DMX REFERENCE

IP Blinder DTW4

CKC Lighting



Manufacturer	CKC Lighting
GDTF file	CKC_Lighting_IP_Blinder_DTW4_64724.gdtf
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1 About this manual

This document describes the IP Blinder DTW4 by CKC Lighting. It was compiled from the GDTF file CKC_Lighting_IP_Blinder_DTW4_64724.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 CKC Lighting; 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	12.7 kg

DMX modes

Mode	Channels	Units in one universe	First start addresses
01CH	1	512	1, 2, 3, 4, ...
2CH	2	256	1, 3, 5, 7, ...
4Cell	4	128	1, 5, 9, 13, ...
Standard	7	73	1, 8, 15, 22, ...
Extended	13	39	1, 14, 27, 40, ...
4WA	8	64	1, 9, 17, 25, ...
Basic	4	128	1, 5, 9, 13, ...

No light? Check these channels

- Standard: CH 1 Shutter at 32–63, 96–127, 160–191 or 224–255 “Open”
- Extended: CH 1 Shutter at 32–63, 96–127, 160–191 or 224–255 “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

- This device produces very intense flashes of light.
- Flash rates of about 3 to 30 flashes per second carry the highest risk for people with photosensitive epilepsy.
- Do not aim the device into the eyes of the audience or performers at close range.
- At public events, always give clear advance notice that strobe effects will be used.

4 Installation

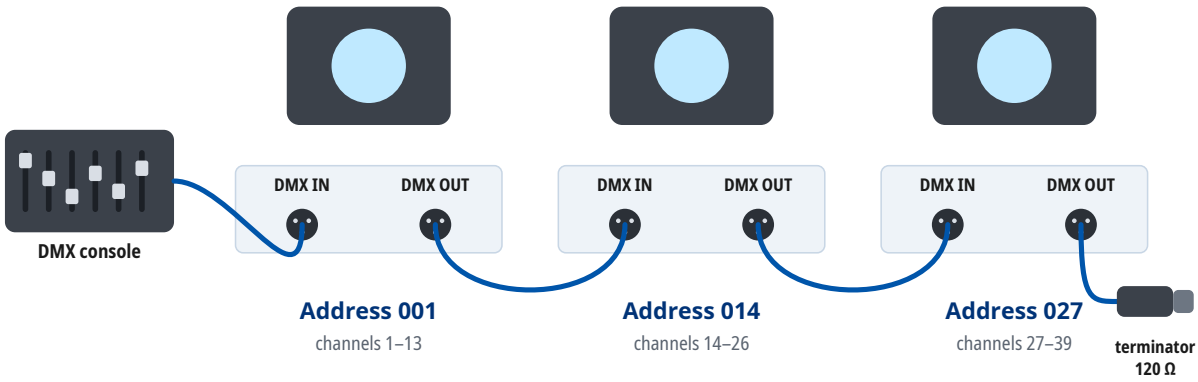
⚠ WARNING

- 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: 12.7 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.

5 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 Extended: every unit occupies 13 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.

6 Operation

Setting the DMX address

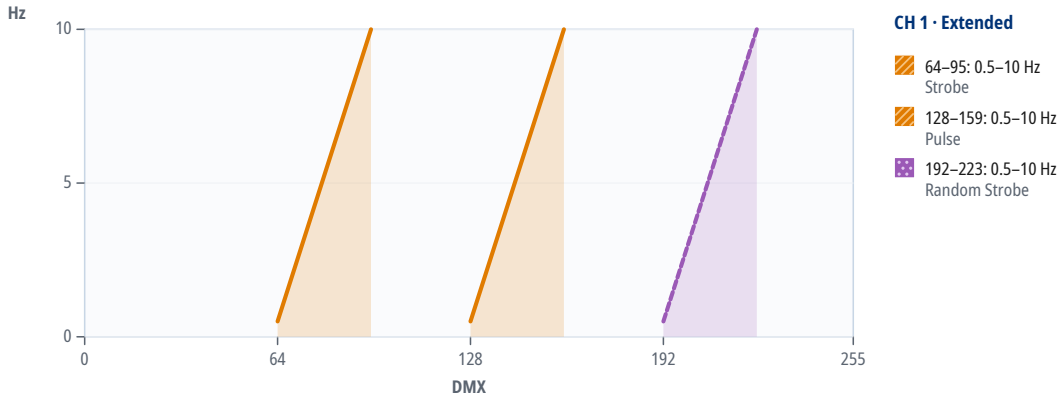
- The device occupies as many consecutive channels in the DMX universe as the selected DMX mode uses, starting at the set start address.
- Number of channels occupied in the DMX mode “Extended”: 13.
- Choose start addresses so that the channels of individual devices do not overlap and the last occupied 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 “Extended”, you can use, for example, the start addresses 1, 14, 27, 40.
- The DMX mode set on the device must match the fixture profile (personality) used in the controller.

7 Functions at a glance

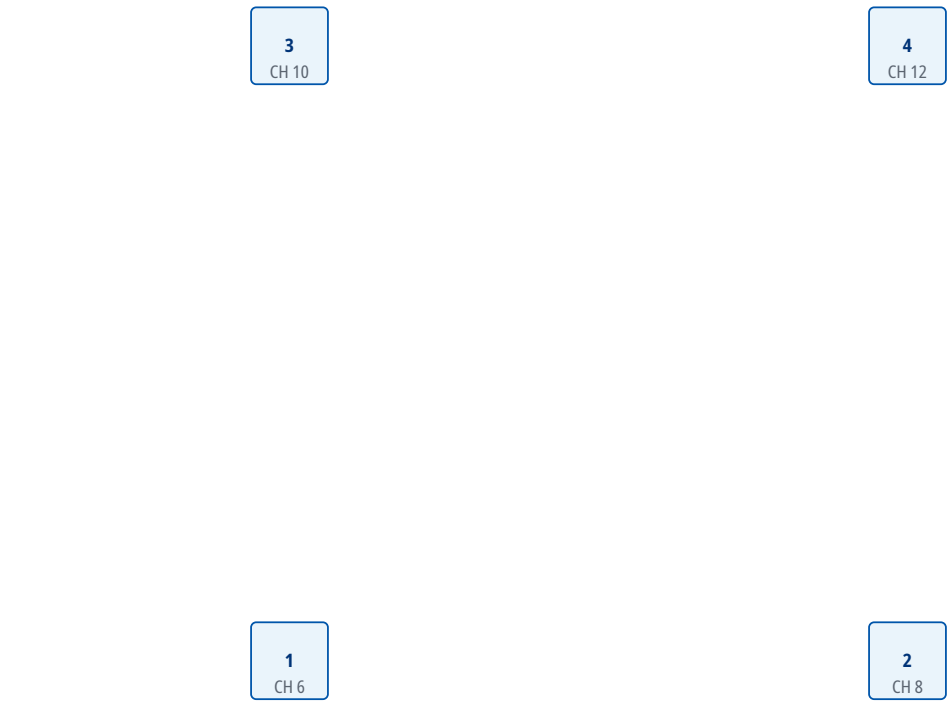
Functions in each DMX mode

	01CH 1 channel	2CH 2 channels	4Cell 4 channels	Standard 7 channels	Extended 13 channels	4WA 8 channels	Basic 4 channels
Dimmer	1			2	2		1
Dimmer resolution	8 bit			16 bit	16 bit		16 bit
Shutter / strobe				1	1		
Color mixing		1, 2	1–4	6, 7	6–13	1–8	3, 4
Pixel control			✓		✓	✓	

Strobe rate



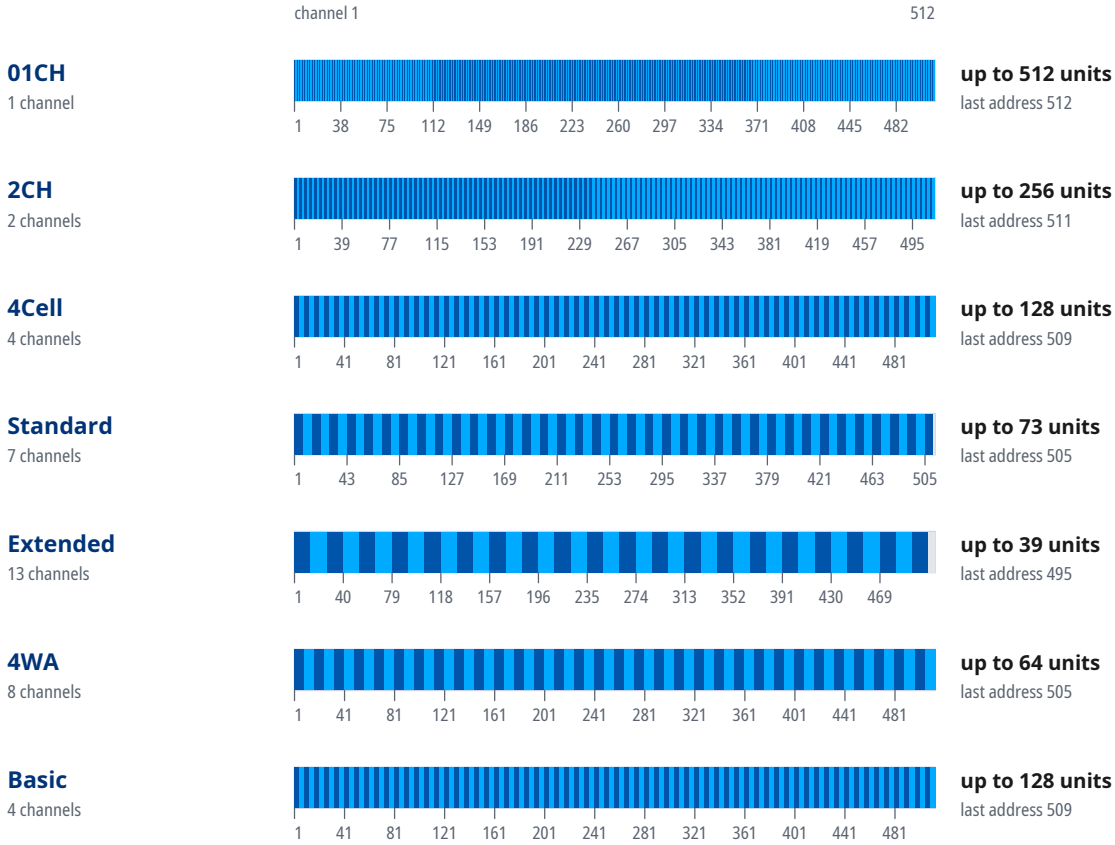
Cells (pixels)



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

8 DMX channels

Units in one DMX universe



Start addresses of 20 units in the mode “Extended”

Unit	Start address	Unit	Start address	Unit	Start address	Unit	Start address
1	1	6	66	11	131	16	196
2	14	7	79	12	144	17	209
3	27	8	92	13	157	18	222
4	40	9	105	14	170	19	235
5	53	10	118	15	183	20	248

Mode 01CH

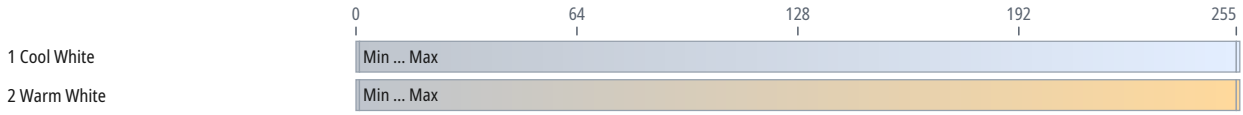
Channel functions at a glance



CH	Function	DMX	Description
1	Dimmer		Dim to Warm All Pixels
		0	Min Dimmer
		1–254	Min Dimmer ... Max Dimmer
		255	Max Dimmer

Mode 2CH

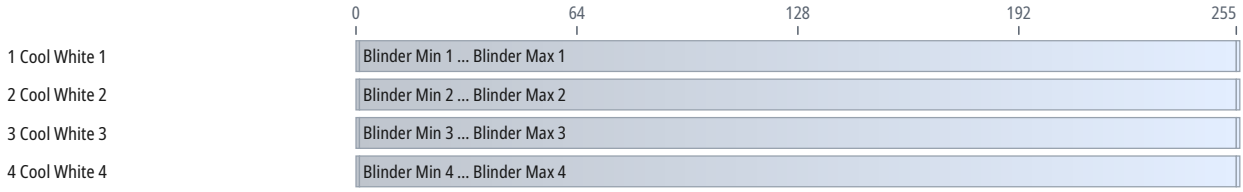
Channel functions at a glance



CH	Function	DMX	Description
1	Cool White	0	Min
		1–254	Min ... Max
		255	Max
2	Warm White	0	Min
		1–254	Min ... Max
		255	Max

Mode 4Cell

Channel functions at a glance



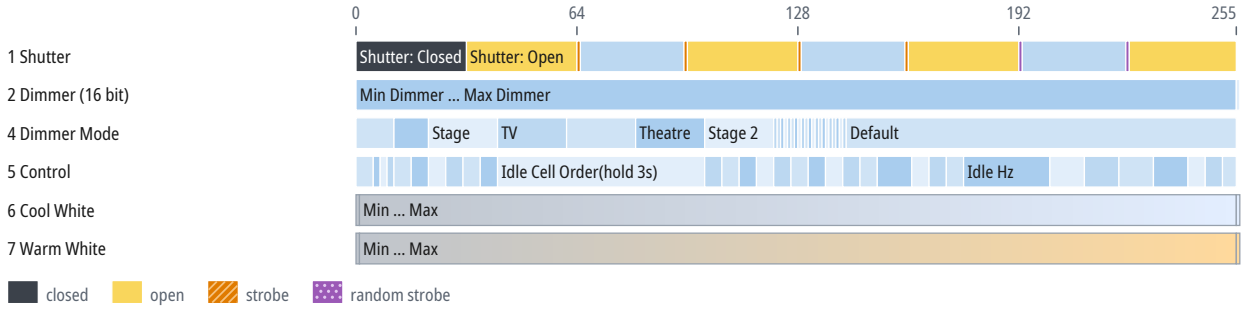
CH	Function	DMX	Description
1	Cool White 1	0	Blinder Min 1
		1–254	Blinder Min 1 ... Blinder Max 1
		255	Blinder Max 1
2	Cool White 2	0	Blinder Min 2
		1–254	Blinder Min 2 ... Blinder Max 2
		255	Blinder Max 2
3	Cool White 3	0	Blinder Min 3
		1–254	Blinder Min 3 ... Blinder Max 3
		255	Blinder Max 3
4	Cool White 4	0	Blinder Min 4
		1–254	Blinder Min 4 ... Blinder Max 4
		255	Blinder Max 4

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 1 Shutter at 32–63, 96–127, 160–191 or 224–255 “Open”. The GDTF file gives these values for a console's Highlight function: CH 1 Shutter 32.

Channel functions at a glance



CH	Function	DMX	Description
1	Shutter	0–31	Shutter: Closed
		32–63	Shutter: Open
		64	Strobe Min
		65–94	Strobe Min ... Strobe Max
		95	Strobe Max
		96–127	Shutter Open: Open
		128	Strobe Pulse Min
		129–158	Strobe Pulse Min ... Strobe Pulse Max
		159	Strobe Pulse Max
		160–191	Shutter Open_: Open
		192	Random Strobe Min
		193–222	Random Strobe Min ... Random Strobe Max
		223	Random Strobe Max
		224–255	Shutter Open__: Open
2	Dimmer		Dim to Warm All Pixels
		0–255	Min Dimmer ... Max Dimmer
		255	Max Dimmer
3	Dimmer Fine	0–255	Fine adjustment of CH 2
4	Dimmer Mode	0–10	Standard
		11–20	Tungsten
		21–40	Stage
		41–60	TV
		61–80	Architectural
		81–100	Theatre
		101–120	Stage 2
		121	0ms Dimmer Delay Time
		122	100ms Dimmer Delay Time

CH	Function	DMX	Description
4	Dimmer Mode (continued)	123	200ms Dimmer Delay Time
		124	300ms Dimmer Delay Time
		125	400ms Dimmer Delay Time
		126	500ms Dimmer Delay Time
		127	600ms Dimmer Delay Time
		128	700ms Dimmer Delay Time
		129	800ms Dimmer Delay Time
		130	900ms Dimmer Delay Time
		131	1s Dimmer Delay Time
		132	1500ms Dimmer Delay Time
		133–141	2...10s Dimmer Delay Time
		142–255	Default
5	Control	0–4	Idle
		5–6	Fan silent
		7–8	Fan auto (default)
		9–10	Fan high
		11–15	Standard Cell Order(hold 3s)
		16–20	Inverted Cell Order(hold 3s)
		21–25	Idle Cell Order(hold 3s)
		26–30	Snake Cell Order(hold 3s)
		31–35	Snake Inverted Cell Order(hold 3s)
		36–40	Snake Rotated Cell Order(hold 3s)
		41–100	Idle Cell Order(hold 3s)
		101–105	900Hz
		106–110	1000Hz
		111–115	1100Hz
		116–120	1200Hz (default)
		121–125	1300Hz
		126–130	1400Hz
		131–135	1500Hz
		136–140	2500Hz
		141–145	4000Hz
		146–150	5000Hz
		151–160	10000Hz
		161–165	15000Hz
		166–170	20000Hz
		171–175	25000Hz
		176–200	Idle Hz
		201–210	Linear
		211–220	Square
		221–230	Inverse Square
		231–240	S-Curve (default)

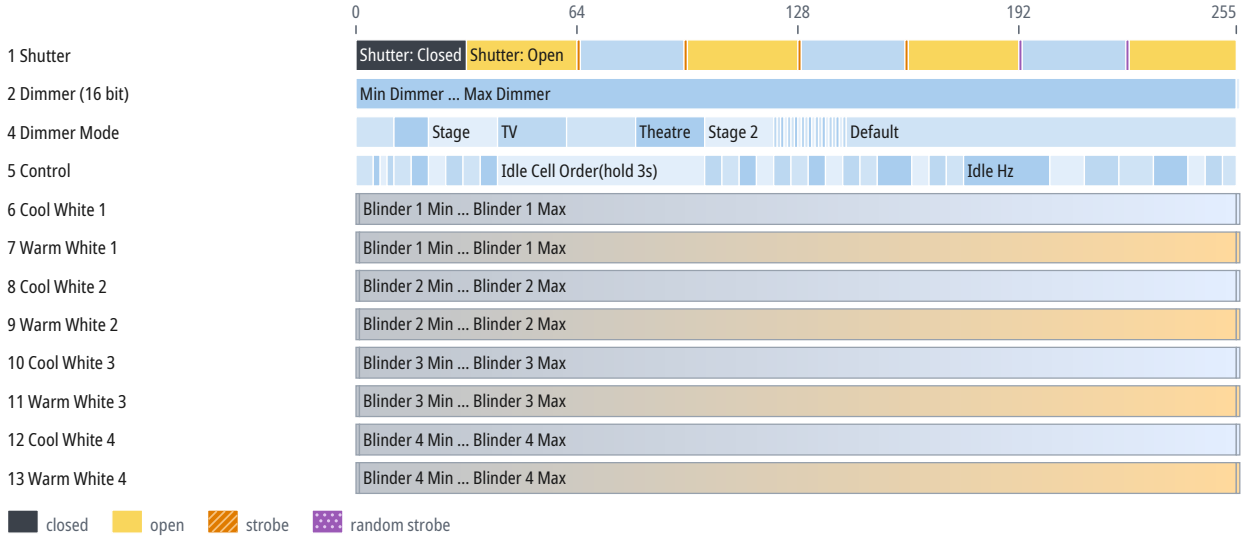
CH	Function	DMX	Description
5	Control (continued)	241–245	Dim to warm ON
		246–250	Dim to warm OFF
		251–255	Idle
6	Cool White		Same as CH 1 in the mode “2CH” (p. 9)
7	Warm White		Same as CH 2 in the mode “2CH” (p. 9)

Mode Extended

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 1 Shutter at 32–63, 96–127, 160–191 or 224–255 “Open”. The GDTF file gives these values for a console's Highlight function: CH 1 Shutter 32.

Channel functions at a glance

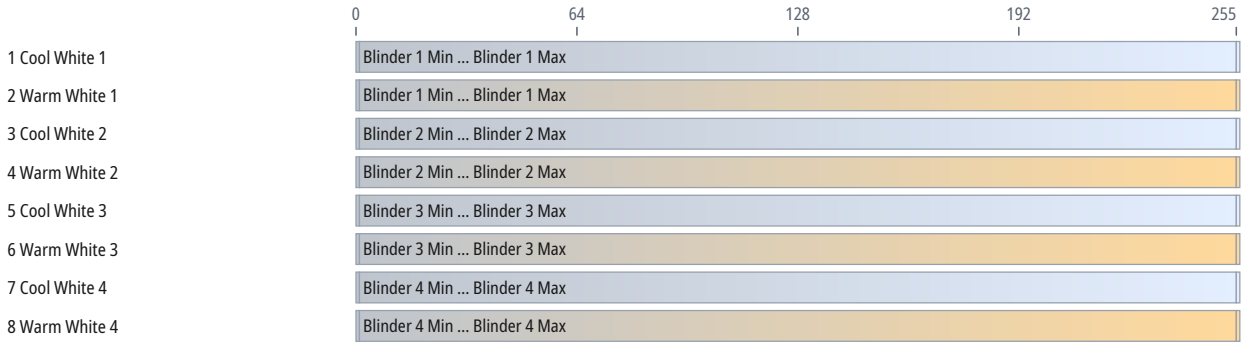


CH	Function	DMX	Description
1	Shutter		Same as CH 1 in the mode “Standard” (p. 10)
2	Dimmer		Same as CH 2 in the mode “Standard” (p. 10)
3	Dimmer Fine	0–255	Fine adjustment of CH 2
4	Dimmer Mode		Same as CH 4 in the mode “Standard” (p. 10)
5	Control		Same as CH 5 in the mode “Standard” (p. 11)
6	Cool White 1	0	Blinder 1 Min
		1–254	Blinder 1 Min ... Blinder 1 Max
		255	Blinder 1 Max
7	Warm White 1	0	Blinder 1 Min
		1–254	Blinder 1 Min ... Blinder 1 Max
		255	Blinder 1 Max
8	Cool White 2	0	Blinder 2 Min
		1–254	Blinder 2 Min ... Blinder 2 Max
		255	Blinder 2 Max
9	Warm White 2	0	Blinder 2 Min

CH	Function	DMX	Description
9	Warm White 2 (continued)	1–254	Blinder 2 Min … Blinder 2 Max
		255	Blinder 2 Max
10	Cool White 3	0	Blinder 3 Min
		1–254	Blinder 3 Min … Blinder 3 Max
		255	Blinder 3 Max
11	Warm White 3	0	Blinder 3 Min
		1–254	Blinder 3 Min … Blinder 3 Max
		255	Blinder 3 Max
12	Cool White 4	0	Blinder 4 Min
		1–254	Blinder 4 Min … Blinder 4 Max
		255	Blinder 4 Max
13	Warm White 4	0	Blinder 4 Min
		1–254	Blinder 4 Min … Blinder 4 Max
		255	Blinder 4 Max

Mode 4WA

Channel functions at a glance

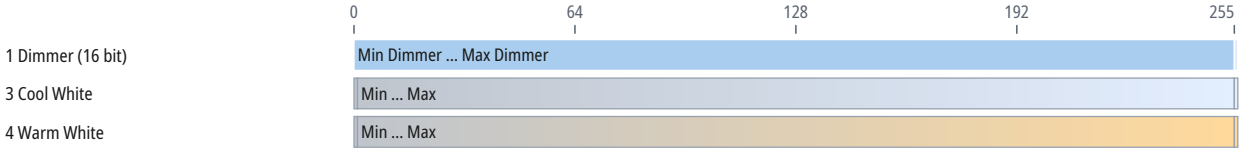


CH	Function	DMX	Description
1	Cool White 1		Same as CH 6 in the mode “Extended” (p. 12)
2	Warm White 1		Same as CH 7 in the mode “Extended” (p. 12)
3	Cool White 2		Same as CH 8 in the mode “Extended” (p. 12)
4	Warm White 2		Same as CH 9 in the mode “Extended” (p. 12)
5	Cool White 3		Same as CH 10 in the mode “Extended” (p. 13)
6	Warm White 3		Same as CH 11 in the mode “Extended” (p. 13)
7	Cool White 4		Same as CH 12 in the mode “Extended” (p. 13)
8	Warm White 4		Same as CH 13 in the mode “Extended” (p. 13)

Mode Basic

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

Channel functions at a glance



CH	Function	DMX	Description
1	Dimmer		Same as CH 2 in the mode “Standard” (p. 10)
2	Dimmer Fine	0–255	Fine adjustment of CH 1
3	Cool White		Same as CH 1 in the mode “2CH” (p. 9)
4	Warm White		Same as CH 2 in the mode “2CH” (p. 9)

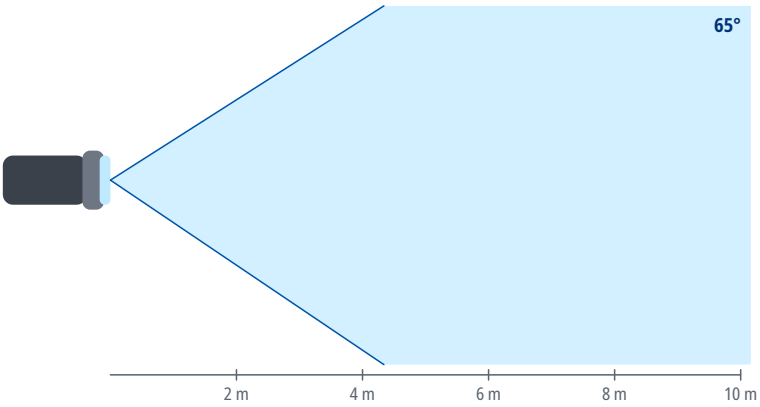
9 Technical specifications

Parameter	Value
Light source	tungsten lamp
Weight	12.7 kg
Operating temperature	-15 to 45 °C

Speeds and ranges

Parameter	Value
Strobe frequency	0.5–10 Hz

Spot diameter



Distance	Ø 65°
2 m	2.5 m
4 m	5.1 m
6 m	7.6 m
8 m	10.2 m
10 m	12.7 m
15 m	19.1 m

Spot diameter square to the beam axis, calculated from the beam angle.

10 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.

11 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.

12 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.