DMX REFERENCE

WASH 760 IP

M-WASH 760 IP

MLight

Manufacturer	MLight
GDTF file	MLight_WASH_760_IP_136892.gdtf
GDTF revision	Rev3 · 2026-04-03
Generated	2026-11-24

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1 About this manual

This document describes the M-WASH 760 IP by MLight. It was compiled from the GDTF file MLight_WASH_760_IP_136892.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 MLight; 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

DMX modes

Mode	Channels	Units in one universe	First start addresses
20ch	20	25	1, 21, 41, 61, ...
21ch	21	24	1, 22, 43, 64, ...
30CH	30	17	1, 31, 61, 91, ...
36ch	36	14	1, 37, 73, 109, ...
57ch	57	8	1, 58, 115, 172, ...
78ch	78	6	1, 79, 157, 235, ...
93ch	93	5	1, 94, 187, 280, ...

No light? Check these channels

- 20ch: CH 2 Dimmer above 0
- 21ch: CH 12 Dimmer above 0
- 30CH: CH 8 Dimmer above 0
- 36ch: CH 2 Dimmer above 0
- 57ch: CH 2 Dimmer above 0
- 78ch: CH 12 Dimmer above 0
- 93ch: CH 2 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.

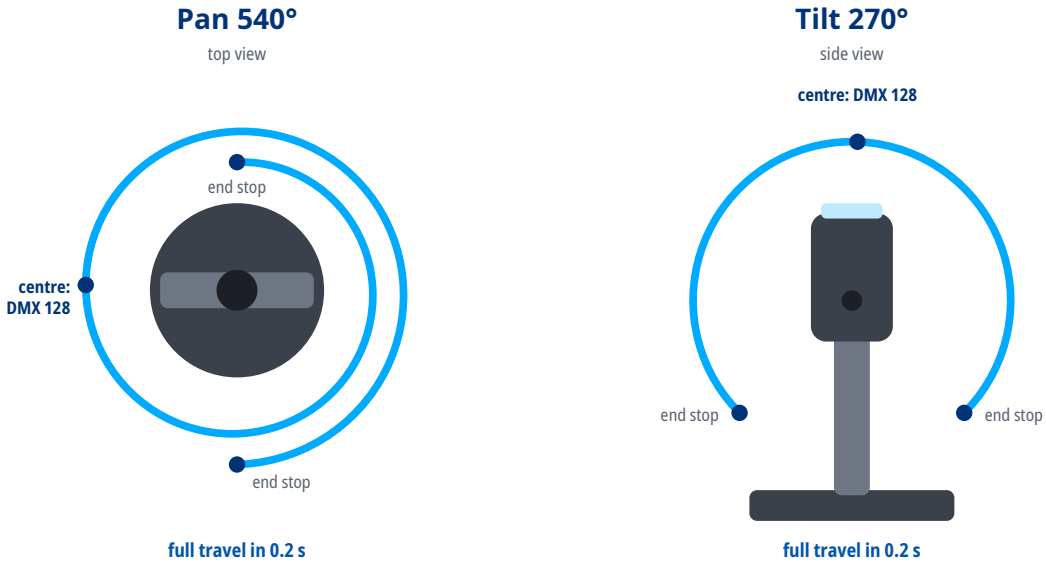
⚠ CAUTION

- 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

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.
> - 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.

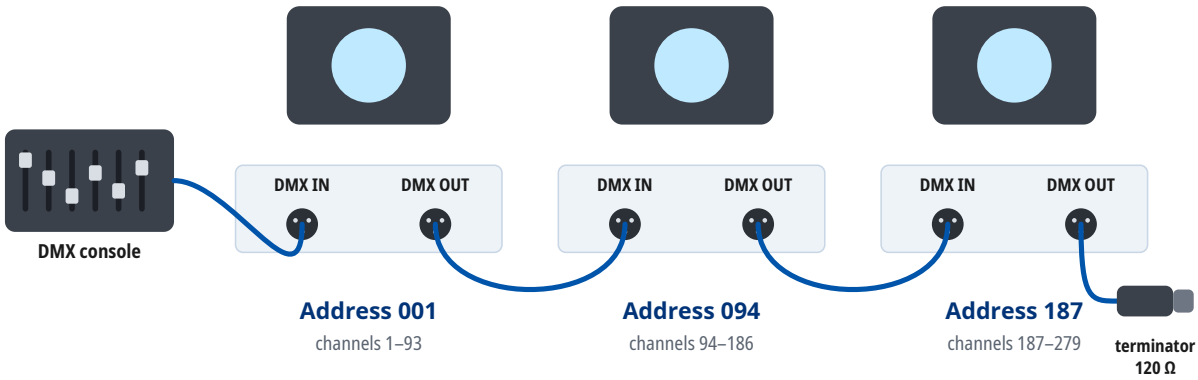
6 Connections

- 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 93ch: every unit occupies 93 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 “93ch”: 93.
- 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 “93ch”, you can use, for example, the start addresses 1, 94, 187, 280.
- The DMX mode set on the device must match the fixture profile (personality) used in the controller.

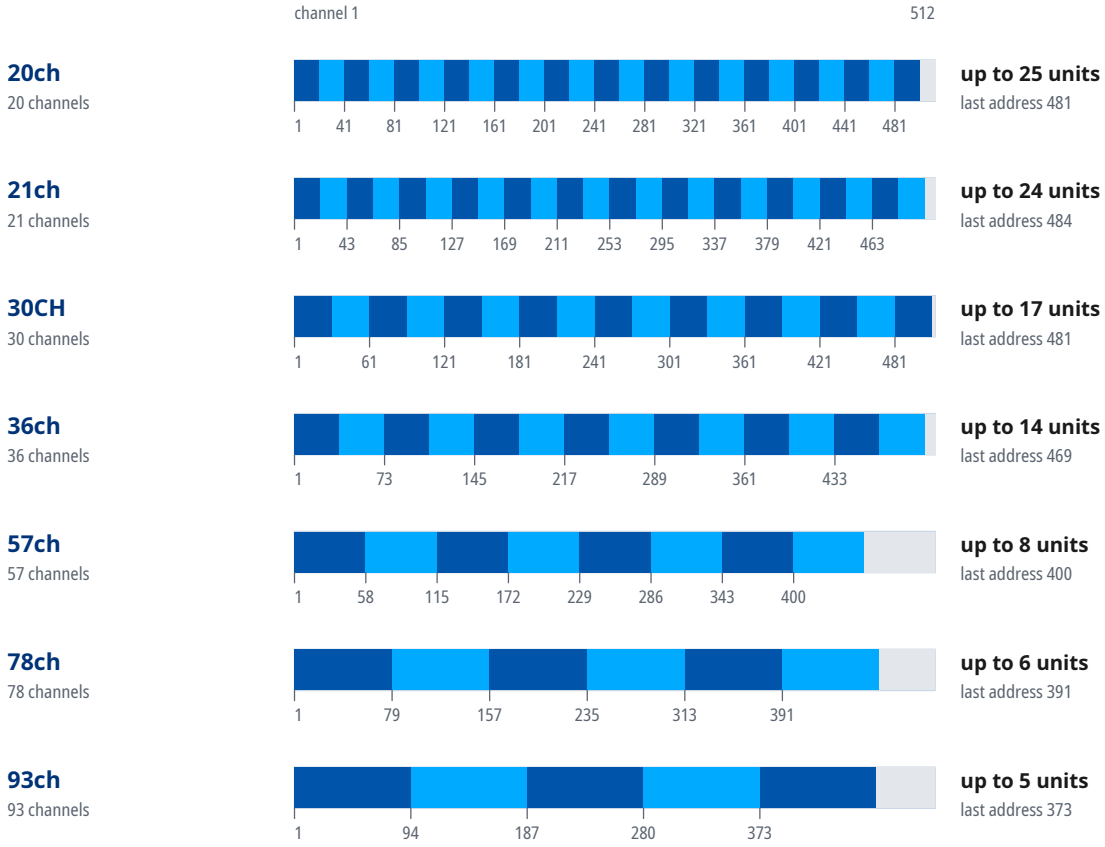
8 Functions at a glance

Functions in each DMX mode

	20ch 20 channels	21ch 21 channels	30CH 30 channels	36ch 36 channels	57ch 57 channels	78ch 78 channels	93ch 93 channels
Pan / Tilt	**15, 17**	**14, 16**	**1, 3**	**15, 17**	**15, 17**	**14, 16**	**15, 17**
Dimmer	**2**	**12**	**8**	**2**	**2**	**12**	**2**
Dimmer resolution	16 bit	16 bit	8 bit	16 bit	16 bit	16 bit	16 bit
Shutter / strobe	**1**	**11**	**9**	**1**	**1**	**11**	**1**
Color mixing	**4, 6, 8**	**4× (1–7)**	**10–13**	**4, 6, 8**	24 channels (4–57)	61 channels (1–78)	60 channels (4–93)
Color temperature	**10**	**9**	**14**	**10**	**10**	**9**	**10**
Zoom	**13**	**20**	**6**	**13**	**13**	**20**	**13**
Effects / macros	**12**	**10**	**15**	**12**	**12**	**10**	**12**

9 DMX channels

Units in one DMX universe



Start addresses of 20 units in the mode “93ch”

Unit	Start address	Unit	Start address	Unit	Start address	Unit	Start address
1	1	6	U2 · 1	11	U3 · 1	16	U4 · 1
2	94	7	U2 · 94	12	U3 · 94	17	U4 · 94
3	187	8	U2 · 187	13	U3 · 187	18	U4 · 187
4	280	9	U2 · 280	14	U3 · 280	19	U4 · 280
5	373	10	U2 · 373	15	U3 · 373	20	U4 · 373

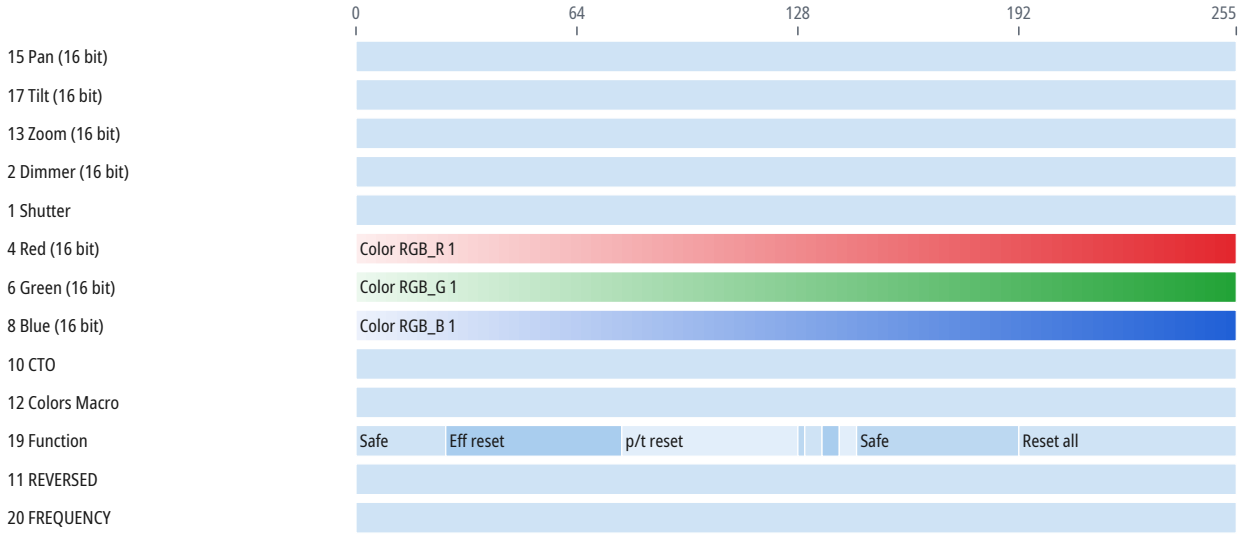
Where a DMX universe is full, the next units continue in the next universe: “U2 · 1” is address 1 in the second universe, counted from the universe of the first unit.

Mode 20ch

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

If the device receives DMX in this mode but gives no light, check these channels: CH 2 Dimmer above 0. The GDTF file gives these values for a console's Highlight function: CH 1 Shutter 0, CH 2 Dimmer 255, CH 4 Red 255, CH 6 Green 255, CH 8 Blue 255.

Channel functions at a glance



CH	Function	DMX	Description
1	Shutter	0–255	
2	Dimmer	0–255	
3	Dimmer Fine	0–255	Fine adjustment of CH 2
4	Red		Color RGB_R 1
		0–255	Color RGB_R 1
5	Red Fine	0–255	Fine adjustment of CH 4
6	Green		Color RGB_G 1
		0–255	Color RGB_G 1
7	Green Fine	0–255	Fine adjustment of CH 6
8	Blue		Color RGB_B 1
		0–255	Color RGB_B 1
9	Blue Fine	0–255	Fine adjustment of CH 8
10	CTO	0–255	
11	REVERSED	0–255	
12	Colors Macro	0–255	
13	Zoom	0–255	0.7–1°
14	Zoom Fine	0–255	Fine adjustment of CH 13
15	Pan	0–255	540°
16	Pan Fine	0–255	Fine adjustment of CH 15
17	Tilt	0–255	270°
18	Tilt Fine	0–255	Fine adjustment of CH 17
19	Function	0–25	Safe

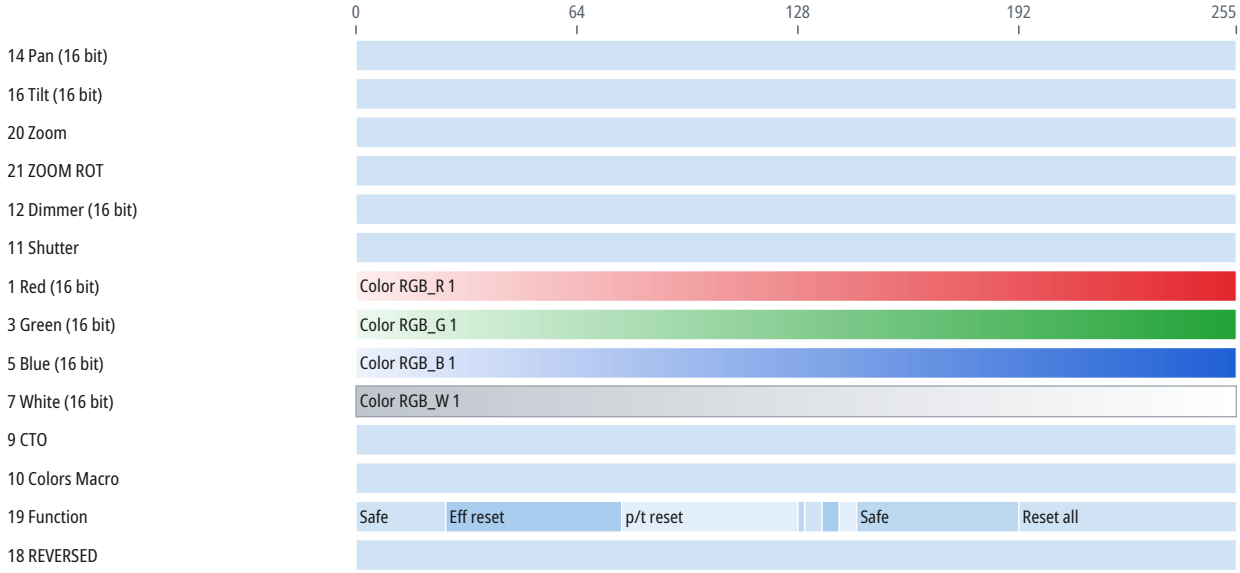
CH	Function	DMX	Description
19	Function (continued)	26–76	Eff reset
		77–127	p/t reset
		128–129	Safe
		130–134	Fan 1
		135–139	Fan 2
		140–144	Fan 3
		145–191	Safe
		192–255	Reset all
20	FREQUENCY	0–255	

Mode 21ch

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 12 Dimmer above 0. The GDTF file gives these values for a console's Highlight function: CH 1 Red 255, CH 3 Green 255, CH 5 Blue 255, CH 7 White 255, CH 11 Shutter 0, CH 12 Dimmer 255.

Channel functions at a glance



CH	Function	DMX	Description
1	Red		Same as CH 4 in the mode “20ch” (p. 9)
2	Red Fine	0–255	Fine adjustment of CH 1
3	Green		Same as CH 6 in the mode “20ch” (p. 9)
4	Green Fine	0–255	Fine adjustment of CH 3
5	Blue		Same as CH 8 in the mode “20ch” (p. 9)
6	Blue Fine	0–255	Fine adjustment of CH 5
7	White		Color RGB_W 1
		0–255	Color RGB_W 1
8	White Fine	0–255	Fine adjustment of CH 7
9	CTO	0–255	
10	Colors Macro	0–255	

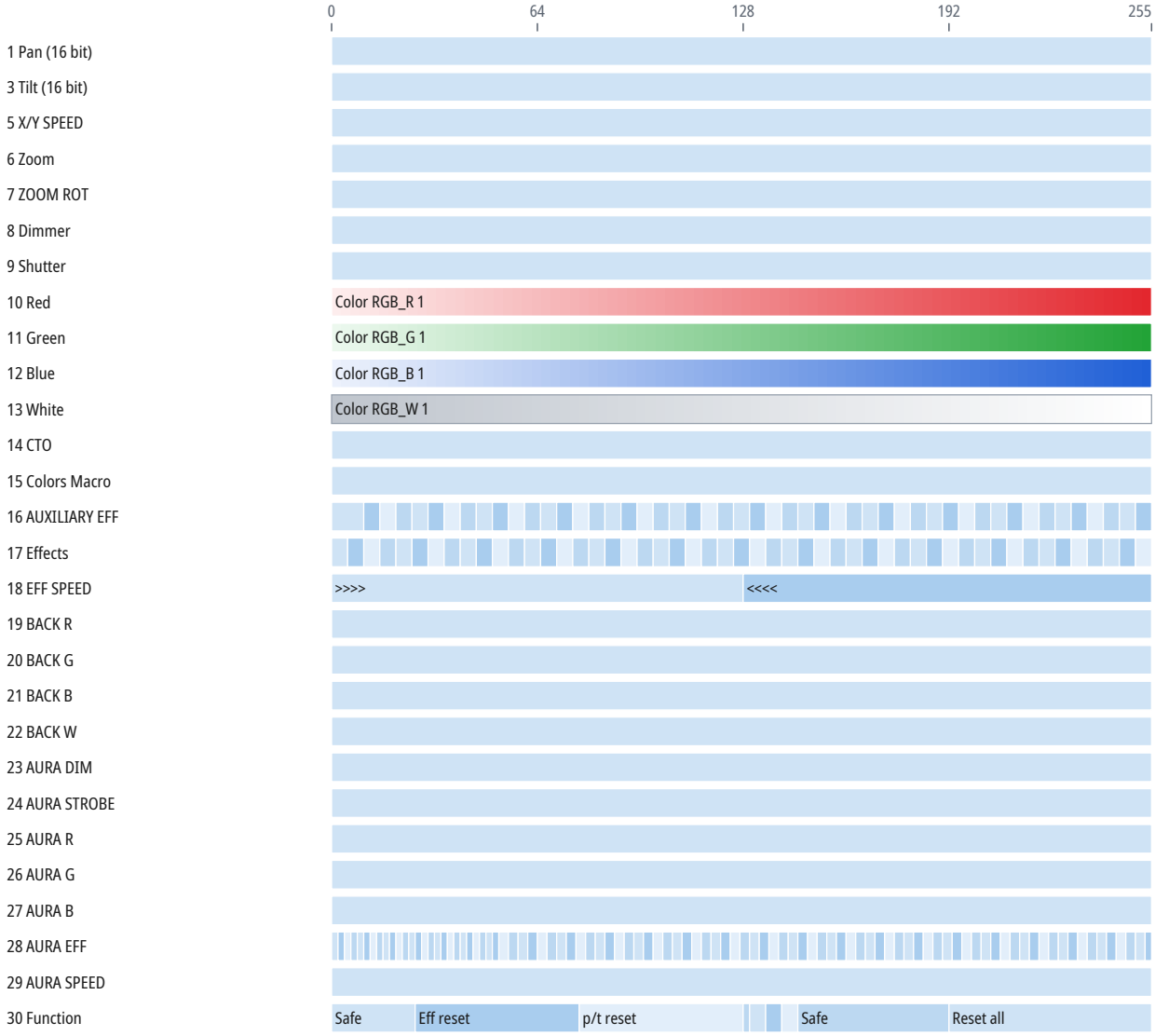
CH	Function	DMX	Description
11	Shutter	0–255	
12	Dimmer	0–255	
13	Dimmer Fine	0–255	Fine adjustment of CH 12
14	Pan	0–255	540°
15	Pan Fine	0–255	Fine adjustment of CH 14
16	Tilt	0–255	270°
17	Tilt Fine	0–255	Fine adjustment of CH 16
18	REVERSED	0–255	
19	Function		Same as CH 19 in the mode “20ch” (p. 9)
20	Zoom	0–255	0.7–1°
21	ZOOM ROT	0–255	

Mode 30CH

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 Dimmer above 0. The GDTF file gives these values for a console's Highlight function: CH 8 Dimmer 255, CH 9 Shutter 0, CH 10 Red 255, CH 11 Green 255, CH 12 Blue 255, CH 13 White 255.

Channel functions at a glance



CH	Function	DMX	Description
1	Pan	0–255	540°
2	Pan Fine	0–255	Fine adjustment of CH 1
3	Tilt	0–255	270°
4	Tilt Fine	0–255	Fine adjustment of CH 3
5	X/Y SPEED	0–255	
6	Zoom	0–255	0.7–1°
7	ZOOM ROT	0–255	
8	Dimmer	0–255	

CH	Function	DMX	Description
9	Shutter	0–255	
10	Red		Same as CH 4 in the mode “20ch” (p. 9)
11	Green		Same as CH 6 in the mode “20ch” (p. 9)
12	Blue		Same as CH 8 in the mode “20ch” (p. 9)
13	White		Same as CH 7 in the mode “21ch” (p. 10)
14	CTO	0–255	
15	Colors Macro	0–255	
16	AUXILIARY EFF	0–9	OPEN
		10–14	EFF 1
		15–19	EFF 2
		20–24	EFF 3
		25–29	EFF 4
		30–34	EFF 5
		35–39	EFF 6
		40–44	EFF 7
		45–49	EFF 8
		50–54	EFF 9
		55–59	EFF 10
		60–64	EFF 11
		65–69	EFF 12
		70–74	EFF 13
		75–79	EFF 14
		80–84	EFF 15
		85–89	EFF 16
		90–94	EFF 17
		95–99	EFF 18
		100–104	EFF 19
		105–109	EFF 20
		110–114	EFF 21
		115–119	EFF 22
		120–124	EFF 23
		125–129	EFF 24
		130–134	EFF 25
		135–139	EFF 26
		140–144	EFF 27
		145–149	EFF 28
		150–154	EFF 29
		155–159	EFF 30
		160–164	EFF 31
		165–169	EFF 32
		170–174	EFF 33
		175–179	EFF 34

CH	Function	DMX	Description
16	AUXILIARY EFF (continued)	180–184	EFF 35
		185–189	EFF 36
		190–194	EFF 37
		195–199	EFF 38
		200–204	EFF 39
		205–209	EFF 40
		210–214	EFF 41
		215–219	EFF 42
		220–224	EFF 43
		225–229	EFF 44
		230–234	EFF 45
		235–239	EFF 46
		240–244	EFF 47
		245–249	EFF 48
		250–255	EFF 49
17	Effects	0–4	OPEN
		5–9	Eff 1
		10–14	Eff 2
		15–19	Eff 3
		20–24	Eff 4
		25–29	Eff 5
		30–34	Eff 6
		35–39	Eff 7
		40–44	Eff 8
		45–49	Eff 9
		50–54	Eff 10
		55–59	Eff 11
		60–64	Eff 12
		65–69	Eff 13
		70–74	Eff 14
		75–79	Eff 15
		80–84	Eff 16
		85–89	Eff 17
		90–94	Eff 18
		95–99	Eff 19
		100–104	Eff 20
		105–109	Eff 21
		110–114	Eff 22
		115–119	Eff 23
		120–124	Eff 24
		125–129	Eff 25
		130–134	Eff 26

CH	Function	DMX	Description
17	Effects (continued)	135–139	Eff 27
		140–144	Eff 28
		145–149	Eff 29
		150–154	Eff 30
		155–159	Eff 31
		160–164	Eff 32
		165–169	Eff 33
		170–174	Eff 34
		175–179	Eff 35
		180–184	Eff 36
		185–189	Eff 37
		190–194	Eff 38
		195–199	Eff 39
		200–204	Eff 40
		205–209	Eff 41
		210–214	Eff 42
		215–219	Eff 43
		220–224	Eff 44
		225–229	Eff 45
		230–234	Eff 46
		235–239	Eff 47
		240–244	Eff 48
		245–249	Eff 49
		250–255	Eff 50
18	EFF SPEED	0–127	>>>>
		128–255	<<<<
19	BACK R	0–255	
20	BACK G	0–255	
21	BACK B	0–255	
22	BACK W	0–255	
23	AURA DIM	0–255	
24	AURA STROBE	0–255	
25	AURA R	0–255	
26	AURA G	0–255	
27	AURA B	0–255	
28	AURA EFF	0–1	Open
		2–3	AURA COLOR 1
		4–5	AURA COLOR 2
		6–7	AURA COLOR 3
		8–9	AURA COLOR 4
		10–11	AURA COLOR 5
		12–13	AURA COLOR 6

CH	Function	DMX	Description
28	AURA EFF (continued)	14–15	AURA COLOR 7
		16–17	AURA COLOR 8
		18–19	AURA COLOR 9
		20–21	AURA COLOR 10
		22–23	AURA COLOR 11
		24–25	AURA COLOR 12
		26–27	AURA COLOR 13
		28–29	AURA COLOR 14
		30–31	AURA COLOR 15
		32–33	AURA COLOR 16
		34–35	AURA COLOR 17
		36–37	AURA COLOR 18
		38–39	AURA COLOR 19
		40–41	AURA COLOR 20
		42–43	AURA COLOR 21
		44–45	AURA COLOR 22
		46–47	AURA COLOR 23
		48–49	AURA COLOR 24
		50–51	AURA COLOR 25
		52–54	AURA EFF 1
		55–57	AURA EFF 2
		58–60	AURA EFF 3
		61–63	AURA EFF 4
		64–66	AURA EFF 5
		67–69	AURA EFF 6
		70–72	AURA EFF 7
		73–75	AURA EFF 8
		76–78	AURA EFF 9
		79–81	AURA EFF 10
		82–84	AURA EFF 11
		85–87	AURA EFF 12
		88–90	AURA EFF 13
		91–93	AURA EFF 14
		94–96	AURA EFF 15
		97–99	AURA EFF 16
		100–102	AURA EFF 17
		103–105	AURA EFF 18
		106–108	AURA EFF 19
		109–111	AURA EFF 20
		112–114	AURA EFF 21
		115–117	AURA EFF 22
		118–120	AURA EFF 23

CH	Function	DMX	Description
28	AURA EFF (continued)	121–123	AURA EFF 24
		124–126	AURA EFF 25
		127–129	AURA EFF 26
		130–132	AURA EFF 27
		133–135	AURA EFF 28
		136–138	AURA EFF 29
		139–141	AURA EFF 30
		142–144	AURA EFF 31
		145–147	AURA EFF 32
		148–150	AURA EFF 33
		151–153	AURA EFF 34
		154–156	AURA EFF 35
		157–159	AURA EFF 36
		160–162	AURA EFF 37
		163–165	AURA EFF 38
		166–168	AURA EFF 39
		169–171	AURA EFF 40
		172–174	AURA EFF 41
		175–177	AURA EFF 42
		178–180	AURA EFF 43
		181–183	AURA EFF 44
		184–186	AURA EFF 45
		187–189	AURA EFF 46
		190–192	AURA EFF 47
		193–195	AURA EFF 48
		196–198	AURA EFF 49
		199–201	AURA EFF 50
		202–204	AURA EFF 51
		205–207	AURA EFF 52
		208–210	AURA EFF 53
		211–213	AURA EFF 54
		214–216	AURA EFF 55
		217–219	AURA EFF 56
		220–222	AURA EFF 57
		223–225	AURA EFF 58
		226–228	AURA EFF 59
		229–231	AURA EFF 60
		232–234	AURA EFF 61
		235–237	AURA EFF 62
		238–240	AURA EFF 63
		241–243	AURA EFF 64
		244–246	AURA EFF 65

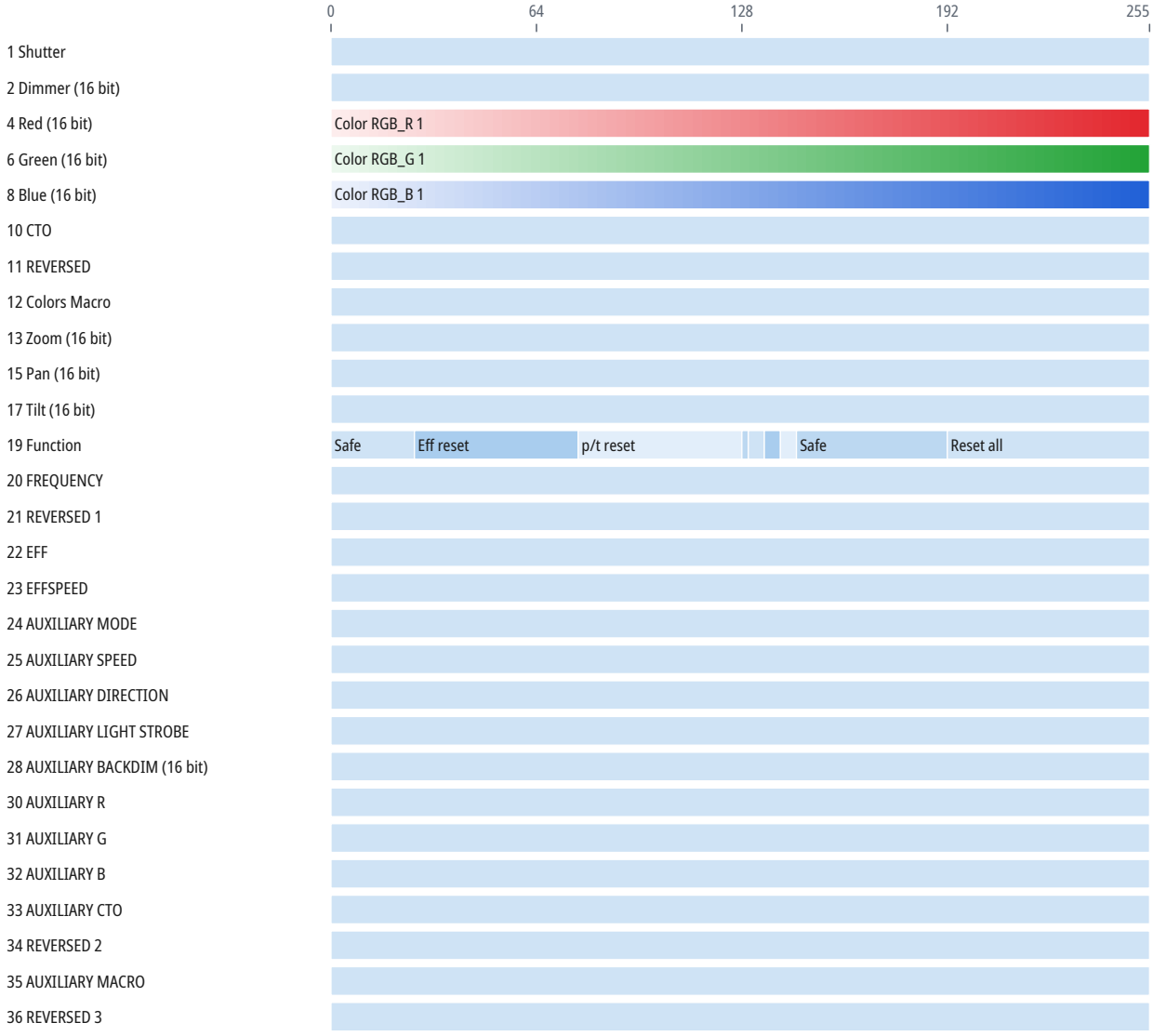
CH	Function	DMX	Description
28	AURA EFF (continued)	247–249	AURA EFF 66
		250–252	AURA EFF 67
		253–255	AURA EFF 68
29	AURA SPEED	0–255	
30	Function		Same as CH 19 in the mode “20ch” (p. 9)

Mode 36ch

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 2 Dimmer above 0. The GDTF file gives these values for a console's Highlight function: CH 1 Shutter 25, CH 2 Dimmer 255, CH 4 Red 255, CH 6 Green 255, CH 8 Blue 255.

Channel functions at a glance



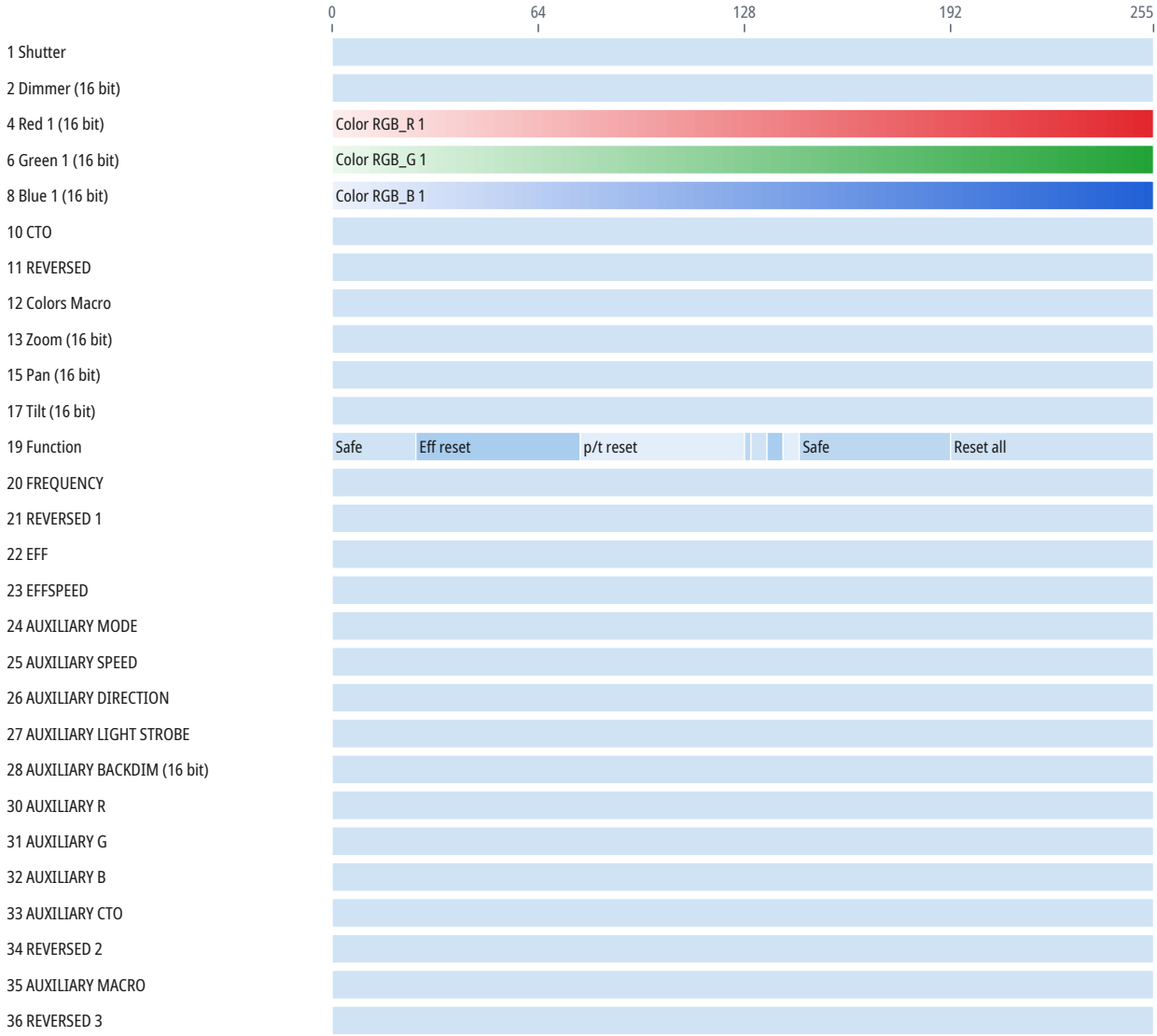
CH	Function	DMX	Description
1	Shutter	0–255	
2	Dimmer	0–255	
3	Dimmer Fine	0–255	Fine adjustment of CH 2
4	Red		Same as CH 4 in the mode “20ch” (p. 9)
5	Red Fine	0–255	Fine adjustment of CH 4
6	Green		Same as CH 6 in the mode “20ch” (p. 9)
7	Green Fine	0–255	Fine adjustment of CH 6
8	Blue		Same as CH 8 in the mode “20ch” (p. 9)
9	Blue Fine	0–255	Fine adjustment of CH 8
10	CTO	0–255	
11	REVERSED	0–255	
12	Colors Macro	0–255	
13	Zoom	0–255	0.7–1°
14	Zoom Fine	0–255	Fine adjustment of CH 13
15	Pan	0–255	540°
16	Pan Fine	0–255	Fine adjustment of CH 15
17	Tilt	0–255	270°
18	Tilt Fine	0–255	Fine adjustment of CH 17
19	Function		Same as CH 19 in the mode “20ch” (p. 9)
20	FREQUENCY	0–255	
21	REVERSED 1	0–255	
22	EFF	0–255	
23	EFFSPEED	0–255	
24	AUXILIARY MODE	0–255	
25	AUXILIARY SPEED	0–255	
26	AUXILIARY DIRECTION	0–255	
27	AUXILIARY LIGHT STROBE	0–255	
28	AUXILIARY BACKDIM	0–255	
29	AUXILIARY BACKDIM Fine	0–255	Fine adjustment of CH 28
30	AUXILIARY R	0–255	
31	AUXILIARY G	0–255	
32	AUXILIARY B	0–255	
33	AUXILIARY CTO	0–255	
34	REVERSED 2	0–255	
35	AUXILIARY MACRO	0–255	
36	REVERSED 3	0–255	

Mode 57ch

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 2 Dimmer above 0. The GDTF file gives these values for a console's Highlight function: CH 1 Shutter 25, CH 2 Dimmer 255, CH 4 Red 1 255, CH 6 Green 1 255, CH 8 Blue 1 255, CH 37 Red 2 255, CH 38 Green 2 255, CH 39 Blue 2 255, CH 40 Red 3 255, CH 41 Green 3 255, CH 42 Blue 3 255, CH 43 Red 4 255, CH 44 Green 4 255, CH 45 Blue 4 255, CH 46 Red 5 255, CH 47 Green 5 255, CH 48 Blue 5 255, CH 49 Red 6 255, CH 50 Green 6 255, CH 51 Blue 6 255, CH 52 Red 7 255, CH 53 Green 7 255, CH 54 Blue 7 255, CH 55 Red 8 255, CH 56 Green 8 255, CH 57 Blue 8 255.

Channel functions at a glance



CH	Function	DMX	Description
1	Shutter	0–255	
2	Dimmer	0–255	
3	Dimmer Fine	0–255	Fine adjustment of CH 2
4	Red 1		Color RGB_R 1
		0–255	Color RGB_R 1

CH	Function	DMX	Description
5	Red 1 Fine	0–255	Fine adjustment of CH 4
6	Green 1		Color RGB_G 1
		0–255	Color RGB_G 1
7	Green 1 Fine	0–255	Fine adjustment of CH 6
8	Blue 1		Color RGB_B 1
		0–255	Color RGB_B 1
9	Blue 1 Fine	0–255	Fine adjustment of CH 8
10	CTO	0–255	
11	REVERSED	0–255	
12	Colors Macro	0–255	
13	Zoom	0–255	0.7–1°
14	Zoom Fine	0–255	Fine adjustment of CH 13
15	Pan	0–255	540°
16	Pan Fine	0–255	Fine adjustment of CH 15
17	Tilt	0–255	270°
18	Tilt Fine	0–255	Fine adjustment of CH 17
19	Function		Same as CH 19 in the mode “20ch” (p. 9)
20	FREQUENCY	0–255	
21	REVERSED 1	0–255	
22	EFF	0–255	
23	EFFSPEED	0–255	
24	AUXILIARY MODE	0–255	
25	AUXILIARY SPEED	0–255	
26	AUXILIARY DIRECTION	0–255	
27	AUXILIARY LIGHT STROBE	0–255	
28	AUXILIARY BACKDIM	0–255	
29	AUXILIARY BACKDIM Fine	0–255	Fine adjustment of CH 28
30	AUXILIARY R	0–255	
31	AUXILIARY G	0–255	
32	AUXILIARY B	0–255	
33	AUXILIARY CTO	0–255	
34	REVERSED 2	0–255	
35	AUXILIARY MACRO	0–255	
36	REVERSED 3	0–255	
37	Red 2		Color RGB_R 1
		0–255	Color RGB_R 1
38	Green 2		Color RGB_G 1
		0–255	Color RGB_G 1
39	Blue 2		Color RGB_B 1
		0–255	Color RGB_B 1
40	Red 3		Color RGB_R 1
		0–255	Color RGB_R 1

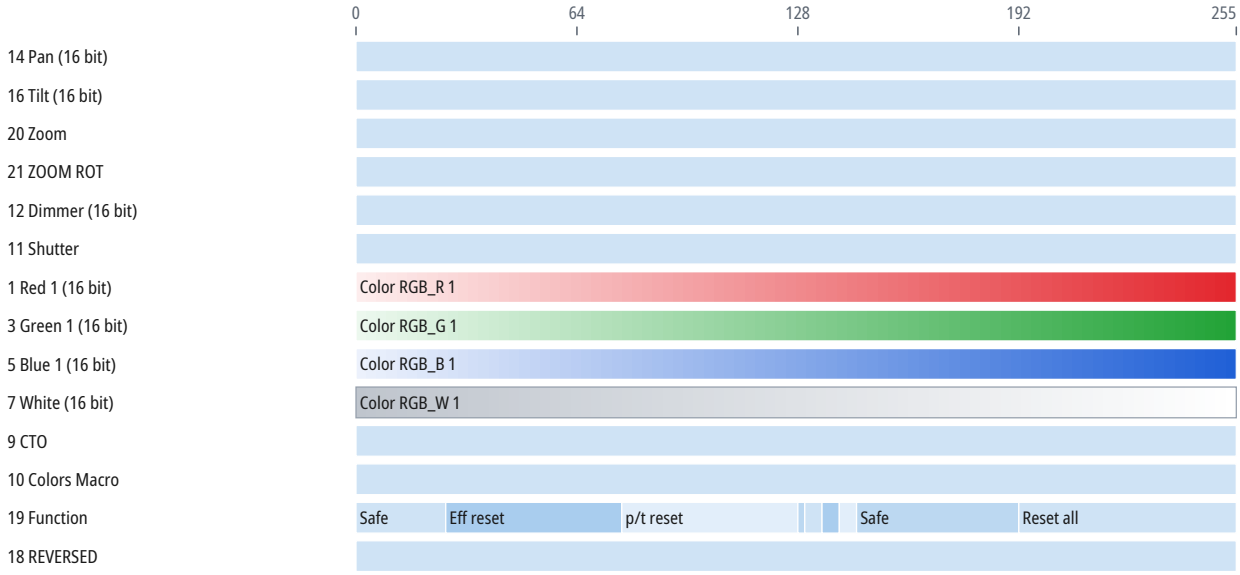
CH	Function	DMX	Description
41	Green 3		Color RGB_G 1
		0–255	Color RGB_G 1
42	Blue 3		Color RGB_B 1
		0–255	Color RGB_B 1
43	Red 4		Color RGB_R 1
		0–255	Color RGB_R 1
44	Green 4		Color RGB_G 1
		0–255	Color RGB_G 1
45	Blue 4		Color RGB_B 1
		0–255	Color RGB_B 1
46	Red 5		Color RGB_R 1
		0–255	Color RGB_R 1
47	Green 5		Color RGB_G 1
		0–255	Color RGB_G 1
48	Blue 5		Color RGB_B 1
		0–255	Color RGB_B 1
49	Red 6		Color RGB_R 1
		0–255	Color RGB_R 1
50	Green 6		Color RGB_G 1
		0–255	Color RGB_G 1
51	Blue 6		Color RGB_B 1
		0–255	Color RGB_B 1
52	Red 7		Color RGB_R 1
		0–255	Color RGB_R 1
53	Green 7		Color RGB_G 1
		0–255	Color RGB_G 1
54	Blue 7		Color RGB_B 1
		0–255	Color RGB_B 1
55	Red 8		Color RGB_R 1
		0–255	Color RGB_R 1
56	Green 8		Color RGB_G 1
		0–255	Color RGB_G 1
57	Blue 8		Color RGB_B 1
		0–255	Color RGB_B 1

Mode 78ch

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 12 Dimmer above 0. The GDTF file gives these values for a console's Highlight function: CH 1 Red 1 255, CH 3 Green 1 255, CH 5 Blue 1 255, CH 7 White 255, CH 11 Shutter 0, CH 12 Dimmer 255.

Channel functions at a glance



CH	Function	DMX	Description
1	Red 1		Same as CH 4 in the mode “57ch” (p. 20)
2	Red 1 Fine	0–255	Fine adjustment of CH 1
3	Green 1		Same as CH 6 in the mode “57ch” (p. 21)
4	Green 1 Fine	0–255	Fine adjustment of CH 3
5	Blue 1		Same as CH 8 in the mode “57ch” (p. 21)
6	Blue 1 Fine	0–255	Fine adjustment of CH 5
7	White		Same as CH 7 in the mode “21ch” (p. 10)
8	White Fine	0–255	Fine adjustment of CH 7
9	CTO	0–255	
10	Colors Macro	0–255	
11	Shutter	0–255	
12	Dimmer	0–255	
13	Dimmer Fine	0–255	Fine adjustment of CH 12
14	Pan	0–255	540°
15	Pan Fine	0–255	Fine adjustment of CH 14
16	Tilt	0–255	270°
17	Tilt Fine	0–255	Fine adjustment of CH 16
18	REVERSED	0–255	
19	Function		Same as CH 19 in the mode “20ch” (p. 9)
20	Zoom	0–255	0.7–1°
21	ZOOM ROT	0–255	

CH	Function	DMX	Description
22	Red 2		Color RGB_R 1
		0–255	Color RGB_R 1
23	Green 2		Color RGB_G 1
		0–255	Color RGB_G 1
24	Blue 2		Color RGB_B 1
		0–255	Color RGB_B 1

CH 22–78: 19 cells of 3 channels each. Every cell works as cell 1 in the table above (CH 22–24); the table below gives each cell's channel numbers.

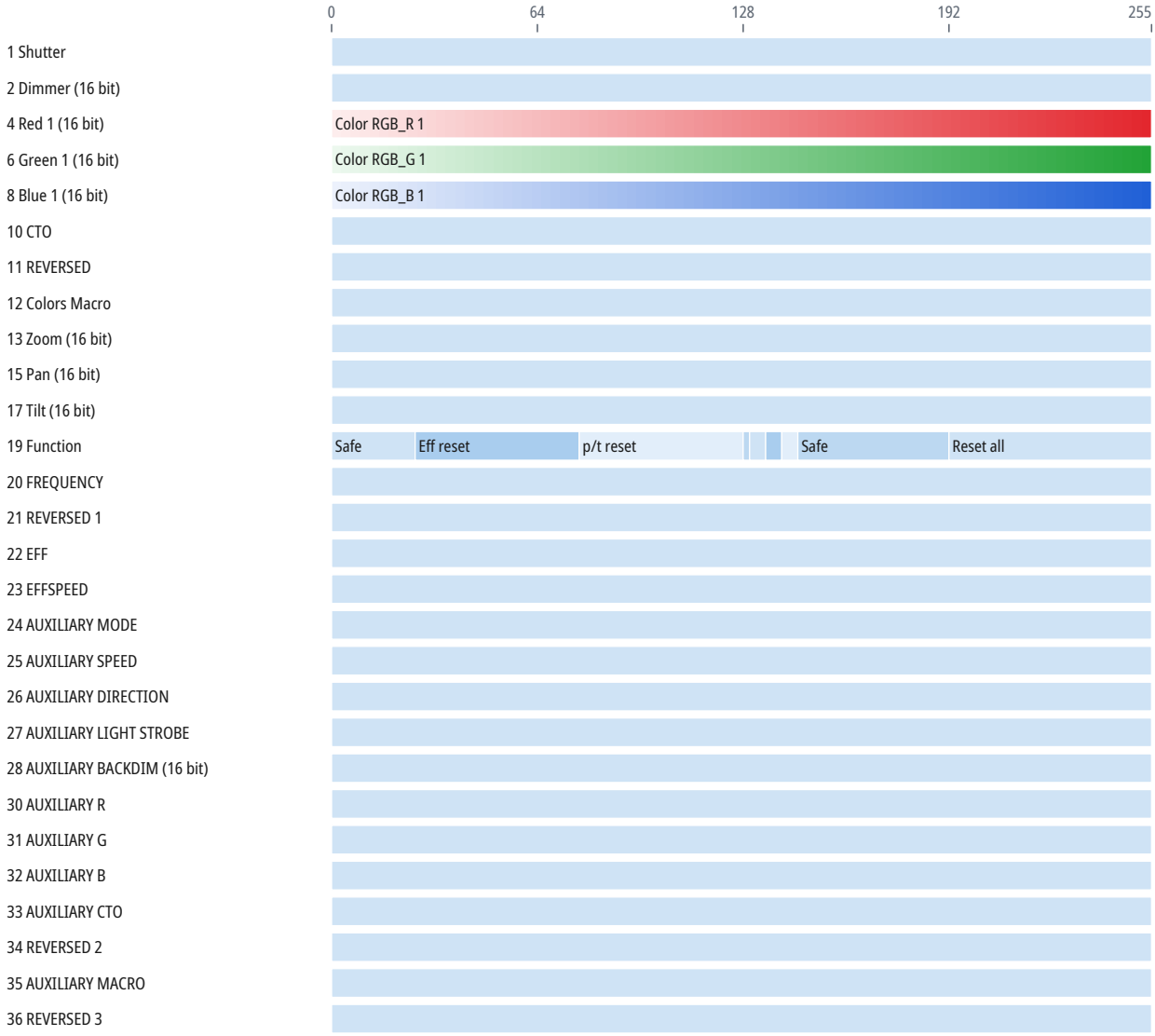
Cell	Red	Green	Blue	Cell	Red	Green	Blue	Cell	Red	Green	Blue
1	22	23	24	2	25	26	27	3	28	29	30
4	31	32	33	5	34	35	36	6	37	38	39
7	40	41	42	8	43	44	45	9	46	47	48
10	49	50	51	11	52	53	54	12	55	56	57
13	58	59	60	14	61	62	63	15	64	65	66
16	67	68	69	17	70	71	72	18	73	74	75
19	76	77	78								

Mode 93ch

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 2 Dimmer above 0. The GDTF file gives these values for a console's Highlight function: CH 1 Shutter 25, CH 2 Dimmer 255, CH 4 Red 1 255, CH 6 Green 1 255, CH 8 Blue 1 255, CH 37 Red 255 (the same in each of the 19 cells), CH 38 Green 255 (the same in each of the 19 cells), CH 39 Blue 255 (the same in each of the 19 cells).

Channel functions at a glance



CH	Function	DMX	Description
1	Shutter	0–255	
2	Dimmer	0–255	
3	Dimmer Fine	0–255	Fine adjustment of CH 2
4	Red 1		Same as CH 4 in the mode “57ch” (p. 20)
5	Red 1 Fine	0–255	Fine adjustment of CH 4
6	Green 1		Same as CH 6 in the mode “57ch” (p. 21)
7	Green 1 Fine	0–255	Fine adjustment of CH 6

CH	Function	DMX	Description
8	Blue 1		Same as CH 8 in the mode “57ch” (p. 21)
9	Blue 1 Fine	0–255	Fine adjustment of CH 8
10	CTO	0–255	
11	REVERSED	0–255	
12	Colors Macro	0–255	
13	Zoom	0–255	0.7–1°
14	Zoom Fine	0–255	Fine adjustment of CH 13
15	Pan	0–255	540°
16	Pan Fine	0–255	Fine adjustment of CH 15
17	Tilt	0–255	270°
18	Tilt Fine	0–255	Fine adjustment of CH 17
19	Function		Same as CH 19 in the mode “20ch” (p. 9)
20	FREQUENCY	0–255	
21	REVERSED 1	0–255	
22	EFF	0–255	
23	EFFSPEED	0–255	
24	AUXILIARY MODE	0–255	
25	AUXILIARY SPEED	0–255	
26	AUXILIARY DIRECTION	0–255	
27	AUXILIARY LIGHT STROBE	0–255	
28	AUXILIARY BACKDIM	0–255	
29	AUXILIARY BACKDIM Fine	0–255	Fine adjustment of CH 28
30	AUXILIARY R	0–255	
31	AUXILIARY G	0–255	
32	AUXILIARY B	0–255	
33	AUXILIARY CTO	0–255	
34	REVERSED 2	0–255	
35	AUXILIARY MACRO	0–255	
36	REVERSED 3	0–255	
37	Red 2		Color RGB_R 1
		0–255	Color RGB_R 1
38	Green 2		Color RGB_G 1
		0–255	Color RGB_G 1
39	Blue 2		Color RGB_B 1
		0–255	Color RGB_B 1

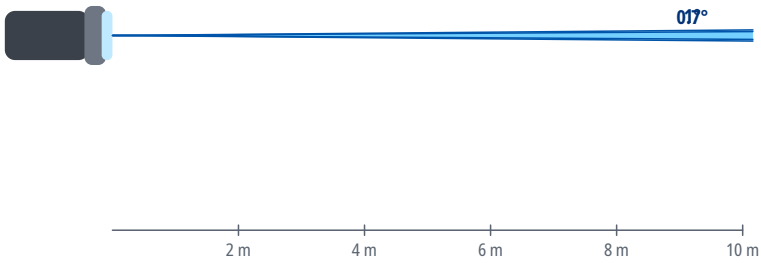
CH 37–93: 19 cells of 3 channels each. Every cell works as cell 1 in the table above (CH 37–39); the table below gives each cell's channel numbers.

Cell	Red	Green	Blue	Cell	Red	Green	Blue	Cell	Red	Green	Blue
1	37	38	39	2	40	41	42	3	43	44	45
4	46	47	48	5	49	50	51	6	52	53	54
7	55	56	57	8	58	59	60	9	61	62	63
10	64	65	66	11	67	68	69	12	70	71	72
13	73	74	75	14	76	77	78	15	79	80	81
16	82	83	84	17	85	86	87	18	88	89	90
19	91	92	93								

10 Technical specifications

Parameter	Value
Zoom	0.7–1°
Pan	540°
Tilt	270°
Operating temperature	0 to 40 °C

Spot diameter



Distance	Ø 0.7°	Ø 1°
2 m	0.02 m	0.03 m
4 m	0.05 m	0.07 m
6 m	0.07 m	0.1 m
8 m	0.1 m	0.14 m
10 m	0.12 m	0.17 m
15 m	0.18 m	0.26 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.