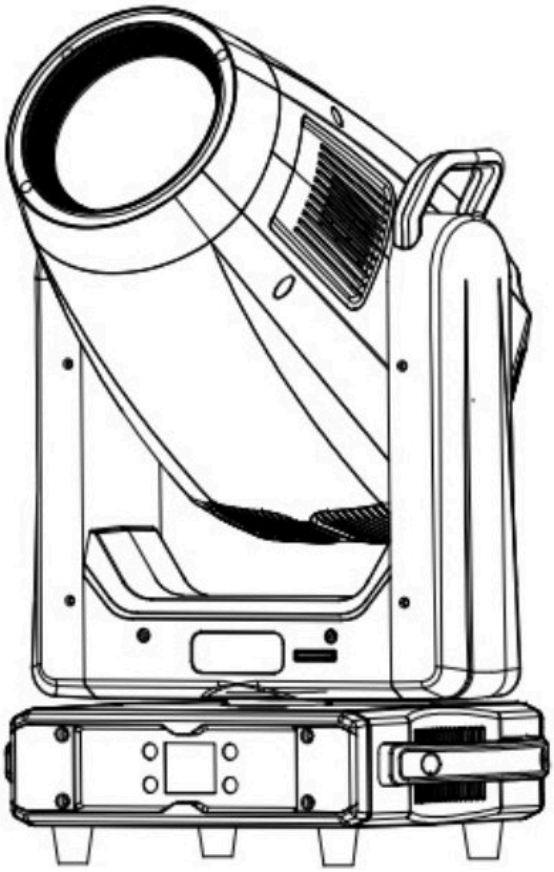
DMX REFERENCE

LED BSWF1000

Vello Light



Manufacturer	Vello Light
GDTF file	User_Test_LED_BSWF1000_105856.gdtf
GDTF revision	official · 2025-07-29
Generated	2026-11-24

Contents

1 About this manual 2
2 Quick reference 2
3 Safety instructions 3
4 Product description 4
5 Installation 4
6 Connections 4
7 Operation 5
8 Functions at a glance 6
9 DMX channels 9
Mode Standard 10
10 Technical specifications 17
11 Maintenance and cleaning 18
12 Troubleshooting 18
13 Disposal 19

1 About this manual

This document describes the LED BSWF1000 by Vello Light. It was compiled from the GDTF file User_Test_LED_BSWF1000_105856.gdtf from the GDTF-Share library.

File revision: “official”.

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 Vello Light; 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	41 kg

DMX modes

Mode	Channels	Units in one universe	First start addresses
Standard	38	13	1, 39, 77, 115, ...

No light? Check these channels

- Standard: CH 7 Shutter at 104–107, 208–212 or 252–255 “Open”; CH 8 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



5 Installation

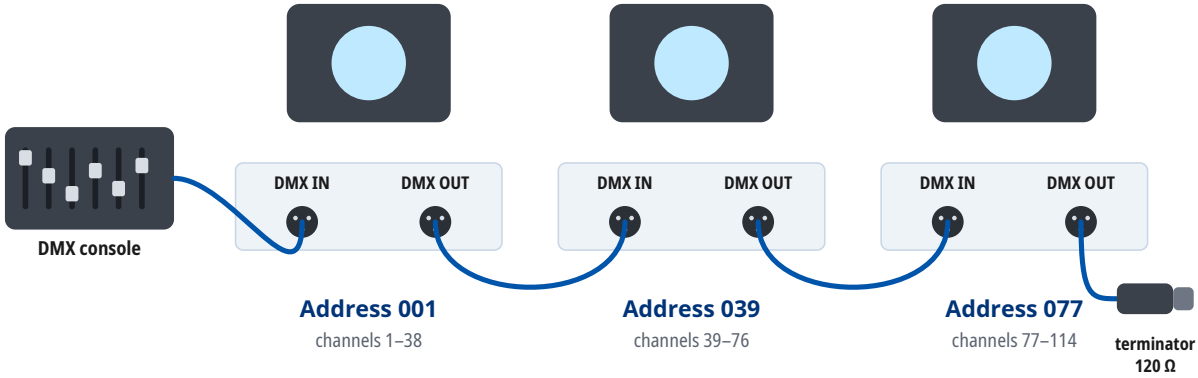
> ⚠ **WARNING**
>
> - Rigging must be carried out only by qualified persons in accordance with applicable regulations, in particular those for work at height.
> - The supporting structure and fixings must safely carry the weight of all suspended devices; verify their load capacity in advance.
> - Weight of the device: 41 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 Standard: every unit occupies 38 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

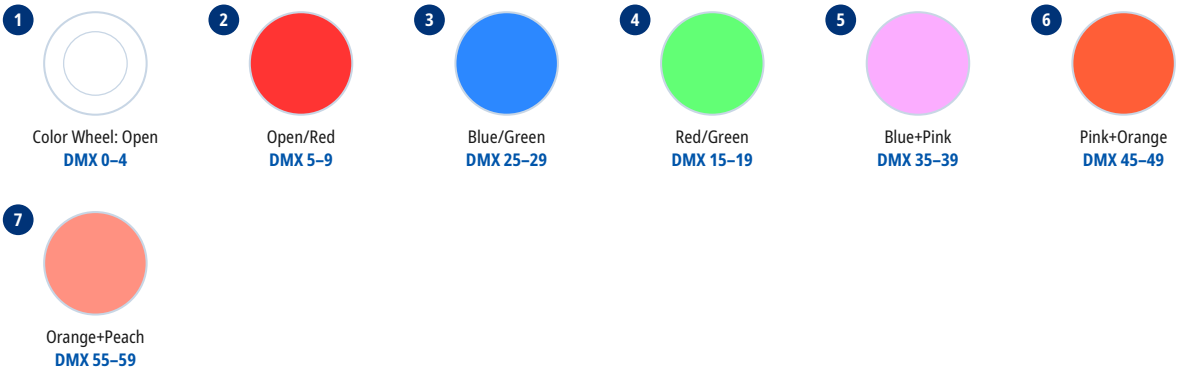
- The device occupies as many consecutive channels in the DMX universe as the selected DMX mode uses, starting at the set start address.
- Number of channels occupied in the DMX mode “Standard”: 38.
- Choose start addresses so that the channels of individual devices do not overlap and the last occupied 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 “Standard”, you can use, for example, the start addresses 1, 39, 77, 115.
- 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

	Standard 38 channels
Pan / Tilt	33, 35
Dimmer	8
Shutter / strobe	7, 10
Color mixing	1–3
Color temperature	4
Color wheel	6
Gobo wheel	11, 12
Gobo rotation	13
Prism	15, 16
Frost	19
Zoom	21
Focus	20
Iris	10
Animation wheel	17, 18
Effects / macros	5, 31

Color wheel



Gobo wheel 1

1
Gobo: Open
DMX 0–8

2 
Gobo 1
DMX 9–17

3 
Gobo 2
DMX 18–26

4 
Gobo 3
DMX 27–35

5 
Gobo 4
DMX 36–44

6 
Gobo 5
DMX 45–53

7 
Gobo 6
DMX 54–62

8 
Wheel Slot 1
DMX 63–72

Gobo wheel 2

1
Gobo: Open
DMX 0–10

2 
Gobo 1
DMX 11–20

3 
Gobo 2
DMX 21–30

4 
Gobo 3
DMX 31–40

5 
Gobo 4
DMX 41–50

6 
Gobo 5
DMX 51–60

7 
Gobo 6
DMX 61–65

8 
Wheel Slot 1
DMX 66–72

Prism

1
Open
DMX 0–127

2 
4 facets
Prism
DMX 128–255

Animation wheel

1
Open
DMX 0–7

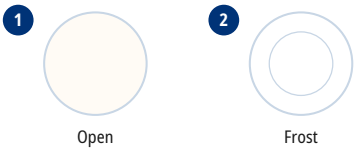
2
Animation
DMX 8–255

Wheel 1

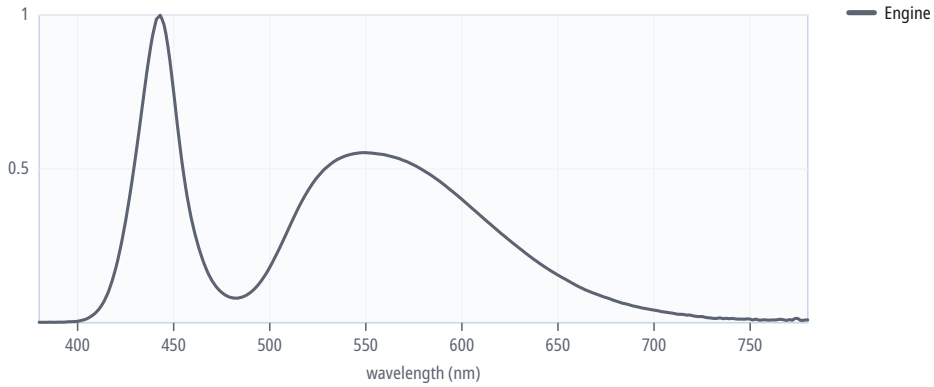
1
Open
DMX 0–127

2
Frost
DMX 128–255

Wheel 2

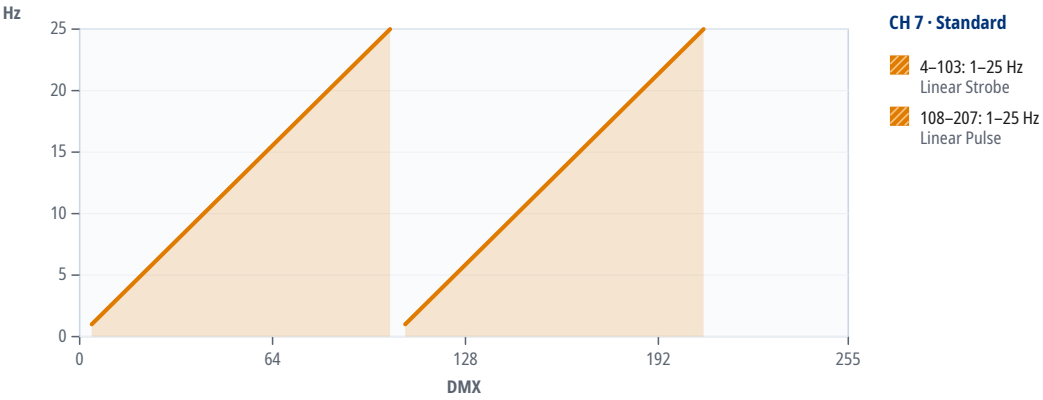


Spectra of the light sources



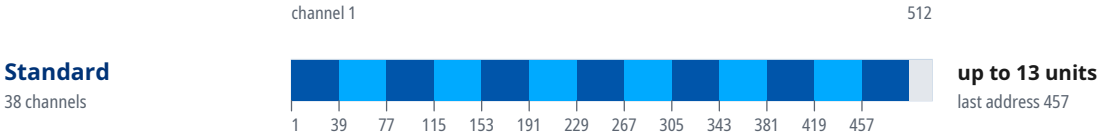
Relative spectrum of each light source as the GDTF file states it; each curve is scaled to its own maximum.

Strobe rate



9 DMX channels

Units in one DMX universe



Start addresses of 20 units in the mode “Standard”

Unit	Start address	Unit	Start address	Unit	Start address	Unit	Start address
1	1	6	191	11	381	16	U2 · 77
2	39	7	229	12	419	17	U2 · 115
3	77	8	267	13	457	18	U2 · 153
4	115	9	305	14	U2 · 1	19	U2 · 191
5	153	10	343	15	U2 · 39	20	U2 · 229

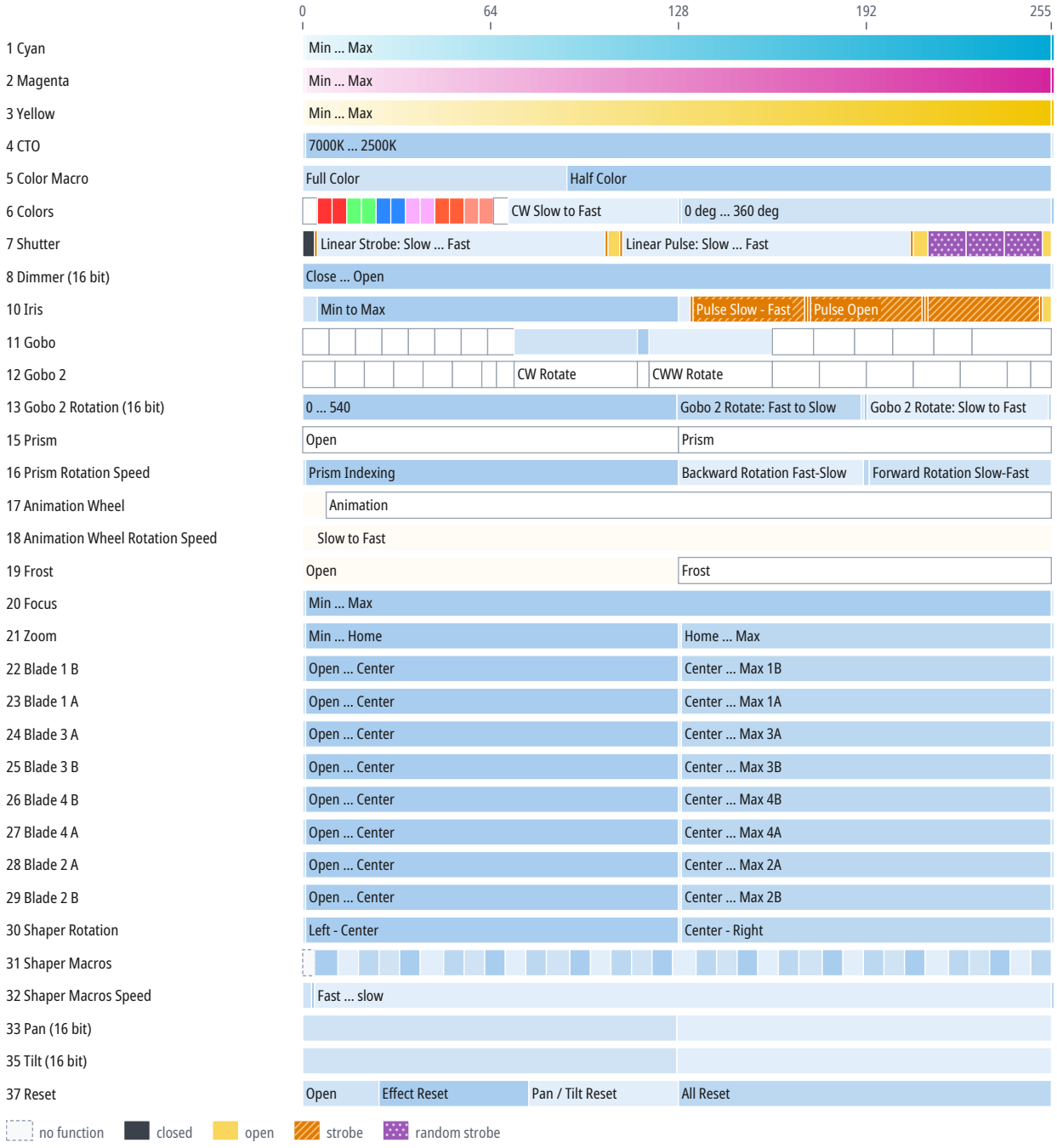
Where a DMX universe is full, the next units continue in the next universe: “U2 · 1” is address 1 in the second universe, counted from the universe of the first unit.

Mode Standard

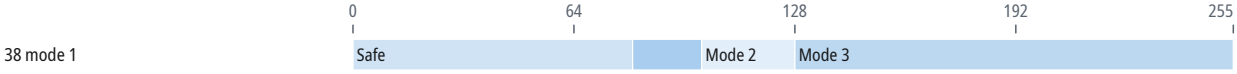
16-bit parameters use two channels, coarse and fine: value = 256 × coarse value + fine value.

If the device receives DMX in this mode but gives no light, check these channels: CH 7 Shutter at 104–107, 208–212 or 252–255 “Open”; CH 8 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 6 Colors 0, CH 7 Shutter 255, CH 8 Dimmer 255.

Channel functions at a glance



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	7000K
		1–254	7000K ... 2500K
		255	2500K
5	Color Macro	0–89	Full Color
		90–255	Half Color
6	Colors	0–4	Color Wheel: Open
		5–9	Open/Red
		10–14	Red
		15–19	Red/Green
		20–24	Green
		25–29	Blue/Green
		30–34	Blue
		35–39	Blue+Pink
		40–44	Pink
		45–49	Pink+Orange
		50–54	Orange
		55–59	Orange+Peach
		60–64	Peach
		65–69	Peach+CTO
		70–127	CW Slow to Fast (30–360 °/s)
		128	0 deg
		129–254	0 deg ... 360 deg
		255	360 deg
7	Shutter	0–3	Closed
		4	Linear Strobe: Slow
		5–102	Linear Strobe: Slow ... Fast
		103	Linear Strobe: Fast
		104–107	Open

CH	Function	DMX	Description
7	Shutter (continued)	108	Linear Pulse: Slow
		109–206	Linear Pulse: Slow ... Fast
		207	Linear Pulse: Fast
		208–212	Open
		213–225	Low Frequency
		226–238	Medium Frequency
		239–251	High Frequency
		252–255	Open
8	Dimmer	0–255	Close ... Open
		255	Open
9	Dimmer Fine	0–255	Fine adjustment of CH 8
10	Iris	0–127	Min to Max
		128–131	Open
		132	Pulse - Slow
		133–170	Pulse Slow - Fast
		171	Pulse - Fast
		172	Pulse Open Slow
		173–210	Pulse Open
		211	Pulse open Fast
		212	Pulse Close Slow
		213–250	Pulse Close Slow to Fast
		251	Pulse Close Fast
		252–255	Open
11	Gobo	0–8	Gobo: Open
		9–17	Gobo 1
		18–26	Gobo 2
		27–35	Gobo 3
		36–44	Gobo 4
		45–53	Gobo 5
		54–62	Gobo 6
		63–71	Gobo 7
		72–113	Gobo 1 Spin: Fast to Slow (360–90 °/s)
		114–117	Gobo 1 Spin: Stop
		118–159	Gobo 1 Spin: Slow to Fast (90–360 °/s)
		160–173	Gobo 1 Shake: Gobo 1 (1–10 Hz)
		174–187	Gobo 1 Shake: Gobo 2 (1–10 Hz)
		188–200	Gobo 1 Shake: Gobo 3 (1–10 Hz)
		201–214	Gobo 1 Shake: Gobo 4 (1–10 Hz)
		215–227	Gobo 1 Shake: Gobo 5 (1–10 Hz)
		228–255	Gobo 1 Shake: Gobo 6 (1–10 Hz)
12	Gobo 2	0–10	Gobo: Open
		11–20	Gobo 1

CH	Function	DMX	Description
12	Gobo 2 (continued)	21–30	Gobo 2
		31–40	Gobo 3
		41–50	Gobo 4
		51–60	Gobo 5
		61–65	Gobo 6
		66–71	Gobo 7
		72–113	CW Rotate (1–10 °/s)
		114–117	Gobo 2 Wheel Spin: Stop (1–10 °/s)
		118–159	CWW Rotate (1–10 °/s)
		160–175	Gobo 1 Shake
		176–191	Gobo 2 Shake
		192–207	Gobo 3 Shake
		208–223	Gobo 4 Shake
		224–239	Gobo 5 Shake
		240–247	Gobo 6 Shake
		248–255	Gobo 7 Shake
13	Gobo 2 Rotation	0–127	0 ... 540
		127	540
		128–190	Gobo 2 Rotate: Fast to Slow (1080–16.9 °/s)
		191–192	Gobo 2 Rotate: Stop
		192	Gobo 2 Rotate: Stop ... Slow to Fast
		193–255	Gobo 2 Rotate: Slow to Fast (16.9–1080 °/s)
14	Gobo 2 Rotation Fine	0–255	Fine adjustment of CH 13
15	Prism	0–127	Open
		128–255	Prism
16	Prism Rotation Speed	0	0
		1–127	Prism Indexing
		128–190	Backward Rotation Fast-Slow (up to 540 °/s (90 rpm))
		191–192	Forward Rotation Slow-Fast: Stop
		193–255	Forward Rotation Slow-Fast
17	Animation Wheel	0–7	Open
		8–255	Animation
18	Animation Wheel Rotation Speed		Animation Wheel Pos Rot
		0–3	Stop
		4–255	Slow to Fast (16–1080 °/s)
19	Frost		Frost 1
		0–127	Open
		128–255	Frost
20	Focus	0	Min
		1–254	Min ... Max
		255	Max
21	Zoom	0	Min

CH	Function	DMX	Description
21	Zoom (continued)	1–127	Min … Home
		128	Home
		129–254	Home … Max
		255	Max
22	Blade 1 B	0	Open
		1–127	Open … Center
		128	Center
		129–254	Center … Max 1B
		255	Max 1B
23	Blade 1 A		Blade 1 Rot 1
		0	Open
		1–127	Open … Center
		128	Center
		129–254	Center … Max 1A
		255	Max 1A
24	Blade 3 A	0	Open
		1–127	Open … Center
		128	Center
		129–254	Center … Max 3A
		255	Max 3A
25	Blade 3 B		Blade 2 Rot 1
		0	Open
		1–127	Open … Center
		128	Center
		129–254	Center … Max 3B
		255	Max 3B
26	Blade 4 B		Blade 3 A 1
		0	Open
		1–127	Open … Center
		128	Center
		129–254	Center … Max 4B
		255	Max 4B
27	Blade 4 A		Blade 3 Rot 1
		0	Open
		1–127	Open … Center
		128	Center
		129–254	Center … Max 4A
		255	Max 4A
28	Blade 2 A		Blade 4 A 1
		0	Open
		1–127	Open … Center
		128	Center

CH	Function	DMX	Description
28	Blade 2 A (continued)	129–254	Center ... Max 2A
		255	Max 2A
29	Blade 2 B	0	Open
		1–127	Open ... Center
		128	Center
		129–254	Center ... Max 2B
		255	Max 2B
30	Shaper Rotation	0	Left
		1–127	Left - Center
		128	Center
		129–254	Center - Right
		255	Right
31	Shaper Macros		Framing Shutter Macros
		0–3	Off
		4–11	Macro 1
		12–18	Macro 2
		19–25	Macro 3
		26–32	Macro 4
		33–39	Macro 5
		40–47	Macro 6
		48–54	Macro 7
		55–61	Macro 8
		62–68	Macro 9
		69–75	Macro 10
		76–82	Macro 11
		83–90	Macro 12
		91–97	Macro 13
		98–104	Macro 14
		105–111	Macro 15
		112–118	Macro 16
		119–125	Macro 17
		126–133	Macro 18
		134–140	Macro 19
		141–147	Macro 20
		148–154	Macro 21
		155–161	Macro 22
		162–168	Macro 23
		169–176	Macro 24
		177–183	Macro 25
		184–190	Macro 26
		191–197	Macro 27
		198–204	Macro 28

CH	Function	DMX	Description
31	Shaper Macros (continued)	205–211	Macro 29
		212–219	Macro 30
		220–226	Macro 31
		227–233	Macro 32
		234–240	Macro 33
		241–247	Macro 34
		248–255	Macro 35
32	Shaper Macros Speed	0–2	Shaper Macros Speed
		3	Fast
		4–254	Fast ... slow
		255	Slow
33	Pan	0–127	Pan
		128	Home
		128–255	Pan
34	Pan Fine	0–255	Fine adjustment of CH 33
35	Tilt	0–127	Tilt
		128	Home
		128–255	Tilt
36	Tilt Fine	0–255	Fine adjustment of CH 35
37	Reset	0–25	Open
		26–76	Effect Reset
		77–127	Pan / Tilt Reset
		128–255	All Reset
38	mode 1	0–80	Safe
		81–100	Mode 1
		101–127	Mode 2
		128–255	Mode 3

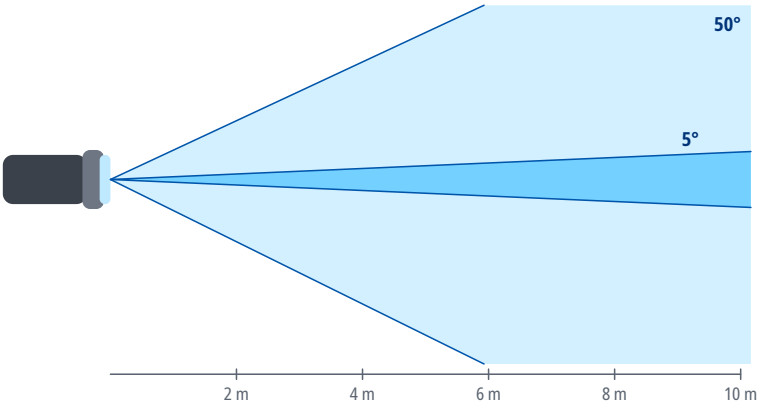
10 Technical specifications

Parameter	Value
Light	
Light source	LED
LED power	900 W
Luminous flux	44,000 lm
Color temperature	6,500 K
Color rendering index (CRI)	88
Optics	
Zoom	5–50°
Movement	
Pan	540°
Tilt	250°
Control	
DMX connection	BNC IN/OUT
Electrical	
Power connectors	powerCON TRUE1 IN
Dimensions and construction	
Weight	41 kg
Operating environment	
Operating temperature	-20 to 45 °C

Speeds and ranges

Parameter	Value
Color temperature range	2500–7000 K
Strobe frequency	1–25 Hz
Color wheel rotation	up to 360 °/s (60 rpm)
Gobo wheel 1 rotation	up to 360 °/s (60 rpm)
Gobo wheel 2 rotation	up to 10 °/s (1.7 rpm)
Gobo 2 rotation	up to 1080 °/s (180 rpm)
Prism rotation	up to 540 °/s (90 rpm)
Animation wheel rotation	up to 1080 °/s (180 rpm)

Spot diameter



Distance	Ø 5°	Ø 50°
2 m	0.17 m	1.9 m
4 m	0.35 m	3.7 m
6 m	0.52 m	5.6 m
8 m	0.7 m	7.5 m
10 m	0.87 m	9.3 m
15 m	1.3 m	14 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.