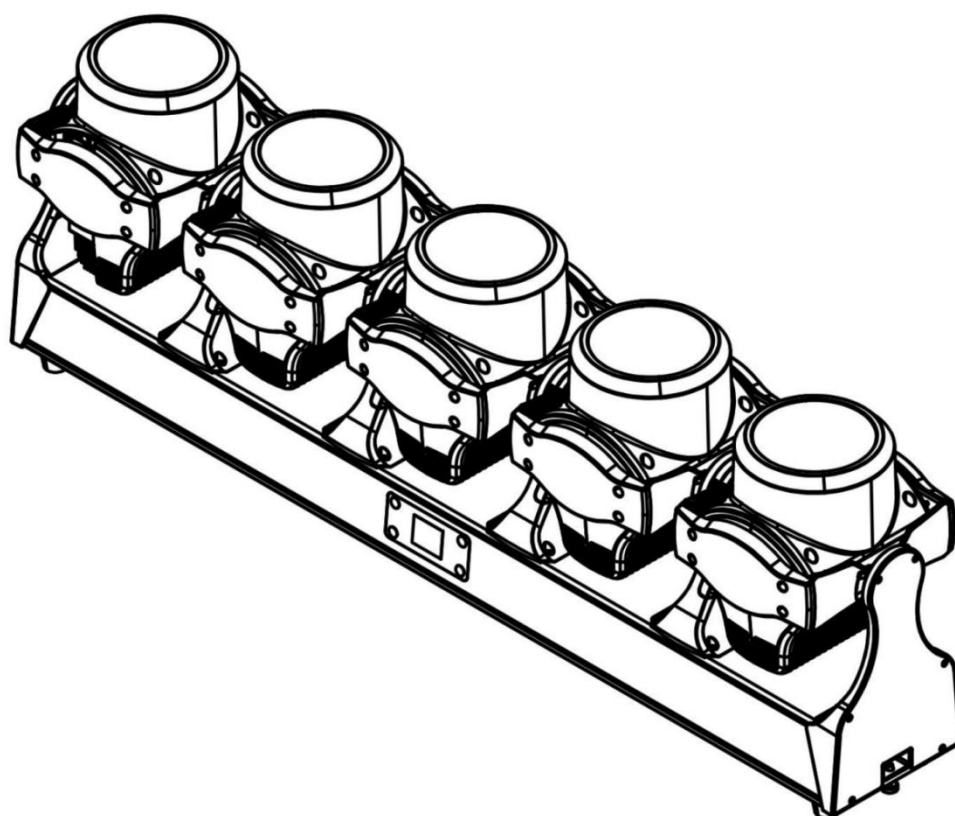# TORNADO
TB5

USER MANUAL

KEEP THIS USER MANUAL FOR FUTURE NEEDS $C \epsilon$

Chapter 1 Installation and attention

1.   Maintenance

❖   To reduce the risk of electrical shock or fire, do not expose this unit to rain or moisture.

❖   Intermittently using will extend this item's service life.

❖   Please clear the fan ,fan net , and optical lens in order to keep good work state.

❖   Do not use the alcohol or any other organic solvent to wipe the shell.

2.   Statement

The product has perfect performance and integrity packing. All users should be strictly complying with the warning and operating instructions as stated. Or we aren't in charge of any result by misusing. Any damage resulting by misuse is not within the Company's warranty. Any fault or problem caused by neglecting the manual is also not in the charge of dealers.

Note: All information is subject to change without prior notice.

3.   Safety Precaution

❖   In order to guarantee the product's life, please don't put it in the damp places or even the environment over 60degress.

❖   Always mount this unit in safe and stable matter.

❖   Install or dismantle should operate by professional engineer.

❖   Using lamp，the change rate of power voltage should be within±10%，If the voltage is too high，it will shorten the light's life; If it's not enough, will influence the effect.

❖   Please restart it 20 minutes later after turning off light , until full-cooling. Frequent switching will reduce the life span of lamps and bulbs; intermittent using will improve the life of bulbs and lamps.

❖   In order to make sure the product is used well, please read the Manual carefully.

4.   Product Instruction

● **Light Source**

Main Light: 5 x 120W LEDs

Outer Circle: 120 x 0.5W RGB LEDs

Total Lumen Output of Fixture: 13,000 lumens

Life Expectancy: 20,000 hours

● **Optical System**

Beam Angles: 3°-30°

Field Angles: 4°-35°

- **Control and Program**

4 button touch control panel

Display: LCD display

Protocols: DMX512, RDM

DMX Protocol Modes: 2

Control Channels: 21CH/41CH /71CH/75CH/85CH/170CH

Firmware Upgrade: Upgrade via DMX link

- **Pan & Tilt**

Pan Movement: 59°

Tilt Movement: 221°

Automatic Pan/Tilt position correction

Resolution: 16 bit

- **Other Effects**

Outstanding strobe effects with variable speed

Variable light adjustment from 0-100% dimming

Outstanding color mixing effects

Outstanding color macro effects

Linear focusing structure

- **Electrical and Connectors**

Input Voltage Range: 100-240V~ 50/60Hz

Power Consumption: 935W

Power In/Out: Waterproof power connector in/out (True1 type)

Data In/Out: 3-pin XLR

- **Fixture Specification**

Fixture Size:1002*196*334mm

Net Weight: 26.6kg

- **Work environment**

Maximum Ambient Temperature: 40°C

Minimum Operating Temperature: -10°C

Maximum Surface Temperature: 75°C
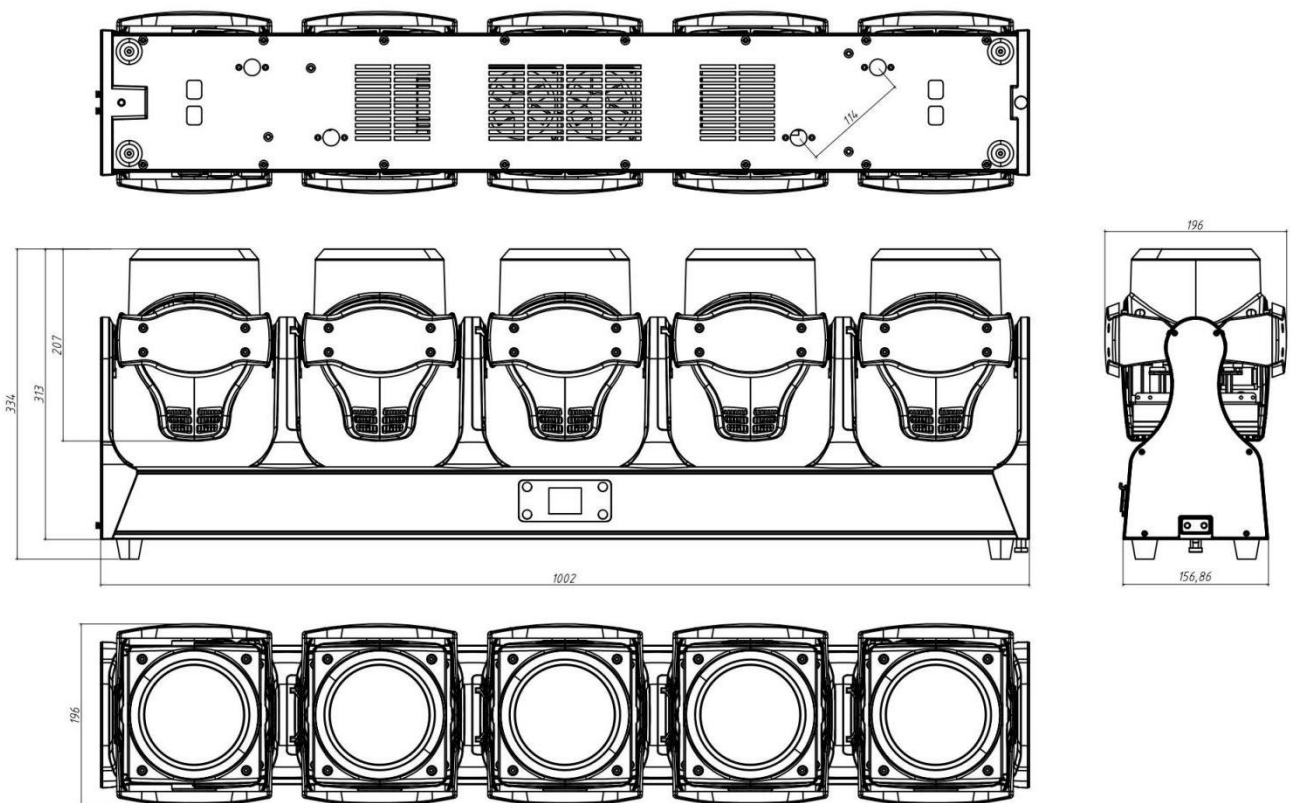
Protection Rating: IP33

- **Installation**

Horizontal or vertical mounting

Universal working position

2 x omega brackets

Safety cable attachment point

Size：

5. Rigging (Optional)

This equipment can be positioned and fixed by clamp in every direction of the stage. Locking system makes it easy to fasten to the bracket.

Attention! Two clamps is needed to fix the equipment. Every clamp is locked by fastener of 1/4 kind. Fastener can only be locked clockwise.

Attention! Fasten a safety string to the additional hole of side aluminum piece. The secondary accessory can not hang on the delivery handle. Nip the equipment on bracket.

❖ Check if rigging clamp (not including the one inside) damaged or not? If stand ten times weight as the equipment. Make sure the architecture can stand ten times weight as all the equipments, clamps, wirings and other additional fixtures.

❖ Screws for clamping must be fixed firmly. Take one M12 screw (Grade 8.8 or higher) to clamp bracket, and then screw the nuts.

❖ Level the two hanging points at the bottom of clamp. Insert fastener to the bottom, lock the two levers by 1/4 rotating clockwise; then install another clamp.

❖ Install on safety string which stands at least ten times weight as equipment. Terminal of the accessory is designed for clamps.

❖ Make sure pan/tilt lock unlocked or not. Keep the distance more than 1M from equipment to flammable material or lighting source.
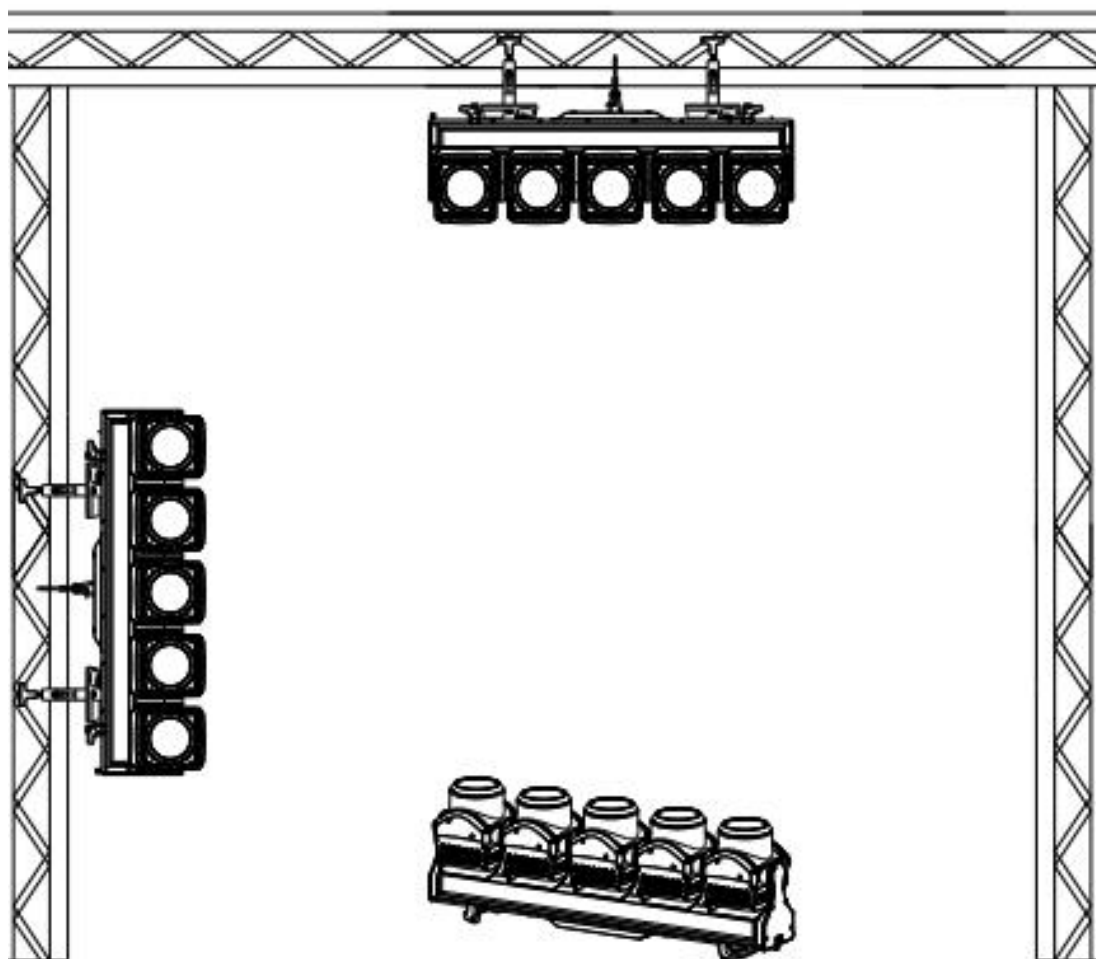
3

Figure 1   Installation

6. Signal line connection

The fixture features standard DMX input and output via 3-pin or 5-pin XLR sockets. Please use a shielded twisted pair signal line specially designed for DMX 512; the signal line is generally connected at a distance of 150 meters. When transmitting long-distance signals, a DMX512 signal amplifier must be added.

Use a shielded twisted pair signal cable to connect the DMX output port of the controller to the DMX input port of the first device, and connect the DMX output port of the first device to the DMX input port of the second device, and so on. Until all the lamps are connected, install a terminal plug on the output 3-pin jack of the last connected lamp in each circuit. (Solder a 4/1W, 120Ω resistor between pins 2 and 3 of the 3-pin XLR plug).

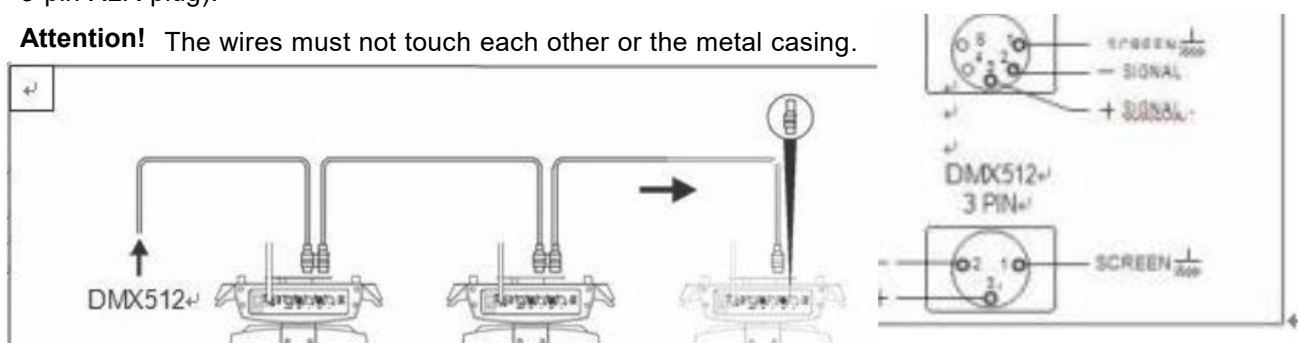**Attention!** The wires must not touch each other or the metal casing.

Figure 2 DMX signal connection

4

Chapter 2 Menu Function

Menu	Address settings	001 - 512			
	Lighting settings	Channel mode	21CH/41CH /71CH/75CH/85CH/170CH		
		Operation mode	DMX / Auto		
		Horizontal inversion	On / Off		
		Vertical inversion	On / Off		
		Fan control	Silent / Low / Medium / High		
		Dimming curve	Linear / Reverse Curve / Forward Curve / S Curve		
		Fast light collection	On / Off		
		No DMX status	Reset / Hold		
		LED refresh frequency	900Hz//5000Hz/……/15KHz/20KHz/25KHz		
	Manual control	Horizontal 1	000 - 255		
		Horizontal 1 fine-tuning	000 - 255		
		Vertical 1	000 - 255		
		Vertical 1 fine-tuning	000 - 255		
		……	……		
	Lighting information	Time information	Power-on time		
			Total time		
			Power-on times		
		Sensor detection	Vertical 1		
			Horizontal 1		
			Zoom 1		
			Temperature 1		
			…		
		Temperature	Lamp head 1 temperature		
			Lamp head 2 temperature		
			Lamp head 3 temperature		
			Lamp head 4 temperature		
			Lamp head 5 temperature		
		Software version	Display version		
			Motor version		

			Dimming version 1
			Dimming version 2
			Dimming version 3
			Dimming version 4
			Dimming version 5
	Factory settings	Password input	000 - 255
		Vertical 1 correction	000 - 255
		Horizontal 1 correction	000 - 255
		Magnification 1 correction	000 - 255
		Vertical 2 correction	000 - 255
		Horizontal 2 correction	000 - 255
		……	……
		……	……
	Lighting reset	Reset all	Execute / Cancel
		Factory settings	Execute / Cancel
	Display settings	Language settings	Chinese / English
		Display inversion	Normal / Reverse
		Display mode	60s / Constantly on

Chapter 3 Channel description

21CH	Function	41CH	Function	71CH	Function
1	Pan	1	Pan1	1	Pan 1
2	Pan Fine	2	Pan Fine1	2	Pan Fine 1
3	Tilt	3	Tilt1	3	Tilt 1
4	Tilt Fine	4	Tilt Fine1	4	Tilt Fine 1
5	Zoom	5	Zoom1	5	Main Red 1
6	Main Red	...	…	6	Main Green 1
7	Main Green	21	Pan5	7	Main Blue 1
8	Main Blue	22	Pan Fine5	8	Main Yellow 1
9	Main White	23	Tilt5	9	Zoom1
10	Main CTO	24	Tilt Fine5	10	Ring Red 1
11	MainColorMacro	25	Zoom5	11	Ring Green 1
12	Ring Red	26	Main Red	12	Ring Blue 1
13	Ring Green	27	Main Green	13	Ring Effect 1
14	Ring Blue	28	Main Blue	...	…
15	Ring Effect	29	Main Yellow	53	Pan 5
16	Dimmer	30	Main CTO	54	Pan Fine 5
17	Dimmer Fine	31	Main ColorMacro	55	Tilt 5
18	Main Strobe	32	Ring Red	56	Tilt Fine 5
19	Ring Strobe	33	Ring Green	57	Main Red 5
20	XY Speed	34	Ring Blue	58	Main Green 5
21	Macro	35	Ring Effect	59	Main Blue 5
		36	Dimmer	60	Main Yellow 5
		37	Dimmer Fine	61	Zoom 5
		38	Main Strobe	62	Ring Red 5
		39	Ring Strobe	63	Ring Green 5
		40	XY Speed	64	Ring Blue 5
		41	Macro	65	Ring Effect 5
				66	Dimmer
				67	Dimmer Fine
				68	Main Strobe
				69	Ring Strobe
				70	XY Speed
				71	Macro

75CH	Function	85CH	Function	170CH	Function
1	Pan 1	1	Pan 1	1	Pan 1
2	Pan Fine 1	2	Pan Fine 1	2	Pan Fine 1
3	Tilt 1	3	Tilt 1	3	Tilt 1
4	Tilt Fine 1	4	Tilt Fine 1	4	Tilt Fine 1
5	Main Red 1	5	Main Red 1	5	Main Red 1
6	Main Green 1	6	Main Green 1	6	Main Green 1
7	Main Blue 1	7	Main Blue 1	7	Main Blue 1
8	Main Yellow 1	8	Main Yellow 1	8	Main Yellow 1
9	Main Strobe 1	9	Dimmer 1	9	Zoom 1
10	Zoom 1	10	Dimmer Fine 1	10	Ring1 Block1 Red
11	Ring Red 1	11	Main Strobe 1	11	Ring1 Block1 Green
12	Ring Green 1	12	Zoom1	12	Ring1 Block1 Blue
13	Ring Blue 1	13	Ring Red 1	13	Ring1 Block2 Red
14	Ring Effect 1	14	Ring Green 1	14	Ring1 Block2 Green
......	......	15	Ring Blue 1	15	Ring1 Block2 Blue
57	Pan 5	16	Ring Effect 1	16	Ring1 Block3 Red
58	Pan Fine 5	......	......	17	Ring1 Block3 Green
59	Tilt 5	65	Pan 5	18	Ring1 Block3 Blue
60	Tilt Fine 5	66	Pan Fine 5	19	Ring1 Block4 Red
61	Main Red 5	67	Tilt 5	20	Ring1 Block4 Green
62	Main Green 5	68	Tilt Fine 5	21	Ring1 Block4 Blue
63	Main Blue 5	69	Main Red 5	22	Ring1 Block5 Red
64	Main Yellow 5	70	Main Green 5	23	Ring1 Block5 Green
65	Main Strobe 5	71	Main Blue 5	24	Ring1 Block5 Blue
66	Zoom 5	72	Main Yellow 5	25	Ring1 Block6 Red
67	Ring Red 5	73	Dimmer 5	26	Ring1 Block6 Green
68	Ring Green 5	74	Dimmer Fine 5	27	Ring1 Block6 Blue
69	Ring Blue 5	75	Main Strobe 5	28	Ring1 Block7 Red
70	Ring Effect 5	76	Zoom 5	29	Ring1 Block7 Green
71	Dimmer	77	Ring Red 5	30	Ring1 Block7 Blue
72	Dimmer Fine	78	Ring Green 5	31	Ring1 Block8 Red
73	Ring Strobe	79	Ring Blue 5	32	Ring1 Block8 Green
74	XY Speed	80	Ring Effect 5	33	Ring1 Block8 Blue
75	Macro	81	Total Dimmer	34	Pan 2
		82	Total Dimmer Fine	......	......
		83	Ring Strobe	133	Pan 5
		84	XY Speed	134	Pan Fine 5
		85	Macro	135	Tilt 5
				136	Tilt Fine 5
				137	Main Red 5
				138	Main Green 5

139	Main Blue 5
140	Main Yellow 5
141	Zoom 5
142	Ring5 Block1 Red
143	Ring5 Block1 Green
144	Ring5 Block1 Blue
145	Ring5 Block2 Red
146	Ring5 Block2 Green
147	Ring5 Block2 Blue
148	Ring5 Block3 Red
149	Ring5 Block3 Green
150	Ring5 Block3 Blue
151	Ring5 Block4 Red
152	Ring5 Block4 Green
153	Ring5 Block4 Blue
154	Ring5 Block5 Red
155	Ring5 Block5 Green
156	Ring5 Block5 Blue
157	Ring5 Block6 Red
158	Ring5 Block6 Green
159	Ring5 Block6 Blue
160	Ring5 Block7 Red
161	Ring5 Block7 Green
162	Ring5 Block7 Blue
163	Ring5 Block8 Red
164	Ring5 Block8 Green
165	Ring5 Block8 Blue
166	Total Dimmer
167	Total Dimmer Fine
168	Ring Strobe
169	XY Speed
170	Macro

9