DMX REFERENCE

Ronin R35

Leding

Manufacturer	Leding
GDTF file	Leding_Ronin_R35_59836.gdtf
GDTF revision	V1.0 · 2024-03-19
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1 About this manual

This document describes the Ronin R35 by Leding. It was compiled from the GDTF file Leding_Ronin_R35_59836.gdtf from the GDTF-Share library.

File revision: “V1.0”.

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 Leding; 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
BASIC	22	23	1, 23, 45, 67, ...
STANDARD	25	20	1, 26, 51, 76, ...

No light? Check these channels

- BASIC: CH 20 Dimmer above 0; CH 21 Shutter at 0–9 “open” or 100–109 or 180–188
- STANDARD: CH 22 Dimmer above 0; CH 24 Shutter at 0–9 “open” or 100–109 or 180–188


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.

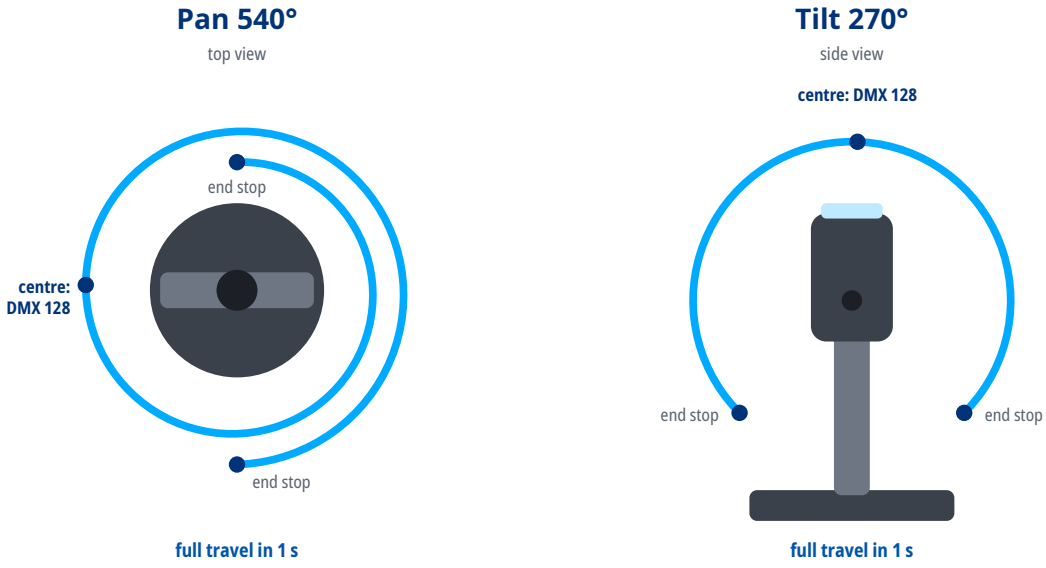
⚠ CAUTION

- 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.

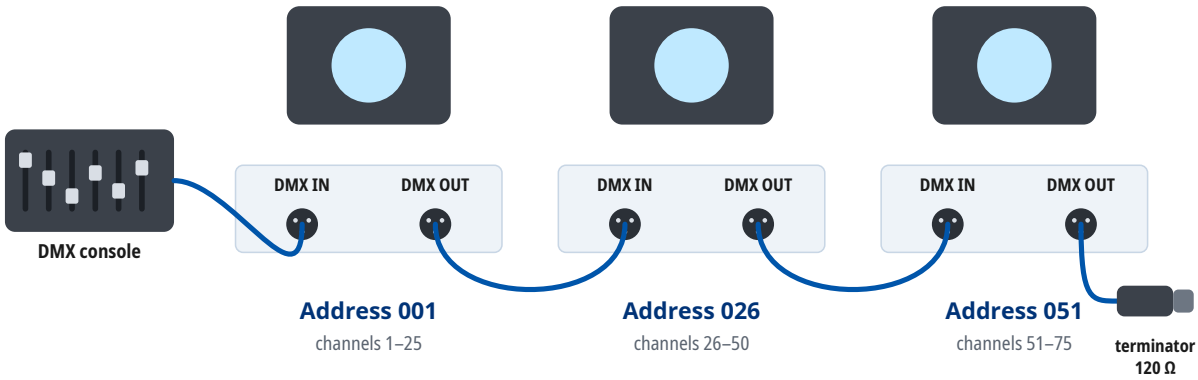
6 Connections

- 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 STANDARD: every unit occupies 25 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

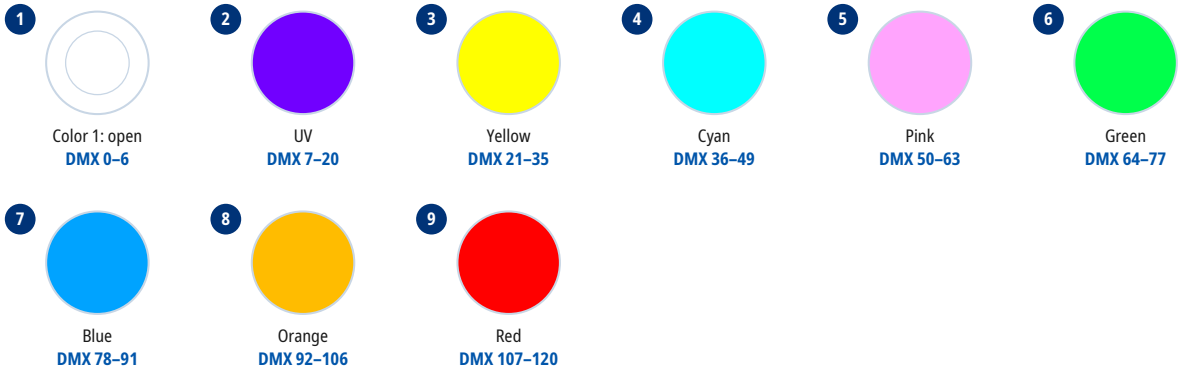
- The device occupies as many consecutive channels in the DMX universe as the selected DMX mode uses, starting at the set start address.
- Number of channels occupied in the DMX mode “STANDARD”: 25.
- Choose start addresses so that the channels of individual devices do not overlap and the last occupied 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 “STANDARD”, you can use, for example, the start addresses 1, 26, 51, 76.
- 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

	BASIC 22 channels	STANDARD 25 channels
Pan / Tilt	**1, 2**	**1, 3**
Pan / Tilt resolution	8 bit	16 bit
Dimmer	**20**	**22**
Dimmer resolution	8 bit	16 bit
Shutter / strobe	**21**	**24**
Color mixing	**4–6**	**6–8**
Color wheel	**9**	**11**
Gobo wheel	**11, 12**	**13, 14**
Gobo rotation	**13**	**15**
Prism		**16**
Frost	**15**	**17**
Zoom	**17**	**19**
Focus	**19**	**21**
Iris	**16**	**18**

Color wheel



Gobo wheel 1

1
Gobo 1: open
DMX 0–10

2 
Gobo 1 1
DMX 11–14

3 
Gobo 1 2
DMX 15–18

4 
Gobo 1 3
DMX 19–22

5 
Gobo 1 4
DMX 23–26

6 
Gobo 1 5
DMX 27–30

7 
Gobo 1 6
DMX 31–34

8 
Gobo 1 7
DMX 35–38

9 
Gobo 1 8
DMX 39–42

10 
Gobo 1 9
DMX 43–46

11 
Gobo 1 10
DMX 47–50

12 
Gobo 1 11
DMX 51–54

13 
Gobo 1 12
DMX 55–58

Gobo wheel 2

1
Gobo 2: open
DMX 0–10

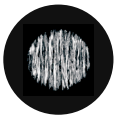
2 
Gobo 2 1
DMX 11–16

3 
Gobo 2 2
DMX 17–22

4 
Gobo 2 3
DMX 23–28

5 
Gobo 2 4
DMX 29–34

6 
Gobo 2 5
DMX 35–40

7 
Gobo 2 6
DMX 41–46

8 
Gobo 2 7
DMX 47–52

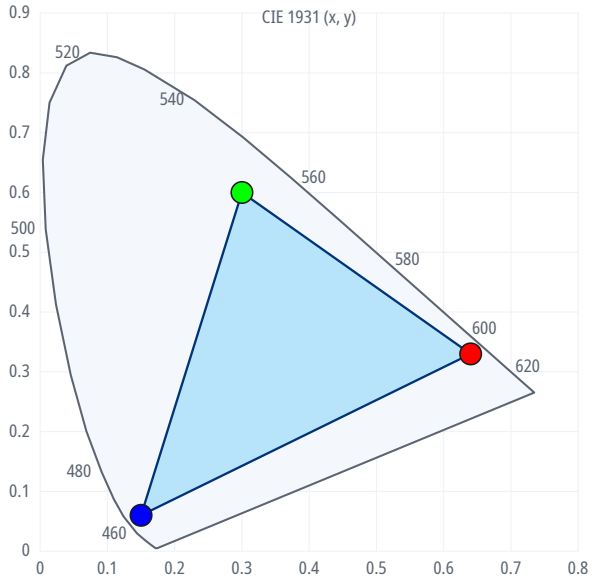
9 
Gobo 2 8
DMX 53–58

Prism

1
open
DMX 0–11

2 
4 facets
4 facet
DMX 146–150

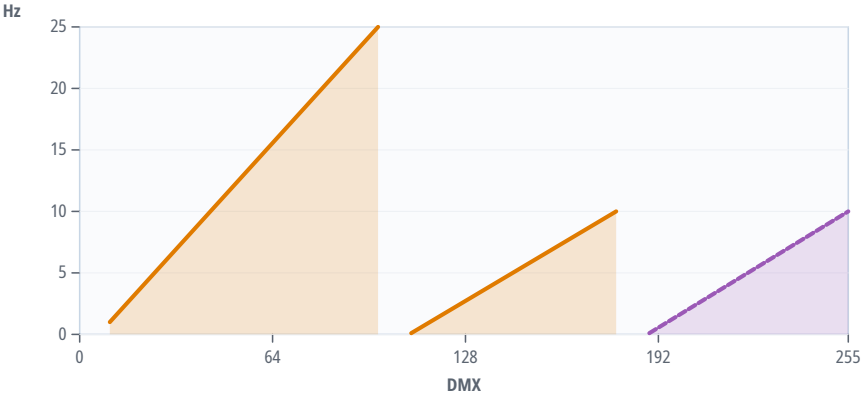
LED colors and the colors they mix



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

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

Strobe rate

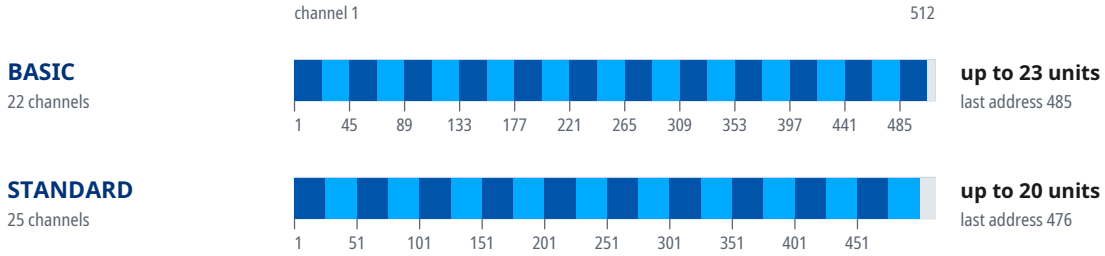


CH 21 · BASIC

- 10–99: 1–25 Hz
  Shutter1Strobe 2
- 110–178: 0.1–10 Hz
  Shutter1StrobePulse 4
- 189–255: 0.1–10 Hz
  Shutter1StrobeRandom 6

9 DMX channels

Units in one DMX universe



Start addresses of 20 units in the mode “STANDARD”

Unit	Start address	Unit	Start address	Unit	Start address	Unit	Start address
1	1	6	126	11	251	16	376
2	26	7	151	12	276	17	401
3	51	8	176	13	301	18	426
4	76	9	201	14	326	19	451
5	101	10	226	15	351	20	476

Mode BASIC

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 20 Dimmer above 0; CH 21 Shutter at 0–9 “open” or 100–109 or 180–188. The GDTF file gives these values for a console's Highlight function: CH 4 Cyan 0, CH 5 Magenta 0, CH 6 Yellow 0, CH 9 Colors 0, CH 20 Dimmer 255, CH 21 Shutter 0.

Channel functions at a glance



CH	Function	DMX	Description
1	Pan	0	Min
		1–127	Min ... center
		128	Center
		129–254	Center ... max
		255	Max
2	Tilt	0	Min
		1–127	Min ... center
		128	Center
		129–254	Center ... max
		255	Max
3	Speed Pan/Tilt	0	Min Track
		1–254	Min Track ... max Track
		255	Max Track

CH	Function	DMX	Description
4	Cyan		Color RGB_R 1
		0	Min
		1–254	Min … max
		255	Max
5	Magenta		Color RGB_G 1
		0	Min
		1–254	Min … max
		255	Max
6	Yellow		Color RGB_B 1
		0	Min
		1–254	Min … max
		255	Max
7	COLORTEMPERATURE	0	Min ColorTemperature
		1–254	Min ColorTemperature … max ColorTemperature
		255	Max ColorTemperature
8	COLORCOLOR	0–19	Entry 0
		20–21	3000K
		22–23	3200K
		24–25	3500K
		26–27	4000K
		28–29	4500K
		30–31	5000K
		32–33	5400K
		34–35	5600K
		36–37	6000K
		38–39	6500K
		40–41	6800K
		42–43	L101
		44–45	L194
		46–47	L019
		48–49	R08
		50–51	L213
		52–53	R80
		54–55	L202
		56–57	L328
		58–59	R3314
		60–61	L106
		62–63	L768
		64–255	Max Cycle
9	Colors	0–6	Color 1: open
		7–20	UV
		21–35	Yellow

CH	Function	DMX	Description
9	Colors (continued)	36–49	Cyan
		50–63	Pink
		64–77	Green
		78–91	Blue
		92–106	Orange
		107–120	Red
		121–127	Color 1: open (2)
		128–134	UV (2)
		135–141	Yellow (2)
		142–148	Cyan (2)
		149–155	Pink (2)
		156–162	Green (2)
		163–169	Blue (2)
		170–176	Orange (2)
		177–183	Red (2)
		184–191	Color 1: open (3)
		192	>>>
		192–222	Spin 100 1% (179.9–1.82 °/s)
		223–224	Color 1 Wheel Spin: stop
		225–255	Spin -1 -100% (1.8–179.9 °/s)
		255	<<<
10	Colors Fine	0–255	Fine adjustment of CH 9
11	Gobo	0–10	Gobo 1: open
		11–14	Gobo 1 1
		15–18	Gobo 1 2
		19–22	Gobo 1 3
		23–26	Gobo 1 4
		27–30	Gobo 1 5
		31–34	Gobo 1 6
		35–38	Gobo 1 7
		39–42	Gobo 1 8
		43–46	Gobo 1 9
		47–50	Gobo 1 10
		51–54	Gobo 1 11
		55–58	Gobo 1 12
		59–63	Gobo 1 1
		64–68	Gobo 1 2
		69–73	Gobo 1 3
		74–78	Gobo 1 4
		79–83	Gobo 1 5
		84–88	Gobo 1 6
		89–93	Gobo 1 7

CH	Function	DMX	Description
11	Gobo (continued)	94–98	Gobo 1 8
		99–103	Gobo 1 9
		104–108	Gobo 1 10
		109–113	Gobo 1 11
		114–118	Gobo 1 12
		119–127	Max Shake
		128	>>>
		129–190	Spin 100 1% (177.1–4.62 °/s)
		191–192	Gobo 1 Wheel Spin: stop
		193–254	Spin -1 -100% (1.8–174.3 °/s)
		255	<<<
12	Gobo 2	0–10	Gobo 2: open
		11–16	Gobo 2 1
		17–22	Gobo 2 2
		23–28	Gobo 2 3
		29–34	Gobo 2 4
		35–40	Gobo 2 5
		41–46	Gobo 2 6
		47–52	Gobo 2 7
		53–58	Gobo 2 8
		59–66	Gobo 2 1
		67–74	Gobo 2 2
		75–82	Gobo 2 3
		83–90	Gobo 2 4
		91–98	Gobo 2 5
		99–106	Gobo 2 6
		107–114	Gobo 2 7
		115–122	Gobo 2 8
		123–127	Max Shake2
		128	>>>
		129–190	Spin2 100 1% (177.1–4.62 °/s)
		191–192	Gobo 2 Wheel Spin: stop
		193–254	Spin2 -1 -100% (1.8–174.3 °/s)
		255	<<<
13	Gobo 2 Rotation	0	Zero
		1–126	Zero ... max CW
		127	Max CW
		128	>>>
		129–190	Rotate2 100 1% (177.1–4.62 °/s)
		191–192	Gobo 2 Pos Rotate: stop
		193–254	Rotate2 -1 -100% (1.8–174.3 °/s)
		255	<<<

CH	Function	DMX	Description
14	EFFECTWHEEL	0–10	EFFECTWHEELSELECT: open
		11	Zero
		12–143	Zero ... max CW
		144	Max CW
		145	EFFECTWHEELSELECT 3
		146–149	Effect
		150	EFFECTROTATE 4
		151	>>>
		152–200	Rotate 100 1%
		201–205	EFFECTROTATE: stop
		206–254	Rotate -1 -100%
		255	<<<
15	Frost	0–10	Frost 0%
		11–255	Frost 100%
16	Iris	0	Open Iris
		1–127	Iris 100 1%
		128–129	Closed Iris
		130	Iris Pulse Open 2
		131	Min Strobe Pulse Open
		132–169	Min Strobe Pulse Open ... max Strobe Pulse Open
		170	Max Strobe Pulse Open
		171	IRIS_STROBE_PULSE 3
		172	Min Strobe Pulse
		173–209	Min Strobe Pulse ... max Strobe Pulse
		210	Max Strobe Pulse
		211	Iris Strobe Random 4
		212	Min Strobe Rnd
		213–249	Min Strobe Rnd ... max Strobe Rnd
		250	Max Strobe Rnd
		251	Iris 5
		252–255	Closed Iris (2)
17	Zoom	0	Narrow
		1–126	Narrow ... normal
		127	Normal
		128–254	Normal ... wide
		255	Wide
18	Focus Mode	0–15	Entry 0
		16–63	5m auto focus
		64–111	10m auto focus
		112–159	15m auto focus
		160–207	20m auto focus
		208–255	25m auto focus

CH	Function	DMX	Description
19	Focus	0	Min Focus
		1–254	Min Focus ... max Focus
		255	Max Focus
20	Dimmer	0	Closed
		1–254	Closed ... open
		255	Open
21	Shutter	0–9	Shutter 1: open
		10	Min Strobe
		11–98	Min Strobe ... max Strobe
		99	Max Strobe
		100–109	Shutter 1: open (2)
		110	Min Pulse
		111–177	Min Pulse ... max Pulse
		178	Max Pulse
		179	Shutter 1 5
		180–188	Shutter 1: open (3)
		189	Shutter 1 Strobe Random 6
		190	Min Rnd
		191–254	Min Rnd ... max Rnd
		255	Max Rnd
22	Reset	0–10	No function
		11–20	POSITIONBLINK: on
		21–30	POSITIONBLINK: off
		31–40	PANINVERT: on (2)
		41–50	TILTINVERT: on (3)
		51–60	PANINVERT: off (2)
		61–70	FANSPEED: Speed 1%
		71–80	FANSPEED: Speed 50%
		81–90	FANSPEED: Speed 100%
		91–100	Auto
		101–110	Dim4
		111–120	Dim3
		121–130	Dim2
		131–140	Dim1
		141–149	Dim0
		150	PWMFREQUENCYSELECT 9
		151–160	1200 Hz
		161–170	2400 Hz
		171–180	4000 Hz
		181–190	6000 Hz
		191–199	25000 Hz
		200	Fixture Global Reset 10

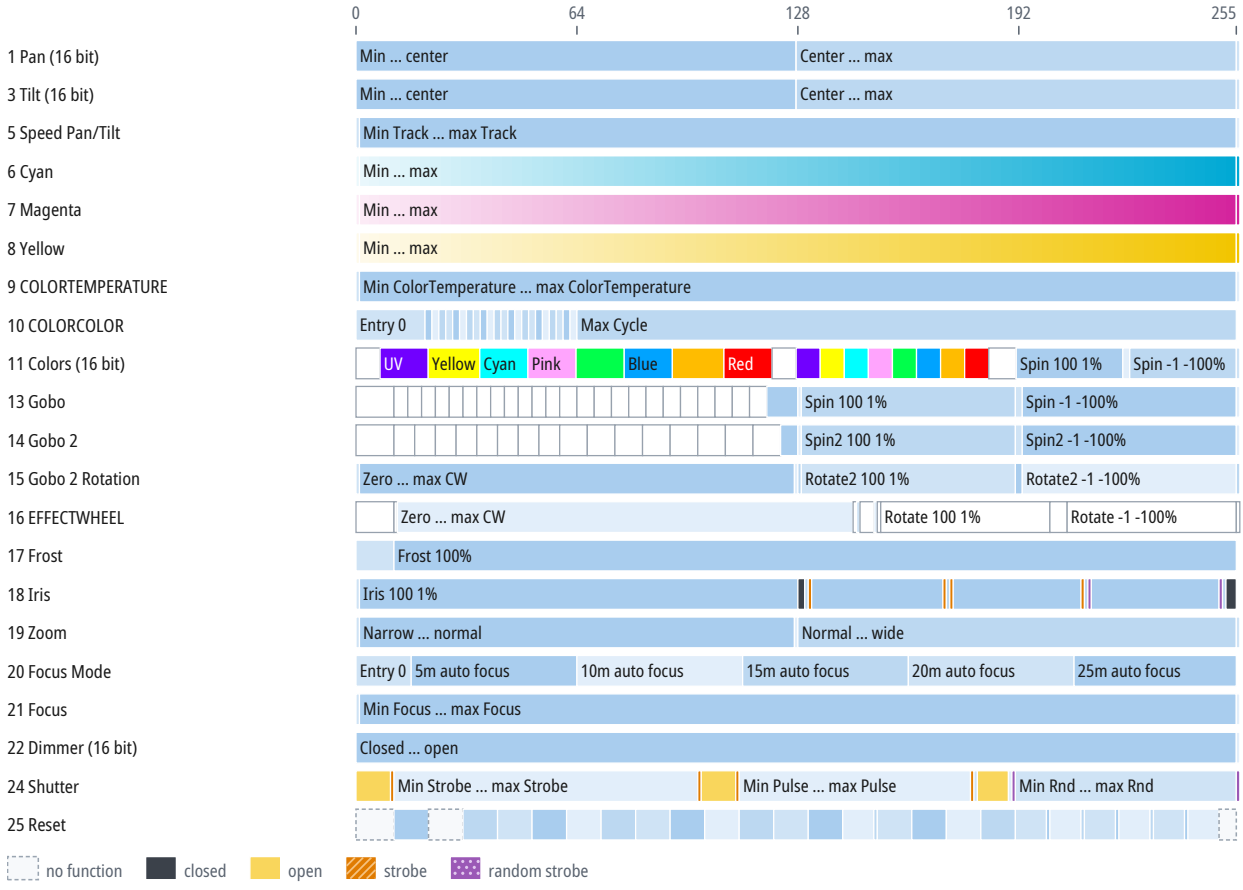
CH	Function	DMX	Description
22	Reset (continued)	201–209	Reset
		210	Position Reset 11
		211–219	PosReset
		220	Color Mix Reset 12
		221–229	ColMReset
		230	Gobo Wheel Reset 1 13
		231–239	GW1Reset
		240	FIXTURENONPOSITIONRESET 14
		241–249	NonPosReset
		250–255	No function

Mode STANDARD

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 22 Dimmer above 0; CH 24 Shutter at 0–9 “open” or 100–109 or 180–188. The GDTF file gives these values for a console's Highlight function: CH 6 Cyan 0, CH 7 Magenta 0, CH 8 Yellow 0, CH 11 Colors 0, CH 22 Dimmer 255, CH 24 Shutter 0.

Channel functions at a glance



CH	Function	DMX	Description
1	Pan	0–127	Min ... center
		128–255	Center ... max
		255	Max
2	Pan Fine	0–255	Fine adjustment of CH 1
3	Tilt	0–127	Min ... center
		128–255	Center ... max
		255	Max
4	Tilt Fine	0–255	Fine adjustment of CH 3
5	Speed Pan/Tilt		Same as CH 3 in the mode “BASIC” (p. 10)
6	Cyan		Same as CH 4 in the mode “BASIC” (p. 11)
7	Magenta		Same as CH 5 in the mode “BASIC” (p. 11)
8	Yellow		Same as CH 6 in the mode “BASIC” (p. 11)
9	COLORTEMPERATURE		Same as CH 7 in the mode “BASIC” (p. 11)
10	COLORCOLOR		Same as CH 8 in the mode “BASIC” (p. 11)
11	Colors		Same as CH 9 in the mode “BASIC” (p. 11)
12	Colors Fine	0–255	Fine adjustment of CH 11
13	Gobo		Same as CH 11 in the mode “BASIC” (p. 12)
14	Gobo 2	0–10	Gobo 2: open
		11–16	Gobo 2 1
		17–22	Gobo 2 2
		23–28	Gobo 2 3
		29–34	Gobo 2 4
		35–40	Gobo 2 5
		41–46	Gobo 2 6
		47–52	Gobo 2 7
		53–58	Gobo 2 8
		59–66	Gobo 2 1
		67–74	Gobo 2 2
		75–82	Gobo 2 3
		83–90	Gobo 2 4
		91–98	Gobo 2 5
		99–106	Gobo 2 6
		107–114	Gobo 2 7
		115–122	Gobo 2 8
		123–127	Shake
		128	>>>
		129–190	Spin2 100 1% (177.1–4.62 °/s)
		191–192	Gobo 2 Wheel Spin: stop
		193–254	Spin2 -1 -100% (1.8–174.3 °/s)
		255	<<<

CH	Function	DMX	Description
15	Gobo 2 Rotation		Same as CH 13 in the mode “BASIC” (p. 13)
16	EFFECTWHEEL	0–10	EFFECTWHEELSELECT: open
		11	Zero
		12–143	Zero ... max CW
		144	Max CW
		145	Prism 1 3
		146–149	Effect
		150	Prism 1 Select Spin 4
		151	>>>
		152–200	Rotate 100 1% (176.3–5.36 °/s)
		201–205	Prism 1 Select Spin: stop
		206–254	Rotate -1 -100% (1.8–172.8 °/s)
		255	<<<
17	Frost		Same as CH 15 in the mode “BASIC” (p. 14)
18	Iris		Same as CH 16 in the mode “BASIC” (p. 14)
19	Zoom		Same as CH 17 in the mode “BASIC” (p. 14)
20	Focus Mode		Same as CH 18 in the mode “BASIC” (p. 14)
21	Focus		Same as CH 19 in the mode “BASIC” (p. 15)
22	Dimmer	0–255	Closed ... open
		255	Open
23	Dimmer Fine	0–255	Fine adjustment of CH 22
24	Shutter		Same as CH 21 in the mode “BASIC” (p. 15)
25	Reset		Same as CH 22 in the mode “BASIC” (p. 15)

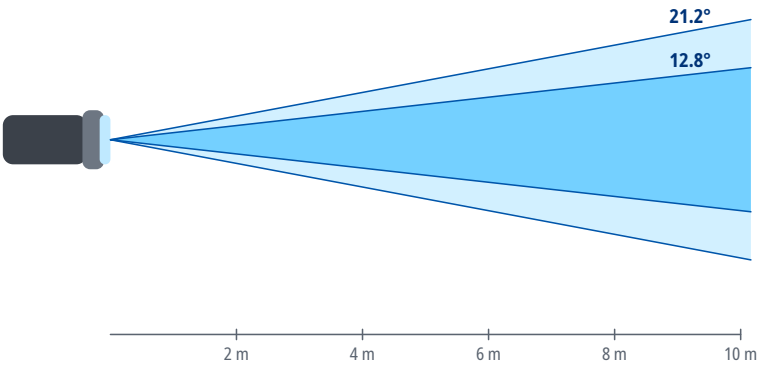
10 Technical specifications

Parameter	Value
Light	
Light source	discharge lamp
Lamp power	1,000 W
Luminous flux	10,000 lm
Color temperature	6,000 K
Color rendering index (CRI)	100
Optics	
Zoom	12.8–21.2°
Movement	
Pan	540°
Tilt	270°
Operating environment	
Operating temperature	0 to 40 °C

Speeds and ranges

Parameter	Value
Strobe frequency	1–25 Hz
Color wheel rotation	up to 179.9 °/s (30 rpm)
Gobo wheel 1 rotation	up to 179.9 °/s (30 rpm)
Gobo wheel 2 rotation	up to 179.9 °/s (30 rpm)
Gobo 2 rotation	up to 179.9 °/s (30 rpm)
Prism rotation	up to 114.6 °/s (19 rpm)

Spot diameter



Distance	Ø 12.8°	Ø 21.2°
2 m	0.45 m	0.75 m
4 m	0.9 m	1.5 m
6 m	1.3 m	2.3 m
8 m	1.8 m	3 m
10 m	2.2 m	3.8 m
15 m	3.4 m	5.6 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.