DMX REFERENCE

JDC1

Sterra



Manufacturer	Sterra
GDTF file	Sterra_JDC1_88648.gdtf
GDTF revision	Complete, Uploaded to GDTF Share. · 2025-03-07
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1 About this manual

This document describes the JDC1 by Sterra. It was compiled from the GDTF file Sterra_JDC1_88648.gdtf from the GDTF-Share library.

File revision: “Complete, Uploaded to GDTF Share.”.

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 Sterra; 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
Power consumption	850 W
Weight	10 kg

DMX modes

Mode	Channels	Units in one universe	First start addresses
7CH	7	73	1, 8, 15, 22, ...
14CH	14	36	1, 15, 29, 43, ...
15CH	15	34	1, 16, 31, 46, ...
43CH	43	11	1, 44, 87, 130, ...
44	44	11	1, 45, 89, 133, ...

No light? Check these channels

- 7CH: CH 2 Dimmer above 0; CH 3 Strobe Mode at 0–5 “No Function”
- 14CH: CH 3 Dimmer above 0; CH 4 Strobe Mode at 0–5 “No Function”
- 15CH: CH 3 Dimmer above 0; CH 4 Strobe Mode at 0–5 “No Function”; CH 15 Dimmer Mode above 0
- 43CH: CH 3 Dimmer 1 above 0; CH 4 Strobe Mode at 0–5 “No Function”; CH 14 Dimmer 2 above 0; CH 15 Dimmer 3 above 0; CH 16 Dimmer 4 above 0; CH 17 Dimmer 5 above 0; CH 18 Dimmer 6 above 0; CH 43 Dimmer Mode above 0
- 44: CH 3 Dimmer 1 above 0; CH 4 Strobe Mode at 0–5 “No Function”; CH 14 Dimmer 2 above 0; CH 15 Dimmer 3 above 0; CH 16 Dimmer 4 above 0; CH 17 Dimmer 5 above 0; CH 18 Dimmer 6 above 0; CH 43 Dimmer Mode above 0


Read the manual before use


Risk of electric shock


Do not stare into the light


Indoor use only

3 Safety instructions


Read the manual before use


Risk of electric shock


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

- Connect the device only to a properly installed mains outlet with a protective earth (ground) contact. The outlet or other means of disconnection must remain easily accessible.
- Power supply: 100–240 V, 50/60 Hz. Before connecting, make sure that the mains voltage matches this value and the value on the rating plate of the device.
- Do not connect the device to a dimmer or to a dimmed circuit.
- Use only the original power cable or a cable with identical ratings. Protect the cable from damage, do not run it over sharp edges, and never unplug it by pulling on the cable.
- When connecting several devices to one circuit, do not exceed its permitted load.
- Do not touch the device with wet hands.

⚠ 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

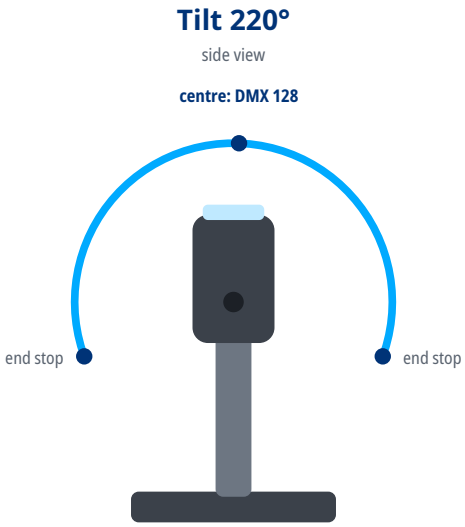
- Strobe and fast flashing light effects can trigger epileptic seizures in susceptible people (photosensitive epilepsy) and can cause nausea or disorientation.
- Inform the audience and performers in advance that strobe effects will be used, for example with a notice at the entrance, and do not use them 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



5 Installation

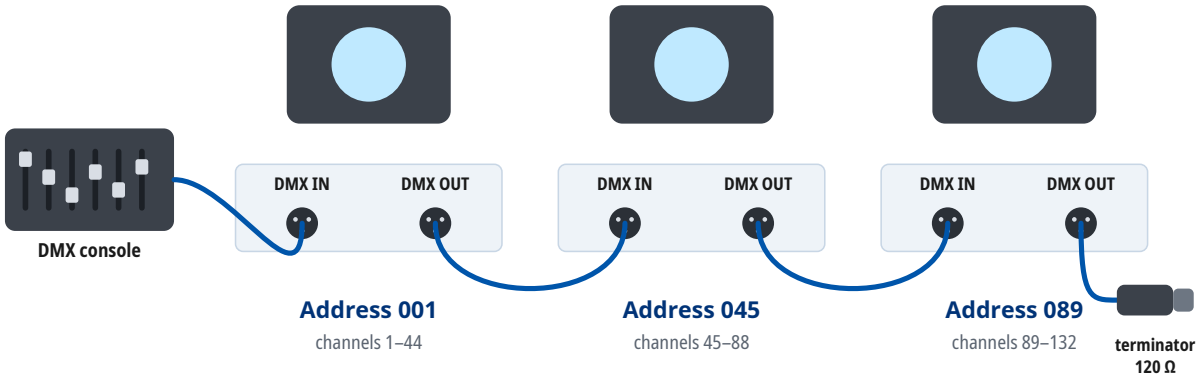
⚠ **WARNING**

- 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: 10 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 44: every unit occupies 44 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

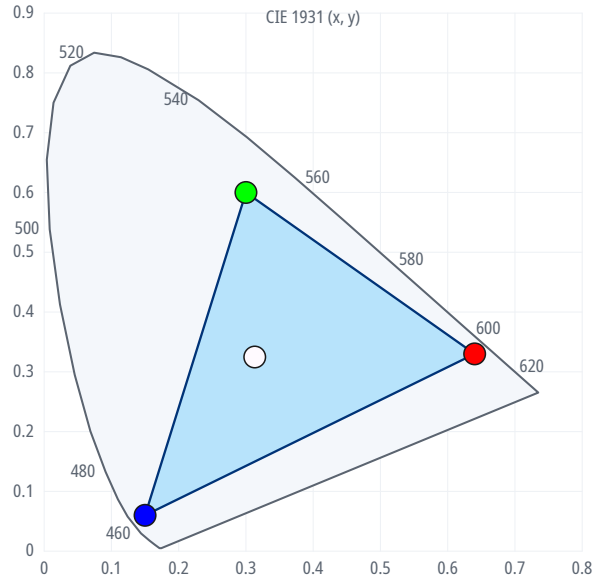
- The device occupies as many consecutive channels in the DMX universe as the selected DMX mode uses, starting at the set start address.
- Number of channels occupied in the DMX mode “44”: 44.
- Choose start addresses so that the channels of individual devices do not overlap and the last occupied channel does not exceed 512. Devices with the same start address and mode respond identically.
- For several devices in a row in the DMX mode “44”, you can use, for example, the start addresses 1, 45, 89, 133.
- 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

	7CH 7 channels	14CH 14 channels	15CH 15 channels	43CH 43 channels	44 44 channels
Pan / Tilt	1	1	1	1	1
Pan / Tilt resolution	8 bit	16 bit	16 bit	16 bit	16 bit
Dimmer	2	3	3	3, 14–18	3, 14–18
Shutter / strobe	7	10	10	10	10
Color mixing	4–6	7–9	7–9	7–9, 19–42	7–9, 19–42
Effects / macros		6, 11–13	6, 11–13	6, 11–13	6, 11–13
Pixel control				8 cells	8 cells

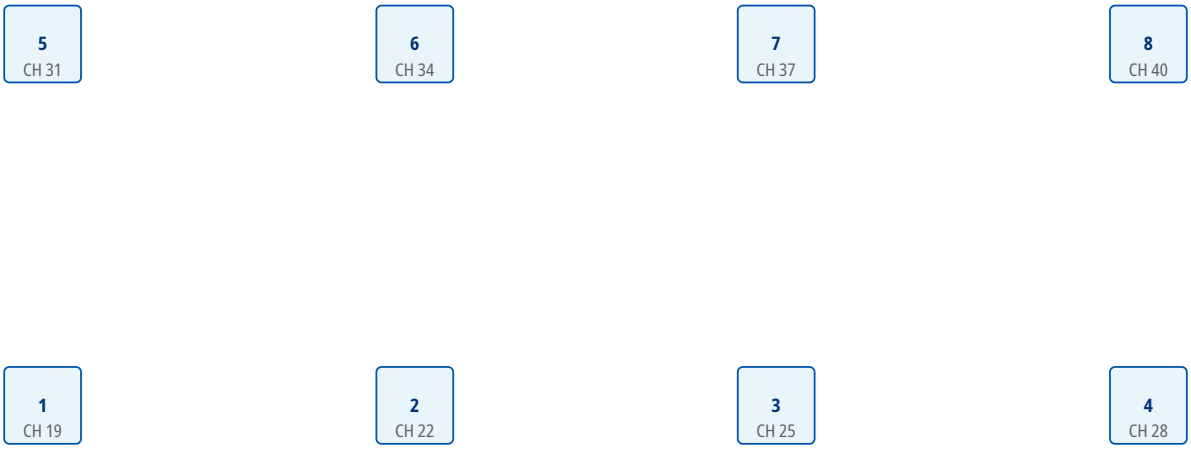
LED colors and the colors they mix



LED	x	y
White	0.313	0.325
Red	0.640	0.330
Green	0.300	0.600
Blue	0.150	0.060

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

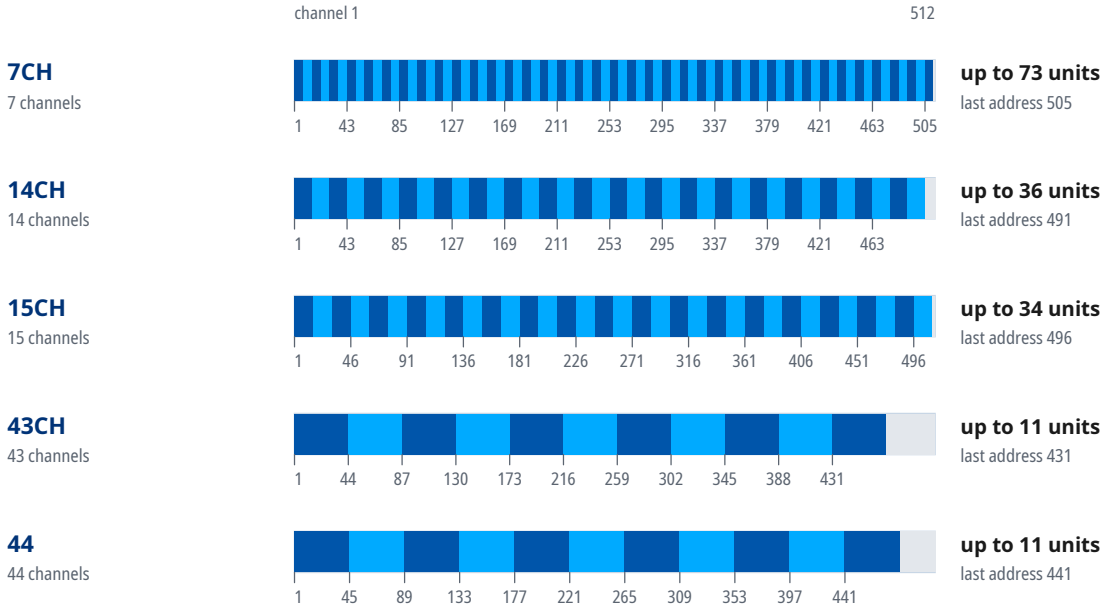
Cells (pixels)



8 cells where the GDTF file places them (seen from above), numbered by their first DMX channel (CH) in the mode “44”.

9 DMX channels

Units in one DMX universe



Start addresses of 20 units in the mode “44”

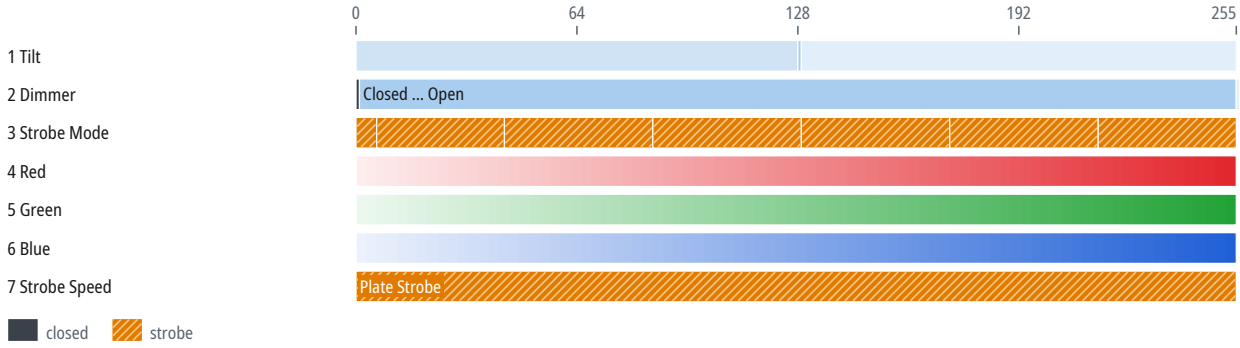
Unit	Start address	Unit	Start address	Unit	Start address	Unit	Start address
1	1	6	221	11	441	16	U2 · 177
2	45	7	265	12	U2 · 1	17	U2 · 221
3	89	8	309	13	U2 · 45	18	U2 · 265
4	133	9	353	14	U2 · 89	19	U2 · 309
5	177	10	397	15	U2 · 133	20	U2 · 353

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 7CH

If the device receives DMX in this mode but gives no light, check these channels: CH 2 Dimmer above 0; CH 3 Strobe Mode at 0–5 “No Function”. The GDTF file gives these values for a console's Highlight function: CH 2 Dimmer 25, CH 4 Red 255, CH 5 Green 255, CH 6 Blue 255.

Channel functions at a glance



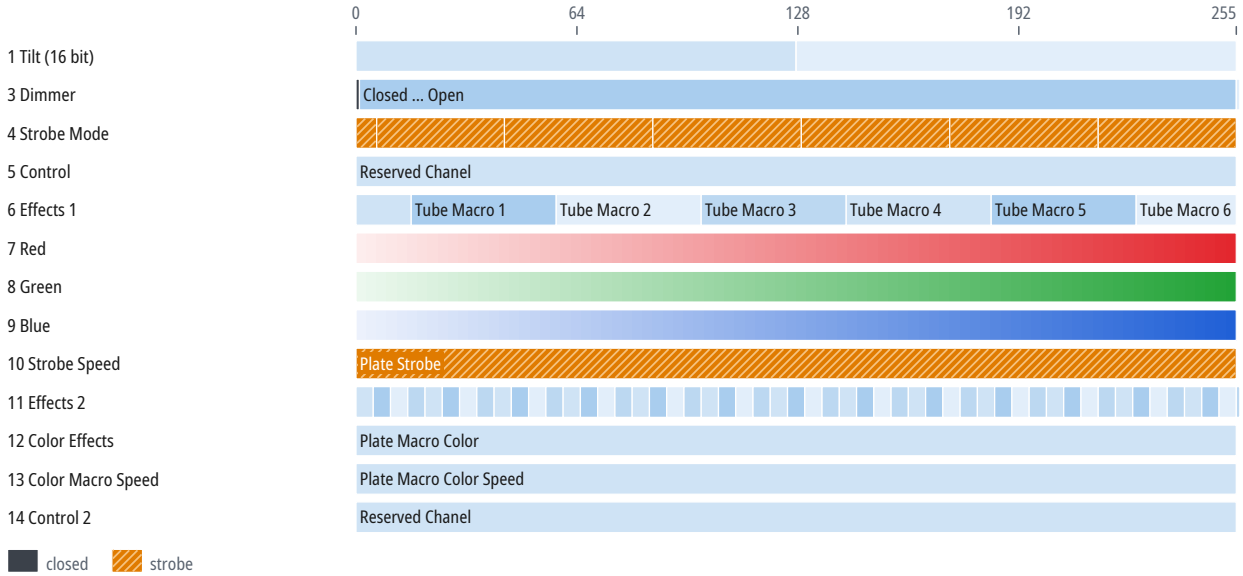
CH	Function	DMX	Description
1	Tilt	0–127	Tilt 1
		128	Home
		129–255	Tilt 1
2	Dimmer	0	Closed
		1–254	Closed ... Open
		255	Open
3	Strobe Mode	0–5	No Function
		6–42	Strobe Mode 1
		43–85	Strobe Mode 2
		86–128	Strobe Mode 3
		129–171	Strobe Mode 4
		172–214	Strobe Mode 5
		215–255	Strobe Mode 6
4	Red	0–255	
5	Green	0–255	
6	Blue	0–255	
7	Strobe Speed		Plate Strobe
		0–255	Plate Strobe

Mode 14CH

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 3 Dimmer above 0; CH 4 Strobe Mode at 0–5 “No Function”. The GDTF file gives these values for a console's Highlight function: CH 3 Dimmer 25, CH 7 Red 255, CH 8 Green 255, CH 9 Blue 255.

Channel functions at a glance



CH	Function	DMX	Description
1	Tilt	0–127	Tilt 1
		128	Home
		128–255	Tilt 1
2	Tilt Fine	0–255	Fine adjustment of CH 1
3	Dimmer		Same as CH 2 in the mode “7CH” (p. 10)
4	Strobe Mode		Same as CH 3 in the mode “7CH” (p. 10)
5	Control		Reserved Chanel
		0–255	Reserved Chanel
6	Effects 1		Tube Macro FX
		0–15	Tube Off
		16–57	Tube Macro 1
		58–99	Tube Macro 2
		100–141	Tube Macro 3
		142–183	Tube Macro 4
		184–225	Tube Macro 5
		226–255	Tube Macro 6
7	Red	0–255	
8	Green	0–255	
9	Blue	0–255	
10	Strobe Speed		Same as CH 7 in the mode “7CH” (p. 10)
11	Effects 2		Plate Macro
		0–4	Plate Macro Off
		5–9	Plate Macro 1
		10–14	Plate Macro 2
		15–19	Plate Macro 3
		20–24	Plate Macro 4
		25–29	Plate Macro 5
		30–34	Plate Macro 6
		35–39	Plate Macro 7
		40–44	Plate Macro 8
		45–49	Plate Macro 9
		50–54	Plate Macro 10
		55–59	Plate Macro 11
		60–64	Plate Macro 12
		65–69	Plate Macro 13
		70–74	Plate Macro 14
		75–79	Plate Macro 15
		80–84	Plate Macro 16
		85–89	Plate Macro 17
		90–94	Plate Macro 18

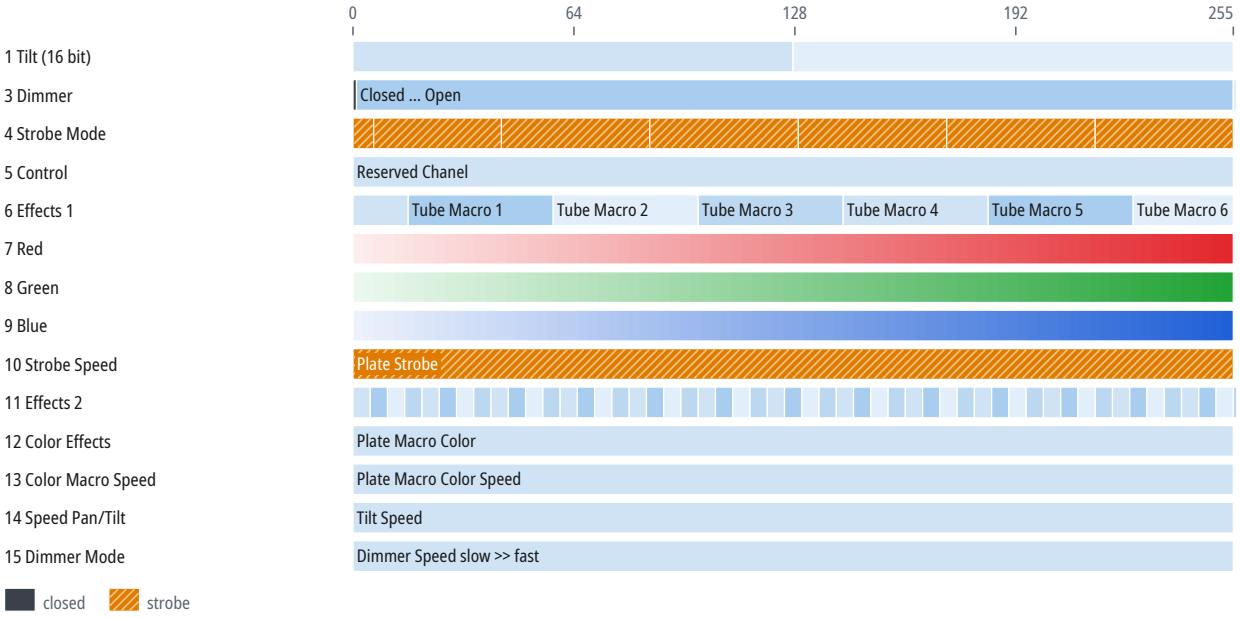
CH	Function	DMX	Description
11	Effects 2 (continued)	95–99	Plate Macro 19
		100–104	Plate Macro 20
		105–109	Plate Macro 21
		110–114	Plate Macro 22
		115–119	Plate Macro 23
		120–124	Plate Macro 24
		125–129	Plate Macro 25
		130–134	Plate Macro 26
		135–139	Plate Macro 27
		140–144	Plate Macro 28
		145–149	Plate Macro 29
		150–154	Plate Macro 30
		155–159	Plate Macro 31
		160–164	Plate Macro 32
		165–169	Plate Macro 33
		170–174	Plate Macro 34
		175–179	Plate Macro 35
		180–184	Plate Macro 36
		185–189	Plate Macro 37
		190–194	Plate Macro 38
		195–199	Plate Macro 39
		200–204	Plate Macro 40
		205–209	Plate Macro 41
		210–214	Plate Macro 42
		215–219	Plate Macro 43
		220–224	Plate Macro 44
		225–229	Plate Macro 45
		230–234	Plate Macro 46
		235–239	Plate Macro 47
		240–244	Plate Macro 48
		245–249	Plate Macro 49
		250–254	Plate Macro 50
		255	Plate Macro 51
12	Color Effects		Plate Macro Color
		0–255	Plate Macro Color
13	Color Macro Speed		Plate Macro Color Speed
		0–255	Plate Macro Color Speed
14	Control 2		Reserved Chanel
		0–255	Reserved Chanel

Mode 15CH

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 3 Dimmer above 0; CH 4 Strobe Mode at 0–5 “No Function”; CH 15 Dimmer Mode above 0. The GDTF file gives these values for a console's Highlight function: CH 3 Dimmer 25, CH 7 Red 255, CH 8 Green 255, CH 9 Blue 255.

Channel functions at a glance



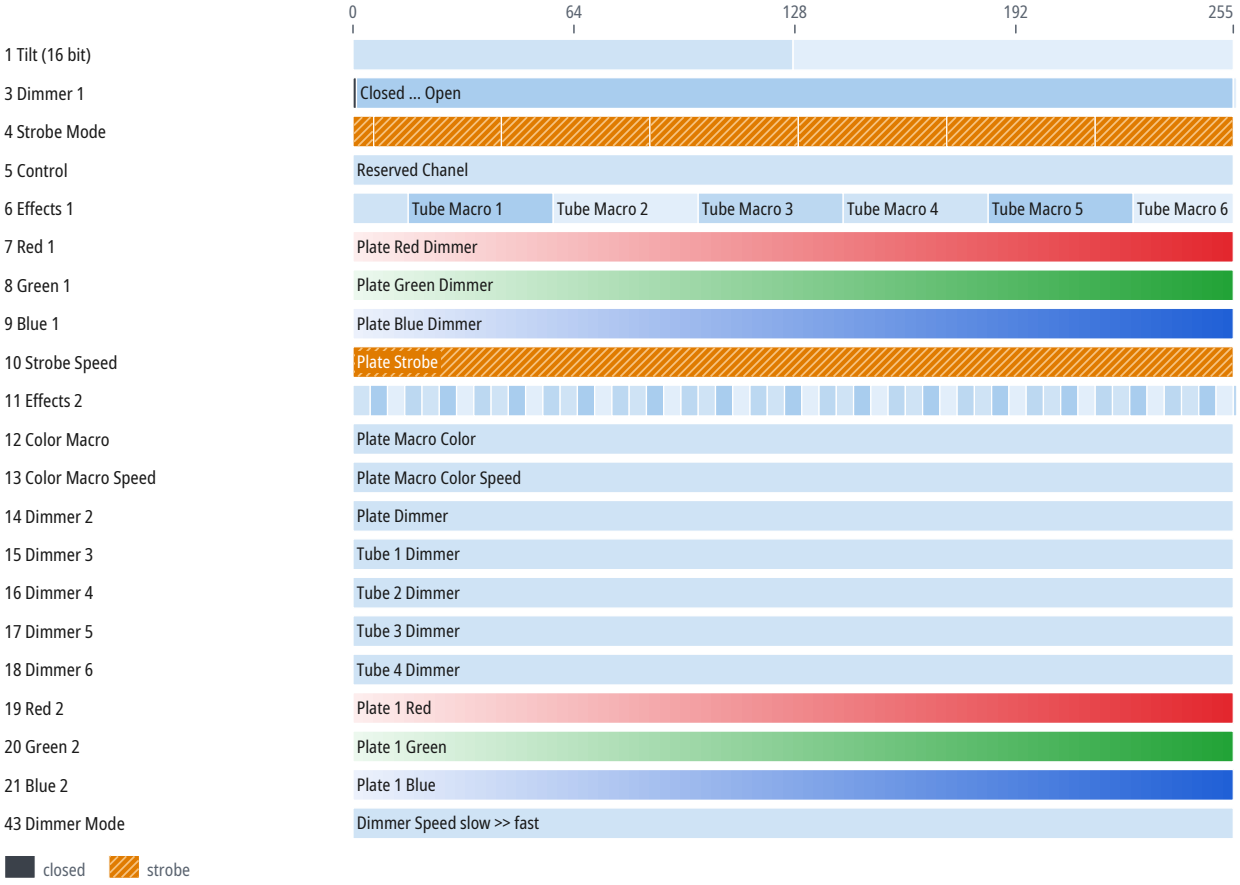
CH	Function	DMX	Description
1	Tilt		Same as CH 1 in the mode “14CH” (p. 11)
2	Tilt Fine	0–255	Fine adjustment of CH 1
3	Dimmer		Same as CH 2 in the mode “7CH” (p. 10)
4	Strobe Mode		Same as CH 3 in the mode “7CH” (p. 10)
5	Control		Same as CH 5 in the mode “14CH” (p. 11)
6	Effects 1		Same as CH 6 in the mode “14CH” (p. 11)
7	Red	0–255	
8	Green	0–255	
9	Blue	0–255	
10	Strobe Speed		Same as CH 7 in the mode “7CH” (p. 10)
11	Effects 2		Same as CH 11 in the mode “14CH” (p. 11)
12	Color Effects		Same as CH 12 in the mode “14CH” (p. 12)
13	Color Macro Speed		Same as CH 13 in the mode “14CH” (p. 12)
14	Speed Pan/Tilt		Tilt Speed
		0–255	Tilt Speed
15	Dimmer Mode		Dimmer Speed slow >> fast
		0–255	Dimmer Speed slow >> fast

Mode 43CH

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 3 Dimmer 1 above 0; CH 4 Strobe Mode at 0–5 “No Function”; CH 14 Dimmer 2 above 0; CH 15 Dimmer 3 above 0; CH 16 Dimmer 4 above 0; CH 17 Dimmer 5 above 0; CH 18 Dimmer 6 above 0; CH 43 Dimmer Mode above 0. The GDTF file gives these values for a console's Highlight function: CH 3 Dimmer 1 25, CH 14 Dimmer 2 255, CH 15 Dimmer 3 25, CH 16 Dimmer 4 25, CH 17 Dimmer 5 25, CH 18 Dimmer 6 25.

Channel functions at a glance



CH	Function	DMX	Description
1	Tilt		Same as CH 1 in the mode “14CH” (p. 11)
2	Tilt Fine	0–255	Fine adjustment of CH 1
3	Dimmer 1	0	Closed
		1–254	Closed ... Open
		255	Open
4	Strobe Mode		Same as CH 3 in the mode “7CH” (p. 10)
5	Control		Same as CH 5 in the mode “14CH” (p. 11)
6	Effects 1		Same as CH 6 in the mode “14CH” (p. 11)
7	Red 1		Plate Red Dimmer
		0–255	Plate Red Dimmer
8	Green 1		Plate Green Dimmer
		0–255	Plate Green Dimmer

CH	Function	DMX	Description
9	Blue 1		Plate Blue Dimmer
		0–255	Plate Blue Dimmer
10	Strobe Speed		Same as CH 7 in the mode “7CH” (p. 10)
11	Effects 2		Same as CH 11 in the mode “14CH” (p. 11)
12	Color Macro		Plate Macro Color
		0–255	Plate Macro Color
13	Color Macro Speed		Same as CH 13 in the mode “14CH” (p. 12)
14	Dimmer 2		Plate Dimmer
		0–255	Plate Dimmer
15	Dimmer 3		Tube 1 Dimmer
		0–255	Tube 1 Dimmer
16	Dimmer 4		Tube 2 Dimmer
		0–255	Tube 2 Dimmer
17	Dimmer 5		Tube 3 Dimmer
		0–255	Tube 3 Dimmer
18	Dimmer 6		Tube 4 Dimmer
		0–255	Tube 4 Dimmer
19	Red 2		Plate 1 Red
		0–255	Plate 1 Red
20	Green 2		Plate 1 Green
		0–255	Plate 1 Green
21	Blue 2		Plate 1 Blue
		0–255	Plate 1 Blue
43	Dimmer Mode		Same as CH 15 in the mode “15CH” (p. 13)

CH 19–42: 8 cells of 3 channels each. Every cell works as cell 1 in the table above (CH 19–21); the table below gives each cell's channel numbers.

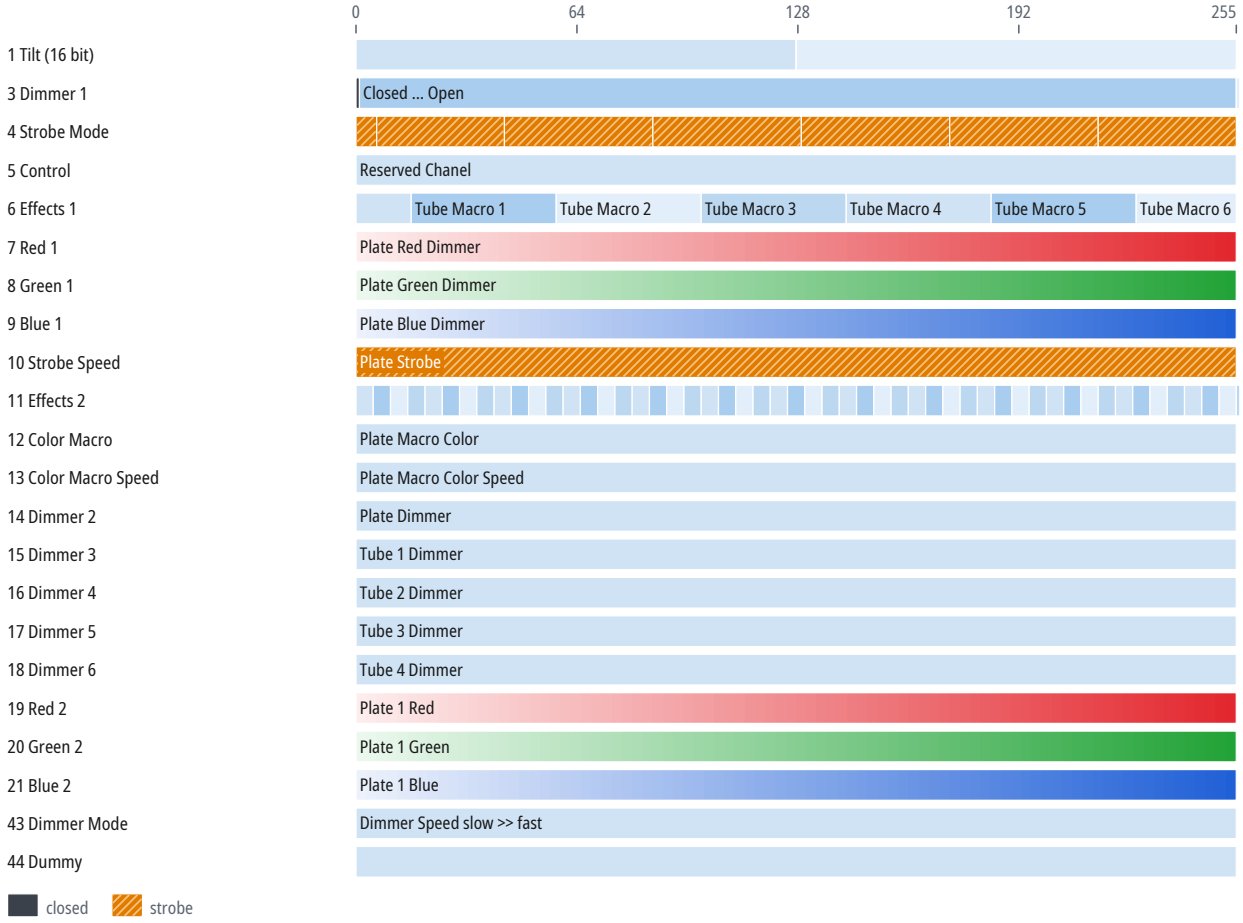
Cell	Red	Green	Blue	Cell	Red	Green	Blue	Cell	Red	Green	Blue
1	19	20	21	2	22	23	24	3	25	26	27
4	28	29	30	5	31	32	33	6	34	35	36
7	37	38	39	8	40	41	42				

Mode 44

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 3 Dimmer 1 above 0; CH 4 Strobe Mode at 0–5 “No Function”; CH 14 Dimmer 2 above 0; CH 15 Dimmer 3 above 0; CH 16 Dimmer 4 above 0; CH 17 Dimmer 5 above 0; CH 18 Dimmer 6 above 0; CH 43 Dimmer Mode above 0. The GDTF file gives these values for a console's Highlight function: CH 3 Dimmer 1 25, CH 14 Dimmer 2 255, CH 15 Dimmer 3 25, CH 16 Dimmer 4 25, CH 17 Dimmer 5 25, CH 18 Dimmer 6 25.

Channel functions at a glance



CH	Function	DMX	Description
1	Tilt		Same as CH 1 in the mode “14CH” (p. 11)
2	Tilt Fine	0–255	Fine adjustment of CH 1
3	Dimmer 1		Same as CH 3 in the mode “43CH” (p. 14)
4	Strobe Mode		Same as CH 3 in the mode “7CH” (p. 10)
5	Control		Same as CH 5 in the mode “14CH” (p. 11)
6	Effects 1		Same as CH 6 in the mode “14CH” (p. 11)
7	Red 1		Same as CH 7 in the mode “43CH” (p. 14)
8	Green 1		Same as CH 8 in the mode “43CH” (p. 14)
9	Blue 1		Same as CH 9 in the mode “43CH” (p. 15)
10	Strobe Speed		Same as CH 7 in the mode “7CH” (p. 10)
11	Effects 2		Same as CH 11 in the mode “14CH” (p. 11)

CH	Function	DMX	Description
12	Color Macro		Same as CH 12 in the mode “43CH” (p. 15)
13	Color Macro Speed		Same as CH 13 in the mode “14CH” (p. 12)
14	Dimmer 2		Same as CH 14 in the mode “43CH” (p. 15)
15	Dimmer 3		Same as CH 15 in the mode “43CH” (p. 15)
16	Dimmer 4		Same as CH 16 in the mode “43CH” (p. 15)
17	Dimmer 5		Same as CH 17 in the mode “43CH” (p. 15)
18	Dimmer 6		Same as CH 18 in the mode “43CH” (p. 15)
19	Red 2		Plate 1 Red
		0–255	Plate 1 Red
20	Green 2		Plate 1 Green
		0–255	Plate 1 Green
21	Blue 2		Plate 1 Blue
		0–255	Plate 1 Blue
43	Dimmer Mode		Same as CH 15 in the mode “15CH” (p. 13)
44	Dummy	0–255	

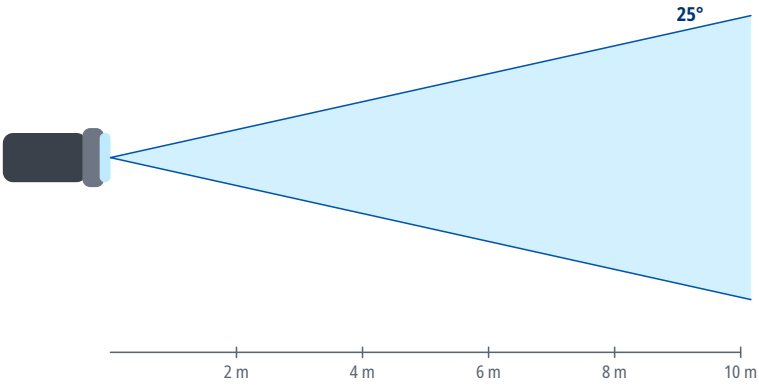
CH 19–42: 8 cells of 3 channels each. Every cell works as cell 1 in the table above (CH 19–21); the table below gives each cell's channel numbers.

Cell	Red	Green	Blue	Cell	Red	Green	Blue	Cell	Red	Green	Blue
1	19	20	21	2	22	23	24	3	25	26	27
4	28	29	30	5	31	32	33	6	34	35	36
7	37	38	39	8	40	41	42				

10 Technical specifications

Parameter	Value
Light	
Light source	LED
Movement	
Tilt	220°
Control	
DMX connection	5-pin XLR IN/OUT
Electrical	
Power supply	100–240 V, 50/60 Hz
Power consumption	850 W
Power connectors	powerCON TRUE1 IN/OUT
Dimensions and construction	
Weight	10 kg
Operating environment	
Operating temperature	0 to 40 °C

Spot diameter



Distance	Ø 25°
2 m	0.89 m
4 m	1.8 m
6 m	2.7 m
8 m	3.5 m
10 m	4.4 m
15 m	6.7 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.