DMX REFERENCE

Halley H450

Triton Blue



Manufacturer	Triton Blue
GDTF file	Triton_Blue_Halley_H450_110019.gdtf
GDTF revision	v1_1 · 2025-09-08
Generated	2026-11-24

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1 About this manual

This document describes the Halley H450 by Triton Blue. It was compiled from the GDTF file Triton_Blue_Halley_H450_110019.gdtf from the GDTF-Share library.

File revision: “v1_1”.

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 Triton Blue; 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	440 W
Weight	26.5 kg

DMX modes

Mode	Channels	Units in one universe	First start addresses
33CH	33	15	1, 34, 67, 100, ...
36CH	36	14	1, 37, 73, 109, ...

No light? Check these channels

- 33CH: CH 29 Shutter at 10–19, 69–79, 129–139, 255 “Open” or 189–254; CH 30 Dimmer above 0
- 36CH: CH 32 Shutter at 10–19, 69–79, 129–139, 255 “Open” or 189–254; CH 33 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

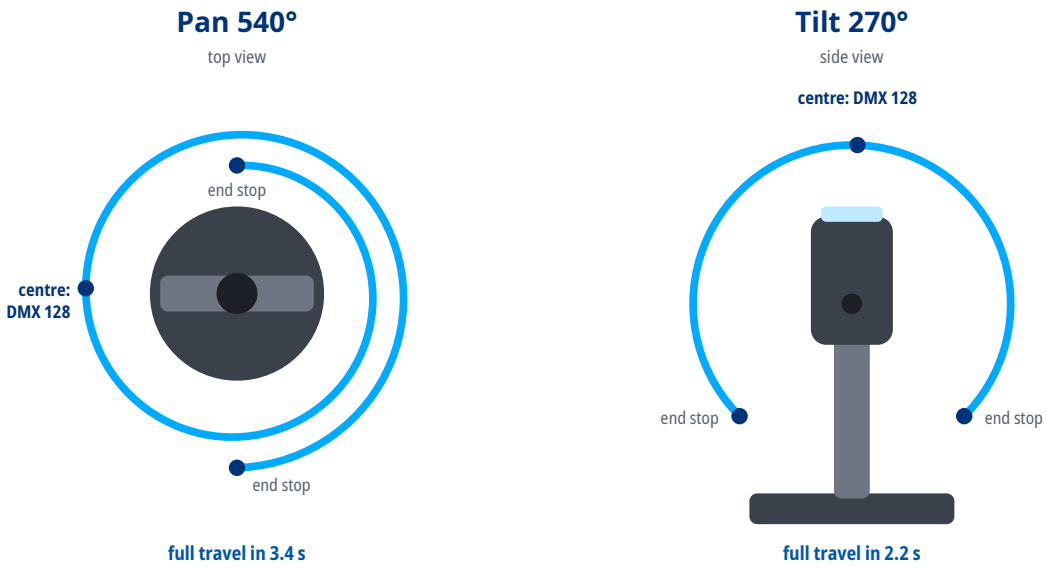
- The moving parts of the device (for example the head or arms) can move quickly and unexpectedly at any time – after power-on, during a reset, or on a command from the controller.
- Keep yourself and any objects out of the range of movement. While the device is switched on, do not touch the moving parts,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

“Triton Blue Halley H450 Hybrid Moving Head 450W The HALLEY H450 uses a long-lasting LED module that saves energy and reduces environmental impact. With its design, the HALLEY H450 integrates beam, Beam, and Wash projection functions into a single device. The HALLEY H450 offers an adjustable zoom angle from 4° to 53°, providing exceptional flexibility in creating lighting effects. With a CRI of 70+ and a filter value that can reach up to 90, it guarantees vibrant and accurate color reproduction. Equipped with an infinite CMY color mixing system, allowing endless color combinations for any environment. Generates a total of 20,000 lumens, ensuring bright and effective lighting for any application.”

Range of movement



Full-travel times as stated in the GDTF file.

5 Installation

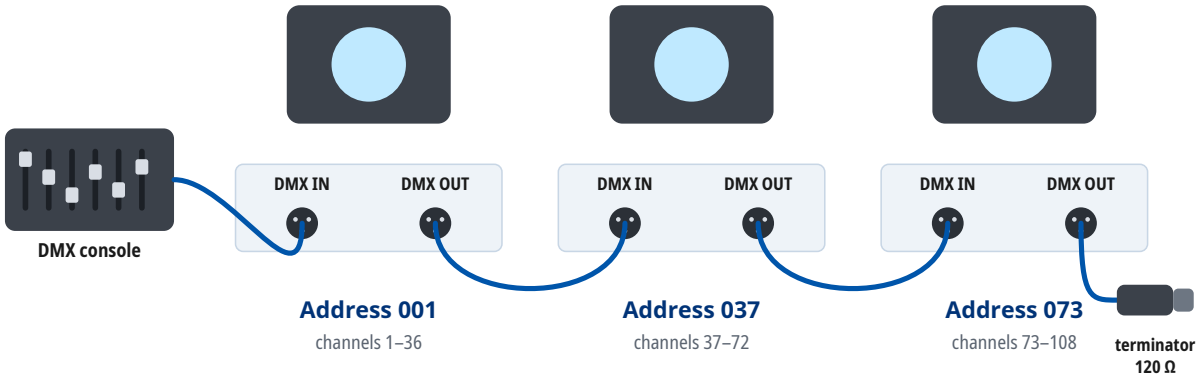
⚠ **WARNING**

- 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: 26.5 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 36CH: every unit occupies 36 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 “36CH”: 36.
- 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 “36CH”, you can use, for example, the start addresses 1, 37, 73, 109.
- 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

	33CH 33 channels	36CH 36 channels
Pan / Tilt	1, 3	1, 3
Dimmer	30	33
Shutter / strobe	29	32
Color mixing	6–8	7–9
Color temperature	12	13
Color wheel	9	10
Gobo wheel	10, 11	11, 12
Gobo rotation	11	12
Prism	25	26
Frost	26	27
Zoom	28	30
Focus	27, 32, 33	28, 35, 36
Iris	24	25
Animation wheel	13	14
Effects / macros	23	24

Gobo wheel

1

Open/hole
DMX 0–9

2

Gobo 1
DMX 10–19

3

Gobo 2
DMX 20–29

4

Gobo 3
DMX 30–39

5

Gobo 4
DMX 40–49

6

Gobo 5
DMX 50–59

7

Gobo 6
DMX 60–69

8

G07
DMX 70–80

Prism

1

Prism: Closed
DMX 0–9

2

4 facets
Prism 1
DMX 10–64

Color wheel

1 Color: Open
DMX 0–5

2 Red
DMX 6–23

3 Green
DMX 24–41

4 Blue
DMX 42–59

5 Orang
DMX 60–77

6 Light Blue
DMX 78–95

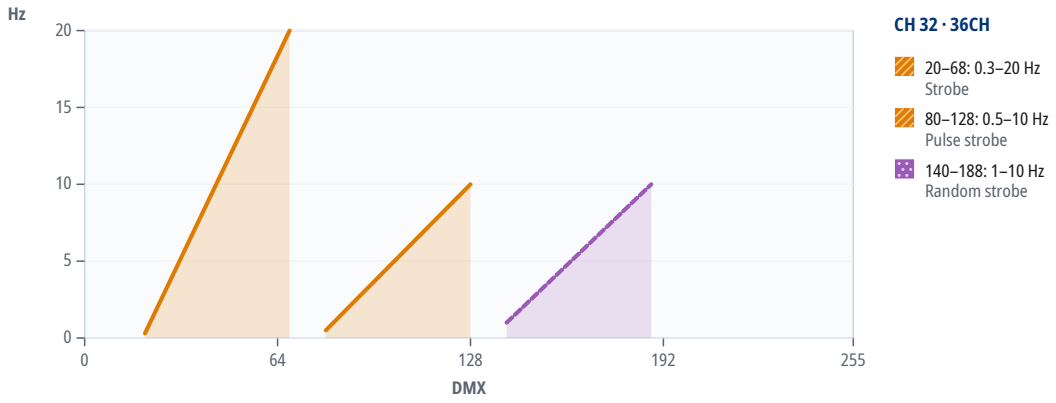
7 CRI
DMX 96–113

Animation wheel

1 Animation: Open
DMX 0–9

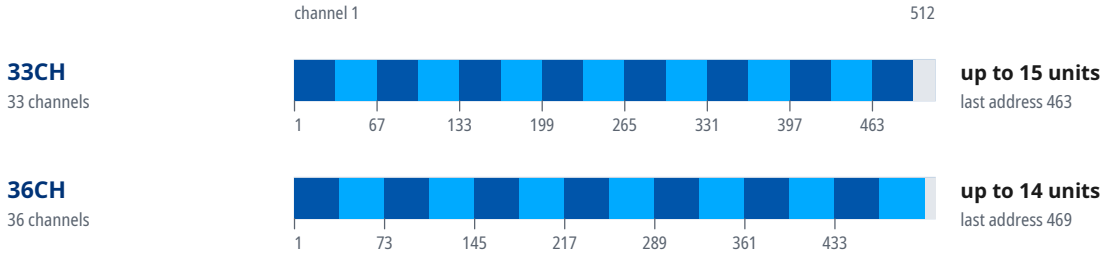
2 Animation
DMX 10–13

Strobe rate



9 DMX channels

Units in one DMX universe



Start addresses of 20 units in the mode “36CH”

Unit	Start address	Unit	Start address	Unit	Start address	Unit	Start address
1	1	6	181	11	361	16	U2 · 37
2	37	7	217	12	397	17	U2 · 73
3	73	8	253	13	433	18	U2 · 109
4	109	9	289	14	469	19	U2 · 145
5	145	10	325	15	U2 · 1	20	U2 · 181

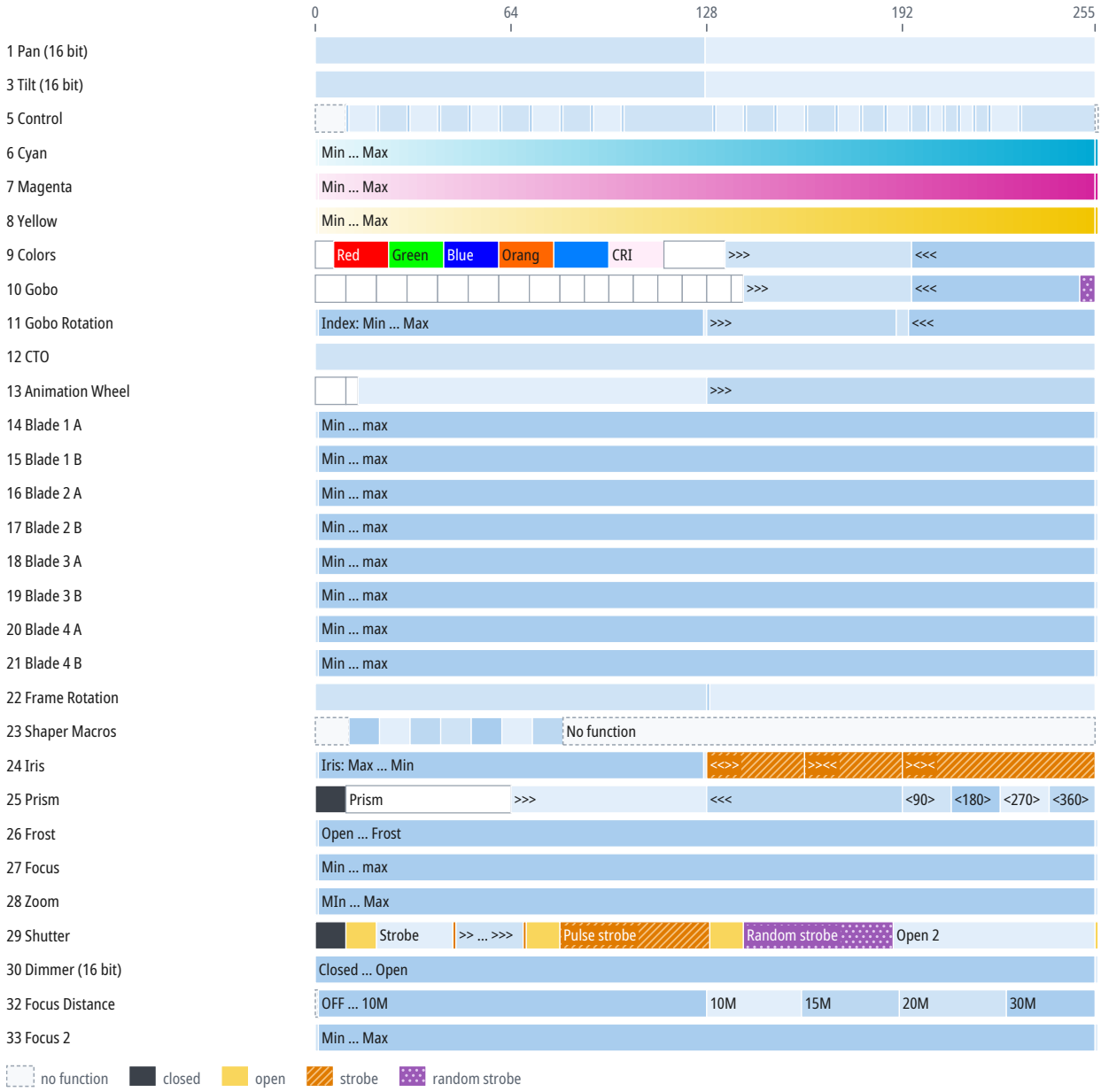
Where a DMX universe is full, the next units continue in the next universe: “U2 · 1” is address 1 in the second universe, counted from the universe of the first unit.

Mode 33CH

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 29 Shutter at 10–19, 69–79, 129–139, 255 “Open” or 189–254; CH 30 Dimmer above 0. The GDTF file gives these values for a console's Highlight function: CH 29 Shutter 255, CH 30 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

CH	Function	DMX	Description
3	Tilt (continued)	128	Center
		128–255	Tilt
4	Tilt Fine	0–255	Fine adjustment of CH 3
5	Control	0–9	No function
		10	Fan high speed
		11–19	Fan high speed ... Fan auto speed
		20	Fan auto speed
		21–29	Fan auto speed ... Fan slow speed
		30	Fan slow speed
		31–39	Fan slow speed ... Reset Pan/Tilt
		40	Reset Pan/Tilt
		41–49	Reset Pan/Tilt ... Reset CMY
		50	Reset CMY
		51–59	Reset CMY ... Reset Gobo
		60	Reset Gobo
		61–69	Reset Gobo ... Reset Frame
		70	Reset Frame
		71–79	Reset Frame ... Reset Head
		80	Reset Head
		81–89	Reset Head ... Reset other
		90	Reset other
		91–99	Reset other ... Reset All
		100	Reset All
		101–129	Reset All ... Pan invert on
		130	Pan invert on
		131–139	Pan invert on ... Pan invert off
		140	Pan invert off
		141–149	Pan invert off ... Tilt invert on
		150	Tilt invert on
		151–159	Tilt invert on ... Tilt invert off
		160	Tilt invert off
		161–169	Tilt invert off ... LED 1kHz
		170	LED 1kHz
		171–177	LED 1kHz ... LED 3/6kHz
		178	LED 3/6kHz
		179–185	LED 3/6kHz ... LED 7/2kHz
		186	LED 7/2kHz
		187–193	LED 7/2kHz ... LED 25kHz
		194	LED 25kHz
		195–199	LED 25kHz ... Curve linear
		200	Curve linear
		201–204	Curve linear ... Curve square1

CH	Function	DMX	Description
5	Control (continued)	205	Curve square1
		206–209	Curve square1 ... Curve square2
		210	Curve square2
		211–214	Curve square2 ... curve S
		215	Curve S
		216–219	Curve S ... Dimmer fast
		220	Dimmer fast
		221–229	Dimmer fast ... Dimmer smooth
		230	Dimmer smooth
		231–254	Dimmer smooth ... No function
		255	No function
6	Cyan	0	Min
		1–254	Min ... Max
		255	Max
7	Magenta	0	Min
		1–254	Min ... Max
		255	Max
8	Yellow	0	Min
		1–254	Min ... Max
		255	Max
9	Colors	0–5	Color: Open
		6–23	Red
		24–41	Green
		42–59	Blue
		60–77	Orang
		78–95	Light Blue
		96–113	CRI
		114–133	Color: Open
		134–194	>>> (360–2.98 °/s)
		195–255	<<< (2.98–360 °/s)
10	Gobo	0–9	Open/hole
		10–19	Gobo 1
		20–29	Gobo 2
		30–39	Gobo 3
		40–49	Gobo 4
		50–59	Gobo 5
		60–69	Gobo 6
		70–79	Gobo 7
		80–87	Gobo 1 - Shaking (0.5–10 Hz)
		88–95	Gobo 2 - Shaking (0.5–10 Hz)
		96–103	Gobo 3 - Shaking (0.5–10 Hz)
		104–111	Gobo 4 - Shaking (0.5–10 Hz)

CH	Function	DMX	Description
10	Gobo (continued)	112–119	Gobo 5 - Shaking (0.5–10 Hz)
		120–127	Gobo 6 - Shaking (0.5–10 Hz)
		128–135	Gobo 7 - Shaking (0.5–10 Hz)
		136–139	Gobo 1 Shake: Open
		140–194	>>>
		195–249	<<<
		250–255	Auto random gobo (0.5–10 Hz)
11	Gobo Rotation	0	Index: Min
		1–126	Index: Min ... Max
		127	Index: Max
		128–189	>>>
		190–193	Gobo 1 Pos Rotate: Stop
		194–255	<<<
12	CTO	0–255	6500–3000 K
13	Animation Wheel	0–9	Animation: Open
		10–127	Animation
		128–255	>>> (up to 360 °/s (60 rpm))
14	Blade 1 A	0	Min
		1–254	Min ... max
		255	Max
15	Blade 1 B	0	Min
		1–254	Min ... max
		255	Max
16	Blade 2 A	0	Min
		1–254	Min ... max
		255	Max
17	Blade 2 B	0	Min
		1–254	Min ... max
		255	Max
18	Blade 3 A	0	Min
		1–254	Min ... max
		255	Max
19	Blade 3 B	0	Min
		1–254	Min ... max
		255	Max
20	Blade 4 A	0	Min
		1–254	Min ... max
		255	Max
21	Blade 4 B	0	Min
		1–254	Min ... max
		255	Max
22	Frame Rotation	0–127	Frame Rotate 1

CH	Function	DMX	Description
22	Frame Rotation (continued)	128	Center
		129–255	Frame Rotate 1
23	Shaper Macros	0–10	No function
		11–20	Square
		21–30	Rectangle
		31–40	Triangle
		41–50	Trapezoid
		51–60	Sector
		61–70	Semi-circle
		71–80	Parallelogram
		81–255	No function
24	Iris	0	Iris: Max
		1–126	Iris: Max ... Min
		127	Iris: Min
		128–159	<<>> (0.5–10 Hz)
		160–191	>>< (0.5–10 Hz)
		192–255	><>< (0.5–10 Hz)
25	Prism	0–9	Prism: Closed
		10–63	Prism
		64–127	>>> (360–10 °/s)
		128–191	<<< (10–360 °/s)
		192–207	<90> (up to 45 °/s (7.5 rpm))
		208–223	<180> (up to 90 °/s (15 rpm))
		224–239	<270> (up to 135 °/s (22 rpm))
		240–255	<360>
26	Frost	0	Open
		1–254	Open ... Frost
		255	Frost
27	Focus	0	Min
		1–254	Min ... max
		255	Max
28	Zoom	0	MIn
		1–254	MIn ... Max
		255	Max
29	Shutter	0–9	Open/Closed: Closed
		10–19	Open/Closed: Open
		20–44	Strobe
		45	>>
		46–67	>> ... >>>
		68	>>>
		69–79	Open
		80–128	Pulse strobe (0.5–10 Hz)

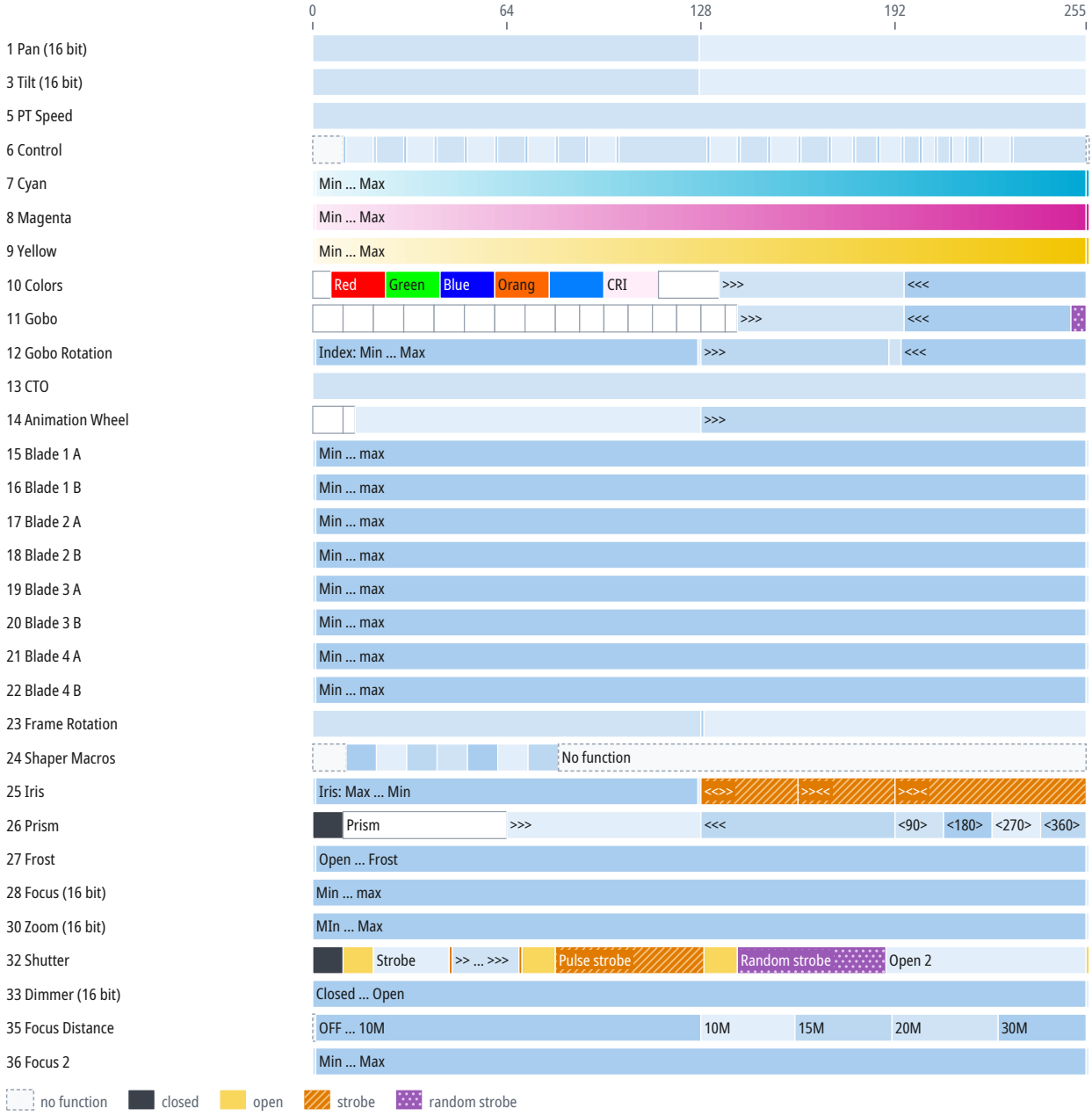
CH	Function	DMX	Description
29	Shutter (continued)	129–139	Open
		140–188	Random strobe (1–10 Hz)
		189–254	Open 2
		255	Open
30	Dimmer	0–255	Closed … Open
		255	Open
31	Dimmer Fine	0–255	Fine adjustment of CH 30
32	Focus Distance	0	OFF
		1–127	OFF … 10M
		128–158	10M
		159–190	15M
		191–225	20M
		226–255	30M
33	Focus 2	0	Min
		1–254	Min … Max
		255	Max

Mode 36CH

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 32 Shutter at 10–19, 69–79, 129–139, 255 “Open” or 189–254; CH 33 Dimmer above 0. The GDTF file gives these values for a console's Highlight function: CH 32 Shutter 255, CH 33 Dimmer 255.

Channel functions at a glance



CH	Function	DMX	Description
1	Pan		Same as CH 1 in the mode “33CH” (p. 11)
2	Pan Fine	0–255	Fine adjustment of CH 1
3	Tilt		Same as CH 3 in the mode “33CH” (p. 11)
4	Tilt Fine	0–255	Fine adjustment of CH 3
5	PT Speed	0–255	

CH	Function	DMX	Description
6	Control		Same as CH 5 in the mode “33CH” (p. 12)
7	Cyan		Same as CH 6 in the mode “33CH” (p. 13)
8	Magenta		Same as CH 7 in the mode “33CH” (p. 13)
9	Yellow		Same as CH 8 in the mode “33CH” (p. 13)
10	Colors		Same as CH 9 in the mode “33CH” (p. 13)
11	Gobo		Same as CH 10 in the mode “33CH” (p. 13)
12	Gobo Rotation		Same as CH 11 in the mode “33CH” (p. 14)
13	CTO	0–255	6500–3000 K
14	Animation Wheel		Same as CH 13 in the mode “33CH” (p. 14)
15	Blade 1 A		Same as CH 14 in the mode “33CH” (p. 14)
16	Blade 1 B		Same as CH 15 in the mode “33CH” (p. 14)
17	Blade 2 A		Same as CH 16 in the mode “33CH” (p. 14)
18	Blade 2 B		Same as CH 17 in the mode “33CH” (p. 14)
19	Blade 3 A		Same as CH 18 in the mode “33CH” (p. 14)
20	Blade 3 B		Same as CH 19 in the mode “33CH” (p. 14)
21	Blade 4 A		Same as CH 20 in the mode “33CH” (p. 14)
22	Blade 4 B		Same as CH 21 in the mode “33CH” (p. 14)
23	Frame Rotation		Same as CH 22 in the mode “33CH” (p. 14)
24	Shaper Macros		Same as CH 23 in the mode “33CH” (p. 15)
25	Iris		Same as CH 24 in the mode “33CH” (p. 15)
26	Prism		Same as CH 25 in the mode “33CH” (p. 15)
27	Frost		Same as CH 26 in the mode “33CH” (p. 15)
28	Focus	0–255	Min … max
		255	Max
29	Focus Fine	0–255	Fine adjustment of CH 28
30	Zoom	0–255	MIn … Max
		255	Max
31	Zoom Fine	0–255	Fine adjustment of CH 30
32	Shutter		Same as CH 29 in the mode “33CH” (p. 15)
33	Dimmer		Same as CH 30 in the mode “33CH” (p. 16)
34	Dimmer Fine	0–255	Fine adjustment of CH 33
35	Focus Distance		Same as CH 32 in the mode “33CH” (p. 16)
36	Focus 2		Same as CH 33 in the mode “33CH” (p. 16)

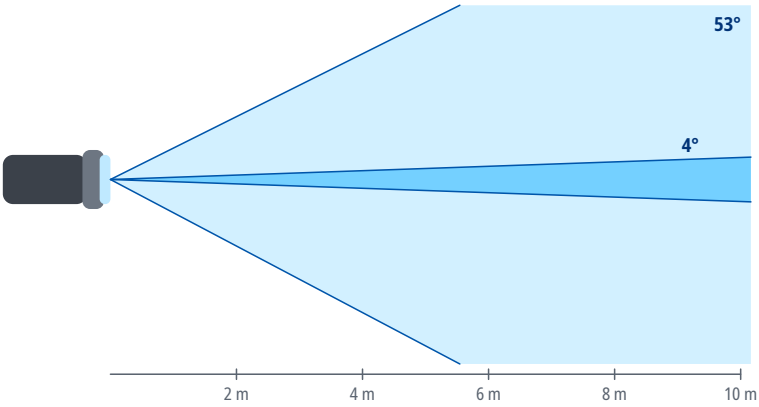
10 Technical specifications

Parameter	Value
Light	
Light source	LED
LED power	450 W
Luminous flux	24,000 lm
Color temperature	6,500 K
Color rendering index (CRI)	90
Optics	
Zoom	4–53°
Movement	
Pan	540°
Tilt	270°
Control	
DMX connection	5-pin XLR IN/OUT
RJ45 connectors	RJ45 IN, RJ45 OUT (EP version)
Electrical	
Power supply	100–240 V, 50/60 Hz
Power consumption	440 W
Power connectors	powerCON TRUE1 IN/OUT
Dimensions and construction	
Weight	26.5 kg
Operating environment	
Operating temperature	0 to 40 °C

Speeds and ranges

Parameter	Value
Color temperature range	3000–6500 K
Strobe frequency	0.3–20 Hz
Color wheel rotation	up to 360 °/s (60 rpm)
Gobo wheel rotation	up to 120 °/s (20 rpm)
Gobo rotation	up to 360 °/s (60 rpm)
Prism rotation	up to 360 °/s (60 rpm)
Animation wheel rotation	up to 360 °/s (60 rpm)

Spot diameter



Distance	Ø 4°	Ø 53°
2 m	0.14 m	2 m
4 m	0.28 m	4 m
6 m	0.42 m	6 m
8 m	0.56 m	8 m
10 m	0.7 m	10 m
15 m	1 m	15 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.