DMX REFERENCE

Potency T913

V-Show



Manufacturer	V-Show
GDTF file	V-Show_Potency_T913_84667.gdtf
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1 About this manual

This document describes the Potency T913 by V-Show. It was compiled from the GDTF file V-Show_Potency_T913_84667.gdtf from the GDTF-Share library.

File revision: “Rev_001”.

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 V-Show; 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
16CH	16	32	1, 17, 33, 49, ...

No light? Check these channels

- 16CH: CH 6 Dimmer above 0; CH 7 Shutter at 33–63 or 96–127, 160–191 “Open” or 224–255



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.

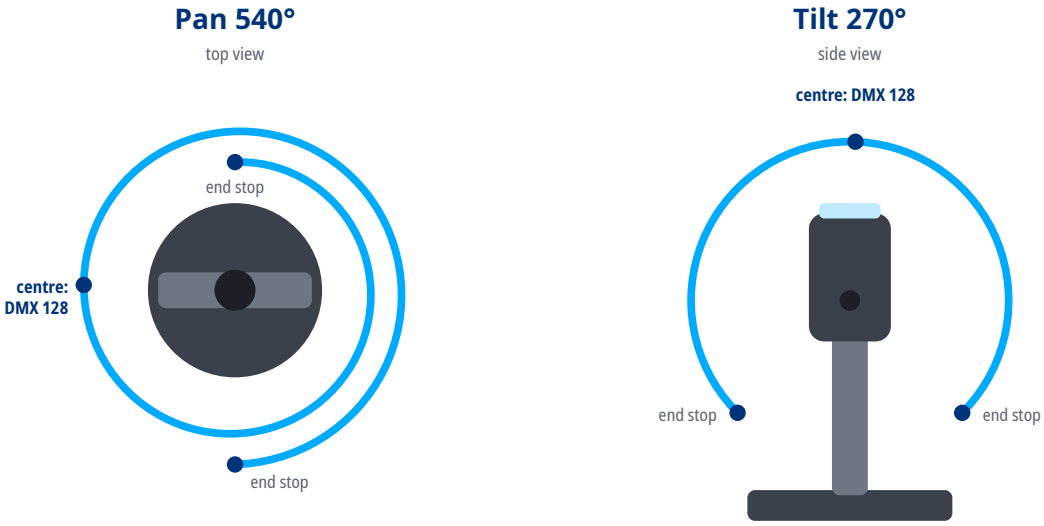
⚠ CAUTION

- 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



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.

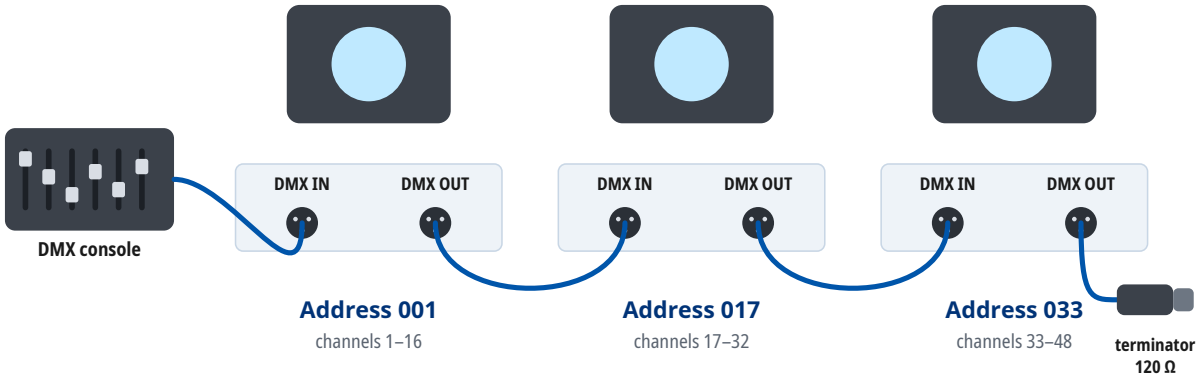
6 Connections

- 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 16CH: every unit occupies 16 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

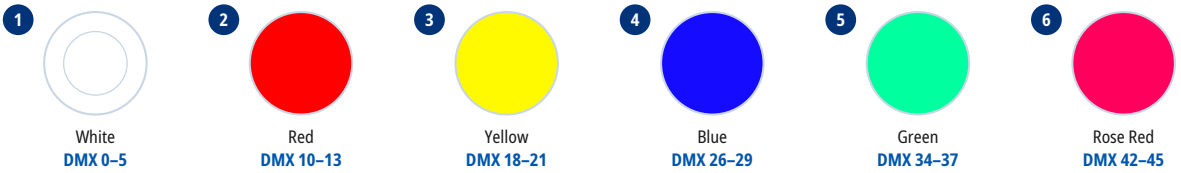
- The device occupies as many consecutive channels in the DMX universe as the selected DMX mode uses, starting at the set start address.
- Number of channels occupied in the DMX mode “16CH”: 16.
- Choose start addresses so that the channels of individual devices do not overlap and the last occupied channel does not exceed 512. Devices with the same start address and mode respond identically.
- For several devices in a row in the DMX mode “16CH”, you can use, for example, the start addresses 1, 17, 33, 49.
- 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

	16CH 16 channels
Pan / Tilt	1, 3
Dimmer	6
Shutter / strobe	7
Color wheel	8
Gobo wheel	9
Prism	10–13
Frost	15
Focus	14

Color wheel



1. White — DMX 0–5
2. Red — DMX 10–13
3. Yellow — DMX 18–21
4. Blue — DMX 26–29
5. Green — DMX 34–37
6. Rose Red — DMX 42–45
7. Light Green — DMX 50–53
8. Purplish Red — DMX 62–65
9. Cyan — DMX 66–69
10. Cool Pink — DMX 74–77
11. UV — DMX 82–85
12. CTB — DMX 90–93
13. CTO — DMX 98–101
14. Orange — DMX 106–109
15. Quad Color — DMX 114–117

Gobo wheel

1	White	DMX 0–5	8 Gobo 7	DMX 30–33	15 Gobo 14	DMX 58–61
2	Gobo 1	DMX 6–9	9 Gobo 8	DMX 34–37	16 Gobo 15	DMX 62–65
3	Gobo 2	DMX 10–13	10 Gobo 9	DMX 38–41	17 Gobo 16	DMX 66–69
4	Gobo 3	DMX 14–17	11 Gobo 10	DMX 42–45	18 Gobo 17	DMX 70–73
5	Gobo 4	DMX 18–21	12 Gobo 11	DMX 46–49	19 Gobo 18	DMX 74–85
6	Gobo 5	DMX 22–25	13 Gobo 12	DMX 50–53		
7	Gobo 6	DMX 26–29	14 Gobo 13	DMX 54–57		

Prism 1

1

Open
DMX 0–5

2



8 facets
Prism 8
DMX 6–127

3



48 facets
Prism 48
DMX 128–255

Prism 2

1



6 facets
Prism Linear 6

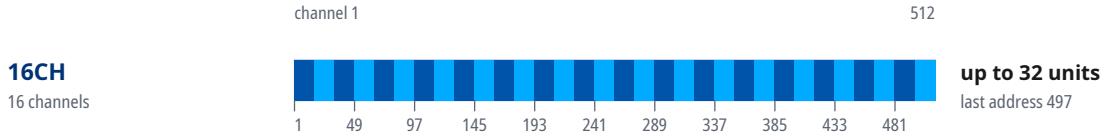
2



16 facets
Prism 16

9 DMX channels

Units in one DMX universe



Start addresses of 20 units in the mode “16CH”

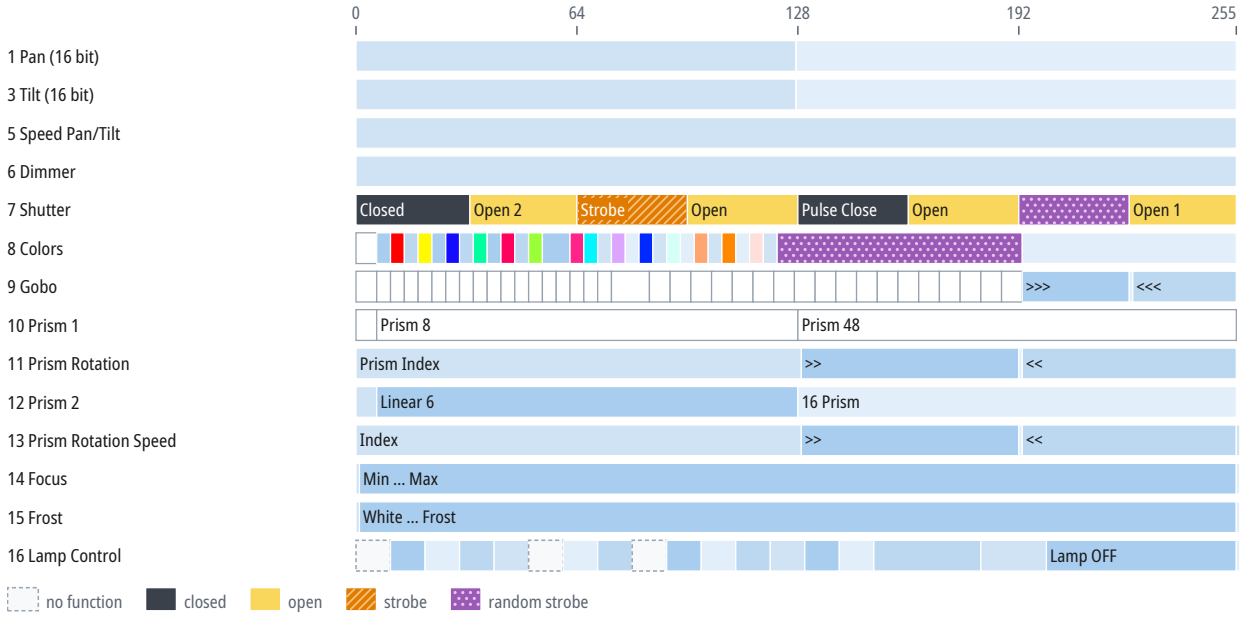
Unit	Start address	Unit	Start address	Unit	Start address	Unit	Start address
1	1	6	81	11	161	16	241
2	17	7	97	12	177	17	257
3	33	8	113	13	193	18	273
4	49	9	129	14	209	19	289
5	65	10	145	15	225	20	305

Mode 16CH

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 7 Shutter at 33–63 or 96–127, 160–191 “Open” or 224–255. The GDTF file gives these values for a console's Highlight function: CH 6 Dimmer 255, CH 7 Shutter 255.

Channel functions at a glance



CH	Function	DMX	Description
1	Pan	0–127	Pan 1
		128	Center
		128–255	Pan 1
2	Pan Fine	0–255	Fine adjustment of CH 1
3	Tilt	0–127	Tilt 1

CH	Function	DMX	Description
3	Tilt (continued)	128	Center
		128–255	Tilt 1
4	Tilt Fine	0–255	Fine adjustment of CH 3
5	Speed Pan/Tilt	0–255	
6	Dimmer	0–255	
7	Shutter	0–32	Closed
		33–63	Open 2
		64–95	Strobe
		96–127	Open
		128–159	Pulse Close
		160–191	Open
		192–223	Strobe Random
		224–255	Open 1
8	Colors	0–5	White
		6–9	White ... Red
		10–13	Red
		14–17	Red ... Yellow
		18–21	Yellow
		22–25	Yellow ... Blue
		26–29	Blue
		30–33	Blue ... Green
		34–37	Green
		38–41	Green ... Rose Red
		42–45	Rose Red
		46–49	Rose Red ... Light Green
		50–53	Light Green
		54–61	Light Green ... Purplish Red
		62–65	Purplish Red
		66–69	Cyan
		70–73	Cyan ... Cool Pink
		74–77	Cool Pink
		78–81	Cool Pink ... UV
		82–85	UV
		86–89	UV ... CTB
		90–93	CTB
		94–97	CTB ... CTO
		98–101	CTO
		102–105	CTO ... Orange
		106–109	Orange
		110–113	Orange ... Quad Color
		114–117	Quad Color
		118–121	Color

CH	Function	DMX	Description
8	Colors (continued)	122–192	Color 1 Wheel Random 2
		193–255	Color 1 Wheel Spin 2 (up to 450 °/s (75 rpm))
9	Gobo	0–5	White
		6–9	Gobo 1
		10–13	Gobo 2
		14–17	Gobo 3
		18–21	Gobo 4
		22–25	Gobo 5
		26–29	Gobo 6
		30–33	Gobo 7
		34–37	Gobo 8
		38–41	Gobo 9
		42–45	Gobo 10
		46–49	Gobo 11
		50–53	Gobo 12
		54–57	Gobo 13
		58–61	Gobo 14
		62–65	Gobo 15
		66–69	Gobo 16
		70–73	Gobo 17
		74–84	Gobo 18
		85–90	Gobo 1 Shake (0.5–10 Hz)
		91–96	Gobo 2 Shake (0.5–10 Hz)
		97–102	Gobo 3 Shake (0.5–10 Hz)
		103–108	Gobo 4 Shake (0.5–10 Hz)
		109–114	Gobo 5 Shake (0.5–10 Hz)
		115–120	Gobo 6 Shake (0.5–10 Hz)
		121–126	Gobo 7 Shake (0.5–10 Hz)
		127–132	Gobo 8 Shake (0.5–10 Hz)
		133–138	Gobo 9 Shake (0.5–10 Hz)
		139–144	Gobo 10 Shake (0.5–10 Hz)
		145–150	Gobo 11 Shake (0.5–10 Hz)
		151–156	Gobo 12 Shake (0.5–10 Hz)
		157–162	Gobo 13 Shake (0.5–10 Hz)
		163–168	Gobo 14 Shake (0.5–10 Hz)
		169–174	Gobo 15 Shake (0.5–10 Hz)
		175–180	Gobo 16 Shake (0.5–10 Hz)
		181–186	Gobo 17 Shake (0.5–10 Hz)
		187–192	Gobo 18 Shake (6.2–6.48 Hz)
		193–223	>>> (6.54–8.21 Hz)
		224	Gobo Shake: Stop
		225–255	<<< (8.32–10 Hz)

CH	Function	DMX	Description
10	Prism 1	0–5	Open
		6–127	Prism 8
		128–255	Prism 48
11	Prism Rotation	0–128	Prism Index
		129–191	>> (360–5.71 °/s)
		192	Prism Rotate: Stop
		193–255	<< (5.71–360 °/s)
12	Prism 2	0–5	Open
		6–127	Linear 6
		128–255	16 Prism
13	Prism Rotation Speed	0–128	Index
		129–191	>> (0–0.5 °/s)
		192	Prism 1 Pos Rotate: Stop
		193–254	<< (0.51–1.01 °/s)
		255	Prism 1 Pos Rotate 2
14	Focus	0	Min
		1–254	Min ... Max
		255	Max
15	Frost	0	White
		1–254	White ... Frost
		255	Frost
16	Lamp Control	0–9	No function
		10–19	Linear 3s
		20–29	Square Law
		30–39	Inverse Square Law
		40–49	S-Curve
		50–59	No function
		60–69	Fast Dimmer
		70–79	Slow Dimmer
		80–89	No function
		90–99	ALL Reset
		100–109	XY Reset
		110–119	Head reset
		120–180	Empty Channel Set
		181–199	Lamp ON
		200–254	Lamp OFF
		255	Empty Channel Set

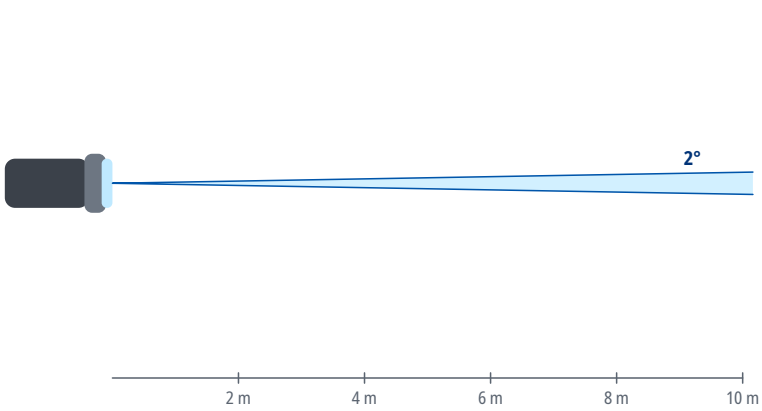
10 Technical specifications

Parameter	Value
Light	
Light source	discharge lamp
Lamp power	420 W
Luminous flux	963,397 lm
Color temperature	7,000 K
Optics	
Beam angle	2°
Movement	
Pan	540°
Tilt	270°
Operating environment	
Operating temperature	0 to 40 °C

Speeds and ranges

Parameter	Value
Color wheel rotation	up to 450 °/s (75 rpm)
Prism 1 rotation	up to 360 °/s (60 rpm)

Spot diameter



Distance	Ø 2°
2 m	0.07 m
4 m	0.14 m
6 m	0.21 m
8 m	0.28 m
10 m	0.35 m
15 m	0.52 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.