DMX REFERENCE

SPOT 460 CMY

SONIC ENT



Manufacturer	SONIC ENT
GDTF file	SONIC_ENT_SPOT_460_CMY_120486.gdtf
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Contents

1 About this manual 2
2 Quick reference 2
3 Safety instructions 3
4 Product description 4
5 Installation 4
6 Connections 5
7 Operation 5
8 Functions at a glance 6
9 DMX channels 8
Mode 22ch 8
10 Technical specifications 13
11 Maintenance and cleaning 13
12 Troubleshooting 14
13 Disposal 14

1 About this manual

This document describes the SPOT 460 CMY by SONIC ENT. It was compiled from the GDTF file SONIC_ENT_SPOT_460_CMY_120486.gdtf from the GDTF-Share library.

File revision: “VER 1_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 SONIC ENT; 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	19 kg

DMX modes

Mode	Channels	Units in one universe	First start addresses
22ch	22	23	1, 23, 45, 67, …

No light? Check these channels

- 22ch: CH 6 Shutter at 32–63 “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

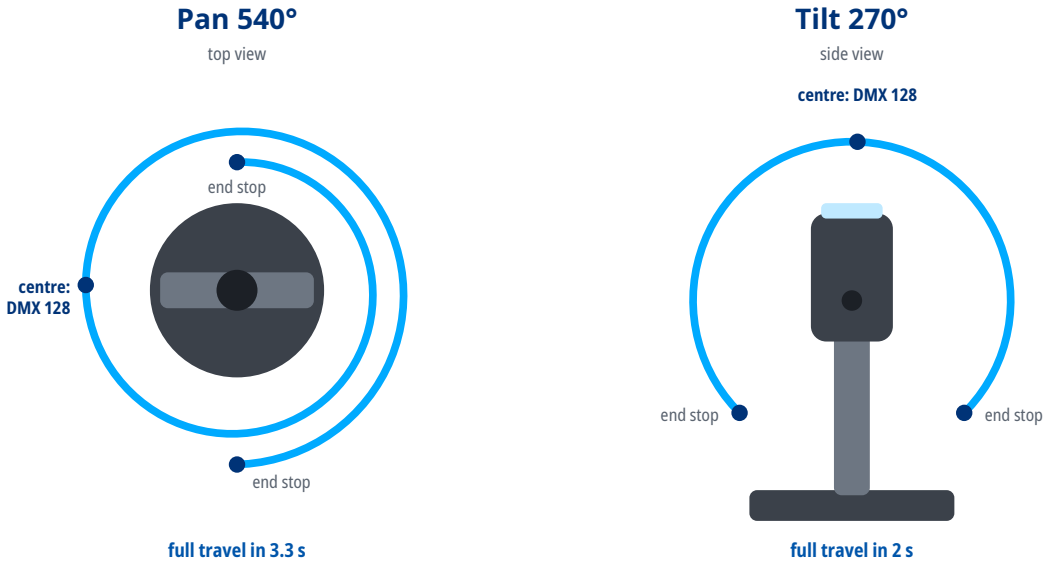
- Strobe and fast flashing light effects can trigger epileptic seizures in susceptible people (photosensitive epilepsy) and can cause nausea or disorientation.
- Inform the audience and performers in advance that strobe effects will be used, for example with a notice at the entrance, and do not use them 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



Full-travel times as stated in the GDTF file.

5 Installation

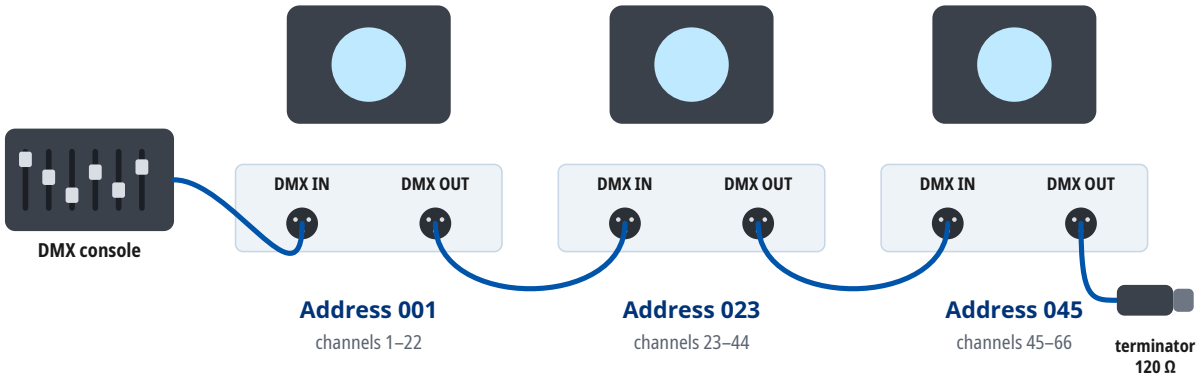
⚠ WARNING

- 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: 19 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 22ch: every unit occupies 22 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 “22ch”: 22.
- 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 “22ch”, you can use, for example, the start addresses 1, 23, 45, 67.
- The DMX mode set on the device must match the fixture profile (personality) used in the controller.

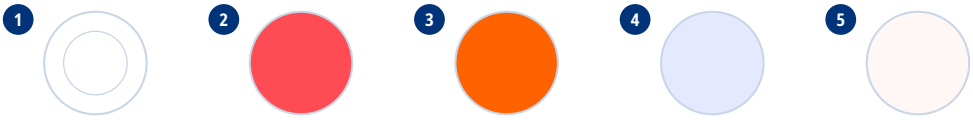
8 Functions at a glance

Functions in each DMX mode

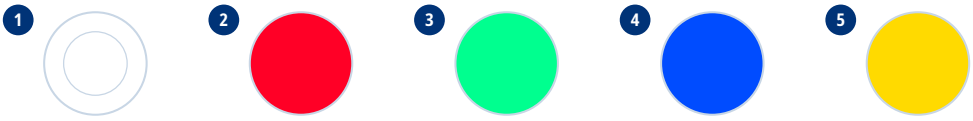
	22ch 22 channels
Pan / Tilt	1, 3
Dimmer	5
Shutter / strobe	6
Color mixing	8–10
Color temperature	11
Color wheel	7
Gobo wheel	12, 13
Gobo rotation	14 *
Prism	15–18
Frost	19
Zoom	20
Focus	21

* The function works only when another channel switches it on; see the DMX table.

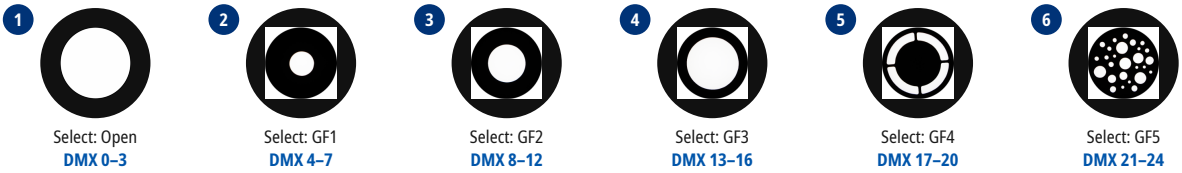
Color wheel 1



Color wheel 2

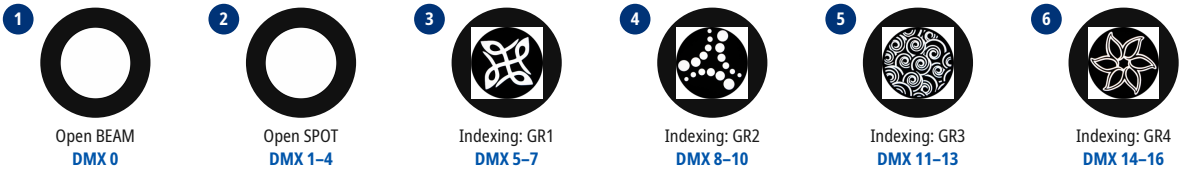


Gobo wheel 1



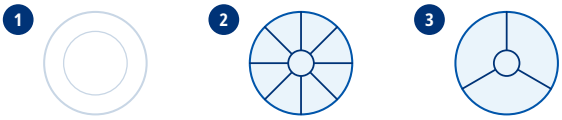
1 Select: Open DMX 0–3
2 Select: GF1 DMX 4–7
3 Select: GF2 DMX 8–12
4 Select: GF3 DMX 13–16
5 Select: GF4 DMX 17–20
6 Select: GF5 DMX 21–24
7 Select: GF6 DMX 25–29
8 Select: GF7 DMX 30–33
9 Select: GF8 DMX 34–37
10 Select: GF9 DMX 38–41
11 Animation wheel DMX 42–72

Gobo wheel 2



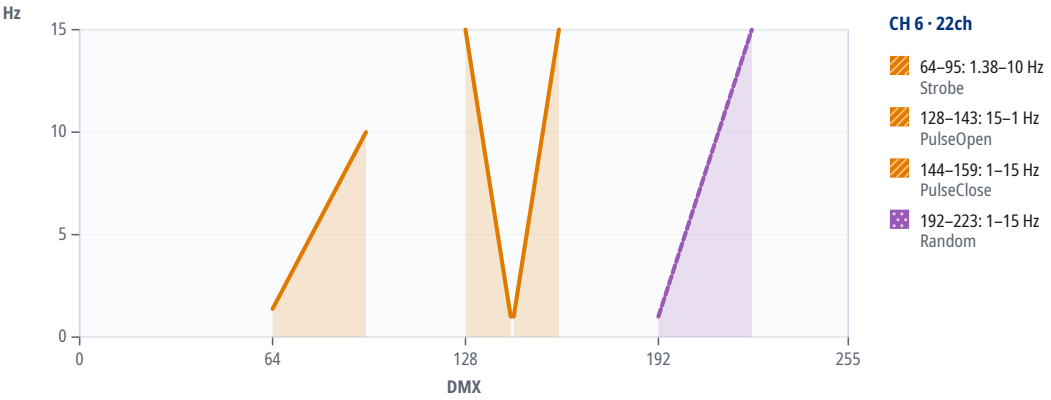
1 Open BEAM DMX 0
2 Open SPOT DMX 1–4
3 Indexing: GR1 DMX 5–7
4 Indexing: GR2 DMX 8–10
5 Indexing: GR3 DMX 11–13
6 Indexing: GR4 DMX 14–16
7 Indexing: GR5 DMX 17–19
8 Indexing: GR6 DMX 20–22
9 Indexing: GR7 DMX 23–25
10 Indexing: GR8 DMX 26–28
11 GR9 DMX 29–32

Prism



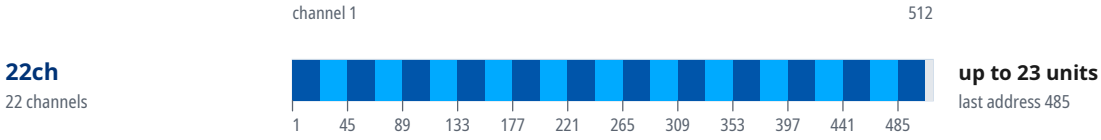
1 Open DMX 0–2
2 8 facets Prism1 DMX 2–64
3 3 facets Prism 2 DMX 64–127

Strobe rate



9 DMX channels

Units in one DMX universe



Start addresses of 20 units in the mode “22ch”

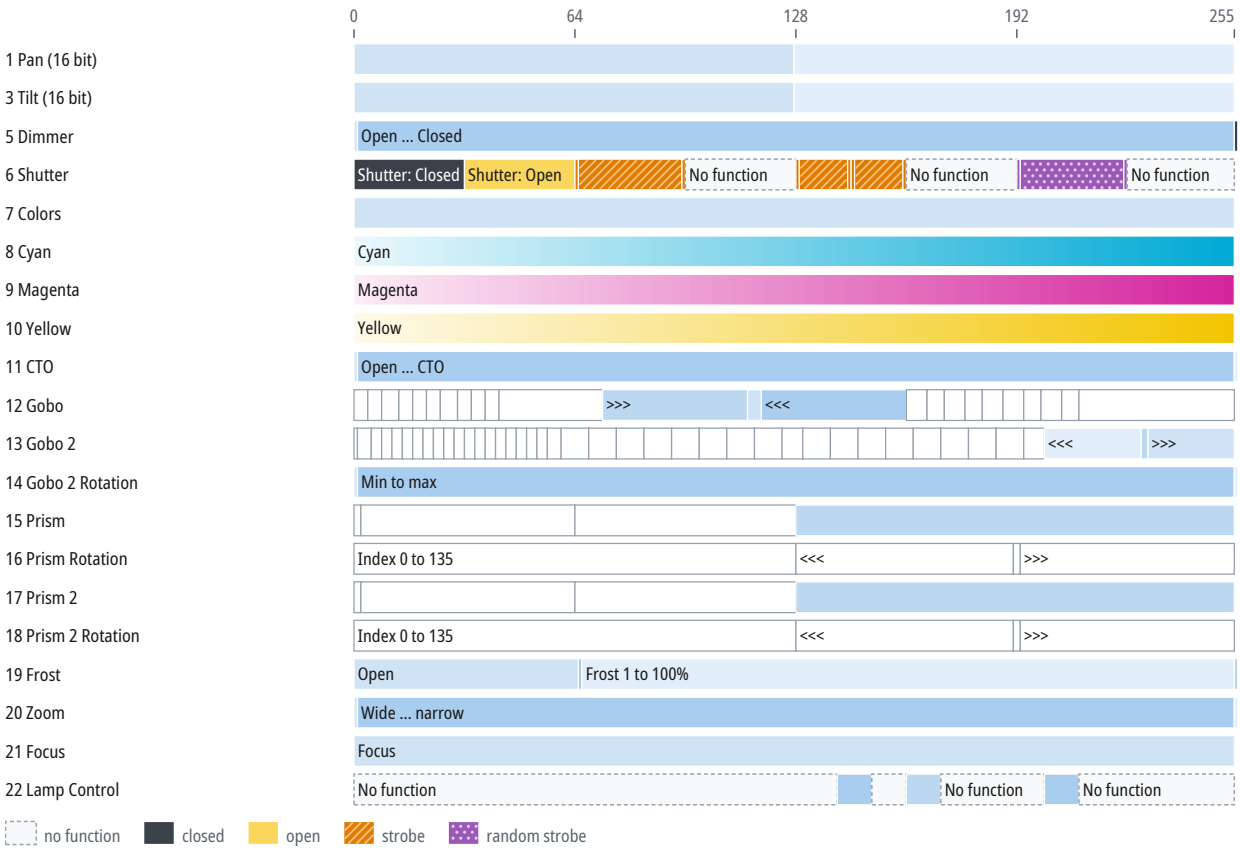
Unit	Start address	Unit	Start address	Unit	Start address	Unit	Start address
1	1	6	111	11	221	16	331
2	23	7	133	12	243	17	353
3	45	8	155	13	265	18	375
4	67	9	177	14	287	19	397
5	89	10	199	15	309	20	419

Mode 22ch

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 Shutter at 32–63 “Open”.

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	0–127	Tilt
		128	Home
		128–255	Tilt
4	Tilt Fine	0–255	Fine adjustment of CH 3
5	Dimmer	0	Open
		1–254	Open ... Closed
		255	Closed
6	Shutter	0–31	Shutter: Closed
		32–63	Shutter: Open
		64	Strobe: min
		65–94	Strobe: min to max
		95	Strobe: max
		96–127	No function
		128	Pulse Open: max
		129–142	Pulse Open: max to min
		143	Pulse Open: min
		144	Pulse Close: min
		145–158	Pulse Close: min to max
		159	Pulse Close: max
		160–191	No function
		192	Random: min
		193–222	Random: min to max
		223	Random: max
		224–255	No function
7	Colors	0–255	
8	Cyan	0–255	Cyan
9	Magenta	0–255	Magenta
10	Yellow	0–255	Yellow
11	CTO	0	Open
		1–254	Open ... CTO
		255	CTO
12	Gobo	0–3	Select: Open
		4–7	Select: GF1
		8–12	Select: GF2
		13–16	Select: GF3
		17–20	Select: GF4
		21–24	Select: GF5

CH	Function	DMX	Description
12	Gobo (continued)	25–29	Select: GF6
		30–33	Select: GF7
		34–37	Select: GF8
		38–41	Select: GF9
		42–71	Select: Animation wheel
		72–113	>>> (360–6 °/s)
		114–117	Wheel Spin: stop
		118–159	<<< (6–360 °/s)
		160–165	Shake: GF1
		166–170	Shake: GF2
		171–176	Shake: GF3
		177–181	Shake: GF4
		182–187	Shake: GF5
		188–193	Shake: GF6
		194–198	Shake: GF7
		199–204	Shake: GF8
		205–209	Shake: GF9
		210–255	Shake: Animation wheel
13	Gobo 2	0	Open BEAM
		1–4	Open SPOT
		5–7	Indexing: GR1
		8–10	Indexing: GR2
		11–13	Indexing: GR3
		14–16	Indexing: GR4
		17–19	Indexing: GR5
		20–22	Indexing: GR6
		23–25	Indexing: GR7
		26–28	Indexing: GR8
		29–31	Indexing: GR9
		32–34	Rotating: GR1
		35–37	Rotating: GR2
		38–40	Rotating: GR3
		41–43	Rotating: GR4
		44–46	Rotating: GR5
		47–49	Rotating: GR6
		50–52	Rotating: GR7
		53–55	Rotating: GR8
		56–59	Rotating: GR9
		60–67	Shake indexing: GR1
		68–75	Shake indexing: GR2
		76–83	Shake indexing: GR3
		84–91	Shake indexing: GR4

CH	Function	DMX	Description
13	Gobo 2 (continued)	92–99	Shake indexing: GR5
		100–107	Shake indexing: GR6
		108–115	Shake indexing: GR7
		116–123	Shake indexing: GR8
		124–129	Shake indexing: GR9
		130–137	Shake rotating: GR1
		138–145	Shake rotating: GR2
		146–153	Shake rotating: GR3
		154–161	Shake rotating: GR4
		162–169	Shake rotating: GR5
		170–177	Shake rotating: GR6
		178–185	Shake rotating: GR7
		186–193	Shake rotating: GR8
		194–199	Shake rotating: GR9
		200–227	<<< (360–6 °/s)
		228–229	Wheel Spin: Stop
		230–255	>>> (6–360 °/s)
14	Gobo 2 Rotation		When CH 13 is 0–31:
		0	Min
		1–254	Min to max
		255	Max
			When CH 13 is 32–59:
		0	Stop
		1–127	>>> (900–1.5 °/s)
		128–129	Stop
		130–255	<<< (1.5–900 °/s)
			When CH 13 is 60–129:
		0	Min
		1–254	Min to max
		255	Max
			When CH 13 is 130–199:
		0	Stop
		1–127	>>> (900–1.5 °/s)
		128–129	Stop
		130–255	<<< (1.5–900 °/s)
15	Prism	0–1	Open
		2–63	Prism 1
		64–255	Prism 2
16	Prism Rotation	0–127	Index 0 to 135 (405°)
		128–190	<<< (630–1.08 °/s)
		191–192	Rotate: Stop
		193–255	>>> (1.08–630 °/s)

CH	Function	DMX	Description
17	Prism 2	0–1	Open
		2–63	Prism 1
		64–255	Prism 2
18	Prism 2 Rotation	0–127	Index 0 to 135 (405°)
		128–190	<<< (630–1.08 °/s)
		191–192	Rotate: Stop
		193–255	>>> (1.08–630 °/s)
19	Frost	0–64	Open
		65	Min frost
		66–254	Frost 1 to 100%
		255	Max frost
20	Zoom		Zoom Beam
		0	Wide
		1–254	Wide ... narrow
		255	Narrow
21	Focus	0–255	Focus
22	Lamp Control	0–139	No function
		140–149	PT reset
		150–159	No function
		160–169	Beam reset
		170–199	No function
		200–209	All reset
		210–255	No function

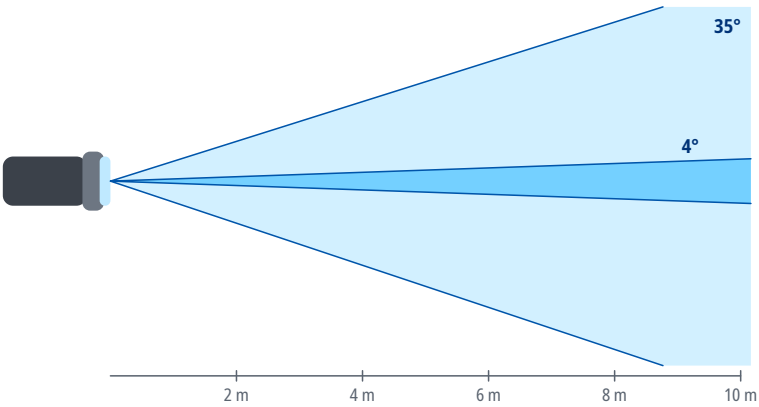
10 Technical specifications

Parameter	Value
Light	
Light source	discharge lamp
Lamp power	350 W
Luminous flux	15,000 lm
Color temperature	8,000 K
Color rendering index (CRI)	75
Optics	
Zoom	4–35°
Movement	
Pan	540°
Tilt	270°
Dimensions and construction	
Weight	19 kg
Operating environment	
Operating temperature	0 to 40 °C

Speeds and ranges

Parameter	Value
Strobe frequency	1.38–10 Hz
Gobo wheel 1 rotation	up to 360 °/s (60 rpm)
Gobo wheel 2 rotation	up to 360 °/s (60 rpm)
Gobo 2 rotation	up to 900 °/s (150 rpm)
Prism rotation	up to 630 °/s (105 rpm)
Prism rotation	up to 630 °/s (105 rpm)

Spot diameter



Distance	Ø 4°	Ø 35°
2 m	0.14 m	1.3 m
4 m	0.28 m	2.5 m
6 m	0.42 m	3.8 m
8 m	0.56 m	5 m
10 m	0.7 m	6.3 m
15 m	1 m	9.5 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.