DMX REFERENCE

Diamond Line MA3-Visualize

Meanreal Diamond Line MA3-Visualize

Meanreal



Manufacturer	Meanreal
GDTF file	Meanreal_Diamond_Line_MA3-Visualize_79508.gdtf
GDTF revision	V024 · 2024-11-27
Generated	2026-11-24

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1 About this manual

This document describes the Meanreal Diamond Line MA3-Visualize by Meanreal. It was compiled from the GDTF file Meanreal_Diamond_Line_MA3-Visualize_79508.gdtf from the GDTF-Share library.

File revision: “V024”.

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 Meanreal; 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
Power consumption	600 W
Weight	18 kg

DMX modes

Mode	Channels	Units in one universe	First start addresses
71 channel	71	7	1, 72, 143, 214, ...

No light? Check these channels

- 71 channel: CH 5 Dimmer 1 above 0; CH 6 Shutter at 0–9 “Open”; CH 15 Shutter 2 at 0–9 “Open”; CH 16 Dimmer 2 above 0; CH 17 Dimmer 3 above 0; CH 18 Dimmer 4 above 0; CH 19 Dimmer 5 above 0


Read the manual before use


Risk of electric shock


Do not stare into the light


Indoor use only

3 Safety instructions


Read the manual before use


Risk of electric shock


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

- Connect the device only to a properly installed mains outlet with a protective earth (ground) contact. The outlet or other means of disconnection must remain easily accessible.
- Power supply: 100–240 V, 50/60 Hz. Before connecting, make sure that the mains voltage matches this value and the value on the rating plate of the device.
- Do not connect the device to a dimmer or to a dimmed circuit.
- Use only the original power cable or a cable with identical ratings. Protect the cable from damage, do not run it over sharp edges, and never unplug it by pulling on the cable.
- When connecting several devices to one circuit, do not exceed its permitted load.
- Do not touch the device with wet hands.

⚠ 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.

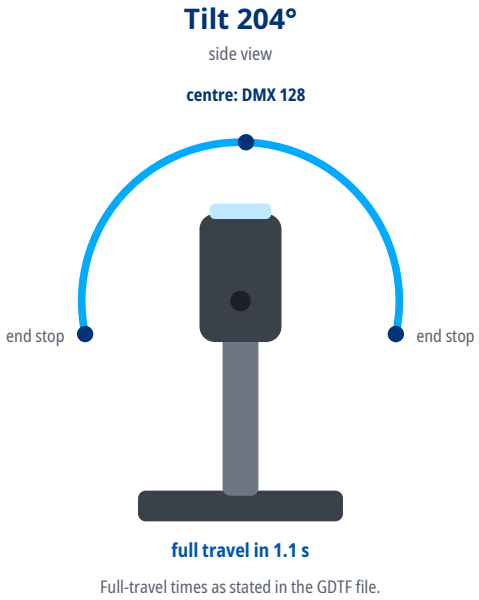
> ⚠ **WARNING**
>
> - The moving parts of the device (for example the head or arms) can move quickly and unexpectedly at any time – after power-on, during a reset, or on a command from the controller.
> - Keep yourself and any objects out of the range of movement. While the device is switched on, do 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

“Diamond Line RGB Led bar with zoom. For MA3 Visualizer.”

Range of movement



Full-travel times as stated in the GDTF file.

5 Installation

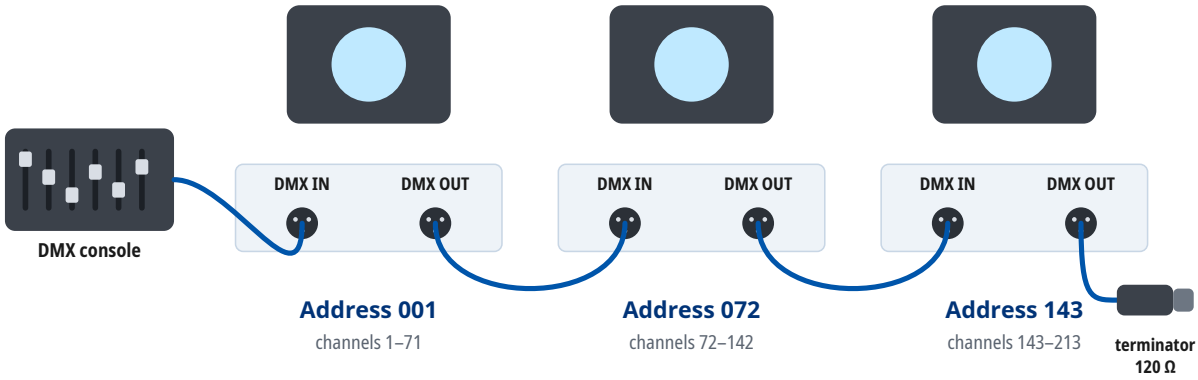
⚠ **WARNING**

- 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: 18 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 71 channel: every unit occupies 71 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

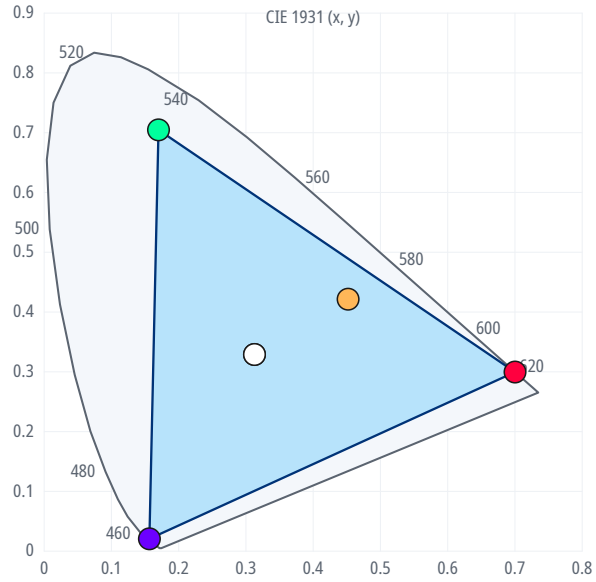
- The device occupies as many consecutive channels in the DMX universe as the selected DMX mode uses, starting at the set start address.
- Number of channels occupied in the DMX mode “71 channel”: 71.
- Choose start addresses so that the channels of individual devices do not overlap and the last occupied 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 “71 channel”, you can use, for example, the start addresses 1, 72, 143, 214.
- 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

	71 channel 71 channels
Pan / Tilt	1
Dimmer	5, 16–19
Shutter / strobe	6, 15
Color mixing	7–10, 24–71
Zoom	4
Effects / macros	5 channels (11–22)
Pixel control	12 cells

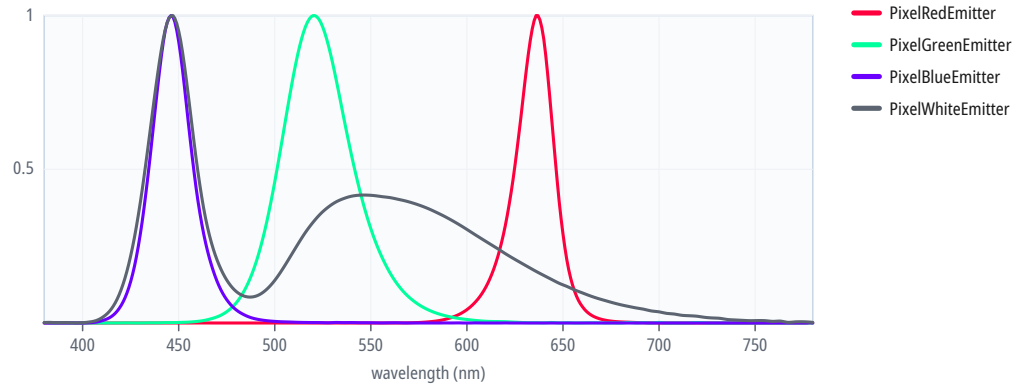
LED colors and the colors they mix



LED	x	y	nm
PixelRedEmitter	0.700	0.300	625
PixelGreenEmitter	0.170	0.705	525
PixelBlueEmitter	0.156	0.021	451
PixelWhiteEmitter	0.313	0.329	
StripGoldEmmiter	0.452	0.421	
StripWhiteEmmiter	0.313	0.329	

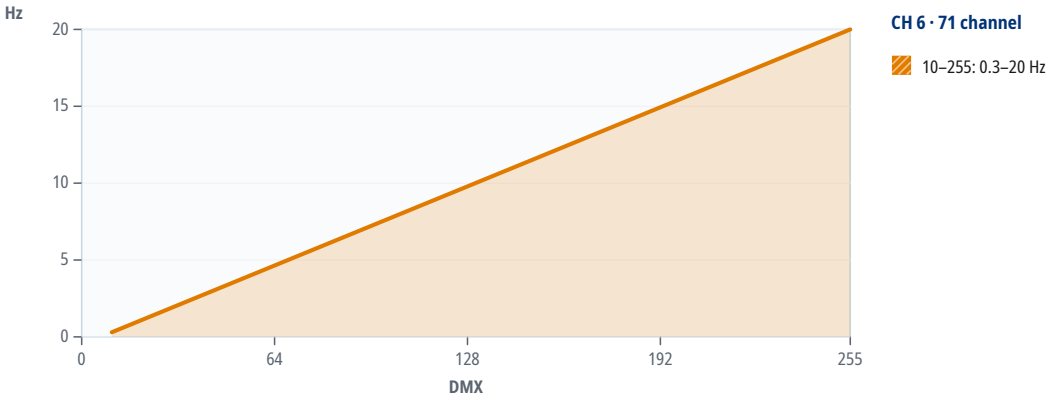
The shaded area holds the colors the LEDs can mix; the dots are the LED colors the GDTF file states.

Spectra of the light sources



Relative spectrum of each light source as the GDTF file states it; each curve is scaled to its own maximum.

Strobe rate



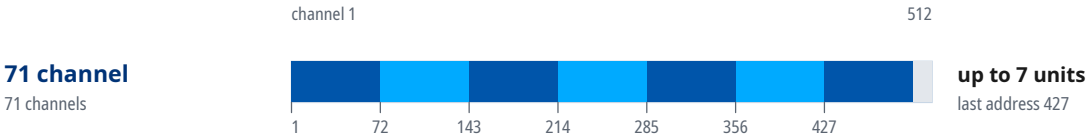
Cells (pixels)



12 cells where the GDTF file places them (seen from above), numbered by their first DMX channel (CH) in the mode “71 channel”.

9 DMX channels

Units in one DMX universe



Start addresses of 20 units in the mode “71 channel”

Unit	Start address	Unit	Start address	Unit	Start address	Unit	Start address
1	1	6	356	11	U2 · 214	16	U3 · 72
2	72	7	427	12	U2 · 285	17	U3 · 143
3	143	8	U2 · 1	13	U2 · 356	18	U3 · 214
4	214	9	U2 · 72	14	U2 · 427	19	U3 · 285
5	285	10	U2 · 143	15	U3 · 1	20	U3 · 356

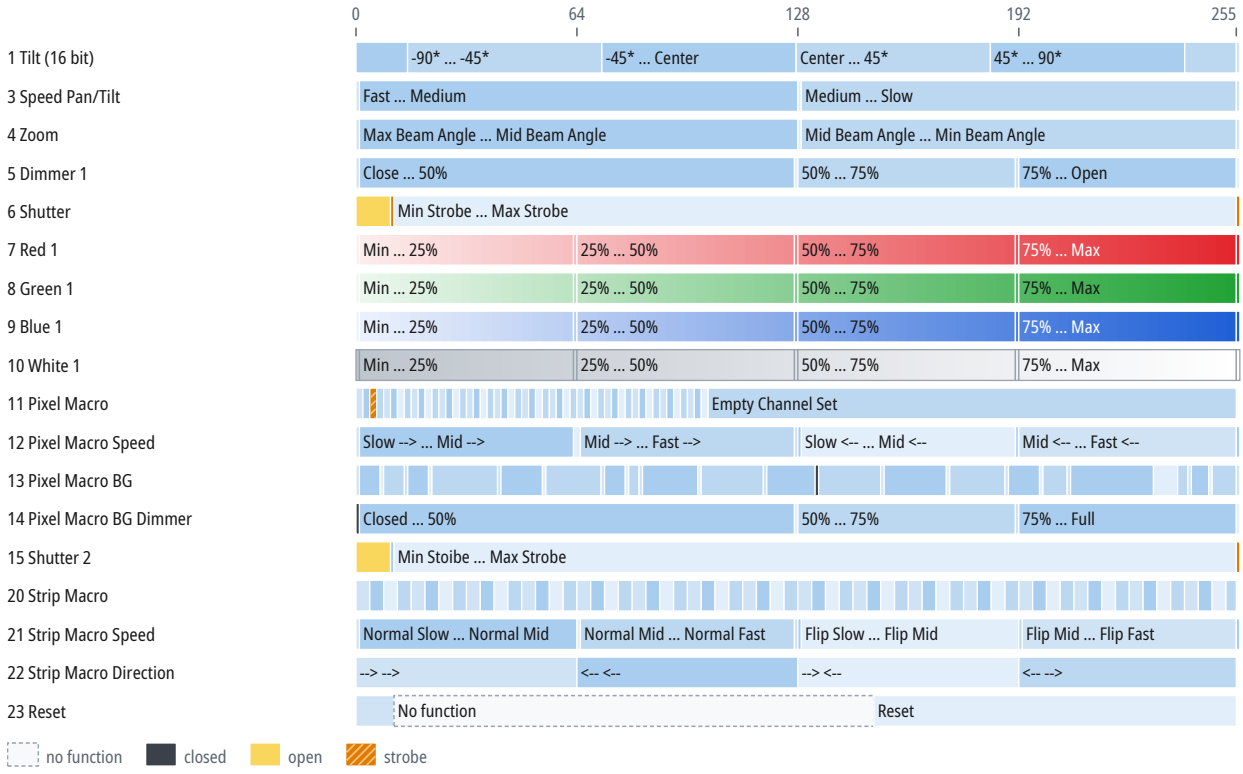
Where a DMX universe is full, the next units continue in the next universe: “U2 · 1” is address 1 in the second universe, counted from the universe of the first unit.

Mode 71 channel

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 5 Dimmer 1 above 0; CH 6 Shutter at 0–9 “Open”; CH 15 Shutter 2 at 0–9 “Open”; CH 16 Dimmer 2 above 0; CH 17 Dimmer 3 above 0; CH 18 Dimmer 4 above 0; CH 19 Dimmer 5 above 0. The GDTF file gives these values for a console's Highlight function: CH 5 Dimmer 1 255, CH 10 White 1 255, CH 27 White 255 (the same in each of the 12 cells).

Channel functions at a glance



CH	Function	DMX	Description
1	Tilt	0–14	Min ... -90*
		14	-90*
		15–71	-90* ... -45*
		71–127	-45* ... Center
		128–184	Center ... 45*
		184–240	45* ... 90*
		241–255	90* ... Max
		255	Max
2	Tilt Fine	0–255	Fine adjustment of CH 1
3	Speed Pan/Tilt		Tilt Speed
		0	Fast
		1–127	Fast ... Medium
		128	Medium
		129–254	Medium ... Slow

CH	Function	DMX	Description
3	Speed Pan/Tilt (continued)	255	Slow
4	Zoom	0	Max Beam Angle
		1–127	Max Beam Angle … Mid Beam Angle
		128	Mid Beam Angle
		129–254	Mid Beam Angle … Min Beam Angle
		255	Min Beam Angle
5	Dimmer 1	0	Close
		1–126	Close … 50%
		127	50%
		128–190	50% … 75%
		191	75%
		192–254	75% … Open
		255	Open
6	Shutter	0–9	Open
		10	Min Strobe
		11–254	Min Strobe … Max Strobe
		255	Max Strobe
7	Red 1	0	Min
		1–62	Min … 25%
		63	25%
		64–126	25% … 50%
		127	50%
		128–190	50% … 75%
		191	75%
		192–254	75% … Max
		255	Max
8	Green 1	0	Min
		1–62	Min … 25%
		63	25%
		64–126	25% … 50%
		127	50%
		128–190	50% … 75%
		191	75%
		192–254	75% … Max
		255	Max
9	Blue 1	0	Min
		1–62	Min … 25%
		63	25%
		64–126	25% … 50%
		127	50%
		128–190	50% … 75%
		191	75%

CH	Function	DMX	Description
9	Blue 1 (continued)	192–254	75% ... Max
		255	Max
10	White 1	0	Min
		1–62	Min ... 25%
		63	25%
		64–126	25% ... 50%
		127	50%
		128–190	50% ... 75%
		191	75%
		192–254	75% ... Max
		255	Max
11	Pixel Macro	0–1	Empty Channel Set
		2–3	RGB Cycle
		4–5	RGB Pulse
		6–7	Colors Change
		8–9	R+Tetris
		10–15	R+2Tetris
		16–19	RGB+3Tetris
		20–23	R+RGB Bounce
		24–27	R+2RGB Bounce
		28–31	R+3RGB Bounce
		32–33	R+
		34–35	Empty Channel Set
		36–37	Pixel Macro
		38–255	Empty Channel Set
12	Pixel Macro Speed	0	Slow -->
		1–62	Slow --> ... Mid -->
		63–64	Mid -->
		65–126	Mid --> ... Fast -->
		127	Fast -->
		128	Slow <--
		129–190	Slow <-- ... Mid <--
		191	Mid <--
		192–254	Mid <-- ... Fast <--
		255	Fast <--
13	Pixel Macro BG	0	Red
		1–6	Red ... Cherry Red
		7	Cherry Red
		8–13	Cherry Red ... Hot Orange
		14	Hot Orange
		15–20	Hot Orange ... Orange
		21	Orange

CH	Function	DMX	Description
13	Pixel Macro BG (continued)	22–40	Orange ... Yellow
		41	Yellow
		42–53	Yellow ... Lime Green
		54	Lime Green
		55–70	Lime Green ... Green
		71	Green
		72–77	Green ... Aquamarine
		78	Aquamarine
		79–81	Aquamarine ... Cyan
		82	Cyan
		83–98	Cyan ... Light Blue
		99	Light Blue
		100–117	Light Blue ... Blue
		118	Blue
		119–132	Blue ... Dark Blue
		133	Dark Blue
		134–151	Dark Blue ... Indigo
		152	Indigo
		153–170	Indigo ... Violet
		171	Violet
		172–187	Violet ... Cold White
		188	Cold White
		189–197	Cold White ... White
		198	White
		199–205	White ... Warm White
		206	Warm White
		207–230	Warm White ... Light Pink
		231–237	Light Pink
		238–240	Light Pink ... Pink
		241	Pink
		242–246	Pink ... Raspberry Pink
		247	Raspberry Pink
		248–254	Raspberry Pink ... Red
		255	Red
14	Pixel Macro BG Dimmer	0	Closed
		1–126	Closed ... 50%
		127	50%
		128–190	50% ... 75%
		191	75%
		192–254	75% ... Full
		255	Full
15	Shutter 2	0–9	Strip Shutter: Open

CH	Function	DMX	Description
15	Shutter 2 (continued)	10	Min Stoibe
		11–254	Min Stoibe ... Max Strobe
		255	Max Strobe
16	Dimmer 2		Gold Dimmer
		0	Closed
		1–254	Closed ... Open
		255	Open
17	Dimmer 3		White Dimmer
		0	Closed
		1–254	Closed ... Open
		255	Open
18	Dimmer 4		Gold Dimmer
		0	Closed
		1–254	Closed ... Open
		255	Open
19	Dimmer 5		White Dimmer
		0	Closed
		1–254	Closed ... Open
		255	Open
20	Strip Macro	0–3	Open
		4–7	Pattern 1:1
		8–11	Pattern 1:2
		12–15	Pattern 1:3
		16–19	Pattern 1:4
		20–23	Pattern 2:1
		24–27	Pattern 2:2
		28–31	Pattern 2:3
		32–35	Pattern 2:4
		36–39	Pattern 3:1
		40–43	Pattern 3:2
		44–47	Pattern 3:3
		48–51	Pattern 4:1
		52–55	Pattern 4:2
		56–59	Pattern 4:3
		60–63	Pattern 5:1
		64–67	Pattern 5:2
		68–71	Pattern 5:3
		72–75	Pattern 6:1
		76–79	Pattern 6:2
		80–83	Pattern 7:1
		84–87	Pattern 7:2
		88–91	Pattern 8:1

CH	Function	DMX	Description
20	Strip Macro (continued)	92–95	Pattern 8:2
		96–99	Pattern 9
		100–103	Pattern 10
		104–107	Pattern 11
		108–111	Pattern 12
		112–115	Pattern 13:1
		116–119	Pattern 13:2
		120–123	Pattern 14
		124–127	Pattern 15
		128–131	Pattern 16
		132–135	Pattern 17
		136–139	Pattern 18
		140–143	Pattern 19:1
		144–147	Pattern 19:2
		148–151	Pattern 19:3
		152–155	Pattern 20:1
		156–159	Pattern 20:2
		160–163	Pattern 20:3
		164–167	Pattern 21:1
		168–171	Pattern 21:2
		172–175	Pattern 22
		176–179	Pattern 23:1
		180–183	Pattern 23:2
		184–187	Pattern 23:3
		188–191	Pattern 23:4
		192–195	Pattern 24:1
		196–199	Pattern 24:2
		200–203	Pattern 24:3
		204–207	Pattern 25:1
		208–211	Pattern 25:2
		212–215	Pattern 25:3
		216–219	Pattern 26:1
		220–223	Pattern 26:2
		224–227	Pattern 26:3
		228–231	Pattern 26:4
		232–235	Pattern 27:1
		236–239	Pattern 27:2
		240–243	Pattern 28:1
		244–247	Pattern 28:2
		248–251	Pattern 29
		252–255	Pattern 30
21	Strip Macro Speed	0	Normal Slow

CH	Function	DMX	Description
21	Strip Macro Speed (continued)	1–63	Normal Slow ... Normal Mid
		64	Normal Mid
		65–126	Normal Mid ... Normal Fast
		127	Normal Fast
		128	Flip Slow
		129–191	Flip Slow ... Flip Mid
		192	Flip Mid
		193–254	Flip Mid ... Flip Fast
		255	Flip Fast
22	Strip Macro Direction	0–63	--> -->
		64–127	<-- <--
		128–191	--> <--
		192–255	<-- -->
23	Reset	0–10	Default
		11–149	No function
		150–255	Reset
24	Red 2		Pixel Red
		0	Min
		1–63	Min ... 25%
		64	25%
		65–127	25% ... 50%
		128	50%
		129–190	50% ... 75%
		191	75%
		192–254	75% ... Max
		255	Max
25	Green 2		Pixel Green
		0	Min
		1–63	Min ... 25%
		64	25%
		65–127	25% ... 50%
		128	50%
		129–190	50% ... 75%
		191	75%
		192–254	75% ... Max
		255	Max
26	Blue 2		Pixel Blue
		0	Min
		1–63	Min ... 25%
		64	25%
		65–127	25% ... 50%
		128	50%

CH	Function	DMX	Description
26	Blue 2 (continued)	129–190	50% … 75%
		191	75%
		192–254	75% … Max
		255	Max
27	White 2		Pixel White
		0	Min
		1–63	Min … 25%
		64	25%
		65–127	25% … 50%
		128	50%
		129–190	50% … 75%
		191	75%
		192–254	75% … Max
		255	Max

CH 24–71: 12 cells of 4 channels each. Every cell works as cell 1 in the table above (CH 24–27); the table below gives each cell's channel numbers.

Cell	Red	Green	Blue	White	Cell	Red	Green	Blue	White
1	24	25	26	27	2	28	29	30	31
3	32	33	34	35	4	36	37	38	39
5	40	41	42	43	6	44	45	46	47
7	48	49	50	51	8	52	53	54	55
9	56	57	58	59	10	60	61	62	63
11	64	65	66	67	12	68	69	70	71

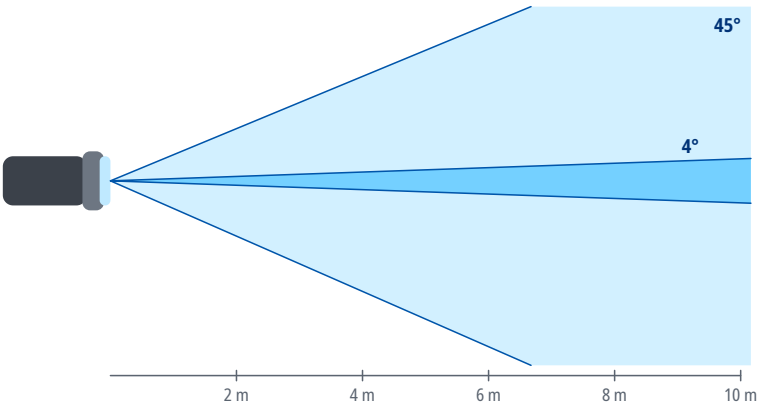
10 Technical specifications

Parameter	Value
Light	
Light source	LED
Optics	
Zoom	4–45°
Movement	
Tilt	204°
Control	
DMX connection	3-pin XLR IN/OUT
RJ45 connectors	RJ45 IN/OUT
Electrical	
Power supply	100–240 V, 50/60 Hz
Power consumption	600 W
Power connectors	NAC3FCB OUT, PowerConBlue IN
Dimensions and construction	
Weight	18 kg
Operating environment	
Operating temperature	0 to 40 °C

Speeds and ranges

Parameter	Value
Strobe frequency	0.3–20 Hz

Spot diameter



Distance	Ø 4°	Ø 45°
2 m	0.14 m	1.7 m
4 m	0.28 m	3.3 m
6 m	0.42 m	5 m
8 m	0.56 m	6.6 m
10 m	0.7 m	8.3 m
15 m	1 m	12.4 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.