DMX REFERENCE

# Freya Mini IP

Pulse

| | |
|---|---|
| **Manufacturer** | Pulse |
| **GDTF file** | Pulse_Freya_Mini_IP_168704.gdtf |
| **GDTF revision** | 1strev · 2026-11-10 |
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# 1 About this manual

This document describes the Freya Mini IP by Pulse. It was compiled from the GDTF file Pulse_Freya_Mini_IP_168704.gdtf from the GDTF-Share library.

File revision: “1strev”.

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 Pulse; 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 | 14.5 kg |
| Ingress protection | IP65 |

### DMX modes

| Mode | Channels | Units in one universe | First start addresses |
|---|---|---|---|
| Mode 1 - 21ch | 21 | 24 | 1, 22, 43, 64, ... |
| Mode 2 - 23ch | 23 | 22 | 1, 24, 47, 70, ... |
| Mode 3 - 35ch | 35 | 14 | 1, 36, 71, 106, ... |
| Mode 4 - 42ch | 42 | 12 | 1, 43, 85, 127, ... |
| Mode 5 - 49ch | 49 | 10 | 1, 50, 99, 148, ... |
| Mode 6 - 51ch | 51 | 10 | 1, 52, 103, 154, ... |
| Mode 7 - 56ch | 56 | 9 | 1, 57, 113, 169, ... |

### No light? Check these channels

- Mode 1 - 21ch: CH 11 Shutter at 0–3 “Open”; CH 12 Dimmer above 0
- Mode 2 - 23ch: CH 8 Dimmer above 0; CH 9 Shutter at 0–3 “Open”
- Mode 3 - 35ch: CH 11 Shutter at 0–3 “Open”; CH 12 Dimmer above 0
- Mode 4 - 42ch: CH 11 Shutter at 0–3 “Open”; CH 12 Dimmer above 0
- Mode 5 - 49ch: CH 11 Shutter at 0–3 “Open”; CH 12 Dimmer above 0
- Mode 6 - 51ch: CH 8 Dimmer above 0; CH 9 Shutter at 0–3 “Open”
- Mode 7 - 56ch: CH 11 Shutter at 0–3 “Open”; CH 12 Dimmer 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

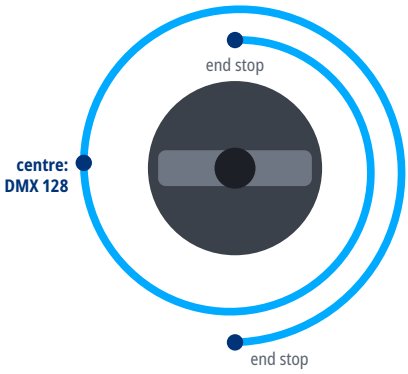
**Description in the GDTF file**

“7x60W RGBW LED wash moving head with zoom and lens rotation, IP65. Built from the Pulse user manual (7 DMX modes).”

**Range of movement**

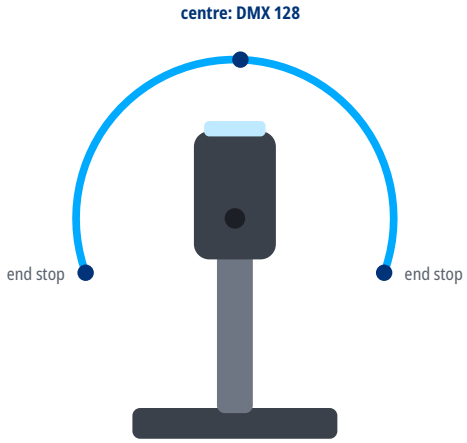
**Pan 540°**

top view




**Tilt 220°**

side view



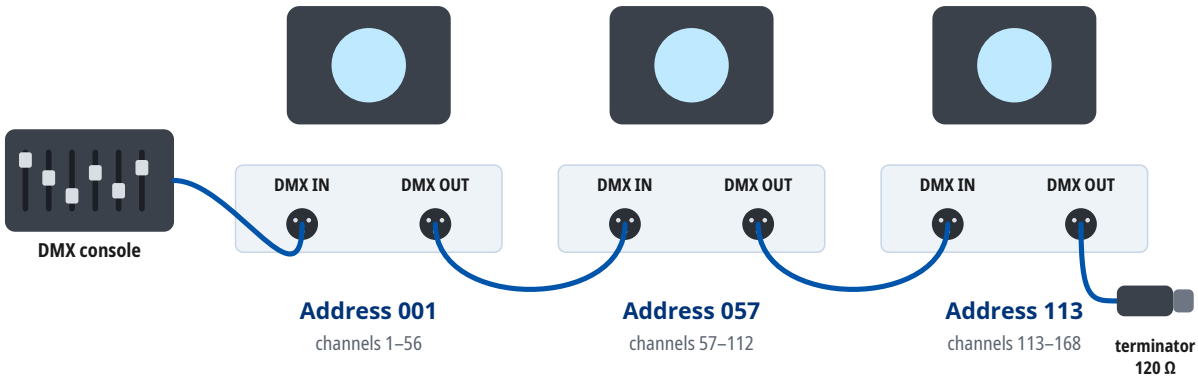

# 5 Installation

> ⚠ **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: 14.5 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 7 - 56ch: every unit occupies 56 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**

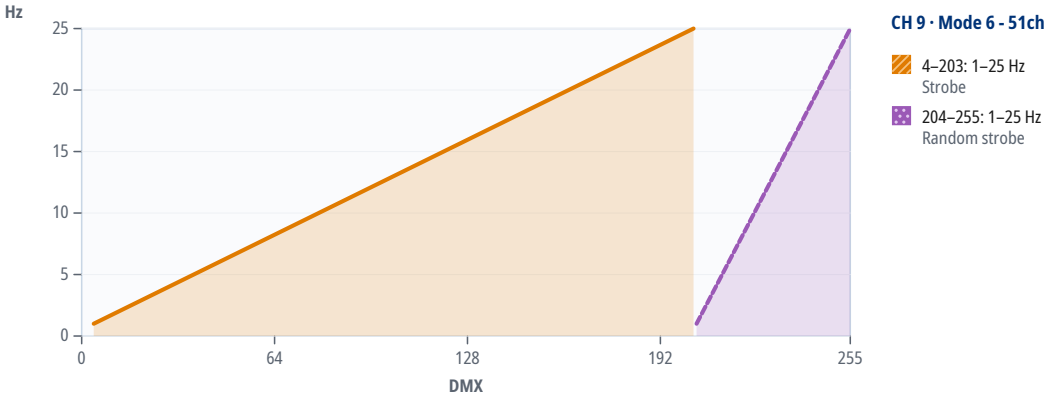
- The device occupies as many consecutive channels in the DMX universe as the selected DMX mode uses, starting at the set start address.
- Number of channels occupied in the DMX mode “Mode 7 - 56ch”: 56.
- Choose start addresses so that the channels of individual devices do not overlap and the last occupied 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 “Mode 7 - 56ch”, you can use, for example, the start addresses 1, 57, 113, 169.
- 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

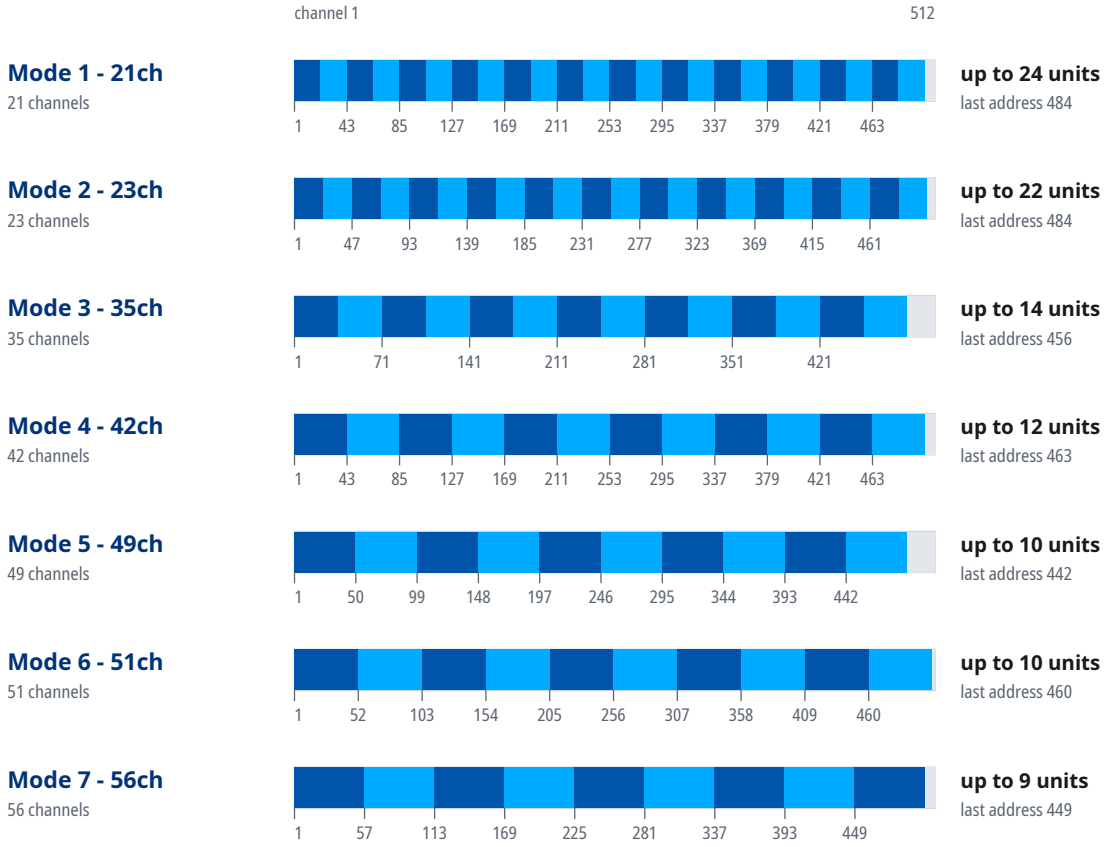
| | Mode 1 - 21ch<br>21 channels | Mode 2 - 23ch<br>23 channels | Mode 3 - 35ch<br>35 channels | Mode 4 - 42ch<br>42 channels | Mode 5 - 49ch<br>49 channels | Mode 6 - 51ch<br>51 channels | Mode 7 - 56ch<br>56 channels |
|---|---|---|---|---|---|---|---|
| Pan / Tilt | **14, 16** | **1, 3** | **14, 16** | **14, 16** | **14, 16** | **1, 3** | **14, 16** |
| Dimmer | **12** | **8** | **12** | **12** | **12** | **8** | **12** |
| Dimmer resolution | 16 bit | 8 bit | 16 bit | 16 bit | 16 bit | 8 bit | 16 bit |
| Shutter / strobe | **11** | **9** | **11** | **11** | **11** | **9** | **11** |
| Color mixing | **4× (1–7)** | **10–13** | **4× (1–7)** | 25 channels (1–42) | 32 channels (1–49) | **10–13, 24–51** | 25 channels (1–56) |
| Zoom | **20** | **6** | **20** | **20** | **20** | **6** | **20** |
| Effects / macros | **9, 10, 21** | **7, 14–22** | **9, 10, 21–35** | **9, 10, 21** | **9, 10, 21** | **7, 14–22** | **9, 10, 21–35** |
| Pixel control | | | | ✓ | ✓ | ✓ | **10 cells** |

## Strobe rate



# 9 DMX channels

### Units in one DMX universe




### Start addresses of 20 units in the mode “Mode 7 - 56ch”

| Unit | Start address | Unit | Start address | Unit | Start address | Unit | Start address |
|---|---|---|---|---|---|---|---|
| 1 | 1 | 6 | 281 | 11 | U2 · 57 | 16 | U2 · 337 |
| 2 | 57 | 7 | 337 | 12 | U2 · 113 | 17 | U2 · 393 |
| 3 | 113 | 8 | 393 | 13 | U2 · 169 | 18 | U2 · 449 |
| 4 | 169 | 9 | 449 | 14 | U2 · 225 | 19 | U3 · 1 |
| 5 | 225 | 10 | U2 · 1 | 15 | U2 · 281 | 20 | U3 · 57 |

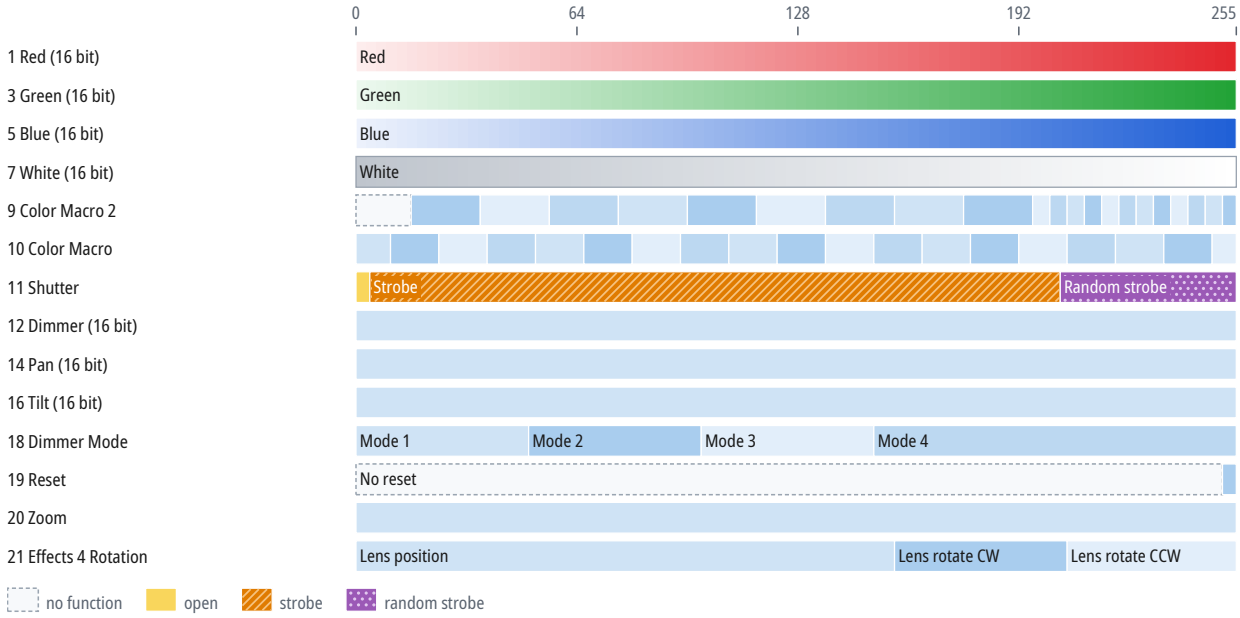
Where a DMX universe is full, the next units continue in the next universe: “U2 · 1” is address 1 in the second universe, counted from the universe of the first unit.

## Mode 1 - 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 11 Shutter at 0–3 “Open”; CH 12 Dimmer above 0. The GDTF file gives these values for a console's Highlight function: CH 12 Dimmer 255.

### Channel functions at a glance




| CH | Function | DMX | Description |
|---|---|---|---|
| **1** | Red | 0–255 | Red |
| **2** | Red Fine | 0–255 | Fine adjustment of CH 1 |
| **3** | Green | 0–255 | Green |
| **4** | Green Fine | 0–255 | Fine adjustment of CH 3 |
| **5** | Blue | 0–255 | Blue |
| **6** | Blue Fine | 0–255 | Fine adjustment of CH 5 |
| **7** | White | 0–255 | White |
| **8** | White Fine | 0–255 | Fine adjustment of CH 7 |
| **9** | Color Macro 2 | | Color temperature |
| | | 0–15 | No function |
| | | 16–35 | R100% G up B0% |
| | | 36–55 | R down G100% B0% |
| | | 56–75 | R0% G100% B up |
| | | 76–95 | R0% G down B100% |
| | | 96–115 | R up G0% B100% |
| | | 116–135 | R100% G0% B down |
| | | 136–155 | R100% G up B up |
| | | 156–175 | R down G down B100% |
| | | 176–195 | R100% G100% B100% W100% |
| | | 196–200 | 2800K |

| CH | Function | DMX | Description |
|---|---|---|---|
| **9** | Color Macro 2 (continued) | 201–205 | 3200K |
| | | 206–210 | 3500K |
| | | 211–215 | 4000K |
| | | 216–220 | 4500K |
| | | 221–225 | 5000K |
| | | 226–230 | 5500K |
| | | 231–235 | 6000K |
| | | 236–240 | 6500K |
| | | 241–245 | 7000K |
| | | 246–250 | 7500K |
| | | 251–255 | 8000K |
| **10** | Color Macro | | Macro color |
| | | 0–9 | No macro |
| | | 10–23 | Macro color 1 |
| | | 24–37 | Macro color 2 |
| | | 38–51 | Macro color 3 |
| | | 52–65 | Macro color 4 |
| | | 66–79 | Macro color 5 |
| | | 80–93 | Macro color 6 |
| | | 94–107 | Macro color 7 |
| | | 108–121 | Macro color 8 |
| | | 122–135 | Macro color 9 |
| | | 136–149 | Macro color 10 |
| | | 150–163 | Macro color 11 |
| | | 164–177 | Macro color 12 |
| | | 178–191 | Macro color 13 |
| | | 192–205 | Macro color 14 |
| | | 206–219 | Macro color 15 |
| | | 220–233 | Macro color 16 |
| | | 234–247 | Macro color 17 |
| | | 248–255 | Macro color 18 |
| **11** | Shutter | 0–3 | Open |
| | | 4–203 | Strobe (1–25 Hz) |
| | | 204–255 | Random strobe (1–25 Hz) |
| **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 | 220° |
| **17** | Tilt Fine | 0–255 | Fine adjustment of CH 16 |
| **18** | Dimmer Mode | | Dimming mode |
| | | 0–49 | Mode 1 |

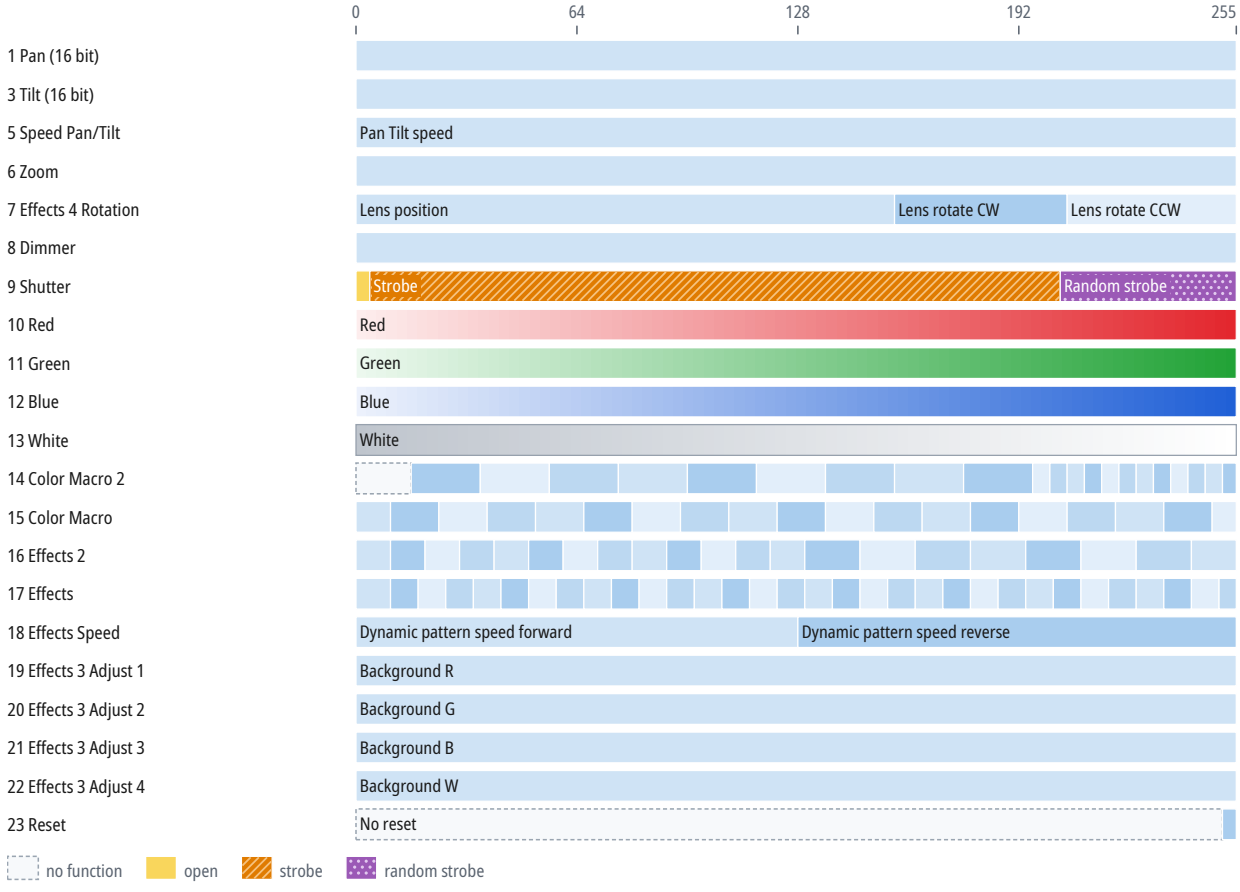
| CH | Function | DMX | Description |
|---|---|---|---|
| **18** | Dimmer Mode (continued) | 50–99 | Mode 2 |
| | | 100–149 | Mode 3 |
| | | 150–255 | Mode 4 |
| **19** | Reset | 0–250 | No reset |
| | | 251–255 | Reset |
| **20** | Zoom | 0–255 | 3.5–45° |
| **21** | Effects 4 Rotation | 0–155 | Lens position (60°) |
| | | 156–205 | Lens rotate CW (100–1 °/s) |
| | | 206–255 | Lens rotate CCW (1–100 °/s) |

## Mode 2 - 23ch

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; CH 9 Shutter at 0–3 “Open”. The GDTF file gives these values for a console's Highlight function: CH 8 Dimmer 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 | 220° |

| CH | Function | DMX | Description |
|---|---|---|---|
| **4** | Tilt Fine | 0–255 | Fine adjustment of CH 3 |
| **5** | Speed Pan/Tilt | | Pan Tilt speed |
| | | 0–255 | Pan Tilt speed |
| **6** | Zoom | 0–255 | 3.5–45° |
| **7** | Effects 4 Rotation | | Same as CH 21 in the mode “Mode 1 - 21ch” (p. 11) |
| **8** | Dimmer | 0–255 | |
| **9** | Shutter | | Same as CH 11 in the mode “Mode 1 - 21ch” (p. 10) |
| **10** | Red | 0–255 | Red |
| **11** | Green | 0–255 | Green |
| **12** | Blue | 0–255 | Blue |
| **13** | White | 0–255 | White |
| **14** | Color Macro 2 | | Same as CH 9 in the mode “Mode 1 - 21ch” (p. 9) |
| **15** | Color Macro | | Same as CH 10 in the mode “Mode 1 - 21ch” (p. 10) |
| **16** | Effects 2 | | Static pattern |
| | | 0–9 | No pattern |
| | | 10–19 | Monochrome pattern 1 |
| | | 20–29 | Monochrome pattern 2 |
| | | 30–39 | Monochrome pattern 3 |
| | | 40–49 | Monochrome pattern 4 |
| | | 50–59 | Monochrome pattern 5 |
| | | 60–69 | Monochrome pattern 6 |
| | | 70–79 | Monochrome pattern 7 |
| | | 80–89 | Monochrome pattern 8 |
| | | 90–99 | Monochrome pattern 9 |
| | | 100–109 | Monochrome pattern 10 |
| | | 110–119 | Monochrome pattern 11 |
| | | 120–129 | Monochrome pattern 12 |
| | | 130–145 | Mixed color pattern 1 |
| | | 146–161 | Mixed color pattern 2 |
| | | 162–177 | Mixed color pattern 3 |
| | | 178–193 | Mixed color pattern 4 |
| | | 194–209 | Mixed color pattern 5 |
| | | 210–225 | Mixed color pattern 6 |
| | | 226–241 | Mixed color pattern 7 |
| | | 242–255 | Mixed color pattern 8 |
| **17** | Effects | | Dynamic pattern |
| | | 0–9 | No pattern |
| | | 10–17 | Monochrome dynamic pattern 1 |
| | | 18–25 | Monochrome dynamic pattern 2 |
| | | 26–33 | Monochrome dynamic pattern 3 |
| | | 34–41 | Monochrome dynamic pattern 4 |
| | | 42–49 | Monochrome dynamic pattern 5 |

| CH | Function | DMX | Description |
|---|---|---|---|
| **17** | Effects (continued) | 50–57 | Monochrome dynamic pattern 6 |
| | | 58–65 | Monochrome dynamic pattern 7 |
| | | 66–73 | Monochrome dynamic pattern 8 |
| | | 74–81 | Monochrome dynamic pattern 9 |
| | | 82–89 | Monochrome dynamic pattern 10 |
| | | 90–97 | Monochrome dynamic pattern 11 |
| | | 98–105 | Monochrome dynamic pattern 12 |
| | | 106–113 | Monochrome dynamic pattern 13 |
| | | 114–121 | Monochrome dynamic pattern 14 |
| | | 122–129 | Monochrome dynamic pattern 15 |
| | | 130–137 | Monochrome dynamic pattern 16 |
| | | 138–145 | Monochrome dynamic pattern 17 |
| | | 146–153 | Monochrome dynamic pattern 18 |
| | | 154–161 | Monochrome dynamic pattern 19 |
| | | 162–169 | Monochrome dynamic pattern 20 |
| | | 170–177 | Monochrome dynamic pattern 21 |
| | | 178–185 | Mixed color dynamic pattern 1 |
| | | 186–193 | Mixed color dynamic pattern 2 |
| | | 194–201 | Mixed color dynamic pattern 3 |
| | | 202–209 | Mixed color dynamic pattern 4 |
| | | 210–217 | Mixed color dynamic pattern 5 |
| | | 218–225 | Mixed color dynamic pattern 6 |
| | | 226–233 | Mixed color dynamic pattern 7 |
| | | 234–241 | Mixed color dynamic pattern 8 |
| | | 242–249 | Mixed color dynamic pattern 9 |
| | | 250–255 | Mixed color dynamic pattern 10 |
| **18** | Effects Speed | 0–127 | Dynamic pattern speed forward (1–0.01 Hz) |
| | | 128–255 | Dynamic pattern speed reverse |
| **19** | Effects 3 Adjust 1 | | Background R |
| | | 0–255 | Background R |
| **20** | Effects 3 Adjust 2 | | Background G |
| | | 0–255 | Background G |
| **21** | Effects 3 Adjust 3 | | Background B |
| | | 0–255 | Background B |
| **22** | Effects 3 Adjust 4 | | Background W |
| | | 0–255 | Background W |
| **23** | Reset | | Same as CH 19 in the mode “Mode 1 - 21ch” (p. 11) |

## Mode 3 - 35ch

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 11 Shutter at 0–3 “Open”; CH 12 Dimmer above 0. The GDTF file gives these values for a console's Highlight function: CH 12 Dimmer 255.

### Channel functions at a glance




| CH | Function | DMX | Description |
|---|---|---|---|
| **1** | Red | 0–255 | Red |
| **2** | Red Fine | 0–255 | Fine adjustment of CH 1 |
| **3** | Green | 0–255 | Green |
| **4** | Green Fine | 0–255 | Fine adjustment of CH 3 |
| **5** | Blue | 0–255 | Blue |
| **6** | Blue Fine | 0–255 | Fine adjustment of CH 5 |
| **7** | White | 0–255 | White |
| **8** | White Fine | 0–255 | Fine adjustment of CH 7 |
| **9** | Color Macro 2 | | Same as CH 9 in the mode “Mode 1 - 21ch” (p. 9) |
| **10** | Color Macro | | Same as CH 10 in the mode “Mode 1 - 21ch” (p. 10) |
| **11** | Shutter | | Same as CH 11 in the mode “Mode 1 - 21ch” (p. 10) |
| **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 |

| CH | Function | DMX | Description |
|---|---|---|---|
| **16** | Tilt | 0–255 | 220° |
| **17** | Tilt Fine | 0–255 | Fine adjustment of CH 16 |
| **18** | Dimmer Mode | | Same as CH 18 in the mode “Mode 1 - 21ch” (p. 10) |
| **19** | Reset | | Same as CH 19 in the mode “Mode 1 - 21ch” (p. 11) |
| **20** | Zoom | 0–255 | 3.5–45° |
| **21** | Effects 4 Rotation | | Same as CH 21 in the mode “Mode 1 - 21ch” (p. 11) |
| **22** | Effects | | Pattern select |
| | | 0–9 | No pattern |
| | | 10–17 | Monochrome dynamic pattern 1 |
| | | 18–25 | Monochrome dynamic pattern 2 |
| | | 26–33 | Monochrome dynamic pattern 3 |
| | | 34–41 | Monochrome dynamic pattern 4 |
| | | 42–49 | Monochrome dynamic pattern 5 |
| | | 50–57 | Monochrome dynamic pattern 6 |
| | | 58–65 | Monochrome dynamic pattern 7 |
| | | 66–73 | Monochrome dynamic pattern 8 |
| | | 74–81 | Monochrome dynamic pattern 9 |
| | | 82–89 | Monochrome dynamic pattern 10 |
| | | 90–97 | Monochrome dynamic pattern 11 |
| | | 98–105 | Monochrome dynamic pattern 12 |
| | | 106–113 | Monochrome dynamic pattern 13 |
| | | 114–121 | Monochrome dynamic pattern 14 |
| | | 122–129 | Monochrome dynamic pattern 15 |
| | | 130–137 | Monochrome dynamic pattern 16 |
| | | 138–145 | Monochrome dynamic pattern 17 |
| | | 146–153 | Monochrome dynamic pattern 18 |
| | | 154–161 | Monochrome dynamic pattern 19 |
| | | 162–169 | Monochrome dynamic pattern 20 |
| | | 170–177 | Monochrome dynamic pattern 21 |
| | | 178–185 | Mixed color dynamic pattern 1 |
| | | 186–193 | Mixed color dynamic pattern 2 |
| | | 194–201 | Mixed color dynamic pattern 3 |
| | | 202–209 | Mixed color dynamic pattern 4 |
| | | 210–217 | Mixed color dynamic pattern 5 |
| | | 218–225 | Mixed color dynamic pattern 6 |
| | | 226–233 | Mixed color dynamic pattern 7 |
| | | 234–241 | Mixed color dynamic pattern 8 |
| | | 242–249 | Mixed color dynamic pattern 9 |
| | | 250–255 | Mixed color dynamic pattern 10 |
| **23** | Effects Speed | 0–9 | Pattern speed none |
| | | 10–132 | Pattern speed forward (1–0.01 Hz) |
| | | 133–255 | Pattern speed reverse |

| CH | Function | DMX | Description |
|---|---|---|---|
| **24** | Effects Fade | | Pattern fade |
| | | 0–255 | Pattern fade |
| **25** | Effects 3 Adjust 1 | | Background R |
| | | 0–255 | Background R |
| **35** | Effects 3 | | Background pattern select |
| | | 0–255 | Background pattern select |

CH 25–34: 10 cells of 1 channel each. Every cell works as cell 1 in the table above (CH 25); the table below gives each cell's channel numbers.

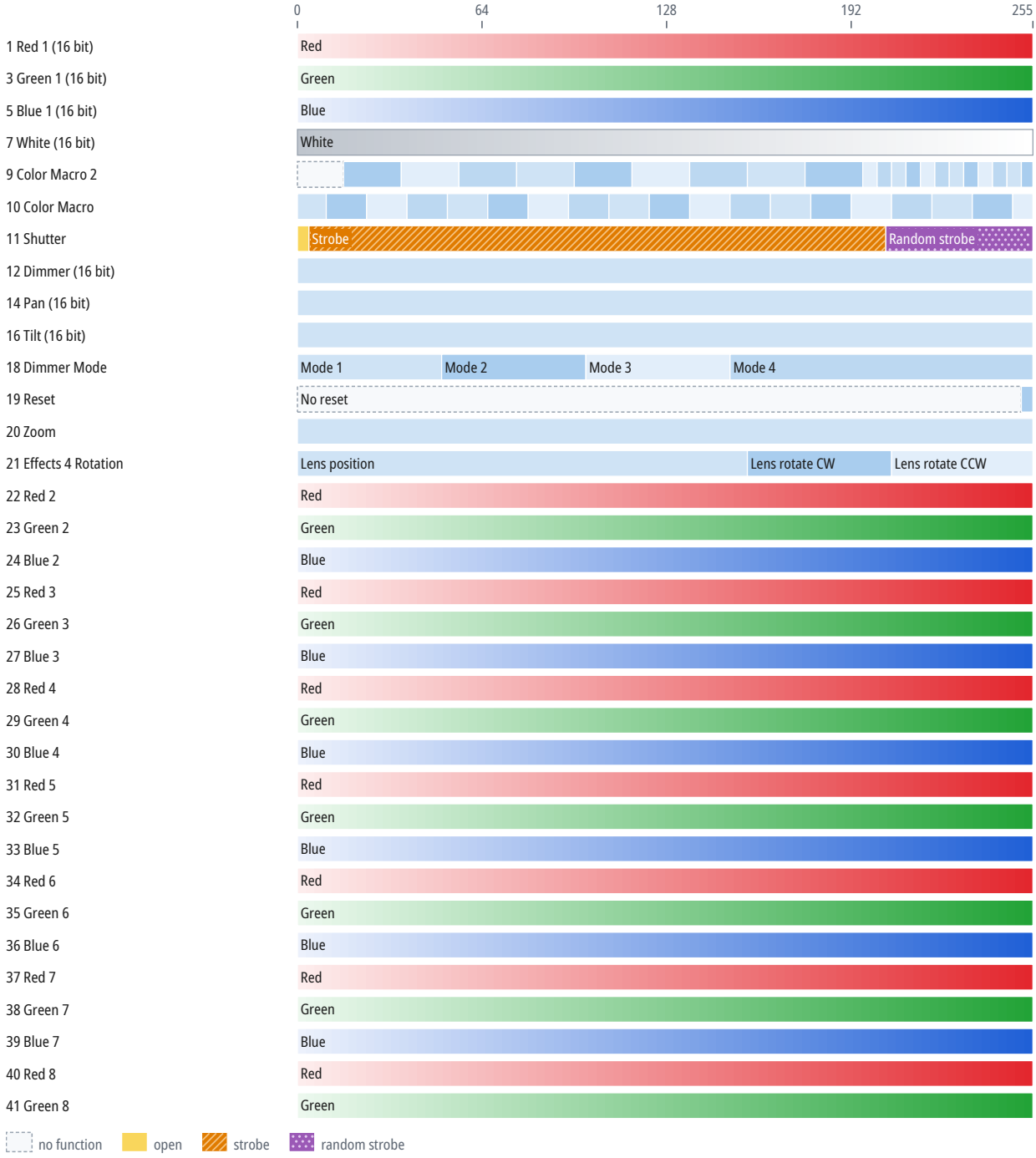
| Cell | Effects Adjust | Cell | Effects Adjust | Cell | Effects Adjust | Cell | Effects Adjust | Cell | Effects Adjust | Cell | Effects Adjust |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1 | 25 | 2 | 26 | 3 | 27 | 4 | 28 | 5 | 29 | 6 | 30 |
| 7 | 31 | 8 | 32 | 9 | 33 | 10 | 34 | | | | |

## Mode 4 - 42ch

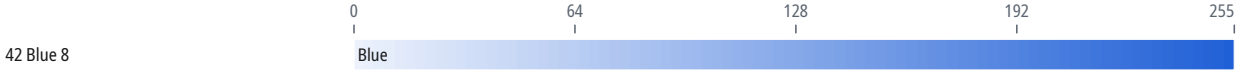
16-bit parameters use two channels, coarse and fine: value = 256 × coarse value + fine value.

If the device receives DMX in this mode but gives no light, check these channels: CH 11 Shutter at 0–3 “Open”; CH 12 Dimmer above 0. The GDTF file gives these values for a console's Highlight function: CH 12 Dimmer 255.

### Channel functions at a glance



## Channel functions at a glance




| CH | Function | DMX | Description |
|---|---|---|---|
| **1** | Red 1 | 0–255 | Red |
| **2** | Red 1 Fine | 0–255 | Fine adjustment of CH 1 |
| **3** | Green 1 | 0–255 | Green |
| **4** | Green 1 Fine | 0–255 | Fine adjustment of CH 3 |
| **5** | Blue 1 | 0–255 | Blue |
| **6** | Blue 1 Fine | 0–255 | Fine adjustment of CH 5 |
| **7** | White | 0–255 | White |
| **8** | White Fine | 0–255 | Fine adjustment of CH 7 |
| **9** | Color Macro 2 | | Same as CH 9 in the mode “Mode 1 - 21ch” (p. 9) |
| **10** | Color Macro | | Same as CH 10 in the mode “Mode 1 - 21ch” (p. 10) |
| **11** | Shutter | | Same as CH 11 in the mode “Mode 1 - 21ch” (p. 10) |
| **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 | 220° |
| **17** | Tilt Fine | 0–255 | Fine adjustment of CH 16 |
| **18** | Dimmer Mode | | Same as CH 18 in the mode “Mode 1 - 21ch” (p. 10) |
| **19** | Reset | | Same as CH 19 in the mode “Mode 1 - 21ch” (p. 11) |
| **20** | Zoom | 0–255 | 3.5–45° |
| **21** | Effects 4 Rotation | | Same as CH 21 in the mode “Mode 1 - 21ch” (p. 11) |
| **22** | Red 2 | 0–255 | Red |
| **23** | Green 2 | 0–255 | Green |
| **24** | Blue 2 | 0–255 | Blue |
| **25** | Red 3 | 0–255 | Red |
| **26** | Green 3 | 0–255 | Green |
| **27** | Blue 3 | 0–255 | Blue |
| **28** | Red 4 | 0–255 | Red |
| **29** | Green 4 | 0–255 | Green |
| **30** | Blue 4 | 0–255 | Blue |
| **31** | Red 5 | 0–255 | Red |
| **32** | Green 5 | 0–255 | Green |
| **33** | Blue 5 | 0–255 | Blue |
| **34** | Red 6 | 0–255 | Red |
| **35** | Green 6 | 0–255 | Green |
| **36** | Blue 6 | 0–255 | Blue |
| **37** | Red 7 | 0–255 | Red |

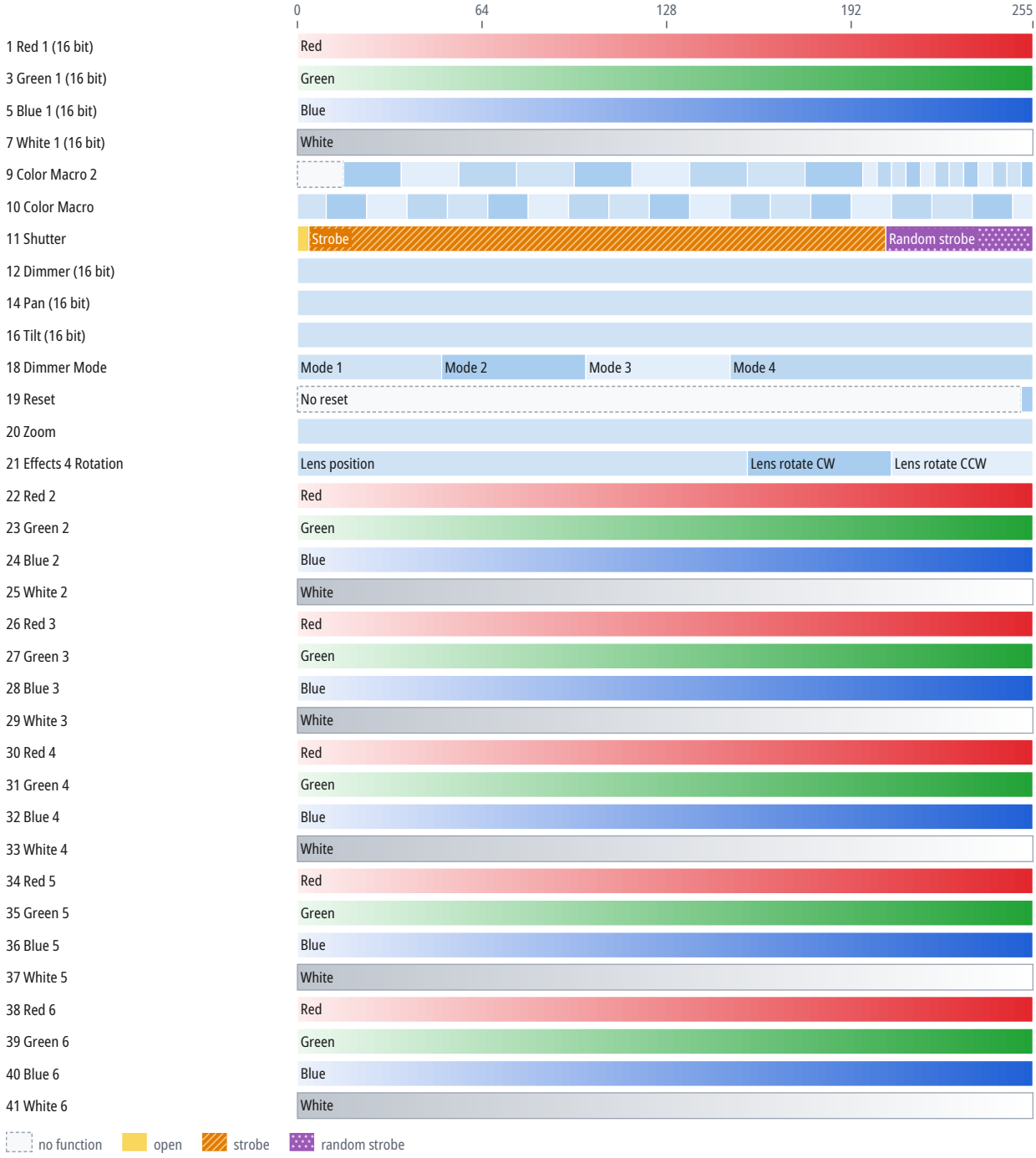
| CH | Function | DMX | Description |
|---|---|---|---|
| **38** | Green 7 | 0–255 | Green |
| **39** | Blue 7 | 0–255 | Blue |
| **40** | Red 8 | 0–255 | Red |
| **41** | Green 8 | 0–255 | Green |
| **42** | Blue 8 | 0–255 | Blue |

## Mode 5 - 49ch

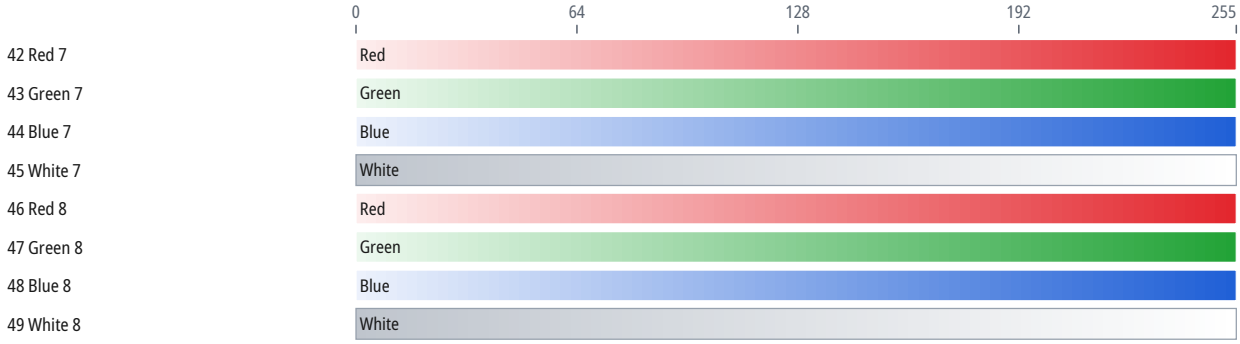
16-bit parameters use two channels, coarse and fine: value = 256 × coarse value + fine value.

If the device receives DMX in this mode but gives no light, check these channels: CH 11 Shutter at 0–3 “Open”; CH 12 Dimmer above 0. The GDTF file gives these values for a console's Highlight function: CH 12 Dimmer 255.

### Channel functions at a glance



## Channel functions at a glance




| CH | Function | DMX | Description |
|---|---|---|---|
| **1** | Red 1 | 0–255 | Red |
| **2** | Red 1 Fine | 0–255 | Fine adjustment of CH 1 |
| **3** | Green 1 | 0–255 | Green |
| **4** | Green 1 Fine | 0–255 | Fine adjustment of CH 3 |
| **5** | Blue 1 | 0–255 | Blue |
| **6** | Blue 1 Fine | 0–255 | Fine adjustment of CH 5 |
| **7** | White 1 | 0–255 | White |
| **8** | White 1 Fine | 0–255 | Fine adjustment of CH 7 |
| **9** | Color Macro 2 | | Same as CH 9 in the mode “Mode 1 - 21ch” (p. 9) |
| **10** | Color Macro | | Same as CH 10 in the mode “Mode 1 - 21ch” (p. 10) |
| **11** | Shutter | | Same as CH 11 in the mode “Mode 1 - 21ch” (p. 10) |
| **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 | 220° |
| **17** | Tilt Fine | 0–255 | Fine adjustment of CH 16 |
| **18** | Dimmer Mode | | Same as CH 18 in the mode “Mode 1 - 21ch” (p. 10) |
| **19** | Reset | | Same as CH 19 in the mode “Mode 1 - 21ch” (p. 11) |
| **20** | Zoom | 0–255 | 3.5–45° |
| **21** | Effects 4 Rotation | | Same as CH 21 in the mode “Mode 1 - 21ch” (p. 11) |
| **22** | Red 2 | 0–255 | Red |
| **23** | Green 2 | 0–255 | Green |
| **24** | Blue 2 | 0–255 | Blue |
| **25** | White 2 | 0–255 | White |
| **26** | Red 3 | 0–255 | Red |
| **27** | Green 3 | 0–255 | Green |
| **28** | Blue 3 | 0–255 | Blue |
| **29** | White 3 | 0–255 | White |
| **30** | Red 4 | 0–255 | Red |
| **31** | Green 4 | 0–255 | Green |

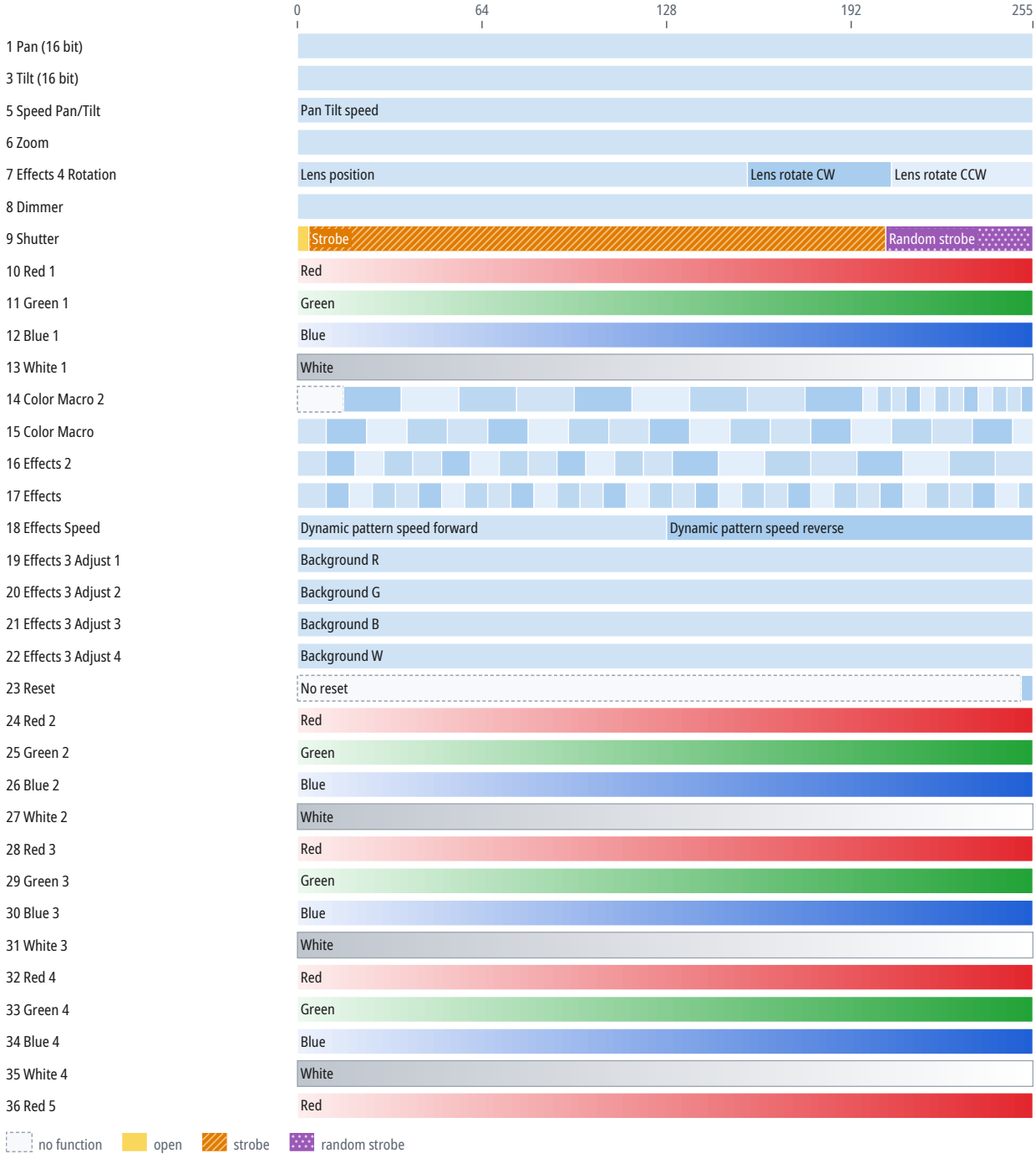
| CH | Function | DMX | Description |
|---|---|---|---|
| **32** | Blue 4 | 0–255 | Blue |
| **33** | White 4 | 0–255 | White |
| **34** | Red 5 | 0–255 | Red |
| **35** | Green 5 | 0–255 | Green |
| **36** | Blue 5 | 0–255 | Blue |
| **37** | White 5 | 0–255 | White |
| **38** | Red 6 | 0–255 | Red |
| **39** | Green 6 | 0–255 | Green |
| **40** | Blue 6 | 0–255 | Blue |
| **41** | White 6 | 0–255 | White |
| **42** | Red 7 | 0–255 | Red |
| **43** | Green 7 | 0–255 | Green |
| **44** | Blue 7 | 0–255 | Blue |
| **45** | White 7 | 0–255 | White |
| **46** | Red 8 | 0–255 | Red |
| **47** | Green 8 | 0–255 | Green |
| **48** | Blue 8 | 0–255 | Blue |
| **49** | White 8 | 0–255 | White |

## Mode 6 - 51ch

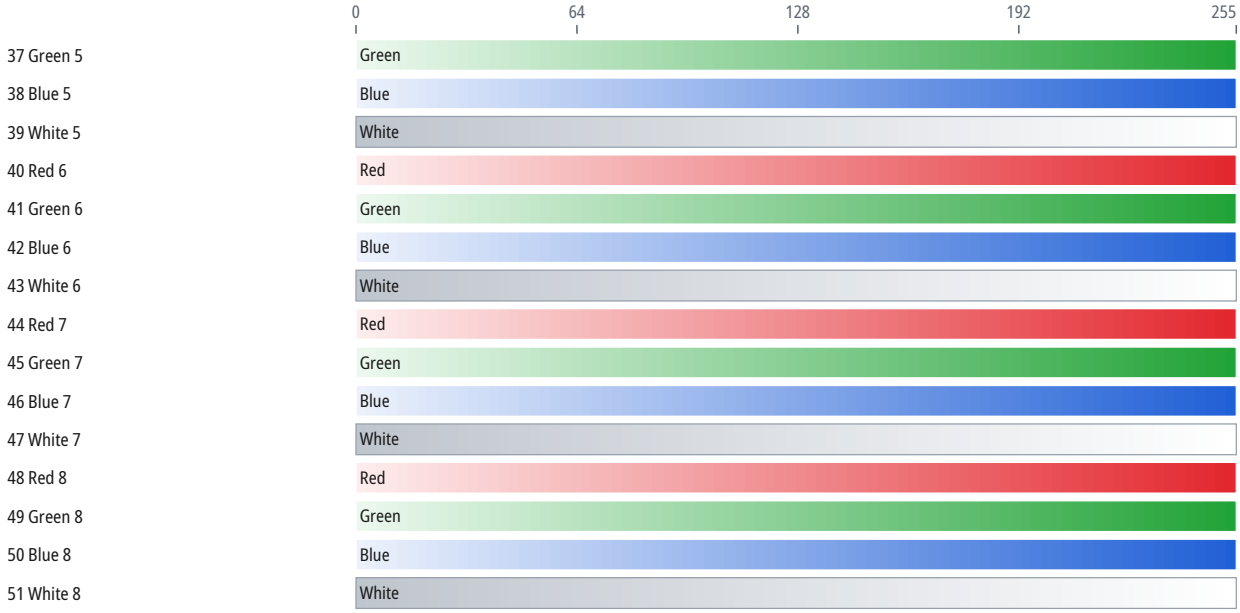
16-bit parameters use two channels, coarse and fine: value = 256 × coarse value + fine value.

If the device receives DMX in this mode but gives no light, check these channels: CH 8 Dimmer above 0; CH 9 Shutter at 0–3 “Open”. The GDTF file gives these values for a console's Highlight function: CH 8 Dimmer 255.

### Channel functions at a glance



## 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 | 220° |
| **4** | Tilt Fine | 0–255 | Fine adjustment of CH 3 |
| **5** | Speed Pan/Tilt | | Same as CH 5 in the mode “Mode 2 - 23ch” (p. 12) |
| **6** | Zoom | 0–255 | 3.5–45° |
| **7** | Effects 4 Rotation | | Same as CH 21 in the mode “Mode 1 - 21ch” (p. 11) |
| **8** | Dimmer | 0–255 | |
| **9** | Shutter | | Same as CH 11 in the mode “Mode 1 - 21ch” (p. 10) |
| **10** | Red 1 | 0–255 | Red |
| **11** | Green 1 | 0–255 | Green |
| **12** | Blue 1 | 0–255 | Blue |
| **13** | White 1 | 0–255 | White |
| **14** | Color Macro 2 | | Same as CH 9 in the mode “Mode 1 - 21ch” (p. 9) |
| **15** | Color Macro | | Same as CH 10 in the mode “Mode 1 - 21ch” (p. 10) |
| **16** | Effects 2 | | Same as CH 16 in the mode “Mode 2 - 23ch” (p. 12) |
| **17** | Effects | | Same as CH 17 in the mode “Mode 2 - 23ch” (p. 12) |
| **18** | Effects Speed | | Same as CH 18 in the mode “Mode 2 - 23ch” (p. 13) |
| **19** | Effects 3 Adjust 1 | | Same as CH 19 in the mode “Mode 2 - 23ch” (p. 13) |
| **20** | Effects 3 Adjust 2 | | Same as CH 20 in the mode “Mode 2 - 23ch” (p. 13) |
| **21** | Effects 3 Adjust 3 | | Same as CH 21 in the mode “Mode 2 - 23ch” (p. 13) |
| **22** | Effects 3 Adjust 4 | | Same as CH 22 in the mode “Mode 2 - 23ch” (p. 13) |
| **23** | Reset | | Same as CH 19 in the mode “Mode 1 - 21ch” (p. 11) |
| **24** | Red 2 | 0–255 | Red |
| **25** | Green 2 | 0–255 | Green |

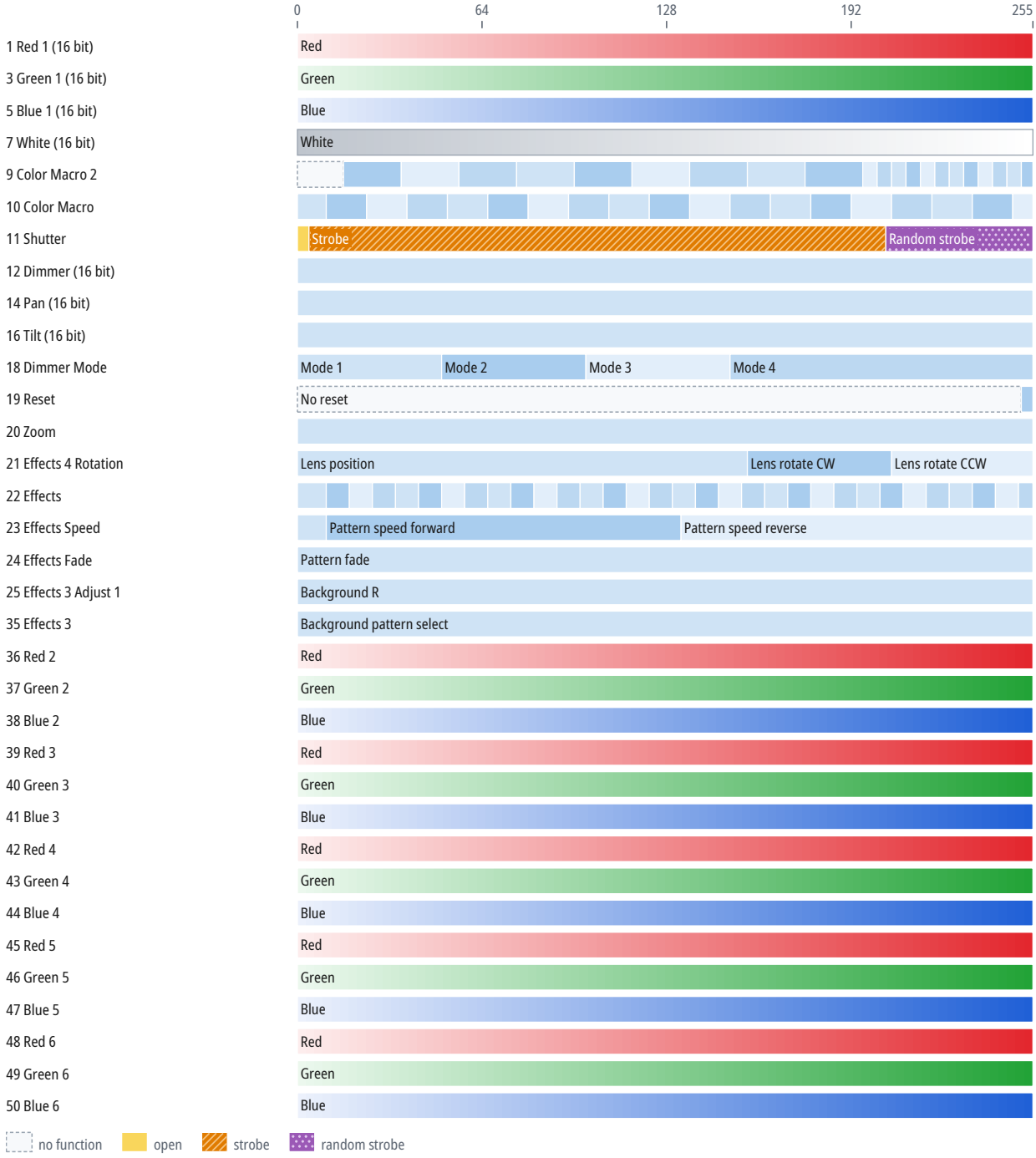
| CH | Function | DMX | Description |
|---|---|---|---|
| **26** | Blue 2 | 0–255 | Blue |
| **27** | White 2 | 0–255 | White |
| **28** | Red 3 | 0–255 | Red |
| **29** | Green 3 | 0–255 | Green |
| **30** | Blue 3 | 0–255 | Blue |
| **31** | White 3 | 0–255 | White |
| **32** | Red 4 | 0–255 | Red |
| **33** | Green 4 | 0–255 | Green |
| **34** | Blue 4 | 0–255 | Blue |
| **35** | White 4 | 0–255 | White |
| **36** | Red 5 | 0–255 | Red |
| **37** | Green 5 | 0–255 | Green |
| **38** | Blue 5 | 0–255 | Blue |
| **39** | White 5 | 0–255 | White |
| **40** | Red 6 | 0–255 | Red |
| **41** | Green 6 | 0–255 | Green |
| **42** | Blue 6 | 0–255 | Blue |
| **43** | White 6 | 0–255 | White |
| **44** | Red 7 | 0–255 | Red |
| **45** | Green 7 | 0–255 | Green |
| **46** | Blue 7 | 0–255 | Blue |
| **47** | White 7 | 0–255 | White |
| **48** | Red 8 | 0–255 | Red |
| **49** | Green 8 | 0–255 | Green |
| **50** | Blue 8 | 0–255 | Blue |
| **51** | White 8 | 0–255 | White |

## Mode 7 - 56ch

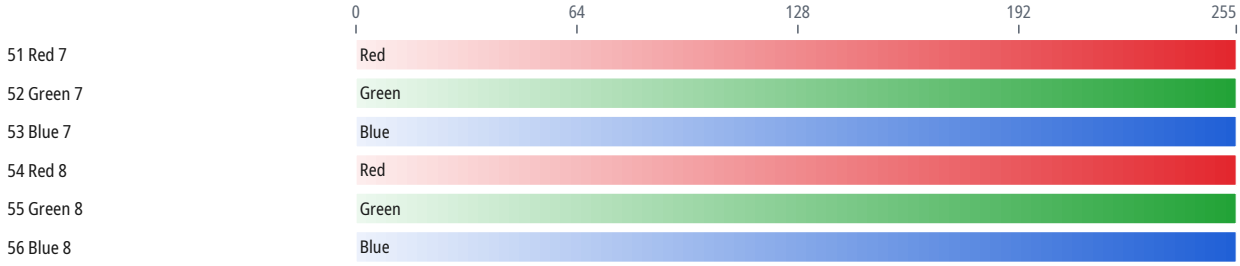
16-bit parameters use two channels, coarse and fine: value = 256 × coarse value + fine value.

If the device receives DMX in this mode but gives no light, check these channels: CH 11 Shutter at 0–3 “Open”; CH 12 Dimmer above 0. The GDTF file gives these values for a console's Highlight function: CH 12 Dimmer 255.

### Channel functions at a glance



## Channel functions at a glance




| CH | Function | DMX | Description |
|---|---|---|---|
| **1** | Red 1 | 0–255 | Red |
| **2** | Red 1 Fine | 0–255 | Fine adjustment of CH 1 |
| **3** | Green 1 | 0–255 | Green |
| **4** | Green 1 Fine | 0–255 | Fine adjustment of CH 3 |
| **5** | Blue 1 | 0–255 | Blue |
| **6** | Blue 1 Fine | 0–255 | Fine adjustment of CH 5 |
| **7** | White | 0–255 | White |
| **8** | White Fine | 0–255 | Fine adjustment of CH 7 |
| **9** | Color Macro 2 | | Same as CH 9 in the mode “Mode 1 - 21ch” (p. 9) |
| **10** | Color Macro | | Same as CH 10 in the mode “Mode 1 - 21ch” (p. 10) |
| **11** | Shutter | | Same as CH 11 in the mode “Mode 1 - 21ch” (p. 10) |
| **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 | 220° |
| **17** | Tilt Fine | 0–255 | Fine adjustment of CH 16 |
| **18** | Dimmer Mode | | Same as CH 18 in the mode “Mode 1 - 21ch” (p. 10) |
| **19** | Reset | | Same as CH 19 in the mode “Mode 1 - 21ch” (p. 11) |
| **20** | Zoom | 0–255 | 3.5–45° |
| **21** | Effects 4 Rotation | | Same as CH 21 in the mode “Mode 1 - 21ch” (p. 11) |
| **22** | Effects | | Pattern select |
| | | 0–9 | No pattern |
| | | 10–17 | Monochrome pattern 1 |
| | | 18–25 | Monochrome pattern 2 |
| | | 26–33 | Monochrome pattern 3 |
| | | 34–41 | Monochrome pattern 4 |
| | | 42–49 | Monochrome pattern 5 |
| | | 50–57 | Monochrome pattern 6 |
| | | 58–65 | Monochrome pattern 7 |
| | | 66–73 | Monochrome pattern 8 |
| | | 74–81 | Monochrome pattern 9 |
| | | 82–89 | Monochrome pattern 10 |

| CH | Function | DMX | Description |
|---|---|---|---|
| **22** | Effects (continued) | 90–97 | Monochrome pattern 11 |
| | | 98–105 | Monochrome pattern 12 |
| | | 106–113 | Monochrome pattern 13 |
| | | 114–121 | Monochrome pattern 14 |
| | | 122–129 | Monochrome pattern 15 |
| | | 130–137 | Monochrome pattern 16 |
| | | 138–145 | Monochrome pattern 17 |
| | | 146–153 | Monochrome pattern 18 |
| | | 154–161 | Monochrome pattern 19 |
| | | 162–169 | Monochrome pattern 20 |
| | | 170–177 | Monochrome pattern 21 |
| | | 178–185 | Mixed color pattern 1 |
| | | 186–193 | Mixed color pattern 2 |
| | | 194–201 | Mixed color pattern 3 |
| | | 202–209 | Mixed color pattern 4 |
| | | 210–217 | Mixed color pattern 5 |
| | | 218–225 | Mixed color pattern 6 |
| | | 226–233 | Mixed color pattern 7 |
| | | 234–241 | Mixed color pattern 8 |
| | | 242–249 | Mixed color pattern 9 |
| | | 250–255 | Mixed color pattern 10 |
| **23** | Effects Speed | | Same as CH 23 in the mode “Mode 3 - 35ch” (p. 15) |
| **24** | Effects Fade | | Same as CH 24 in the mode “Mode 3 - 35ch” (p. 16) |
| **25** | Effects 3 Adjust 1 | | Background R |
| | | 0–255 | Background R |
| **35** | Effects 3 | | Same as CH 35 in the mode “Mode 3 - 35ch” (p. 16) |
| **36** | Red 2 | 0–255 | Red |
| **37** | Green 2 | 0–255 | Green |
| **38** | Blue 2 | 0–255 | Blue |
| **39** | Red 3 | 0–255 | Red |
| **40** | Green 3 | 0–255 | Green |
| **41** | Blue 3 | 0–255 | Blue |
| **42** | Red 4 | 0–255 | Red |
| **43** | Green 4 | 0–255 | Green |
| **44** | Blue 4 | 0–255 | Blue |
| **45** | Red 5 | 0–255 | Red |
| **46** | Green 5 | 0–255 | Green |
| **47** | Blue 5 | 0–255 | Blue |
| **48** | Red 6 | 0–255 | Red |
| **49** | Green 6 | 0–255 | Green |
| **50** | Blue 6 | 0–255 | Blue |
| **51** | Red 7 | 0–255 | Red |

| CH | Function | DMX | Description |
|---|---|---|---|
| **52** | Green 7 | 0–255 | Green |
| **53** | Blue 7 | 0–255 | Blue |
| **54** | Red 8 | 0–255 | Red |
| **55** | Green 8 | 0–255 | Green |
| **56** | Blue 8 | 0–255 | Blue |

CH 25–34: 10 cells of 1 channel each. Every cell works as cell 1 in the table above (CH 25); the table below gives each cell's channel numbers.

| Cell | Effects Adjust | Cell | Effects Adjust | Cell | Effects Adjust | Cell | Effects Adjust | Cell | Effects Adjust | Cell | Effects Adjust |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1 | 25 | 2 | 26 | 3 | 27 | 4 | 28 | 5 | 29 | 6 | 30 |
| 7 | 31 | 8 | 32 | 9 | 33 | 10 | 34 | | | | |

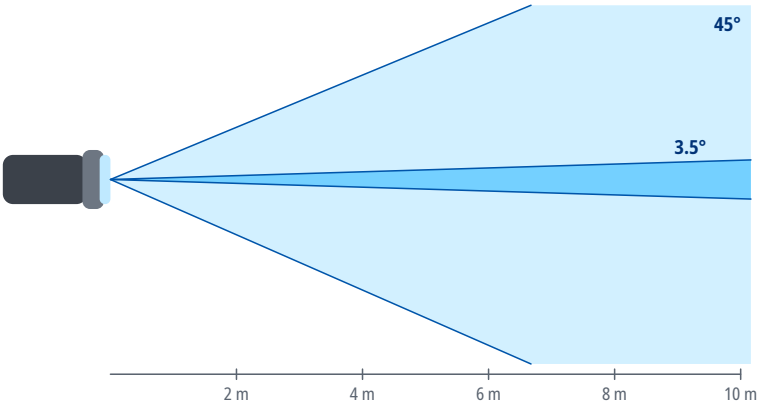
# 10 Technical specifications

| Parameter | Value |
|---|---|
| **Light** | |
| Light source | LED |
| **Optics** | |
| Zoom | 3.5–45° |
| **Movement** | |
| Pan | 540° |
| Tilt | 220° |
| **Dimensions and construction** | |
| Weight | 14.5 kg |
| **Operating environment** | |
| Ingress protection | IP65 |
| Meaning of the IP code (IEC 60529) | Dust-tight; protected against water jets |
| Operating temperature | 0 to 40 °C |

### Speeds and ranges

| Parameter | Value |
|---|---|
| Strobe frequency | 1–25 Hz |
| Effect rotation | up to 100 °/s (17 rpm) |

### Spot diameter




| Distance | Ø 3.5° | Ø 45° |
|---|---|---|
| 2 m | 0.12 m | 1.7 m |
| 4 m | 0.24 m | 3.3 m |
| 6 m | 0.37 m | 5 m |
| 8 m | 0.49 m | 6.6 m |
| 10 m | 0.61 m | 8.3 m |
| 15 m | 0.92 m | 12.4 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.