DMX REFERENCE

Trinity 200 LED V2

Involight



Manufacturer	Involight
GDTF file	Involight_Trinity_200_LED_V2_42257.gdtf
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1 About this manual

This document describes the Trinity 200 LED V2 by Involight. It was compiled from the GDTF file Involight_Trinity_200_LED_V2_42257.gdtf from the GDTF-Share library.

File revision: “1.2.0.0”.

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 Involight; 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	22 kg

DMX modes

Mode	Channels	Units in one universe	First start addresses
25 Ch	25	20	1, 26, 51, 76, ...
30 Ch	30	17	1, 31, 61, 91, ...

No light? Check these channels

- 25 Ch: CH 6 Dimmer above 0; CH 7 Shutter at 104–107, 208–212 or 252–255 “Shutter Open”
- 30 Ch: CH 6 Dimmer above 0; CH 8 Shutter at 104–107, 208–212 or 252–255 “Shutter 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.

⚠ **WARNING**

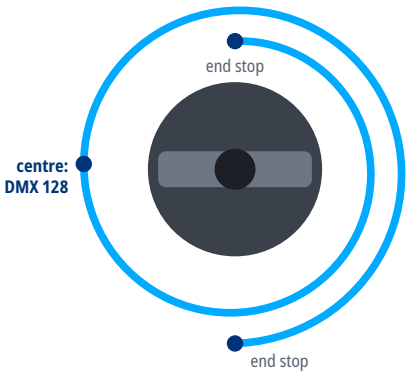
- The moving parts of the device (for example the head or arms) can move quickly and unexpectedly at any time – after power-on, during a reset, or on a command from the controller.
- Keep yourself and any objects out of the range of movement. While the device is switched on, do not touch the moving parts,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

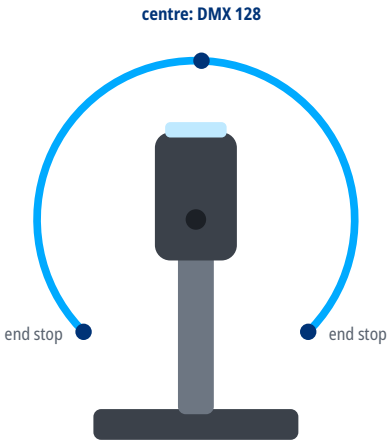
Pan 540°

top view



Tilt 270°

side view



5 Installation

⚠ **WARNING**

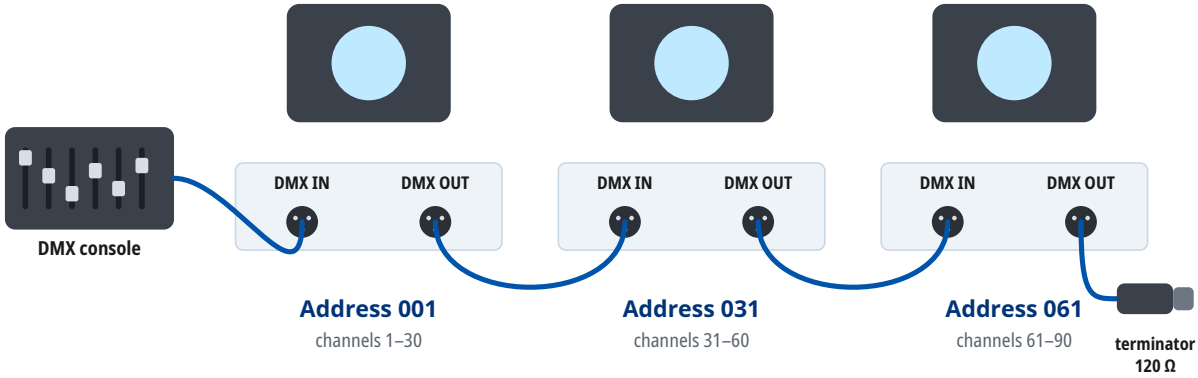
- Rigging must be carried out only by qualified persons in accordance with applicable regulations, in particular those for work at height.
- The supporting structure and fixings must safely carry the weight of all suspended devices; verify their load capacity in advance.
- Weight of the device: 22 kg.
- 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 30 Ch: every unit occupies 30 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

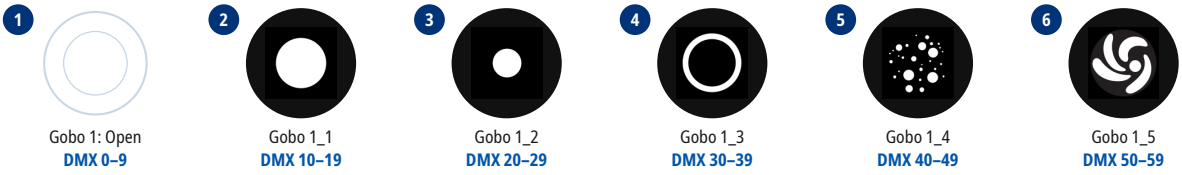
- The device occupies as many consecutive channels in the DMX universe as the selected DMX mode uses, starting at the set start address.
- Number of channels occupied in the DMX mode “30 Ch”: 30.
- Choose start addresses so that the channels of individual devices do not overlap and the last occupied 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 “30 Ch”, you can use, for example, the start addresses 1, 31, 61, 91.
- 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

	25 Ch 25 channels	30 Ch 30 channels
Pan / Tilt	1, 3	1, 3
Dimmer	6	6
Dimmer resolution	8 bit	16 bit
Shutter / strobe	7	8
Color mixing	8–10	9–11
Color wheel	11–13	12–14
Gobo wheel	14, 15	15, 16
Gobo rotation	16	17
Prism	19–22	24–27
Frost	24	29
Zoom	18	22
Focus	17	19, 21
Animation wheel	23	28

Gobo wheel 1



1 Gobo 1: Open
DMX 0–9

2 Gobo 1_1
DMX 10–19

3 Gobo 1_2
DMX 20–29

4 Gobo 1_3
DMX 30–39

5 Gobo 1_4
DMX 40–49

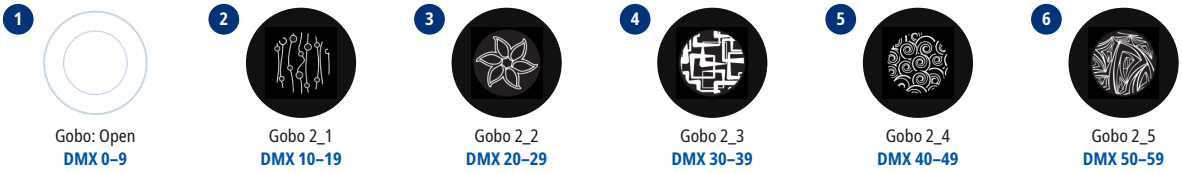
6 Gobo 1_5
DMX 50–59



7 Gobo 1_6
DMX 60–69

8 Gobo 1_7
DMX 70–78

Gobo wheel 2



1 Gobo: Open
DMX 0–9

2 Gobo 2_1
DMX 10–19

3 Gobo 2_2
DMX 20–29

4 Gobo 2_3
DMX 30–39

5 Gobo 2_4
DMX 40–49

6 Gobo 2_5
DMX 50–59



7 Gobo 2_6
DMX 60–69

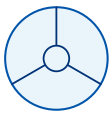
8 Gobo 2_7
DMX 70–78

Animation wheel

1 
Stripes

2 
Dots

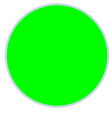
Prism

1 
3 facets
3 Facet Prism
CH 24: DMX 128–255

2 
6 facets
6 Facet Prism
CH 26: DMX 128–255

Color wheel 1

1
Open
DMX 0

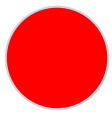
2 
Green
DMX 76

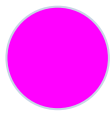
3 
Blue
DMX 180

4 
Cyan
DMX 254

Color wheel 2

1
Open
DMX 0

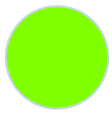
2 
Red
DMX 76

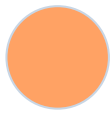
3 
Magenta
DMX 180

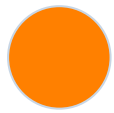
4 
Pink
DMX 254

Color wheel 3

1
Open
DMX 0

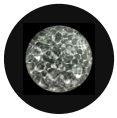
2 
Fern Green
DMX 76

3 
CTO
DMX 180

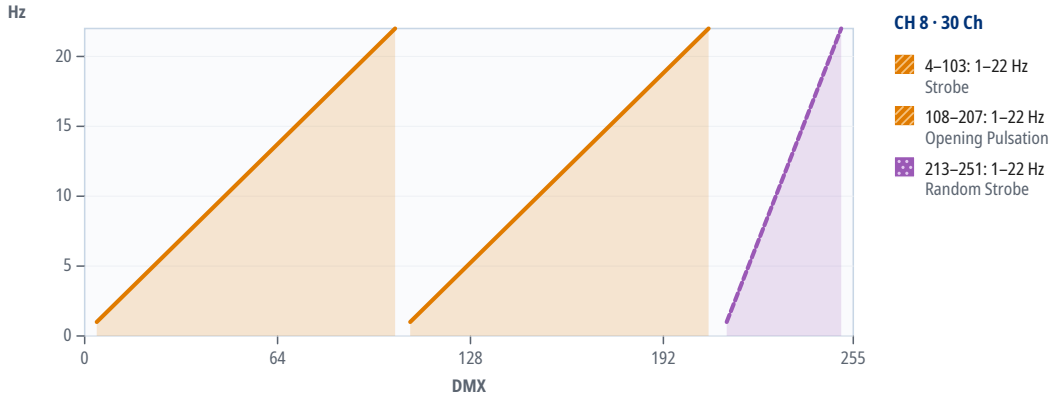
4 
Orange
DMX 254

Gobo wheel 3

1
Open

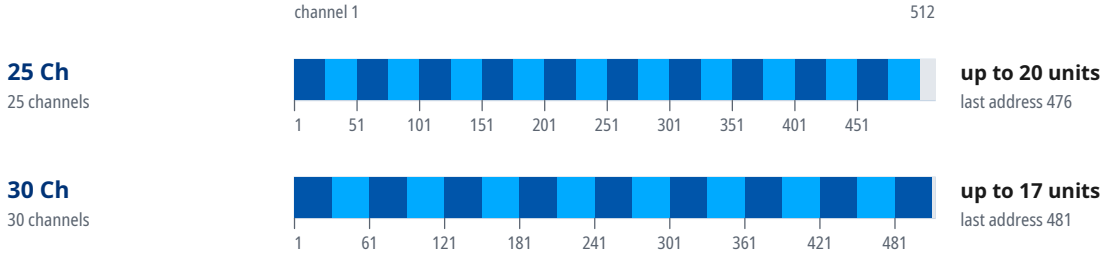
2 
Frost

Strobe rate



9 DMX channels

Units in one DMX universe



Start addresses of 20 units in the mode “30 Ch”

Unit	Start address	Unit	Start address	Unit	Start address	Unit	Start address
1	1	6	151	11	301	16	451
2	31	7	181	12	331	17	481
3	61	8	211	13	361	18	U2 · 1
4	91	9	241	14	391	19	U2 · 31
5	121	10	271	15	421	20	U2 · 61

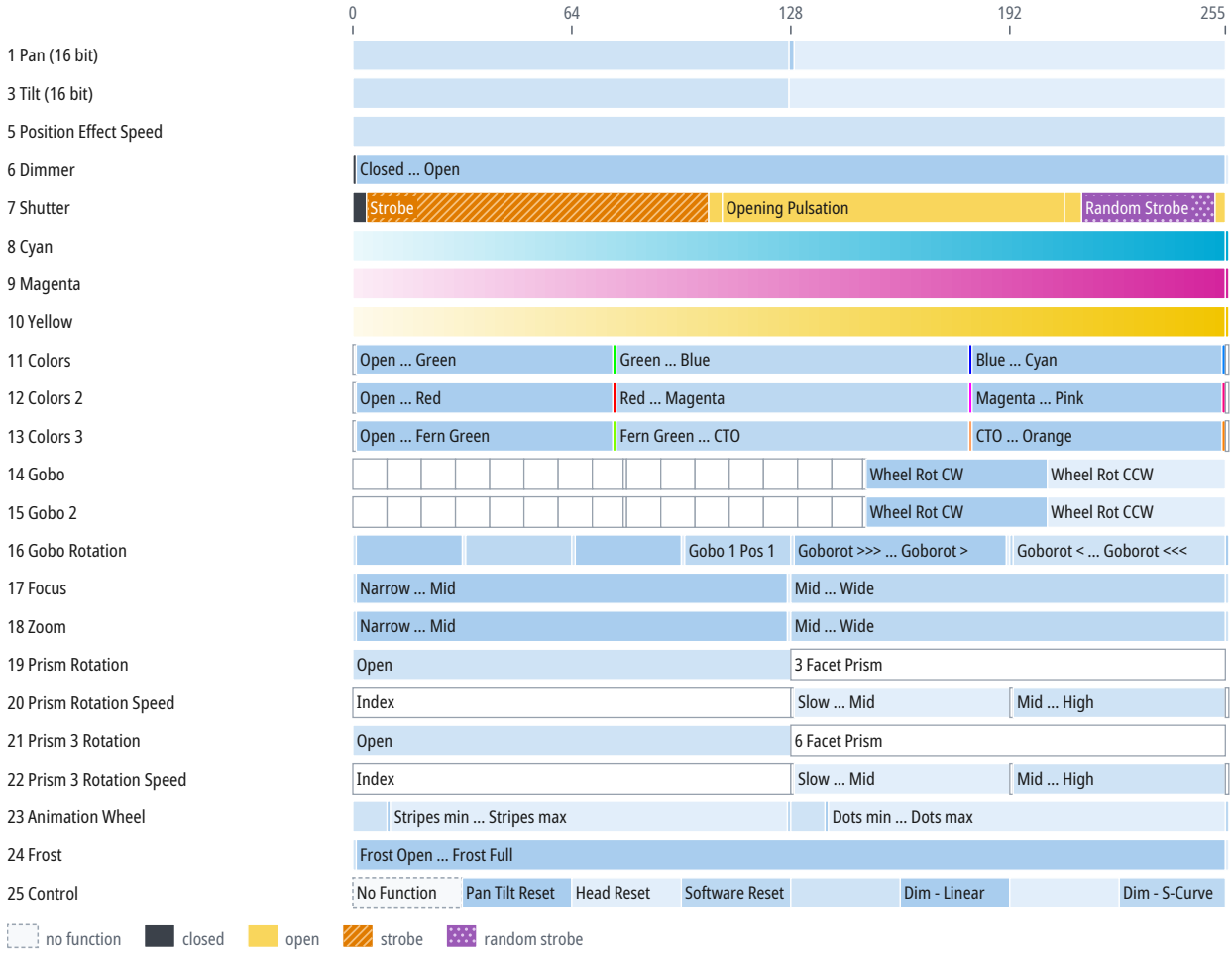
Where a DMX universe is full, the next units continue in the next universe: “U2 · 1” is address 1 in the second universe, counted from the universe of the first unit.

Mode 25 Ch

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 Dimmer above 0; CH 7 Shutter at 104–107, 208–212 or 252–255 “Shutter Open”. The GDTF file gives these values for a console's Highlight function: CH 6 Dimmer 255, CH 7 Shutter 255, CH 8 Cyan 255, CH 9 Magenta 255, CH 10 Yellow 255, CH 11 Colors 0, CH 12 Colors 2 0, CH 13 Colors 3 0.

Channel functions at a glance



CH	Function	DMX	Description
1	Pan	0–127	Pan
		128–129	Home
		129–255	Pan
2	Pan Fine	0–255	Fine adjustment of CH 1
3	Tilt	0–127	Tilt
		128	Home
		128–255	Tilt
4	Tilt Fine	0–255	Fine adjustment of CH 3
5	Position Effect Speed	0–255	
6	Dimmer	0	Closed
		1–254	Closed ... Open

CH	Function	DMX	Description
6	Dimmer (continued)	255	Open
7	Shutter	0–3	Shutter Closed
		4–103	Strobe (1–22 Hz)
		104–107	Shutter Open
		108–207	Opening Pulsation (1–22 Hz)
		208–212	Shutter Open
		213–251	Random Strobe (1–22 Hz)
		252–255	Shutter Open
8	Cyan	0–254	Color Sub_C
		255	Min
9	Magenta	0–254	Color Sub_M
		255	Min
10	Yellow	0–254	Color Sub_Y
		255	Min
11	Colors		Color Wheel 1
		0	Open
		1–75	Open ... Green
		76	Green
		77–179	Green ... Blue
		180	Blue
		181–253	Blue ... Cyan
		254	Cyan
		255	Open2
12	Colors 2		Color 2
		0	Open
		1–75	Open ... Red
		76	Red
		77–179	Red ... Magenta
		180	Magenta
		181–253	Magenta ... Pink
		254	Pink
		255	Open2
13	Colors 3	0	Open
		1–75	Open ... Fern Green
		76	Fern Green
		77–179	Fern Green ... CTO
		180	CTO
		181–253	CTO ... Orange
		254	Orange
		255	Open2
14	Gobo	0–9	Gobo 1: Open
		10–19	Gobo 1_1

CH	Function	DMX	Description
14	Gobo (continued)	20–29	Gobo 1_2
		30–39	Gobo 1_3
		40–49	Gobo 1_4
		50–59	Gobo 1_5
		60–69	Gobo 1_6
		70–78	Gobo 1_7
		79	Gobo 1: Open2
		80–89	Gobo Shake 1_1 (0.1–2 Hz)
		90–99	Gobo Shake 1_2 (0.1–2 Hz)
		100–109	Gobo Shake 1_3 (0.1–2 Hz)
		110–119	Gobo Shake 1_4 (0.1–2 Hz)
		120–129	Gobo Shake 1_5 (0.1–2 Hz)
		130–139	Gobo Shake 1_6 (0.1–2 Hz)
		140–148	Gobo Shake 1_7 (0.1–2 Hz)
		149	Gobo 1 Select Shake: Open
		150–202	Wheel Rot CW (1200–1.2 °/s)
		203–255	Wheel Rot CCW (1.2–1200 °/s)
15	Gobo 2	0–9	Gobo: Open
		10–19	Gobo 2_1
		20–29	Gobo 2_2
		30–39	Gobo 2_3
		40–49	Gobo 2_4
		50–59	Gobo 2_5
		60–69	Gobo 2_6
		70–78	Gobo 2_7
		79	Gobo: Open2
		80–89	Gobo Shake 2_1 (0.1–2 Hz)
		90–99	Gobo Shake 2_2 (0.1–2 Hz)
		100–109	Gobo Shake 2_3 (0.1–2 Hz)
		110–119	Gobo Shake 2_4 (0.1–2 Hz)
		120–129	Gobo Shake 2_5 (0.1–2 Hz)
		130–139	Gobo Shake 2_6 (0.1–2 Hz)
		140–148	Gobo Shake 2_7 (0.1–2 Hz)
		149	Gobo 2 Select Shake: Open
		150–202	Wheel Rot CW (600–6 °/s)
		203–255	Wheel Rot CCW (6–600 °/s)
16	Gobo Rotation	0	0 deg
		1–31	0 deg ... 90 deg
		32	90 deg
		33–63	90 deg ... 180 deg
		64	180 deg
		65–95	180 deg ... 270 deg

CH	Function	DMX	Description
16	Gobo Rotation (continued)	96	270 deg
		97–127	Gobo 1 Pos 1
		128	Goborot >>>
		129–190	Goborot >>> ... Goborot >
		191	Goborot >
		192	Goborot <
		193–254	Goborot < ... Goborot <<<
		255	Goborot <<<
17	Focus	0	Narrow
		1–126	Narrow ... Mid
		127	Mid
		128–254	Mid ... Wide
		255	Wide
18	Zoom	0	Narrow
		1–126	Narrow ... Mid
		127	Mid
		128–254	Mid ... Wide
		255	Wide
19	Prism Rotation	0–127	Open
		128–255	3 Facet Prism
20	Prism Rotation Speed	0–127	Index (360°)
		128	Prism 1 Pos Rotate: Slow
		129–191	Slow ... Mid
		192	Mid
		193–254	Mid ... High
		255	Prism 1 Pos Rotate: High
21	Prism 3 Rotation	0–127	Open
		128–255	6 Facet Prism
22	Prism 3 Rotation Speed	0–127	Index (360°)
		128	Prism 2 Pos Rotate: Slow
		129–191	Slow ... Mid
		192	Mid
		193–254	Mid ... High
		255	Prism 2 Pos Rotate: High
23	Animation Wheel	0–9	Open
		10	Stripes min
		11–126	Stripes min ... Stripes max
		127	Stripes max
		128–137	Open
		138	Dots min
		139–254	Dots min ... Dots max
		255	Dots max

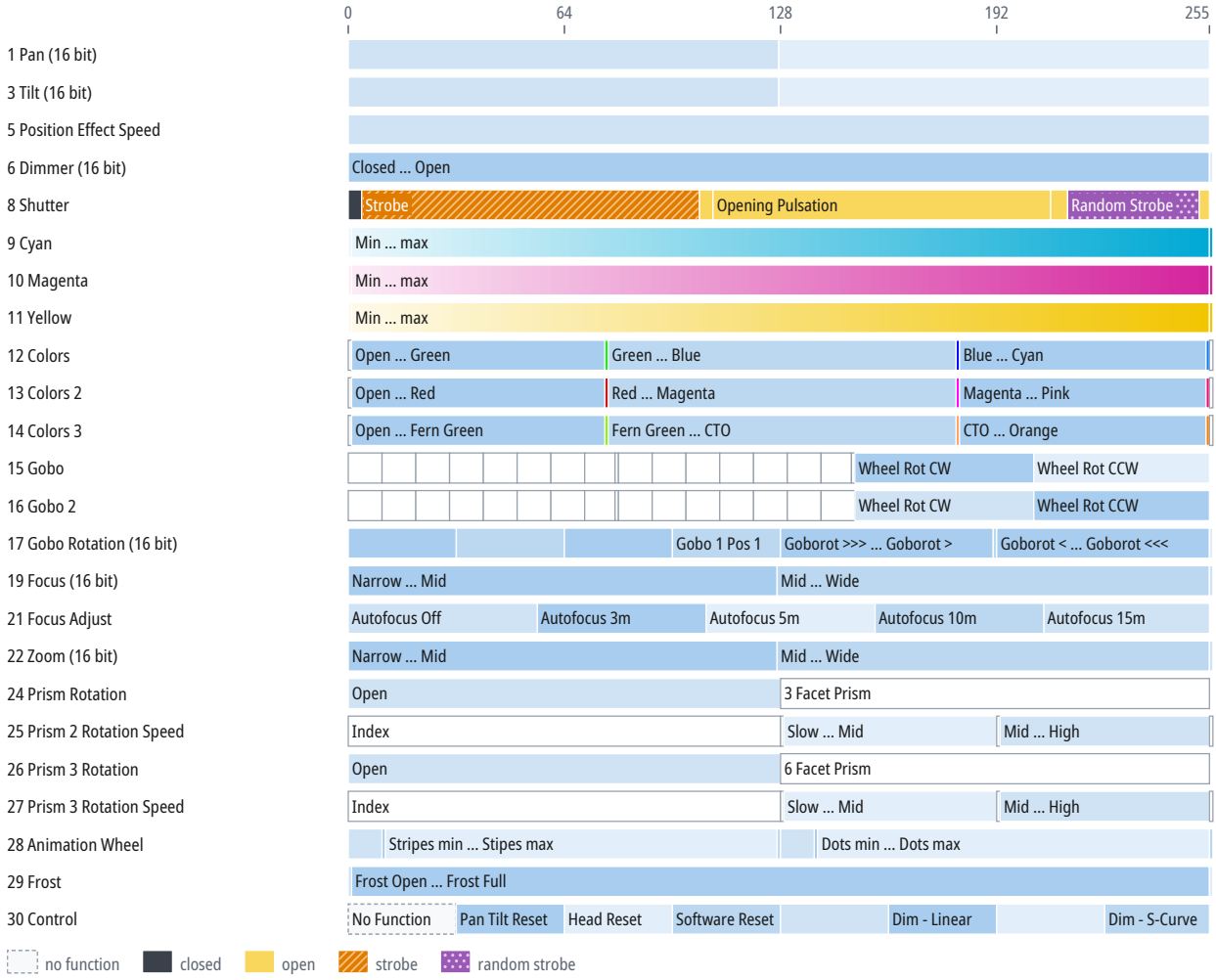
CH	Function	DMX	Description
24	Frost	0	Frost Open
		1–254	Frost Open ... Frost Full
		255	Frost Full
25	Control	0–31	No Function
		32–63	Pan Tilt Reset
		64–95	Head Reset
		96–127	Software Reset
		128–159	Dim - Exp-Curve
		160–191	Dim - Linear
		192–223	Dim - Log-Curve
		224–255	Dim - S-Curve

Mode 30 Ch

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 Dimmer above 0; CH 8 Shutter at 104–107, 208–212 or 252–255 “Shutter Open”. The GDTF file gives these values for a console's Highlight function: CH 6 Dimmer 255, CH 8 Shutter 255, CH 9 Cyan 255, CH 10 Magenta 255, CH 11 Yellow 255, CH 12 Colors 0, CH 13 Colors 2 0, CH 14 Colors 3 0.

Channel functions at a glance



CH	Function	DMX	Description
1	Pan	0–127	Pan
		128	Home
		128–255	Pan
2	Pan Fine	0–255	Fine adjustment of CH 1
3	Tilt		Same as CH 3 in the mode “25 Ch” (p. 10)
4	Tilt Fine	0–255	Fine adjustment of CH 3
5	Position Effect Speed	0–255	
6	Dimmer	0–255	Closed ... Open
		255	Open
7	Dimmer Fine	0–255	Fine adjustment of CH 6

CH	Function	DMX	Description
8	Shutter		Same as CH 7 in the mode “25 Ch” (p. 11)
9	Cyan	0	Min
		1–254	Min ... max
		255	Max
10	Magenta	0	Min
		1–254	Min ... max
		255	Max
11	Yellow	0	Min
		1–254	Min ... max
		255	Max
12	Colors		Same as CH 11 in the mode “25 Ch” (p. 11)
13	Colors 2		Color 2
		0	Open
		1–75	Open ... Red
		76	Red
		77–179	Red ... Magenta
		180	Magenta
		181–253	Magenta ... Pink
		254	Pink
		255	Open
14	Colors 3		Same as CH 13 in the mode “25 Ch” (p. 11)
15	Gobo	0–9	Gobo 1: Open
		10–19	Gobo 1_1
		20–29	Gobo 1_2
		30–39	Gobo 1_3
		40–49	Gobo 1_4
		50–59	Gobo 1_5
		60–69	Gobo 1_6
		70–78	Gobo 1_7
		79	Gobo 1: Open
		80–89	Gobo Shake 1_1 (0.1–2 Hz)
		90–99	Gobo Shake 1_2 (0.1–2 Hz)
		100–109	Gobo Shake 1_3 (0.1–2 Hz)
		110–119	Gobo Shake 1_4 (0.1–2 Hz)
		120–129	Gobo Shake 1_5 (0.1–2 Hz)
		130–139	Gobo Shake 1_6 (0.1–2 Hz)
		140–148	Gobo Shake 1_7 (0.1–2 Hz)
		149	Gobo 1 Select Shake: Open
		150–202	Wheel Rot CW (600–6 °/s)
		203–255	Wheel Rot CCW (6–600 °/s)
16	Gobo 2	0–9	Gobo: Open
		10–19	Gobo 2_1

CH	Function	DMX	Description
16	Gobo 2 (continued)	20–29	Gobo 2_2
		30–39	Gobo 2_3
		40–49	Gobo 2_4
		50–59	Gobo 2_5
		60–69	Gobo 2_6
		70–78	Gobo 2_7
		79	Gobo: Open
		80–89	Gobo Shake 2_1 (0.1–2 Hz)
		90–99	Gobo Shake 2_2 (0.1–2 Hz)
		100–109	Gobo Shake 2_3 (0.1–2 Hz)
		110–119	Gobo Shake 2_4 (0.1–2 Hz)
		120–129	Gobo Shake 2_5 (0.1–2 Hz)
		130–139	Gobo Shake 2_6 (0.1–2 Hz)
		140–149	Gobo Shake 2_7 (0.1–2 Hz)
		150–202	Wheel Rot CW (600–6 °/s)
		203–255	Wheel Rot CCW (6–600 °/s)
17	Gobo Rotation	0–32	0 deg ... 90 deg
		32–64	90 deg ... 180 deg
		64–96	180 deg ... 270 deg
		96	270 deg
		96–128	Gobo 1 Pos 1
		128–191	Goborot >>> ... Goborot >
		191	Goborot >
		191–192	Gobo 1 Pos Rotate CW
		192–255	Goborot < ... Goborot <<<
		255	Goborot <<<
18	Gobo Rotation Fine	0–255	Fine adjustment of CH 17
19	Focus	0–127	Narrow ... Mid
		127–255	Mid ... Wide
		255	Wide
20	Focus Fine	0–255	Fine adjustment of CH 19
21	Focus Adjust		Auto Focus 1
		0–55	Autofocus Off
		56–105	Autofocus 3m
		106–155	Autofocus 5m
		156–205	Autofocus 10m
		206–255	Autofocus 15m
22	Zoom	0–127	Narrow ... Mid
		127–255	Mid ... Wide
		255	Wide
23	Zoom Fine	0–255	Fine adjustment of CH 22
24	Prism Rotation		Same as CH 19 in the mode “25 Ch” (p. 13)

CH	Function	DMX	Description
25	Prism 2 Rotation Speed	0–127	Index (360°)
		128	Prism 1 Pos Rotate: Slow
		129–191	Slow ... Mid
		192	Mid
		193–254	Mid ... High
		255	Prism 1 Pos Rotate: High
26	Prism 3 Rotation		Same as CH 21 in the mode “25 Ch” (p. 13)
27	Prism 3 Rotation Speed		Same as CH 22 in the mode “25 Ch” (p. 13)
28	Animation Wheel	0–9	Open
		10	Stripes min
		11–126	Stripes min ... Stipes max
		127	Stipes max
		128–137	Open
		138	Dots min
		139–254	Dots min ... Dots max
		255	Dots max
29	Frost		Same as CH 24 in the mode “25 Ch” (p. 14)
30	Control		Same as CH 25 in the mode “25 Ch” (p. 14)

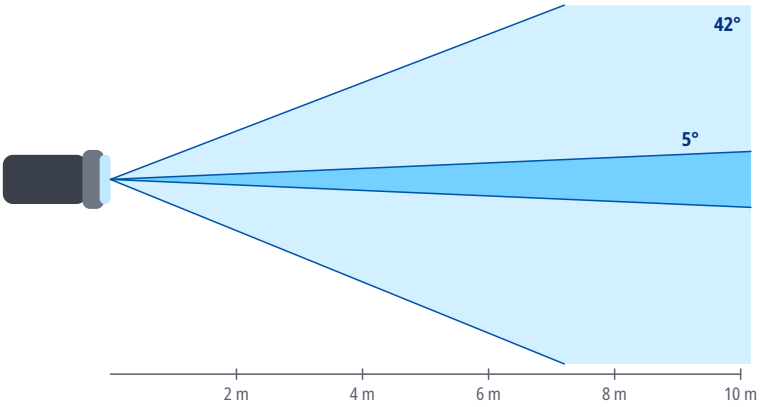
10 Technical specifications

Parameter	Value
Light	
Light source	tungsten lamp
Lamp power	200 W
Luminous flux	66,000 lm
Color temperature	6,000 K
Color rendering index (CRI)	100
Optics	
Zoom	5–42°
Movement	
Pan	540°
Tilt	270°
Dimensions and construction	
Weight	22 kg
Operating environment	
Operating temperature	0 to 40 °C

Speeds and ranges

Parameter	Value
Strobe frequency	1–22 Hz
Gobo wheel 1 rotation	up to 1200 °/s (200 rpm)
Gobo wheel 1 rotation	up to 1200 °/s (200 rpm)
Gobo wheel 2 rotation	up to 600 °/s (100 rpm)
Gobo wheel 2 rotation	up to 600 °/s (100 rpm)
Gobo 2 rotation	up to 600 °/s (100 rpm)
Prism rotation	up to 600 °/s (100 rpm)

Spot diameter



Distance	Ø 5°	Ø 42°
2 m	0.17 m	1.5 m
4 m	0.35 m	3.1 m
6 m	0.52 m	4.6 m
8 m	0.7 m	6.1 m
10 m	0.87 m	7.7 m
15 m	1.3 m	11.5 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.