DMX REFERENCE

Nick NRG 1401

DTS Nick NRG 1401

DTS



Manufacturer	DTS
GDTF file	DTS_NICK_NRG_1401_150364.gdtf
GDTF revision	REV3 · 2026-07-10
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1 About this manual

This document describes the DTS Nick NRG 1401 by DTS. It was compiled from the GDTF file DTS_NICK_NRG_1401_150364.gdtf from the GDTF-Share library.

File revision: “REV3”.

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 DTS; 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	13 kg

DMX modes

Mode	Channels	Units in one universe	First start addresses
Compatibility EXT	20	25	1, 21, 41, 61, ...
COMPATIBILITY	20	25	1, 21, 41, 61, ...
Pixels EXTENDED	111	4	1, 112, 223, 334
Pixels STD	111	4	1, 112, 223, 334
Shapes STD	33	15	1, 34, 67, 100, ...
SECTOR	31	16	1, 32, 63, 94, ...

No light? Check these channels

- Compatibility EXT: CH 8 Shutter at 10–19 “open” or 230–255; CH 9 Dimmer above 7
- COMPATIBILITY: CH 8 Shutter at 10–19 “open” or 230–255; CH 9 Dimmer above 7
- Pixels EXTENDED: CH 5 Shutter at 10–19 “open” or 230–255; CH 6 Dimmer above 255
- Pixels STD: CH 5 Shutter at 10–19 “open” or 230–255; CH 6 Dimmer above 255
- Shapes STD: CH 5 Shutter at 10–19 “open” or 230–255; CH 6 Dimmer above 255
- SECTOR: CH 5 Shutter at 10–19 “open”; CH 6 Dimmer above 255



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

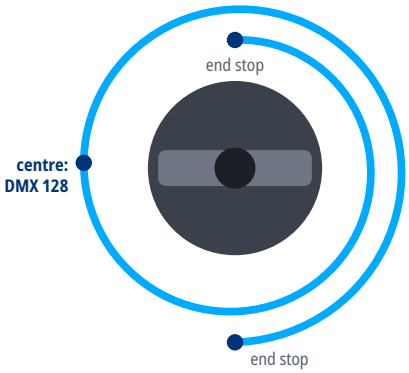
Description in the GDTF file

“High-performance LED moving head. With exceptional brightness, pixel-by-pixel control, and long-throw zoom, NICK 1401 is perfect for diverse applications - from multicolored beam effects to smooth wash coverage. Ideal for large venues and television studios, it delivers innovative effects and wide, uniform projection.”

Range of movement

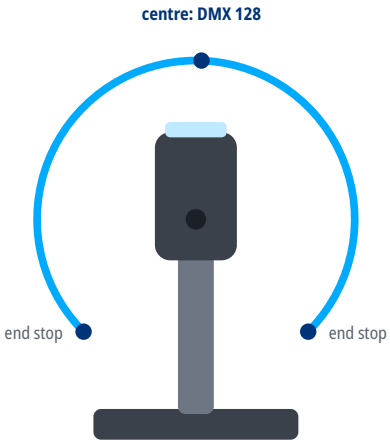
Pan 540°

top view



Tilt 270°

side view



5 Installation

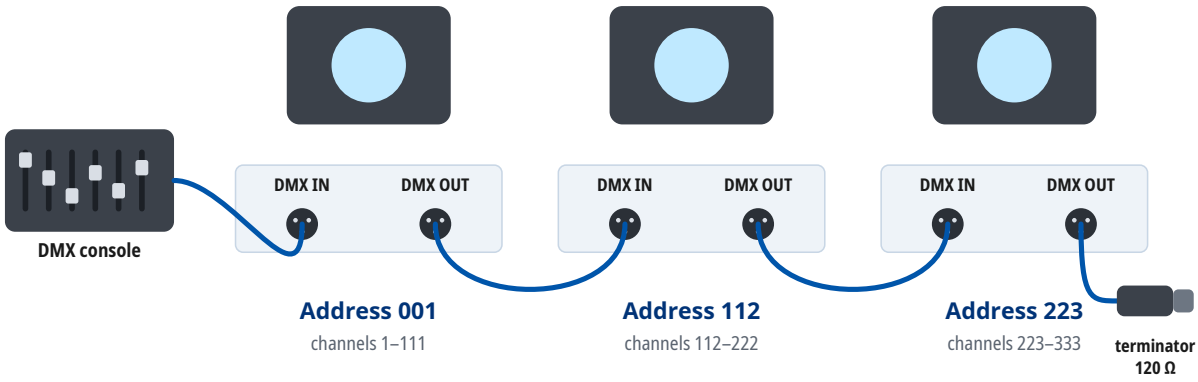
⚠ WARNING

- 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: 13 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 Pixels EXTENDED: every unit occupies 111 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

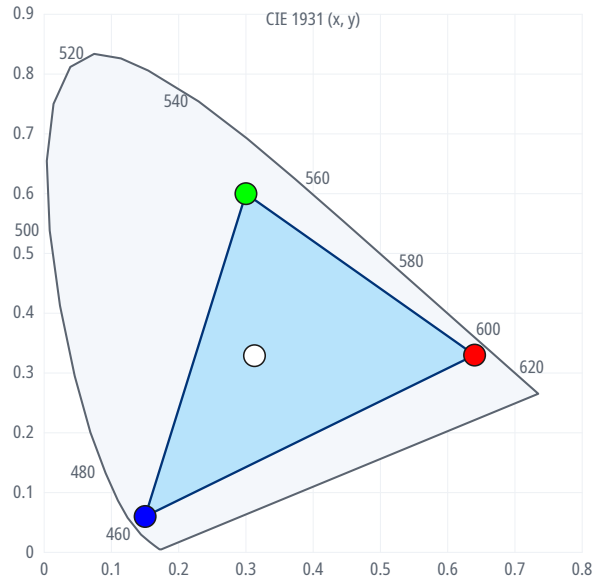
- The device occupies as many consecutive channels in the DMX universe as the selected DMX mode uses, starting at the set start address.
- Number of channels occupied in the DMX mode “Pixels EXTENDED”: 111.
- Choose start addresses so that the channels of individual devices do not overlap and the last 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 “Pixels EXTENDED”, you can use, for example, the start addresses 1, 112, 223, 334.
- 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

	Compatibility EXT 20 channels	COMPATIBILITY 20 channels	Pixels EXTENDED 111 channels	Pixels STD 111 channels	Shapes STD 33 channels	SECTOR 31 channels
Pan / Tilt	**1, 3, 6**	**1, 3, 6**	**10, 12, 15**	**10, 12, 15**	**10, 12, 15**	**10, 12, 15**
Dimmer	**9**	**9**	**6**	**6**	**6**	**6**
Dimmer resolution	8 bit	8 bit	16 bit	16 bit	16 bit	16 bit
Shutter / strobe	**8**	**8**	**5**	**5**	**5**	**5**
Color mixing	**10–13**	**10–13**	**1–4, 20–111**	**1–4, 20–111**	**1–4**	**1–4**
Color temperature	**15**	**15**	**8**	**8**	**8**	**8**
Zoom	**18**	**18**	**18**	**18**	**18**	**18**
Effects / macros	**14, 16**	**14, 16**	**9**	**9**	**9**	**9**
Pixel control			**23 cells**	**23 cells**		

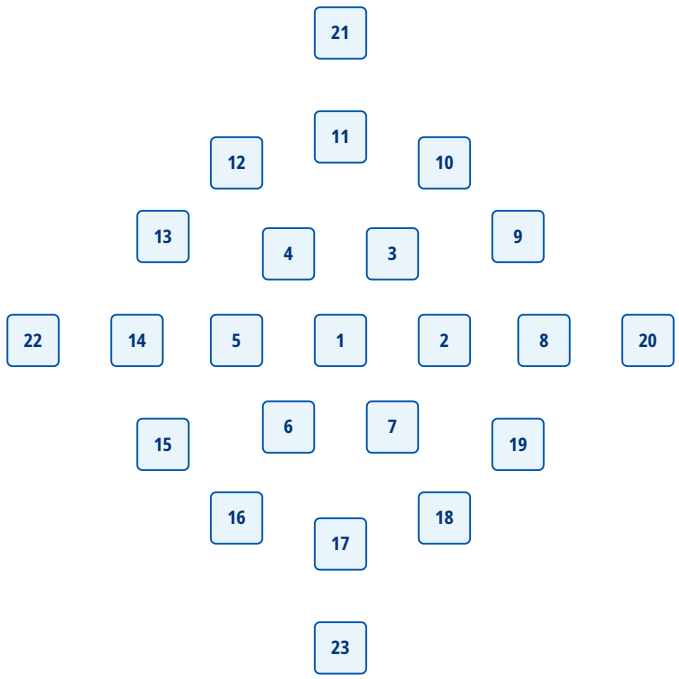
LED colors and the colors they mix



LED	x	y
Red	0.640	0.330
Green	0.300	0.600
Blue	0.150	0.060
White	0.313	0.329

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

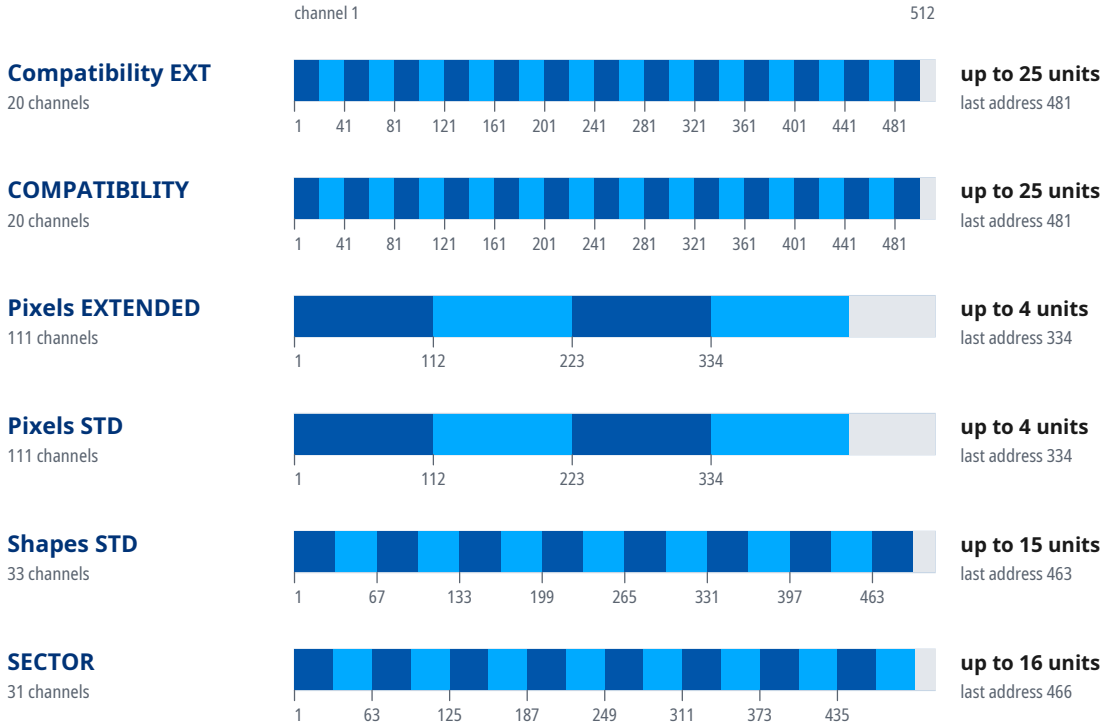
Cells (pixels)



Cells where the GDTF file places them (seen from above), 23 in all; numbered in the order of their first DMX channel in the mode “Pixels EXTENDED”.

9 DMX channels

Units in one DMX universe



Start addresses of 20 units in the mode “Pixels EXTENDED”

Unit	Start address	Unit	Start address	Unit	Start address	Unit	Start address
1	1	6	U2 · 112	11	U3 · 223	16	U4 · 334
2	112	7	U2 · 223	12	U3 · 334	17	U5 · 1
3	223	8	U2 · 334	13	U4 · 1	18	U5 · 112
4	334	9	U3 · 1	14	U4 · 112	19	U5 · 223
5	U2 · 1	10	U3 · 112	15	U4 · 223	20	U5 · 334

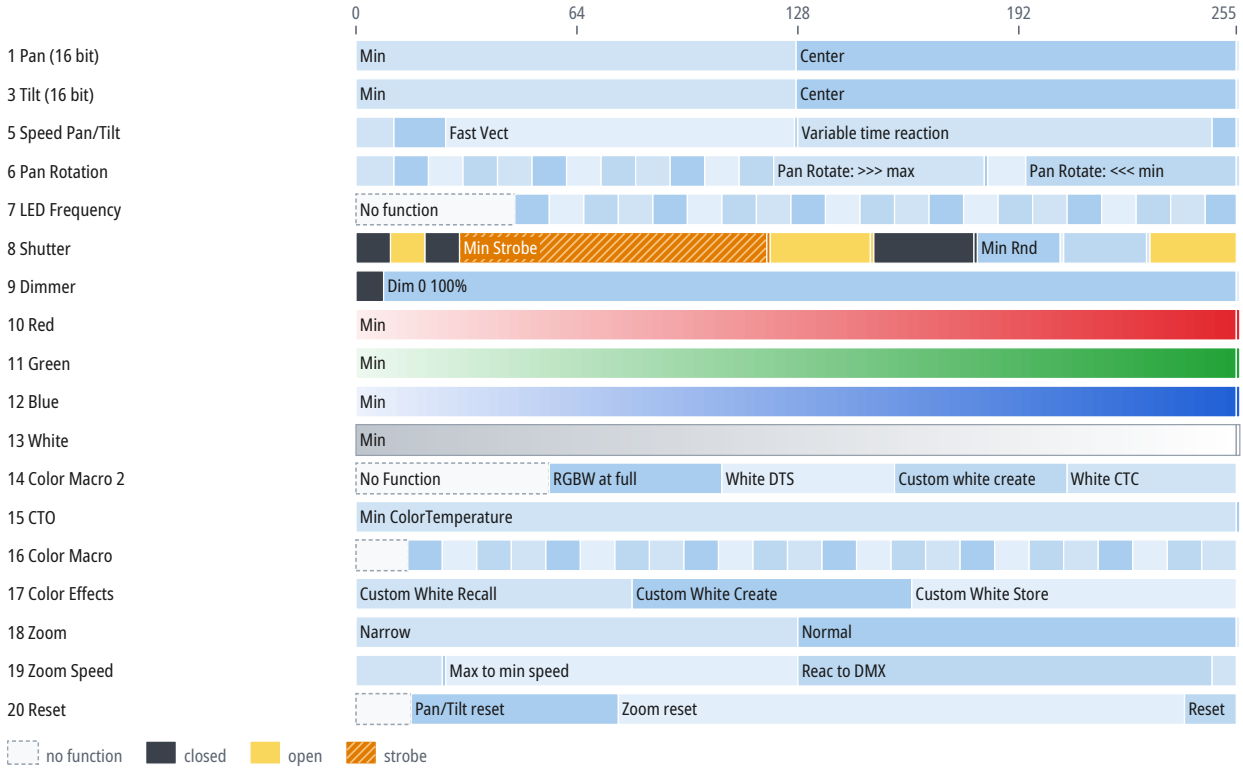
Where a DMX universe is full, the next units continue in the next universe: “U2 · 1” is address 1 in the second universe, counted from the universe of the first unit.

Mode Compatibility EXT

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 8 Shutter at 10–19 “open” or 230–255; CH 9 Dimmer above 7.

Channel functions at a glance



CH	Function	DMX	Description
1	Pan	0–127	Min
		128–255	Center
		255	Max
2	Pan Fine	0–255	Fine adjustment of CH 1
3	Tilt	0–127	Min
		128–255	Center
		255	Max
4	Tilt Fine	0–255	Fine adjustment of CH 3
5	Speed Pan/Tilt	0–10	Standard
		11–25	Fast Movement
		26–126	Fast Vect
		127	Slow Vect
		128–247	Variable time reaction
		248–254	Fast React
		255	Slow React
6	Pan Rotation	0–10	Position mode 540 degrees
		11–20	Position mode 360 degrees 1 turn

CH	Function	DMX	Description
6	Pan Rotation (continued)	21–30	Position mode 720 degrees - 2 turns
		31–40	Position mode 1080 degrees - 3 turns
		41–50	Position mode 1440 degrees - 4 turns
		51–60	Position mode 1800 degrees - 5 turn
		61–70	Position mode 2160 degrees - 6 turns
		71–80	Position mode 2520 degrees - 7 turns
		81–90	Position mode 2880 degrees - 8 turns
		91–100	Position mode 3240 degrees - 9 turns
		101–110	Position mode 3600 degrees - 10 turns
		111–120	Position mode 360 degrees - smart path
		121–181	Pan Rotate: >>> max
		182	Pan Rotate: >>> min
		183–193	Pan Rotate: stop
		194–254	Pan Rotate: <<< min
		255	Pan Rotate: <<< max
7	LED Frequency	0–45	No function
		46–55	Out Freq 610 Hz
		56–65	Out Freq 800 Hz
		66–75	Out Freq 1000 Hz
		76–85	Out Freq 1500 HZ
		86–95	Out Freq 2000 Hz
		96–105	Out Freq 2500 Hz
		106–115	Out Freq 3000 Hz
		116–125	Out Freq 3500 Hz
		126–135	Out Freq 4000 Hz
		136–145	Out Freq 4500 Hz
		146–155	Out Freq 5000 Hz
		156–165	Out Freq 5500 Hz
		166–175	Out Freq 6000 Hz
		176–185	Out Freq 6500 Hz
		186–195	Out Freq 7000 Hz
		196–205	Out Freq 7500 HZ
		206–215	Out Freq 8000 Hz
		216–225	Out Freq 8500 Hz
		226–235	Out Freq 9000 Hz
		236–245	Out Freq 9500 Hz
		246–255	Out Freq 10000 Hz
8	Shutter	0–9	Shutter 1: closed
		10–19	Shutter 1: open
		20–29	Shutter 1: closed (2)
		30–118	Min Strobe
		119	Max Strobe

CH	Function	DMX	Description
8	Shutter (continued)	120–148	Min Pulse Open
		149	Max Pulse Open
		150–178	Min Pulse Close
		179	Max Pulse Close
		180–203	Min Rnd
		204	Max Rnd
		205–228	Min Rnd (2)
		229	Max Rnd (2)
		230–255	Shutter 1: open (2)
9	Dimmer	0–7	Closed
		8–254	Dim 0 100%
		255	Open
10	Red	0–254	Min
		255	Max
11	Green	0–254	Min
		255	Max
12	Blue	0–254	Min
		255	Max
13	White	0–254	Min
		255	Max
14	Color Macro 2	0–55	No Function
		56–105	RGBW at full
		106–155	White DTS
		156–205	Custom white create
		206–255	White CTC
15	CTO	0–254	Min ColorTemperature
		255	Max ColorTemperature
16	Color Macro	0–14	No Function
		15–24	Macro 1
		25–34	Macro 2
		35–44	Macro 3
		45–54	Macro 4
		55–64	Macro 5
		65–74	Macro 6
		75–84	Macro 7
		85–94	Macro 8
		95–104	Macro 9
		105–114	Macro 10
		115–124	Macro 11
		125–134	Macro 12
		135–144	Macro 13
		145–154	Macro 14

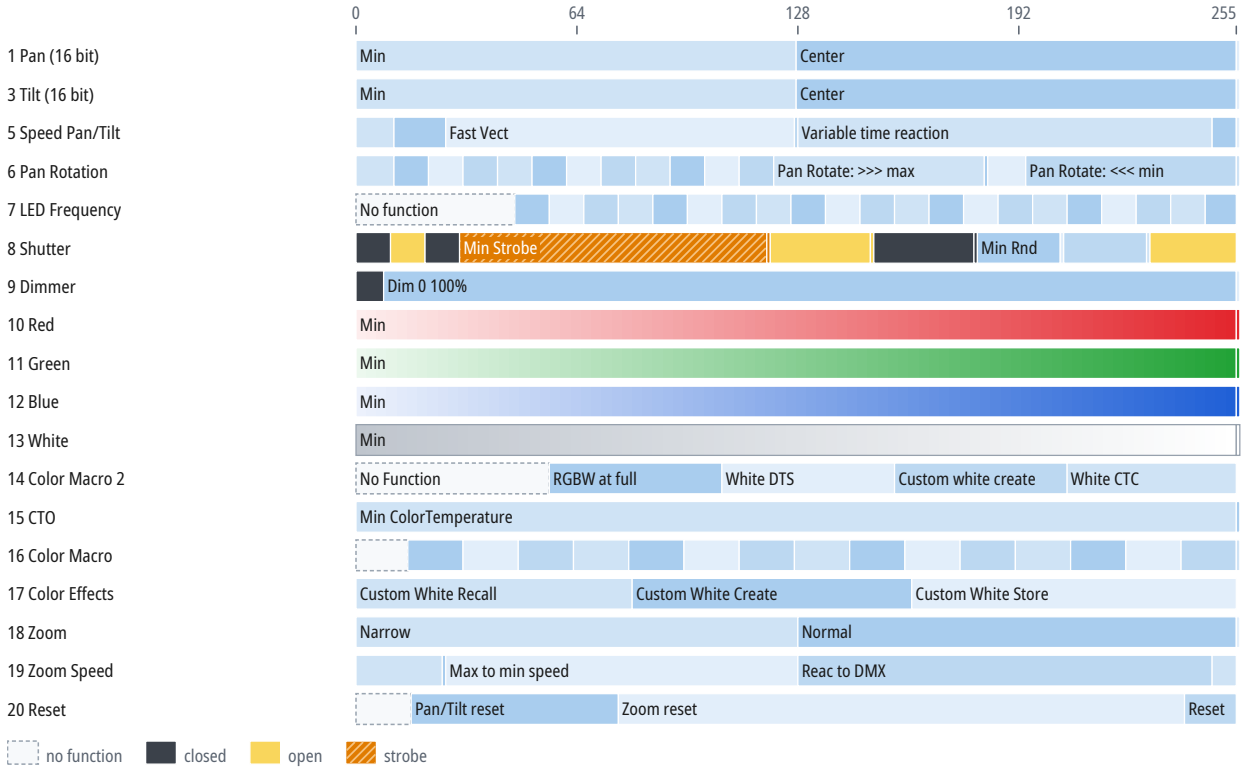
CH	Function	DMX	Description
16	Color Macro (continued)	155–164	Macro 15
		165–174	Macro 16
		175–184	Rainbow speed 1
		185–194	Rainbow speed 2
		195–204	Rainbow speed 3
		205–214	Rainbow speed 4
		215–224	Rainbow speed 5
		225–234	Rainbow speed 6
		235–244	Rainbow speed 7
		245–255	Rainbow speed 8
17	Color Effects		Custom White Recall
		0–79	Custom White Recall
		80–160	Custom White Create
		161–255	Custom White Store
18	Zoom	0–127	Narrow
		128–254	Normal
		255	Wide
19	Zoom Speed	0–24	Standard speed
		25	Max speed
		26–127	Max to min speed
		128–247	Reac to DMX
		248–255	Slow react time DMX
20	Reset	0–15	No Function
		16–75	Pan/Tilt reset
		76–239	Zoom reset
		240–255	Reset

Mode COMPATIBILITY

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 8 Shutter at 10–19 “open” or 230–255; CH 9 Dimmer above 7.

Channel functions at a glance



CH	Function	DMX	Description
1	Pan		Same as CH 1 in the mode “Compatibility EXT” (p. 10)
2	Pan Fine	0–255	Fine adjustment of CH 1
3	Tilt		Same as CH 3 in the mode “Compatibility EXT” (p. 10)
4	Tilt Fine	0–255	Fine adjustment of CH 3
5	Speed Pan/Tilt		Same as CH 5 in the mode “Compatibility EXT” (p. 10)
6	Pan Rotation		Same as CH 6 in the mode “Compatibility EXT” (p. 10)
7	LED Frequency		Same as CH 7 in the mode “Compatibility EXT” (p. 11)
8	Shutter		Same as CH 8 in the mode “Compatibility EXT” (p. 11)
9	Dimmer		Same as CH 9 in the mode “Compatibility EXT” (p. 12)
10	Red		Same as CH 10 in the mode “Compatibility EXT” (p. 12)
11	Green		Same as CH 11 in the mode “Compatibility EXT” (p. 12)
12	Blue		Same as CH 12 in the mode “Compatibility EXT” (p. 12)
13	White		Same as CH 13 in the mode “Compatibility EXT” (p. 12)
14	Color Macro 2		Same as CH 14 in the mode “Compatibility EXT” (p. 12)
15	CTO		Same as CH 15 in the mode “Compatibility EXT” (p. 12)
16	Color Macro	0–14	No Function
		15–30	Macro 1

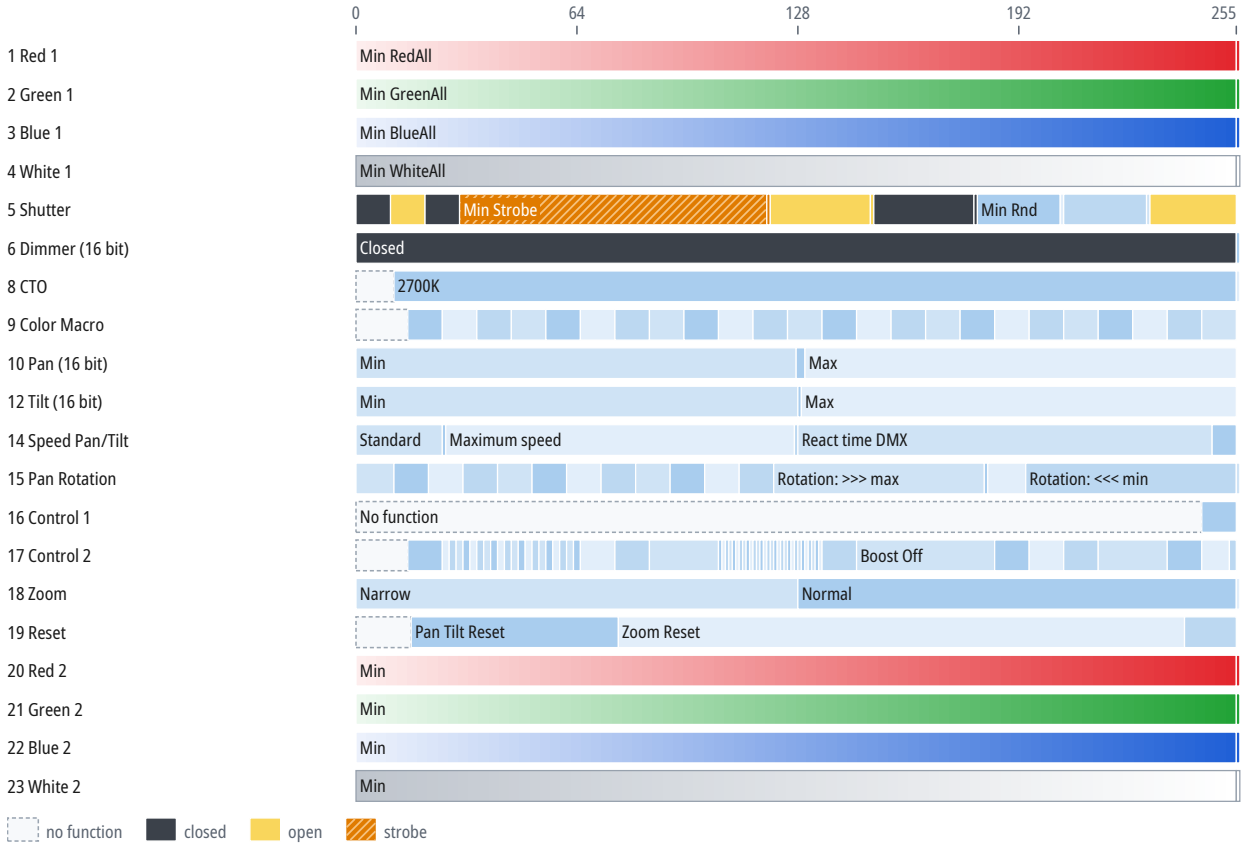
CH	Function	DMX	Description
16	Color Macro (continued)	31–46	Macro 2
		47–62	Macro 3
		63–78	Macro 4
		79–94	Macro 5
		95–110	Macro 6
		111–126	Macro 7
		127–142	Macro 8
		143–158	Macro 9
		159–174	Macro 10
		175–190	Macro 11
		191–206	Macro 12
		207–222	Macro 13
		223–238	Macro 14
		239–254	Macro 15
		255	Macro 16
17	Color Effects		Same as CH 17 in the mode “Compatibility EXT” (p. 13)
18	Zoom		Same as CH 18 in the mode “Compatibility EXT” (p. 13)
19	Zoom Speed		Same as CH 19 in the mode “Compatibility EXT” (p. 13)
20	Reset		Same as CH 20 in the mode “Compatibility EXT” (p. 13)

Mode Pixels EXTENDED

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 Shutter at 10–19 “open” or 230–255; CH 6 Dimmer above 255.

Channel functions at a glance



CH	Function	DMX	Description
1	Red 1	0–254	Min RedAll
		255	Max RedAll
2	Green 1	0–254	Min GreenAll
		255	Max GreenAll
3	Blue 1	0–254	Min BlueAll
		255	Max BlueAll
4	White 1	0–254	Min WhiteAll
		255	Max WhiteAll
5	Shutter		Same as CH 8 in the mode “Compatibility EXT” (p. 11)
6	Dimmer	0–255	Closed
		255	Open
7	Dimmer Fine	0–255	Fine adjustment of CH 6
8	CTO	0–10	No function
		11–254	2700K
		255	8000K

CH	Function	DMX	Description
9	Color Macro	0–14	No function
		15–24	COL 1
		25–34	COL 2
		35–44	COL 3
		45–54	COL 4
		55–64	COL 5
		65–74	COL 6
		75–84	COL 7
		85–94	COL 8
		95–104	COL 9
		105–114	COL 10
		115–124	COL 11
		125–134	COL 12
		135–144	COL 13
		145–154	COL 14
		155–164	COL 15
		165–174	COL 16
		175–184	Rainbow 6 sec
		185–194	Rainbow 15 sec
		195–204	Rainbow 30 sec
		205–214	Rainbow 45 sec
		215–224	Rainbow 60 sec
		225–234	Rainbow 120 sec
		235–244	Rainbow 150 sec
		245–255	Rainbow 180 sec
10	Pan	0–127	Min
		128–130	Center
		130–255	Max
11	Pan Fine	0–255	Fine adjustment of CH 10
12	Tilt	0–128	Min
		128–129	Center
		129–255	Max
13	Tilt Fine	0–255	Fine adjustment of CH 12
14	Speed Pan/Tilt	0–24	Standard
		25	Max spd
		26–126	Maximum speed
		127	Minimum speed
		128–247	React time DMX
		248–255	Slow react time DMX
15	Pan Rotation	0–10	Position mode 540 degrees
		11–20	Position mode 360 degrees 1 turn
		21–30	Position mode 720 degrees - 2 turns

CH	Function	DMX	Description
15	Pan Rotation (continued)	31–40	Position mode 1080 degrees - 3 turns
		41–50	Position mode 1440 degrees - 4 turns
		51–60	Position mode 1800 degrees - 5 turn
		61–70	Position mode 2160 degrees - 6 turns
		71–80	Position mode 2520 degrees - 7 turns
		81–90	Position mode 2880 degrees - 8 turns
		91–100	Position mode 3240 degrees - 9 turns
		101–110	Position mode 3600 degrees - 10 turns
		111–120	Position mode 360 degrees - smart path
		121–181	Rotation: >>> max
		182	Rotation: >>> min
		183–193	Rotation: stop
		194–254	Rotation: <<< min
		255	Rotation: <<< max
16	Control 1	0–244	No function
		245–255	Activating Function
17	Control 2	0–14	No function
		15–24	Smooth off
		25–26	Smooth 1
		27–28	Smooth 2
		29–30	Smooth 3
		31–32	Smooth 4
		33–34	Smooth 5
		35–36	Smooth 6
		37–38	Smooth 7
		39–40	Smooth 8
		41–42	Smooth 9
		43–44	Smooth 10
		45–46	Smooth 11
		47–48	Smooth 12
		49–50	Smooth 13
		51–52	Smooth 14
		53–54	Smooth 15
		55–56	Smooth 16
		57–58	Smooth 17
		59–60	Smooth 18
		61–62	Smooth 19
		63–64	Smooth 20
		65–74	Gamma Corr Quadratic
		75–84	Gamma Corr Linear
		85–104	Out Freq 610 Hz
		105	Out Freq 800 Hz

CH	Function	DMX	Description
17	Control 2 (continued)	106	Out Freq 1000 Hz
		107	Out Freq 1500 Hz
		108	Out Freq 2000 Hz
		109	Out Freq 2500 Hz
		110	Out Freq 3000 Hz
		111	Out Freq 3500 Hz
		112	Out Freq 4000 Hz
		113	Out Freq 4500 Hz
		114	Out Freq 5000 Hz
		115	Out Freq 5500 Hz
		116	Out Freq 6000 HZ
		117	Out Freq 6500 Hz
		118	Out Freq 7000 Hz
		119	Out Freq 7500 Hz
		120	Out Freq 8000 Hz
		121	Out Freq 8500 Hz
		122	Out Freq 9000 Hz
		123	Out Freq 9500 Hz
		124	Out Freq 10000 Hz
		125	Out Freq 11000 Hz
		126	Out Freq 12000 Hz
		127	Out Freq 13000 Hz
		128	Out Freq 14000 Hz
		129	Out Freq 15000 Hz
		130	Out Freq 16000 Hz
		131	Out Freq 17000 Hz
		132	Out Freq 18000 Hz
		133	Out Freq 19000 Hz
		134	Out Freq 20000 Hz
		135–144	Boost On
		145–184	Boost Off
		185–194	Pan Normal
		195–204	Pan Reverse
		205–214	Tilt Normal
		215–234	Tilt Reverse
		235–244	Studio Mode On
		245–252	Studio Mode Off
		253–255	Set Control Values
18	Zoom		Same as CH 18 in the mode “Compatibility EXT” (p. 13)
19	Reset	0–15	No function
		16–75	Pan Tilt Reset
		76–239	Zoom Reset

CH	Function	DMX	Description
19	Reset (continued)	240–255	Total Reset
20	Red 2	0–254	Min
		255	Max
21	Green 2	0–254	Min
		255	Max
22	Blue 2	0–254	Min
		255	Max
23	White 2	0–254	Min
		255	Max

CH 20–111: 23 cells of 4 channels each. Every cell works as cell 1 in the table above (CH 20–23); the table below gives each cell's channel numbers.

Cell	Red	Green	Blue	White	Cell	Red	Green	Blue	White
1	20	21	22	23	2	24	25	26	27
3	28	29	30	31	4	32	33	34	35
5	36	37	38	39	6	40	41	42	43
7	44	45	46	47	8	48	49	50	51
9	52	53	54	55	10	56	57	58	59
11	60	61	62	63	12	64	65	66	67
13	68	69	70	71	14	72	73	74	75
15	76	77	78	79	16	80	81	82	83
17	84	85	86	87	18	88	89	90	91
19	92	93	94	95	20	96	97	98	99
21	100	101	102	103	22	104	105	106	107
23	108	109	110	111					

Mode Pixels STD

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 Shutter at 10–19 “open” or 230–255; CH 6 Dimmer above 255.

Channel functions at a glance



CH	Function	DMX	Description
1	Red 1		Same as CH 1 in the mode “Pixels EXTENDED” (p. 16)
2	Green 1		Same as CH 2 in the mode “Pixels EXTENDED” (p. 16)
3	Blue 1		Same as CH 3 in the mode “Pixels EXTENDED” (p. 16)
4	White 1		Same as CH 4 in the mode “Pixels EXTENDED” (p. 16)
5	Shutter		Same as CH 8 in the mode “Compatibility EXT” (p. 11)
6	Dimmer		Same as CH 6 in the mode “Pixels EXTENDED” (p. 16)
7	Dimmer Fine	0–255	Fine adjustment of CH 6
8	CTO		Same as CH 8 in the mode “Pixels EXTENDED” (p. 16)
9	Color Macro	0–14	No function
		15–30	COL 1
		31–46	COL 2
		47–62	COL 3
		63–78	COL 4
		79–94	COL 5
		95–110	COL 6

CH	Function	DMX	Description
9	Color Macro (continued)	111–126	COL 7
		127–142	COL 8
		143–158	COL 9
		159–174	COL 10
		175–190	COL 11
		191–206	COL 12
		207–222	COL 13
		223–238	COL 14
		239–254	COL 15
		255	COL 16
10	Pan		Same as CH 10 in the mode “Pixels EXTENDED” (p. 17)
11	Pan Fine	0–255	Fine adjustment of CH 10
12	Tilt		Same as CH 12 in the mode “Pixels EXTENDED” (p. 17)
13	Tilt Fine	0–255	Fine adjustment of CH 12
14	Speed Pan/Tilt		Same as CH 14 in the mode “Pixels EXTENDED” (p. 17)
15	Pan Rotation		Same as CH 15 in the mode “Pixels EXTENDED” (p. 17)
16	Control 1		Same as CH 16 in the mode “Pixels EXTENDED” (p. 18)
17	Control 2		Same as CH 17 in the mode “Pixels EXTENDED” (p. 18)
18	Zoom		Same as CH 18 in the mode “Compatibility EXT” (p. 13)
19	Reset		Same as CH 19 in the mode “Pixels EXTENDED” (p. 19)
20	Red 2	0–254	Min
		255	Max
21	Green 2	0–254	Min
		255	Max
22	Blue 2	0–254	Min
		255	Max
23	White 2	0–254	Min
		255	Max

CH 20–111: 23 cells of 4 channels each. Every cell works as cell 1 in the table above (CH 20–23); the table below gives each cell's channel numbers.

Cell	Red	Green	Blue	White	Cell	Red	Green	Blue	White
1	20	21	22	23	2	24	25	26	27
3	28	29	30	31	4	32	33	34	35
5	36	37	38	39	6	40	41	42	43
7	44	45	46	47	8	48	49	50	51
9	52	53	54	55	10	56	57	58	59
11	60	61	62	63	12	64	65	66	67
13	68	69	70	71	14	72	73	74	75
15	76	77	78	79	16	80	81	82	83
17	84	85	86	87	18	88	89	90	91

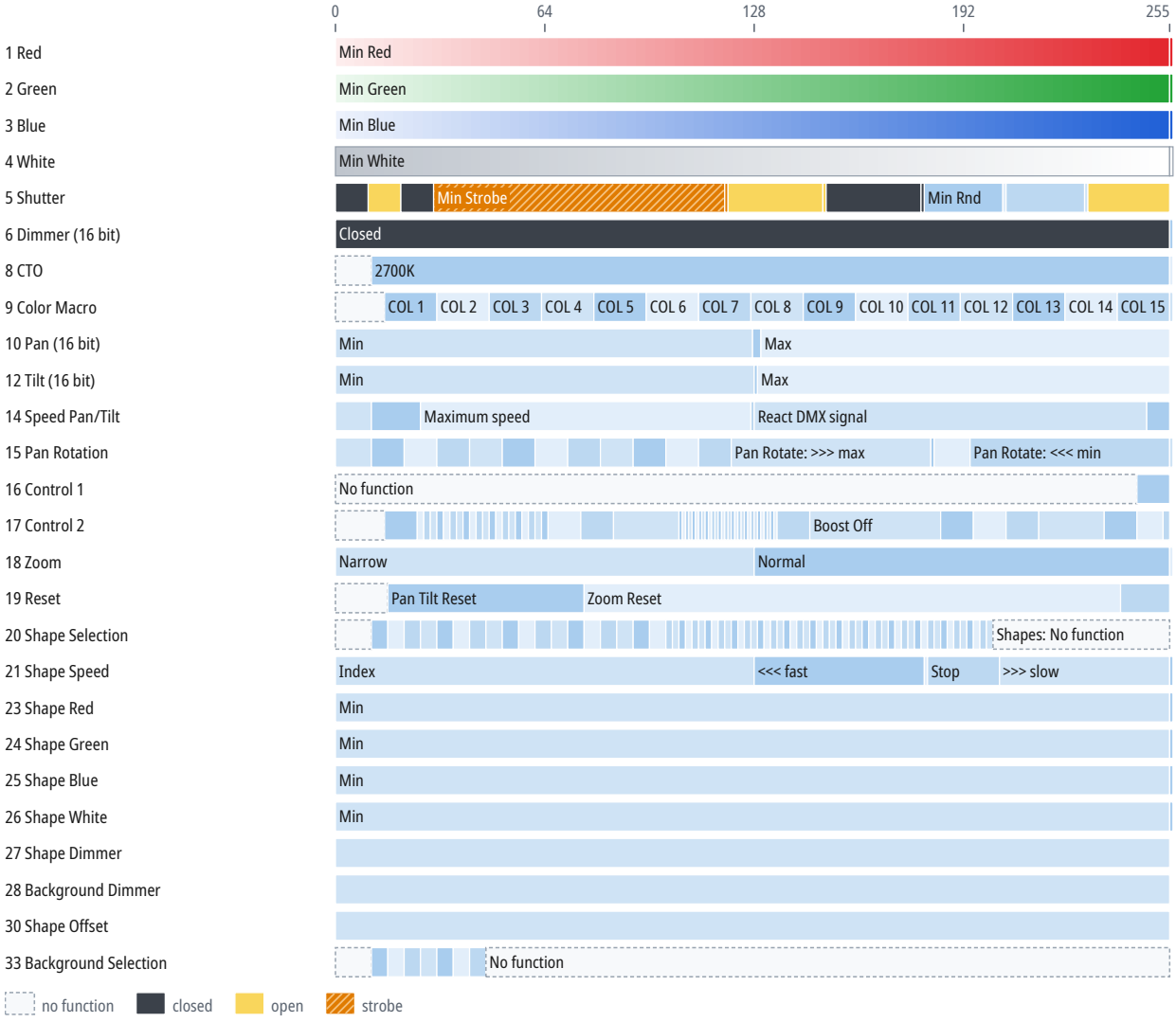
Cell	Red	Green	Blue	White	Cell	Red	Green	Blue	White
19	92	93	94	95	20	96	97	98	99
21	100	101	102	103	22	104	105	106	107
23	108	109	110	111					

Mode Shapes STD

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 Shutter at 10–19 “open” or 230–255; CH 6 Dimmer above 255.

Channel functions at a glance



CH	Function	DMX	Description
1	Red		Red Dimmer
		0–254	Min Red
		255	Max Red
2	Green		Green Dimmer

CH	Function	DMX	Description
2	Green (continued)	0–254	Min Green
		255	Max Green
3	Blue		Blue Dimmer
		0–254	Min Blue
		255	Max Blue
4	White		White Dimmer
		0–254	Min White
		255	Max White
5	Shutter	0–9	Shutter 1: closed
		10–19	Shutter 1: open
		20–29	Shutter 1: closed (2)
		30–118	Min Strobe
		119	Max Strobe
		120–148	Min Pulse Open
		149	Max Pulse Open
		150–178	Min Pulse Close
		179	Max Pulse Close
		180–203	Min Rnd
		204	Max Rnd
		205–228	Min Rnd (2)
		229	Max Rnd (2)
		230–255	Shutter: open (2)
6	Dimmer		Same as CH 6 in the mode “Pixels EXTENDED” (p. 16)
7	Dimmer Fine	0–255	Fine adjustment of CH 6
8	CTO		Same as CH 8 in the mode “Pixels EXTENDED” (p. 16)
9	Color Macro		Same as CH 9 in the mode “Pixels STD” (p. 21)
10	Pan		Same as CH 10 in the mode “Pixels EXTENDED” (p. 17)
11	Pan Fine	0–255	Fine adjustment of CH 10
12	Tilt		Same as CH 12 in the mode “Pixels EXTENDED” (p. 17)
13	Tilt Fine	0–255	Fine adjustment of CH 12
14	Speed Pan/Tilt	0–10	Standard
		11–25	Max speed
		26–126	Maximum speed
		127	Minimum speed
		128–247	React DMX signal
		248–255	React time DMX
15	Pan Rotation		Same as CH 6 in the mode “Compatibility EXT” (p. 10)
16	Control 1	0–244	No function
		245–255	Activating Functions
17	Control 2		Same as CH 17 in the mode “Pixels EXTENDED” (p. 18)
18	Zoom		Same as CH 18 in the mode “Compatibility EXT” (p. 13)

CH	Function	DMX	Description
19	Reset		Same as CH 19 in the mode “Pixels EXTENDED” (p. 19)
20	Shape Selection	0–10	Shape Selection: No function
		11–15	Pixel 1
		16–20	Ring 1
		21–25	Ring 2
		26–30	Pixel 1 Ring 1
		31–35	Pixel 1 Ring 2
		36–40	Pixel 1 Ring 1 Ring 2
		41–45	Single Ring Up Down
		46–50	Filled Ring Up Down
		51–55	Spiral
		56–60	Fan
		61–65	Bar1
		66–70	Half Moon
		71–75	Triangle
		76–80	Segment1
		81–85	Arc1
		86–90	Arc2
		91–95	Bar2
		96–100	Segment2
		101–102	Shape 19
		103–104	Shape 20
		105–106	Shape 21
		107–108	Shape 22
		109–110	Shape 23
		111–112	Shape 24
		113–114	Shape 25
		115–116	Shape 26
		117–118	Shape 27
		119–120	Shape 28
		121–122	Shape 29
		123–124	Shape 30
		125–126	Shape 31
		127–128	Shape 32
		129–130	Shape 33
		131–132	Shape 34
		133–134	Shape 35
		135–136	Shape 36
		137–138	Shape 37
		139–140	Shape 38
		141–142	Shape 39

CH	Function	DMX	Description
20	Shape Selection (continued)	143–144	Shape 40
		145–146	Shape 41
		147–148	Shape 42
		149–150	Shape 43
		151–152	Shape 44
		153–154	Shape 45
		155–156	Shape 46
		157–158	Shape 47
		159–160	Shape 48
		161–162	Shape 49
		163–164	Shape 50
		165–166	Shape 51
		167–168	Shape 52
		169–170	Shape 53
		171–172	Shape 54
		173–174	Shape 55
		175–176	Shape 56
		177–178	Shape 57
		179–180	Shape 58
		181–182	Shape 59
		183–184	Shape 60
		185–186	Shape 61
		187–188	Shape 62
		189–190	Shape 63
		191–192	Shape 64
		193–194	Shape 65
		195–196	Shape 66
		197–198	Shape 67
		199–200	Shape 68
		201–255	Shapes: No function
21	Shape Speed	0–127	Index
		128–179	<<< fast
		180	<<< slow
		181–202	Stop
		203–254	>>> slow
		255	>>> fast
23	Shape Red	0–254	Min
		255	Max
24	Shape Green	0–254	Min
		255	Max
25	Shape Blue	0–254	Min

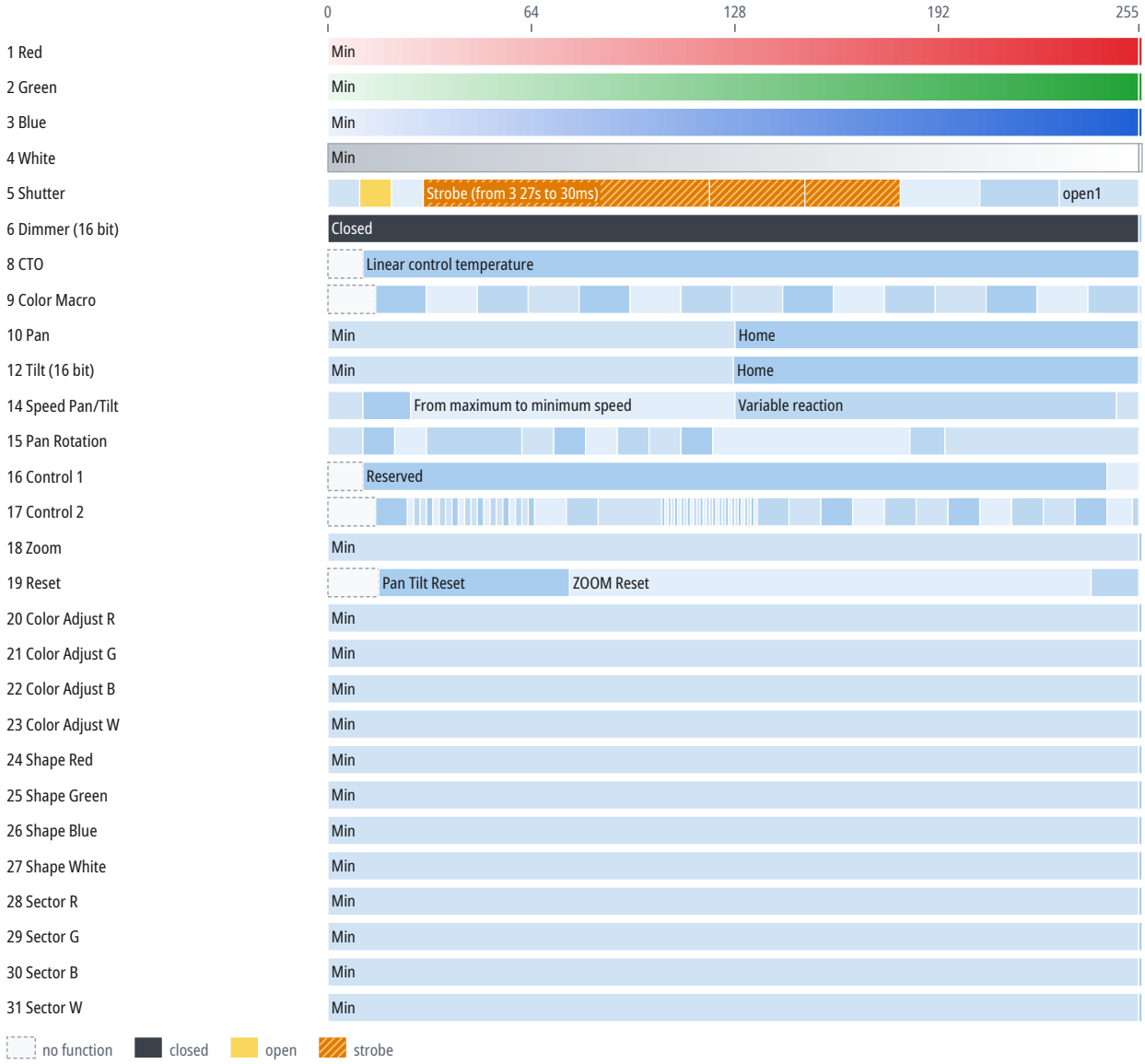
CH	Function	DMX	Description
25	Shape Blue (continued)	255	Max
26	Shape White	0–254	Min
		255	Max
27	Shape Dimmer	0–255	
28	Background Dimmer	0–255	
30	Shape Offset	0–255	
33	Background Selection	0–10	No function
		11–15	Pixel1
		16–20	Ring1
		21–25	Pixel1+ Ring1
		26–30	Ring2
		31–35	Pixel1+Ring2
		36–40	Ring1+Ring2
		41–45	Pixel1+Ring1+Ring2
		46–255	No function

Mode SECTOR

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 Shutter at 10–19 “open”; CH 6 Dimmer above 255.

Channel functions at a glance



CH	Function	DMX	Description
1	Red		Same as CH 10 in the mode “Compatibility EXT” (p. 12)
2	Green		Same as CH 11 in the mode “Compatibility EXT” (p. 12)
3	Blue		Same as CH 12 in the mode “Compatibility EXT” (p. 12)
4	White		Same as CH 13 in the mode “Compatibility EXT” (p. 12)
5	Shutter	0–9	Black-out
		10–19	Open
		20–29	Black out
		30–119	Strobe (from 3 27s to 30ms)

CH	Function	DMX	Description
5	Shutter (continued)	120–149	Pulse up (from 42 6 to 120 ms)
		150–179	Pulse down (from 42 6 to 120 ms
		180–204	Random strobe
		205–229	Full indipendent random strobe
		230–255	open1
6	Dimmer		Same as CH 6 in the mode “Pixels EXTENDED” (p. 16)
7	Dimmer Fine	0–255	Fine adjustment of CH 6
8	CTO	0–10	No function
		11–255	Linear control temperature
9	Color Macro	0–14	No function
		15–30	COL1 RGBW
		31–46	COL2 RGBW
		47–62	COL3 RGBW
		63–78	COL4 RGBW
		79–94	COL5 RGBW
		95–110	COL6 RGBW
		111–126	COL7 RGBW
		127–142	COL8 RGBW
		143–158	COL9 RGBW
		159–174	COL10 RGBW
		175–190	COL11 RGBW
		191–206	COL12 RGBW
		207–222	COL13 RGBW
		223–238	COL14 RGBW
		239–254	COL15 RGBW
		255	COL16 RGBW
10	Pan	0–127	Min
		128–254	Home
		255	Max
12	Tilt	0–127	Min
		128–255	Home
		255	Max
13	Tilt Fine	0–255	Fine adjustment of CH 12
14	Speed Pan/Tilt	0–10	Standard
		11–25	Max speed
		26–127	From maximum to minimum speed
		128–247	Variable reaction
		248–255	Slow reaction
15	Pan Rotation	0–10	Pos mode 540 (std path)
		11–20	Pos mode 360
		21–30	Pos mode 720
		31–60	Pos mode 1080

CH	Function	DMX	Description
15	Pan Rotation (continued)	61–70	Pos mode 2160
		71–80	Pos mode 2520
		81–90	Pos mode 2880
		91–100	Pos mode 3240
		101–110	Pos mode 3600
		111–120	Pos mode 360 smarth path
		121–182	Forward spin rotation speed max to min
		183–193	Stop
		194–255	Reverse spin rotation speed min to max
16	Control 1	0–10	No function
		11–244	Reserved
		245–255	Activate function chanel
17	Control 2	0–14	No Function
		15–24	SMOOTH OFF (Default)
		25–26	SMOOTH 1 (50ms)
		27–28	SMOOTH 2 (100ms)
		29–30	SMOOTH 3 (150ms)
		31–32	SMOOTH 4 (200ms)
		33–34	SMOOTH 5 (250ms)
		35–36	SMOOTH 6 (300ms)
		37–38	SMOOTH 7 (350ms)
		39–40	SMOOTH 8 (400ms)
		41–42	SMOOTH 9 (450ms)
		43–44	SMOOTH 10 (500ms)
		45–46	SMOOTH 11 (550ms)
		47–48	SMOOTH 12 (600ms)
		49–50	SMOOTH 13 (650ms)
		51–52	SMOOTH 14 (700ms)
		53–54	SMOOTH 15 (750ms)
		55–56	SMOOTH 16 (800ms)
		57–58	SMOOTH 17 (850ms)
		59–60	SMOOTH 18 (900ms)
		61–62	SMOOTH 19 (950ms)
		63–64	SMOOTH 20 (1000ms)
		65–74	GAMA CORRECTION QUADRATIC (default)
		75–84	GAMMA CORRECTION LINEAR
		85–104	OUTPUT FREQUENCY 610 Hz (default)
		105	OUTPUT FREQUENCY 800Hz
		106	OUTPUT FREQUENCY 1000 Hz
		107	OUTPUT FREQUENCY 1500 Hz
		108	OUTPUT FREQUENCY 2000 Hz
		109	OUTUPUT FREQUENCY 2500 Hz

CH	Function	DMX	Description
17	Control 2 (continued)	110	OUTPUT FREQUENCY 3000 Hz
		111	OUTPUT FREQUENCY 3500 Hz
		112	OUTPUT FREQUENCY 4000 Hz
		113	OUTPUT FREQUENCY 4500 Hz
		114	OUTPUT FREQUENCY 5000 Hz
		115	OUTPUT FREQUENCY 5500 Hz
		116	OUTPUT FREQUENCY 6000 Hz
		117	OUTPUT FREQUENCY 6500 Hz
		118	OUTPUT FREQUENCY 7000 Hz
		119	OUTPUT FREQUENCY 7500 Hz
		120	OUTPUT FREQUENCY 8000 Hz
		121	OUTPUT FREQUENCY 8500 Hz
		122	OUTPUT FREQUENCY 9000 Hz
		123	OUTPUT FREQUENCY 9500 Hz
		124	OUTPUT FREQUENCY 10000 Hz
		125	OUTPUT FREQUENCY 11000 Hz
		126	OUTPUT FREQUENCY 12000 Hz
		127	OUTPUT FREQUENCY 13000 Hz
		128	OUTPUT FREQUENCY 14000 Hz
		129	OUTPUT FREQUENCY 15000 Hz
		130	OUTPUT FREQUENCY 16000 Hz
		131	OUTPUT FREQUENCY 17000 Hz
		132	OUTPUT FREQUENCY 18000 Hz
		133	OUTPUT FREQUENCY 19000 Hz
		134	OUTPUT FREQUENCY 20000 Hz
		135–144	BOOST ON (default)
		145–154	BOOST OFF
		155–174	RESERVED
		175–184	RESERVED1
		185–194	PAN NORMAL (Default)
		195–204	PAN REVERSE
		205–214	TILT NORMAL (Default)
		215–224	TILT REVERSE
		225–234	RESERVED2
		235–244	STUDIO MODE ON
		245–252	STUDIO MODE OFF (Default)
		253–255	SET DEFAULT VALUE
18	Zoom	0–254	Min
		255	Max
19	Reset	0–15	NO Function
		16–75	Pan Tilt Reset
		76–239	ZOOM Reset

CH	Function	DMX	Description
19	Reset (continued)	240–255	TOTAL unit reset
20	Color Adjust R	0–254	Min
		255	Max
21	Color Adjust G	0–254	Min
		255	Max
22	Color Adjust B	0–254	Min
		255	Max
23	Color Adjust W		White adjust
		0–254	Min
		255	Max
24	Shape Red		Same as CH 23 in the mode “Shapes STD” (p. 26)
25	Shape Green		Same as CH 24 in the mode “Shapes STD” (p. 26)
26	Shape Blue		Same as CH 25 in the mode “Shapes STD” (p. 26)
27	Shape White		Same as CH 26 in the mode “Shapes STD” (p. 27)
28	Sector R		RED 3
		0–254	Min
		255	Max
29	Sector G	0–254	Min
		255	Max
30	Sector B	0–254	Min
		255	Max
31	Sector W	0–254	Min
		255	Max

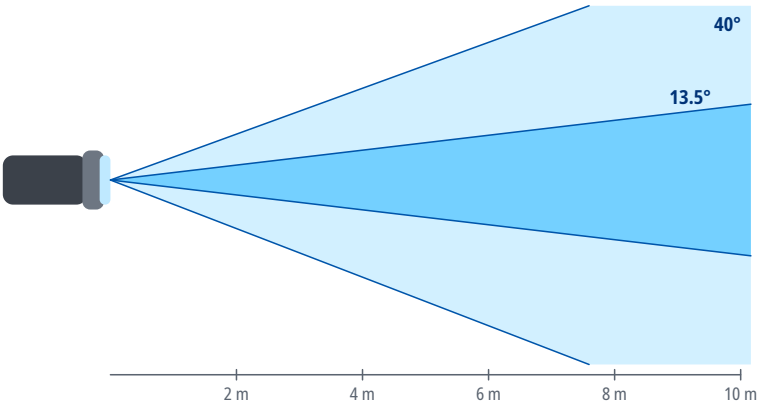
10 Technical specifications

Parameter	Value
Light source	LED
Zoom	13.5–40°
Pan	540°
Tilt	270°
Weight	13 kg
Operating temperature	-20 to 45 °C

Speeds and ranges

Parameter	Value
Color temperature range	2700–8000 K

Spot diameter



Distance	Ø 13.5°	Ø 40°
2 m	0.47 m	1.5 m
4 m	0.95 m	2.9 m
6 m	1.4 m	4.4 m
8 m	1.9 m	5.8 m
10 m	2.4 m	7.3 m
15 m	3.6 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.