DMX REFERENCE

iW-741 RDM

Infinity



Manufacturer	Infinity
GDTF file	Infinity_Iw-741_RDM_170339.gdtf
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1 About this manual

This document describes the iW-741 RDM by Infinity. It was compiled from the GDTF file Infinity_Iw-741_RDM_170339.gdtf from the GDTF-Share library.

File revision: “Initial upload by GDTFservice powered by Q2Q Technologies commissioned by Infinity”.

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 Infinity; 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	9.4 kg

DMX modes

Mode	Channels	Units in one universe	First start addresses
20Ch Mode	20	25	1, 21, 41, 61, ...
15Ch Mode	15	34	1, 16, 31, 46, ...

No light? Check these channels

- 20Ch Mode: CH 18 Shutter at 20–24, 65–69, 85–89, 105–109, 125–129, 145–149, 165–169, 185–189, 205–209, 225–229 or 245–255 “Open”
- 15Ch Mode: CH 13 Shutter at 20–24, 65–69, 85–89, 105–109, 125–129, 145–149, 165–169, 185–189, 205–209, 225–229 or 245–255 “Open”


Read the manual before use


Do not stare into the light


Indoor use only

3 Safety instructions



Read the manual before use



Do not stare into the light



Indoor use only

⚠ WARNING

- This device is intended for professional use. Installation, connection, setup and maintenance must be carried out only by suitably qualified persons who have read this manual.
- Use the device only for its intended purpose and as described in this manual.
- Do not open the housing and do not modify or tamper with the device. Refer all repairs to an authorized service center.
- Do not use the device if its housing, power or data cable, or a connector is damaged, if the device has been dropped, or if liquid or a foreign object has entered it. In such a case, have it checked by a service center.
- Disconnect the device from the power supply before cleaning, maintenance or any work on the connections.
- After moving the device from a cold to a warm environment, let it reach room temperature before switching it on to prevent condensation inside.
- The device is not a toy; keep it out of the reach of children.

⚠ WARNING

- This device is designed for indoor use only. Protect it from rain, splashing water, moisture and dust, and do not place containers with liquids on it.
- Do not operate the device in high humidity, near water, or where condensation can form on it.

⚠ CAUTION

- This device emits intense light. Do not look directly into the light source or the beam at close range; doing so may damage your eyes.
- Do not aim the beam at the eyes of people or animals at close range, and do not view the light source through optical instruments (binoculars, camera lenses).
- Do not aim the beam at flammable or heat-sensitive materials at close range.

⚠ CAUTION

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

> ⚠ **WARNING**
>
> - The moving parts of the device (for example the head or arms) can move quickly and unexpectedly at any time – after power-on, during a reset, or on a command from the controller.
> - Keep yourself and any objects out of the range of movement. While the device is switched on, do not touch the moving parts, move them by hand, or obstruct their movement; this can cause injury (pinching) and damage the drive.
> - Do not carry the device by its moving parts. If the device has a transport lock, engage it before transport and release it before switching on.

4 Product description

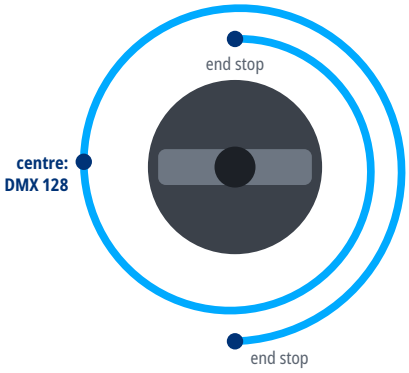
Description in the GDTF file

“iW-741 RDM is a compact power-pack which is equipped with 7 RGBW 40W Osram LEDs. Especially selected motors provide ultrafast and precise movements. In combination with motorized zoom a razor sharp 3.6deg beam can be produced which changes into a 60deg wash effect through various available controlling protocols. The seven O-Star LEDs produce very bright and saturated colours and by changing the PWM through DMX the iW-741 is very well suited for theatre or television applications.”

Range of movement

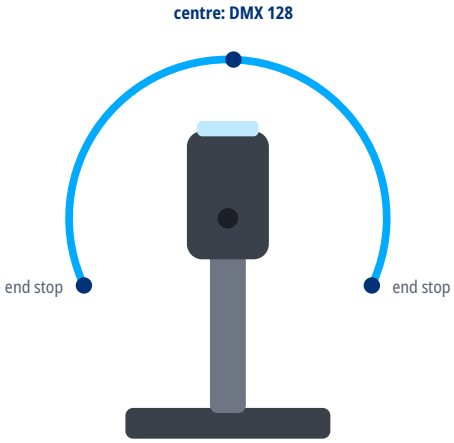
Pan 540°

top view



Tilt 230°

side view



5 Installation

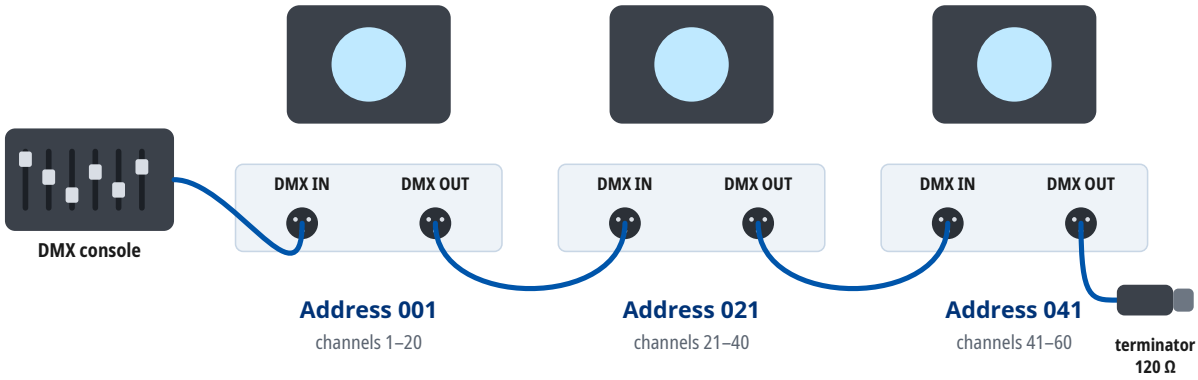
⚠ **WARNING**

- 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: 9.36 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 20Ch Mode: every unit occupies 20 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 “20Ch Mode”: 20.
- 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 “20Ch Mode”, you can use, for example, the start addresses 1, 21, 41, 61.
- The DMX mode set on the device must match the fixture profile (personality) used in the controller.
- The device supports RDM (Remote Device Management), two-way communication with the controller over the DMX line.

8 Functions at a glance

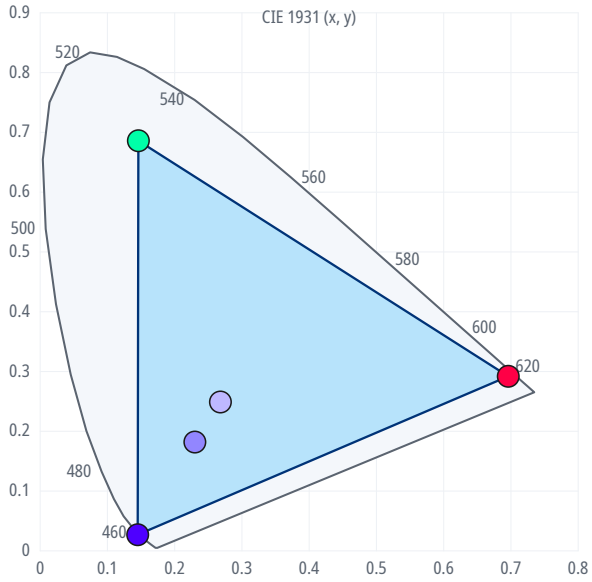
Functions in each DMX mode

	20Ch Mode 20 channels	15Ch Mode 15 channels
Pan / Tilt	1, 2	1, 2
Dimmer	16	11
Shutter / strobe	18	13
Color mixing	4× (6–12)	5–8
Color temperature	14	9
Color wheel	15	10
Zoom	19	14

Color wheel

1. COLOR MACRO: Open — **DMX 0**
2. White 2700K — **DMX 1–2**
3. White 3200K — **DMX 3–4**
4. White 4200K — **DMX 5–6**
5. White 5600K — **DMX 7–8**
6. White 8000K — **DMX 9–10**
7. Blue — **DMX 11**
8. R=0 G+ B=255 W=0 — **DMX 12–48**
9. Cyan — **DMX 49**
10. R=0 G=255 B- W=0 — **DMX 50–86**
11. Green — **DMX 87**
12. R=+ G=255 B=0 W=0 — **DMX 88–124**
13. Yellow — **DMX 125**
14. R=255 G- B=0 W=0 — **DMX 126–162**
15. Red — **DMX 163**
16. R=255 G=0 B+ W=0 — **DMX 164–200**
17. Magenta — **DMX 201**
18. R- G=0 B=255 W=0 — **DMX 202–238**

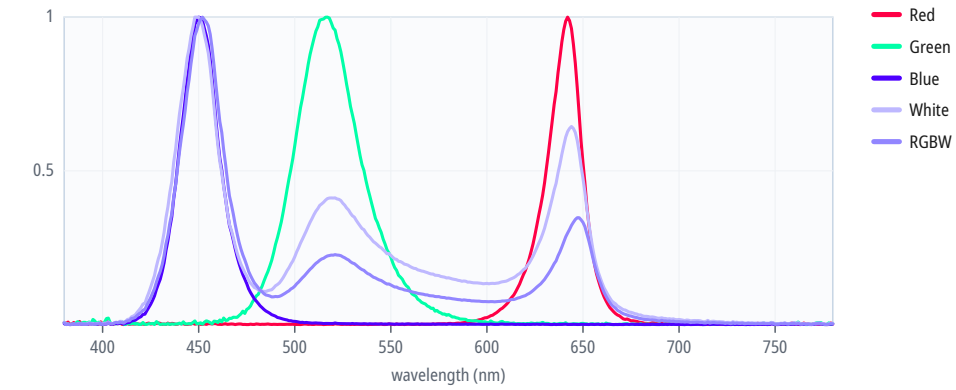
LED colors and the colors they mix



LED	x	y	nm
Red	0.696	0.292	631
Green	0.146	0.686	520
Blue	0.145	0.027	455
White	0.268	0.249	
RGBW	0.230	0.182	460

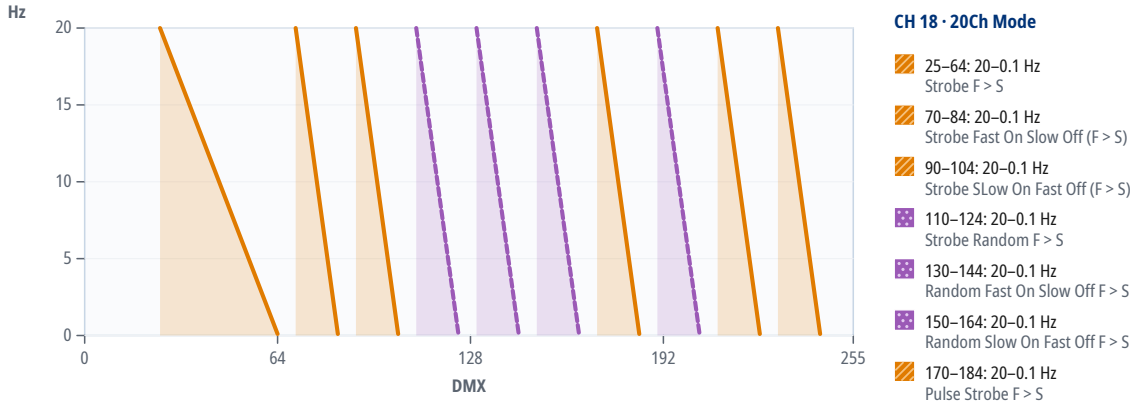
The shaded area holds the colors the LEDs can mix; the dots are the LED colors the GDTF file states.

Spectra of the light sources



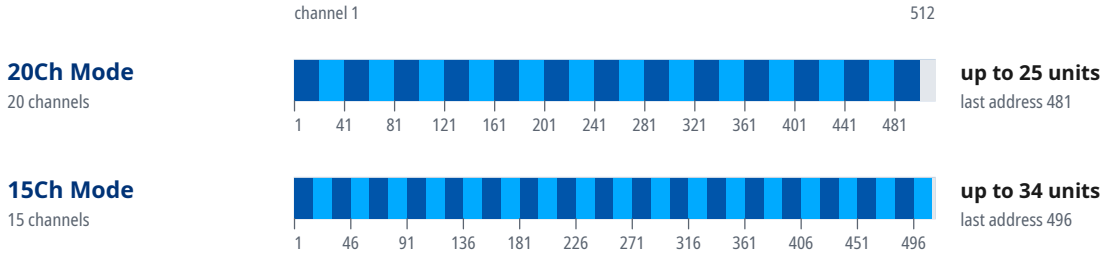
Relative spectrum of each light source as the GDTF file states it; each curve is scaled to its own maximum.

Strobe rate



9 DMX channels

Units in one DMX universe



Start addresses of 20 units in the mode “20Ch Mode”

Unit	Start address	Unit	Start address	Unit	Start address	Unit	Start address
1	1	6	101	11	201	16	301
2	21	7	121	12	221	17	321
3	41	8	141	13	241	18	341
4	61	9	161	14	261	19	361
5	81	10	181	15	281	20	381

RDM personalities

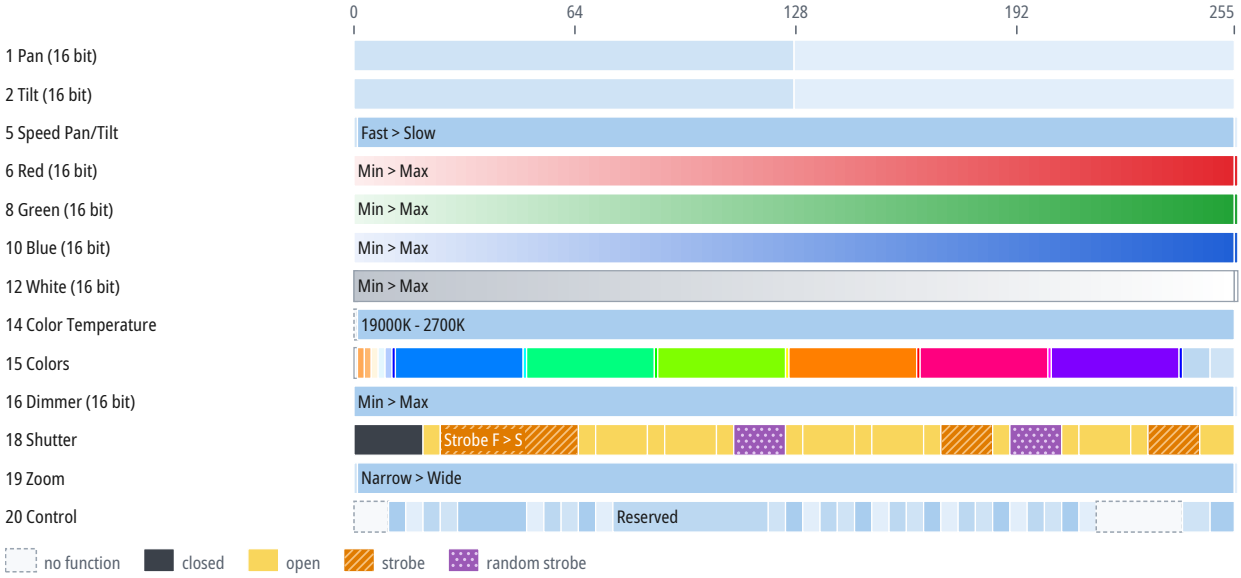
Mode	Channels	RDM personality
20Ch Mode	20	1
15Ch Mode	15	2

Mode 20Ch Mode

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 18 Shutter at 20–24, 65–69, 85–89, 105–109, 125–129, 145–149, 165–169, 185–189, 205–209, 225–229 or 245–255 “Open”. The GDTF file gives these values for a console's Highlight function: CH 6 Red 255, CH 8 Green 255, CH 10 Blue 255, CH 12 White 255, CH 15 Colors 0, CH 16 Dimmer 255, CH 18 Shutter 22.

Channel functions at a glance



CH	Function	DMX	Description
1	Pan	0–127	PAN
		128	Home
		128–255	PAN
2	Tilt	0–127	TILT
		128	Home
		128–255	TILT
3	Pan Fine	0–255	Fine adjustment of CH 1
4	Tilt Fine	0–255	Fine adjustment of CH 2
5	Speed Pan/Tilt		P/T SPEED
		0	Fast
		1–254	Fast > Slow
		255	Slow
6	Red	0	Min
		0–255	Min > Max
		255	Max
7	Red Fine	0–255	Fine adjustment of CH 6
8	Green	0	Min
		0–255	Min > Max
		255	Max
9	Green Fine	0–255	Fine adjustment of CH 8

CH	Function	DMX	Description
10	Blue	0	Min
		0–255	Min > Max
		255	Max
11	Blue Fine	0–255	Fine adjustment of CH 10
12	White	0	Min
		0–255	Min > Max
		255	Max
13	White Fine	0–255	Fine adjustment of CH 12
14	Color Temperature	0	No Function
		1–255	19000K - 2700K (19000–2700 K)
15	Colors	0	COLOR MACRO: Open
		1–2	White 2700K
		3–4	White 3200K
		5–6	White 4200K
		7–8	White 5600K
		9–10	White 8000K
		11	Blue
		12–48	R=0 G+ B=255 W=0
		49	Cyan
		50–86	R=0 G=255 B- W=0
		87	Green
		88–124	R=+ G=255 B=0 W=0
		125	Yellow
		126–162	R=255 G- B=0 W=0
		163	Red
		164–200	R=255 G=0 B+ W=0
		201	Magenta
		202–238	R- G=0 B=255 W=0
		239	Blue
		240–247	Color Fade F > S
		248–255	Color Jump F > S
16	Dimmer	0	Min
		0–255	Min > Max
		255	Max
17	Dimmer Fine	0–255	Fine adjustment of CH 16
18	Shutter	0–19	Closed/Open: Closed
		20–24	Closed/Open: Open
		25–64	Strobe F > S (20–0.1 Hz)
		65–69	Open
		70–84	Strobe Fast On Slow Off (F > S) (20–0.1 Hz)
		85–89	Open
		90–104	Strobe SLow On Fast Off (F > S) (20–0.1 Hz)

CH	Function	DMX	Description
18	Shutter (continued)	105–109	Open
		110–124	Strobe Random F > S (20–0.1 Hz)
		125–129	Open
		130–144	Random Fast On Slow Off F > S (20–0.1 Hz)
		145–149	Open
		150–164	Random Slow On Fast Off F > S (20–0.1 Hz)
		165–169	Open
		170–184	Pulse Strobe F > S (20–0.1 Hz)
		185–189	Open
		190–204	Strobe Pulse Random F > S (20–0.1 Hz)
		205–209	Open
		210–224	Fade On Or Off F > S (20–0.1 Hz)
		225–229	Open
		230–244	Pulse Strobe F > S (20–0.1 Hz)
		245–255	Open
19	Zoom	0	Narrow
		1–254	Narrow > Wide
		255	Wide
20	Control	0–9	No Function
		10–14	P/T BO After 3Sec
		15–19	Reserved
		20–24	RGBW Color Mixing
		25–29	CMY Color Mixing
		30–49	Reserved
		50–54	Pan Reset
		55–59	Tilt Reset
		60–64	Zoom Reset
		65–69	Reserved
		70–74	Reset All
		75–119	Reserved
		120–124	Fan Low Speed
		125–129	Fan Full Speed
		130–134	Fan Auto
		135–139	Dimmer Fast
		140–144	Dimmer Smooth
		145–149	Liinear Curve
		150–154	Square Curve
		155–159	I Square Curve
		160–164	S-Curve
		165–169	Output = Full
		170–174	Output = White
		175–179	Single Color Calibration Off

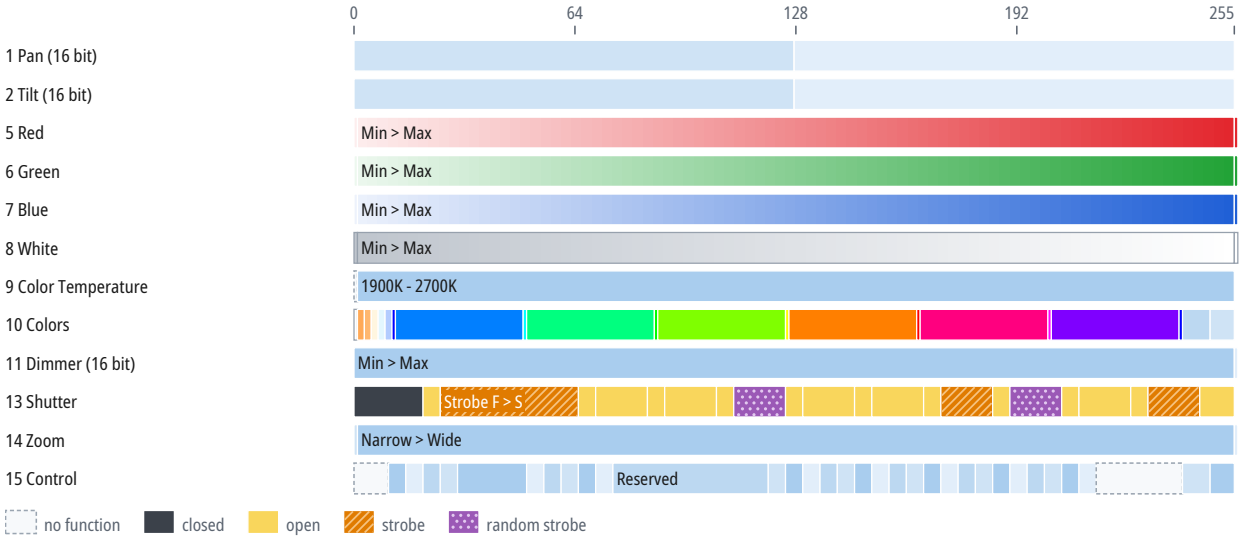
CH	Function	DMX	Description
20	Control (continued)	180–184	Single Color Calibration On
		185–189	PWM 600Hz
		190–194	PWM 1200Hz
		195–199	PWM 2000Hz
		200–204	PWM 4000Hz
		205–209	PWM 6000Hz
		210–214	PWM 15000Hz
		215–239	No Function
		240–247	Calibration On
		248–255	Calibration Off

Mode 15Ch Mode

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 13 Shutter at 20–24, 65–69, 85–89, 105–109, 125–129, 145–149, 165–169, 185–189, 205–209, 225–229 or 245–255 “Open”. The GDTF file gives these values for a console's Highlight function: CH 5 Red 255, CH 6 Green 255, CH 7 Blue 255, CH 8 White 255, CH 10 Colors 0, CH 11 Dimmer 255, CH 13 Shutter 22.

Channel functions at a glance



CH	Function	DMX	Description
1	Pan		Same as CH 1 in the mode “20Ch Mode” (p. 11)
2	Tilt		Same as CH 2 in the mode “20Ch Mode” (p. 11)
3	Pan Fine	0–255	Fine adjustment of CH 1
4	Tilt Fine	0–255	Fine adjustment of CH 2
5	Red	0	Min
		1–254	Min > Max
		255	Max
6	Green	0	Min
		1–254	Min > Max
		255	Max

CH	Function	DMX	Description
7	Blue	0	Min
		1–254	Min > Max
		255	Max
8	White	0	Min
		1–254	Min > Max
		255	Max
9	Color Temperature	0	No Function
		1–255	1900K - 2700K (1900–2700 K)
10	Colors		Same as CH 15 in the mode “20Ch Mode” (p. 12)
11	Dimmer		Same as CH 16 in the mode “20Ch Mode” (p. 12)
12	Dimmer Fine	0–255	Fine adjustment of CH 11
13	Shutter		Same as CH 18 in the mode “20Ch Mode” (p. 12)
14	Zoom		Same as CH 19 in the mode “20Ch Mode” (p. 13)
15	Control		Same as CH 20 in the mode “20Ch Mode” (p. 13)

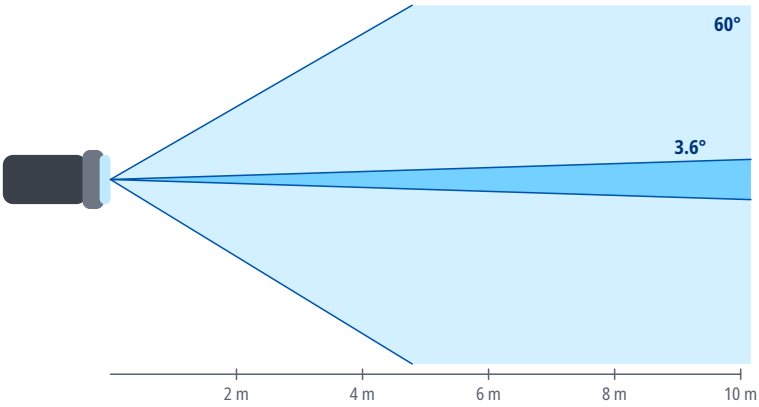
10 Technical specifications

Parameter	Value
Light	
Light source	LED
LED power	40 W
Luminous flux	10,000 lm
Color temperature	6,000 K
Color rendering index (CRI)	78
Optics	
Zoom	3.6–60°
Movement	
Pan	540°
Tilt	230°
Control	
RDM	yes (manufacturer ID 0x29B4, device model ID 0x0038)
Dimensions and construction	
Weight	9.4 kg
Operating environment	
Operating temperature	0 to 45 °C

Speeds and ranges

Parameter	Value
Color temperature range	1900–19000 K
Strobe frequency	0.1–20 Hz

Spot diameter



Distance	Ø 3.6°	Ø 60°
2 m	0.13 m	2.3 m
4 m	0.25 m	4.6 m
6 m	0.38 m	6.9 m
8 m	0.5 m	9.2 m
10 m	0.63 m	11.5 m
15 m	0.94 m	17.3 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.