

# Onyx IP LED Beam



**Please read the instructions carefully before use**

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## Table of Contents

### Chapter 1. Notes and Installation

1.1 Maintenance .....	1
1.2 Statement .....	1
1.3 Product precautions .....	1
1.4 Installation of lamps and lanterns .....	1

### Chapter 2. Panel Operation

2.1 Lamp panel .....	3
2.2 Menu header interface .....	3
2.2.1 The system setup .....	4
2.2.2 System for calibration .....	6
2.2.3 The system is reset .....	7
2.2.4 System information .....	7

### Chapter 3. Channel Description and Technical Parameters

3.1 Channel table .....	9
3.2 Technical parameters .....	11

### Chapter 4. Common Faults and Use Attention

4.1 Common fault handling .....	12
4.2 Notes for use .....	13
4.3 Notes for the use of RDM .....	13

## Chapter 1. Notes and Installation

### 1.1 Tending

- This lamp shall be kept dry to avoid working in a wet environment.
- Intermittent use will effectively prolong the life of this lamp.
- In order to achieve good ventilation and lighting effects, pay attention to regularly clean the fans, fan nets, and lenses.
- Do not wipe the lamp shell with organic solvents such as alcohol to avoid damage.

### 1.2 Statement

This product leaves the factory with intact performance and complete packaging. All users shall strictly comply with the warnings and operating instructions stated above. Any damage caused by misuse is not covered by the Company's warranty, and the faults and problems resulting from neglect of the operating manual are solely the user's responsibility.

*Note: This manual is subject to technical changes without prior notice.*

### 1.3 Precautions for Products

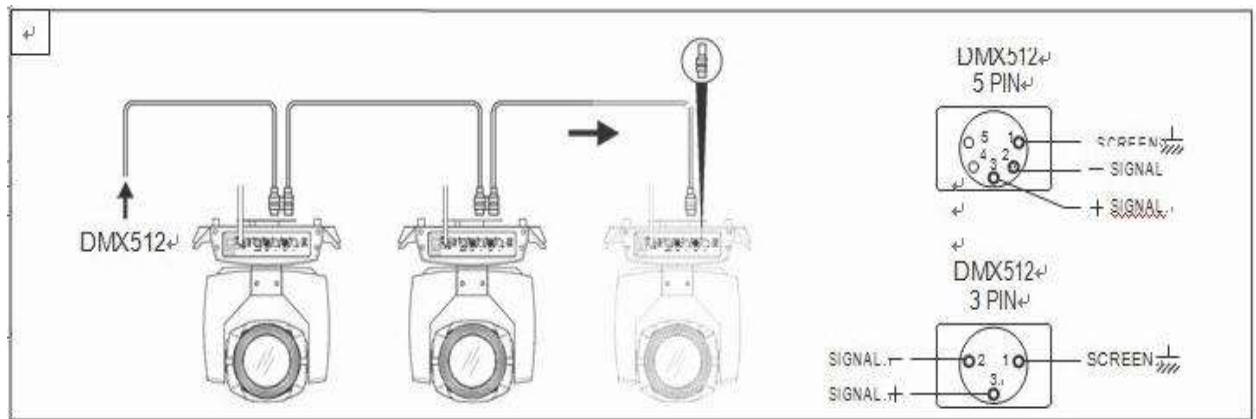
- In order to ensure the service life of the product, do not place it in wet or leaky locations, nor operate it in temperatures exceeding 60 degrees Celsius.
- Do not place the product in areas prone to loosening or vibrations.
- To avoid the risk of electric shock, use the product strictly according to instructions.
- When using the lamp, the voltage variation of the power supply should not exceed  $\pm 10\%$ . Excessively high voltage will shorten the bulb's life, whereas excessively low voltage will adversely affect the color output of the bulb.
- After power failure, ensure the lamp fully cools down for at least 20 minutes before re-energizing.
- Please read these instructions carefully to ensure the normal use of this product.

### Signal Line Connection (DMX)

Use specification-compliant RS-485 cable with shielding, 120-ohm characteristic impedance, 22-24 AWG, and low tolerance. Do not use microphone cables or cables of different specified characteristics. Connections must be made with 3- or 5-pin XLR male/female connectors (minimum 1/4W). Refer to Figure 1 below for the schematic diagram of the DMX signal line connection (*the lamp in the figure is illustrative and does not represent the exact appearance of the product*).

**Important:**

The lines shall not contact each other or touch the metal shell.



**Figure 1.** Schematic diagram of the DMX signal line connection.

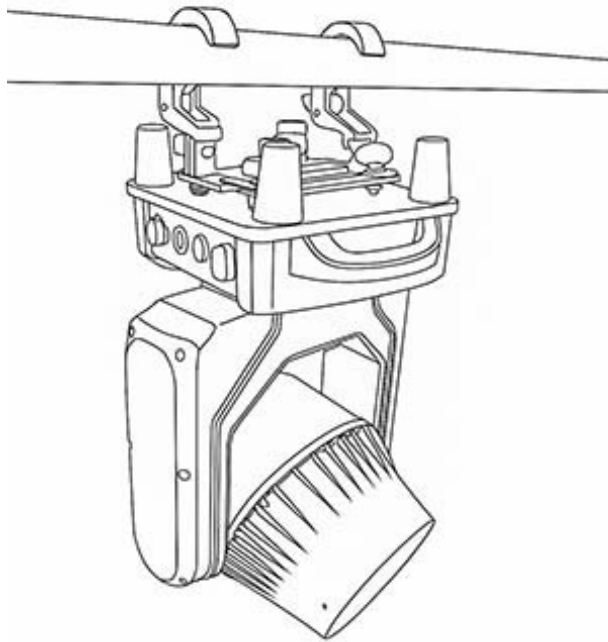
## 1.4 Lighting Installation

Lamps can be installed horizontally, obliquely, or inverted (upside-down). Special attention must be given to the installation method when mounting lamps in oblique or inverted positions.

As shown in **Figure 2** (illustrative image, does not represent the exact appearance of the product), before positioning the lamps, ensure the installation site is stable. For inverted installations, ensure the lamps do not fall from the support frame. Always use a safety cable through the support frame and lamp handle as auxiliary support to guarantee safety and prevent lamps from falling or sliding.

When lamps are installed and during testing, pedestrians must not pass beneath the installation area. Regularly inspect the condition of the safety cable for wear and check that the mounting screws are securely tightened.

*Our company bears no responsibility for consequences resulting from unstable installations or from the lamp falling due to improper mounting.*



**Figure 2.** *Schematic diagram of the inverted lamp installation.*

## **Chapter 2. Panel Operation**

### **2.1 Lamp Panel**

The schematic diagram of the lamp panel is shown in **Figure 3**:

1. **Signal Light:**

DMX signal indicator is located above.

- **Blue:** Connected with the console, normal operating condition (no error).
- **Red:** Indicates a malfunction or abnormal state.

2. **Temperature:**

The displayed temperature indicates the lamp board temperature (e.g., 30°C).

- If "°C" is shown, it indicates an abnormal lamp temperature, possibly due to a broken temperature-control connection line.
- If "99°C" is displayed and significantly deviates from the ambient temperature, there may be a temperature-control cable short circuit. In this case, professional repair is required before resuming normal operation.

#### **Temperature and Power Control:**

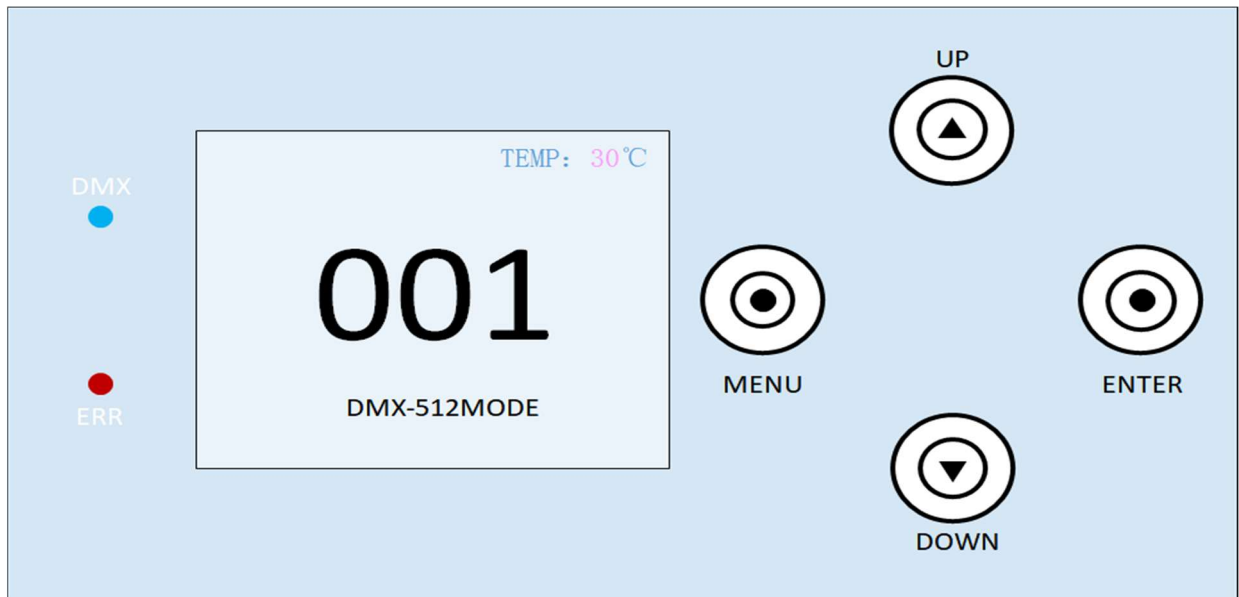
- When the temperature reaches **75°C**, power output is automatically reduced.
- At temperatures of **80°C** or higher, the lamp will shut down immediately. Normal operation resumes only when the temperature falls below **75°C**.

#### **Temperature and Fan Operation:**

- The fan activates 15 seconds after startup and continuously monitors air temperature.
- The fan activates at **46°C** and deactivates when the temperature drops below **43°C**.

3. **Address Code:**  
Adjustable range from **001–512**. Default is **001**.
4. **DMX Mode:**  
Operating mode is set to **512** channels.
5. **Control Buttons:**
  - **UP:** Moves cursor or setting upwards.
  - **DOWN:** Moves cursor or setting downwards.
  - **MENU:** Returns to previous menu level.
  - **ENTER:** Confirms selection.

**Note:** *Never use sharp objects to operate the display panel to prevent damage.*



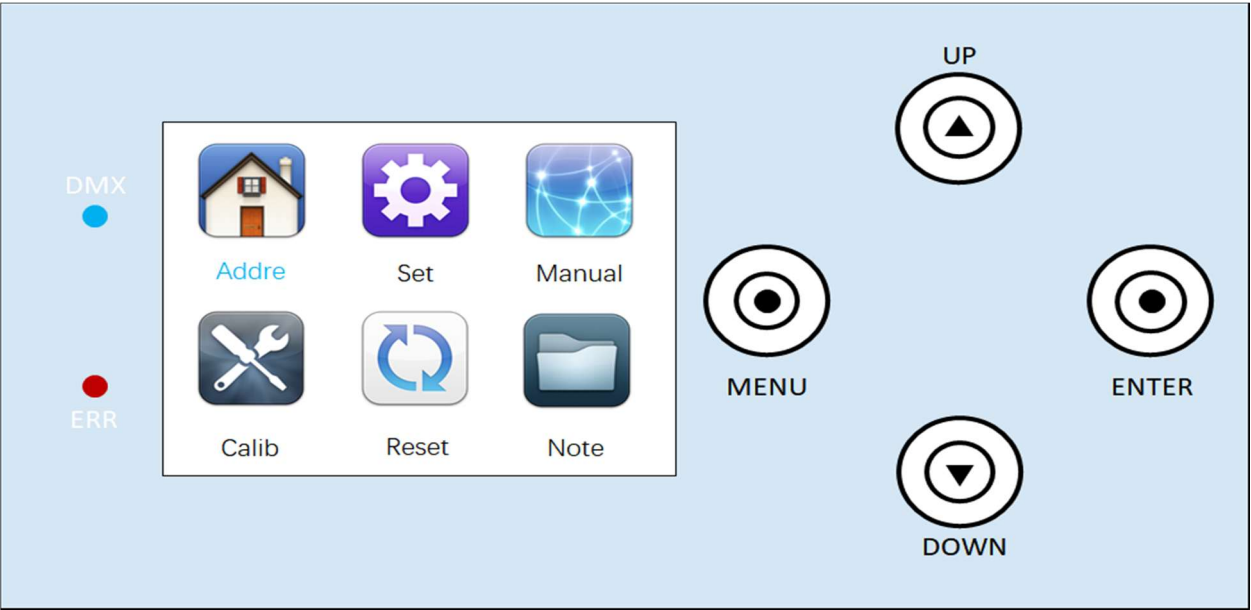
**Figure 3.** *Five-key panel schematic diagram.*

## 2.2 Menu First Interface

The first interface of the menu contains **6 sub-menus**. Select the corresponding sub-menu using the "UP" and "DOWN" keys, and press "ENTER" to enter the selected sub-menu. The main menu interface is illustrated in **Figure 4**.

1. **Address:**  
Enter to set the DMX address code. Adjust using the "UP" and "DOWN" keys; the address displayed updates simultaneously.
2. **Settings:**  
Enter to configure the system's operating modes, working parameters, and panel display settings.
3. **Manual:**  
Enter manual mode to control lamp functions directly. Refer to the channel table for detailed controls.
4. **Calibration:**  
Enter a password to access the calibration interface. Here you can adjust lamp power, motor stroke, sound control sensitivity, and other parameters.
5. **Reset:**  
Enter to access system reset mode.

6. **Information:**  
Enter to view system error corrections, hardware, and software version information.



**Figure 4.** Menu first interface schematic diagram.

## 2.1 System Settings

The system settings interface is illustrated in **Figure 5**. To modify settings, enter the system settings menu and press the "ENTER" key to select the desired parameter. Use the "UP" and "DOWN" keys to change the values, and press "ENTER" again to confirm your selection. Here you can adjust the working mode, working parameters, and panel display settings of the lamp. Refer to **Table 1** for detailed options.

System Setup		System Setup		System Setup	
Run Mode	DMX	Signal Keep	ON	MIC	020
Channel Mode	14CH	Screen Saver	OFF	Load Default	
Invert Pan	OFF	Invert Screen	Auto		
Invert Tilt	OFF	Update Slave	OFF		
Hall Crct	ON	Language	EN		
Encoder Crct	ON	Screen Lock	OFF		

**Figure 5.** System Settings interface.

**Table 1. System Settings**

<b>Option</b>	<b>Description</b>
<b>Operating Mode</b>	DMX / Voice control / Self-propelled 1 / Self-propelled 2 / Self-propelled 3
DMX mode	Console mode, receive DMX signal
Self-propelled mode 1	The lamps run automatically according to the built-in self-propelled program 1
Self-propelled mode 2	The lamps run automatically according to the built-in self-propelled program 2
Self-propelled mode 3	The lamps run automatically according to the built-in self-propelled program 3
Voice mode	When detecting a strong sound, the lamp automatically runs a built-in scene; otherwise, it maintains the last scene
<b>Channel mode</b>	14CH
<b>Horizontal inversion</b>	Set the X-axis rotation direction
Closure	Not reversed
Turn on	Reverse
<b>Flip vertically</b>	Set the Y-axis rotation direction
Closure	Not reversed
Turn on	Reverse
<b>Hall Error Correction</b>	Detect and correct synchronization errors (color wheel, gobo wheel)
Closure	No correction after a step loss
Turn on	Automatically correct after step loss
<b>Optocoupler error correction</b>	Detect XY synchronization errors
Closure	No correction after a step loss
Turn on	Automatically correct after step loss
<b>Signal hold</b>	Screen display time
Closure	Always on
Turn on	Turns off periodically in static environment
<b>Screen protector</b>	Screen brightness protection
Closure	Always bright
Turn on	Screen turns off periodically in static environment
<b>Screen flip</b>	Set screen display direction
Closure	Normal orientation
Turn on	Reverse orientation
Voluntarily	Automatically rotates based on gravity
<b>Synchronization Update</b>	Synchronize settings/calibration of multiple lamps
Closure	Synchronous update off
Turn on	Synchronization on (connect lamps via DMX cable; disconnect console)
<b>Language</b>	Select menu language



Option	Description
Middle	Chinese
EN	English
<b>Screen lock</b>	Locks the screen after a pause
Closure	Not locked
Turn on	Locked (see unlock interface for password)
<b>MIC sensitivity</b>	Adjust voice control sensitivity (range 0–255, default 20)
0	Lowest sensitivity
255	Highest sensitivity
<b>Reset</b>	Restore lighting parameters to factory defaults
Cancel	Keep current settings
Confirm	Reset to factory defaults

## 2.2 System Calibration

Press "6 xxx" to enter the system calibration interface. Use the "UP" and "DOWN" keys to adjust lamp power, motor stroke, sound control sensitivity, and other parameters. The system calibration interface is shown in **Figure 6**. Refer to **Table 2** for detailed options.

Calibration	Calibration	Calibration
Pan Start 127	Colorful Start 127	Power 255
Pan End 127	Colorful End 127	Reserve
Tilt Start 127	Prism Start 127	Change password >>
Tilt End 127	Prism End 127	
Color 127	Focus Start 127	
Gobo 127	Focus End 127	

**Figure 6.** System calibration interface.

**Table 2.** System Calibration

Option	Description
<b>Initial position</b>	Adjust initial positions of X-axis, Y-axis, color plate, map plate, colorful, prism, and focus motor (range 0–255; 127 = no adjustment).
<b>Stroke calibration</b>	Adjust stroke range for X-axis, Y-axis, fog mirror, colorful, prism, and focus motor (range 0–255; 127 = no adjustment).
<b>Power</b>	Adjust the maximum power of the lamp (255 = maximum power).
<b>Change password</b>	Set or modify the system calibration password.

System Reset
Reset Effect
Reset Scan
Reset All

**Figure 7. System Reset Interface**

The system reset interface is shown in **Figure 7**. Use the **"UP"** and **"DOWN"** keys to select the desired reset mode, then press **"ENTER"** to initiate the reset. Details of the available reset modes are provided in **Table 3**.

**Table 3. System Reset Options**

Option	Description
<b>Effect motor reset</b>	Resets motors related to color wheel, fixation, focus, etc.
<b>Scan motor reset</b>	Resets only the X and Y axis motors.
<b>All motors reset</b>	Resets all fixture motors.

## 2.4 System Information

**Figure 8. System Information Interface**

Press the **"ENTER"** key to access the system information interface. Use the **"UP"** and **"DOWN"** keys to navigate, and press **"ENTER"** to view the selected item. The available information categories are listed in **Table 4**.

**Table 4. System Information**

Option	Description
<b>Reset error message</b>	If the red ERR indicator lights up, the luminaire has an issue:1) IC1 communication failure (between motor and display board)2) X/Y optocoupler error3) Motor reset failure (color disk, gobo, etc.)
<b>DMX data monitoring</b>	Opens a sub-interface where the current DMX channel values are displayed numerically.
<b>Sensor Information</b>	1) Hall sensor data2) Sensor data: X, Y optocoupler values (e.g., XXXX--XXXX).
<b>Hardware version number</b>	Displays luminaire hardware version, including:- Display board version-Motor board version
<b>Software version number</b>	Displays luminaire software version, including:- Display board version-Motor board version

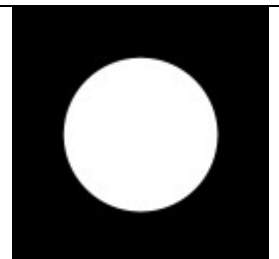
## Chapter 3. Channel Description and Technical Parameters

### 1. Channel Table

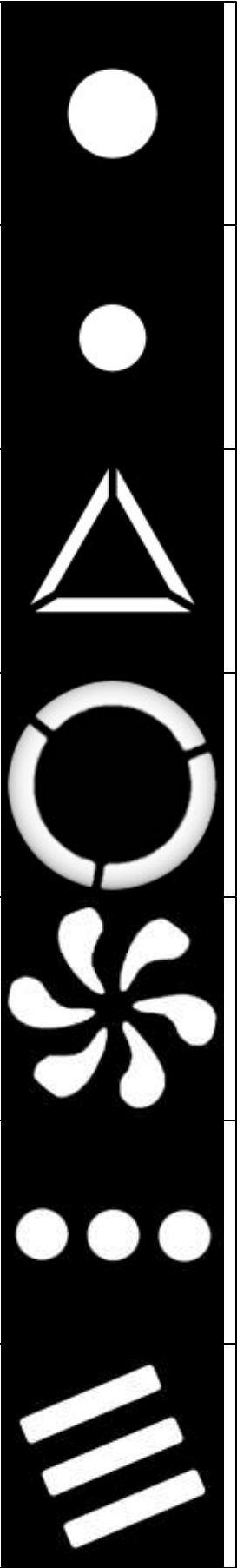
The detailed data of the channel are shown in **Table 5** and can be viewed in the manual interface:

Channel	Channel function	Value	Note	
1	Pan	0-255	Pan control	
2	Pan-fine	0-255	Pan-fine control	
3	Tilt	0-255	Tilt control	
4	Tilt-fine	0-255	Tilt-fine control	
5	Pan/Tilt Speed	0-255	From "Fast" to "Slow"	
6	Dimmer	0-255	From "Closed" to "Open"	

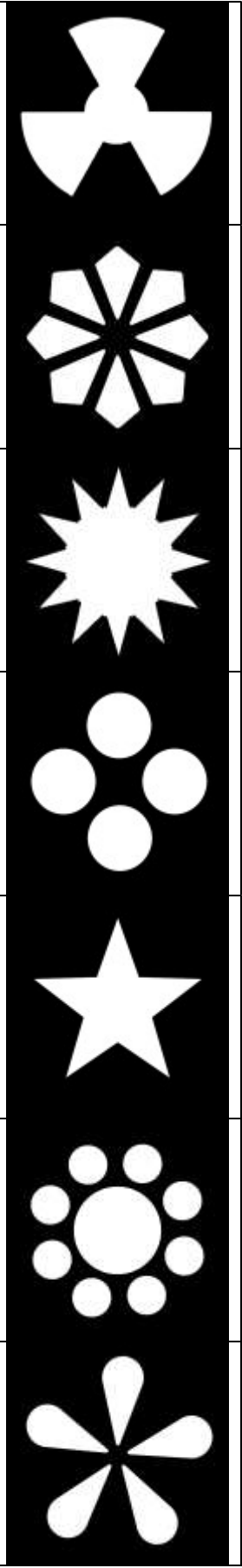
7	Shutter	0-3	Shutter "Open"	
		4-99	Strobe from "Slow" to "Fast"	
		100-149	Strobe Ramp from "Slow" to "Fast"	
		150-199	Strobe Lightning from "Slow" to "Fast"	
		200-249	Strobe Random from "Slow" to "Fast"	
		250-255	Shutter "Open"	
8	Static Color	0-7	White	
		8-12	Red	
		13-16	Green	
		17-21	Blue	
		22-26	Yellow	
		27-31	Magenta	
		32-36	Light green (Fern)	
		37-41	UV	
		42-46	Light magenta (Pink)	
		47-51	Dark orange	
		52-56	Cyan	
		57-61	CTB	
		62-67	Lavender	
		68-71	CTO	
	Static Half-Color	72-76	White-Red	
		77-79	Red-Green	
		80-83	Green-Blue	
		84-87	Blue-Yellow	
		88-91	Yellow-Magenta	
		92-95	Magenta-Light green (Fern)	
		96-100	Light green (Fern)-UV	
		101-104	UV- Light magenta (Pink)	
		105-107	Light magenta (Pink)- Dark orange	
		108-111	Dark orange-Cyan	
		112-115	Cyan-CTB	
		116-119	CTB-Lavender	
		120-123	Lavender -CTO	
		124-127	CTO-White	
	Color Wheel rotation	128-189	CCW from "Fast" to "Slow"	
		190	Stop	
		191-255	CW from "Slow" to "Fast"	
9	Static Gobo	0-2	Open	
		3-6	Gobo 1	




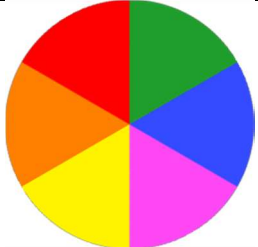
		7-10	Gobo 2	
		11-15	Gobo 3	
		16-18	Gobo 4	
		19-22	Gobo 5	
		23-26	Gobo 6	
		27-30	Gobo 7	
		31-34	Gobo 8	



		35-38	Gobo 9	
		39-42	Gobo 10	
		43-46	Gobo 11	
		47-50	Gobo 12	
		51-54	Gobo 13	
		55-58	Gobo 14	
		59-62	Gobo 15	



		63-66	Gobo 16	
		67-70	Gobo 17	
	Gobo Shake	71-77	Gobo 1 shake from “Slow” to “Fast”	
		78-84	Gobo 2 shake from “Slow” to “Fast”	
		85-91	Gobo 3 shake from “Slow” to “Fast”	
		92-98	Gobo 4 shake from “Slow” to “Fast”	
		99-105	Gobo 5 shake from “Slow” to “Fast”	
		106-112	Gobo 6 shake from “Slow” to “Fast”	
		113-199	Gobo 7 shake from “Slow” to “Fast”	
		120-126	Gobo 8 shake from “Slow” to “Fast”	
		127-133	Gobo 9 shake from “Slow” to “Fast”	
		134-140	Gobo 10 shake from “Slow” to “Fast”	
		141-147	Gobo 11 shake from “Slow” to “Fast”	
		148-154	Gobo 12 shake from “Slow” to “Fast”	
		155-161	Gobo 13 shake from “Slow” to “Fast”	
		162-168	Gobo 14 shake from “Slow” to “Fast”	
		169-175	Gobo 15 shake from “Slow” to “Fast”	
		176-182	Gobo 16 shake from “Slow” to “Fast”	
		183-189	Gobo 17 shake from “Slow” to “Fast”	
	Gobo Wheel rotation	190-221	CCW from “Fast” to “Slow”	
		222	Stop	
		223-255	CW from “Slow” to “Fast”	
10	Color Macro	0-127	Open	

		128-255	Color frame "Rainbow"	
11	Prism	0-127	Open	
		128-255	24-facets prism	
12	Prism Indexing/Rotation	0-127	Prism indexing	
		128-190	CCW from "Fast" to "Slow"	
		191-192	Stop	
		193-255	CW from "Slow" to "Fast"	
13	Focus	0-255	From "Min" to "Max"	
14	Control	0-199	None	
		200-205	Reset 5 sec	

**Table 5. Technical Parameters**

- **Voltage:** AC 100–240V, 50–60Hz
- **Rated Power:** 350W
- **Light Source:** Brand new 200W white LED module
- LED module, 830 Lm
- **Pattern:** 17 patterns + white light with bidirectional flow, variable speed jitter effect
- **Color Wheel:** 13 colors + white light, bidirectional variable speed rainbow flow effect
- **Effect Plate:** Colorful mirror effect
- **Prism:** 8 + 16 facet prism, rotatable in both directions with variable speed
- **XY Movement:** Magnetic encoder precise positioning
- **Horizontal Movement:** 540° + fine adjustment
- **Vertical Movement:** 270° + fine adjustment
- **Beam Angle:** 1.6°
- **Channel:** 14CH
- **Dimming:** 0–100% linear dimming
- **Strobe:** 1–25 Hz, random pulse and multiple strobe effects
- **Waterproof Grade:** IP65
- **Lifespan:** 50,000 hours; low power consumption; energy saving and environmentally friendly
- **Screen:** Chinese and English touch LCD display showing current function status

## Chapter 4. Common Faults and Use Attention

### 1. Common Fault Handling

Lamps contain microcomputer circuit board, high voltage power supply and other professional components. For your safety and product life, **non-professionals do not remove lamps and related accessories without authorization.**

### **1. Bulb is not light on (except for LED light source)**

**Possible reasons:** The bulb is not fully cooled, or the bulb reaches its life. Treated as follows:

- Due to abnormal operation, the bulb is not completely cooled. The light body should be cooled for more than **10 minutes**, so that its internal components fully restore to the normal state, and then restart the power supply.
  - Check whether the light bulb has reached the service life, and replace it with a new light bulb.
  - Check whether the bulb and the lamp lighting device circuit leakage, fall off or poor contact.
  - Replace the new lamp lighter.
- 

### **2. The beam looked dim**

**Possible reasons:** The bulb has been used too long, or the light path is not clean.

- Check whether the light bulb has reached the service life, and replace it with a new one.
  - Check whether the optical components or bulbs are clean, and whether there is dust accumulation on the bulbs and other optical components. Clean and maintain regularly.
- 

### **3. The pattern projection is vague**

- Check if the electronic focus channel values are appropriate for the current projection distance.
- 

### **4. The light fixtures work intermittently**

**Possible reasons:** The internal line enters the protection state. Handled as follows:

- Check whether the fan is running normally or whether it is dirty, causing the temperature inside the lamp to rise.
  - Check whether the internal temperature control switch is in a closed state.
  - Check the bulb and replace it if necessary.
- 

### **5. The control of the console is not accepted after the lamp is normally reset**

**Possible cause:** Signal line failure or abnormal lamp parameter settings. Handled as follows:

- Check the starting address code and the connection of the **DMX signal line** (whether the signal cable is intact and whether the Alcock head connection is loose).
- Add a signal amplifier or a **120-ohm terminal resistor**.



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## **6. The lamps cannot be started**

**Possible reasons:** Poor power line. Handled as follows:

- Check whether the **fuse on the power input socket** is blown and replace if necessary.
  - Poor line contact due to vibration during long-distance transportation.
  - Check the input power supply, computer board, and other connecting devices.
-

### 3. RDM Use Considerations

RDM is an extended version of the DMX512-A protocol, which is the Remote Device Management protocol. Traditional DMX512 communication is one-way; it is based on an RS-485 bus that is time-sharing, multi-point, and half-duplex, allowing only one port to output from the host at any given time. Therefore, the following points should be noted when using RDM:

- To use a console or host device that supports the RDM protocol host;
  - To use the two-way signal amplifier, the traditional one-way signal amplifier is not applicable to the RDM protocol, because the RDM protocol needs feedback data; the use of a one-way amplifier will block the returned data, resulting in the search for lamps;
  - All lamps must be set to DMX mode to ensure that there is only one host on the signal line;
  - A 120-ohm impedance-matching resistor must be inserted between terminals 2 and 3 of the terminal plug. When the signal line is relatively long, the signal reflection, which is conducive to the quality of communication;
  - When the lamp is subject to DMX control, but cannot RDM-search the lamp, first check the signal amplifier, and then check whether the 2 and 3 lines of the signal line have poor contact.
-

## 2. Precautions for Use

- Check whether the local power supply meets the rated voltage requirements of the product, leakage protector, overcurrent protector and meet the load requirements;
- Do not use damaged power cord with insulation and do not attach power cord to other wires;
- The lamps and lanterns use strong air refrigeration, which is easy to accumulate dust. They must be cleaned once a month, especially the cooling outlet, otherwise it will be blocked due to dust, resulting in poor heat dissipation, so that the lamps appear abnormal.
- When installing the lamps, the fixed screws must be tightened, and equipped with safety cables, and regular inspection;
- In the installation and positioning of the lamp, any point on the surface of the lamp and any burning explosive, keep the minimum distance of 10 meters, the distance from the irradiation is 2.5 meters, please do not install the lamp directly on the surface of combustible material;
- It is recommended that the continuous working time of lamps should not exceed 10 hours, and the interval time of continuous starting lamps should not be less than 10 minutes, otherwise it will not be triggered normally because of the overheating protection of the bulb;
- The closing time of using the on-off valve should not exceed 5 minutes. If the light needs to be closed for a long time, the console (light gun control channel) should be used to turn off the light gun;
- In order to ensure that multiple lamps better comply with the scene effect, the lamps should not always be in the unfinished current scene, that is, start the next scene action, it is best that this state is not more than 3 minutes, to ensure that multiple lamps can run synchronously;
- In the process of use, if the lamps are abnormal, the lamps should be stopped in time to prevent other faults.