DMX REFERENCE

Proteus Rayzor 760 OPS

Elation



Manufacturer	Elation
GDTF file	Elation_Proteus_Rayzor_760_OPS_96942.gdtf
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1 About this manual

This document describes the Proteus Rayzor 760 OPS by Elation. It was compiled from the GDTF file Elation_Proteus_Rayzor_760_OPS_96942.gdtf from the GDTF-Share library.

File revision: “25-15-05 Release”.

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 Elation; 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	12.2 kg
Ingress protection	IP65

DMX modes

Mode	Channels	Units in one universe	First start addresses
Extended 360Pan/Tilt	80	6	1, 81, 161, 241, ...
Pixels 360Pan/Tilt	52	9	1, 53, 105, 157, ...
Standard 360Pan/Tilt	25	20	1, 26, 51, 76, ...
SparkLED	28	18	1, 29, 57, 85, ...
Extended 540Pan/270Tilt	80	6	1, 81, 161, 241, ...
Pixels 540Pan/270Tilt	52	9	1, 53, 105, 157, ...
Standard 540Pan/270Tilt	25	20	1, 26, 51, 76, ...

No light? Check these channels

- Pixels 360Pan/Tilt: CH 51 Dimmer 2 above 0



Read the manual before use



Do not stare into the light

3 Safety instructions



Read the manual before use



Do not stare into the light

⚠ 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.

⚠ CAUTION

- The device is rated IP65 and may be used outdoors within the limits of this rating.
- This protection is effective only when all connectors are mated or closed with their protective caps and all seals are intact. Use cables and connectors with the same or a higher protection rating.
- Do not open the housing; opening it breaks the seals and the protection rating can no longer be guaranteed.
- Install the device so that water cannot collect around connectors and cable glands, and inspect seals and cables regularly.

⚠ 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.

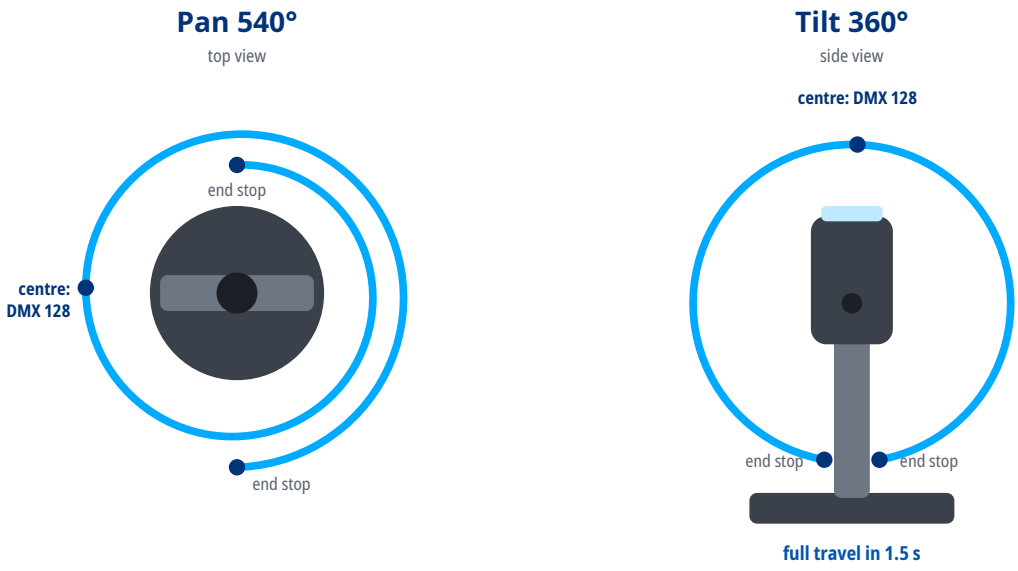
> ⚠ **WARNING**
>
> - The moving parts of the device (for example the head or arms) can move quickly and unexpectedly at any time – after power-on, during a reset, or on a command from the controller.
> - Keep yourself and any objects out of the range of movement. While the device is switched on, do 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

“The Proteus Rayzor 760™ OPS is a compact yet extremely powerful IP65 rated Wash Effects fixture featuring Elation’s unique SparkLED™ system and fast continuous Pan and Tilt motion. With its wide zoom range from 5 to 77 degrees it provides intense and well-defined mid-air beams at over 7,200 lumens as well as an exceptionally wide and even wash coverage, making it a perfect tool for any application, even in adverse outdoor conditions. SparkLEDs offer a prominent and innovative LED pixel effect with dedicated high brightness pixels inside the large front lenses for additional layers of creativity.”

Range of movement



Full-travel times as stated in the GDTF file.

5 Installation

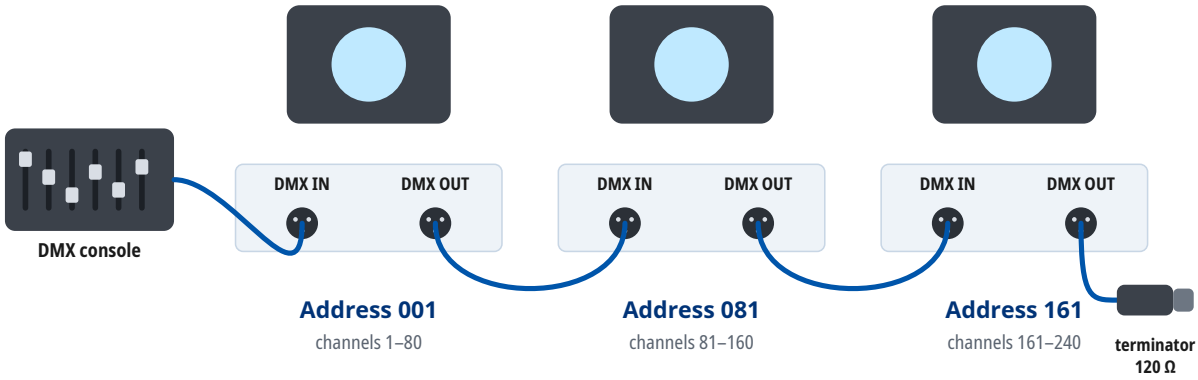
⚠ **WARNING**

- 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: 12.2 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 Extended 360Pan/Tilt: every unit occupies 80 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 “Extended 360Pan/Tilt”: 80.
- 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 “Extended 360Pan/Tilt”, you can use, for example, the start addresses 1, 81, 161, 241.
- 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

	Extended 360Pan/Tilt 80 channels	Pixels 360Pan/Tilt 52 channels	Standard 360Pan/Tilt 25 channels	SparkLED 28 channels	Extended 540Pan/ 270Tilt 80 channels	Pixels 540Pan/ 270Tilt 52 channels	Standard 540Pan/ 270Tilt 25 channels
Pan / Tilt	1, 3, 5, 6	1, 3, 5, 6	1, 3, 5, 6		1, 3, 5, 6	1, 3, 5, 6	1, 3, 5, 6
Dimmer	1–28, 51, 53–80	10, 51, 74	2, 10, 25	1–28, 53–80	1–28, 51, 53–80	10, 51, 74	2, 10, 25
Dimmer resolution	16 bit	16 bit	16 bit	8 bit	16 bit	16 bit	16 bit
Shutter / strobe	9, 50	9, 50, 73	1, 9, 24		9, 50	9, 50, 73	1, 9, 24
Color mixing	22–49	22–49	20–23		22–49	22–49	20–23
Color temperature	7	7	7		7	7	7
Color wheel	8	8	8		8	8	8
Zoom	13	13	13		13	13	13
Effects / macros	17–21	17–21	15–19		17–21	17–21	15–19
Pixel control	28 cells				28 cells		

Color wheel



25 Dark CTB
DMX 125–129

26 Light Green
DMX 130–134

27 Purple
DMX 135–139

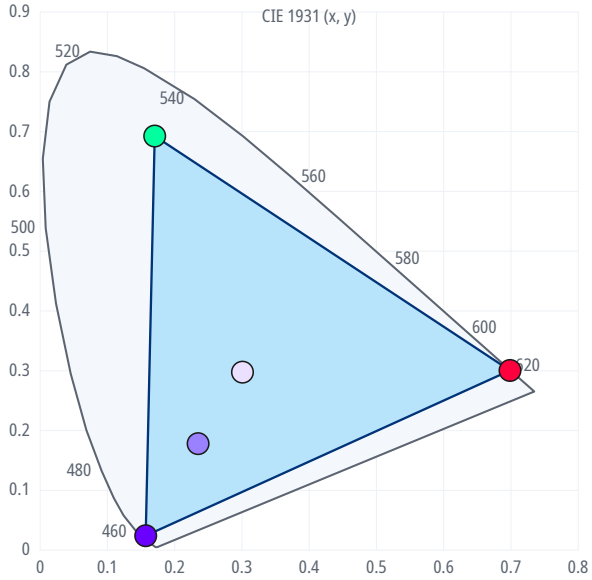
28 Lighter Purple
DMX 140–144

29 Pink
DMX 145–149

30 Rose
DMX 150–154

31 White
DMX 155–159

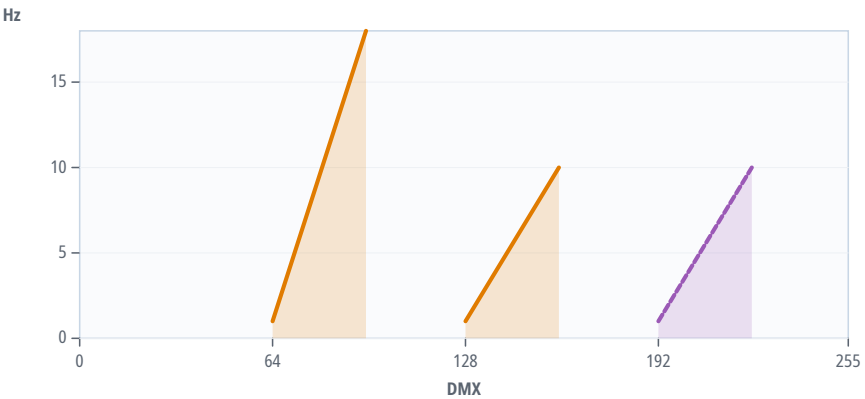
LED colors and the colors they mix



LED	x	y
Red	0.699	0.300
Green	0.170	0.693
Blue	0.157	0.024
White	0.301	0.298
Spark White	0.235	0.178

The shaded area holds the colors the LEDs can mix; the dots are the LED colors the GDTF file states.

Strobe rate



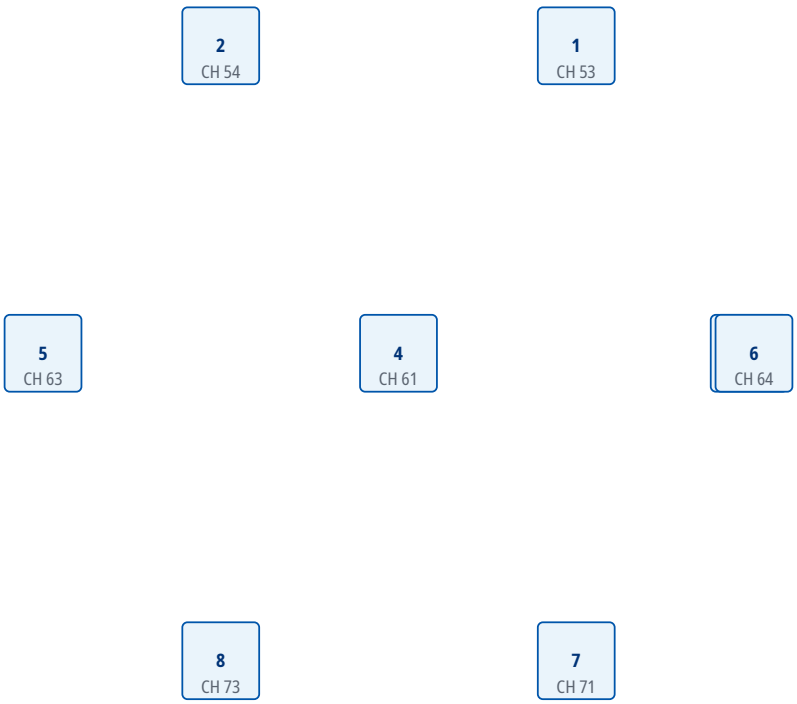
CH 9 · Extended 360Pan/Tilt

64–95: 1–18 Hz
Strobe Effect SLOW to FAST

128–159: 1–10 Hz
Pulse Effect In Sequences

192–223: 1–10 Hz
Random Strobe Effect SLOW to FAST

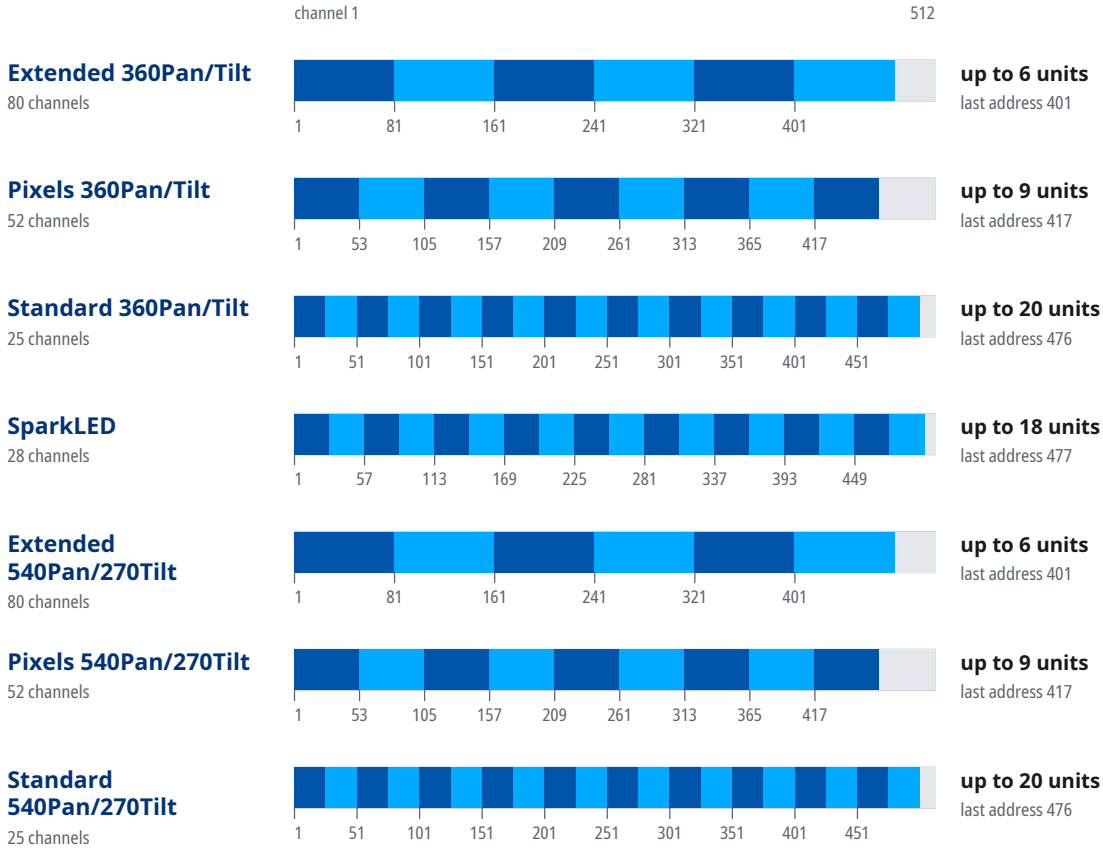
Cells (pixels)



8 cells where the GDTF file places them (seen from above), numbered by their first DMX channel (CH) in the mode “Extended 360Pan/Tilt”.

9 DMX channels

Units in one DMX universe



Start addresses of 20 units in the mode “Extended 360Pan/Tilt”

Unit	Start address	Unit	Start address	Unit	Start address	Unit	Start address
1	1	6	401	11	U2 · 321	16	U3 · 241
2	81	7	U2 · 1	12	U2 · 401	17	U3 · 321
3	161	8	U2 · 81	13	U3 · 1	18	U3 · 401
4	241	9	U2 · 161	14	U3 · 81	19	U4 · 1
5	321	10	U2 · 241	15	U3 · 161	20	U4 · 81

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 Extended 360Pan/Tilt

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

The GDTF file gives these values for a console's Highlight function: CH 9 Shutter 1 47, CH 10 Dimmer 1 255, CH 22 Red 1 255, CH 23 Green 1 255, CH 24 Blue 1 255, CH 25 White 1 255, CH 26 Red 2 255, CH 27 Green 2 255, CH 28 Blue 2 255, CH 29 White 2 255, CH 30 Red 3 255, CH 31 Green 3 255, CH 32 Blue 3 255, CH 33 White 3 255, CH 34 Red 4 255, CH 35 Green 4 255, CH 36 Blue 4 255, CH 37 White 4 255, CH 38 Red 5 255, CH 39 Green 5 255, CH 40 Blue 5 255, CH 41 White 5 255, CH 42 Red 6 255, CH 43 Green 6 255, CH 44 Blue 6 255, CH 45 White 6 255, CH 46 Red 7 255, CH 47 Green 7 255, CH 48 Blue 7 255, CH 49 White 7 255, CH 50 Shutter 2 47, CH 53 Dimmer 255 (the same in each of the 28 cells).

CH	Function	DMX	Description
1	Pan	0–127	Min … Center
		127	Center
		128–255	Center … Max
		255	Max
2	Pan Fine	0–255	Fine adjustment of CH 1
3	Tilt	0–127	Min … Center
		127	Center
		128–255	Center … Max
		255	Max
4	Tilt Fine	0–255	Fine adjustment of CH 3
5	Pan Rotation	0–2	Disable
		3–126	CW Fast to Slow (360–10 °/s)
		127–129	No Rot
		130–253	CCW Slow to Fast (10–360 °/s)
		254–255	No Rot
6	Tilt Rotation	0–2	Disable
		3–126	CW Fast to Slow (360–10 °/s)
		127–129	No Rot
		130–253	CCW Slow to Fast (10–360 °/s)
		254–255	No Rot
7	CTO	0–10	Disabled
		11	2000k
		12	2050k
		13	2100k
		14	2150k
		15	2200k
		16	2250k
		17	2300k
		18	2350k
		19	2400k
		20	2450k
		21	2500k
		22	2550k

CH	Function	DMX	Description
7	CTO (continued)	23	2600k
		24	2650k
		25	2700k
		26	2750k
		27	2800k
		28	2850k
		29	2900k
		30	2950k
		31	3000k
		32	3050k
		33	3100k
		34	3150k
		35	3200k
		36	3250k
		37	3300k
		38	3350k
		39	3400k
		40	3450k
		41	3500k
		42	3550k
		43	3600k
		44	3650k
		45	3700k
		46	3750k
		47	3800k
		48	3850k
		49	3900k
		50	3950k
		51	4000k
		52	4050k
		53	4100k
		54	4150k
		55	4200k
		56	4250k
		57	4300k
		58	4350k
		59	4400k
		60	4450k
		61	4500k
		62	4550k
		63	4600k
		64	4650k

CH	Function	DMX	Description
7	CTO (continued)	65	4700k
		66	4750k
		67	4800k
		68	4850k
		69	4900k
		70	4950k
		71	5000k
		72	5050k
		73	73
		74	5150k
		75	5200k
		76	5250k
		77	5300k
		78	5350k
		79	5400k
		80	5450k
		81	5500k
		82	5550k
		83	5600k
		84	5650k
		85	5700k
		86	5750k
		87	5800k
		88	5850k
		89	5900k
		90	5950k
		91	6000k
		92	6050k
		93	6100k
		94	6150k
		95	6200k
		96	6250k
		97	6300k
		98	6350k
		99	6400k
		100	6450k
		101	6500k
		102	6550k
		103	6600k
		104	6650k
		105	6700k
		106	6750k

CH	Function	DMX	Description
7	CTO (continued)	107	6800k
		108	6850k
		109	6900k
		110	6950k
		111	7000k
		112	7050k
		113	7100k
		114	7150k
		115	7200k
		116	7250k
		117	7300k
		118	7350k
		119	7400k
		120	7450k
		121	7500k
		122	7550k
		123	7600k
		124	7650k
		125	7700k
		126	7750k
		127	7800k
		128	7850k
		129	7900k
		130	7950k
		131	8000k
		132	8050k
		133	8100k
		134	8150k
		135	8200k
		136	8250k
		137	8300k
		138	8350k
		139	8400k
		140	8450k
		141	8500k
		142	8550k
		143	8600k
		144	8650k
		145	8700k
		146	8750k
		147	8800k
		148	8850k

CH	Function	DMX	Description
7	CTO (continued)	149	8900k
		150	8950k
		151	9000k
		152	9050k
		153	9100k
		154	9150k
		155	9200k
		156	9250k
		157	9300k
		158	9350k
		159	9400k
		160	9450k
		161	9500k
		162	9550k
		163	9600k
		164	9650k
		165	9700k
		166	9750k
		167	9800k
		168	9850k
		169	9900k
		170	9950k
		171–255	10000k
8	Colors	0–9	Color Wheel: Open
		10–14	Red
		15–19	Red Orange
		20–24	Light Amber
		25–29	Yellow Amber
		30–34	Greenish Yellow
		35–39	Light Yellow Green
		40–44	Dark Yellow Green
		45–49	Green
		50–54	Teal
		55–59	Cyan
		60–64	Light Blue
		65–69	Aqua
		70–74	Dark Aqua
		75–79	Green Blue
		80–84	Light Lavender
		85–89	Dark Purple
		90–94	Medium Purple
		95–99	Mid Rose

CH	Function	DMX	Description
8	Colors (continued)	100–104	Muave
		105–109	Nice Magenta
		110–114	Warm Magenta
		115–119	Light Red
		120–124	Straw
		125–129	Dark CTB
		130–134	Light Green
		135–139	Purple
		140–144	Lighter Purple
		145–149	Pink
		150–154	Rose
		155–159	White
		160–174	Not in Use
		175–179	Color Wheel: Open
		180–201	CW Fast to Slow (360–10 °/s)
		202–207	Wheel Spin: Stop
		208–229	CCW Slow to Fast (up to 360 °/s (60 rpm))
		230–234	Wheel Open: Open
		235–239	Random Fast
		240–244	Random Med
		245–249	Random Slow
		250–255	Wheel Open: Open
9	Shutter 1	0–31	Shutter CLOSED
		32–63	NO Function (Shutter OPEN)
		64–95	Strobe Effect SLOW to FAST (1–18 Hz)
		96–127	NO Function (Shutter OPEN)
		128–159	Pulse Effect In Sequences (1–10 Hz)
		160–191	NO Function (Shutter OPEN)
		192–223	Random Strobe Effect SLOW to FAST (1–10 Hz)
		224–255	NO Function (Shutter OPEN)
10	Dimmer 1	0–63	0 % … 25 %
		63	25 %
		64–127	25 % … 50 %
		127	50 %
		128–191	50 % … 75 %
		191	75 %
		192–255	75 % … 100 %
		255	100 %
11	Dimmer 1 Fine	0–255	Fine adjustment of CH 10
12	Dimmer Mode	0–20	Standard
		21–40	Stage
		41–60	TV

CH	Function	DMX	Description
12	Dimmer Mode (continued)	61–80	Architectual
		81–100	Theater
		101–120	Stage 2
		121	0s
		122	0_1s
		123	0_2s
		124	0_3s
		125	0_4s
		126	0_5s
		127	0_6s
		128	0_7s
		129	0_8s
		130	0_9s
		131	1s
		132	1_5s
		133–141	2...10s
		142–255	Idle
13	Zoom	0–216	Wide ... Narrow
		216	Narrow
		216–255	Overdrive Min ... Overdrive Max
		255	Overdrive Max
14	Zoom Fine	0–255	Fine adjustment of CH 13
15	Speed Pan/Tilt	0	P/T Speed: Max
		1–224	P/T Speed: Max ... Min
		225	P/T Speed: Min
		226	Blackout P/T Move
		227–235	Blackout P/T Move ... Blackout All Wheel Change
		236	Blackout All Wheel Change
		237–255	Blackout Mode
16	Control	0–10	P/T Ranges: Idle
		11–12	P/T Shortest Path
		13–14	P/T Continue Path
		15–16	Pan Range 540
		17–18	Pan Range 360
		19–20	Tilt Range 270
		21–22	Tilt Range 360
		23–39	P/T Ranges: Idle
		40–59	Silent
		60–79	Auto
		80–84	Reset All
		85–87	Reset Movement
		88–91	Reset Zoom

CH	Function	DMX	Description
16	Control (continued)	92–99	Reset Zoom: Idle
		100	900Hz
		101	910Hz
		102	920Hz
		103	930Hz
		104	940Hz
		105	950Hz
		106	960Hz
		107	970Hz
		108	980Hz
		109	990Hz
		110	1000Hz
		111	1010Hz
		112	1020Hz
		113	1030Hz
		114	1040Hz
		115	1050Hz
		116	1060Hz
		117	1070Hz
		118	1080Hz
		119	1090Hz
		120	1100Hz
		121	1110Hz
		122	1120Hz
		123	1130Hz
		124	1140Hz
		125	1150Hz
		126	1160Hz
		127	1170Hz
		128	1180Hz
		129	1190Hz
		130	1200Hz
		131	1210Hz
		132	1220Hz
		133	1230Hz
		134	1240Hz
		135	1250Hz
		136	1260Hz
		137	1270Hz
		138	1280Hz
		139	1290Hz
		140	1300Hz

CH	Function	DMX	Description
16	Control (continued)	141	1310Hz
		142	1320Hz
		143	1330Hz
		144	1340Hz
		145	1350Hz
		146	1360Hz
		147	1370Hz
		148	1380Hz
		149	1390Hz
		150	1400Hz
		151	1410Hz
		152	1420Hz
		153	1430Hz
		154	1440Hz
		155	1450Hz
		156	1460Hz
		157	1470Hz
		158	1480Hz
		159	1490Hz
		160	1500Hz
		161	2500Hz
		162	4000Hz
		163	5000Hz
		164	6000Hz
		165	10000Hz
		166	15000Hz
		167	20000Hz
		168	25000Hz
		169–192	Hibernate: Idle
		193–194	Hibernate Off
		195–196	Hibernate
		197–198	Home Position Before Power Off
		199–200	Home Position Off
		201–210	Linear
		211–220	Square
		221–230	Inverse Square
		231–240	S Curve
		241–255	Dimming Curve
17	Color Macro	0–10	No Function
		11	Single
		12	Single Bounce
		13	Snake

CH	Function	DMX	Description
17	Color Macro (continued)	14	Snake Bounce
		15	Rows
		16	Rows Bounce
		17	Column
		18	Column Bounce
		19	Columns 2
		20	RGBW Intensity FX: Slash
		21	RGBW Intensity FX: Backslash
		22	Slash Back
		23	<>
		24	><
		25	>>
		26	<<
		27	Rotating Bar
		28	Rotating Dot
		29	Rotating 2 Dot
		30	Ring 2 Cell
		31	Ring 2 Cell Overlap
		32	Ring 3 Cell Blend
		33	Ring - Center Fade
		34	X - Bar
		35	Diagonals
		36	RGBW Intensity FX: Arrow Left
		37	RGBW Intensity FX: Arrow Right
		38	2 Pixels
		39	3 Pixels
		40	4 Pixels
		41	1 2 3 4 Pixels
		42	Ring Build
		43	Ring Build Erase
		44	Ring Build Erase 2
		45–54	Chase 1...10
		55	Center Chase
		56	Center Chase 2
		57	Alternate
		58	Burst SprakLED
		59	Burst RGBW
		60	Strobe Alternate
		61	Strobe Alternate ... Lens/SparkLED Alternate
		62	Lens/SparkLED Alternate
		63–100	RGBW Intensity FX
		101	Top 2

CH	Function	DMX	Description
17	Color Macro (continued)	102	RGBW Static FX Patterns: Center 3
		103	Bottom 2
		104	Top And Bottom
		105	X
		106	Ring
		107	Center Dot
		108	RGBW Static FX Patterns: Slash
		109	RGBW Static FX Patterns: Backslash
		110	RGBW Static FX Patterns: Arrow Left
		111	RGBW Static FX Patterns: Arrow Right
		112	<
		113	>
		114–130	RGBW Static FX Patterns
		131	RGBW Cells
		132	RGBWCMY Cells
		133	Color Wheel Cells
		134	RGBW Rows
		135	RGBWCMY Rows
		136	Color Wheel Rows
		137	RGBW Columns
		138	RGBWCMY Columns
		139	Color Wheel Columns
		140	RGBW Single Row
		141	RGBWCMY Single Row
		142	Color Wheel Single Row
		143	RGBW Single Columns
		144	RGBWCMY Single Columns
		145	Color Wheel Single Columns
		146	RGB Rows
		147	RGB Columns
		148	Red White Cells
		149	Green White Cells
		150	Blue White Cells
		151	Red Green Cells
		152	Red Blue Cells
		153	Blue Green Cells
		154	Ring - Center Mix To Color Wheel
		155	Random White Cell
		156	Random White Row
		157	Random White Column
		158	White Flash
		159	Red Flash

CH	Function	DMX	Description
17	Color Macro (continued)	160	Green Flash
		161	Blue Flash
		162	Color Wheel Flash
		163	Alternate Color
		164–255	RGBW Color FX
18	Color Macro Speed	0	CW Fast
		1–56	CW Fast ... CW Med
		57	CW Med
		58–125	CW Med ... CW Slow
		126	CW Slow
		127	Stop
		128	Stop ... CCW Slow
		129	CCW Slow
		130–184	CCW Slow ... CCW Med
		185	CCW Med
		186–254	CCW Med ... CCW Fast
		255	CCW Fast
19	Color Macro 2	0–10	No Function
		11	Starfield
		12	1 Pixel
		13	Spark LED FX: 2 Pixels
		14	Spark LED FX: 3 Pixels
		15	Spark LED FX: 4 Pixels
		16	5 Pixels
		17	7 Pixels
		18	14 Pixels
		19	Single Row
		20	3 Rows
		21	Single Column
		22	3 Column
		23	Pixel Ring Chase
		24	Pixel Row Chase
		25	Pixel Row Chase 2
		26	Center Out
		27	Fireworks
		28	Spark LED FX: Ring
		29	Row
		30	Spark LED FX: Snake
		31–90	Spark LED FX
		91–100	Spark LED Lens Combos
		101	Single
		102	Single Bounce

CH	Function	DMX	Description
19	Color Macro 2 (continued)	103	Full Lens Patterns: Snake
		104	Snake Bounce
		105	Rows
		106	Rows Bounce
		107	Column
		108	Column Bounce
		109	Columns 2
		110	Full Lens Patterns: Slash
		111	Full Lens Patterns: Backslash
		112	Slash Back
		113	<>
		114	><
		115	>>
		116	<<
		117	Rotating Bar
		118	Rotating Dot
		119	Rotating 2 Dot
		120	Ring 2 Cell
		121	Ring 2 Cell Overlap
		122	Ring 3 Cell Blend
		123	Ring - Center Fade
		124	X - Bar
		125	Diagonals
		126	Full Lens Patterns: Arrow Left
		127	Full Lens Patterns: Arrow Right
		128	Full Lens Patterns: 2 Pixels
		129	Full Lens Patterns: 3 Pixels
		130	Full Lens Patterns: 4 Pixels
		131	1 2 3 4 Pixels
		132	Ring Build
		133	Ring Build Erase
		134	Ring Build Erase 2
		135–144	Chase 1...10
		145	Center Chase
		146	Center Chase 2
		147–200	Full Lens Patterns
		201	Top 2
		202	Full Lens Static Patterns: Center 3
		203	Bottom 2
		204	Top And Bottom
		205	X
		206	Full Lens Static Patterns: Ring

CH	Function	DMX	Description
19	Color Macro 2 (continued)	207	Center Dot
		208	Full Lens Static Patterns: Slash
		209	Full Lens Static Patterns: Backslash
		210	Full Lens Static Patterns: Arrow Left
		211	Full Lens Static Patterns: Arrow Right
		212	<
		213	>
		214–225	Full Lens Static Patterns
		226–232	Row 1...7
		233–239	Column 1...7
		240	Ring 1
		241	Ring 2
		242	Ring 3
		243–255	Spark LED Pattern
20	Color Macro 2 Speed	0	CW Fast
		1–56	CW Fast ... CW Med
		57	CW Med
		58–125	CW Med ... CW Slow
		126	CW Slow
		127	Stop
		128	Stop ... CCW Slow
		129	CCW Slow
		130–184	CCW Slow ... CCW Med
		185	CCW Med
		186–254	CCW Med ... CCW Fast
		255	CCW Fast
21	Effects		FX Offset
		0	FX Offset
		1	10 Degrees Offset
		2	20 Degrees Offset
		3	30 Degrees Offset
		4	40 Degrees Offset
		5	50 Degrees Offset
		6	60 Degrees Offset
		7	70 Degrees Offset
		8	80 Degrees Offset
		9	90 Degrees Offset
		10	100 Degrees Offset
		11	110 Degrees Offset
		12	120 Degrees Offset
		13	130 Degrees Offset
		14	140 Degrees Offset

CH	Function	DMX	Description
21	Effects (continued)	15	150 Degrees Offset
		16	160 Degrees Offset
		17	170 Degrees Offset
		18	180 Degrees Offset
		19	190 Degrees Offset
		20	200 Degrees Offset
		21	210 Degrees Offset
		22	220 Degrees Offset
		23	230 Degrees Offset
		24	240 Degrees Offset
		25	250 Degrees Offset
		26	260 Degrees Offset
		27	270 Degrees Offset
		28	280 Degrees Offset
		29	290 Degrees Offset
		30	300 Degrees Offset
		31	310 Degrees Offset
		32	320 Degrees Offset
		33	330 Degrees Offset
		34	340 Degrees Offset
		35	350 Degrees Offset
		36	Synchronized
		37–100	Synchronized ... Random Fixtures
		101	Random Fixtures
		102–120	Random Fixtures ... Random Duration
		121	Random Duration
		122–140	Random Duration ... Random Pixels
		141	Random Pixels
		142–255	FX Offset
22	Red 1	0	0 %
		1–62	0 % ... 25 %
		63	25 %
		64–126	25 % ... 50 %
		127	50 %
		128–190	50 % ... 75 %
		191	75 %
		192–254	75 % ... 100 %
		255	100 %
23	Green 1	0	0 %
		1–62	0 % ... 25 %
		63	25 %
		64–126	25 % ... 50 %

CH	Function	DMX	Description
23	Green 1 (continued)	127	50 %
		128–190	50 % … 75 %
		191	75 %
		192–254	75 % … 100 %
		255	100 %
24	Blue 1	0	0 %
		1–62	0 % … 25 %
		63	25 %
		64–126	25 % … 50 %
		127	50 %
		128–190	50 % … 75 %
		191	75 %
		192–254	75 % … 100 %
		255	100 %
25	White 1	0	0 %
		1–62	0 % … 25 %
		63	25 %
		64–126	25 % … 50 %
		127	50 %
		128–190	50 % … 75 %
		191	75 %
		192–254	75 % … 100 %
		255	100 %
26	Red 2	0	0 %
		1–62	0 % … 25 %
		63	25 %
		64–126	25 % … 50 %
		127	50 %
		128–190	50 % … 75 %
		191	75 %
		192–254	75 % … 100 %
		255	100 %
27	Green 2	0	0 %
		1–62	0 % … 25 %
		63	25 %
		64–126	25 % … 50 %
		127	50 %
		128–190	50 % … 75 %
		191	75 %
		192–254	75 % … 100 %
		255	100 %
28	Blue 2	0	0 %

CH	Function	DMX	Description
28	Blue 2 (continued)	1–62	0 % … 25 %
		63	25 %
		64–126	25 % … 50 %
		127	50 %
		128–190	50 % … 75 %
		191	75 %
		192–254	75 % … 100 %
		255	100 %
29	White 2	0	0 %
		1–62	0 % … 25 %
		63	25 %
		64–126	25 % … 50 %
		127	50 %
		128–190	50 % … 75 %
		191	75 %
		192–254	75 % … 100 %
		255	100 %
30	Red 3	0	0 %
		1–62	0 % … 25 %
		63	25 %
		64–126	25 % … 50 %
		127	50 %
		128–190	50 % … 75 %
		191	75 %
		192–254	75 % … 100 %
		255	100 %
31	Green 3	0	0 %
		1–62	0 % … 25 %
		63	25 %
		64–126	25 % … 50 %
		127	50 %
		128–190	50 % … 75 %
		191	75 %
		192–254	75 % … 100 %
		255	100 %
32	Blue 3	0	0 %
		1–62	0 % … 25 %
		63	25 %
		64–126	25 % … 50 %
		127	50 %
		128–190	50 % … 75 %
		191	75 %

CH	Function	DMX	Description
32	Blue 3 (continued)	192–254	75 % … 100 %
		255	100 %
33	White 3	0	0 %
		1–62	0 % … 25 %
		63	25 %
		64–126	25 % … 50 %
		127	50 %
		128–190	50 % … 75 %
		191	75 %
		192–254	75 % … 100 %
		255	100 %
34	Red 4	0	0 %
		1–62	0 % … 25 %
		63	25 %
		64–126	25 % … 50 %
		127	50 %
		128–190	50 % … 75 %
		191	75 %
		192–254	75 % … 100 %
		255	100 %
35	Green 4	0	0 %
		1–62	0 % … 25 %
		63	25 %
		64–126	25 % … 50 %
		127	50 %
		128–190	50 % … 75 %
		191	75 %
		192–254	75 % … 100 %
		255	100 %
36	Blue 4	0	0 %
		1–62	0 % … 25 %
		63	25 %
		64–126	25 % … 50 %
		127	50 %
		128–190	50 % … 75 %
		191	75 %
		192–254	75 % … 100 %
		255	100 %
37	White 4	0	0 %
		1–62	0 % … 25 %
		63	25 %
		64–126	25 % … 50 %

CH	Function	DMX	Description
37	White 4 (continued)	127	50 %
		128–190	50 % … 75 %
		191	75 %
		192–254	75 % … 100 %
		255	100 %
38	Red 5	0	0 %
		1–62	0 % … 25 %
		63	25 %
		64–126	25 % … 50 %
		127	50 %
		128–190	50 % … 75 %
		191	75 %
		192–254	75 % … 100 %
		255	100 %
39	Green 5	0	0 %
		1–62	0 % … 25 %
		63	25 %
		64–126	25 % … 50 %
		127	50 %
		128–190	50 % … 75 %
		191	75 %
		192–254	75 % … 100 %
		255	100 %
40	Blue 5	0	0 %
		1–62	0 % … 25 %
		63	25 %
		64–126	25 % … 50 %
		127	50 %
		128–190	50 % … 75 %
		191	75 %
		192–254	75 % … 100 %
		255	100 %
41	White 5	0	0 %
		1–62	0 % … 25 %
		63	25 %
		64–126	25 % … 50 %
		127	50 %
		128–190	50 % … 75 %
		191	75 %
		192–254	75 % … 100 %
		255	100 %
42	Red 6	0	0 %

CH	Function	DMX	Description
42	Red 6 (continued)	1–62	0 % … 25 %
		63	25 %
		64–126	25 % … 50 %
		127	50 %
		128–190	50 % … 75 %
		191	75 %
		192–254	75 % … 100 %
		255	100 %
43	Green 6	0	0 %
		1–62	0 % … 25 %
		63	25 %
		64–126	25 % … 50 %
		127	50 %
		128–190	50 % … 75 %
		191	75 %
		192–254	75 % … 100 %
		255	100 %
44	Blue 6	0	0 %
		1–62	0 % … 25 %
		63	25 %
		64–126	25 % … 50 %
		127	50 %
		128–190	50 % … 75 %
		191	75 %
		192–254	75 % … 100 %
		255	100 %
45	White 6	0	0 %
		1–62	0 % … 25 %
		63	25 %
		64–126	25 % … 50 %
		127	50 %
		128–190	50 % … 75 %
		191	75 %
		192–254	75 % … 100 %
		255	100 %
46	Red 7	0	0 %
		1–62	0 % … 25 %
		63	25 %
		64–126	25 % … 50 %
		127	50 %
		128–190	50 % … 75 %
		191	75 %

CH	Function	DMX	Description
46	Red 7 (continued)	192–254	75 % … 100 %
		255	100 %
47	Green 7	0	0 %
		1–62	0 % … 25 %
		63	25 %
		64–126	25 % … 50 %
		127	50 %
		128–190	50 % … 75 %
		191	75 %
		192–254	75 % … 100 %
		255	100 %
48	Blue 7	0	0 %
		1–62	0 % … 25 %
		63	25 %
		64–126	25 % … 50 %
		127	50 %
		128–190	50 % … 75 %
		191	75 %
		192–254	75 % … 100 %
		255	100 %
49	White 7	0	0 %
		1–62	0 % … 25 %
		63	25 %
		64–126	25 % … 50 %
		127	50 %
		128–190	50 % … 75 %
		191	75 %
		192–254	75 % … 100 %
		255	100 %
50	Shutter 2	0–31	Shutter CLOSED SPARKLED
		32–63	NO Function (Shutter OPEN) SPARKLED
		64–95	Strobe Effect SLOW to FAST SPARKLED (1–18 Hz)
		96–127	NO Function (Shutter OPEN) SPARKLED
		128–159	Pulse Slow to Fast SPARKLED (1–10 Hz)
		160–191	NO Function (Shutter OPEN) SPARKLED
		192–223	Rnd strob SLOW to FAST SPARKLED (1–10 Hz)
		224–255	NO Function (Shutter OPEN) SPARKLED
51	Dimmer 2	0–63	0 % SPARKLED Strob … 25 % SPARKLED Strob
		63	25 % SPARKLED Strob
		64–127	25 % SPARKLED Strob … 50 % SPARKLED Strob
		127	50 % SPARKLED Strob
		128–191	50 % SPARKLED Strob … 75 % SPARKLED Strob

CH	Function	DMX	Description
51	Dimmer 2 (continued)	191	75 % SPARKLED Strob
		192–255	75 % SPARKLED Strob ... 100 % SPARKLED Strob
		255	100 % SPARKLED Strob
52	Dimmer 2 Fine	0–255	Fine adjustment of CH 51
53	Dimmer 3	0	0 % SPARKLED
		1–62	0 % SPARKLED ... 25 % SPARKLED
		63	25 % SPARKLED
		64–126	25 % SPARKLED ... 50 % SPARKLED
		127	50 % SPARKLED
		128–190	50 % SPARKLED ... 75 % SPARKLED
		191	75 % SPARKLED
		192–254	75 % SPARKLED ... 100 % SPARKLED
		255	100 % SPARKLED

CH 53–80: 28 cells of 1 channel each. Every cell works as cell 1 in the table above (CH 53); the table below gives each cell's channel numbers.

Cell	Dimmer	Cell	Dimmer	Cell	Dimmer	Cell	Dimmer	Cell	Dimmer	Cell	Dimmer
1	53	2	54	3	55	4	56	5	57	6	58
7	59	8	60	9	61	10	62	11	63	12	64
13	65	14	66	15	67	16	68	17	69	18	70
19	71	20	72	21	73	22	74	23	75	24	76
25	77	26	78	27	79	28	80				

Mode Pixels 360Pan/Tilt

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 51 Dimmer 2 above 0. The GDTF file gives these values for a console's Highlight function: CH 9 Shutter 1 47, CH 10 Dimmer 1 255, CH 22 Red 1 255, CH 23 Green 1 255, CH 24 Blue 1 255, CH 25 White 1 255, CH 26 Red 2 255, CH 27 Green 2 255, CH 28 Blue 2 255, CH 29 White 2 255, CH 30 Red 3 255, CH 31 Green 3 255, CH 32 Blue 3 255, CH 33 White 3 255, CH 34 Red 4 255, CH 35 Green 4 255, CH 36 Blue 4 255, CH 37 White 4 255, CH 38 Red 5 255, CH 39 Green 5 255, CH 40 Blue 5 255, CH 41 White 5 255, CH 42 Red 6 255, CH 43 Green 6 255, CH 44 Blue 6 255, CH 45 White 6 255, CH 46 Red 7 255, CH 47 Green 7 255, CH 48 Blue 7 255, CH 49 White 7 255, CH 50 Shutter 2 47, CH 51 Dimmer 2 255.

CH	Function	DMX	Description
1	Pan	0–255	360°
2	Pan Fine	0–255	Fine adjustment of CH 1
3	Tilt	0–255	360°
4	Tilt Fine	0–255	Fine adjustment of CH 3
5	Pan Rotation		Same as CH 5 in the mode “Extended 360Pan/Tilt” (p. 12)
6	Tilt Rotation		Same as CH 6 in the mode “Extended 360Pan/Tilt” (p. 12)
7	CTO		Same as CH 7 in the mode “Extended 360Pan/Tilt” (p. 12)
8	Colors		Same as CH 8 in the mode “Extended 360Pan/Tilt” (p. 16)
9	Shutter 1		Same as CH 9 in the mode “Extended 360Pan/Tilt” (p. 17)
10	Dimmer 1		Same as CH 10 in the mode “Extended 360Pan/Tilt” (p. 17)

CH	Function	DMX	Description
11	Dimmer 1 Fine	0–255	Fine adjustment of CH 10
12	Dimmer Mode	0–20	Standard
		21–40	Stage
		41–60	TV
		61–80	Architectual
		81–100	Theater
		101–120	Stage 2
		121	0s
		122	0_1s
		123	0_2s
		124	0_3s
		125	0_4s
		126	0_5s
		127	0_6s
		128	0_7s
		129	0_8s
		130	0_9s
		131	1s
		132	1_5s
		133–141	2...10s
		142–254	10s ... Idle
		255	Idle
13	Zoom		Same as CH 13 in the mode “Extended 360Pan/Tilt” (p. 18)
14	Zoom Fine	0–255	Fine adjustment of CH 13
15	Speed Pan/Tilt		Same as CH 15 in the mode “Extended 360Pan/Tilt” (p. 18)
16	Control		Same as CH 16 in the mode “Extended 360Pan/Tilt” (p. 18)
17	Color Macro		Same as CH 17 in the mode “Extended 360Pan/Tilt” (p. 20)
18	Color Macro Speed		Same as CH 18 in the mode “Extended 360Pan/Tilt” (p. 23)
19	Color Macro 2		Same as CH 19 in the mode “Extended 360Pan/Tilt” (p. 23)
20	Color Macro 2 Speed		Same as CH 20 in the mode “Extended 360Pan/Tilt” (p. 25)
21	Effects		Same as CH 21 in the mode “Extended 360Pan/Tilt” (p. 25)
22	Red 1		Same as CH 22 in the mode “Extended 360Pan/Tilt” (p. 26)
23	Green 1		Same as CH 23 in the mode “Extended 360Pan/Tilt” (p. 26)
24	Blue 1		Same as CH 24 in the mode “Extended 360Pan/Tilt” (p. 27)
25	White 1		Same as CH 25 in the mode “Extended 360Pan/Tilt” (p. 27)
26	Red 2		Same as CH 26 in the mode “Extended 360Pan/Tilt” (p. 27)
27	Green 2		Same as CH 27 in the mode “Extended 360Pan/Tilt” (p. 27)
28	Blue 2		Same as CH 28 in the mode “Extended 360Pan/Tilt” (p. 27)
29	White 2		Same as CH 29 in the mode “Extended 360Pan/Tilt” (p. 28)
30	Red 3		Same as CH 30 in the mode “Extended 360Pan/Tilt” (p. 28)
31	Green 3		Same as CH 31 in the mode “Extended 360Pan/Tilt” (p. 28)
32	Blue 3		Same as CH 32 in the mode “Extended 360Pan/Tilt” (p. 28)

CH	Function	DMX	Description
33	White 3		Same as CH 33 in the mode “Extended 360Pan/Tilt” (p. 29)
34	Red 4		Same as CH 34 in the mode “Extended 360Pan/Tilt” (p. 29)
35	Green 4		Same as CH 35 in the mode “Extended 360Pan/Tilt” (p. 29)
36	Blue 4		Same as CH 36 in the mode “Extended 360Pan/Tilt” (p. 29)
37	White 4		Same as CH 37 in the mode “Extended 360Pan/Tilt” (p. 29)
38	Red 5		Same as CH 38 in the mode “Extended 360Pan/Tilt” (p. 30)
39	Green 5		Same as CH 39 in the mode “Extended 360Pan/Tilt” (p. 30)
40	Blue 5		Same as CH 40 in the mode “Extended 360Pan/Tilt” (p. 30)
41	White 5		Same as CH 41 in the mode “Extended 360Pan/Tilt” (p. 30)
42	Red 6		Same as CH 42 in the mode “Extended 360Pan/Tilt” (p. 30)
43	Green 6		Same as CH 43 in the mode “Extended 360Pan/Tilt” (p. 31)
44	Blue 6		Same as CH 44 in the mode “Extended 360Pan/Tilt” (p. 31)
45	White 6		Same as CH 45 in the mode “Extended 360Pan/Tilt” (p. 31)
46	Red 7		Same as CH 46 in the mode “Extended 360Pan/Tilt” (p. 31)
47	Green 7		Same as CH 47 in the mode “Extended 360Pan/Tilt” (p. 32)
48	Blue 7		Same as CH 48 in the mode “Extended 360Pan/Tilt” (p. 32)
49	White 7		Same as CH 49 in the mode “Extended 360Pan/Tilt” (p. 32)
50	Shutter 2		Same as CH 50 in the mode “Extended 360Pan/Tilt” (p. 32)
51	Dimmer 2	0–255	Closed … Open
		255	Open
52	Dimmer 2 Fine	0–255	Fine adjustment of CH 51

Mode Standard 360Pan/Tilt

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

The GDTF file gives these values for a console's Highlight function: CH 9 Shutter 1 47, CH 10 Dimmer 1 255, CH 20 Red 255, CH 21 Green 255, CH 22 Blue 255, CH 23 White 255, CH 24 Shutter 2 47, CH 25 Dimmer 2 255.

CH	Function	DMX	Description
1	Pan	0–255	360°
2	Pan Fine	0–255	Fine adjustment of CH 1
3	Tilt	0–255	360°
4	Tilt Fine	0–255	Fine adjustment of CH 3
5	Pan Rotation	0–2	Disable
		3	CW Fast
		4–64	CW Fast … CW Med
		65	CW Med
		66–125	CW Med … CW Slow
		126	CW Slow
		127–129	Rot Stop
		130	CCW Slow
		131–191	CCW Slow … CCW Med
		192	CCW Med

CH	Function	DMX	Description
5	Pan Rotation (continued)	193–252	CCW Med ... CCW Fast
		253	CCW Fast
		254	CCW Fast ... Rot Stop
		255	Rot Stop
6	Tilt Rotation		Same as CH 6 in the mode “Extended 360Pan/Tilt” (p. 12)
7	CTO		Same as CH 7 in the mode “Extended 360Pan/Tilt” (p. 12)
8	Colors		Same as CH 8 in the mode “Extended 360Pan/Tilt” (p. 16)
9	Shutter 1		Same as CH 9 in the mode “Extended 360Pan/Tilt” (p. 17)
10	Dimmer 1		Same as CH 10 in the mode “Extended 360Pan/Tilt” (p. 17)
11	Dimmer 1 Fine	0–255	Fine adjustment of CH 10
12	Dimmer Mode		Same as CH 12 in the mode “Extended 360Pan/Tilt” (p. 17)
13	Zoom	0	Wide
		1–214	Wide ... Narrow
		215	Narrow
		216	Overdrive Min
		217–254	Overdrive Min ... Overdrive Max
		255	Overdrive Max
14	Control		Same as CH 16 in the mode “Extended 360Pan/Tilt” (p. 18)
15	Color Macro		Same as CH 17 in the mode “Extended 360Pan/Tilt” (p. 20)
16	Color Macro Speed		Same as CH 18 in the mode “Extended 360Pan/Tilt” (p. 23)
17	Color Macro 2		Same as CH 19 in the mode “Extended 360Pan/Tilt” (p. 23)
18	Color Macro 2 Speed		Same as CH 20 in the mode “Extended 360Pan/Tilt” (p. 25)
19	Effects		Same as CH 21 in the mode “Extended 360Pan/Tilt” (p. 25)
20	Red	0	Min
		1–254	Min ... Max
		255	Max
21	Green	0	Min
		1–254	Min ... Max
		255	Max
22	Blue	0	Min
		1–254	Min ... Max
		255	Max
23	White	0	Min
		1–254	Min ... Max
		255	Max
24	Shutter 2		Same as CH 50 in the mode “Extended 360Pan/Tilt” (p. 32)
25	Dimmer 2	0	SparkLED Min
		1–254	SparkLED Min ... SparkLED Max
		255	SparkLED Max

Mode SparkLED

The GDTF file gives these values for a console's Highlight function: CH 1 Dimmer 255 (the same in each of the 28 cells).

CH	Function	DMX	Description
1	Dimmer 1	0	0 %
		1–62	0 % … 25 %
		63	25 %
		64–126	25 % … 50 %
		127	50 %
		128–190	50 % … 75 %
		191	75 %
		192–254	75 % … 100 %
		255	100 %

CH 1–28: 28 cells of 1 channel each. Every cell works as cell 1 in the table above (CH 1); the table below gives each cell's channel numbers.

Cell	Dimmer	Cell	Dimmer	Cell	Dimmer	Cell	Dimmer	Cell	Dimmer	Cell	Dimmer
1	1	2	2	3	3	4	4	5	5	6	6
7	7	8	8	9	9	10	10	11	11	12	12
13	13	14	14	15	15	16	16	17	17	18	18
19	19	20	20	21	21	22	22	23	23	24	24
25	25	26	26	27	27	28	28				

Mode Extended 540Pan/270Tilt

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

The GDTF file gives these values for a console's Highlight function: CH 9 Shutter 1 47, CH 10 Dimmer 1 255, CH 22 Red 1 255, CH 23 Green 1 255, CH 24 Blue 1 255, CH 25 White 1 255, CH 26 Red 2 255, CH 27 Green 2 255, CH 28 Blue 2 255, CH 29 White 2 255, CH 30 Red 3 255, CH 31 Green 3 255, CH 32 Blue 3 255, CH 33 White 3 255, CH 34 Red 4 255, CH 35 Green 4 255, CH 36 Blue 4 255, CH 37 White 4 255, CH 38 Red 5 255, CH 39 Green 5 255, CH 40 Blue 5 255, CH 41 White 5 255, CH 42 Red 6 255, CH 43 Green 6 255, CH 44 Blue 6 255, CH 45 White 6 255, CH 46 Red 7 255, CH 47 Green 7 255, CH 48 Blue 7 255, CH 49 White 7 255, CH 50 Shutter 2 47, CH 51 Dimmer 2 255, CH 53 Dimmer 255 (the same in each of the 28 cells).

CH	Function	DMX	Description
1	Pan		Same as CH 1 in the mode “Extended 360Pan/Tilt” (p. 12)
2	Pan Fine	0–255	Fine adjustment of CH 1
3	Tilt		Same as CH 3 in the mode “Extended 360Pan/Tilt” (p. 12)
4	Tilt Fine	0–255	Fine adjustment of CH 3
5	Pan Rotation		Same as CH 5 in the mode “Extended 360Pan/Tilt” (p. 12)
6	Tilt Rotation		Same as CH 6 in the mode “Extended 360Pan/Tilt” (p. 12)
7	CTO		Same as CH 7 in the mode “Extended 360Pan/Tilt” (p. 12)
8	Colors		Same as CH 8 in the mode “Extended 360Pan/Tilt” (p. 16)
9	Shutter 1		Same as CH 9 in the mode “Extended 360Pan/Tilt” (p. 17)
10	Dimmer 1		Same as CH 10 in the mode “Extended 360Pan/Tilt” (p. 17)

CH	Function	DMX	Description
11	Dimmer 1 Fine	0–255	Fine adjustment of CH 10
12	Dimmer Mode		Same as CH 12 in the mode “Extended 360Pan/Tilt” (p. 17)
13	Zoom		Same as CH 13 in the mode “Extended 360Pan/Tilt” (p. 18)
14	Zoom Fine	0–255	Fine adjustment of CH 13
15	Speed Pan/Tilt		Same as CH 15 in the mode “Extended 360Pan/Tilt” (p. 18)
16	Control		Same as CH 16 in the mode “Extended 360Pan/Tilt” (p. 18)
17	Color Macro		Same as CH 17 in the mode “Extended 360Pan/Tilt” (p. 20)
18	Color Macro Speed		Same as CH 18 in the mode “Extended 360Pan/Tilt” (p. 23)
19	Color Macro 2		Same as CH 19 in the mode “Extended 360Pan/Tilt” (p. 23)
20	Color Macro 2 Speed		Same as CH 20 in the mode “Extended 360Pan/Tilt” (p. 25)
21	Effects		Same as CH 21 in the mode “Extended 360Pan/Tilt” (p. 25)
22	Red 1	0	Min
		1–254	Min ... Max
		255	Max
23	Green 1	0	Min
		1–254	Min ... Max
		255	Max
24	Blue 1	0	Min
		1–254	Min ... Max
		255	Max
25	White 1	0	Min
		1–254	Min ... Max
		255	Max
26	Red 2	0	Min
		1–254	Min ... Max
		255	Max
27	Green 2	0	Min
		1–254	Min ... Max
		255	Max
28	Blue 2	0	Min
		1–254	Min ... Max
		255	Max
29	White 2	0	Min
		1–254	Min ... Max
		255	Max
30	Red 3	0	Min
		1–254	Min ... Max
		255	Max
31	Green 3	0	Min
		1–254	Min ... Max
		255	Max
32	Blue 3	0	Min

CH	Function	DMX	Description
32	Blue 3 (continued)	1–254	Min … Max
		255	Max
33	White 3	0	Min
		1–254	Min … Max
		255	Max
34	Red 4	0	Min
		1–254	Min … Max
		255	Max
35	Green 4	0	Min
		1–254	Min … Max
		255	Max
36	Blue 4	0	Min
		1–254	Min … Max
		255	Max
37	White 4	0	Min
		1–254	Min … Max
		255	Max
38	Red 5	0	Min
		1–254	Min … Max
		255	Max
39	Green 5	0	Min
		1–254	Min … Max
		255	Max
40	Blue 5	0	Min
		1–254	Min … Max
		255	Max
41	White 5	0	Min
		1–254	Min … Max
		255	Max
42	Red 6	0	Min
		1–254	Min … Max
		255	Max
43	Green 6	0	Min
		1–254	Min … Max
		255	Max
44	Blue 6	0	Min
		1–254	Min … Max
		255	Max
45	White 6	0	Min
		1–254	Min … Max
		255	Max
46	Red 7	0	Min

CH	Function	DMX	Description
46	Red 7 (continued)	1–254	Min ... Max
		255	Max
47	Green 7	0	Min
		1–254	Min ... Max
		255	Max
48	Blue 7	0	Min
		1–254	Min ... Max
		255	Max
49	White 7	0	Min
		1–254	Min ... Max
		255	Max
50	Shutter 2		Same as CH 50 in the mode “Extended 360Pan/Tilt” (p. 32)
51	Dimmer 2	0–63	0 % SparkLED ... 25 % SparkLED
		63	25 % SparkLED
		64–127	25 % SparkLED ... 50 % SparkLED
		127	50 % SparkLED
		128–191	50 % SparkLED ... 75 % SparkLED
		191	75 % SparkLED
		192–255	75 % SparkLED ... 100 % SparkLED
		255	100 % SparkLED
52	Dimmer 2 Fine	0–255	Fine adjustment of CH 51
53	Dimmer 3	0	Min Sparkles Dimmer
		1–254	Min Sparkles Dimmer ... Max Sparkles Dimmer
		255	Max Sparkles Dimmer

CH 53–80: 28 cells of 1 channel each. Every cell works as cell 1 in the table above (CH 53); the table below gives each cell's channel numbers.

Cell	Dimmer	Cell	Dimmer	Cell	Dimmer	Cell	Dimmer	Cell	Dimmer	Cell	Dimmer
1	53	2	54	3	55	4	56	5	57	6	58
7	59	8	60	9	61	10	62	11	63	12	64
13	65	14	66	15	67	16	68	17	69	18	70
19	71	20	72	21	73	22	74	23	75	24	76
25	77	26	78	27	79	28	80				

Mode Pixels 540Pan/270Tilt

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

The GDTF file gives these values for a console's Highlight function: CH 9 Shutter 1 47, CH 10 Dimmer 1 255, CH 22 Red 1 255, CH 23 Green 1 255, CH 24 Blue 1 255, CH 25 White 1 255, CH 26 Red 2 255, CH 27 Green 2 255, CH 28 Blue 2 255, CH 29 White 2 255, CH 30 Red 3 255, CH 31 Green 3 255, CH 32 Blue 3 255, CH 33 White 3 255, CH 34 Red 4 255, CH 35 Green 4 255, CH 36 Blue 4 255, CH 37 White 4 255, CH 38 Red 5 255, CH 39 Green 5 255, CH 40 Blue 5 255, CH 41 White 5 255, CH 42 Red 6 255, CH 43 Green 6 255, CH 44 Blue 6 255, CH 45 White 6 255, CH 46 Red 7 255, CH 47 Green 7 255, CH 48 Blue 7 255, CH 49 White 7 255, CH 50 Shutter 2 47, CH 51 Dimmer 2 255.

CH	Function	DMX	Description
1	Pan		Same as CH 1 in the mode “Extended 360Pan/Tilt” (p. 12)
2	Pan Fine	0–255	Fine adjustment of CH 1
3	Tilt		Same as CH 3 in the mode “Extended 360Pan/Tilt” (p. 12)
4	Tilt Fine	0–255	Fine adjustment of CH 3
5	Pan Rotation		Same as CH 5 in the mode “Extended 360Pan/Tilt” (p. 12)
6	Tilt Rotation		Same as CH 6 in the mode “Extended 360Pan/Tilt” (p. 12)
7	CTO		Same as CH 7 in the mode “Extended 360Pan/Tilt” (p. 12)
8	Colors	0–9	Color Wheel: Open
		10–14	Red
		15–19	Red Orange
		20–24	Light Amber
		25–29	Yellow Amber
		30–34	Greenish Yellow
		35–39	Light Yellow Green
		40–44	Dark Yellow Green
		45–49	Green
		50–54	Teal
		55–59	Cyan
		60–64	Light Blue
		65–69	Aqua
		70–74	Dark Aqua
		75–79	Green Blue
		80–84	Light Lavender
		85–89	Dark Purple
		90–94	Medium Purple
		95–99	Mid Rose
		100–104	Muave
		105–109	Nice Magenta
		110–114	Warm Magenta
		115–119	Light Red
		120–124	Straw
		125–129	Dark CTB
		130–134	Light Green

CH	Function	DMX	Description
8	Colors (continued)	135–139	Purple
		140–144	Lighter Purple
		145–149	Pink
		150–154	Rose
		155–159	White
		160–179	Color Wheel
		180	CW Fast
		181–189	CW Fast ... CW Med
		190	CW Med
		191–200	CW Med ... CW Slow
		201	CW Slow
		202–203	CW Slow ... Rot Stop
		204	Rot Stop
		205–207	Rot Stop ... CCW Slow
		208	CCW Slow
		209–218	CCW Slow ... CCW Med
		219	CCW Med
		220–228	CCW Med ... CCW Fast
		229	CCW Fast
		230	Wheel Open: Open
		231–234	Wheel Open
		235	Random Fast
		236–239	Random Fast ... Random Med
		240	Random Med
		241–244	Random Med ... Random Slow
		245	Random Slow
		246–249	Random Slots
		250	Wheel Open: Open
		251–255	Wheel Open 1
9	Shutter 1		Same as CH 9 in the mode “Extended 360Pan/Tilt” (p. 17)
10	Dimmer 1		Same as CH 10 in the mode “Extended 360Pan/Tilt” (p. 17)
11	Dimmer 1 Fine	0–255	Fine adjustment of CH 10
12	Dimmer Mode		Same as CH 12 in the mode “Extended 360Pan/Tilt” (p. 17)
13	Zoom		Same as CH 13 in the mode “Extended 360Pan/Tilt” (p. 18)
14	Zoom Fine	0–255	Fine adjustment of CH 13
15	Speed Pan/Tilt		Same as CH 15 in the mode “Extended 360Pan/Tilt” (p. 18)
16	Control		Same as CH 16 in the mode “Extended 360Pan/Tilt” (p. 18)
17	Color Macro		Same as CH 17 in the mode “Extended 360Pan/Tilt” (p. 20)
18	Color Macro Speed		Same as CH 18 in the mode “Extended 360Pan/Tilt” (p. 23)
19	Color Macro 2		Same as CH 19 in the mode “Extended 360Pan/Tilt” (p. 23)
20	Color Macro 2 Speed		Same as CH 20 in the mode “Extended 360Pan/Tilt” (p. 25)
21	Effects		Same as CH 21 in the mode “Extended 360Pan/Tilt” (p. 25)

CH	Function	DMX	Description
22	Red 1		Same as CH 22 in the mode “Extended 540Pan/270Tilt” (p. 38)
23	Green 1		Same as CH 23 in the mode “Extended 540Pan/270Tilt” (p. 38)
24	Blue 1		Same as CH 24 in the mode “Extended 540Pan/270Tilt” (p. 38)
25	White 1		Same as CH 25 in the mode “Extended 540Pan/270Tilt” (p. 38)
26	Red 2		Same as CH 26 in the mode “Extended 540Pan/270Tilt” (p. 38)
27	Green 2		Same as CH 27 in the mode “Extended 540Pan/270Tilt” (p. 38)
28	Blue 2		Same as CH 28 in the mode “Extended 540Pan/270Tilt” (p. 38)
29	White 2		Same as CH 29 in the mode “Extended 540Pan/270Tilt” (p. 38)
30	Red 3		Same as CH 30 in the mode “Extended 540Pan/270Tilt” (p. 38)
31	Green 3		Same as CH 31 in the mode “Extended 540Pan/270Tilt” (p. 38)
32	Blue 3		Same as CH 32 in the mode “Extended 540Pan/270Tilt” (p. 38)
33	White 3		Same as CH 33 in the mode “Extended 540Pan/270Tilt” (p. 39)
34	Red 4		Same as CH 34 in the mode “Extended 540Pan/270Tilt” (p. 39)
35	Green 4		Same as CH 35 in the mode “Extended 540Pan/270Tilt” (p. 39)
36	Blue 4		Same as CH 36 in the mode “Extended 540Pan/270Tilt” (p. 39)
37	White 4		Same as CH 37 in the mode “Extended 540Pan/270Tilt” (p. 39)
38	Red 5		Same as CH 38 in the mode “Extended 540Pan/270Tilt” (p. 39)
39	Green 5		Same as CH 39 in the mode “Extended 540Pan/270Tilt” (p. 39)
40	Blue 5		Same as CH 40 in the mode “Extended 540Pan/270Tilt” (p. 39)
41	White 5		Same as CH 41 in the mode “Extended 540Pan/270Tilt” (p. 39)
42	Red 6		Same as CH 42 in the mode “Extended 540Pan/270Tilt” (p. 39)
43	Green 6		Same as CH 43 in the mode “Extended 540Pan/270Tilt” (p. 39)
44	Blue 6		Same as CH 44 in the mode “Extended 540Pan/270Tilt” (p. 39)
45	White 6		Same as CH 45 in the mode “Extended 540Pan/270Tilt” (p. 39)
46	Red 7		Same as CH 46 in the mode “Extended 540Pan/270Tilt” (p. 39)
47	Green 7		Same as CH 47 in the mode “Extended 540Pan/270Tilt” (p. 40)
48	Blue 7		Same as CH 48 in the mode “Extended 540Pan/270Tilt” (p. 40)
49	White 7		Same as CH 49 in the mode “Extended 540Pan/270Tilt” (p. 40)
50	Shutter 2		Same as CH 50 in the mode “Extended 360Pan/Tilt” (p. 32)
51	Dimmer 2		Same as CH 51 in the mode “Extended 540Pan/270Tilt” (p. 40)
52	Dimmer 2 Fine	0–255	Fine adjustment of CH 51

Mode Standard 540Pan/270Tilt

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

The GDTF file gives these values for a console's Highlight function: CH 9 Shutter 1 47, CH 10 Dimmer 1 255, CH 20 Red 255, CH 21 Green 255, CH 22 Blue 255, CH 23 White 255, CH 24 Shutter 2 47, CH 25 Dimmer 2 255.

CH	Function	DMX	Description
1	Pan		Same as CH 1 in the mode “Extended 360Pan/Tilt” (p. 12)
2	Pan Fine	0–255	Fine adjustment of CH 1
3	Tilt	0–127	Mix ... Center
		127	Center

CH	Function	DMX	Description
3	Tilt (continued)	128–255	Center … Max
		255	Max
4	Tilt Fine	0–255	Fine adjustment of CH 3
5	Pan Rotation		Same as CH 5 in the mode “Extended 360Pan/Tilt” (p. 12)
6	Tilt Rotation		Same as CH 6 in the mode “Extended 360Pan/Tilt” (p. 12)
7	CTO		Same as CH 7 in the mode “Extended 360Pan/Tilt” (p. 12)
8	Colors		Same as CH 8 in the mode “Pixels 540Pan/270Tilt” (p. 41)
9	Shutter 1		Same as CH 9 in the mode “Extended 360Pan/Tilt” (p. 17)
10	Dimmer 1		Same as CH 10 in the mode “Extended 360Pan/Tilt” (p. 17)
11	Dimmer 1 Fine	0–255	Fine adjustment of CH 10
12	Dimmer Mode		Same as CH 12 in the mode “Extended 360Pan/Tilt” (p. 17)
13	Zoom		Same as CH 13 in the mode “Standard 360Pan/Tilt” (p. 36)
14	Control		Same as CH 16 in the mode “Extended 360Pan/Tilt” (p. 18)
15	Color Macro		Same as CH 17 in the mode “Extended 360Pan/Tilt” (p. 20)
16	Color Macro Speed		Same as CH 18 in the mode “Extended 360Pan/Tilt” (p. 23)
17	Color Macro 2		Same as CH 19 in the mode “Extended 360Pan/Tilt” (p. 23)
18	Color Macro 2 Speed		Same as CH 20 in the mode “Extended 360Pan/Tilt” (p. 25)
19	Effects		Same as CH 21 in the mode “Extended 360Pan/Tilt” (p. 25)
20	Red	0	0 %
		1–62	0 % … 25 %
		63	25 %
		64–126	25 % … 50 %
		127	50 %
		128–190	50 % … 75 %
		191	75 %
		192–254	75 % … 100 %
		255	100 %
21	Green	0	0 %
		1–62	0 % … 25 %
		63	25 %
		64–126	25 % … 50 %
		127	50 %
		128–190	50 % … 75 %
		191	75 %
		192–254	75 % … 100 %
		255	100 %
22	Blue	0	0 %
		1–62	0 % … 25 %
		63	25 %
		64–126	25 % … 50 %
		127	50 %
		128–190	50 % … 75 %

CH	Function	DMX	Description
22	Blue (continued)	191	75 %
		192–254	75 % … 100 %
		255	100 %
23	White	0	0 %
		1–62	0 % … 25 %
		63	25 %
		64–126	25 % … 50 %
		127	50 %
		128–190	50 % … 75 %
		191	75 %
		192–254	75 % … 100 %
		255	100 %
24	Shutter 2		Same as CH 50 in the mode “Extended 360Pan/Tilt” (p. 32)
25	Dimmer 2	0	0 % SparkLED
		1–62	0 % SparkLED … 25 % SparkLED
		63	25 % SparkLED
		64–126	25 % SparkLED … 50 % SparkLED
		127	50 % SparkLED
		128–190	50 % SparkLED … 75 % SparkLED
		191	75 % SparkLED
		192–254	75 % SparkLED … 100 % SparkLED
		255	100 % SparkLED

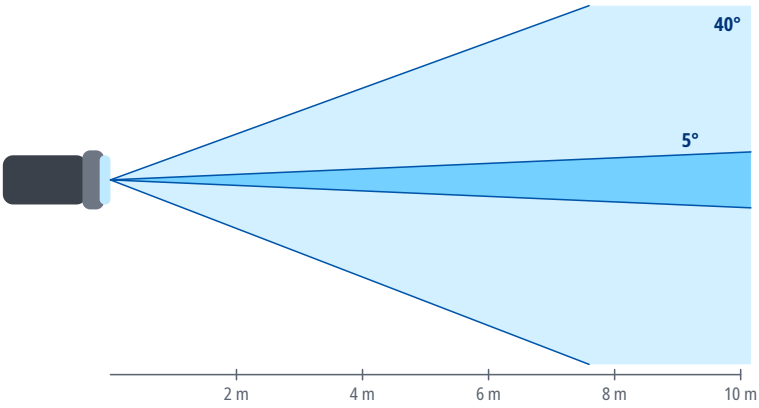
10 Technical specifications

Parameter	Value
Pan	540°
Tilt	360°
RDM	yes (manufacturer ID 0x22A6, device model ID 0x1543)
Weight	12.2 kg
Ingress protection	IP65
Meaning of the IP code (IEC 60529)	Dust-tight; protected against water jets
Operating temperature	-10 to 45 °C

Speeds and ranges

Parameter	Value
Color temperature range	2000–2950 K
Strobe frequency	1–18 Hz
Color wheel rotation	up to 200 °/s (33 rpm)

Spot diameter



Distance	Ø 5°	Ø 40°
2 m	0.17 m	1.5 m
4 m	0.35 m	2.9 m
6 m	0.52 m	4.4 m
8 m	0.7 m	5.8 m
10 m	0.87 m	7.3 m
15 m	1.3 m	10.9 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.