DMX REFERENCE

Tambora Rays

Clay Paky



Manufacturer	Clay Paky
GDTF file	Clay_Paky_Tambora_Rays_97321.gdtf
GDTF revision	ClayPaky Official File Fw Ver 1_0 (fixed geometry pixels) · 2025-05-20
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1 About this manual

This document describes the Tambora Rays by Clay Paky. It was compiled from the GDTF file Clay_Paky_Tambora_Rays_97321.gdtf from the GDTF-Share library.

File revision: “ClayPaky Official File Fw Ver 1_0 (fixed geometry pixels)”.

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 Clay Paky; 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	10.5 kg

DMX modes

Mode	Channels	Units in one universe	First start addresses
Advanced	26	19	1, 27, 53, 79, ...
Standard	32	16	1, 33, 65, 97, ...
Basic	10	51	1, 11, 21, 31, ...
RGBW	108	4	1, 109, 217, 325

No light? Check these channels

- Advanced: CH 6 Shutter 1 at 104–107, 208–212 or 252–255 “Open”; CH 8 Shutter 2 at 104–107, 208–212 or 252–255 “Open”; CH 17 Shutter 3 at 104–107 “Open”; CH 25 Shutter 4 at 104–107 “Open”
- Standard: CH 10 Shutter 1 at 104–107, 208–212 or 252–255 “Open”; CH 19 Shutter 2 at 104–107 “Open”; CH 31 Shutter 3 at 104–107, 208–212 or 252–255 “Open”
- Basic: CH 6 Shutter at 104–107, 208–212 or 252–255 “Open”


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.

4 Product description

Description in the GDTF file

“Tambora Rays redefines what’s possible in lighting design. As the latest addition to the Tambora family, Tambora Rays combines innovation, light output, and creativity. It features 9×3 rows of high-power RGBWW LEDs with pixel-to-pixel control, allowing you to manage 27 individual LEDs for stunning

lighting effects.”

5 Installation

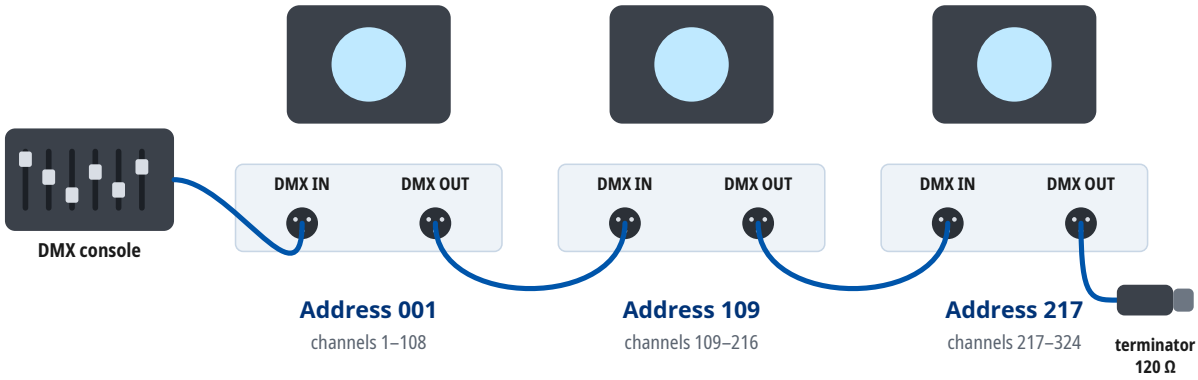
⚠ **WARNING**

- 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: 10.5 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 RGBW: every unit occupies 108 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

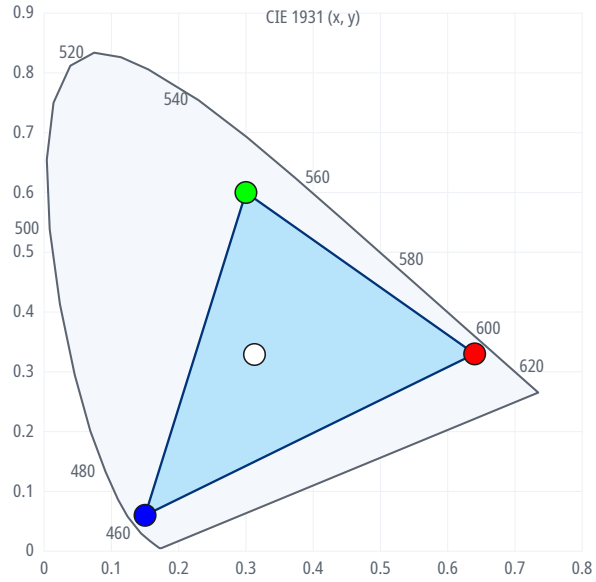
- The device occupies as many consecutive channels in the DMX universe as the selected DMX mode uses, starting at the set start address.
- Number of channels occupied in the DMX mode “RGBW”: 108.
- Choose start addresses so that the channels of individual devices do not overlap and the last occupied 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 “RGBW”, you can use, for example, the start addresses 1, 109, 217, 325.
- 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

	Advanced 26 channels	Standard 32 channels	Basic 10 channels	RGBW 108 channels
Dimmer	4 channels (7–26)	11, 20, 32	7	✓
Shutter / strobe	4 channels (6–25)	10, 19, 31	6	
Color mixing	1–4, 20–23	8 channels (1–28)	1–4	1–108
Color temperature	5, 24	9, 30	5	
Pixel control	✓			

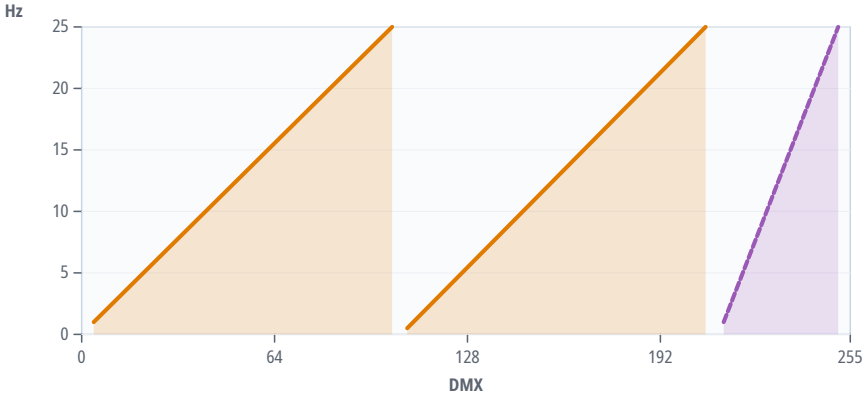
LED colors and the colors they mix



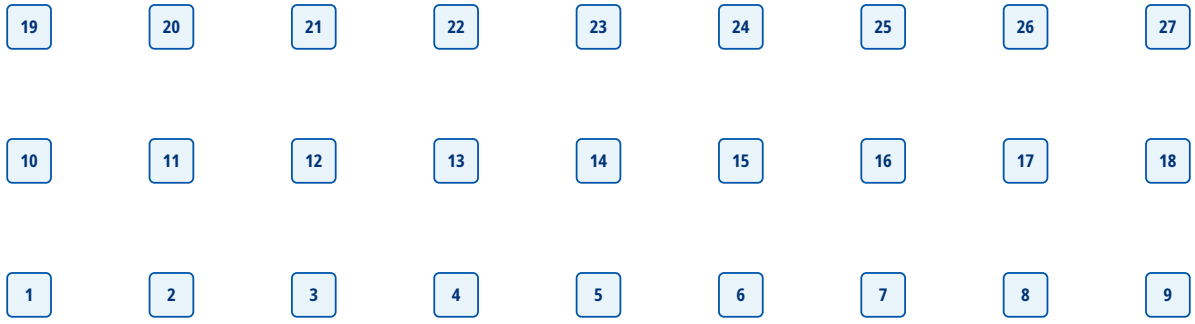
LED	x	y
Red	0.640	0.330
Green	0.300	0.600
Blue	0.150	0.060
White	0.313	0.329

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

Strobe rate



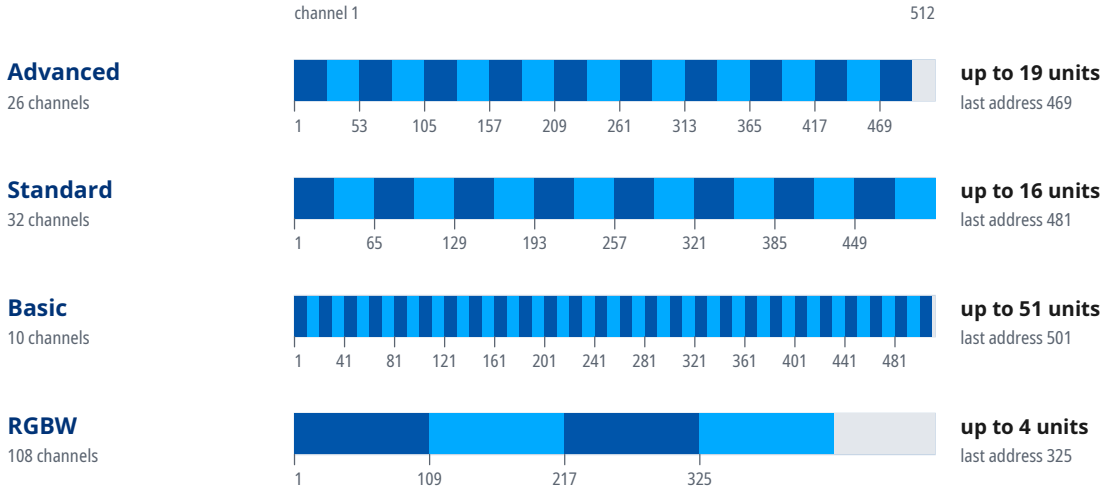
Cells (pixels)



Cells where the GDTF file places them (seen from above), 27 in all; numbered in the order of their first DMX channel in the mode “Advanced”.

9 DMX channels

Units in one DMX universe



Start addresses of 20 units in the mode “RGBW”

Unit	Start address	Unit	Start address	Unit	Start address	Unit	Start address
1	1	6	U2 · 109	11	U3 · 217	16	U4 · 325
2	109	7	U2 · 217	12	U3 · 325	17	U5 · 1
3	217	8	U2 · 325	13	U4 · 1	18	U5 · 109
4	325	9	U3 · 1	14	U4 · 109	19	U5 · 217
5	U2 · 1	10	U3 · 109	15	U4 · 217	20	U5 · 325

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 Advanced

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 6 Shutter 1 at 104–107, 208–212 or 252–255 “Open”; CH 8 Shutter 2 at 104–107, 208–212 or 252–255 “Open”; CH 17 Shutter 3 at 104–107 “Open”; CH 25 Shutter 4 at 104–107 “Open”. The GDTF file gives these values for a console's Highlight function: CH 1 Red 1 255, CH 2 Green 1 255, CH 3 Blue 1 255, CH 4 White 1 255, CH 6 Shutter 1 105, CH 7 Dimmer 1 255, CH 8 Shutter 2 105, CH 9 Dimmer 2 255, CH 17 Shutter 3 105, CH 25 Shutter 4 105.

CH	Function	DMX	Description
1	Red 1	0	0%
		1–254	0% … 100%
		255	100%
2	Green 1	0	0%
		1–254	0% … 100%
		255	100%
3	Blue 1	0	0%
		1–254	0% … 100%
		255	100%

CH	Function	DMX	Description
4	White 1	0	0%
		1–254	0% … 100%
		255	100%
5	CTO 1	0–9	Off
		10	8000K
		11–254	8000K … 2700K
		255	2700K
6	Shutter 1	0–3	Light OFF: Closed
		4	Strobe: Slow
		5–102	Strobe: Slow … Fast
		103	Strobe: Fast
		104–107	Light ON: Open
		108	Pulsation: Slow
		109–206	Pulsation: Slow … Fast
		207	Pulsation: Fast
		208–212	Light ON: Open
		213–225	Random: Slow
		226–238	Medium
		239–251	Random: Fast
		252–255	Light ON: Open
7	Dimmer 1	0	0%
		1–254	0% … 100%
		255	100%
8	Shutter 2	0–3	Light OFF: Closed
		4	Strobe: Slow
		5–102	Strobe: Slow … Fast
		103	Strobe: Fast
		104–107	Light ON: Open
		108	Pulsation: Slow
		109–206	Pulsation: Slow … Fast
		207	Pulsation: Fast
		208–212	Light ON: Open
		213–225	Random: Slow
		226–238	Medium
		239–251	Random: Fast
		252–255	Light ON: Open
9	Dimmer 2	0–255	0% … 100%
		255	100%
10	Dimmer 2 Fine	0–255	Fine adjustment of CH 9
11	Color Crossfade	0	Fast
		1–254	Fast … Slow
		255	Slow

CH	Function	DMX	Description
12	Control	0–1	No Function
		2–3	Fans Auto
		4–5	Fans SLN
		6–7	Fans Theatre
		8–9	Fans Constant
		10–37	Unused Range: Reserved
		38–42	Dimmer Curve 1
		43–47	Dimmer Curve 2
		48–52	Dimmer Curve 3
		53–55	Dimmer Curve 4
		56–57	Dimmer Curve 5
		58–62	1
		63–67	1 point 5
		68–72	2 point 2
		73–84	Unused Range: Reserved
		85–86	Rev Map Off
		87–88	Rev Map On
		89–92	Free
		93–97	Pixel Map Off
		98–102	Pixel Map Off ... Pixel Map RGBW
		103–107	Pixel Map RGBW
		108–167	Unused Range: Reserved
		168–188	1000Hz
		189–199	2000Hz
		200–210	3000Hz
		211–221	4000Hz
		222–232	6000Hz
		233–243	25000Hz
		244–248	Display Off
		249–253	Display On
		254–255	Default Function Recall
13	Shape Mode		Shape Selection
		0–5	Off
		6–130	Static
		131–255	Dynamic
14	Shape Selection	0–15	Effect 1
		16–31	Effect 2
		32–47	Effect 3
		48–63	Effect 4
		64–79	Effect 5
		80–95	Effect 6
		96–111	Effect 7

CH	Function	DMX	Description
14	Shape Selection (continued)	112–127	Effect 8
		128–143	Effect 9
		144–159	Effect 10
		160–175	Effect 11
		176–191	Effect 12
		192–207	Effect 13
		208–223	Effect 14
		224–239	Effect 15
		240–255	Effect 16
15	Shape Speed		When CH 13 is 6–130:
		0–255	Index
			When CH 13 is 131–255:
		0–124	Forward Fast to Slow
		125–130	Stop
		131–255	Backward Slow to Fast
16	Shape Fade	0–5	Off
		6–130	Fade Increase
		131–255	Wake Increase
17	Shutter 3	0–3	Light OFF: Closed
		4	Strobe: Slow
		5–102	Strobe: Slow ... Fast
		103	Strobe: Fast
		104–107	Light ON: Open
		108	Pulsation: Slow
		109–206	Pulsation: Slow ... Fast
		207	Pulsation: Fast
		208–212	Shape Slave when dimmer@0
		213–225	Random: Slow
		226–238	Medium
		239–251	Random: Fast
		252–255	Shape Master when dimmer@0
18	Dimmer 3	0	0%
		1–254	0% ... 100%
		255	100%
19	Shape Crossfade	0–255	Shape Transition
20	Red 2	0	0%
		1–254	0% ... 100%
		255	100%
21	Green 2	0	0%
		1–254	0% ... 100%
		255	100%
22	Blue 2	0	0%

CH	Function	DMX	Description
22	Blue 2 (continued)	1–254	0% … 100%
		255	100%
23	White 2	0	0%
		1–254	0% … 100%
		255	100%
24	CTO 2	0–9	Off
		10	8000K
		11–254	8000K … 2700K
		255	2700K
25	Shutter 4	0–3	Light OFF: Closed
		4	Strobe: Slow
		5–102	Strobe: Slow … Fast
		103	Strobe: Fast
		104–107	Light ON: Open
		108	Pulsation: Slow
		109–206	Pulsation: Slow … Fast
		207	Pulsation: Fast
		208–212	Pixels Slave when dimmer@0
		213–225	Random: Slow
		226–238	Medium
		239–251	Random: Fast
		252–255	Pixels Master when dimmer@0
26	Dimmer 4	0	0%
		1–254	0% … 100%
		255	100%

Mode Standard

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 10 Shutter 1 at 104–107, 208–212 or 252–255 “Open”; CH 19 Shutter 2 at 104–107 “Open”; CH 31 Shutter 3 at 104–107, 208–212 or 252–255 “Open”. The GDTF file gives these values for a console's Highlight function: CH 1 Red 1 255, CH 3 Green 1 255, CH 5 Blue 1 255, CH 7 White 1 255, CH 10 Shutter 1 105, CH 11 Dimmer 1 255, CH 19 Shutter 2 105, CH 31 Shutter 3 105.

CH	Function	DMX	Description
1	Red 1	0–255	0% … 100%
		255	100%
2	Red 1 Fine	0–255	Fine adjustment of CH 1
3	Green 1	0–255	0% … 100%
		255	100%
4	Green 1 Fine	0–255	Fine adjustment of CH 3
5	Blue 1	0–255	0% … 100%
		255	100%
6	Blue 1 Fine	0–255	Fine adjustment of CH 5

CH	Function	DMX	Description
7	White 1	0–255	0% … 100%
		255	100%
8	White 1 Fine	0–255	Fine adjustment of CH 7
9	CTO 1		Same as CH 5 in the mode “Advanced” (p. 9)
10	Shutter 1		Same as CH 6 in the mode “Advanced” (p. 9)
11	Dimmer 1	0–255	0% … 100%
		255	100%
12	Dimmer 1 Fine	0–255	Fine adjustment of CH 11
13	Color Crossfade		Same as CH 11 in the mode “Advanced” (p. 9)
14	Control		Same as CH 12 in the mode “Advanced” (p. 10)
15	Shape Mode		Same as CH 13 in the mode “Advanced” (p. 10)
16	Shape Selection		Same as CH 14 in the mode “Advanced” (p. 10)
17	Shape Speed		When CH 15 is 6–130:
		0–255	Index
			When CH 15 is 131–255:
		0–124	Forward Fast to Slow
		125–130	Stop
		131–255	Backward Slow to Fast
18	Shape Fade		Same as CH 16 in the mode “Advanced” (p. 11)
19	Shutter 2	0–3	Light OFF: Closed
		4	Strobe: Slow
		5–102	Strobe: Slow … Fast
		103	Strobe: Fast
		104–107	Light ON: Open
		108	Pulsation: Slow
		109–206	Pulsation: Slow … Fast
		207	Pulsation: Fast
		208–212	Shape Slave when dimmer@0
		213–225	Random: Slow
		226–238	Medium
		239–251	Random: Fast
		252–255	Shape Master when dimmer@0
20	Dimmer 2	0	0%
		1–254	0% … 100%
		255	100%
21	Shape Crossfade	0–255	Shape Transition
22	Red 2	0–255	0% … 100%
		255	100%
23	Red 2 Fine	0–255	Fine adjustment of CH 22
24	Green 2	0–255	0% … 100%
		255	100%
25	Green 2 Fine	0–255	Fine adjustment of CH 24

CH	Function	DMX	Description
26	Blue 2	0–255	0% … 100%
		255	100%
27	Blue 2 Fine	0–255	Fine adjustment of CH 26
28	White 2	0–255	0% … 100%
		255	100%
29	White 2 Fine	0–255	Fine adjustment of CH 28
30	CTO 2		Same as CH 24 in the mode “Advanced” (p. 12)
31	Shutter 3	0–3	Light OFF: Closed
		4	Strobe: Slow
		5–102	Strobe: Slow … Fast
		103	Strobe: Fast
		104–107	Light ON: Open
		108	Pulsation: Slow
		109–206	Pulsation: Slow … Fast
		207	Pulsation: Fast
		208–212	Light ON: Open
		213–225	Random: Slow
		226–238	Medium
		239–251	Random: Fast
		252–255	Light ON: Open
32	Dimmer 3		Same as CH 18 in the mode “Advanced” (p. 11)

Mode Basic

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 6 Shutter at 104–107, 208–212 or 252–255 “Open”. The GDTF file gives these values for a console's Highlight function: CH 1 Red 255, CH 2 Green 255, CH 3 Blue 255, CH 4 White 255, CH 6 Shutter 105, CH 7 Dimmer 255.

CH	Function	DMX	Description
1	Red	0	0%
		1–254	0% … 100%
		255	100%
2	Green	0	0%
		1–254	0% … 100%
		255	100%
3	Blue	0	0%
		1–254	0% … 100%
		255	100%
4	White	0	0%
		1–254	0% … 100%
		255	100%
5	CTO	0–9	Off
		10	8000K

CH	Function	DMX	Description
5	CTO (continued)	11–254	8000K ... 2700K
		255	2700K
6	Shutter	0–3	Light OFF: Closed
		4	Strobe: Slow
		5–102	Strobe: Slow ... Fast
		103	Strobe: Fast
		104–107	Light ON: Open
		108	Pulsation: Slow
		109–206	Pulsation: Slow ... Fast
		207	Pulsation: Fast
		208–212	Light ON: Open
		213–225	Random: Slow
		226–238	Medium
		239–251	Random: Fast
		252–255	Light ON: Open
7	Dimmer	0–255	0% ... 100%
		255	100%
8	Dimmer Fine	0–255	Fine adjustment of CH 7
9	Color Crossfade		Same as CH 11 in the mode “Advanced” (p. 9)
10	Control		Same as CH 12 in the mode “Advanced” (p. 10)

Mode RGBW

The GDTF file gives these values for a console's Highlight function: CH 1 Red 255 (the same in each of the 27 cells), CH 2 Green 255 (the same in each of the 27 cells), CH 3 Blue 255 (the same in each of the 27 cells), CH 4 White 255 (the same in each of the 27 cells).

CH	Function	DMX	Description
1	Red 1	0	Min
		1–254	Min ... Max
		255	Max
2	Green 1	0	Min
		1–254	Min ... Max
		255	Max
3	Blue 1	0	Min
		1–254	Min ... Max
		255	Max
4	White 1	0	Min
		1–254	Min ... Max
		255	Max

CH 1–108: 27 cells of 4 channels each. Every cell works as cell 1 in the table above (CH 1–4); the table below gives each cell's channel numbers.

Cell	Red	Green	Blue	White	Cell	Red	Green	Blue	White
1	1	2	3	4	2	5	6	7	8
3	9	10	11	12	4	13	14	15	16
5	17	18	19	20	6	21	22	23	24
7	25	26	27	28	8	29	30	31	32
9	33	34	35	36	10	37	38	39	40
11	41	42	43	44	12	45	46	47	48
13	49	50	51	52	14	53	54	55	56
15	57	58	59	60	16	61	62	63	64
17	65	66	67	68	18	69	70	71	72
19	73	74	75	76	20	77	78	79	80
21	81	82	83	84	22	85	86	87	88
23	89	90	91	92	24	93	94	95	96
25	97	98	99	100	26	101	102	103	104
27	105	106	107	108					

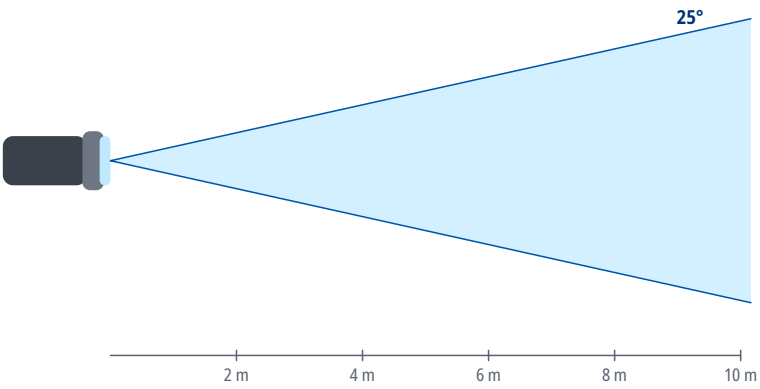
10 Technical specifications

Parameter	Value
Light source	LED
RDM	yes (manufacturer ID 0x4350, device model ID 0x04AB)
Weight	10.5 kg
Operating temperature	-20 to 45 °C

Speeds and ranges

Parameter	Value
Color temperature range	2700–8000 K
Strobe frequency	1–25 Hz

Spot diameter



Distance	Ø 25°
2 m	0.89 m
4 m	1.8 m
6 m	2.7 m
8 m	3.5 m
10 m	4.4 m
15 m	6.7 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.

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.