DMX REFERENCE

V2000W-R

Terbly V2000W-R

Terbly



Manufacturer	Terbly
GDTF file	Terbly_V2000W-R_91230.gdtf
GDTF revision	Corrected all rotation channel defaults · 2025-03-27
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1 About this manual

This document describes the Terbly V2000W-R by Terbly. It was compiled from the GDTF file Terbly_V2000W-R_91230.gdtf from the GDTF-Share library.

File revision: “Corrected all rotation channel defaults”.

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 Terbly; 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

DMX modes

Mode	Channels	Units in one universe	First start addresses
Standard	18	28	1, 19, 37, 55, ...
Extended	26	19	1, 27, 53, 79, ...

No light? Check these channels

- Standard: CH 12 Shutter at 32–63, 96–127, 160–191 or 224–255 “Open”; CH 13 Dimmer above 0
- Extended: CH 19 Shutter at 32–63, 96–127, 160–191 or 224–255 “Open”; CH 20 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.

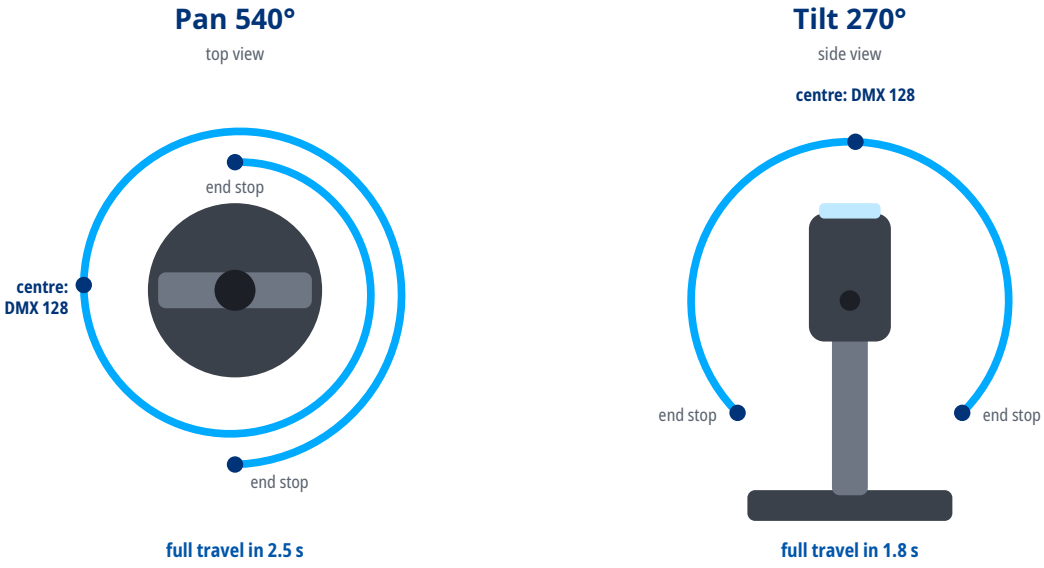
⚠ CAUTION

- 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



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.
> - 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.

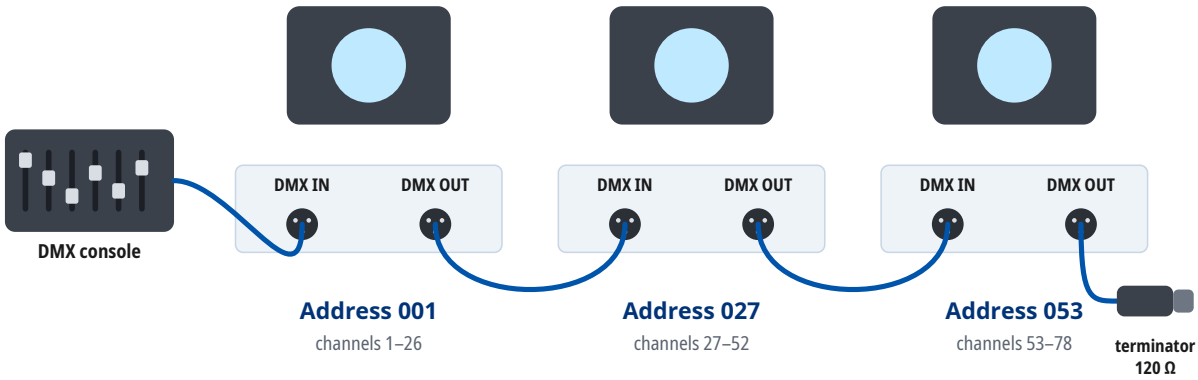
6 Connections

- 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 Extended: every unit occupies 26 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

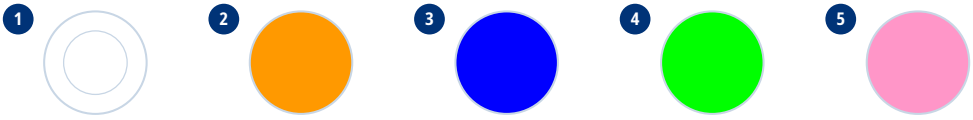
- The device occupies as many consecutive channels in the DMX universe as the selected DMX mode uses, starting at the set start address.
- Number of channels occupied in the DMX mode “Extended”: 26.
- Choose start addresses so that the channels of individual devices do not overlap and the last occupied 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 “Extended”, you can use, for example, the start addresses 1, 27, 53, 79.
- 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

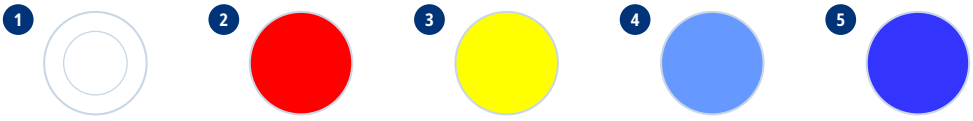
Functions in each DMX mode

	Standard 18 channels	Extended 26 channels
Pan / Tilt	**5, 6**	**5, 6**
Dimmer	**13**	**20**
Dimmer resolution	8 bit	16 bit
Shutter / strobe	**12**	**19**
Color mixing	**1–3**	**1, 3, 9**
Color temperature	**4**	**11**
Color wheel	**9, 10**	**13, 15**
Zoom	**11**	**17**
Effects / macros	**15**	**23**

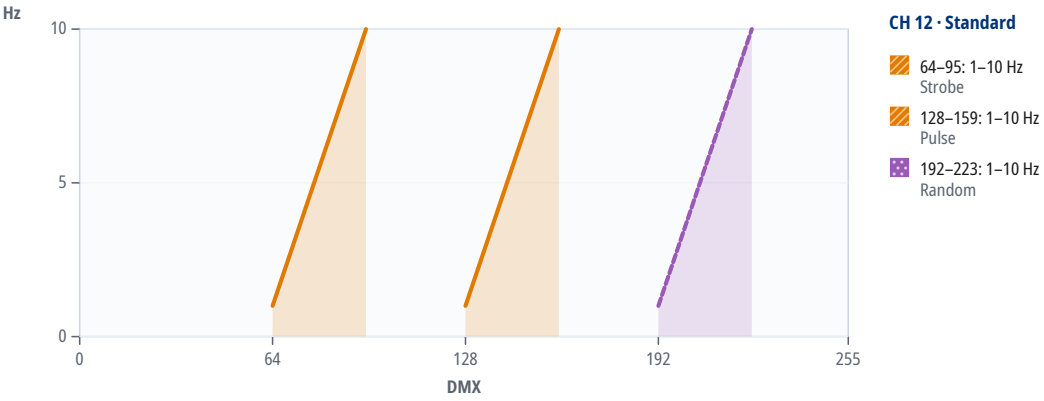
Color wheel 1



Color wheel 2

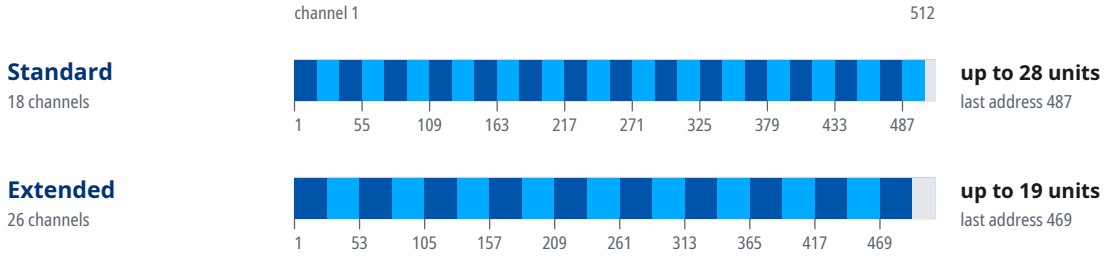


Strobe rate



9 DMX channels

Units in one DMX universe



Start addresses of 20 units in the mode “Extended”

Unit	Start address	Unit	Start address	Unit	Start address	Unit	Start address
1	1	6	131	11	261	16	391
2	27	7	157	12	287	17	417
3	53	8	183	13	313	18	443
4	79	9	209	14	339	19	469
5	105	10	235	15	365	20	U2 · 1

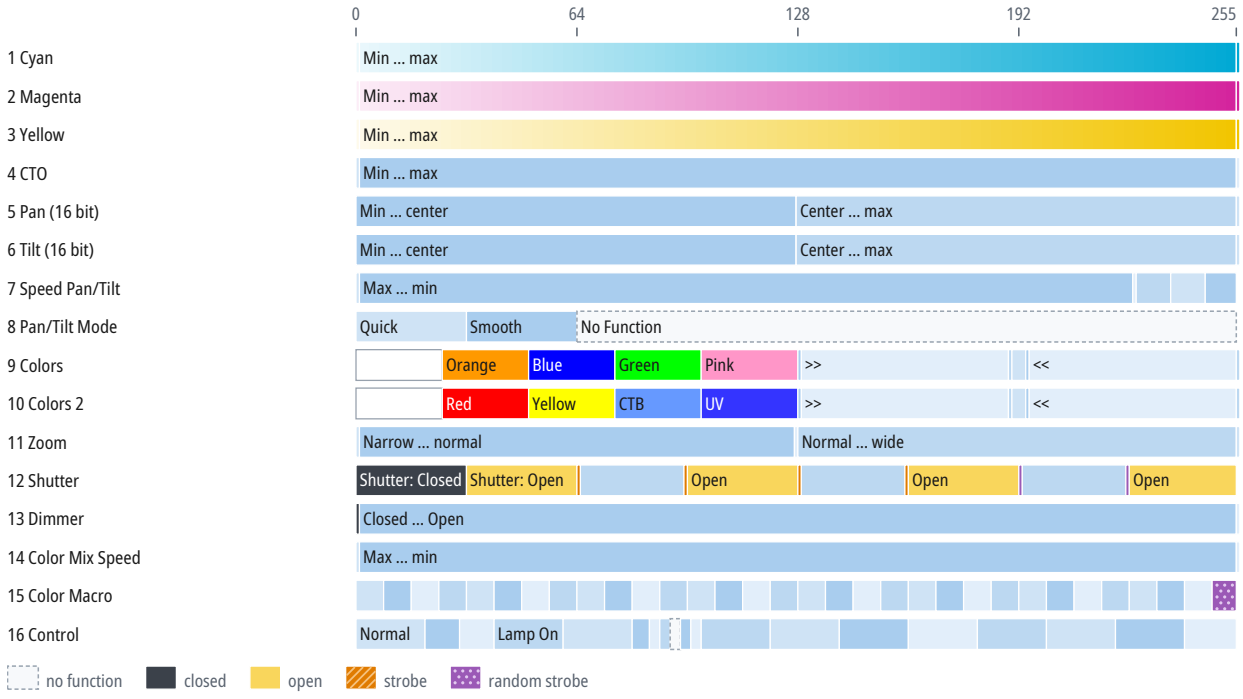
Where a DMX universe is full, the next units continue in the next universe: “U2 · 1” is address 1 in the second universe, counted from the universe of the first unit.

Mode 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 12 Shutter at 32–63, 96–127, 160–191 or 224–255 “Open”; CH 13 Dimmer above 0. The GDTF file gives these values for a console's Highlight function: CH 1 Cyan 0, CH 2 Magenta 0, CH 3 Yellow 0, CH 4 CTO 0, CH 12 Shutter 63, CH 13 Dimmer 255.

Channel functions at a glance



CH	Function	DMX	Description
1	Cyan	0	Min
		1–254	Min ... max
		255	Max
2	Magenta	0	Min
		1–254	Min ... max
		255	Max
3	Yellow	0	Min
		1–254	Min ... max
		255	Max
4	CTO	0	Min
		1–254	Min ... max
		255	Max
5	Pan	0–127	Min ... center
		128–255	Center ... max
		255	Max
6	Tilt	0–127	Min ... center
		128–255	Center ... max

CH	Function	DMX	Description
6	Tilt (continued)	255	Max
7	Speed Pan/Tilt	0	Max
		1–224	Max ... min
		225	Min
		226–235	BO by movement
		236–245	BO by all wheel
		246–255	Position MSpeed 1
8	Pan/Tilt Mode	0–31	Quick
		32–63	Smooth
		64–255	No Function
9	Colors	0–24	Color: Open
		25–49	Orange
		50–74	Blue
		75–99	Green
		100–127	Pink
		128	>>>
		129–188	>> (703.2–1.38 °/s)
		189	>
		190–193	Color 1 Spin: Stop
		194	<
		195–254	<< (1.38–703.2 °/s)
		255	<<<
10	Colors 2	0–24	Color: Open
		25–49	Red
		50–74	Yellow
		75–99	CTB
		100–127	UV
		128	>>>
		129–188	>> (703.2–1.38 °/s)
		189	>
		190–193	Color 2 Spin: Stop
		194	<
		195–254	<< (1.38–703.2 °/s)
		255	<<<
11	Zoom		Zoom 1 1
		0	Narrow
		1–126	Narrow ... normal
		127	Normal
		128–254	Normal ... wide
		255	Wide
12	Shutter	0–31	Shutter: Closed
		32–63	Shutter: Open

CH	Function	DMX	Description
12	Shutter (continued)	64	Min Strobe
		65–94	Min Strobe ... max Strobe
		95	Max Strobe
		96–127	Open
		128	Min Pulse
		129–158	Min Pulse ... max Pulse
		159	Max Pulse
		160–191	Open
		192	Min Rnd
		193–222	Min Rnd ... maxRnd
		223	maxRnd
		224–255	Open
13	Dimmer	0	Closed
		1–254	Closed ... Open
		255	Open
14	Color Mix Speed	0	Max
		1–254	Max ... min
		255	Min
15	Color Macro	0–7	Safe
		8–15	Macro 1
		16–23	Macro 2
		24–31	Macro 3
		32–39	Macro 4
		40–47	Macro 5
		48–55	Macro 6
		56–63	Macro 7
		64–71	Macro 8
		72–79	Macro 9
		80–87	Macro 10
		88–95	Macro 11
		96–103	Macro 12
		104–111	Macro 13
		112–119	Macro 14
		120–127	Macro 15
		128–135	Macro 16
		136–143	Macro 17
		144–151	Macro 18
		152–159	Macro 19
		160–167	Macro 20
		168–175	Macro 21
		176–183	Macro 22
		184–191	Macro 23

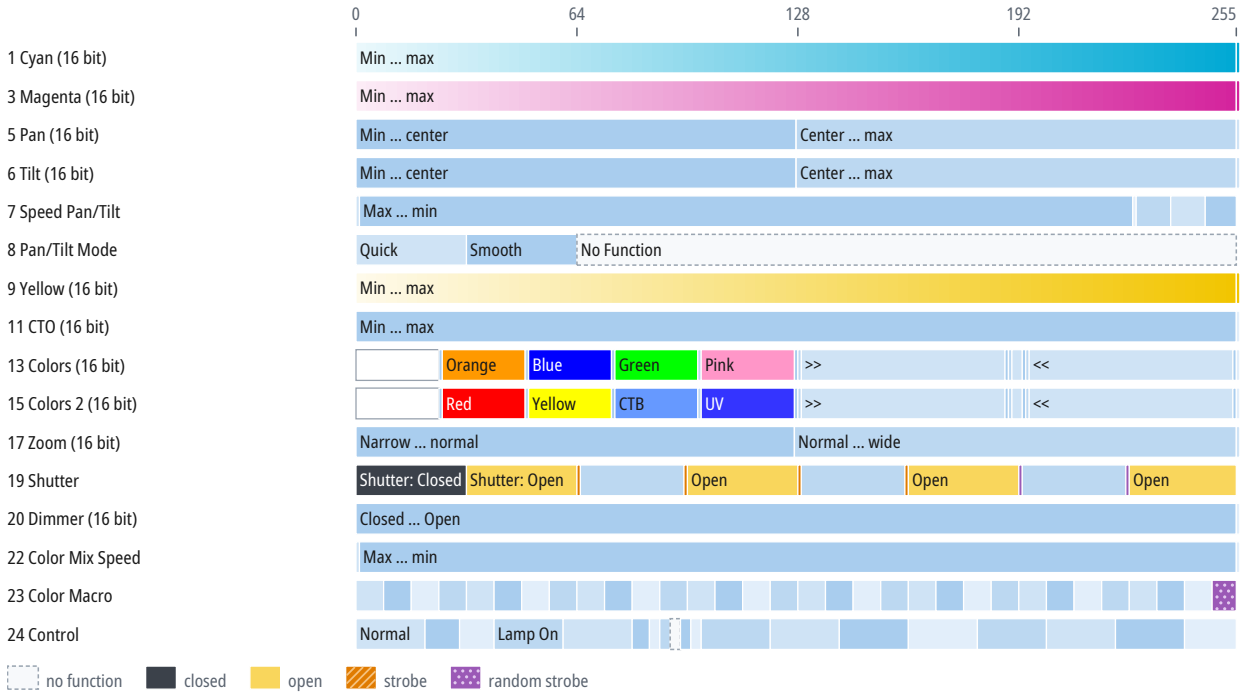
CH	Function	DMX	Description
15	Color Macro (continued)	192–199	Macro 24
		200–207	Macro 25
		208–215	Macro 26
		216–223	Macro 27
		224–231	Macro 28
		232–239	Macro 29
		240–247	Macro 30
		248–255	Random CMY
16	Control	0–19	Normal
		20–29	Color any pos
		30–39	Color/Gobo any pos
		40–59	Lamp On
		60–79	Lamp Off
		80–84	Reset all
		85–87	Reset P/T
		88–90	Reset Colors
		91–93	No function
		94–96	Reset Shutter
		97–99	Reset Others
		100–119	Program 1
		120–139	Program 2
		140–159	Program 3
		160–179	Program 4
		180–199	Program 5
		200–219	Program 6
		220–239	Program 7
		240–255	Music Control
17	Pan Fine	0–255	Fine adjustment of CH 5
18	Tilt Fine	0–255	Fine adjustment of CH 6

Mode Extended

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 19 Shutter at 32–63, 96–127, 160–191 or 224–255 “Open”; CH 20 Dimmer above 0. The GDTF file gives these values for a console's Highlight function: CH 1 Cyan 0, CH 3 Magenta 0, CH 9 Yellow 0, CH 11 CTO 0, CH 19 Shutter 63, CH 20 Dimmer 255.

Channel functions at a glance



CH	Function	DMX	Description
1	Cyan	0–255	Min ... max
		255	Max
2	Cyan Fine	0–255	Fine adjustment of CH 1
3	Magenta	0–255	Min ... max
		255	Max
4	Magenta Fine	0–255	Fine adjustment of CH 3
5	Pan		Same as CH 5 in the mode “Standard” (p. 8)
6	Tilt		Same as CH 6 in the mode “Standard” (p. 8)
7	Speed Pan/Tilt		Same as CH 7 in the mode “Standard” (p. 9)
8	Pan/Tilt Mode		Same as CH 8 in the mode “Standard” (p. 9)
9	Yellow	0–255	Min ... max
		255	Max
10	Yellow Fine	0–255	Fine adjustment of CH 9
11	CTO	0–255	Min ... max
		255	Max
12	CTO Fine	0–255	Fine adjustment of CH 11
13	Colors	0–24	Color: Open

CH	Function	DMX	Description
13	Colors (continued)	24–25	Open ... Orange
		25–49	Orange
		49–50	Orange ... Blue
		50–74	Blue
		74–75	Blue ... Green
		75–99	Green
		99–100	Green ... Pink
		100–127	Pink
		127–128	Color 1
		128–129	>>> ... >>
		129–188	>> (703.2–1.38 °/s)
		188–189	>> ... >
		189	>
		189–190	Color 1 Spin: > ... Stop
		190–193	Color 1 Spin: Stop
		193–194	Color 1 Spin: Stop ... <
		194–195	< ... <<
		195–254	<< (1.38–703.2 °/s)
		254–255	<< ... <<<
		255	<<<
14	Colors Fine	0–255	Fine adjustment of CH 13
15	Colors 2	0–24	Color: Open
		24–25	Open ... Red
		25–49	Red
		49–50	Red ... Yellow
		50–74	Yellow
		74–75	Yellow ... CTB
		75–99	CTB
		99–100	CTB ... UV
		100–127	UV
		127–128	Color 2
		128–129	>>> ... >>
		129–188	>> (703.2–1.38 °/s)
		188–189	>> ... >
		189	>
		189–190	Color 2 Spin: > ... Stop
		190–193	Color 2 Spin: Stop
		193–194	Color 2 Spin: Stop ... <
		194–195	< ... <<
		195–254	<< (1.38–703.2 °/s)
		254–255	<< ... <<<
		255	<<<

CH	Function	DMX	Description
16	Colors 2 Fine	0–255	Fine adjustment of CH 15
17	Zoom		Zoom 1 1
		0–127	Narrow ... normal
		127–255	Normal ... wide
		255	Wide
18	Zoom Fine	0–255	Fine adjustment of CH 17
19	Shutter		Same as CH 12 in the mode “Standard” (p. 9)
20	Dimmer	0–255	Closed ... Open
		255	Open
21	Dimmer Fine	0–255	Fine adjustment of CH 20
22	Color Mix Speed		Same as CH 14 in the mode “Standard” (p. 10)
23	Color Macro		Same as CH 15 in the mode “Standard” (p. 10)
24	Control		Same as CH 16 in the mode “Standard” (p. 11)
25	Pan Fine	0–255	Fine adjustment of CH 5
26	Tilt Fine	0–255	Fine adjustment of CH 6

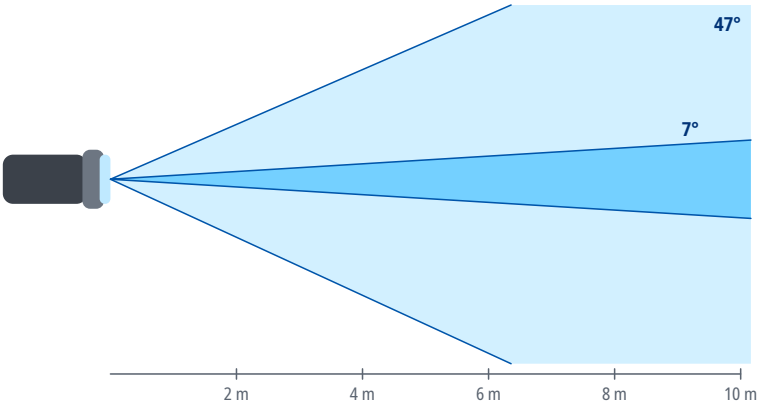
10 Technical specifications

Parameter	Value
Light	
Light source	discharge lamp
Lamp power	1,500 W
Luminous flux	40,000 lm
Color temperature	6,000 K
Color rendering index (CRI)	75
Optics	
Zoom	7–47°
Movement	
Pan	540°
Tilt	270°
Control	
RDM	yes (manufacturer ID 0x4753, device model ID 0x01AF)
Operating environment	
Operating temperature	0 to 40 °C

Speeds and ranges

Parameter	Value
Strobe frequency	1–10 Hz
Color wheel 1 rotation	up to 703.2 °/s (117 rpm)
Color wheel 2 rotation	up to 703.2 °/s (117 rpm)

Spot diameter



Distance	Ø 7°	Ø 47°
2 m	0.24 m	1.7 m
4 m	0.49 m	3.5 m
6 m	0.73 m	5.2 m
8 m	0.98 m	7 m
10 m	1.2 m	8.7 m
15 m	1.8 m	13 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.