DMX REFERENCE

Auro Spot Z300

Cameo



Manufacturer	Cameo
GDTF file	Cameo_Auro_Spot_Z300_166067.gdtf
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Contents

1 About this manual 2
2 Quick reference 3
3 Safety instructions 4
4 Product description 5
5 Installation 5
6 Connections 5
7 Operation 6
8 Functions at a glance 7
9 DMX channels 9
Mode 20Ch 9
Mode 17Ch 15
10 Technical specifications 16
11 Maintenance and cleaning 16
12 Troubleshooting 17
13 Disposal 17

1 About this manual

This document describes the Auro Spot Z 300 by Cameo. It was compiled from the GDTF file Cameo_Auro_Spot_Z300_166067.gdtf from the GDTF-Share library.

File revision: “Test, Uploaded to GDTF Share.”.

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 Cameo; 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	11.2 kg

DMX modes

Mode	Channels	Units in one universe	First start addresses
20Ch	20	25	1, 21, 41, 61, ...
17Ch	17	30	1, 18, 35, 52, ...

No light? Check these channels

- 20Ch: CH 5 Dimmer above 0; CH 7 Shutter at 0–5 “Open” or 251–255 “Shutter Open”
- 17Ch: CH 5 Dimmer above 0; CH 7 Shutter at 0–5 “Open” or 251–255 “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

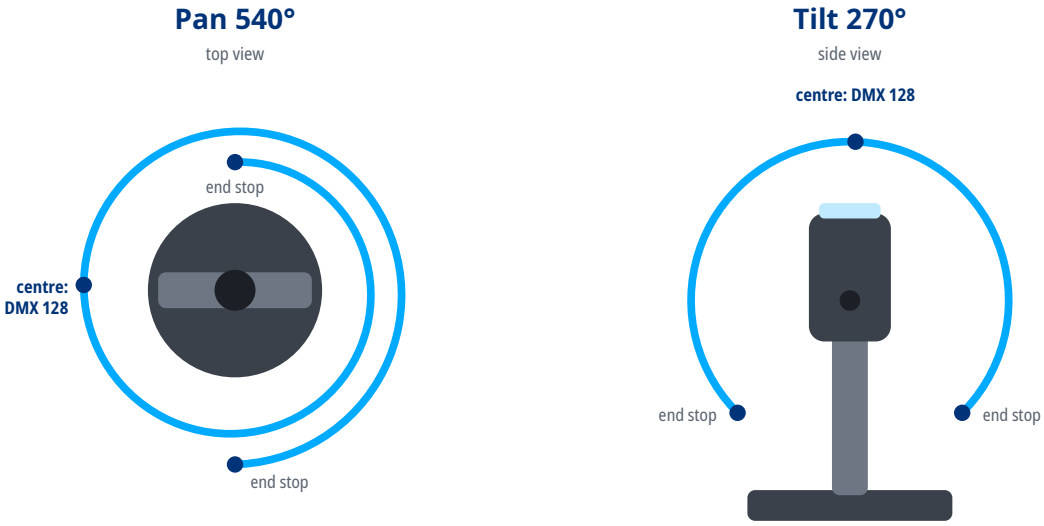
- Strobe and fast flashing light effects can trigger epileptic seizures in susceptible people (photosensitive epilepsy) and can cause nausea or disorientation.
- Inform the audience and performers in advance that strobe effects will be used, for example with a notice at the entrance, and do not use them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



5 Installation

⚠ WARNING

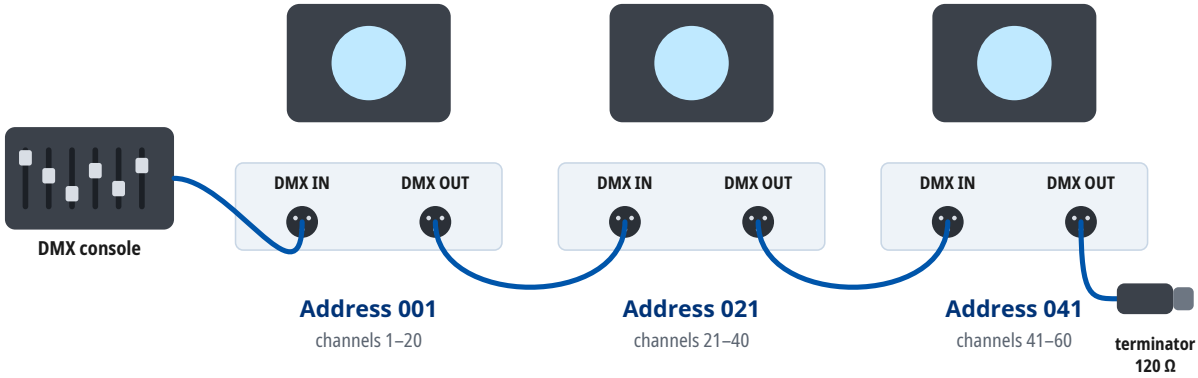
- Rigging must be carried out only by qualified persons in accordance with applicable regulations, in particular those for work at height.
- The supporting structure and fixings must safely carry the weight of all suspended devices; verify their load capacity in advance.
- Weight of the device: 11.2 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 20Ch: every unit occupies 20 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

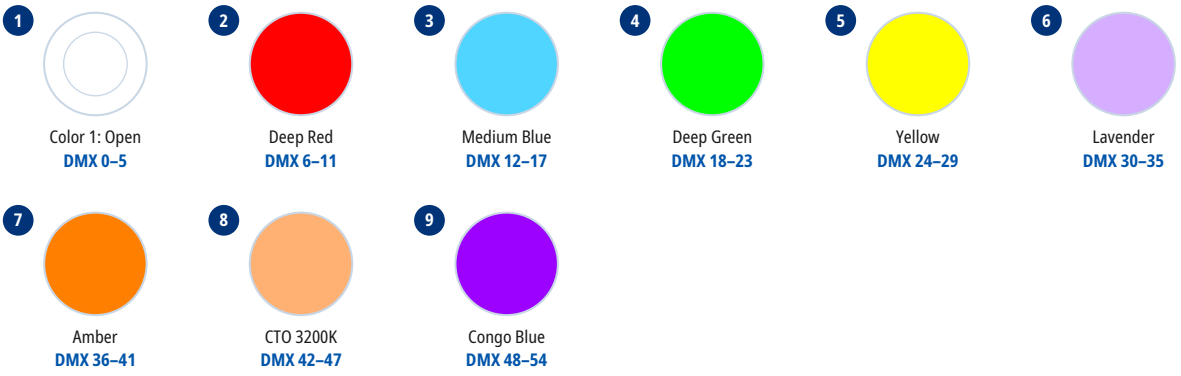
- The device occupies as many consecutive channels in the DMX universe as the selected DMX mode uses, starting at the set start address.
- Number of channels occupied in the DMX mode “20Ch”: 20.
- Choose start addresses so that the channels of individual devices do not overlap and the last occupied channel does not exceed 512. Devices with the same start address and mode respond identically.
- For several devices in a row in the DMX mode “20Ch”, you can use, for example, the start addresses 1, 21, 41, 61.
- The DMX mode set on the device must match the fixture profile (personality) used in the controller.

8 Functions at a glance

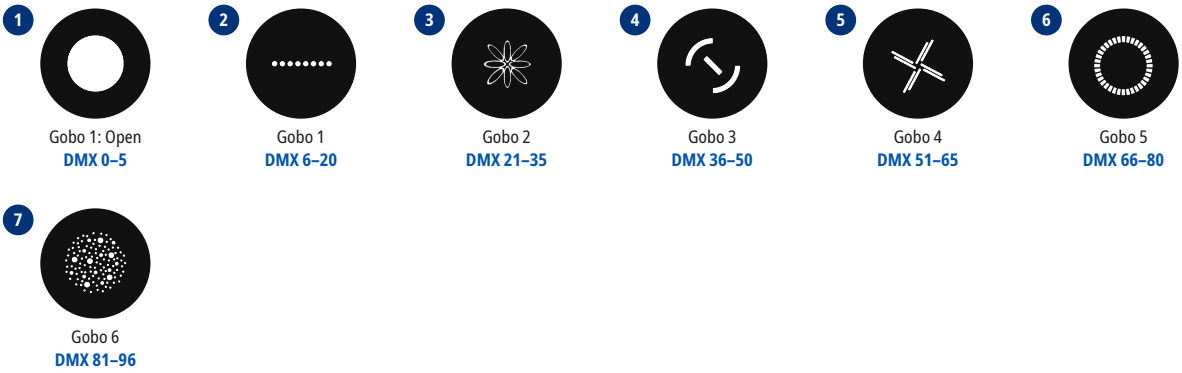
Functions in each DMX mode

	20Ch 20 channels	17Ch 17 channels
Pan / Tilt	1, 3	1, 3
Dimmer	5	5
Shutter / strobe	7	7
Color wheel	8	8
Gobo wheel	9, 11	9, 11
Gobo rotation	10	10
Prism	14, 15	14, 15
Frost	16	16
Zoom	12	12
Focus	13	13
Effects / macros	17	

Color wheel



Gobo wheel 1



Gobo wheel 2

1 
Gobo 2: Open
DMX 0–5

2 
Gobo 1
DMX 6–20

3 
Gobo 2
DMX 21–35

4 
Gobo 3
DMX 36–50

5 
Gobo 4
DMX 51–65

6 
Gobo 5
DMX 66–80

7 
Gobo 6
DMX 81–96

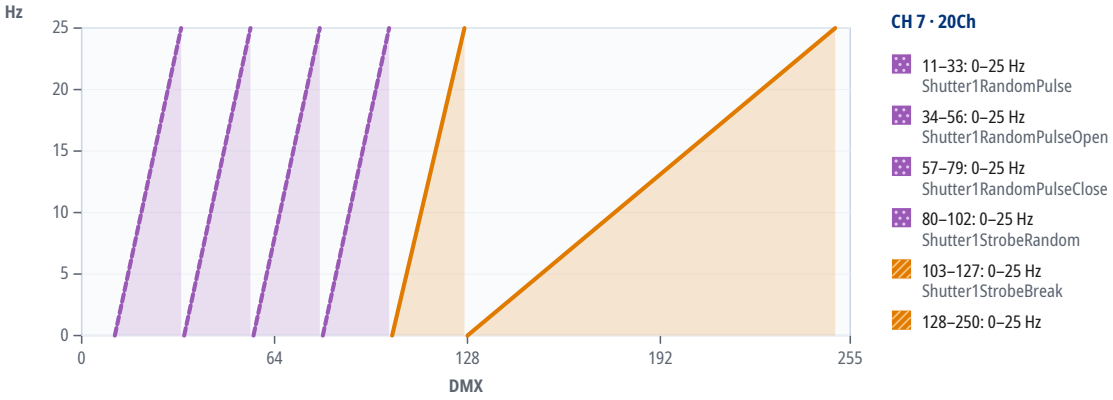
Prism

1
Open
DMX 0–5

2 
6 facets
6-Facet-Circular
DMX 6–127

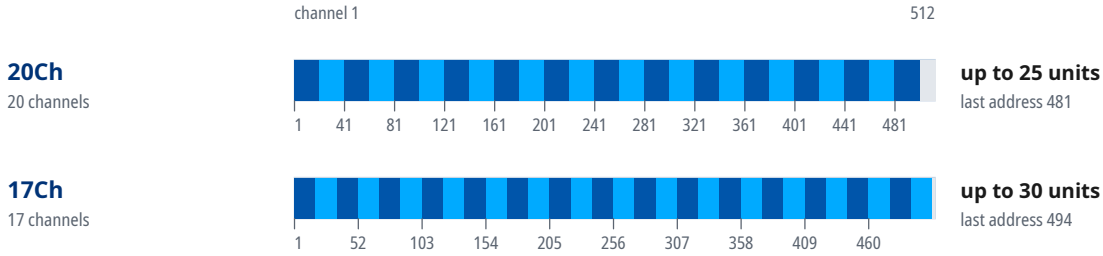
3 
4 facets
5-Facet-Linear
DMX 128–255

Strobe rate



9 DMX channels

Units in one DMX universe



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

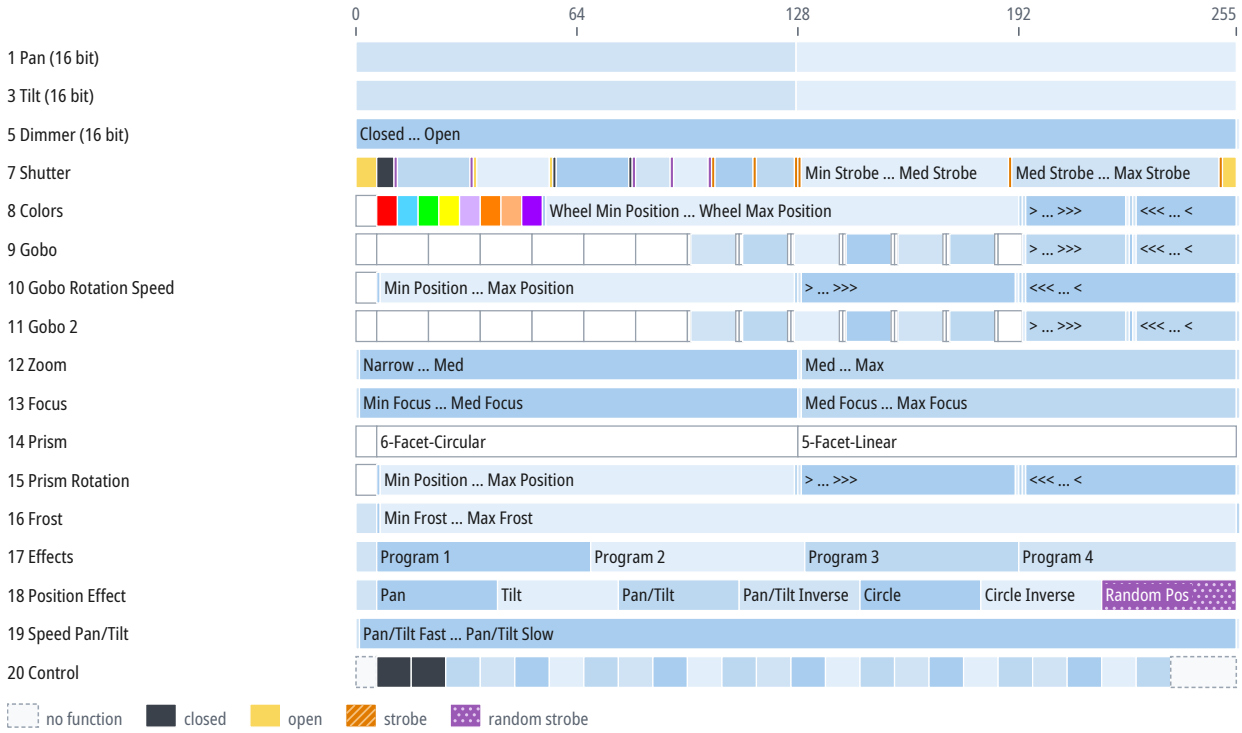
Unit	Start address	Unit	Start address	Unit	Start address	Unit	Start address
1	1	6	101	11	201	16	301
2	21	7	121	12	221	17	321
3	41	8	141	13	241	18	341
4	61	9	161	14	261	19	361
5	81	10	181	15	281	20	381

Mode 20Ch

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 5 Dimmer above 0; CH 7 Shutter at 0–5 “Open” or 251–255 “Shutter Open”. The GDTF file gives these values for a console's Highlight function: CH 5 Dimmer 255, CH 7 Shutter 0, CH 8 Colors 0.

Channel functions at a glance



CH	Function	DMX	Description
1	Pan	0–127	Pan 1
		128	Home
		128–255	Pan 1
2	Pan Fine	0–255	Fine adjustment of CH 1
3	Tilt	0–127	Tilt 1
		128	Home
		128–255	Tilt 1
4	Tilt Fine	0–255	Fine adjustment of CH 3
5	Dimmer	0–255	Closed … Open
		255	Open
6	Dimmer Fine	0–255	Fine adjustment of CH 5
7	Shutter	0–5	Shutter 1: Open
		6–10	Shutter 1: Closed
		11	Min Random Pulse
		12–32	Min Random Pulse … Max Random Pulse
		33	Max Random Pulse
		34	Min Pulse Open
		35–55	Min Pulse Open … Max Pulse Open
		56	Max Pulse Open
		57	Min Pulse Closed
		58–78	Min Pulse Closed … Max Pulse Closed
		79	Max Pulse Closed
		80	Min Random
		81–90	Min Random … Med Random
		91	Med Random
		92–101	Med Random … Max Random
		102	Max Random
		103	Min Break
		104–114	Min Break … Med Break
		115	Med Break
		116–126	Med Break … Max Break
		127	Max Break
		128	Min Strobe
		129–188	Min Strobe … Med Strobe
		189	Med Strobe
		190–249	Med Strobe … Max Strobe
		250	Max Strobe
		251–255	Shutter Open
8	Colors	0–5	Color 1: Open
		6–11	Deep Red
		12–17	Medium Blue

CH	Function	DMX	Description
8	Colors (continued)	18–23	Deep Green
		24–29	Yellow
		30–35	Lavender
		36–41	Amber
		42–47	CTO 3200K
		48–53	Congo Blue
		54	Wheel Min Position
		55–191	Wheel Min Position ... Wheel Max Position
		192	Wheel Max Position
		193	>
		194–222	> ... >>>
		223	>>>
		224	Color 1 Wheel Spin: Stop
		225	<<<
		226–254	<<< ... <
		255	<
9	Gobo	0–5	Gobo 1: Open
		6–20	Gobo 1
		21–35	Gobo 2
		36–50	Gobo 3
		51–65	Gobo 4
		66–80	Gobo 5
		81–95	Gobo 6
		96	Gobo 1 Min Shake
		97–109	Gobo 1 Min Shake ... Gobo 1 Max Shake
		110	Gobo 1 Max Shake
		111	Gobo 2 Min Shake
		112–124	Gobo 2 Min Shake ... Gobo 2 Max Shake
		125	Gobo 2 Max Shake
		126	Gobo 3 Min Shake
		127–139	Gobo 3 Min Shake ... Gobo 3 Max Shake
		140	Gobo 3 Max Shake
		141	Gobo 4 Min Shake
		142–154	Gobo 4 Min Shake ... Gob 4 Max Shake
		155	Gob 4 Max Shake
		156	Gobo 5 Min Shake
		157–169	Gobo 5 Min Shake ... Gobo 5 Max Shake
		170	Gobo 5 Max Shake
		171	Gobo 6 Min Shake
		172–184	Gobo 6 Min Shake ... Gobo 6 Max Shake
		185	Gobo 6 Max Shake
		186–192	Gobo 1: Open

CH	Function	DMX	Description
9	Gobo (continued)	193	>
		194–222	> ... >>>
		223	>>>
		224	Gobo 1 Wheel Spin: Stop
		225	<<<
		226–254	<<< ... <
		255	<
10	Gobo Rotation Speed	0–5	Gobo 1 Pos Rotate: Open
		6	Min Position
		7–126	Min Position ... Max Position
		127	Max Position
		128	>
		129–190	> ... >>>
		191	>>>
		192	Gobo 1 Pos Rotate: Stop
		193	<<<
		194–254	<<< ... <
		255	<
11	Gobo 2	0–5	Gobo 2: Open
		6–20	Gobo 1
		21–35	Gobo 2
		36–50	Gobo 3
		51–65	Gobo 4
		66–80	Gobo 5
		81–95	Gobo 6
		96	Gobo 1 Min Shake
		97–109	Gobo 1 Min Shake ... Gobo 1 Max Shake
		110	Gobo 1 Max Shake
		111	Gobo 2 Min Shake
		112–124	Gobo 2 Min Shake ... Gobo 2 Max Shake
		125	Gobo 2 Max Shake
		126	Gobo 3 Min Shake
		127–139	Gobo 3 Min Shake ... Gobo 3 Max Shake
		140	Gobo 3 Max Shake
		141	Gobo 4 Min Shake
		142–154	Gobo 4 Min Shake ... Gob 4 Max Shake
		155	Gob 4 Max Shake
		156	Gobo 5 Min Shake
		157–169	Gobo 5 Min Shake ... Gobo 5 Max Shake
		170	Gobo 5 Max Shake
		171	Gobo 6 Min Shake
		172–184	Gobo 6 Min Shake ... Gobo 6 Max Shake

CH	Function	DMX	Description
11	Gobo 2 (continued)	185	Gobo 6 Max Shake
		186–192	Gobo 2: Open
		193	>
		194–222	> ... >>>
		223	>>>
		224	Gobo 2 Wheel Spin: Stop
		225	<<<
		226–254	<<< ... <
		255	<
12	Zoom	0	Narrow
		1–127	Narrow ... Med
		128	Med
		129–254	Med ... Max
		255	Max
13	Focus	0	Min Focus
		1–127	Min Focus ... Med Focus
		128	Med Focus
		129–254	Med Focus ... Max Focus
		255	Max Focus
14	Prism	0–5	Open
		6–127	6-Facet-Circular
		128–255	5-Facet-Linear
15	Prism Rotation	0–5	Prism 1 Pos Rotate: Open
		6	Min Position
		7–126	Min Position ... Max Position
		127	Max Position
		128	>
		129–190	> ... >>>
		191	>>>
		192	Prism 1 Pos Rotate: Stop
		193	<<<
		194–254	<<< ... <
		255	<
16	Frost	0–5	No Frost
		6	Min Frost
		7–254	Min Frost ... Max Frost
		255	Max Frost
17	Effects	0–5	Effects Off
		6–67	Program 1
		68–129	Program 2
		130–191	Program 3
		192–255	Program 4

CH	Function	DMX	Description
18	Position Effect	0–5	No Effect
		6–40	Pan
		41–75	Tilt
		76–110	Pan/Tilt
		111–145	Pan/Tilt Inverse
		146–180	Circle
		181–215	Circle Inverse
		216–255	Random Pos
19	Speed Pan/Tilt	0	Pan/Tilt Fast
		1–254	Pan/Tilt Fast ... Pan/Tilt Slow
		255	Pan/Tilt Slow
20	Control	0–5	Control 1: No Function
		6–15	Blackout While Moving ON
		16–25	Blackout While Moving OFF
		26–35	Invert Pan ON
		36–45	Invert Pan OFF
		46–55	Invert Tilt ON
		56–65	Invert Tilt OFF
		66–75	Display backlight ON
		76–85	Display backlight OFF
		86–95	Dimmer Curve LINEAR
		96–105	Dimmer Curve EXPONENTIAL
		106–115	Dimmer Curve LOGARITHMIC
		116–125	Dimmer Curve SCURVE
		126–135	PWM Freq 800Hz
		136–145	PWM 1200Hz
		146–155	PWM 2000Hz
		156–165	PWM 3600Hz
		166–175	PWM 12kHz
		176–185	PWM 25kHz
		186–195	Fan AUTO
		196–205	Fan SILENT
		206–215	Pan/Tilt Reset
		216–225	Head Reset
		226–235	Global Reset
		236–255	Control 1: No Function

Mode 17Ch

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 5 Dimmer above 0; CH 7 Shutter at 0–5 “Open” or 251–255 “Shutter Open”. The GDTF file gives these values for a console's Highlight function: CH 5 Dimmer 255, CH 7 Shutter 0, CH 8 Colors 0.

Channel functions at a glance



CH	Function	DMX	Description
1	Pan		Same as CH 1 in the mode “20Ch” (p. 10)
2	Pan Fine	0–255	Fine adjustment of CH 1
3	Tilt		Same as CH 3 in the mode “20Ch” (p. 10)
4	Tilt Fine	0–255	Fine adjustment of CH 3
5	Dimmer		Same as CH 5 in the mode “20Ch” (p. 10)
6	Dimmer Fine	0–255	Fine adjustment of CH 5
7	Shutter		Same as CH 7 in the mode “20Ch” (p. 10)
8	Colors		Same as CH 8 in the mode “20Ch” (p. 10)
9	Gobo		Same as CH 9 in the mode “20Ch” (p. 11)
10	Gobo Rotation Speed		Same as CH 10 in the mode “20Ch” (p. 12)
11	Gobo 2		Same as CH 11 in the mode “20Ch” (p. 12)
12	Zoom		Same as CH 12 in the mode “20Ch” (p. 13)
13	Focus		Same as CH 13 in the mode “20Ch” (p. 13)
14	Prism		Same as CH 14 in the mode “20Ch” (p. 13)
15	Prism Rotation		Same as CH 15 in the mode “20Ch” (p. 13)
16	Frost		Same as CH 16 in the mode “20Ch” (p. 13)
17	Control		Same as CH 20 in the mode “20Ch” (p. 14)

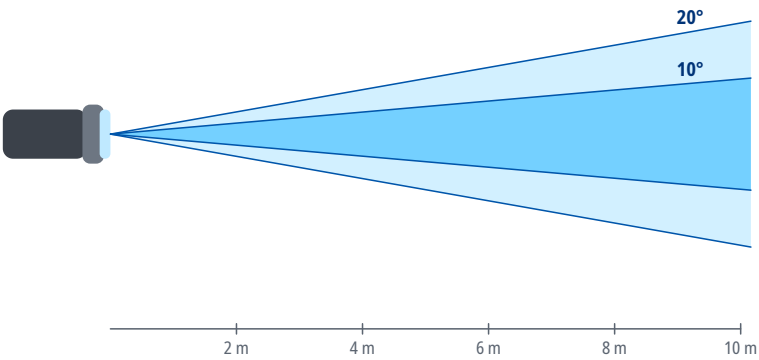
10 Technical specifications

Parameter	Value
Light	
Light source	LED
LED power	200 W
Luminous flux	7,500 lm
Color temperature	19,500 K
Color rendering index (CRI)	77
Optics	
Zoom	10–20°
Movement	
Pan	540°
Tilt	270°
Dimensions and construction	
Weight	11.2 kg
Operating environment	
Operating temperature	0 to 40 °C

Speeds and ranges

Parameter	Value
Strobe frequency	0–25 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 360 °/s (60 rpm)
Gobo 1 rotation	up to 360 °/s (60 rpm)
Prism rotation	up to 360 °/s (60 rpm)

Spot diameter



Distance	Ø 10°	Ø 20°
2 m	0.35 m	0.71 m
4 m	0.7 m	1.4 m
6 m	1 m	2.1 m
8 m	1.4 m	2.8 m
10 m	1.7 m	3.5 m
15 m	2.6 m	5.3 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.