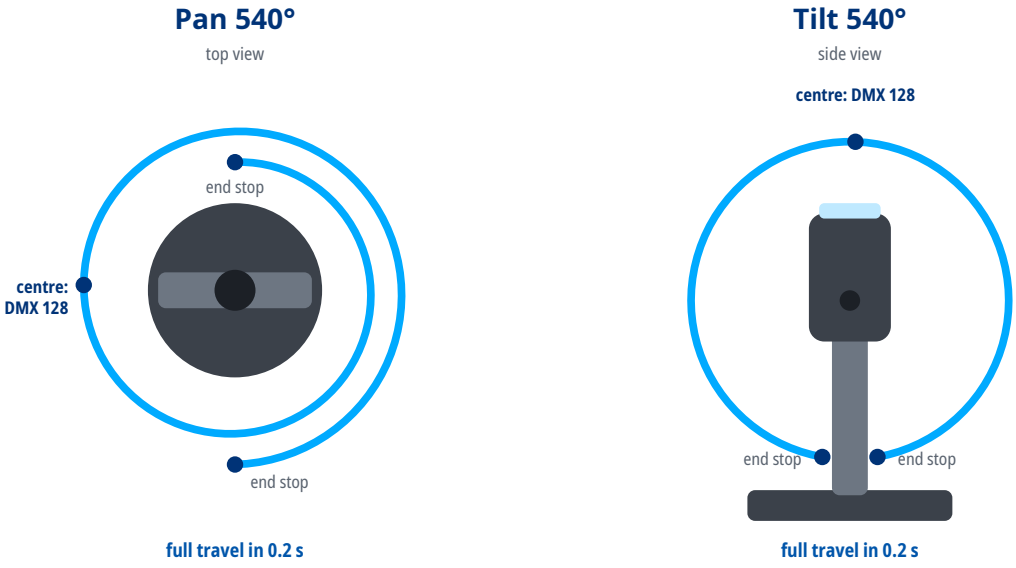
⚠ CAUTION

- 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



Full-travel times as stated in the GDTF file.

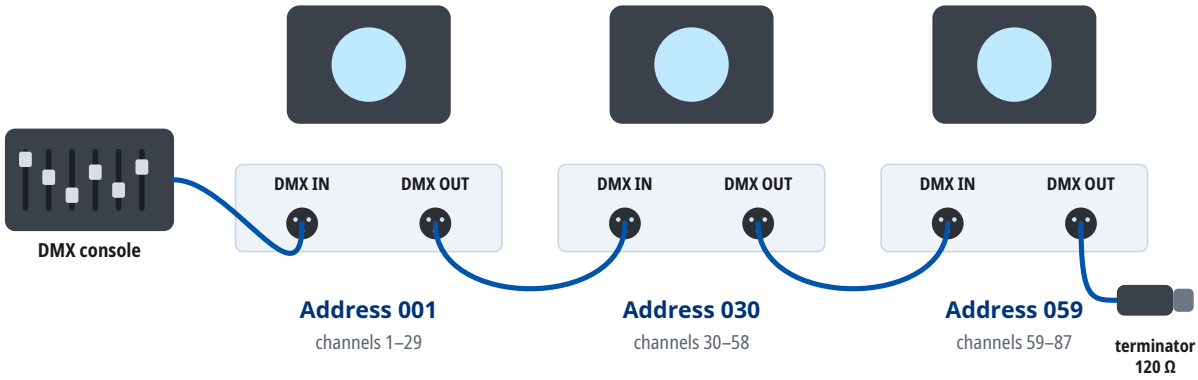
5 Installation

> ⚠ **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.
> - Weight of the device: 19.5 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 5 27 DMX: every unit occupies 29 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 “Mode 5 27 DMX”: 29.
- 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 “Mode 5 27 DMX”, you can use, for example, the start addresses 1, 30, 59, 88.
- 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

	Mode 5 27 DMX 29 channels
Pan / Tilt	1, 3, 7, 8
Dimmer	4 channels (9–26)
Shutter / strobe	10, 20
Color mixing	11–14, 21–24
Color wheel	15, 25
Zoom	6
Effects / macros	17, 18, 27, 28
Pixel control	✓

Color wheel

1 Open DMX 0–9	2 Color 1 DMX 10–14	3 Color 2 DMX 15–19	4 Color 3 DMX 20–24	5 Color 4 DMX 25–29	6 Color 5 DMX 30–34
7 Color 6 DMX 35–39	8 Color 7 DMX 40–44	9 Color 8 DMX 45–49	10 Color 9 DMX 50–54	11 Color 10 DMX 55–59	12 Color 11 DMX 60–64
13 Color 12 DMX 65–69	14 Color 13 DMX 70–74	15 Color 14 DMX 75–79	16 Color 15 DMX 80–84	17 Color 16 DMX 85–89	18 Color 17 DMX 90–94
19 Color 18 DMX 95–99	20 Color 19 DMX 100–104	21 Color 20 DMX 105–109	22 Color 21 DMX 110–114	23 Color 22 DMX 115–119	24 Color 23 DMX 120–124

25 Color 24
DMX 125–129

26 Color 25
DMX 130–134

27 Color 26
DMX 135–139

28 Color 27
DMX 140–144

29 Color 28
DMX 145–149

30 Color 29
DMX 150–154

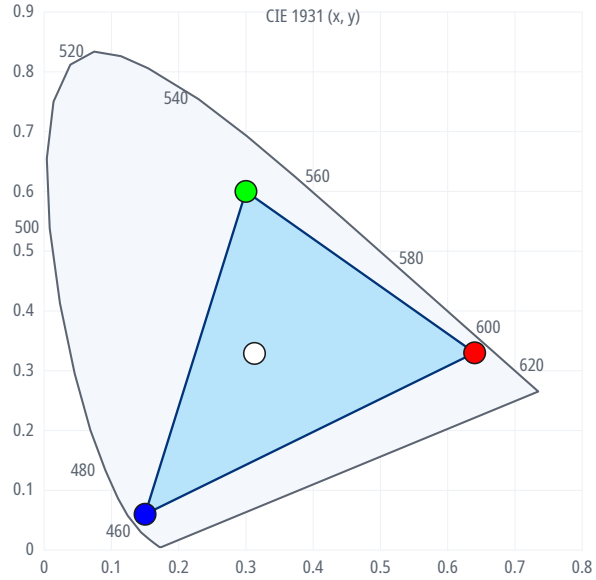
31 Color 30
DMX 155–159

32 Color 31
DMX 160–164

33 Color 32
DMX 165–169

34 Color 33
DMX 170–174

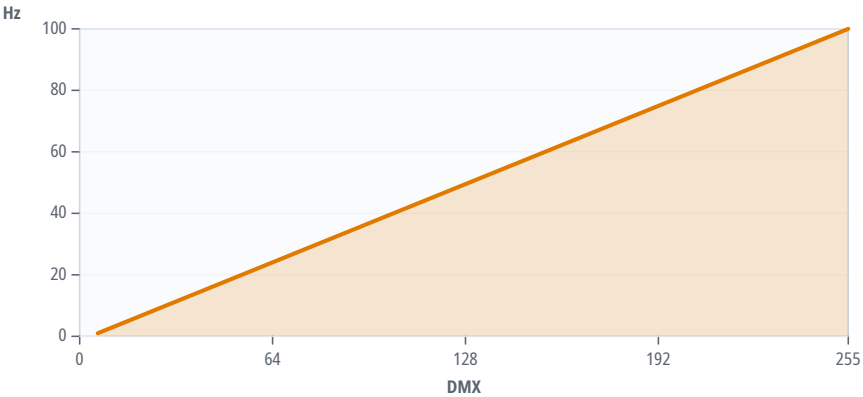
LED colors and the colors they mix



LED	x	y
Red	0.640	0.330
Green	0.300	0.600
Blue	0.150	0.060
White	0.313	0.329

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

Strobe rate



CH 10 · Mode 5 27 DMX

6–255: 1–100 Hz

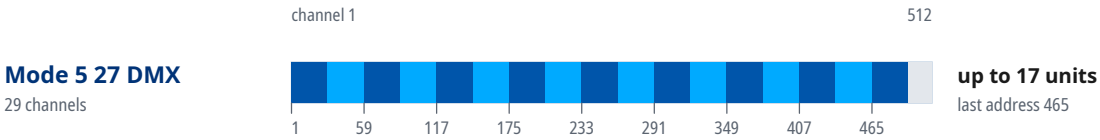
Cells (pixels)



5 cells where the GDTF file places them (seen from above), numbered in the file's order; the mode “Mode 5 27 DMX” drives them together.

9 DMX channels

Units in one DMX universe



Start addresses of 20 units in the mode “Mode 5 27 DMX”

Unit	Start address	Unit	Start address	Unit	Start address	Unit	Start address
1	1	6	146	11	291	16	436
2	30	7	175	12	320	17	465
3	59	8	204	13	349	18	U2 · 1
4	88	9	233	14	378	19	U2 · 30
5	117	10	262	15	407	20	U2 · 59

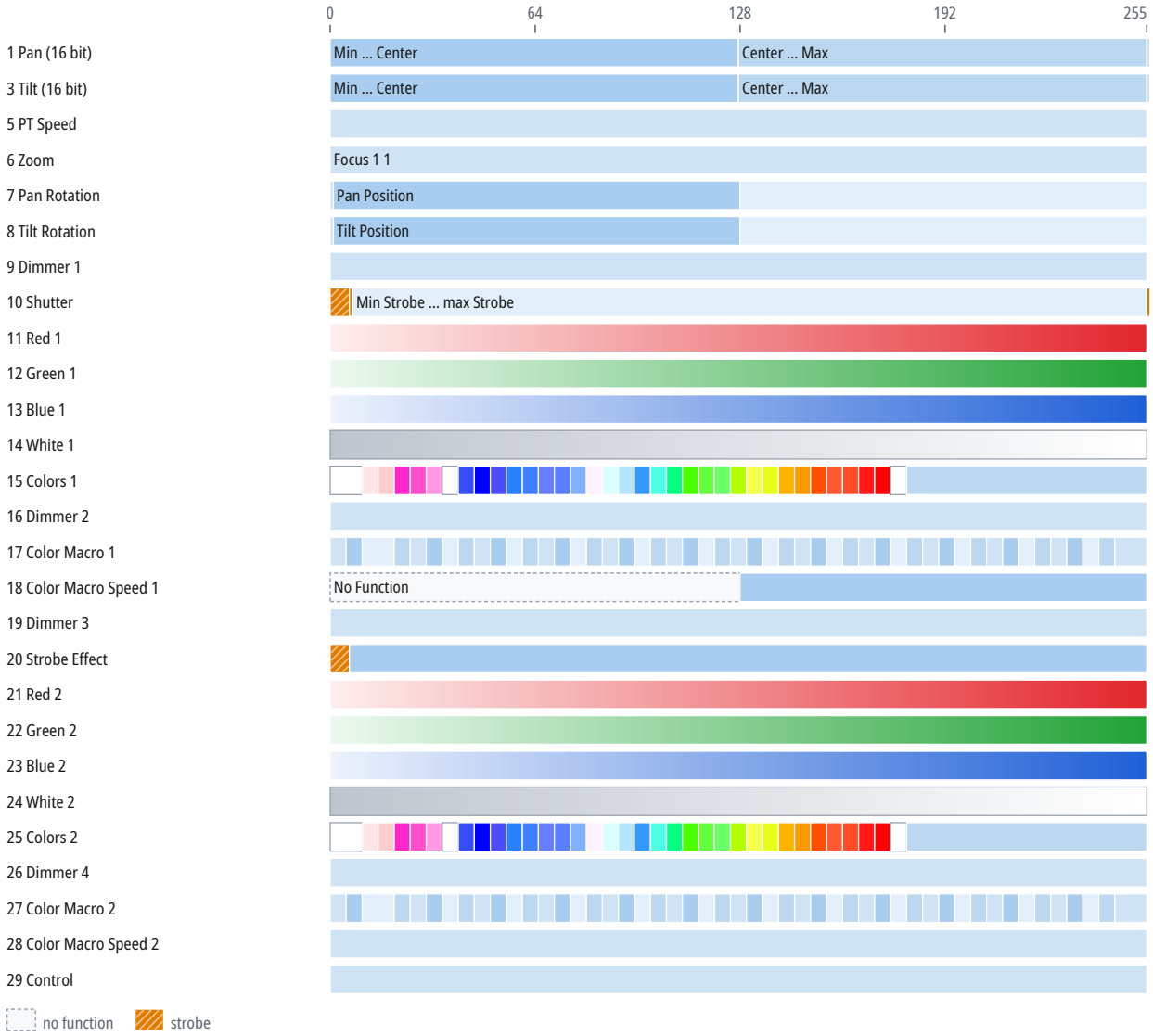
Where a DMX universe is full, the next units continue in the next universe: “U2 · 1” is address 1 in the second universe, counted from the universe of the first unit.

Mode 5 27 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 9 Dimmer 1 above 0; CH 10 Shutter at 0–5 “open”; CH 16 Dimmer 2 above 0; CH 19 Dimmer 3 above 0; CH 20 Strobe Effect at 0–5 “No Effect”; CH 26 Dimmer 4 above 0. The GDTF file gives these values for a console's Highlight function: CH 9 Dimmer 1 255, CH 11 Red 1 255, CH 12 Green 1 255, CH 13 Blue 1 255, CH 14 White 1 0, CH 16 Dimmer 2 255, CH 17 Color Macro 1 0, CH 18 Color Macro Speed 1 0, CH 20 Strobe Effect 0, CH 27 Color Macro 2 0.

Channel functions at a glance



CH	Function	DMX	Description
1	Pan	0–127	Min ... Center
		127	Center
		128–255	Center ... Max
		255	Max
2	Pan Fine	0–255	Fine adjustment of CH 1
3	Tilt	0–127	Min ... Center

CH	Function	DMX	Description
3	Tilt (continued)	128–255	Center … Max
		255	Max
4	Tilt Fine	0–255	Fine adjustment of CH 3
5	PT Speed	0–255	
6	Zoom		Focus 1 1
		0–255	Focus 1 1 (26–4°)
7	Pan Rotation		Pan Position
		0	Open
		1–255	Pan Position
8	Tilt Rotation		Tilt Position
		0	Open
		1–255	Tilt Position
9	Dimmer 1	0–255	
10	Shutter	0–5	Shutter 1: open
		6	Min Strobe
		7–254	Min Strobe … max Strobe
		255	Max Strobe
11	Red 1	0–255	
12	Green 1	0–255	
13	Blue 1	0–255	
14	White 1	0–255	
15	Colors 1	0–9	Open
		10–14	Color 1
		15–19	Color 2
		20–24	Color 3
		25–29	Color 4
		30–34	Color 5
		35–39	Color 6
		40–44	Color 7
		45–49	Color 8
		50–54	Color 9
		55–59	Color 10
		60–64	Color 11
		65–69	Color 12
		70–74	Color 13
		75–79	Color 14
		80–84	Color 15
		85–89	Color 16
		90–94	Color 17
		95–99	Color 18
		100–104	Color 19
		105–109	Color 20

CH	Function	DMX	Description
15	Colors 1 (continued)	110–114	Color 21
		115–119	Color 22
		120–124	Color 23
		125–129	Color 24
		130–134	Color 25
		135–139	Color 26
		140–144	Color 27
		145–149	Color 28
		150–154	Color 29
		155–159	Color 30
		160–164	Color 31
		165–169	Color 32
		170–174	Color 33
		175–179	Open
		180–255	Color 1 1
16	Dimmer 2	0–255	
17	Color Macro 1		Macro 1
		0–4	Open
		5–9	Macro 1
		10–19	Macro 2
		20–24	Macro 3
		25–29	Macro 4
		30–34	Macro 5
		35–39	Macro 6
		40–44	Macro 7
		45–49	Macro 8
		50–54	Macro 9
		55–59	Macro 10
		60–64	Macro 11
		65–69	Macro 12
		70–74	Macro 13
		75–79	Macro 14
		80–84	Macro 15
		85–89	Macro 16
		90–94	Macro 17
		95–99	Macro 18
		100–104	Macro 19
		105–109	Macro 20
		110–114	Macro 21
		115–119	Macro 22
		120–124	Macro 23
		125–129	Macro 24

CH	Function	DMX	Description
17	Color Macro 1 (continued)	130–134	Macro 25
		135–139	Macro 26
		140–144	Macro 27
		145–149	Macro 28
		150–154	Macro 29
		155–159	Macro 30
		160–164	Macro 31
		165–169	Macro 32
		170–174	Macro 33
		175–179	Macro 34
		180–184	Macro 35
		185–189	Macro 36
		190–194	Macro 37
		195–199	Macro 38
		200–204	Macro 39
		205–209	Macro 40
		210–214	Macro 41
		215–219	Macro 42
		220–224	Macro 43
		225–229	Macro 44
		230–234	Macro 45
		235–239	Rnd Single
		240–244	Rnd Double
		245–255	Open 2
18	Color Macro Speed 1		No Function
		0–255	No Function
19	Dimmer 3	0–255	
20	Strobe Effect	0–5	No Effect
		6–255	Shutter 1 Strobe Effect 1
21	Red 2	0–255	
22	Green 2	0–255	
23	Blue 2	0–255	
24	White 2	0–255	
25	Colors 2	0–9	Open
		10–14	Color 1
		15–19	Color 2
		20–24	Color 3
		25–29	Color 4
		30–34	Color 5
		35–39	Color 6
		40–44	Color 7
		45–49	Color 8

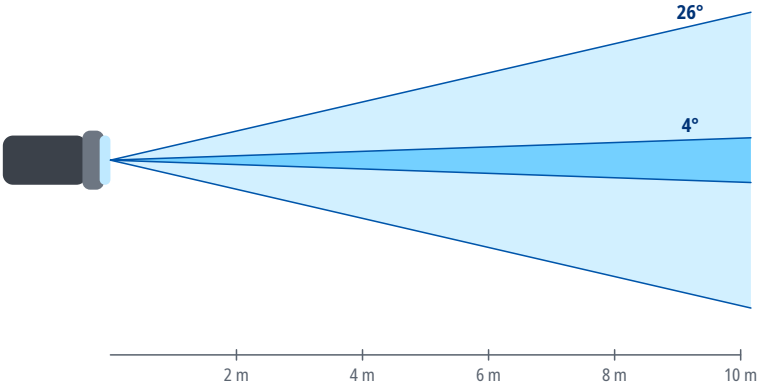
CH	Function	DMX	Description
25	Colors 2 (continued)	50–54	Color 9
		55–59	Color 10
		60–64	Color 11
		65–69	Color 12
		70–74	Color 13
		75–79	Color 14
		80–84	Color 15
		85–89	Color 16
		90–94	Color 17
		95–99	Color 18
		100–104	Color 19
		105–109	Color 20
		110–114	Color 21
		115–119	Color 22
		120–124	Color 23
		125–129	Color 24
		130–134	Color 25
		135–139	Color 26
		140–144	Color 27
		145–149	Color 28
		150–154	Color 29
		155–159	Color 30
		160–164	Color 31
		165–169	Color 32
		170–174	Color 33
		175–179	Open
		180–255	Color 1 1
26	Dimmer 4	0–255	
27	Color Macro 2		Macro 1
		0–4	Open
		5–9	Macro 1
		10–19	Macro 2
		20–24	Macro 3
		25–29	Macro 4
		30–34	Macro 5
		35–39	Macro 6
		40–44	Macro 7
		45–49	Macro 8
		50–54	Macro 9
		55–59	Macro 10
		60–64	Macro 11
		65–69	Macro 12

CH	Function	DMX	Description
27	Color Macro 2 (continued)	70–74	Macro 13
		75–79	Macro 14
		80–84	Macro 15
		85–89	Macro 16
		90–94	Macro 17
		95–99	Macro 18
		100–104	Macro 19
		105–109	Macro 20
		110–114	Macro 21
		115–119	Macro 22
		120–124	Macro 23
		125–129	Macro 24
		130–134	Macro 25
		135–139	Macro 26
		140–144	Macro 27
		145–149	Macro 28
		150–154	Macro 29
		155–159	Macro 30
		160–164	Macro 31
		165–169	Macro 32
		170–174	Macro 33
		175–179	Macro 34
		180–184	Macro 35
		185–189	Macro 36
		190–194	Macro 37
		195–199	Macro 38
		200–204	Macro 39
		205–209	Macro 40
		210–214	Macro 41
		215–219	Macro 42
		220–224	Macro 43
		225–229	Macro 44
		230–234	Macro 45
		235–239	Rnd Single
		240–244	Rnd Double
		245–255	Open 2
28	Color Macro Speed 2	0–255	
29	Control	0–255	

10 Technical specifications

Parameter	Value
Zoom	4–26°
Pan	540°
Tilt	540°
Weight	19.5 kg
Operating temperature	0 to 40 °C

Spot diameter



Distance	Ø 4°	Ø 26°
2 m	0.14 m	0.92 m
4 m	0.28 m	1.8 m
6 m	0.42 m	2.8 m
8 m	0.56 m	3.7 m
10 m	0.7 m	4.6 m
15 m	1 m	6.9 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.