

# VELA290B



## 1. Safety Instruction



Warning

Please read this manual carefully. It contains important information about installation, use and maintenance.

Please read this instruction carefully before using this product.

Please keep this manual as a reference for future consultation, If you sell this product to other users, please make sure they also get this manual.

Please use it correctly on the basis of full understanding of the content.

### Notice:

The equipment is packed in good condition when leaving the factory. Please operate it according to the user's manual. The machine failure caused by human factors is not covered by the warranty.

- ⌘ Before using the product, please open it and check carefully, to ensure that there is no damage caused by transportation.
- ⌘ This fixture is only suitable for indoor dry places.
- ⌘ The installation and operation of the fixture, should be carried out by professionals.
- ⌘ Do not let children operate the fixture.
- ⌘ Use insurance ropes when fixing the device, and hold the bottom at the same time when moving the fixture.
- ⌘ The equipment must be installed in a well-ventilated place, at least 50 cm away from the adjacent surface.
- ⌘ Make sure the ventilation holes are clear to avoid overheating when the fixture is running.
- ⌘ Before operation, make sure that the power supply voltage matches the power supply voltage required by the fixture.
- ⌘ Please ground the conductor to prevent electric shock.
- ⌘ Ambient temperature: Do not operate the fixture below  $-25^{\circ}\text{C}$  or above  $45^{\circ}\text{C}$ .
- ⌘ It is forbidden to connect the fixture directly to the dimming equipment.
- ⌘ Do not place combustible materials within 1 meter of the fixture When it is running, to avoid fire hazard.
- ⌘ Please carefully check whether the power cable is damaged before turning on the fixture, and replace it immediately if there is any damage.
- ⌘ The surface temperature of the fixture can reach  $55^{\circ}\text{C}$  during operation, please do not touch it with bare hands.
- ⌘ Avoid operating in dirty and dusty environments, and clean and maintain the fixture regularly.
- ⌘ It is forbidden to touch the wire when the fixture is running to prevent electric shock.
- ⌘ Avoid entanglement of the power cable and other wires
- ⌘ The distance between the fixture and the illuminated surface should be more than 15M。
- ⌘ Disconnect the power supply before replacing the fuse or bulb

- ⌘ Use the same model when replacing fuses or bulb.
- ⌘ There is a serious operation failure, please stop using it immediately.
- ⌘ Do not turn on the fixture repeatedly.
- ⌘ Please replace the lamp housing, lens or ultraviolet filter when there is obvious damage.
- ⌘ There are no available parts inside the fixture, Do not open the lamp housing without authorization
- ⌘ Do not operate the machine by yourself. Operation by non-professionals will cause damage to the device or malfunctions. If you need maintenance, please contact the nearest authorized service center.
- ⌘ Please turn off the power when the fixture is not used for a long time or maintenance.
- ⌘ When shipping again, please use the original packaging material.
- ⌘ To avoid fire or electric shock, do not expose the fixture to rain or wet areas.
- ⌘ There is a danger of explosion due to high temperature bulbs. Please do not turn on the lamp within 15 minutes after power off.
- ⌘ Please replace the bulb in time if the bulb is damaged, deformed by heat or exceeds the service life
- ⌘ Do not stare at the fixture directly during operation
- ⌘ The bulb will be very hot when the fixture is running. Do not touch the bulb with bare hands.
- ⌘ The plug must be grounded when the fixture is in operation.
- ⌘ Don't operate the fixture when the bulb has no protective cover or the cover is damaged.

## 2. Technical Specifications

**Power supply:** 100~240V, 50/60H

**Power rated:** 370W (90V)

**Bulb:** PHILIPS MSD Silver 250W (Lamp rated life: 1500H)

**Color temperature:** 8000

**Power off display function:**

Connect the USB socket when the power is off, you can enter the menu to set the address code and other settings.

**Optical System:** Efficient optical system、Powerful light output、High quality optical lens

**Movement:**

Horizontal: 540° (16bit Precision scan)

Vertical: 270° (16bit Precision scan)

Reset function with automatic error correction

**Dimming/strobe:**

0%~100% smooth dimming, multiple speed strobe effect

**Color Wheel:**

1 color wheel: 12 color +white, half-color effect with bidirectional rotation.

**Gobo Wheel:**

1 fixed pattern plate: 14 pattern pieces + white, with pattern dithering and pattern arbitrary positioning function.

Magnetic positioning function, convenient for initial position correction and maintenance

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**Prism:**

Prism1: 8 prism that can be rotated and overlapped in two-way

Prism2: 24 honeycomb prism that can be rotated and overlapped in two-way

**Focusing angle:** Zoom: 1.8° (Fixed focus)

**Fog:**Independent fog and soft light effect

**Heat dissipation:**Fan cooling

**General controller:**

DMX 512 controller

DMX signal input/output: 3-pin XLR signal line interface

**N.W:**14KG

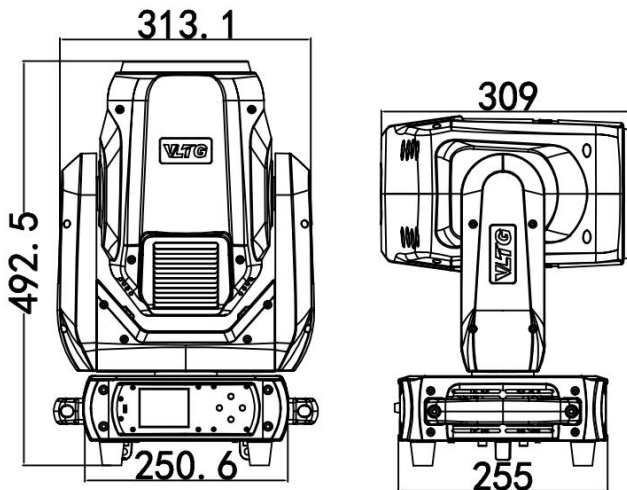
**G.W (Carton) :**15.5KG

**Product Dimension:**

492.5\*313.1\*255mm

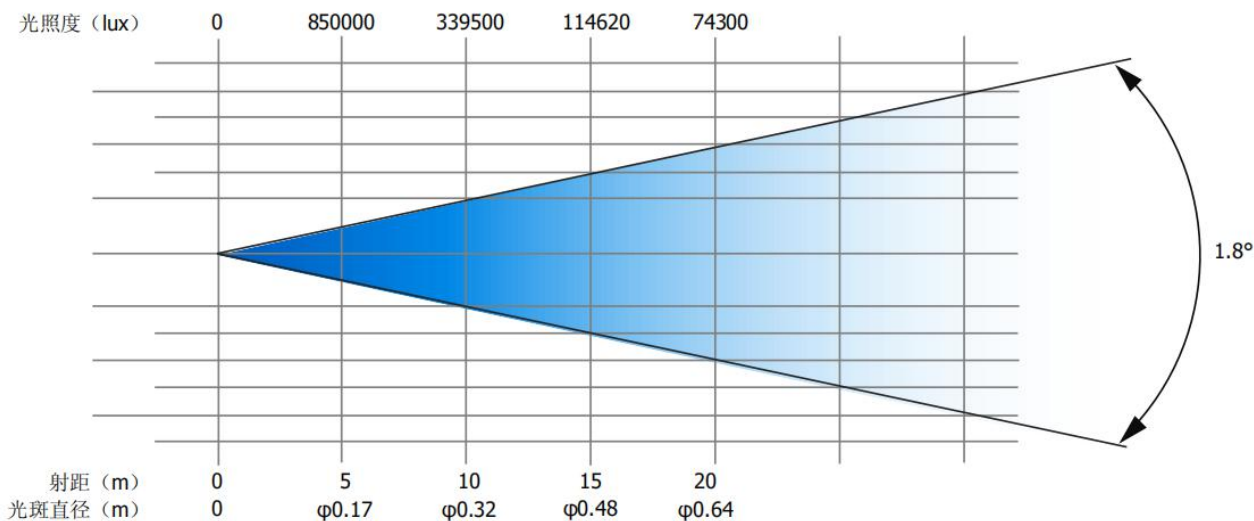
**Package Dimension (Carton):**

580× 520 × 405mm

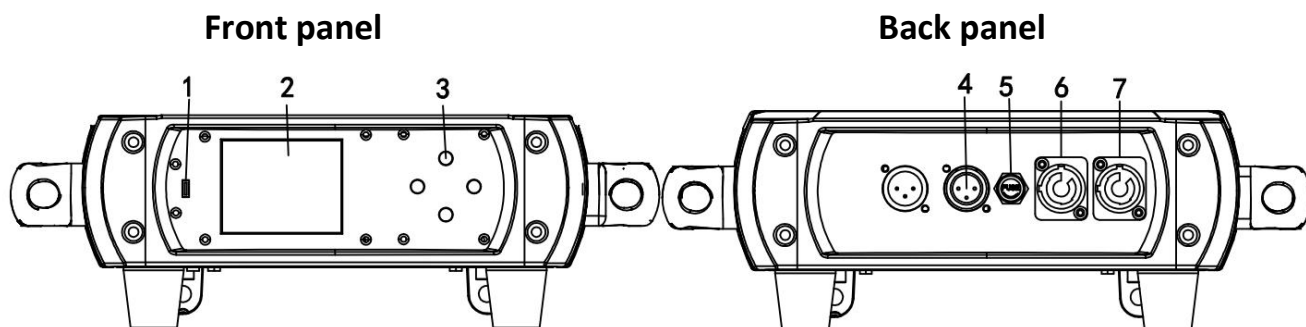


**Product Illumination Chart**

● **照度表**



### 3. Description



- 1. **USB socket:** USB connection data.
- 2. **Display screen:** display function menus, the button will automatically lock the setting after 30 seconds of standby, to prevent operation errors, long press the MENU button for 2 seconds to activate the button.

**3. Button:**

|               |   |
|---------------|---|
| <b>MENU</b>   | Return  |
| <b>▲ DOWN</b> | To the next option                                      |
| <b>▼ UP</b>   | Go to previous option                                   |
| <b>ENTER</b>  | Enter menu selection function\Confirm selected function |

**4. DMX Input/ Output:**

For DMX 512 connection, use 3-pin XLR signal cable to connect the fixture and DMX console, and input DMX signal.

- 5. **Fuse:** Over current protection.
- 6. **Power Input:** Connect to power supply.
- 7. **Power Output:**

Connect the power supply (110V power supply can connect up to 3 pieces of beam, 220V power supply can connect up to 6 pieces of beam)

### 4. Lamp Bulb

**PHILIP MSD SILVER ®250W**

There is high voltage inside the bulb, which may break during operation. The ultraviolet light emitted by the bulb is harmful to the eyes and skin. Do not stare directly at the fixture during operation.

- 1 In order to protect the fixture, please turn off the fixture first when turning off the lamp, and then disconnect the power after running for at least 5 minutes.
- 2 Do not touch the bulb with bare hands. Once touched by hand, wipe with alcohol and then dry with soft linen.
- 3 When the lamp is on, the bulb operates under high pressure, so there is a risk of rupture. The degree of danger is related to the length of use time, temperature and unreasonable operation and other factors. Therefore, please do not use bulbs that exceed the service life.
- 4 Make sure the bulb is installed in the center to ensure the best results.

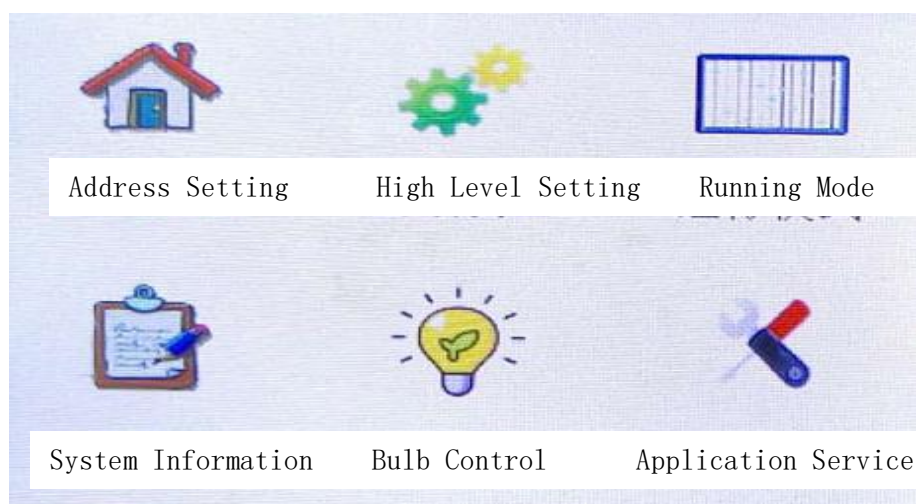
## 5. Fixture settings

### 5.1 Main Function

Turn on the machine, press the ENTER button to enter the menu mode, use the UP and DOWN buttons to find the menu, when the preset menu is displayed on the display, press the ENTER button to confirm, use the UP and DOWN buttons to select the submenu, press the ENTER button to save the setting Automatically return to the previous menu. Press the MENU button to return, or wait 30 seconds and automatically exit the menu mode.

When there is no power connection, press the MENU button for 3 seconds to enter the menu mode. After setting, press the ENTER button for 1 second or wait for 40 seconds and then automatically exit the setting function after power off.

#### Main menu page:



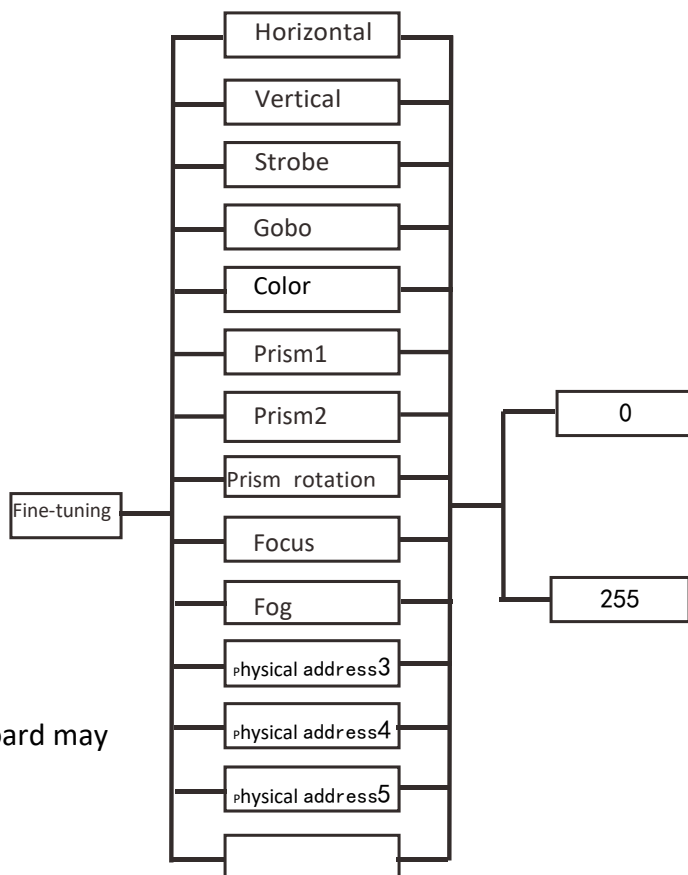
| <b>Menu function</b> |                           |                        |                   |                           |       |  |
|----------------------|---------------------------|------------------------|-------------------|---------------------------|-------|--|
| Level 1 menu         | Level 2 menu              | Level 3 menu           | Level 4 menu      | Level 5 menu              |       |  |
| Set address          | 0-512                     |                        |                   |                           |       |  |
| Advanced settings    | X axis reversal           | Open/ Close            |                   | (Default off)             |       |  |
|                      | Y axis reversal           | Open/ Close            |                   | (Default off)             |       |  |
|                      | Display screen reverse    | Positive/Reverse /Auto |                   | (Default Positive)        |       |  |
|                      | The screen is always on   | Open/ Close            |                   | (Default off)             |       |  |
|                      | Optocoupler correction    | Open/ Close            |                   | (Default on)              |       |  |
|                      | Language                  | Chinese/ English       |                   | (Factory default Chinese) |       |  |
|                      | Error message             | Open/ Close            |                   | (Default on)              |       |  |
|                      | Touch screen calibration  | Yes/ No                |                   |                           |       |  |
|                      | Factory settings          |                        |                   |                           |       |  |
|                      | Drop out                  |                        |                   |                           |       |  |
| Operating mode       | Select channel mode       | Standard mode 16 (CH)  |                   | (Factory default)         |       |  |
|                      |                           | Reduced mode 13 (CH)   |                   |                           |       |  |
|                      | View the current channel  | horizontal             | 0-255             |                           |       |  |
|                      |                           | .....                  |                   |                           |       |  |
|                      |                           | Functional channel     |                   |                           |       |  |
|                      | Manual control of Fixture | DMX Mode               |                   |                           |       |  |
|                      |                           | Self-propelled mode    |                   |                           |       |  |
|                      |                           | Voice mode             |                   |                           |       |  |
|                      |                           | Scene mode             | automatic/ 1-10   |                           |       |  |
|                      |                           | Master-slave mode      | Auto/Master/Slave |                           |       |  |
|                      |                           | Scene setting          | Scene selection   |                           | 01-10 |  |
|                      |                           |                        | Scene time        |                           | 0.00S |  |
|                      |                           |                        | drop out          |                           |       |  |
|                      |                           |                        | X axis            |                           | 0-255 |  |
|                      |                           |                        | ....              |                           | 0-255 |  |
|                      | 16 Reset function         |                        | 0-255             |                           |       |  |

|                     |                                   |                            |                 |           |  |
|---------------------|-----------------------------------|----------------------------|-----------------|-----------|--|
|                     |                                   | Fixture reset              | X axis/ Y axis  | Yes/ No   |  |
|                     |                                   |                            | Color           | Yes/ No   |  |
|                     |                                   |                            | Gobo            | Yes/ No   |  |
|                     |                                   |                            | Strobe          | Yes/ No   |  |
|                     |                                   |                            | Focus and prism | Yes/ No   |  |
|                     |                                   |                            | All             | Yes/ No   |  |
|                     |                                   |                            | drop out        |           |  |
|                     | drop out                          |                            |                 |           |  |
| System message      | Device version number             |                            |                 |           |  |
|                     | equipment status                  |                            |                 |           |  |
|                     | broken record                     |                            |                 |           |  |
|                     | Light source time                 |                            |                 |           |  |
|                     | Equipment running time            |                            |                 |           |  |
|                     | drop out                          |                            |                 |           |  |
| Lamp control        | Bright light bulb                 | Yes/ No                    |                 |           |  |
|                     | Turn on the electric light bulb   | Yes/ No                    |                 |           |  |
|                     | Console control light bulb        | Yes/ No                    |                 |           |  |
|                     | Turn on lamp delay                | 0-535                      |                 |           |  |
|                     | Half power delay                  | 0-535                      |                 |           |  |
|                     | Reset lamp time                   | Yes/ No                    |                 |           |  |
|                     | Lamp maintenance                  | internal use               |                 | 0-255     |  |
|                     |                                   | Remaining maintenance time |                 | Repeat/no |  |
|                     | drop out                          |                            |                 |           |  |
| Application service | Service Contact                   |                            |                 |           |  |
|                     | Equipment maintenance times       |                            |                 |           |  |
|                     | Equipment fine-tuning calibration |                            |                 |           |  |
|                     | Device data clear                 |                            |                 |           |  |
|                     | Equipment usage records           |                            |                 |           |  |
|                     | drop out                          |                            |                 |           |  |



## Device fine-tuning settings

Select the **device fine-tuning setting**, press the **ENTER** button to confirm, the device fine-tuning setting (password: 1212), enter the initial setting menu to adjust the initial position of each motor. Press the **ENTER** button to confirm. Use the **UP/DOWN** button to select the submenu, press the **ENTER** button to save and automatically return to the previous menu. Press the **MENU** button to exit.



## 5.2 Error message

### Temperature error

The temperature detection board may be damaged.

### Fan error

The fan and its control parts may be broken.

### Magneto sensitive error

For the magnetic sensitive function part may be broken.

### Optocoupler error

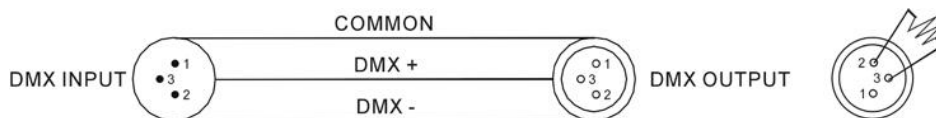
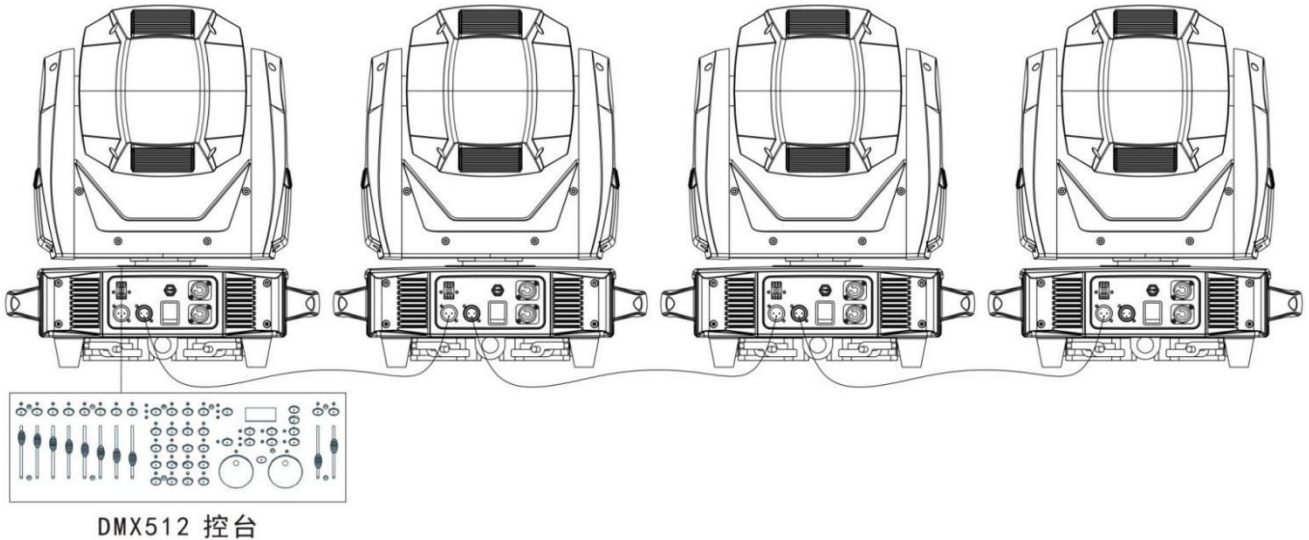
Optocoupler and its control part may be broken.

**The above situation may occur when the Fixture is turned on or reset, some parts may be damaged.**

**Please contact an authorized service center.**

## 6. Universal DMX controller control

### 6.1 Connection



- 1 In order to reduce signal errors and avoid signal attenuation and interference during transmission, a 90-120Ω (0.25W) resistor can be added between the 2-core and 3-core of the DMX output of the last machine.
- 2 Connect the fixture with XLR signal cable, one end is connected to the output port of the fixture, and the other end is connected to the input port of the next fixture. XLR signal lines can only be used in series, not in parallel. DMX512 signal transmission speed is very fast. Damaged signal wires, weak soldering, poor contact, etc., will affect signal transmission and cause the system to shut down.
- 3 When the machine power supply of a unit is disconnected, the connection of DMX output and input is bypassed in order to maintain the connection of the DMX line.
- 4 Each lamp must have an address code, which can receive the information sent by the console, and the range is 0-511 (usually 0&1 and 1 are the same).
- 5 The terminal of the DMX512 system needs to be equipped with a terminal to reduce errors in signal transmission.
- 6 3-pin XLR connector:  
3 core XLR: PIN 1: GND, PIN 2: negative signal, PIN 3: positive signal.

## 6.2 Channel settings

Press the ENTER button to enter the menu mode, select the operating mode → select channel mode, press the ENTER button to confirm, the current channel mode will flash on the display, use the UP and DOWN buttons to select the full mode 24 (CH), press the ENTER button to save. Press the MENU button to return to the previous menu or wait 30 seconds and automatically exit the menu mode.

## 6.3 Address code setting

When using a general DMX controller to control fixture, you need to set the starting address (1-512) for the fixture so that the machine can receive DMX signals.

Press the ENTER button to enter the menu mode, select the DMX function, press the ENTER button to confirm, the current address will flash on the display, then use the UP/DOWN button to select the address code (1-512), press the ENTER button to save. Press the MENU button to return to the previous menu or wait 30 seconds and automatically exit the menu mode.

Please refer to the following chart to set the address codes of the first 4 fixtures

| Channel mode | Fixture 1 address code | Fixture 2 address code | Fixture 3 address code | Fixture 4 address code |
|--------------|------------------------|------------------------|------------------------|------------------------|
| 16 Channel   | 1                      | 17                     | 33                     | 49                     |
| 13 Channel   | 1                      | 14                     | 27                     | 40                     |

## 6.4 DMX 512 channel

Please refer to the following channel diagram to control

Notice:

1. If the DMX signal is cut off, the fixture will remain in the state before the signal was cut off, unless reset.

**Channel :**

| Full mode 16 (CH) | Standard mode 13 (CH) | Function                      | Channel name | Channel value                                     |
|-------------------|-----------------------|-------------------------------|--------------|---|
| 1                 | 1                     | <b>Horizontal</b>             | 000-255      | 0-540 degree                                      |
| 2                 |                       | <b>Horizontal Fine-tuning</b> | 000-255      | 16bit Adjustable                                  |
| 3                 | 2                     | <b>Vertical</b>               | 000-255      | 0-270 degree                                      |
| 4                 |                       | <b>Vertical Fine-tuning</b>   | 000-255      | 16bit Adjustable                                  |
| 5                 | 3                     | <b>XY speed</b>               | 000-255      | From fast to slow                                 |
| 6                 | 4                     | <b>Dimming</b>                | 000-255      | Light spot from dark to light                     |
| 7                 |                       | <b>Dimming fine-tuning</b>    | 000-255      | 16bit adjustable                                  |
| 8                 | 5                     | <b>Strobe</b>                 | 0-7          | No function                                       |
|                   |                       |                               | 8-15         | Open  |
|                   |                       |                               | 16-131       | Synchronous strobe, from slow to fast             |
|                   |                       |                               | 132-167      | Fast closing and slow opening, from slow to fast  |
|                   |                       |                               | 168-203      | Slow to close and fast to open, from slow to fast |
|                   |                       |                               | 204-239      | Pulse strobe, from slow to fast                   |
|                   |                       |                               | 240-247      | Random strobe, from slow to fast                  |
|                   |                       |                               | 248-255      | Open  |
| 9                 | 6                     | <b>Color wheel</b>            | 0-4          | White light                                       |
|                   |                       |                               | 5-9          | Deep red  |
|                   |                       |                               | 10-14        | Blue  |
|                   |                       |                               | 15-19        | Green   |
|                   |                       |                               | 20-24        | Orange  |
|                   |                       |                               | 25-29        | Magenta   |
|                   |                       |                               | 30-34        | Yellow  |
|                   |                       |                               | 35-39        | Cyan  |
|                   |                       |                               | 40-44        | Red   |
|                   |                       |                               | 45-49        | Navy blue   |
|                   |                       |                               | 50-54        | Dark green  |
|                   |                       |                               | 55-59        | Yellow-green                                      |
|                   |                       |                               | 60-64        | CTO5600K  |
|                   |                       |                               | 65-69        | Four-color effect                                 |
|                   |                       |                               | 70-75        | White light → dark red (half color value 73)      |

|       |  |  |         |  |
|-------|--|--|---------|--|
|       |  |  | 76-82   | Crimson → blue (half color value 79)                   |
|       |  |  | 83-88   | Blue → green (half color value 86)                     |
|       |  |  | 89-95   | Green → orange (half color value 92)                   |
|       |  |  | 96-101  | Orange→purple (half color value 99)                    |
|       |  |  | 102-108 | Fuchsia → yellow (half color value 105)                |
|       |  |  | 109-114 | Yellow → cyan (half color value 112)                   |
|       |  |  | 115-121 | Cyan → plum red (half color value 118)                 |
|       |  |  | 122-127 | Plum red → dark blue (half color value 125)            |
|       |  |  | 128-133 | Dark blue → dark green (half color value 131)          |
|       |  |  | 134-140 | Dark green → yellow-green (half color value 137)       |
|       |  |  | 141-146 | Yellow-green→CT05600K (half color value 144)           |
|       |  |  | 147-152 | CT05600K→four-color effect (half-color value 150)      |
|       |  |  | 153-159 | Four-color effect → white light (half-color value 154) |
|       |  |  | 160-219 | Positive rainbow, from fast to slow                    |
|       |  |  | 220-223 | Stop   |
|       |  |  | 224-255 | Reverse rainbow, from slow to fast                     |
|       |  |  | 10      | 7  |
| 4-7   | Gobo1                                      |  |         |  |
| 8-11  | Gobo2                                      |  |         |  |
| 12-15 | Gobo3                                      |  |         |  |
| 16-19 | Gobo4                                      |  |         |  |
| 20-23 | Gobo5                                      |  |         |  |
| 24-27 | Gobo6                                      |  |         |  |
| 28-31 | Gobo7                                      |  |         |  |
| 32-35 | Gobo8                                      |  |         |  |
| 36-39 | Gobo9                                      |  |         |  |
| 40-43 | Gobo10                                     |  |         |  |
| 44-47 | Gobo11                                     |  |         |  |
| 48-51 | Gobo12                                     |  |         |  |
| 52-55 | Gobo13                                     |  |         |  |
| 56-59 | Gobo14                                     |  |         |  |
| 60-64 | Gobo14 dithering effect, from slow to fast |  |         |  |
| 65-68 | Gobo13dithering effect, from slow to fast  |  |         |  |
| 69-72 | Gobo12dithering effect, from slow to fast  |  |         |  |
| 73-76 | Gobo11dithering effect, from slow to fast  |  |         |  |
| 77-80 | Gobo10dithering effect, from slow to fast  |  |         |  |
| 81-84 | Gobo9dithering effect, from slow to fast   |  |         |  |
| 85-88 | Gobo8dithering effect, from slow to fast   |  |         |  |

|    |    |                           |         |   |
|----|----|---------------------------|---------|---|
|    |    |                           | 89-92   | Gobo7dithering effect, from slow to fast          |
|    |    |                           | 93-96   | Gobo6dithering effect, from slow to fast          |
|    |    |                           | 97-100  | Gobo5dithering effect, from slow to fast          |
|    |    |                           | 101-104 | Gobo4dithering effect, from slow to fast          |
|    |    |                           | 105-108 | Gobo3dithering effect, from slow to fast          |
|    |    |                           | 109-112 | Gobo2dithering effect, from slow to fast          |
|    |    |                           | 113-115 | Gobo1dithering effect, from slow to fast          |
|    |    |                           | 116-119 | White light                                       |
|    |    |                           | 120-189 | Dynamic wheel rotates forward, from slow to fast  |
|    |    |                           | 190-193 | Stop  |
|    |    |                           | 194-255 | Dynamic wheel reverse rotation, from slow to fast |
| 11 | 8  | <b>Prism 1</b>            | 0-15    | No Function                                       |
|    |    |                           | 16-255  | Eight Prism                                       |
| 12 | 9  | <b>Prism 2</b>            | 0-15    | No Function                                       |
|    |    |                           | 16-255  | 24 honeycomb prism                                |
| 13 | 10 | <b>Prism rotation</b>     | 0-127   | Prism rotation position                           |
|    |    |                           | 128-189 | Forward rotation, from fast to slow               |
|    |    |                           | 190-193 | Stop  |
|    |    |                           | 194-255 | Reverse rotation, from slow to fast               |
| 14 | 11 | <b>Fog</b>                | 0-7     | No Function                                       |
|    |    |                           | 8-255   | Fog   |
| 15 | 12 | <b>Fog</b>                | 0-255   | No function                                       |
| 16 | 13 | <b>Functional channel</b> | 0-129   | Fog   |
|    |    |                           | 130-139 | No function                                       |
|    |    |                           | 140-149 | Turn on the bulb                                  |
|    |    |                           | 150-159 | XY Reset  |
|    |    |                           | 160-169 | Color reset                                       |
|    |    |                           | 170-179 | Gobo reset  |
|    |    |                           | 180-189 | Strobe reset                                      |
|    |    |                           | 190-199 | No function                                       |
|    |    |                           | 200-209 | Focus/prism reset                                 |
|    |    |                           | 210-229 | Reset all   |
|    |    |                           | 230-239 | No function                                       |
|    |    |                           | 240-255 | Turn off the bulb                                 |

## **7. Fault Handling**

**The following are some of the problems that often occur during operation, with some suggestions for Fault Handling:**

### **A. The lamp does not work, there is no light, the fan does not running**

1. Check the power contact and whether the fuse is good.
2. Check the voltage.
3. Check the indicator light of the power switch.

### **B. Out of the control of the controller**

1. Check the DMX signal connector and signal cable to see if they are properly connected.
2. Check whether the address code setting is correct.
3. If the DMX signal transmission is intermittent, check whether the connection between the XLR seat and the signal cable is good.
4. Try it with another controller.
5. Check if the distance between the DMX signal wire and the high-voltage wire is too close, which will damage or interfere with the signal circuit.

### **C. Channel fails**

1. Stepper motor or motor lead may be damaged.
2. The drive circuit of the motor may be damaged.

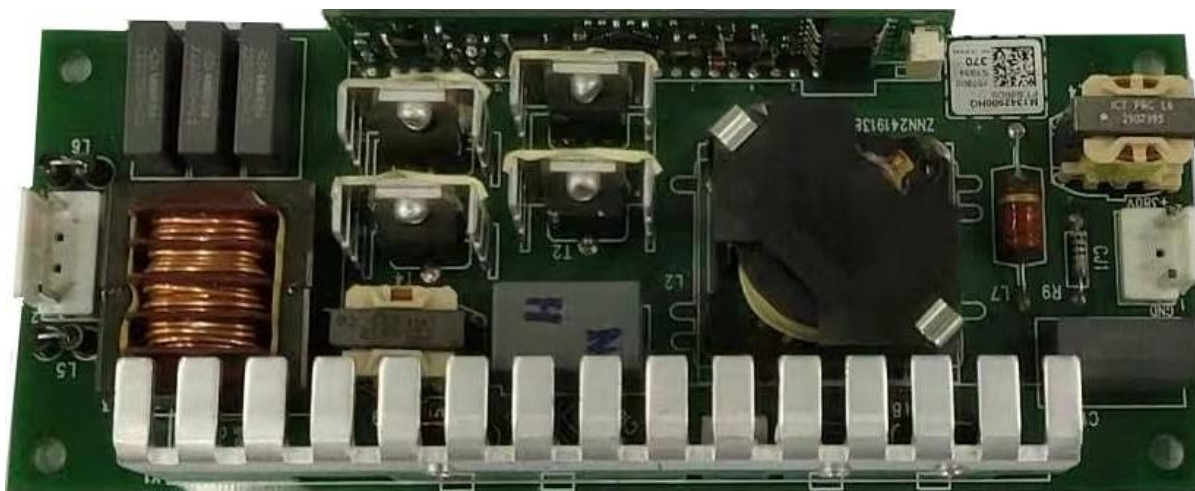
### **D. Good and bad bulbs**

3. The bulb cannot be light up normally. See if the voltage is too high or too low.
4. The internal temperature may be too high. If necessary, replace the cooling fan.

## 8. Maintenance and cleaning

### Maintenance:

#### Ballast



- A. When the color of each wire leg of the ballast turns yellow, please consider replacing it in time.
- B. Please be sure to maintain the fixture every 2 months, and make sure that the screws and terminals in the parts shown above are locked and not loose. To ensure performance. Careless maintenance may cause the machine to malfunction.

### Clean:

The inside and outside of the lens and the mirror must be wiped frequently, so that the lighting effect is better. The wiping frequency depends on the environment. The damp, smoky, and particularly dirty environment is prone to dusting the lens.

- \*Use soft linen and special glass scrubbing agent.
- \* Dry parts carefully.
- \*Wipe the outside of the lens at least once every 20 days. Wipe the inside at least every 30 days. The dustproof sponge of the bottom cover must be cleaned at least every 30 days (the specific time depends on the actual environment)