DMX REFERENCE

Axcor Profile 600 HC ST

Clay Paky



Manufacturer	Clay Paky
GDTF file	Clay_Paky_Axcor_Profile_600_HC_ST_98193.gdtf
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1 About this manual

This document describes the Axcor Profile 600 HC ST by Clay Paky. It was compiled from the GDTF file Clay_Paky_Axcor_Profile_600_HC_ST_98193.gdtf from the GDTF-Share library.

File revision: “ClayPaky Ofweficial File Fw Ver 2_25_006”.

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 Clay Paky; 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	33 kg

DMX modes

Mode	Channels	Units in one universe	First start addresses
Standard	40	12	1, 41, 81, 121, ...

No light? Check these channels

- Standard: CH 6 Shutter at 104–107, 208–212 or 252–255 “Open”; CH 7 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.

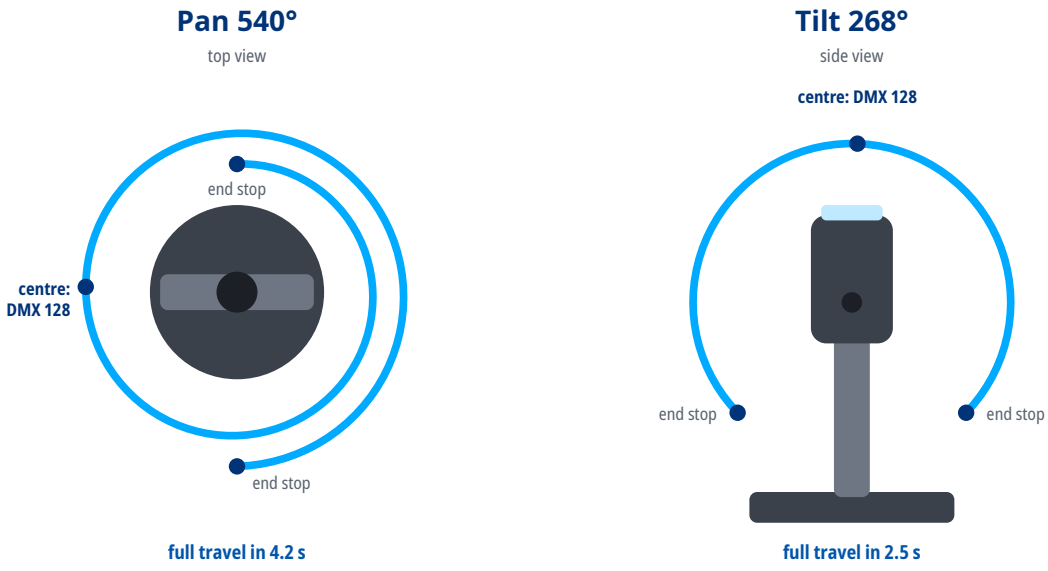
4 Product description

Description in the GDTF file

“In the crowded world of medium-high power lights, the AXCOR PROFILE 600 HC ST stands out for its excellent combination of high performance, exceptional light quality, and versatility of use. It fits a 500 W white LED engine, available in two versions: with high output 6500K color temperature, or - alternatively - with 5600K color temperature and a CRI of around 90. The luminous efficiency is among the highest in this power category, and - if necessary - it can be further increased by about 25% thanks to “boost mode” (available on the standard version and on the HC version), making AXCOR PROFILE 600 a perfect tool for tours and large events. A wide zoom range from 5.3° to 47.2° (1:9 ratio) means the light can be used in a variety of situations, including those for which a narrow angle is best. The completeness of its color section, its great wealth of visual effects, its framing system implemented with technological devices that enhance its precision and versatility, the possibility of using it as a wash light, make the Axcor Profile 600 an essential benchmark for all modern entertainment uses.”

“The AXCOR PROFILE 600 TEATRO is a special version of the Axcor Profile 600 ST that features an updated cooling system and mechanisms to significantly reduce the unit’s acoustical footprint. Available in two different CRI versions, this fixture is ideal for applications where noise is a concern in venues such as theatres, television studios, opera houses, conference halls, and more.”

Range of movement



Full-travel times as stated in the GDTF file.

5 Installation

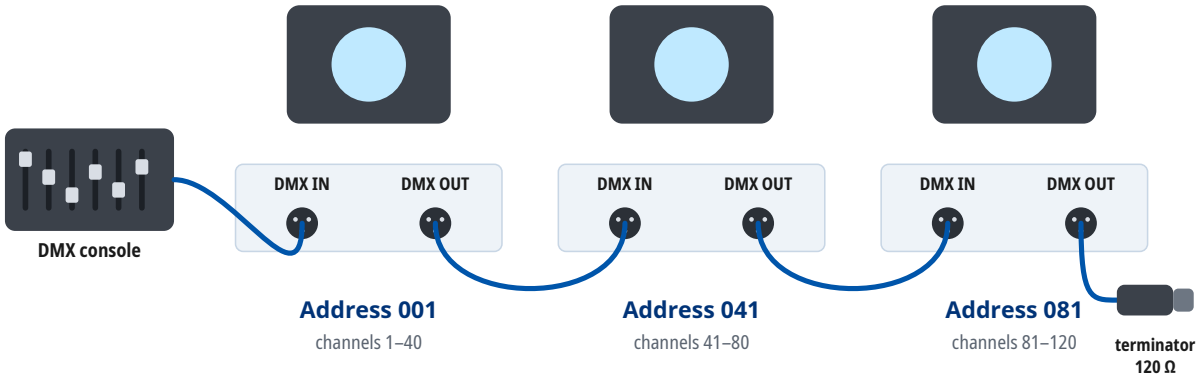
⚠ WARNING

- 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: 33 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 40 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

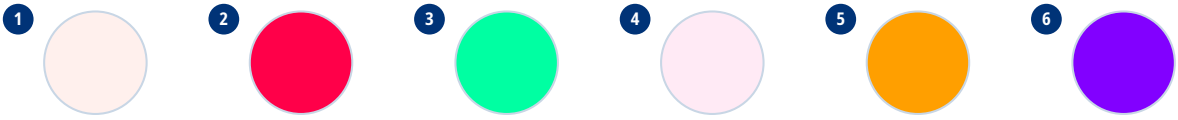
- The device occupies as many consecutive channels in the DMX universe as the selected DMX mode uses, starting at the set start address.
- Number of channels occupied in the DMX mode “Standard”: 40.
- Choose start addresses so that the channels of individual devices do not overlap and the last occupied 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, 41, 81, 121.
- The DMX mode set on the device must match the fixture profile (personality) used in the controller.
- The device supports RDM (Remote Device Management), two-way communication with the controller over the DMX line.

8 Functions at a glance

Functions in each DMX mode

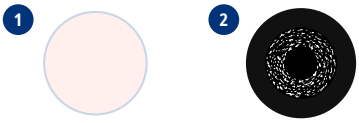
	Standard 40 channels
Pan / Tilt	32, 34
Dimmer	7
Shutter / strobe	6
Color mixing	1–3
Color temperature	4
Color wheel	5
Gobo wheel	12
Gobo rotation	13
Prism	15, 16
Frost	17
Zoom	29
Focus	27, 30, 31
Iris	9
Animation wheel	10, 11

Color wheel



1 Color: Open DMX 0–11
2 Dark Red DMX 12–32
3 Green DMX 33–53
4 CRI DMX 54–74
5 Gold Amber DMX 75–95
6 Navy Blue DMX 96–118

Animation wheel



1 No Animation DMX 0
2 Animation>> DMX 1–255

Gobo wheel

1 Gobo: Open
DMX 0–16

2 Plumens
DMX 17–32

3 Water Lines
DMX 33–48

4 Multiple Cones
DMX 49–64

5 Shattered
DMX 65–81

6 Small Dots
DMX 82–97

7 Broken Circle
DMX 98–113

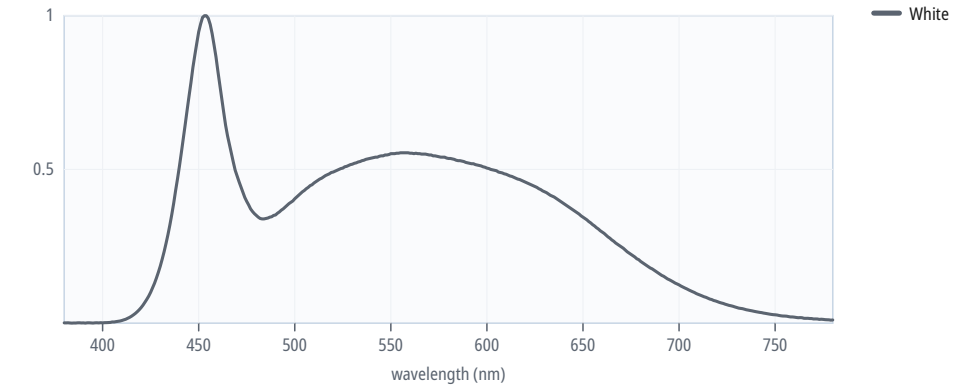
8 Half Circles
DMX 114–130

Prism

1 No Prism
DMX 0–127

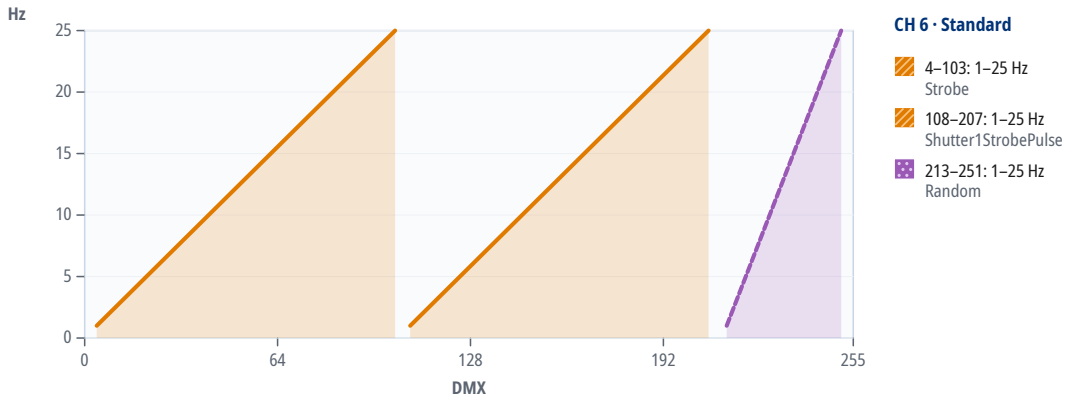
2 4 facets
4 Facet Prism
DMX 128–255

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.

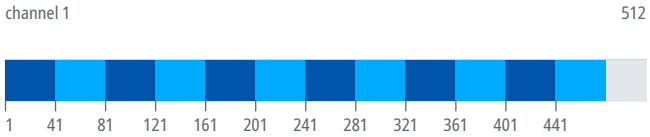
Strobe rate



9 DMX channels

Units in one DMX universe

Standard
40 channels



up to 12 units
last address 441

Start addresses of 20 units in the mode “Standard”

Unit	Start address	Unit	Start address	Unit	Start address	Unit	Start address
1	1	6	201	11	401	16	U2 · 121
2	41	7	241	12	441	17	U2 · 161
3	81	8	281	13	U2 · 1	18	U2 · 201
4	121	9	321	14	U2 · 41	19	U2 · 241
5	161	10	361	15	U2 · 81	20	U2 · 281

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.

RDM personalities

Mode	Channels	RDM personality
Standard	40	1

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 6 Shutter at 104–107, 208–212 or 252–255 “Open”; CH 7 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 5 Colors 0, CH 6 Shutter 255, CH 7 Dimmer 255.

Channel functions at a glance



Channel functions at a glance



CH	Function	DMX	Description
1	Cyan	0–255	
2	Magenta	0–255	
3	Yellow	0–255	
4	CTO	0–255	6500–3200 K
5	Colors	0–11	Color: Open
		12–32	Dark Red
		33–53	Green
		54–74	CRI
		75–95	Gold Amber
		96–118	Navy Blue
		119–127	Color 1
		128–153	x1 Spin C1>> (960–771.1 °/s)
		154–178	x2 Spin C1>> (763.5–582.2 °/s)
		179–204	x3 Spin C1>> (574.7–385.8 °/s)
		205–229	x4 Spin C1>> (378.2–196.9 °/s)
		230–255	x5 Spin C1>> (189.3–0.44 °/s)
6	Shutter	0–3	Shutter: Closed
		4–23	x1 Strb>>
		24–43	x2 Strb>>
		44–63	x3 Strb>>
		64–83	x4 Strb>>
		84–103	x5 Strb>>
		104–107	Shutter: Open
		108–127	x1 PulseC>>
		128–147	x2 PulseC>>
		148–167	x3 PulseC>>
		168–187	x4 PulseC>>
		188–207	x5 PulseC>>
		208–212	Shutter: Open
		213–220	x1 RndStrb>>
		221–228	x2 RndStrb>>
		229–235	x3 RndStrb>>
		236–243	x4 RndStrb>>
		244–251	x5 RndStrb>>
		252–255	Shutter: Open
7	Dimmer	0–255	Closed ... Open
		255	Open

CH	Function	DMX	Description
8	Dimmer Fine	0–255	Fine adjustment of CH 7
9	Iris	0	Iris C
		1–32	Iris C … Iris 25%
		33	Iris 25%
		34–64	Iris 25% … Iris 50%
		65	Iris 50%
		66–97	Iris 50% … Iris 75%
		98	Iris 75%
		99–130	Iris 75% … Iris O
		131	Iris O
		132–139	x1 PlsIris>>
		140–147	x2 PlsIris>>
		148–155	x3 PlsIris>>
		156–163	x4 PlsIris>>
		164–171	x5 PlsIris>>
		172–179	x1 PlsIrisC>>
		180–187	x2 PlsIrisC>>
		188–195	x3 PlsIrisC>>
		196–203	x4 PlsIrisC>>
		204–211	x5 PlsIrisC>>
		212–219	x1 PlsIrisO>>
		220–227	x2 PlsIrisO>>
		228–235	x3 PlsIrisO>>
		236–243	x4 PlsIrisO>>
		244–251	x5 PlsIrisO>>
		252–255	Iris O
10	Animation Wheel	0	No Animation
		1–255	Animation>>
11	Animation Wheel Rotation	0–24	x5 Rot A1<< (1080–871 °/s)
		25–29	x4 Rot A1<< (862.3–827.5 °/s)
		30–49	x4 Rot A1<< … x3 Rot A1<<
		50–74	x3 Rot A1<< (644.7–435.7 °/s)
		75–99	x2 Rot A1<< (427–218.1 °/s)
		100–124	x1 Rot A1<< (209.4–0.4 °/s)
		125–130	Rot A1><
		131–155	x1 Rot A1>> (0.4–209.4 °/s)
		156–180	x2 Rot A1>> (218.1–427 °/s)
		181–205	x3 Rot A1>> (435.7–644.7 °/s)
		206–230	x4 Rot A1>> (653.4–862.3 °/s)
		231–255	x5 Rot A1>> (871–1080 °/s)
12	Gobo	0–16	Gobo: Open
		17–32	Plumens

CH	Function	DMX	Description
12	Gobo (continued)	33–48	Water Lines
		49–64	Multiple Cones
		65–81	Shattered
		82–97	Small Dots
		98–113	Broken Circle
		114–129	Half Circles
		130–147	Shake 1-1>> (1–10 Hz)
		148–165	Shake 1-2>> (1–10 Hz)
		166–183	Shake 1-3>> (1–10 Hz)
		184–201	Shake 1-4>> (1–10 Hz)
		202–219	Shake 1-5>> (1–10 Hz)
		220–237	Shake 1-6>> (1–10 Hz)
		238–255	Shake 1-7>> (1–10 Hz)
13	Gobo Rotation	0–21	0 deg ... 90 deg
		21–42	90 deg ... 180 deg
		42–63	180 deg ... 270 deg
		63	270 deg
		64–85	270 deg ... 360 deg
		85–106	360 deg ... 450 deg
		106–127	450 deg ... 540 deg
		127	540 deg
		128–140	x5 Rot G1<< (1080–864.1 °/s)
		140–153	x4 Rot G1<< (864–648.1 °/s)
		153–165	x3 Rot G1<< (648.1–432.1 °/s)
		165–178	x2 Rot G1<< (432.1–216.2 °/s)
		178–190	x1 Rot G1<< (216.2–0.22 °/s)
		191–192	Rot G1><
		193–205	x1 Rot G1>> (0.22–216.2 °/s)
		205–218	x2 Rot G1>> (216.2–432.1 °/s)
		218–230	x3 Rot G1>> (432.1–648.1 °/s)
		230–243	x4 Rot G1>> (648.1–864 °/s)
		243–255	x5 Rot G1>> (864.1–1080 °/s)
14	Gobo Rotation Fine	0–255	Fine adjustment of CH 13
15	Prism	0–127	No Prism
		128–255	4 Facet Prism
16	Prism Rotation	0	0 deg
		1–20	0 deg ... 90 deg
		21	90 deg
		22–41	90 deg ... 180 deg
		42	180 deg
		43–63	180 deg ... 270 deg
		64	270 deg

CH	Function	DMX	Description
16	Prism Rotation (continued)	65–84	270 deg ... 360 deg
		85	360 deg
		86–105	360 deg ... 450 deg
		106	450 deg
		107–126	450 deg ... 540 deg
		127	540 deg
		128–140	x5 Rot P1<< (480–387.1 °/s)
		141–152	x4 Rot P1<< (379.4–294.3 °/s)
		153–165	x3 Rot P1<< (286.6–193.7 °/s)
		166–177	x2 Rot P1<< (186–100.9 °/s)
		178–190	x1 Rot P1<< (93.2–0.3 °/s)
		191–192	Rot P1><
		193–205	x1 Rot P1>> (0.3–93.2 °/s)
		206–217	x2 Rot P1>> (100.9–186 °/s)
		218–230	x3 Rot P1>> (193.7–286.6 °/s)
		231–242	x4 Rot P1>> (294.3–379.4 °/s)
		243–255	x5 Rot P1>> (387.1–480 °/s)
17	Frost		Light Frost
		0	No Frost
		1–254	No Frost ... Frost
		255	Frost
18	Blade 3 B	0–255	
19	Blade 3 A	0–255	
20	Blade 1 B	0–255	
21	Blade 1 A	0–255	
22	Blade 2 B	0–255	
23	Blade 2 A	0–255	
24	Blade 4 B	0–255	
25	Blade 4 A	0–255	
26	Shaper Rotation	0	-45 deg
		1–41	-45 deg ... -30 deg
		42	-30 deg
		43–84	-30 deg ... -15 deg
		85	-15 deg
		86–127	-15 deg ... 0 deg127
		128	0 deg127
		129–169	0 deg127 ... 15 deg
		170	15 deg
		171–212	15 deg ... 30 deg
		213	30 deg
		214–254	30 deg ... 45 deg
		255	45 deg

CH	Function	DMX	Description
27	Focus	0–255	
28	Focus Fine	0–255	Fine adjustment of CH 27
29	Zoom	0	Narrow
		1–254	Narrow ... Wide
		255	Wide
30	Focus Distance	0	OFF AutoFocus
		1–6	Focus 1 Distance
		7–255	ON AutoFocus>>
31	Focus Adjust	0–127	AutoFocus ADJ <<
		128	AutoFocus ADJ ><
		129–255	AutoFocus ADJ >>
32	Pan	0–127	Pan
		128	Home
		128–255	Pan
33	Pan Fine	0–255	Fine adjustment of CH 32
34	Tilt	0–127	Tilt
		128	Home
		128–255	Tilt
35	Tilt Fine	0–255	Fine adjustment of CH 34
36	Function	0–11	No Feature: No Function
		12–24	Fast Pan/Tilt
		25–37	Normal Pan/Tilt
		38–50	Conventional Dim
		51–62	Standard Dim
		63–75	CMY Shortcut ON
		76–88	CMY Shortcut OFF
		89–101	Slow Shaper
		102–113	Fast Shaper
		114–126	Fast Gobo
		127–139	Normal Gobo
		140–152	Quadratic Dim
		153–164	400W Led Power
		165–177	500W Led Power
		178–215	No Feature: No Function
		216–228	Linear Dim
		229–231	Display ON/OFF
		232–255	No Feature: No Function
37	Reset	0–25	No Function
		26–76	Effect Reset
		77–127	Position Reset
		128–255	Reset
38	Uniform Beam	0	Normal

CH	Function	DMX	Description
38	Uniform Beam (continued)	1–254	Normal ... Boost
		255	Boost
39	Function 2	0–11	No Feature: No Function
		12	4700Hz
		13	6000Hz
		14	7300Hz
		15	8600Hz
		16	10000Hz
		17	12000Hz
		18	15000Hz
		19	17578Hz
		20	20000Hz
		21	22000Hz
		22–173	No function
		174–176	No Feature: No Function
		177–255	No function
40	LED Frequency		When CH 39 is 12:
		0–255	4060–5335 Hz
			When CH 39 is 13:
		0–255	
			When CH 39 is 14:
		0–255	
			When CH 39 is 15:
		0–255	
			When CH 39 is 16:
		0–255	
			When CH 39 is 17:
		0–255	
			When CH 39 is 18:
		0–255	
			When CH 39 is 19:
		0–255	
			When CH 39 is 20:
		0–255	
			When CH 39 is 21:
		0–255	

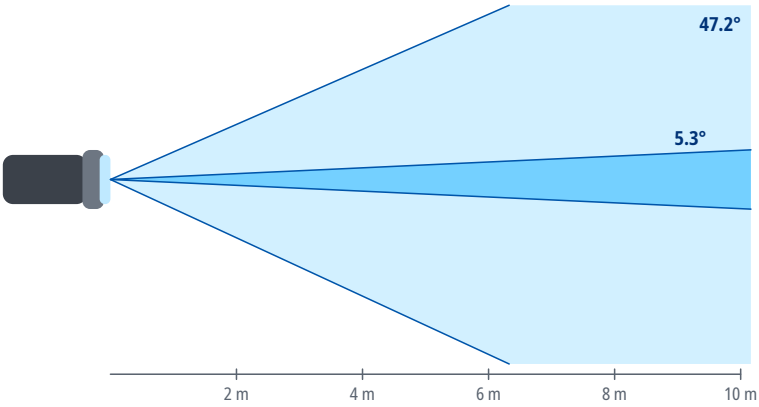
10 Technical specifications

Parameter	Value
Light	
Light source	LED
LED power	500 W
Luminous flux	120,000 lm
Color temperature	6,500 K
Color rendering index (CRI)	70
Optics	
Zoom	5.3–47.2°
Movement	
Pan	540°
Tilt	268°
Control	
RDM	yes (manufacturer ID 0x4350, device model ID 0x0450)
Dimensions and construction	
Weight	33 kg
Operating environment	
Operating temperature	-20 to 40 °C

Speeds and ranges

Parameter	Value
Color temperature range	3200–6500 K
Strobe frequency	1–25 Hz
LED frequency	1682–22635 Hz
Color wheel rotation	up to 960 °/s (160 rpm)
Gobo rotation	up to 1080 °/s (180 rpm)
Prism rotation	up to 480 °/s (80 rpm)
Animation wheel rotation	up to 1080 °/s (180 rpm)

Spot diameter



Distance	Ø 5.3°	Ø 47.2°
2 m	0.19 m	1.7 m
4 m	0.37 m	3.5 m
6 m	0.56 m	5.2 m
8 m	0.74 m	7 m
10 m	0.93 m	8.7 m
15 m	1.4 m	13.1 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.