DMX REFERENCE

TBZ-1240

TILT BAR ZOOM 1240

Conic Designs



Manufacturer	Conic Designs
GDTF file	Conic_Designs_TBZ-1240_167209.gdtf
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1 About this manual

This document describes the TILT BAR ZOOM 1240 by Conic Designs. It was compiled from the GDTF file Conic_Designs_TBZ-1240_167209.gdtf from the GDTF-Share library.

File revision: “Rev_7”.

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 Conic Designs; 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	20.5 kg

DMX modes

Mode	Channels	Units in one universe	First start addresses
WIP	17	30	1, 18, 35, 52, ...
57Ch	57	8	1, 58, 115, 172, ...
WIP 1	4	128	1, 5, 9, 13, ...

No light? Check these channels

- WIP: CH 3 Dimmer above 0; CH 4 Shutter at 0, 104–107 “Open” or 208–212 or 252–255
- 57Ch: CH 6 Dimmer above 0; CH 8 Shutter at 0–3 “Open” or 4 or 201–205


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.

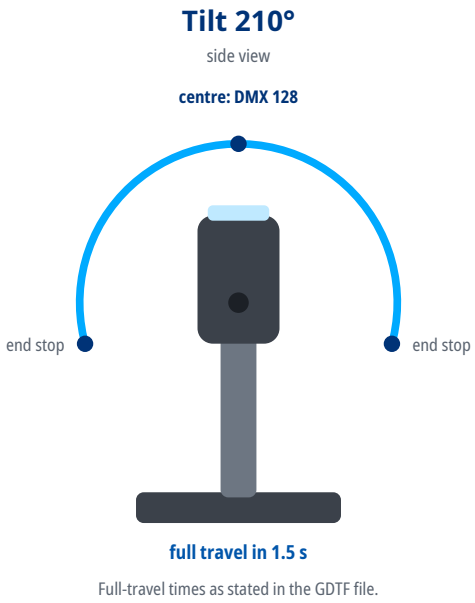
4 Product description

Description in the GDTF file

“Introducing the Tilt Bar Zoom 1240, a versatile lighting solution designed to elevate your events. With 12x40W RGBW 4in1 LEDs, individually controlled for precision, and a zoom range of 5~35°, it offers dynamic color mixing and customizable beam angles. Featuring advanced cooling and easy mounting with Omega turn brackets, it ensures reliable performance. Compact yet powerful, it weighs 15 KG and comes with accessories for seamless setup.”

“Kenzo Lemus | Yeen Lites.”

Range of movement



Full-travel times as stated in the GDTF file.

5 Installation

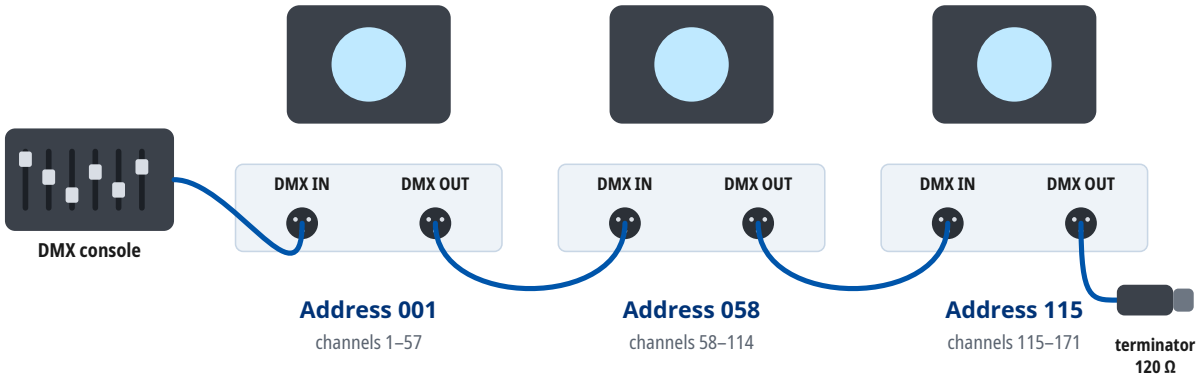
⚠ WARNING

- 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.
- Weight of the device: 20.5 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 57Ch: every unit occupies 57 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

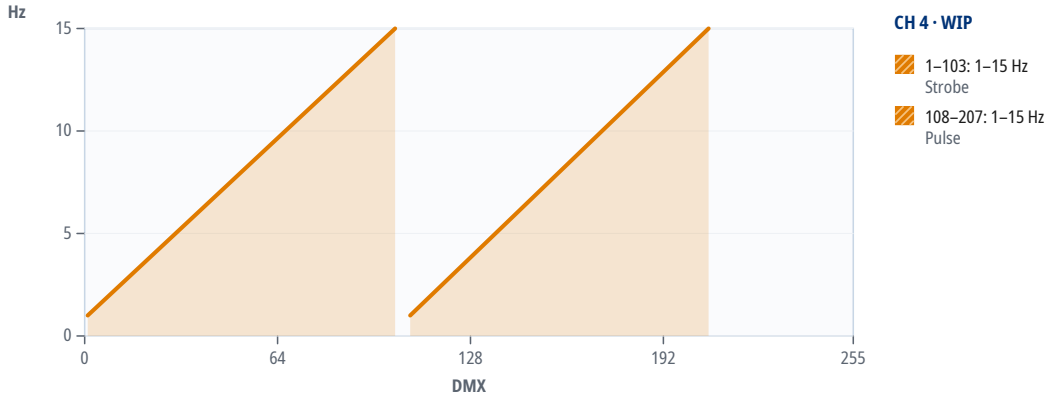
- The device occupies as many consecutive channels in the DMX universe as the selected DMX mode uses, starting at the set start address.
- Number of channels occupied in the DMX mode “57Ch”: 57.
- Choose start addresses so that the channels of individual devices do not overlap and the last occupied channel does not exceed 512. Devices with the same start address and mode respond identically.
- For several devices in a row in the DMX mode “57Ch”, you can use, for example, the start addresses 1, 58, 115, 172.
- 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

	WIP 17 channels	57Ch 57 channels	WIP 1 4 channels
Pan / Tilt	1	1	
Dimmer	3	6	✓
Dimmer resolution	8 bit	16 bit	
Shutter / strobe	4	8	
Color mixing	5–8	9–56	1–48
Color temperature	10		
Zoom	9	4	
Effects / macros	11, 14		

Strobe rate



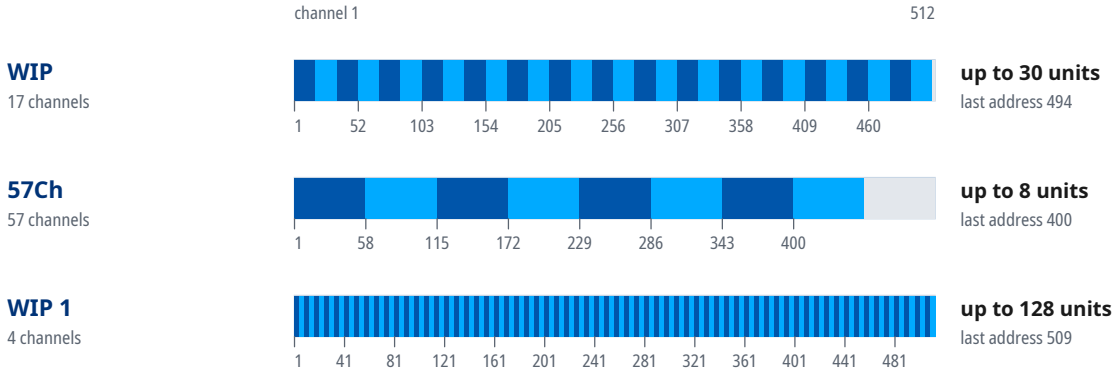
Cells (pixels)



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

9 DMX channels

Units in one DMX universe



Start addresses of 20 units in the mode “57Ch”

Unit	Start address	Unit	Start address	Unit	Start address	Unit	Start address
1	1	6	286	11	U2 · 115	16	U2 · 400
2	58	7	343	12	U2 · 172	17	U3 · 1
3	115	8	400	13	U2 · 229	18	U3 · 58
4	172	9	U2 · 1	14	U2 · 286	19	U3 · 115
5	229	10	U2 · 58	15	U2 · 343	20	U3 · 172

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 WIP

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 Shutter at 0, 104–107 “Open” or 208–212 or 252–255. The GDTF file gives these values for a console's Highlight function: CH 3 Dimmer 255, CH 4 Shutter 0, CH 5 Red 0, CH 6 Green 0, CH 7 Blue 0, CH 8 White 255.

CH	Function	DMX	Description
1	Tilt	0–127	Min … center
		128–255	Center … max
		255	Max
2	Tilt Fine	0–255	Fine adjustment of CH 1
3	Dimmer	0	Closed
		1–254	Closed … Open
		255	Open
4	Shutter	0	Open
		1–3	Strobe
		4	Min Strobe
		5–102	Min Strobe … max Strobe
		103	Max Strobe
		104–107	Open

CH	Function	DMX	Description
4	Shutter (continued)	108	Min Pulse
		109–206	Min Pulse ... max Pulse
		207	Max Pulse
		208–212	Open 2
		213	Min Rnd
		214–250	Min Rnd ... max Rnd
		251	Max Rnd
		252–255	Open 3
5	Red	0	Min
		1–254	Min ... Max
		255	Max
6	Green	0	Min
		1–254	Min ... Max
		255	Max
7	Blue	0	Min
		1–254	Min ... Max
		255	Max
8	White	0	Min
		1–254	Min ... Max
		255	Max
9	Zoom	0	Wide
		1–126	Wide ... normal
		127	Normal
		128–254	Normal ... narrow
		255	Narrow
10	CTO	0	No function
		1–27	2800K
		28–55	3200K
		56–83	3600K
		84–111	4500K
		112–139	5000K
		140–167	5600K
		168–195	6200K
		196–223	6800K
		224–251	7500K
		252–255	8000K
11	Effects	0	No function
		1–2	LED 1
		3–4	LED 2
		5–6	LED 3
		7–8	LED 4
		9–10	LED 5

CH	Function	DMX	Description
11	Effects (continued)	11–12	LED 6
		13–14	LED 7
		15–16	LED 8
		17–18	LED 9
		19–20	LED 10
		21–22	LED 11
		23–24	LED 12
		25–34	Effect 1
		35–43	Effect 2
		44–53	Effect 3
		54–62	Effect 4
		63–72	Effect 5
		73–81	Effect 6
		82–91	Effect 7
		92–100	Effect 8
		101–110	Effect 9
		111–119	Effect 10
		120–129	Effect 11
		130–138	Effect 12
		139–148	Effect 13
		149–157	Effect 14
		158–167	Effect 15
		168–176	Effect 16
		177–186	Effect 17
		187–195	Effect 18
		196–205	Effect 19
		206–214	Effect 20
		215–224	Effect 21
		225–233	Effect 22
		234–243	Effect 23
		244–252	Effect 24
		253–255	Effect 25
12	Foreground	0	Min
		1–254	Min ... Max
		255	Max
13	Bachground	0	Min
		1–254	Min ... Max
		255	Max
14	Effect Macro	0	No function
		1–15	Macro 1
		16–31	Macro 2
		32–63	Macro 3

CH	Function	DMX	Description
14	Effect Macro (continued)	64–95	Macro 4
		96–127	Macro 5
		128–159	Macro 6
		160–191	Macro 7
		192–255	Macro 8
15	Effect Speed	0	Min
		1–254	Min … Max
		255	Max
16	Control	0	No function
		1–127	No function … Reset all
		128–190	Reset all
		191–255	Control 1 1
17	Speed Pan/Tilt	0	Max
		1–254	Max … Min
		255	Min

Mode 57Ch

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 6 Dimmer above 0; CH 8 Shutter at 0–3 “Open” or 4 or 201–205. The GDTF file gives these values for a console's Highlight function: CH 6 Dimmer 255, CH 8 Shutter 0, CH 9 Red 0 (the same in each of the 12 cells), CH 10 Green 0 (the same in each of the 12 cells), CH 11 Blue 0 (the same in each of the 12 cells), CH 12 White 255 (the same in each of the 12 cells).

CH	Function	DMX	Description
1	Tilt		Same as CH 1 in the mode “WIP” (p. 9)
2	Tilt Fine	0–255	Fine adjustment of CH 1
3	Speed Pan/Tilt		Same as CH 17 in the mode “WIP” (p. 12)
4	Zoom		Same as CH 9 in the mode “WIP” (p. 10)
5	Zoom Mode		Zoom 2
		0	Wide
		1–126	Wide … normal
		127	Normal
		128–254	Normal … narrow
		255	Narrow
6	Dimmer	0–255	Closed … Open
		255	Open
7	Dimmer Fine	0–255	Fine adjustment of CH 6
8	Shutter	0–3	Open
		4	Open 1
		5	Min Strobe
		6–199	Min Strobe … max Strobe
		200	Max Strobe
		201–205	Open 2

CH	Function	DMX	Description
8	Shutter (continued)	206–212	Random Strobe
		213	Min Rnd
		214–250	Min Rnd ... max Rnd
		251	Max Rnd
		252–255	Random Strobe
9	Red 1	0	Min
		1–254	Min ... Max
		255	Max
10	Green 1	0	Min
		1–254	Min ... Max
		255	Max
11	Blue 1	0	Min
		1–254	Min ... Max
		255	Max
12	White 1	0	Min
		1–254	Min ... Max
		255	Max
57	Control	0	No function
		1–100	No function ... Reset all
		101–120	Reset all
		121–255	Control 1

CH 9–56: 12 cells of 4 channels each. Every cell works as cell 1 in the table above (CH 9–12); the table below gives each cell's channel numbers.

Cell	Red	Green	Blue	White	Cell	Red	Green	Blue	White
1	9	10	11	12	2	13	14	15	16
3	17	18	19	20	4	21	22	23	24
5	25	26	27	28	6	29	30	31	32
7	33	34	35	36	8	37	38	39	40
9	41	42	43	44	10	45	46	47	48
11	49	50	51	52	12	53	54	55	56

Mode WIP 1

The GDTF file gives these values for a console's Highlight function: CH 1 Red 255, CH 2 Green 255, CH 3 Blue 255, CH 4 White 0.

CH	Function	DMX	Description
1	Red		Same as CH 5 in the mode “WIP” (p. 10)
2	Green		Same as CH 6 in the mode “WIP” (p. 10)
3	Blue		Same as CH 7 in the mode “WIP” (p. 10)
4	White		Same as CH 8 in the mode “WIP” (p. 10)

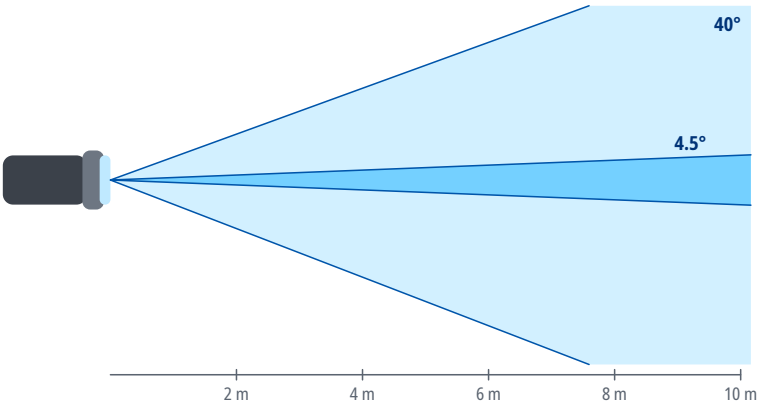
10 Technical specifications

Parameter	Value
Light source	LED
Zoom	4.5–40°
Tilt	210°
Weight	20.5 kg
Operating temperature	-10 to 45 °C

Speeds and ranges

Parameter	Value
Color temperature range	2800–8000 K
Strobe frequency	1–15 Hz

Spot diameter



Distance	Ø 4.5°	Ø 40°
2 m	0.16 m	1.5 m
4 m	0.31 m	2.9 m
6 m	0.47 m	4.4 m
8 m	0.63 m	5.8 m
10 m	0.79 m	7.3 m
15 m	1.2 m	10.9 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.