DMX REFERENCE

UNITY 19 WILOX

Stage4



Manufacturer	Stage4
GDTF file	Stage4_UNITY_19_WILOX_131820.gdtf
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1 About this manual

This document describes the UNITY 19 WILOX by Stage4. It was compiled from the GDTF file Stage4_UNITY_19_WILOX_131820.gdtf from the GDTF-Share library.

File revision: “Rev2”.

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 Stage4; 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	30 W
Weight	4 kg

DMX modes

Mode	Channels	Units in one universe	First start addresses
23ch	23	22	1, 24, 47, 70, ...
16ch	16	32	1, 17, 33, 49, ...
10ch	10	51	1, 11, 21, 31, ...
6ch	6	85	1, 7, 13, 19, ...
2ch	2	256	1, 3, 5, 7, ...

No light? Check these channels

- 23ch: CH 1 Dimmer above 0
- 16ch: CH 1 Dimmer above 0
- 10ch: CH 1 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.

4 Installation

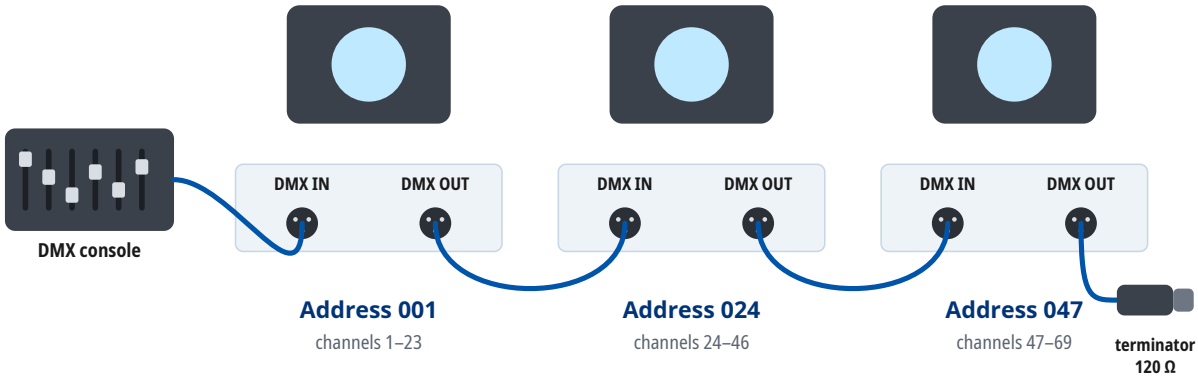
⚠ **WARNING**

- 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: 4 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.

5 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 23ch: every unit occupies 23 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.

6 Operation

Setting the DMX address

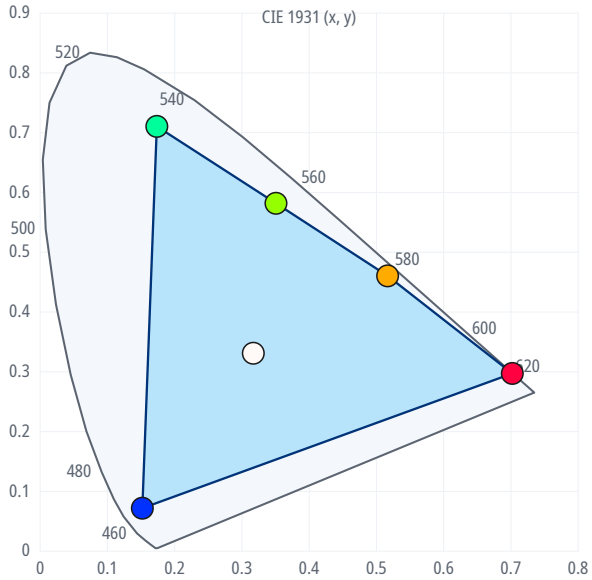
- The device occupies as many consecutive channels in the DMX universe as the selected DMX mode uses, starting at the set start address.
- Number of channels occupied in the DMX mode “23ch”: 23.
- Choose start addresses so that the channels of individual devices do not overlap and the last occupied channel does not exceed 512. Devices with the same start address and mode respond identically.
- For several devices in a row in the DMX mode “23ch”, you can use, for example, the start addresses 1, 24, 47, 70.
- The DMX mode set on the device must match the fixture profile (personality) used in the controller.

7 Functions at a glance

Functions in each DMX mode

	23ch 23 channels	16ch 16 channels	10ch 10 channels	6ch 6 channels	2ch 2 channels
Dimmer	1	1	1		
Dimmer resolution	16 bit	8 bit	8 bit		
Color mixing	6× (3–13)	2–7	2–7	1–6	
Color temperature	16	9			2
Effects / macros	15, 22, 23	8, 15, 16			1

LED colors and the colors they mix

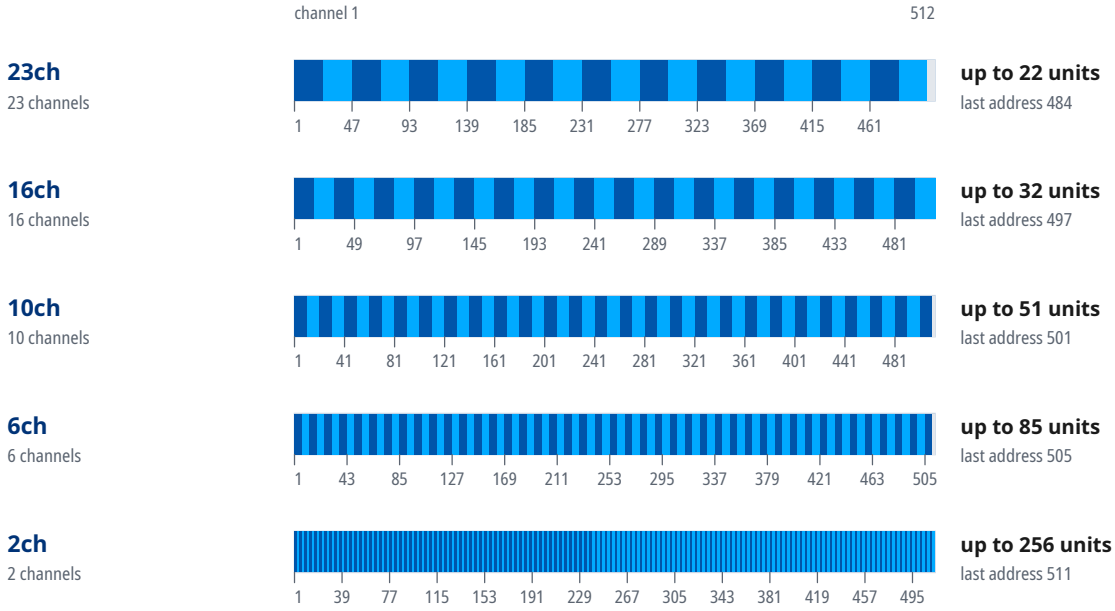


LED	x	y	nm
Red	0.702	0.297	626
Green	0.173	0.711	527
Blue	0.152	0.072	452
Cold White	0.317	0.331	
Warm White	0.517	0.461	
Lime	0.351	0.582	

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

8 DMX channels

Units in one DMX universe



Start addresses of 20 units in the mode “23ch”

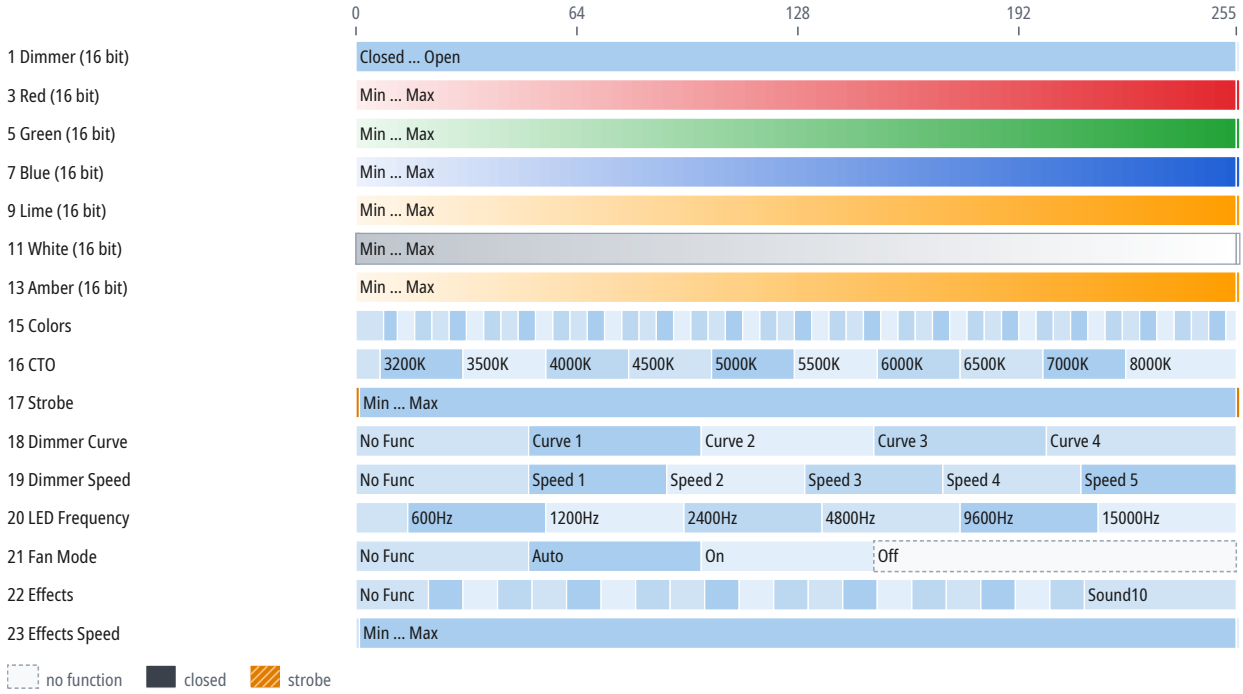
Unit	Start address	Unit	Start address	Unit	Start address	Unit	Start address
1	1	6	116	11	231	16	346
2	24	7	139	12	254	17	369
3	47	8	162	13	277	18	392
4	70	9	185	14	300	19	415
5	93	10	208	15	323	20	438

Mode 23ch

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 1 Dimmer above 0. The GDTF file gives these values for a console's Highlight function: CH 1 Dimmer 255, CH 3 Red 255, CH 5 Green 255, CH 7 Blue 255.

Channel functions at a glance



CH	Function	DMX	Description
1	Dimmer	0–255	Closed ... Open
		255	Open
2	Dimmer Fine	0–255	Fine adjustment of CH 1
3	Red	0–255	Min ... Max
		255	Max
4	Red Fine	0–255	Fine adjustment of CH 3
5	Green	0–255	Min ... Max
		255	Max
6	Green Fine	0–255	Fine adjustment of CH 5
7	Blue	0–255	Min ... Max
		255	Max
8	Blue Fine	0–255	Fine adjustment of CH 7
9	Lime	0–255	Min ... Max
		255	Max
10	Lime Fine	0–255	Fine adjustment of CH 9
11	White		Cold White
		0–255	Min ... Max
		255	Max

CH	Function	DMX	Description
12	White Fine	0–255	Fine adjustment of CH 11
13	Amber	0–255	Min ... Max
		255	Max
14	Amber Fine	0–255	Fine adjustment of CH 13
15	Colors	0–7	No Func
		8–11	Color1
		12–16	Color2
		17–21	Color3
		22–26	Color4
		27–31	Color5
		32–36	Color6
		37–41	Color7
		42–46	Color8
		47–51	Color9
		52–56	Color10
		57–61	Color11
		62–66	Color12
		67–71	Color13
		72–76	Color14
		77–81	Color15
		82–86	Color16
		87–91	Color17
		92–96	Color18
		97–101	Color19
		102–106	Color20
		107–111	Color21
		112–116	Color22
		117–121	Color23
		122–126	Color24
		127–131	Color25
		132–136	Color26
		137–141	Color27
		142–146	Color28
		147–151	Color29
		152–156	Color30
		157–161	Color31
		162–166	Color32
		167–171	Color33
		172–176	Color34
		177–181	Color35
		182–186	Color36
		187–191	Color37

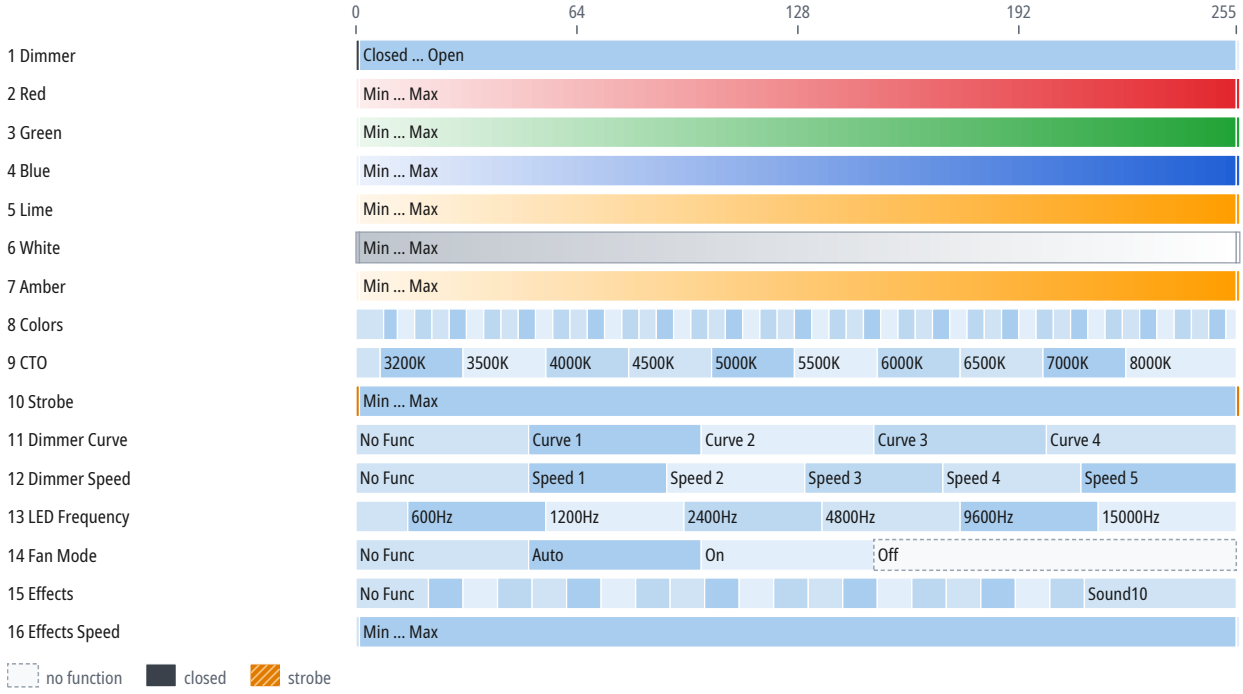
CH	Function	DMX	Description
15	Colors (continued)	192–196	Color38
		197–201	Color39
		202–206	Color40
		207–211	Color41
		212–216	Color42
		217–221	Color43
		222–226	Color44
		227–231	Color45
		232–236	Color46
		237–241	Color47
		242–246	Color48
		247–251	Color49
		252–255	Color50
16	CTO	0–6	No Func
		7–30	3200K
		31–54	3500K
		55–78	4000K
		79–102	4500K
		103–126	5000K
		127–150	5500K
		151–174	6000K
		175–198	6500K
		199–222	7000K
		223–255	8000K
17	Strobe	0	Min
		1–254	Min ... Max
		255	Max
18	Dimmer Curve	0–49	No Func
		50–99	Curve 1
		100–149	Curve 2
		150–199	Curve 3
		200–255	Curve 4
19	Dimmer Speed	0–49	No Func
		50–89	Speed 1
		90–129	Speed 2
		130–169	Speed 3
		170–209	Speed 4
		210–255	Speed 5
20	LED Frequency		Refresh Rate
		0–14	No Func
		15–54	600Hz
		55–94	1200Hz

CH	Function	DMX	Description
20	LED Frequency (continued)	95–134	2400Hz
		135–174	4800Hz
		175–214	9600Hz
		215–255	15000Hz
21	Fan Mode	0–49	No Func
		50–99	Auto
		100–149	On
		150–255	Off
22	Effects	0–20	No Func
		21–30	Auto1
		31–40	Auto2
		41–50	Auto3
		51–60	Auto4
		61–70	Auto5
		71–80	Auto6
		81–90	Auto7
		91–100	Auto8
		101–110	Auto9
		111–120	Auto10
		121–130	Sound1
		131–140	Sound2
		141–150	Sound3
		151–160	Sound4
		161–170	Sound5
		171–180	Sound6
		181–190	Sound7
		191–200	Sound8
		201–210	Sound9
		211–255	Sound10
23	Effects Speed		Auto Speed
		0	Min
		1–254	Min ... Max
		255	Max

Mode 16ch

If the device receives DMX in this mode but gives no light, check these channels: CH 1 Dimmer above 0. The GDTF file gives these values for a console's Highlight function: CH 1 Dimmer 255, CH 2 Red 255, CH 3 Green 255, CH 4 Blue 255.

Channel functions at a glance



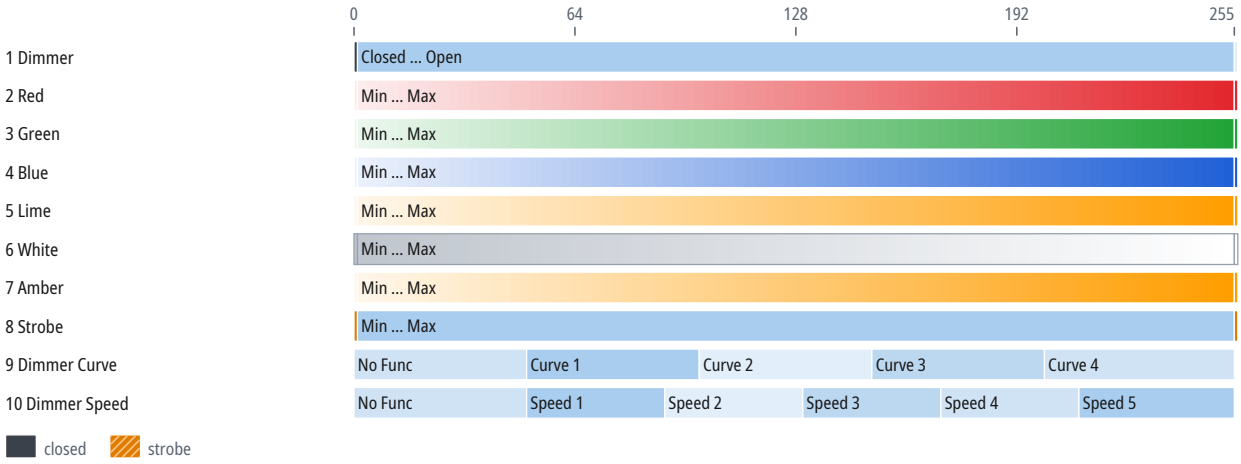
CH	Function	DMX	Description
1	Dimmer	0	Closed
		1–254	Closed ... Open
		255	Open
2	Red	0	Min
		1–254	Min ... Max
		255	Max
3	Green	0	Min
		1–254	Min ... Max
		255	Max
4	Blue	0	Min
		1–254	Min ... Max
		255	Max
5	Lime	0	Min
		1–254	Min ... Max
		255	Max
6	White		Cold White
		0	Min
		1–254	Min ... Max
		255	Max

CH	Function	DMX	Description
7	Amber	0	Min
		1–254	Min ... Max
		255	Max
8	Colors		Same as CH 15 in the mode “23ch” (p. 10)
9	CTO		Same as CH 16 in the mode “23ch” (p. 11)
10	Strobe		Same as CH 17 in the mode “23ch” (p. 11)
11	Dimmer Curve		Same as CH 18 in the mode “23ch” (p. 11)
12	Dimmer Speed		Same as CH 19 in the mode “23ch” (p. 11)
13	LED Frequency		Same as CH 20 in the mode “23ch” (p. 11)
14	Fan Mode		Same as CH 21 in the mode “23ch” (p. 12)
15	Effects		Same as CH 22 in the mode “23ch” (p. 12)
16	Effects Speed		Same as CH 23 in the mode “23ch” (p. 12)

Mode 10ch

If the device receives DMX in this mode but gives no light, check these channels: CH 1 Dimmer above 0. The GDTF file gives these values for a console's Highlight function: CH 1 Dimmer 255, CH 2 Red 255, CH 3 Green 255, CH 4 Blue 255.

Channel functions at a glance

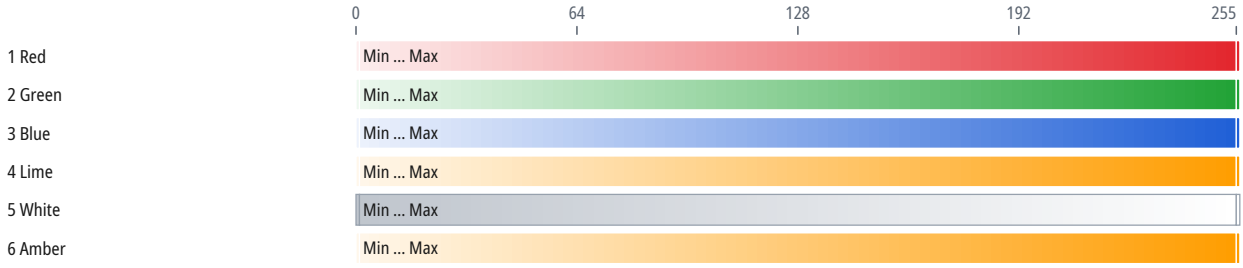


CH	Function	DMX	Description
1	Dimmer		Same as CH 1 in the mode “16ch” (p. 13)
2	Red		Same as CH 2 in the mode “16ch” (p. 13)
3	Green		Same as CH 3 in the mode “16ch” (p. 13)
4	Blue		Same as CH 4 in the mode “16ch” (p. 13)
5	Lime		Same as CH 5 in the mode “16ch” (p. 13)
6	White		Same as CH 6 in the mode “16ch” (p. 13)
7	Amber		Same as CH 7 in the mode “16ch” (p. 14)
8	Strobe		Same as CH 17 in the mode “23ch” (p. 11)
9	Dimmer Curve		Same as CH 18 in the mode “23ch” (p. 11)
10	Dimmer Speed		Same as CH 19 in the mode “23ch” (p. 11)

Mode 6ch

The GDTF file gives these values for a console's Highlight function: CH 1 Red 255, CH 2 Green 255, CH 3 Blue 255.

Channel functions at a glance

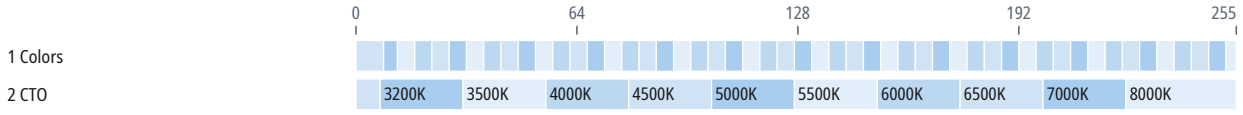


CH	Function	DMX	Description
1	Red		Same as CH 2 in the mode “16ch” (p. 13)
2	Green		Same as CH 3 in the mode “16ch” (p. 13)
3	Blue		Same as CH 4 in the mode “16ch” (p. 13)
4	Lime		Same as CH 5 in the mode “16ch” (p. 13)
5	White		Same as CH 6 in the mode “16ch” (p. 13)
6	Amber		Same as CH 7 in the mode “16ch” (p. 14)

Mode 2ch

The GDTF file gives these values for a console's Highlight function: CH 2 CTO 255.

Channel functions at a glance



CH	Function	DMX	Description
1	Colors		Same as CH 15 in the mode “23ch” (p. 10)
2	CTO		Same as CH 16 in the mode “23ch” (p. 11)

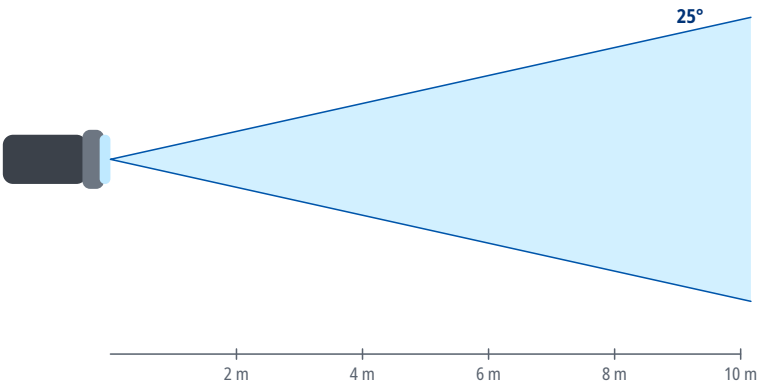
9 Technical specifications

Parameter	Value
Light	
Light source	LED
LED power	30 W
Luminous flux	1,000 lm
Color temperature	6,000 K
Color rendering index (CRI)	95
Optics	
Beam angle	25°
Control	
DMX connection	5-pin XLR IN/OUT
Electrical	
Power supply	100–240 V, 50/60 Hz
Power consumption	30 W
Power connectors	powerCON TRUE1 IN
Dimensions and construction	
Weight	4 kg
Operating environment	
Operating temperature	0 to 40 °C

Speeds and ranges

Parameter	Value
Color temperature range	3200–8000 K

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.

10 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.

11 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.

12 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.