DMX REFERENCE

Beam150 RGBA

PLS LEDBeam 150 RGBA

PLS



Manufacturer	PLS
GDTF file	PLS_Beam150_RGBA_91355.gdtf
GDTF revision	Rev-5, Uploaded to GDTF Share. · 2025-03-27
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1 About this manual

This document describes the PLS LEDBeam 150 RGBA by PLS. It was compiled from the GDTF file PLS_Beam150_RGBA_91355.gdtf from the GDTF-Share library.

File revision: “Rev-5, Uploaded to GDTF Share.”.

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 PLS; 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	220 W
Weight	5.7 kg

DMX modes

Mode	Channels	Units in one universe	First start addresses
Mode 2 - Standard 16-bit - 22ch	22	23	1, 23, 45, 67, ...
Mode 1 - Reduced 8-bit - 16ch	16	32	1, 17, 33, 49, ...

No light? Check these channels

- Mode 2 - Standard 16-bit - 22ch: CH 20 Shutter at 32–63, 96–127, 160–191 or 224–255 “Shutter open”; CH 21 Dimmer above 0
- Mode 1 - Reduced 8-bit - 16ch: CH 15 Shutter at 32–63, 96–127, 160–191 or 224–255 “Shutter open”; CH 16 Dimmer 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

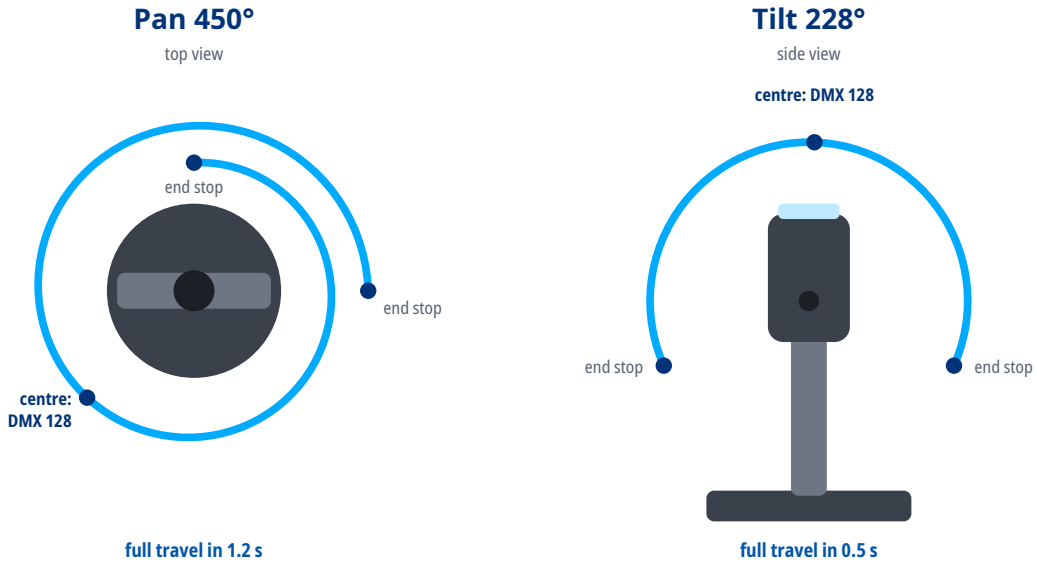
- The moving parts of the device (for example the head or arms) can move quickly and unexpectedly at any time – after power-on, during a reset, or on a command from the controller.
- Keep yourself and any objects out of the range of movement. While the device is switched on, do not touch the moving parts, 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

“Fast sweeping beams and a wide far-reaching quality wash in compact housing.”

Range of movement



Full-travel times as stated in the GDTF file.

5 Installation

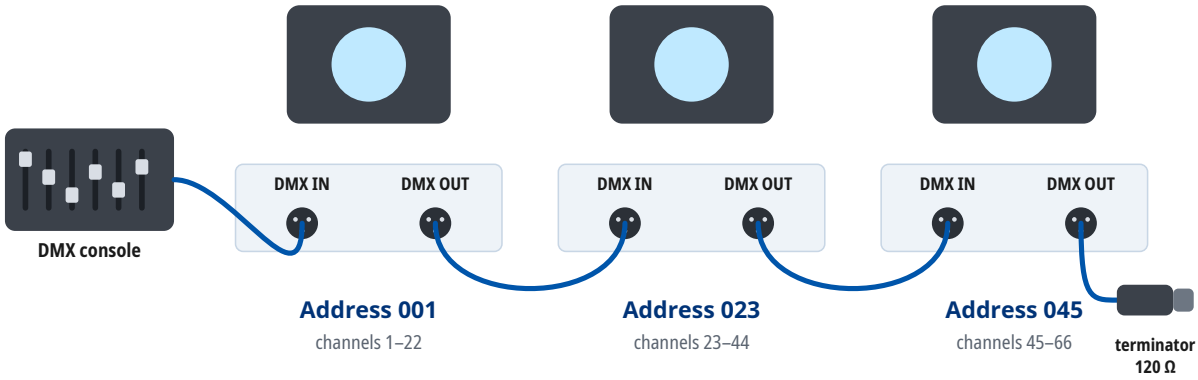
⚠ **WARNING**

- 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: 5.7 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 2 - Standard 16-bit - 22ch: every unit occupies 22 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 2 - Standard 16-bit - 22ch”: 22.
- 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 2 - Standard 16-bit - 22ch”, you can use, for example, the start addresses 1, 23, 45, 67.
- The DMX mode set on the device must match the fixture profile (personality) used in the controller.
- The device supports RDM (Remote Device Management), two-way communication with the controller over the DMX line.

8 Functions at a glance

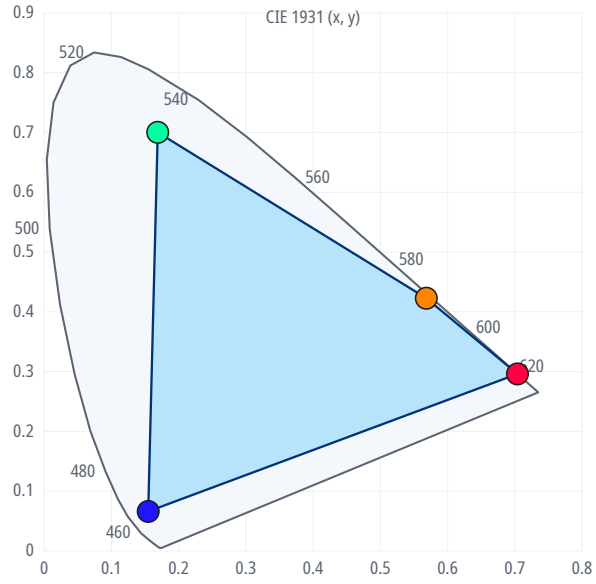
Functions in each DMX mode

	Mode 2 - Standard 16-bit - 22ch 22 channels	Mode 1 - Reduced 8-bit - 16ch 16 channels
Pan / Tilt	1, 3	1, 3
Dimmer	21	16
Dimmer resolution	16 bit	8 bit
Shutter / strobe	20	15
Color mixing	4× (8–14)	8–11
Color temperature	16	12
Color wheel	17	13
Zoom	18	14

Color wheel

1. Color: Open — DMX 0–9
2. Red L106 — DMX 10–19
3. Green L090 — DMX 20–29
4. Tokyo Blue L071 — DMX 30–39
5. Spring Yellow L100 — DMX 40–49
6. Magical Magenta L795 — DMX 50–59
7. Berry Blue L721 — DMX 60–69
8. Full CT Blue L201 — DMX 70–79
9. Cool LED Apricot CL147 — DMX 80–89
10. Summer Blue L140 — DMX 90–99
11. Violet/Regal Blue — DMX 100–109
12. 3200K CTO L626 — DMX 110–119
13. Provence L701 — DMX 120–129
14. Marine Blue L131 — DMX 130–139
15. Surprise Pink L194 — DMX 140–149
16. Lavender L058 — DMX 150–159
17. Fluorescent 4300K L242 — DMX 160–169
18. Moonlight Blue L183 — DMX 170–179
19. Cool LEDlightBlue L118 — DMX 180–189
20. Medium Lavender L343 — DMX 190–199
21. SCI to Tungsten L238 — DMX 200–210

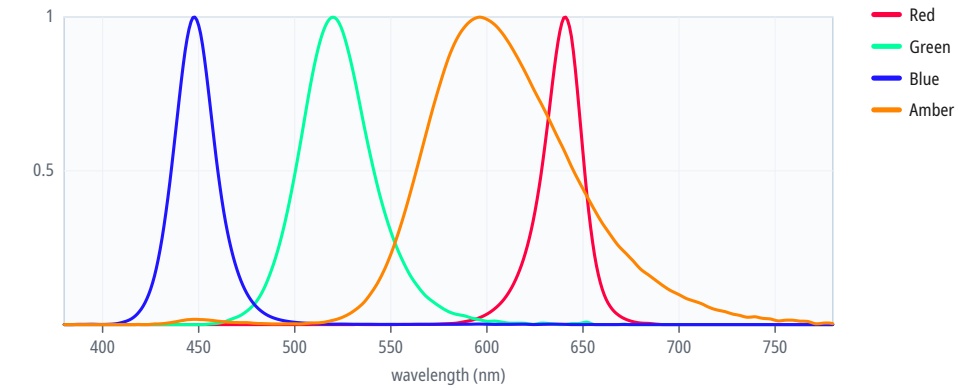
LED colors and the colors they mix



LED	x	y	nm
Red	0.704	0.296	627
Green	0.169	0.700	525
Blue	0.155	0.066	452
Amber	0.568	0.423	590

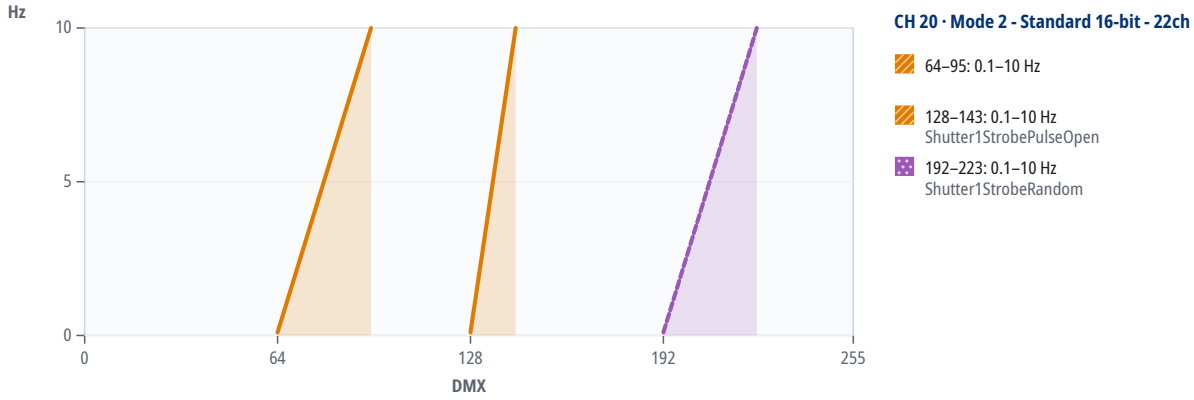
The shaded area holds the colors the LEDs can mix; the dots are the LED colors the GDTF file states.

Spectra of the light sources



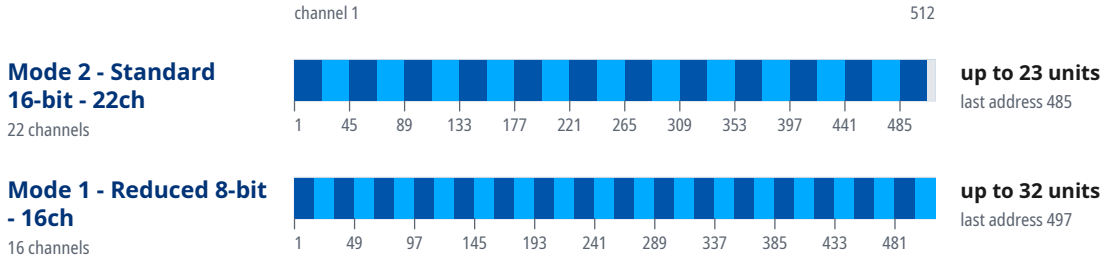
Relative spectrum of each light source as the GDTF file states it; each curve is scaled to its own maximum.

Strobe rate



9 DMX channels

Units in one DMX universe



Start addresses of 20 units in the mode “Mode 2 - Standard 16-bit - 22ch”

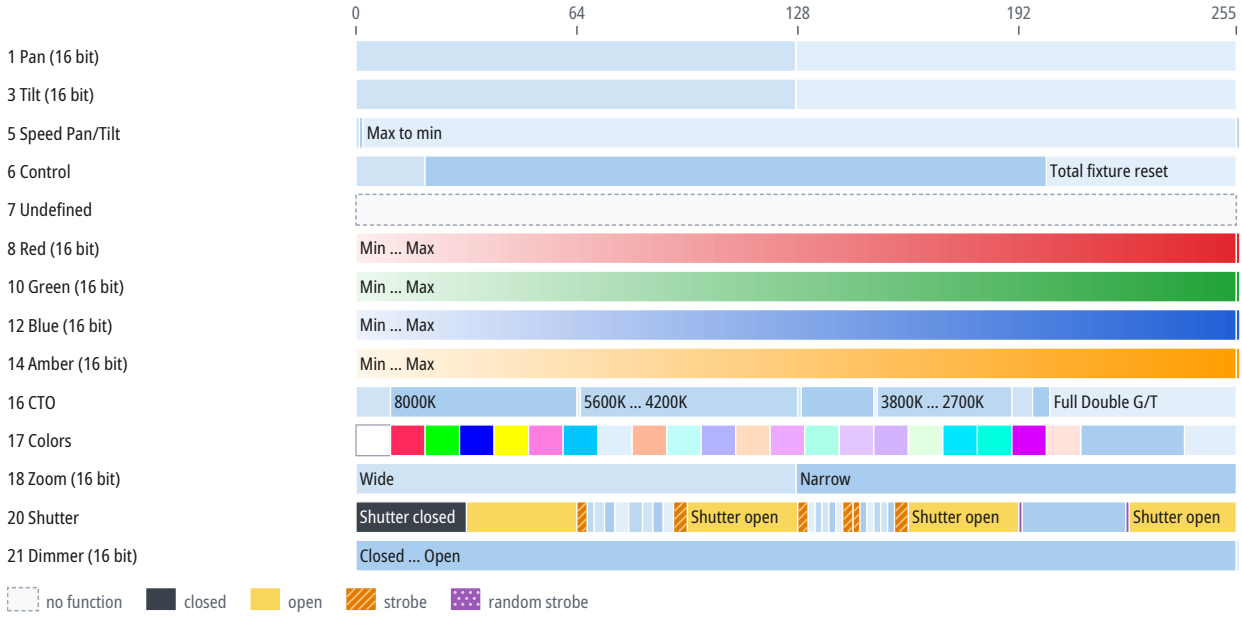
Unit	Start address	Unit	Start address	Unit	Start address	Unit	Start address
1	1	6	111	11	221	16	331
2	23	7	133	12	243	17	353
3	45	8	155	13	265	18	375
4	67	9	177	14	287	19	397
5	89	10	199	15	309	20	419

Mode 2 - Standard 16-bit - 22ch

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 32–63, 96–127, 160–191 or 224–255 “Shutter open”; CH 21 Dimmer above 0. The GDTF file gives these values for a console's Highlight function: CH 8 Red 255, CH 10 Green 255, CH 12 Blue 255, CH 14 Amber 255, CH 16 CTO 0, CH 17 Colors 0, CH 20 Shutter 32, CH 21 Dimmer 255.

Channel functions at a glance



CH	Function	DMX	Description
1	Pan	0–127	Pan
		128	Center
		128–255	Pan
2	Pan Fine	0–255	Fine adjustment of CH 1
3	Tilt	0–127	Tilt
		128	Center
		128–255	Tilt
4	Tilt Fine	0–255	Fine adjustment of CH 3
5	Speed Pan/Tilt	0	Standard mode
		1	Max
		2–254	Max to min
		255	Min
6	Control	0–199	No function
		200–255	Total fixture reset
7	Undefined	0–255	
8	Red	0–255	Min ... Max
		255	Max
9	Red Fine	0–255	Fine adjustment of CH 8
10	Green	0–255	Min ... Max
		255	Max
11	Green Fine	0–255	Fine adjustment of CH 10
12	Blue	0–255	Min ... Max
		255	Max
13	Blue Fine	0–255	Fine adjustment of CH 12
14	Amber	0–255	Min ... Max
		255	Max
15	Amber Fine	0–255	Fine adjustment of CH 14
16	CTO	0–9	No Functions (8000–7000 K)
		10–63	8000K
		64	5600K
		65–127	5600K ... 4200K
		128	4200K
		129–149	4200K ... 3800K
		150	3800K
		151–189	3800K ... 2700K
		190–195	2700K
		196–200	CTO 3
		201–255	Full Double G/T
17	Colors	0–9	Color: Open
		10–19	Red L106

CH	Function	DMX	Description
17	Colors (continued)	20–29	Green L090
		30–39	Tokyo Blue L071
		40–49	Spring Yellow L100
		50–59	Magical Magenta L795
		60–69	Berry Blue L721
		70–79	Full CT Blue L201
		80–89	Cool LED Apricot CL147
		90–99	Summer Blue L140
		100–109	Violet/Regal Blue
		110–119	3200K CTO L626
		120–129	Provence L701
		130–139	Marine Blue L131
		140–149	Surprise Pink L194
		150–159	Lavender L058
		160–169	Fluorescent 4300K L242
		170–179	Moonlight Blue L183
		180–189	Cool LEDlightBlue L118
		190–199	Medium Lavender L343
		200–209	SCI to Tungsten L238
		210–239	Color Spin Fast
		240–255	Color Spin Slow
18	Zoom	0–128	Wide
		128–255	Narrow
19	Zoom Fine	0–255	Fine adjustment of CH 18
20	Shutter	0–31	Shutter closed
		32–63	Open/Closed: Shutter open
		64–66	Shutter 1 Strobe: Slow to fast - Slow (0.303–0.357 Hz)
		67–91	Shutter 1 Strobe: Slow to fast - Slow ... Slow to fast - Fast (0.357–13.2 Hz)
		92–95	Shutter 1 Strobe: Slow to fast - Fast (13.2–20.2 Hz)
		96–127	Shutter open
		128–130	Shutter 1 Strobe Pulse Open: Slow to fast 1/7 (0.126–0.149 Hz)
		131–140	Shutter 1 Strobe Pulse Open: Slow to fast 1/7 ... Slow to fast 7/7 (0.149–0.36 Hz)
		141–143	Shutter 1 Strobe Pulse Open: Slow to fast 7/7 (0.36–0.504 Hz)
		144–145	Shutter 1 Strobe Pulse Close: Fast to slow 1/7 (0.504–0.36 Hz)
		146–155	Shutter 1 Strobe Pulse Close: Fast to slow 1/7 ... Fast to slow 7/7 (0.36–0.149 Hz)
		156–159	Shutter 1 Strobe Pulse Close: Fast to slow 7/7 (0.149–0.126 Hz)
		160–191	Shutter open
		192	Strobe random slow

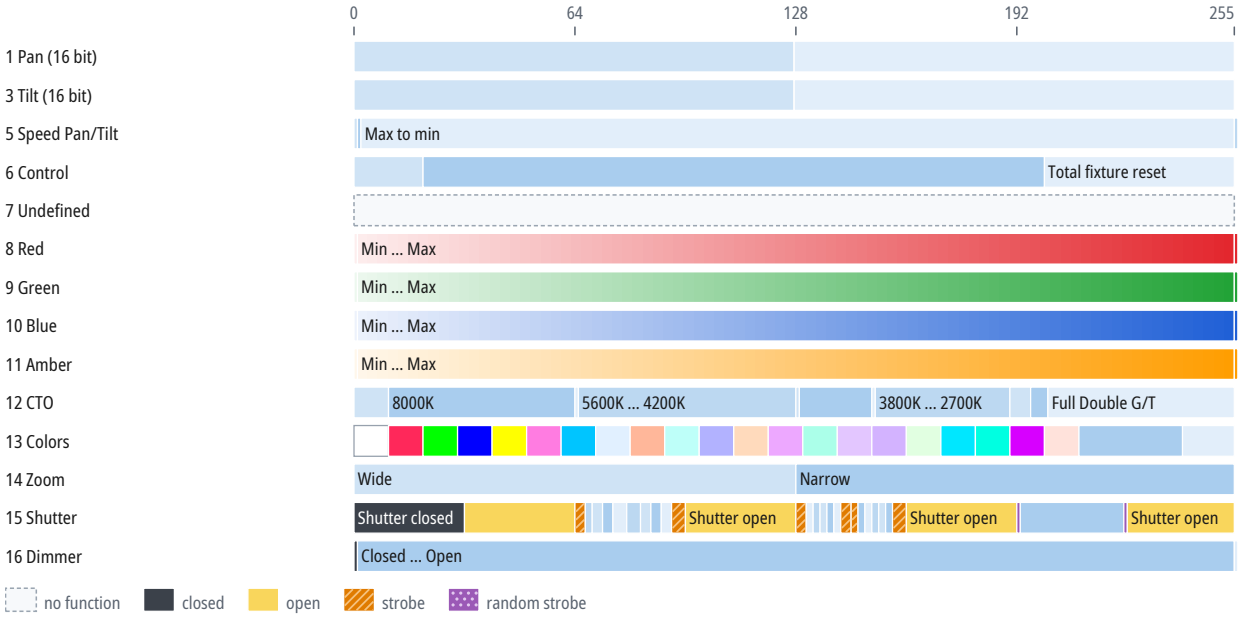
CH	Function	DMX	Description
20	Shutter (continued)	193–222	Strobe random slow ... Strobe random Fast
		223	Strobe random Fast
		224–255	Shutter open
21	Dimmer	0–255	Closed ... Open
		255	Open
22	Dimmer Fine	0–255	Fine adjustment of CH 21

Mode 1 - Reduced 8-bit - 16ch

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 15 Shutter at 32–63, 96–127, 160–191 or 224–255 “Shutter open”; CH 16 Dimmer above 0. The GDTF file gives these values for a console's Highlight function: CH 8 Red 255, CH 9 Green 255, CH 10 Blue 255, CH 11 Amber 255, CH 12 CTO 0, CH 13 Colors 0, CH 15 Shutter 32, CH 16 Dimmer 255.

Channel functions at a glance



CH	Function	DMX	Description
1	Pan		Same as CH 1 in the mode “Mode 2 - Standard 16-bit - 22ch” (p. 11)
2	Pan Fine	0–255	Fine adjustment of CH 1
3	Tilt		Same as CH 3 in the mode “Mode 2 - Standard 16-bit - 22ch” (p. 11)
4	Tilt Fine	0–255	Fine adjustment of CH 3
5	Speed Pan/Tilt		Same as CH 5 in the mode “Mode 2 - Standard 16-bit - 22ch” (p. 11)
6	Control		Same as CH 6 in the mode “Mode 2 - Standard 16-bit - 22ch” (p. 11)
7	Undefined	0–255	
8	Red	0	Min

CH	Function	DMX	Description
8	Red (continued)	1–254	Min ... Max
		255	Max
9	Green	0	Min
		1–254	Min ... Max
		255	Max
10	Blue	0	Min
		1–254	Min ... Max
		255	Max
11	Amber	0	Min
		1–254	Min ... Max
		255	Max
12	CTO		Same as CH 16 in the mode “Mode 2 - Standard 16-bit - 22ch” (p. 11)
13	Colors		Same as CH 17 in the mode “Mode 2 - Standard 16-bit - 22ch” (p. 11)
14	Zoom	0–127	Wide
		128–255	Narrow
15	Shutter		Same as CH 20 in the mode “Mode 2 - Standard 16-bit - 22ch” (p. 12)
16	Dimmer	0	Closed
		1–254	Closed ... Open
		255	Open

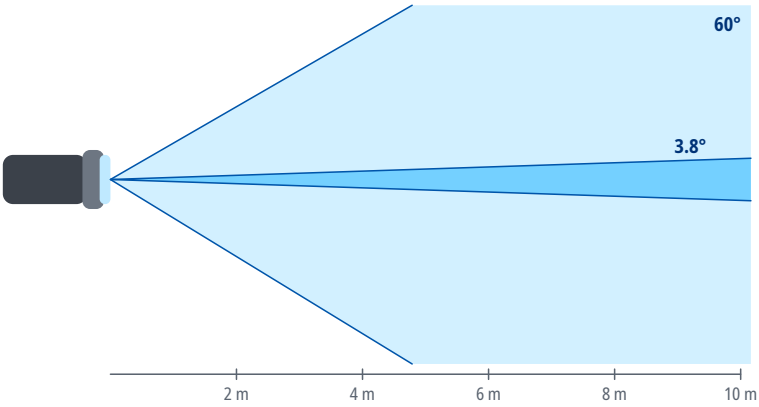
10 Technical specifications

Parameter	Value
Light	
Light source	LED
LED power	280 W
Luminous flux	2,245 lm
Color temperature	8,000 K
Color rendering index (CRI)	75
Optics	
Zoom	3.8–60°
Movement	
Pan	450°
Tilt	228°
Control	
DMX connection	5-pin XLR IN/OUT
RJ45 connectors	RJ45
RDM	yes (manufacturer ID 0x1314, device model ID 0x0002)
Electrical	
Power supply	100–240 V, 50/60 Hz
Power consumption	220 W
Power connectors	NAC3FCA IN
Dimensions and construction	
Weight	5.7 kg
Operating environment	
Operating temperature	-5 to 45 °C

Speeds and ranges

Parameter	Value
Color temperature range	2700–8000 K
Strobe frequency	0.1–10 Hz
Color wheel rotation	up to 1 °/s (0.2 rpm)

Spot diameter



Distance	Ø 3.8°	Ø 60°
2 m	0.13 m	2.3 m
4 m	0.27 m	4.6 m
6 m	0.4 m	6.9 m
8 m	0.53 m	9.2 m
10 m	0.66 m	11.5 m
15 m	1 m	17.3 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.