

TORNADO 5

User manual



Please read the instructions carefully before
use

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Chapter 1 Precautions and installation

1. tending

- The lamp should be kept dry and should not be used in a humid environment.
- Intermittent use will effectively extend the life of this lamp.
- In order to obtain good ventilation and lighting effect, attention should be paid to the regular cleaning of fans, fan nets and lenses.
- Do not use alcohol and other organic solvents to wipe the lamp shell, so as to avoid damage.

2. statement

For the correct and safe use of this product, please read the instructions carefully before installation and use. This manual contains important installation and application information, and please follow the instructions strictly when installing and operating the product. Please keep this manual properly.

This product is in good condition and packaged intact upon leaving the factory. All users must strictly adhere to the warning statements and operating instructions mentioned above. Any damage caused by misuse is not covered by our warranty. Faults and issues resulting from neglecting the user manual are also not within the responsibility of the dealer. If there are any technical changes to this manual, we regret not providing prior notice.

Please be careful to remove the package, check whether the product is damaged during transportation after the package is removed, and check whether the following contents are complete.

TB5 effect light----1
Manual----1

unit signal line----1
power cord----1

3. Product precautions

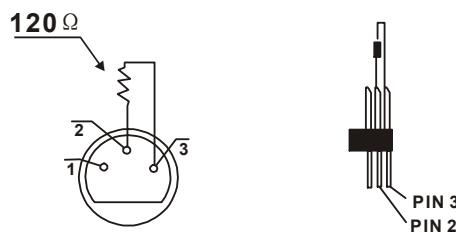
- To ensure the products lifespan, do not place it in damp or water-leaking areas, and never operate it in environments with temperatures exceeding 60 degrees Celsius. If the product has been exposed to extreme and unstable temperatures (such as after transportation), do not immediately connect the power supply, as moisture caused by temperature changes may damage the product. Please wait until the product returns to normal temperature before using it.
- This product can be used in the voltage range of 100-240V and is for indoor use. Please ensure that the ground voltage is not higher than the range that the product can withstand!! The power plug must be inserted into a well protected class I socket. The green or tea-green conductor must be grounded.
- Please check the power cord regularly. Make sure the power cord is not folded or damaged and not connected to other wires! Pay special attention when connecting the power cord or related wires. Unplug the power cord when not using the product or before cleaning.
- Do not tamper with this product without authorization, otherwise it may damage the product, and any damage caused is not covered by warranty. In addition, unprofessional operation may cause short circuit, burns or electric shock, etc.

- Do not store this product in a place where it is easy to loosen or shake.
- Before using the product, please familiarize yourself with the operation function of the product. Do not shake this product. Do not use brute force when installing or operating the product. Do not let unprofessional personnel operate the product. Most of the damage is caused by unprofessional operation.
- To avoid the danger of electric shock, the maintenance request of this product should be assisted by professionals.
- When the bulb is used, the power supply voltage should not change more than $\pm 10\%$. If the voltage is too high, the life of the bulb will be shortened; if the voltage is too low, the color of the bulb will be affected.
- After power failure, the lamp should be fully cooled for 20 minutes before being re-electrified.
- Please read this manual carefully to ensure the normal use of this product.
- Signal line connection (DMX)

Use specification compliant RS-485 cables: shielded, 120ohm characteristic impedance, 22-24 AWG, low capacitive reactance. Do not use microphone cables or cables with different specified characteristics. Terminal connections must use 3 or 5 pin XLR male/female connectors (minimum 1 / 4 W).

Important note: The wires should not touch each other or the metal casing.

During the installation process, if the signal cable is laid over a long distance or in a noisy environment, such as a dance hall, it is recommended to use a DMX terminal (loop connection). This can prevent digital control signals from becoming muddled due to electrical noise. The DMX terminal consists of a simple XLR connector with 2 or 3 pins connected to a 120-ohm resistor. Please plug the terminal into the XLR output port of the last product, as shown in the following figure.



4. Lighting installation

Note: The lamp can be placed horizontally, hung at an angle and hung upside down. When hanging at an Angle and upside down, pay attention to the installation method. For safety, please hang this product away from walkways, seating areas, or areas accessible to people. Before hanging this product, make sure the mounting point can support up to 10 times the weight of this product.

The product installation must have a double protection device, such as a safety rope.

Do not stand under the installation point when hanging, removing or repairing this product.

Please ensure that the product should be installed at least 0.5 meters away from flammable materials.

Please remember to use the safety rope as a safety guarantee to prevent accidents when the fastening is loose.

Hanging point: The top hanging requires the installation personnel to be experienced,

including calculating the load requirements, using the installation materials, periodic inspection of the safety status of the installation materials and products. If you lack this knowledge, please do not try to install by yourself. If not operated correctly, it may lead to serious consequences such as personal injury.

Before the product is powered on, be sure to complete all required hanging and installation steps.

Quick lock hanging: The bottom of this product has a specially designed professional hanging piece, including quick lock hanging piece and safety rope hanging point (please refer to the figure below).

When hanging this product on the truss, please remember to use the appropriate quick lock, secure it to the quick lock hanging position of the product, and hang it with an M10 screw. For further safety, attach a safety rope to the bottom of the product at the safety rope hanging point and secure it to the truss.

in compliance with graph 2As shown, (the lamp in the figure is an example image and does not represent the actual appearance of this product) before positioning the lamp, ensure the stability of the installation location. When installing in reverse suspension, make sure the lamp does not fall off the support frame. Use a safety rope to pass through the support frame and the lamp handle for auxiliary hanging, ensuring safety and preventing the lamp from falling or sliding.

When the lamp is installed and adjusted, pedestrians are not allowed to pass under the lamp, and the safety rope is checked regularly to see if it is worn out and the hook screws are loose.

If the consequences of the fall of the lamp are caused by the unstable hanging installation, our company shall not be liable for any consequences.

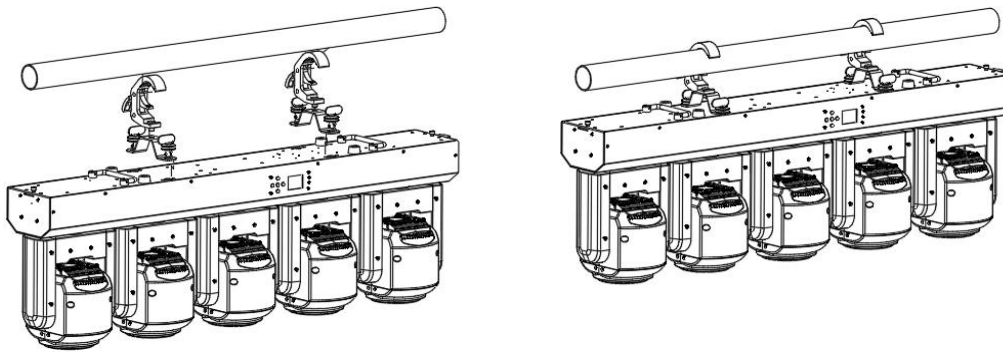


Figure 1 Schematic diagram of inverted lamp

Chapter 2 Panel operation

1. Lighting panel

The schematic diagram of the lamp panel is shown as followsgraph 2As shown:

1) Temperature: As shown in the figure, the board temperature is 30 degrees Celsius; if the temperature display is---°C, it indicates an abnormal temperature detection for the lamp. This could be due to a broken control connection wire. If the temperature display is ***°C and there is a significant difference from the ambient temperature, it may indicate a short circuit in the control connection wire. A professional must inspect and repair the issue before normal use can resume.

2) Address code: It can display the range of 001-512, and the address code displayed on the map is 001.

3) DMX mode: 512 mode.

4) Key: UP: Up key

MENU: Return key

ENTER: Confirm key

DOWN: The down key

Note: Do not use a sharp object or blade to click the display to prevent damage.

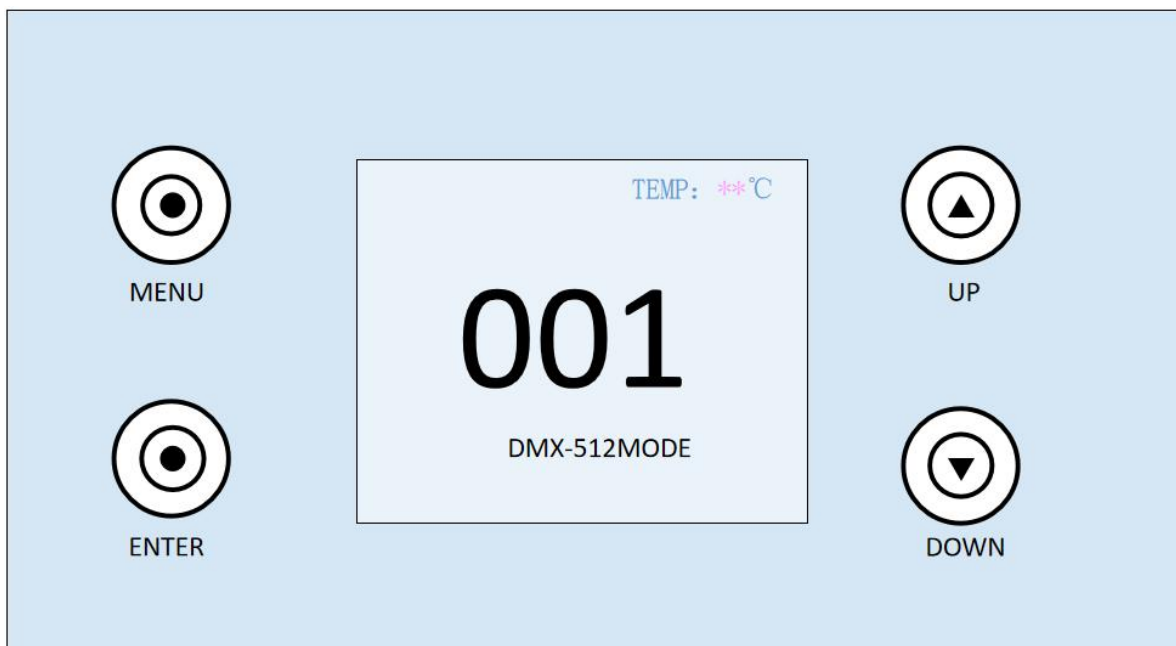


Figure 2 Schematic diagram of five-key display panel

2. Menu home screen

The first interface of the menu contains 6 sub-menus. Select the corresponding sub-menu by pressing the "UP" key and "DOWN" key, and click the "ENTER" key to enter the corresponding sub-menu interface. The first interface of the menu is shown in Figure 3:

1) Address: Click to enter the address code setting. The number of address codes can be increased or decreased by pressing the "UP" key and "DOWN" key, and the

address code displayed on the lamp panel will be updated synchronously.

- 2) Settings:** Click to enter the system Settings, you can change the working mode of the lamp, working parameters and panel display Settings.
- 3) Manual mode:** Click to enter the manual mode to control the functions of the lamp. See the channel table for details.
- 4) Calibration:** Click the input password to enter the calibration interface, and adjust the parameters such as lamp power, motor travel and sound sensitivity.
- 5) Reset:** Click to enter the system reset mode and control the bulb.
- 6) Information:** Click to enter to view system correction, software and hardware version and other information.

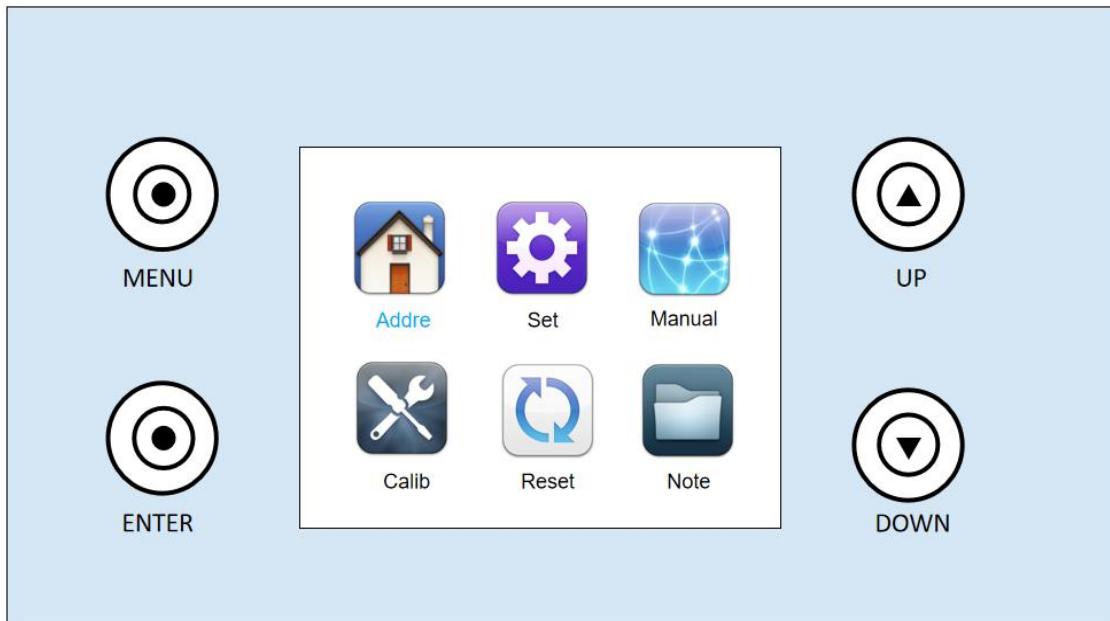


Figure 3 Determine the input window

2.1 System Settings

System Setup		System Setup		System Setup	
Run Mode	DMX	Screen Saver	ON	Dimmer Curve	Curve2
Channel Mode	41CH	Invert Screen	Auto	Dim Frequency	25KHZ
Invert Pan	OFF	Update Slave	OFF	LED Set	OFF
Invert Tilt	OFF	Language	EN	Load Default	
Hall Crct	ON	Screen Lock	OFF		
Encoder Crct	ON	Speed Mode	Normal		
Signal Keep	OFF	Silent Mode	OFF		

Figure 4 System Settings interface

The system setting interface is shown in Figure 4. Enter the system setting, click the "ENTER" key to select the setting to be modified, and then select the content to be changed through the "UP" and "DOWN" keys. Finally, confirm with the "ENTER" key to change the working mode, working parameters and panel display settings of the lamp. See Table 1 for details.

option	explain	
running mode	Lamp operation mode: DMX / voice control / self-drive 1 / self-walk 2	
	DMX pattern	Console mode, receiving the DMX signal
	Self-walking mode 1	The lamp shall be run automatically according to the built-in self-walk program 1
	Self-walking mode 2	The lamp shall be run automatically according to the built-in self-walk program 2
	Sound control mode	When the lamp detects a strong sound, the lamp automatically runs a scene according to the built-in program, otherwise maintain the last scene
channel pattern	41CH/71CH	
Horizontal reversal	Set the X-axis rotation direction	
	close	Don't reverse
	open	opposite direction
Vertical reversal	Set the Y-axis rotation direction	
	close	Don't reverse
	open	opposite direction
Hall error correction	X-axis Y-axis were tested for loss of step and correction	
	close	Position is not corrected after a misstep
	open	Position is automatically corrected after loss of step
Optical coupling error correction	XY was tested for loss of step and corrected	
	close	Position is not corrected after a misstep
	open	Position is automatically corrected after loss of step
The signal to keep	Output status of the lamp with no DMX signal	
	close	There is no signal, so the motor and the light source return to the position and state when the reset is complete
	open	No signal, keeping the last frame of the DMX data output
Screen protection	The screen is bright for a long time	
	close	Often bright
	open	In a static environment, the screen timing off the screen
Screen flip	Set the display direction of the screen	
	close	No reversal is shown
	open	Reverse display

	voluntarily	The system can automatically rotate the screen according to the direction of gravity
Synchronous update	Synchronize the setting parameters or calibration parameters of multiple lamps	
	close	The synchronous update function is turned off.
	open	After opening, connect multiple lamps with DMX cable, and the information can be updated synchronously in the setting interface and calibration interface.(Note: Remove the DMX signal wire connected to the console)
language	Chinese and English menu switch	
	centre	the Chinese language
	EN	English menu
Screen lock	close	The screen lock function is turned off
	open	After extinguishing the screen to prevent accidental touch, use again need to unlock first.
Speed mode	fast	Quick dimming
	standard	Slow dimming
Silent mode	close	Fan full speed
	open	Fan speed adjustment along with the temperature
The dimming curve	Curve 1	straight line
	Curve 2	Square rate curve
	Curve 3	Anti-square rate curve
	Curve 4	S curve
Tuning frequency	10KHZ/15KHZ/20KHZ/25KHZ/900HZ/1000HZ/1100HZ/1200HZ/1300HZ/1400HZ/1500HZ/2500HZ/4000HZ/5000HZ/6000HZ	
LED number	close	The chip number setting function is turned off.
	1—5	The X-axis MCU chip number is set to receive the specified channel data. Facing the display screen, the X-axis is numbered 1 to 5 from left to right.
factory data reset	Lighting parameters are returned to the factory settings	
	cancel	res sic stantibus
	affirm	Light ture to factory settings

primary menu	Sublevel menu	Tertiary menu / parameters
address	001 - 512	(Number of channels added each time, minus normal)
System Settings	running mode	DMX / self walking 1 / self 2 / voice control

	channel pattern	41CH 71CH
	Horizontal reversal	Open / close
	Vertical reversal	Open / close
	Hall error correction	Open / close
	Optical coupling error correction	Open / close
	The signal to keep	Open / close
	Screen protection	Open / close
	Screen flip	Open / close / automatic
	Synchronous update	Open / close
	language	centre /EN
	Screen lock	Open / close
	Speed mode	Standard / fast
	Silent mode	Open / close
	The dimming curve	Curve 1 / curve 2 / curve 3 / curve 4
	Tuning frequency	10KHZ/15KHZ/20KHZ/25KHZ/900HZ/1000HZ/1100HZ/1200HZ/1300HZ/1400HZ/1500HZ/2500HZ/4000HZ/5000HZ/6000HZ
	LED number	Pass / 1-5
	factory data reset	Confirm / cancel
manual mode	Current channel mode channel	0-255
system calibration	enter password	Lighting calibration
system reset	Effect motor reset	Effect disc reset other than XY
	Scan the motor for reset	The XY axis was reset only
	Full motor reset	Lamps reset
system info	Reset information	Device error message
	And DMX data monitoring	Channel values for the receiving console
	sensor information	Sensor status information
	Hardware version	Displays the hardware version
	software release	Displays the software version

Table 1

2.2 System calibration

Calibration		Calibration		Calibration	
Pan-1	255	Focus-5	255	Balance 3-Green	255
Tilt-1	255	Balance-Red	255	Balance 3-Blue	255
Focus-1	255	Balance-Green	255	Balance 3-Lime	255
Pan-2	255	Balance-Blue	255	Balance 4-Red	255
Tilt-2	255	Balance-Lime	255	Balance 4-Green	255
Focus-2	255	Balance 1-Red	255	Balance 4-Blue	255
Pan-3	255	Balance 1-Green	255	Balance 4-Lime	255
Tilt-3	255	Balance 1-Blue	255	Balance 5-Red	255
Focus-3	255	Balance 1-Lime	255	Balance 5-Green	255
Pan-4	255	Balance 2-Red	255	Balance 5-Blue	255
Tilt-4	255	Balance 2-Green	255	Balance 5-Lime	255
Focus-4	255	Balance 2-Blue	255	Power	255
Pan-5	255	Balance 2-Lime	255	MIC	127
Tilt-5	255	Balance 3-Red	255	Change Password	>>

Figure 5 System calibration interface

Enter the password "0000" to enter the system calibration interface. Modify the values through the "UP" key and "DOWN" key to modify the lamp power and motor travel parameters. The system calibration interface is shown in Figure 5. See Table 2 for details.

option	explain
initial position	After entering the sub-interface, the initial position of X-axis, Y-axis and focusing motor 1-5 can be adjusted. The adjustment range of 0-255, and 127 indicates that there is no adjustment
Travel calibration	After entering the sub-interface, the stroke of X-axis, Y-axis, focusing motor, red, green, blue, lemon yellow , LED1-LED5 white balance can be adjusted. The adjustment range of 0~255,127 means that there is no adjustment
power	After entering the sub-interface, the maximum power of the lamp can be adjusted, and 255 indicates the maximum power
MIC sensitivity	Voice control sensitivity adjustment, default 127. The value decreases, and the sensitivity increases. The value increases and the sensitivity decreases.
change password	Set the system calibration password

Table 2

2.3 System reset

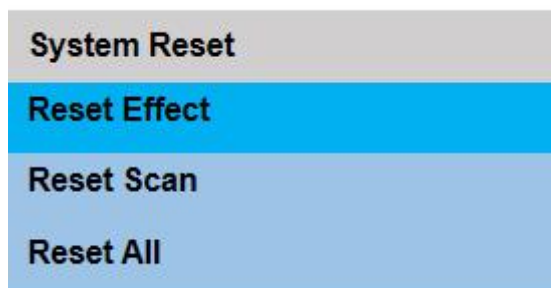


Figure 6 System reset interface

The system reset interface is shown in Figure 6. Press "UP" and "DOWN" keys to switch the reset mode, and press "ENTER" to reset directly. See Table 3 for details.

option	explain
The effect motor resets	Reset the motor such as color disk, fixed image and focus adjustment
Scan the motor reset	Only the XY axis is reset
All motors reset	The lamp is reset

Table 3

2.4 System Information

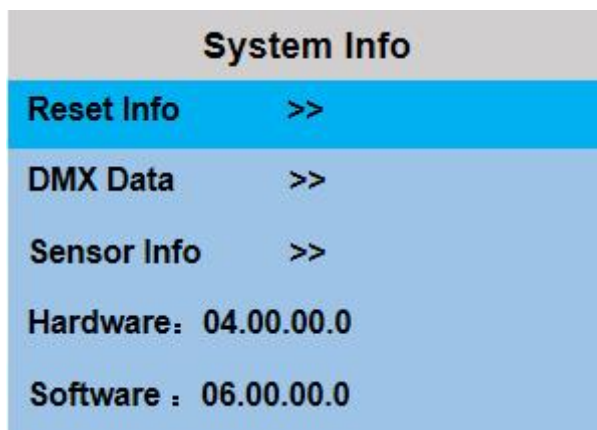


Figure 7 System information interface

Press "ENTER" directly to enter the system information interface, and select the information to be viewed through "UP" and "DOWN". Click "ENTER" to view the corresponding content. The system information interface is shown in Figure 7, and the detailed content is shown in Table 4.

option	explain
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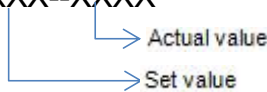
Reset information	If the red ERR indicator light is on for a long time, it indicates that the lamp is running wrong: 1) X1-X5 communication failure (communication failure between X-axis motor and display board) 2) Y1-Y5 communication failure (communication failure between Y-axis motor and display board) 3) Z1-Z5 communication failure (communication failure between LED driver board and display board) 4) X/Y (1-5) optical coupling error 4) X/Y/Z (1-5) Hall error
DMX data monitoring	Thus, the sub-interface is entered, and the channel value is displayed in numerical form for viewing
sensor information	1) Hall: <u>XXXXXX</u> Hall 1-5 sensor: X, Y optocoupler: XXXX--XXXX 
Hardware version number	Lamp hardware information <u>XX</u> . <u>XX</u> . <u>XX</u> . <u>XX</u> ↓ ↓ Display panel version. Motor version.
Software version number	Lamp software version <u>XX</u> . <u>XX</u> . <u>XX</u> . <u>XX</u> ↓ ↓ Display panel version. Motor version.

Table 4

Chapter 3 Channel description and technical parameters

1. channel table

The specific detailed data of the channel is shown in Table 5, which can also be viewed in the manual operation interface:

41 Channel mode (Mode 1):

41CH	The channel name	The channel value	Channel function
1	Level 1	0-255	0°-540°
2	Horizontal 1 fine-tuning	0-255	0°-2°
3	Vertical 1	0-255	0°-540°
4	Vertical 1 fine-tuning	0-255	0°-2°
5	Scale 1	0-255	0%-100%
6	Level 2	0-255	0°-540°
7	Horizontal 2 fine-tuning	0-255	0°-2°
8	Vertical 2	0-255	0°-540°
9	Vertical 2 fine-tuning	0-255	0°-2°
10	Scale 2	0-255	0%-100%
11	Level 3	0-255	0°-540°
12	Horizontal 3 fine-tuning	0-255	0°-2°
13	Vertical 3	0-255	0°-540°
14	Vertical 3 fine-tuning	0-255	0°-2°
15	Scale 3	0-255	0%-100%
16	Level 4	0-255	0°-540°
17	Level 4 fine-tuning	0-255	0°-2°
18	Vertical 4	0-255	0°-540°
19	Vertical 4 fine-tuning	0-255	0°-2°
20	Scale 4	0-255	0%-100%
21	Level 5	0-255	0°-540°
22	Horizontal 5 fine-tuning	0-255	0°-2°
23	Vertical 5	0-255	0°-540°
24	Vertical 5 fine-tuning	0-255	0°-2°
25	Scale 5	0-255	0%-100%
26	Main light red	0-255	Red color 0% -100%
27	Main light green	0-255	Green, 0% -100%
28	Main light blue	0-255	Blue color is 0% -100%
29	Main light lemon yellow	0-255	Lemon yellow for 0% -100%
30	Main light color temperature	0	NF
		1-255	8000K-2500K
31	Main light color	0-9	NF
		10-16	LEE 790 - Moroccan Pink
		17-23	LEE 157 - Pink
		24-30	LEE 332 - Special Rose Pink
		31-37	LEE 328 - Follies Pink

		38-44	LEE 345 - Fuchsia Pink
		45-51	LEE 194 - Surprise Pink
		52-58	LEE 181 - Congo Blue
		59-65	LEE 071 - Tokyo Blue
		66-72	LEE 120 - Deep Blue
		73-79	LEE 079 - Just Blue
		80-86	LEE 132 - Medium Blue
		87-93	LEE 200 - Double CT Blue
		94-100	LEE 161 - State Blue
		101-107	LEE 201 - Full CT Blue
		108-114	LEE 202 - Half CT Blue
		115-121	LEE 117 - Steel Blue
		122-128	LEE 353 - Lighter Blue
		129-135	LEE 118 - Light Blue
		136-142	LEE 116 - Medium Blue Green
		143-149	LEE 124 - Dark Green
		150-156	LEE 139 - Primary Green
		157-163	LEE 089 - Moss Green
		164-170	LEE 122 - Fern Green
		171-177	LEE 738 - JAS Green
		178-184	LEE 088 - Lime Green
		185-191	LEE 100 - Spring Yellow
		192-198	LEE 104 - Deep Amber
		199-205	LEE 179 - Chrome Orange
		206-212	LEE 105 - Orange
		213-219	LEE 021 - Gold Amber
		220-226	LEE 778 - Millennium Gold
		227-233	LEE 135 - Deep Gold Amber
		234-255	LEE 164 - Flame Red
32	Halo red	0-255	Red color 0% -100%
33	Halo green	0-255	Green, 0% -100%
34	Halo blue	0-255	Blue color is 0% -100%
35	The Halo Effect & Speed	0-15	NF
		16-31	Effect 1, from fast to slow
		32-47	Effect 2, from fast to slow
		48-63	Effect 3, from fast to slow
		64-79	Effect 4, from fast to slow
		80-95	Effect 5, from fast to slow
		96-111	Effect 6, from fast to slow
		112-127	Effect 7, from fast to slow
		128-143	Effect 8, from fast to slow
		144-159	Effect 9, from fast to slow
		160-175	Effect 10, from fast to slow
		176-191	Effect of the 11, from fast to slow
		192-207	Effect of the 12, from fast to slow

		208-223	Effect 13, from fast to slow
		224-239	Effect 14, from fast to slow
		240-255	Effect 15, from fast to slow
36	Total dimming	0-255	0%-100%
37	Total dimming fine-tuning	0-255	16bit
38	Main light flash	0-7	Closed light
		8-15	opening the light
		16-131	Synchronous strobe, from slow to fast
		132-139	opening the light
		140-181	Open fast and slow off, from slow to fast
		182-189	opening the light
		190-231	Open it off slowly and turn it off fast, from slow to fast
		232-239	opening the light
		240-247	Random strobe, from slow to fast
		248-255	opening the light
39	Halo flash	0-7	Closed light
		8-15	opening the light
		16-131	Synchronous strobe, from slow to fast
		132-139	opening the light
		140-181	Open fast and slow off, from slow to fast
		182-189	opening the light
		190-231	Open it off slowly and turn it off fast, from slow to fast
		232-239	opening the light
		240-247	Random strobe, from slow to fast
		248-255	opening the light
40	XY axis speed	0-255	From fast to slow
41	function	0-29	NF
		30-39	Dimmer curve: The curve is linear
		40-49	Dimmer curve: square rate
		50-59	Dimmer curve: inverse square rate
		60-69	Dimmer curve: S curve
		70-122	NF
		123	900HZ
		124	1000HZ
		125	1100HZ
		126	1200HZ
		127	1300HZ
		128	1400HZ
		129	1500HZ
		130	2500HZ

		131	4000HZ
		132	5000HZ
		133	6000HZ
		134	10KHZ
		135	15KHZ
		136	20KHZ
		137	25KHZ
		138-139	NF
		140-149	XY axis reduction
		150-159	Head reset
		160-199	NF
		200-209	All reset
		210-255	NF

71 Channel mode (Mode 2):

71CH	The channel name	The channel value	Channel function
1	Level 1	0-255	0°->540°
2	Horizontal 1 fine-tuning	0-255	0°-2°
3	Vertical 1	0-255	0°->540°
4	Vertical 1 fine-tuning	0-255	0°-2°
5	Main light 1 red	0-255	Red color 0% -> 100%
6	Main light 1 green	0-255	Green, 0% -> 100%
7	Main light 1 blue	0-255	Blue is 0% -> 100%
8	Main light 1 is lemon yellow	0-255	Lemon Yellow for 0% -> 100%
9	Scale 1	0-255	0%->100%
10	Halo 1 red	0-255	Red color 0% -> 100%
11	Halo 1 green	0-255	Green, 0% -> 100%
12	Halo 1 blue	0-255	Blue is 0% -> 100%
13	Halo 1 Effect & Speed	0-15	NF
		16-31	Effect 1, from fast to slow
		32-47	Effect 2, from fast to slow
		48-63	Effect 3, from fast to slow
		64-79	Effect 4, from fast to slow
		80-95	Effect 5, from fast to slow
		96-111	Effect 6, from fast to slow
		112-127	Effect 7, from fast to slow
		128-143	Effect 8, from fast to slow
		144-159	Effect 9, from fast to slow
		160-175	Effect 10, from fast to slow

		176-191	Effect of the 11, from fast to slow
		192-207	Effect of the 12, from fast to slow
		208-223	Effect 13, from fast to slow
		224-239	Effect 14, from fast to slow
		240-255	Effect 15, from fast to slow
14	Level 2	0-255	0°->540°
15	Horizontal 2 fine-tuning	0-255	0°-2°
16	Vertical 2	0-255	0°->540°
17	Vertical 2 fine-tuning	0-255	0°-2°
18	Main light 2 red	0-255	Red color 0% -> 100%
19	Main light 2 green	0-255	Green, 0% -> 100%
20	Main light 2 blue	0-255	Blue is 0% -> 100%
21	Main light 2 is lemon yellow	0-255	Lemon Yellow for 0% -> 100%
22	Scale 2	0-255	0%->100%
23	Halo 2 red	0-255	Red color 0% -> 100%
24	Halo 2 green	0-255	Green, 0% -> 100%
25	Halo 2 blue	0-255	Blue is 0% -> 100%
26	Halo 2 Effect & Speed	0-15	NF
		16-31	Effect 1, from fast to slow
		32-47	Effect 2, from fast to slow
		48-63	Effect 3, from fast to slow
		64-79	Effect 4, from fast to slow
		80-95	Effect 5, from fast to slow
		96-111	Effect 6, from fast to slow
		112-127	Effect 7, from fast to slow
		128-143	Effect 8, from fast to slow
		144-159	Effect 9, from fast to slow
		160-175	Effect 10, from fast to slow
		176-191	Effect of the 11, from fast to slow
		192-207	Effect of the 12, from fast to slow
		208-223	Effect 13, from fast to slow
		224-239	Effect 14, from fast to slow
		240-255	Effect 15, from fast to slow
27	Level 3	0-255	0°->540°
28	Horizontal 3 fine-tuning	0-255	0°-2°
29	Vertical 3	0-255	0°->540°
30	Vertical 3 fine-tuning	0-255	0°-2°

31	Main light 3 red	0-255	Red color 0% -> 100%
32	Main light 3 green	0-255	Green, 0% -> 100%
33	Main light 3 blue	0-255	Blue is 0% -> 100%
34	Main light 3 is lemon yellow	0-255	Lemon Yellow for 0% -> 100%
35	Scale 3	0-255	0%->100%
36	Halo 3 red	0-255	Red color 0% -> 100%
37	Halo 3 green	0-255	Green, 0% -> 100%
38	Halo 3 blue	0-255	Blue is 0% -> 100%
39	Halo 3 Effect & Speed	0-15	NF
		16-31	Effect 1, from fast to slow
		32-47	Effect 2, from fast to slow
		48-63	Effect 3, from fast to slow
		64-79	Effect 4, from fast to slow
		80-95	Effect 5, from fast to slow
		96-111	Effect 6, from fast to slow
		112-127	Effect 7, from fast to slow
		128-143	Effect 8, from fast to slow
		144-159	Effect 9, from fast to slow
		160-175	Effect 10, from fast to slow
		176-191	Effect of the 11, from fast to slow
		192-207	Effect of the 12, from fast to slow
		208-223	Effect 13, from fast to slow
		224-239	Effect 14, from fast to slow
		240-255	Effect 15, from fast to slow
40	Level 4	0-255	0°->540°
41	Level 4 fine-tuning	0-255	0°-2°
42	Vertical 4	0-255	0°->540°
43	Vertical 4 fine-tuning	0-255	0°-2°
44	Main light 4 red	0-255	Red color 0% -> 100%
45	Main light 4 green	0-255	Green, 0% -> 100%
46	Main light 4 blue	0-255	Blue is 0% -> 100%
47	Main light 4 is lemon yellow	0-255	Lemon Yellow for 0% -> 100%
48	Scale 4	0-255	0%->100%
49	Halo 4 red	0-255	Red color 0% -> 100%
50	Halo 4 green	0-255	Green, 0% -> 100%
51	Halo 4 blue	0-255	Blue is 0% -> 100%
52	Halo 4 Effect & Speed	0-15	NF
		16-31	Effect 1, from fast to slow
		32-47	Effect 2, from fast to slow
		48-63	Effect 3, from fast to slow

		64-79	Effect 4, from fast to slow
		80-95	Effect 5, from fast to slow
		96-111	Effect 6, from fast to slow
		112-127	Effect 7, from fast to slow
		128-143	Effect 8, from fast to slow
		144-159	Effect 9, from fast to slow
		160-175	Effect 10, from fast to slow
		176-191	Effect of the 11, from fast to slow
		192-207	Effect of the 12, from fast to slow
		208-223	Effect 13, from fast to slow
		224-239	Effect 14, from fast to slow
		240-255	Effect 15, from fast to slow
53	Level 5	0-255	0°->540°
54	Horizontal 5 fine-tuning	0-255	0°-2°
55	Vertical 5	0-255	0°->540°
56	Vertical 5 fine-tuning	0-255	0°-2°
57	Main light 5 red	0-255	Red color 0% -> 100%
58	Main light 5 green	0-255	Green, 0% -> 100%
59	Main light 5 blue	0-255	Blue is 0% -> 100%
60	Main light 5 is lemon yellow	0-255	Lemon Yellow for 0% -> 100%
61	Scale 5	0-255	0%->100%
62	Halo 5 red	0-255	Red color 0% -> 100%
63	Halo 5 green	0-255	Green, 0% -> 100%
64	Halo 5 blue	0-255	Blue is 0% -> 100%
65	Halo 5 Effect & Speed	0-15	NF
		16-31	Effect 1, from fast to slow
		32-47	Effect 2, from fast to slow
		48-63	Effect 3, from fast to slow
		64-79	Effect 4, from fast to slow
		80-95	Effect 5, from fast to slow
		96-111	Effect 6, from fast to slow
		112-127	Effect 7, from fast to slow
		128-143	Effect 8, from fast to slow
		144-159	Effect 9, from fast to slow
		160-175	Effect 10, from fast to slow
		176-191	Effect of the 11, from fast to slow
		192-207	Effect of the 12, from fast to slow
		208-223	Effect 13, from fast to slow
		224-239	Effect 14, from fast to slow
		240-255	Effect 15, from fast to slow

66	Total dimming	0-255	0%->100%
67	Total dimming fine-tuning	0-255	Tuning fine-tuning
68	Main light flash	0-7	Closed light
		8-15	opening the light
		16-131	Synchronous strobe, from slow to fast
		132-139	opening the light
		140-181	Open fast and slow off, from slow to fast
		182-189	opening the light
		190-231	Open it off slowly and turn it off fast, from slow to fast
		232-239	opening the light
		240-247	Random strobe, from slow to fast
		248-255	opening the light
69	Halo flash	0-7	Closed light
		8-15	opening the light
		16-131	Synchronous strobe, from slow to fast
		132-139	opening the light
		140-181	Open fast and slow off, from slow to fast
		182-189	opening the light
		190-231	Open it off slowly and turn it off fast, from slow to fast
		232-239	opening the light
		240-247	Random strobe, from slow to fast
		248-255	opening the light
70	XY axis speed	0-255	From fast to slow
71	function	0-29	NF
		30-39	Dimmer curve: The curve is linear
		40-49	Dimmer curve: square rate
		50-59	Dimmer curve: inverse square rate
		60-69	Dimmer curve: S curve
		70-122	NF
		123	900HZ
		124	1000HZ
		125	1100HZ
		126	1200HZ
		127	1300HZ
		128	1400HZ
		129	1500HZ
		130	2500HZ
		131	4000HZ
		132	5000HZ
		133	6000HZ

		134	10KHZ
		135	15KHZ
		136	20KHZ
		137	25KHZ
		138-139	NF
		140-149	XY axis reduction
		150-159	Head reset
		160-199	NF
		200-209	All reset
		210-255	NF

Table 5

2. Technical parameters:

Input voltage: AC100-240V, 50 / 60Hz

Whole lamp power: 625W;

Main light source: 5 * 120 WRGB lemon yellow (1212 lamp beads) + 1200.5 RGB auxiliary light;

Auxiliary light: single-head outer ring 24*0.2W RGB LED module;

Type: single-head 120 W RGB lemon yellow LED module;

Average life span:> 20,000 hours;

Connection mode: DMX512 input / output / power input / output

Zoom and zoom: electronic linear zoom 3.5° -45°, zoom distance of more than 3 meters;

Dimming and strobe: 0-100% linear electronic dimming; fast electronic strobe;

Display and control

Display and main control: LCD display, support Chinese and English switching; lamp information can be checked;

Channel: 41 channel / 71 channel;

Control: DMX512 control, support RDM function; upgrade the lamps through DMX signal line;

Intelligent heat dissipation: temperature sensing detection, fan speed adaptive adjustment;

The lamp is equipped with five independently controlled lamp heads with smooth X-axis Y-axis motion.

Scan

Horizontal scan: 60° (16 bit resolution)

Vertical scan: 220° (16 bit resolution)

With the automatic error correction of the reset function;

Appearance: metal, black;

Chapter 4 Common faults and usage precautions

1. Common fault handling

The lamp contains microcomputer circuit board, high voltage power supply and other professional components. For your safety and product life, non-professionals should not dismantle the lamp and related accessories without authorization.

1. The bulb does not light (except for LED light source)

Possible causes: The bulb is not completely cooled, or the bulb has reached its life, and the treatment is as follows:

- Due to abnormal operation, the bulb is not completely cooled, let the lamp body cool for more than 10 minutes, so that its internal state is completely restored to normal, and then restart the power supply;
- Check whether the bulb has reached its service life, and replace the new bulb;
- Check whether the bulb and the ignition circuit are leaking, falling off or in poor contact;
- Replace the new light bulb.

2. The beam appears dim

Possible causes: long use time of the bulb or dirty optical path. Handle as follows:

- Check whether the bulb has reached its service life, and replace the new bulb;
- Check whether the optical parts or bulbs are clean, whether there is dust on the bulbs and other optical devices, and clean and maintain the bulbs and other parts in the lamps regularly.

3. Pattern projection is blurred

- Check that the value of the electronic focus channel is appropriate for the current projection distance.

4. The lights work intermittently

Possible causes: Internal lines enter protection mode. Handle as follows:

- Check whether the fan is running normally or dirty, resulting in the internal temperature of the lamp rising;
- Check whether the internal temperature control switch is closed;
- Check if the bulb has reached its service life and replace it with a new one.

5. The lamp is not controlled by the console after it is normally reset

Possible causes: signal line fault or lamp parameter setting is not normal, the treatment is as follows:

- Check the starting address code and check the connection of DMX signal lines (whether the signal cable is intact and whether the connector is loose);
- Add signal amplifier, add 120 ohm terminal resistor;

6. The lamp does not start

Possible causes: poor power line, handle as follows:

- Check whether the fuse on the power input socket is blown, and replace the fuse;
- The lamp is subjected to vibration during long-distance transportation, resulting in poor

contact of the line

- Check the input power supply, computer board and other plug-in devices.

2. Usage precautions

- Check whether the local power supply meets the rated voltage requirements of the product, and whether the leakage protector, overcurrent protector and so on meet the requirements of the load;
- Do not use power lines with damaged insulation, do not connect power lines to other wires;
- The lamp uses strong wind refrigeration, which is easy to accumulate dust, and must be cleaned once a month, especially the heat dissipation air outlet, otherwise it will be blocked by dust accumulation, resulting in poor heat dissipation and abnormal lamp.
- When installing lamps, the fixing screws must be tightened, and the safety cable should be added, and checked regularly;
- When installing and positioning the lamp, any point on the surface of the lamp should be kept at a minimum distance of 10 meters from any inflammable and explosive objects, and 2.5 meters away from the irradiated object. Please do not install the lamp directly on the surface of combustible substances;
- The continuous working time of the lamp is recommended not to exceed 10 hours, and the interval time between continuous starting of the lamp should not be less than 10 minutes, otherwise it will not be able to trigger normally due to the overheating protection of the bulb;
- The closing time of the switch valve should not exceed 5 minutes. If it is necessary to close the light for a long time, the lamp should be turned off using the control panel (lamp control channel);
- In order to ensure that multiple lamps better comply with the scene effect, the lamps should not remain in the current scene, that is, start the next scene action, and it is best that this state does not exceed 3 minutes to ensure that multiple lamps can run synchronously;
- During use, if the lamp is abnormal, the lamp should be stopped in time to prevent other faults.

3. RDM usage precautions

RDM is an extended version of the DMX512-A protocol and is the Remote Device Management (Remote Device Management) protocol. Traditional DMX512 communication is unidirectional, based on the RS-485 bus, which is a time-sharing multi-point, half-duplex protocol that allows only one port to be the host output at any given time. Therefore, when using RDM, you should pay attention to the following points:

- Use a console or host device that supports the RDM protocol;
- To use a bidirectional signal amplifier, a traditional unidirectional signal amplifier is not suitable for the RDM protocol, because the RMD protocol requires feedback data, and using a unidirectional amplifier will block the return data, resulting in the search of lamps;
- All lamps must be set to DMX mode to ensure that only one host is on the signal line;
- A 120ohm impedance matching resistor must be inserted between terminals 2 and 3 of the terminal plug. When the signal line is relatively long, differential signals are more

stable to reduce signal reflection, which is beneficial to communication quality;

- When the lamp receives D MX control but cannot R DM search the lamp, check the signal amplifier first, and then check whether the 2 or 3 lines of the signal line are in poor contact.