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# 250W Beam Spot Wash 3in1 LED Moving Head Light



## Instruction Manual

Please read the manual carefully before use

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## Precautions and Installation

### 1. Maintenance

- The lamp should be kept dry to avoid working in humid environment.
- Intermittent use will effectively extend the life of the lamp.
- In order to obtain good ventilation effect and lighting effect, the fan, fan net and lens should be cleaned frequently.
- Please do not use alcohol and other organic solvents to wipe the lamp shell to avoid damage.

### 2. Statement

When the product is delivered from the factory, it has good performance and complete package. All users shall strictly abide by the warning and operation instructions stated above. Any damage caused by misuse is not within the warranty of the company, and the failure and problems caused by ignoring the operation manual are not within the responsibility of the distributor.

This manual is subject to technical changes without prior notice.

### 3. Product Precautions

- In order to ensure the service life of the product, the product should not be placed in a humid or leaking place, nor should it work in an environment with a temperature above 60 °C
- Don't place the product in the place that is easy to loosen or vibrate.
- In order to avoid the risk of electric shock, the maintenance of this product please ask for professional maintenance.
- When the bulb is used, the change of power supply voltage shall not exceed  $\pm 10\%$ . If the voltage is too high, the life of the bulb will be shortened. If the voltage is too low, the light color of the bulb will be affected.
- After power failure, it takes 20 minutes for the lamp to be used, and it can only be used after full cooling.
- In order to ensure the normal use of this product, please read this instruction carefully. Signal line connection (DMX)
- Use RS-485 cable with shielding, 120ohm characteristic impedance, 22-24awg, low capacitive reactance. Do not use microphone cables or cables with different specified characteristics. 3 or 5-pin XLR male / female connector must be used for terminal connection (  $1 / 4 W$  minimum).

Important: the wires should not touch each other or the metal shell

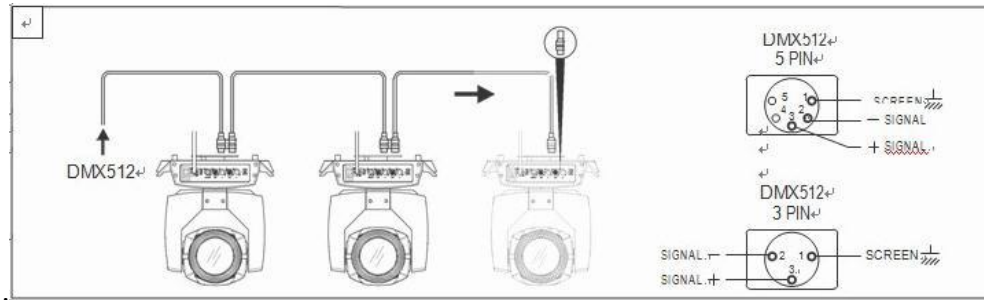


Figure 1 DMX Signal connect

#### 4. Installation

The lamps can be placed horizontally, inclined or upside down. Pay attention to the installation method when hanging diagonally and upside down

As shown in Figure 2, before positioning the lamps, the stability of the installation site should be ensured. During reverse hanging installation, it must be ensured that the lamps do not fall down on the support frame. It is necessary to use the safety rope to pass through the support frame and the lamp handle for auxiliary hanging, so as to ensure safety and prevent the lamps from falling and sliding.

During the installation and commissioning of lamps, pedestrians are not allowed to pass below. Regularly check whether the safety rope is worn and whether the hook screw is loose.

Our company will not bear any responsibility for all consequences caused by the falling of lamps due to the unstable suspension and installation

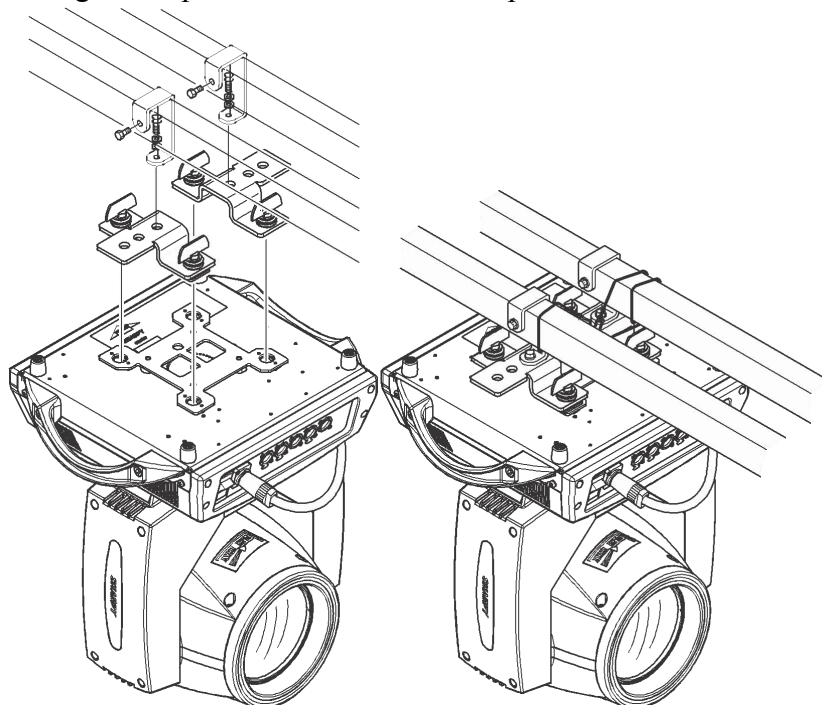


Figure 2 Schematic diagram of upside down lamps

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## Specification

Input Voltage: AC100V-240V, 50/60Hz

Power Consumption: 350W

LED Source: 250W High Output White LED

Lifetime: 50,000 hours lifespan and low power consumption

Zoom Angle: 3.7°-40°

Color Wheel: 9 colors +white, color fine tuning, rotation with variable direction and speed

Static Gobo Wheel: 9 gobos + white, wheel rotation and shake

Rotation Gobo Wheel: 7 gobos + white, wheel rotation and shake

Prism: 3-facet Prism, bi-directional rotate at variable speeds

Frost: Electronic Frost effect

Strobe: High speed strobe effect with 1-25 flashers per second

Dimmer: 0-100% linear dimmer

Pan 540°, Tilt 270°, 16bit

DMX Channel: 16/20Channels

Control Mode: DMX 512, Master-slave, Sound activated , Auto Running

Support RDM

Display: LCD display

IP Rate: IP 20 protection rating

Fans: Efficient low noise fan cooling system

Dimensions: 290(L)\*210(W)\*540(H)mm

N.W.: 13.0kg

## Display Operation

### 1. Overview

The schematic diagram of the lamp panel is shown in Figure 3. The title above shows the name of the lamp, and the status bar below shows the signal, bulb status and fault of the current lamp (when the fault information is not viewed, "err" is displayed, otherwise, "nor") and so on. The lamp supports the DMX / RDM protocol. When the lamp is searched by the RDM host, three letters of "RDM" will appear on the panel, indicating that the lamp is enumerated normally.

Note: do not use sharp or sharp objects to click on the display screen to prevent damage

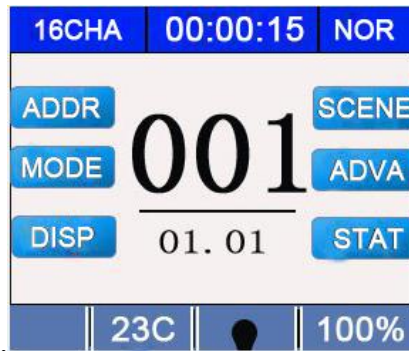


Figure 3 Schematic diagram of display panel

### Sub page (parameter)

<b>Address</b> <span style="float: right;">✕</span>	<b>WorkMode</b> <span style="float: right;">✕</span>	<b>Display</b> <span style="float: right;">✕</span>
<div style="border: 1px solid black; padding: 5px; display: inline-block;">001</div> 16CHA 01.01 <div style="display: flex; justify-content: space-around; margin-top: 5px;"> <span>Prev</span>  <span>Next</span>  <span>Chan</span> </div>	DMX Ctrl ✓ Auto Run Sound Ctrl Scene Mode Auto M/S Choose Auto	语言 English Screen Saver Model Screen Rot Auto DMX Indicate Mode3 Screen Light 010
<b>Scene</b> <span style="float: right;">✕</span>	<b>Advanced</b> <span style="float: right;">✕</span>	<b>Status</b> <span style="float: right;">✕</span>
Scene Select 1 Scene Time 0.0s 01.Pan 000 02.Pan Fine 000 03.Tilt 000 04.Tilt Fine 000	Pan Invert OFF Tilt Invert OFF P/T Rectify ON Pan Offset 010 Tilt Offset 010 Data hold OFF	Stepper info Error Logging Fixture Status Version V1.1.0 Light time 0:00 Total time 0:00

Figure 4 Function page

### Function operation and parameter setting

- Enter the setting interface, as shown in Figure 4
- In the main interface, you can enter the corresponding parameter setting interface by selecting six buttons.
- In the parameter setting interface, you can quickly switch to other setting interfaces by pressing the blue option on the left.
- Setting the address code
- DMX address, channel mode, etc. of lamps can be set through the page shown in Figure 4-1.
- The menu setting of lamps optimizes the setting of address. Several setting address codes are as follows:  
 Select "previous" or "next", and the lamp will automatically calculate the address code of the next or previous one according to the current address code and channel data, and can be set quickly

- Click the address code value to enter the value editing window. Here, any valid address code can be used. The lamp can automatically obtain the current channel number of lamps and filter the address code that can not be used automatically (512 current channel number).
- The lamp supports RDM protocol, and can set the lamp address code remotely through RDM.
- Channel mode: different channel modes can be selected in a cycle;

## 2. Work Mode

<b>DMX Ctrl</b>	DMX mode, receive the signal of DMX and RDM	
<b>Auto Run</b>	Auto running according to the built-in program	
<b>Sound Ctrl</b>	When the lamp detects a strong sound, it will automatically run a scene according to the built-in program	
<b>Scene Mode</b>	It runs in setting scene mode, support up to 10 custom editing scenarios	
	<b>1~10</b>	Output the specified scene
	<b>Auto</b>	Automatically output the scene in the order of the set scene time (non-0), and skip and ignore the scene with time 0
<b>M/S Choose</b>	It takes effect in non-DMX mode. Select the data output method. The light will automatically detect the DMX status and automatically switch the output to prevent data conflicts	
	<b>Auto</b>	If there is no signal in the DMX, the lamp will operate as built-in program; otherwise, the lamp will operate as the DMX signal
	<b>Slave</b>	The lamp operates as built-in without data output (not synchronized with other lamps)
	<b>Master</b>	The lamp operates as built-in. If DMX has no signal, output data (synchronous), otherwise, it will not output data

### 3. Display

<b>Language</b>	Set the language of the display	
	<b>English</b>	English display
	<b>中文</b>	Chinese display
<b>Screen saver</b>	Set the display content or mode of the screen after no operation for 30 seconds	
	<b>OFF</b>	Keep the last operation page and light up the screen
	<b>Mode 1</b>	Screen out
	<b>Mode 2</b>	Black screen, display the address code of the current lamp in the lower left corner
	<b>Mode 3</b>	Display trademark information, address code and operation mode
<b>Screen Rot</b>	Set the display direction of the screen	
	<b>Forward</b>	Do not reverse display
	<b>Reverse</b>	Reverse display
	<b>Auto</b>	Automatic detection lamp hanging direction, automatic switch display direction
<b>DMX Indicate</b>	Set the indication mode of the signal indicator	
	<b>Mode 1</b>	On when there is a signal, off when there is no signal
	<b>Mode 2</b>	It goes out when there is a signal, and it goes on when there is no signal
	<b>Mode 3</b>	It flashes when there is a signal and goes out when there is no signal
<b>Screen Light</b>	Set the brightness of the screen backlight after 10 seconds of no operation, and it will be fully on during operation	
	<b>1~10</b>	10 levels

### 4. Scene Mode

<b>Scene Select</b>	Select the current operation scene	
	1~10	10 scene settings
<b>Scene</b>	Sets the time the current scene is kept automatically, in 0.1 seconds	

<b>Time</b>	000	The current scene does not participate in automatic scene output
	001-255	0.1 second to 25.5 seconds
<b>1. Pan</b>	0-255	Set the data of each channel, and the display content and sequence correspond to the channel table of the lamp one by one
.....	0-255	
.....	0-255	
<b>20. Reset</b>	0-255	

## 5. Advanced Setting

<b>Pan Invert</b>	Set Pan rotation direction	
	<b>OFF</b>	No reverse
	<b>ON</b>	Reverse
<b>Tilt Invert</b>	Set Tilt rotation direction	
	<b>OFF</b>	No reverse
	<b>ON</b>	Reverse
<b>P/T Rectify</b>	Set whether the lamp detects PT out of step and corrects it	
	<b>OFF</b>	No position correction after out of step
	<b>ON</b>	Automatic position correction after out of step
<b>Pan Offset</b>	Set the zero point position of pan	
	<b>4-150</b>	
<b>Tilt Offset</b>	Set the zero point position of tilt	
	<b>4-48</b>	
<b>Data hold</b>	Set the output state of the lamp when there is no signal	
	<b>OFF</b>	There is no signal, so the motor and light source return to the position and state when the reset is completed
	<b>ON</b>	No signal, keep the data output of the last frame
<b>Reset</b>	After selecting "Sure", the fixture will reset	



<b>Factory Setting</b>	After selecting "Sure", the lamp parameters will return to the factory settings
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**Note:**

1. When the position of the lamp cannot be corrected, please check whether the "P/T Rectify" is turned off.
2. When the signal is removed, if the position of the lamp is not output as expected, please check the "data hold" setting first.
3. When setting PT offset, after setting, please control Pan/Tilt with the maximum stroke to check that after setting, Pan and Tilt will not hit the positioning rod or shell.

## 6. Status Information

<b>Stepper info</b>	Display the information status of all motors and signals in the lamp	
	<b>Hall</b>	If it is not displayed, it means that the motor has no hall correction, 0 means that the motor leaves the correction position point, and 1 means that the motor is in the correction position point
	<b>Pan</b>	Display the real-time position value of Pan optocoupler
	<b>Tilt</b>	Display the real-time position value of Tilt optocoupler
	<b>Pan Op Tilt Op</b>	Display the level state of Pan and Tilt optocoupler signals, binary
<b>Error Logging</b>	Display the last 8 fault records of lamp reset and operation	
	Fault data	Total number of faults detected after power up
	12:03	The power on time when the fault occurs, in minutes
	Hall failure	When the corresponding motor is reset, the motor does not detect the effective Hall signal
	Hall short circuit	When the corresponding motor is reset, it is detected that the hall signal of the motor is always valid
	Optocoupler failure	No valid optocoupler signal is detected when the corresponding motor is reset
	Out of step	The corresponding motor is out of step during operation
	Impact bar	Impact the positioning rod when the corresponding motor is reset

	Bulb failure	Accidental bulb extinction
	Sensor failure	The signal of temperature sensor is abnormal、
	Fan failure	The main fan is not working properly
<b>Fixture Status</b>	Fixture current status	
	<b>Communication</b>	0 ~ 100%, the communication quality of the internal data link
	<b>Error Cnt</b>	Total number of error frames detected after power on, cumulative
	<b>Light Temp</b>	Temperature of the current light source, "---" means no detection
	<b>Panel Temp</b>	Temperature of the current display panel or the ambient temperature nearby
	<b>Sensor1 Temp</b> <b>Sensor2 Temp</b>	Current motherboard temperature or the ambient temperature of the motherboard installation location
<b>Version</b>	Information and version of current lamps and important reference for after-sales maintenance	
<b>Light Time</b>	Record the total accumulated time of light source	
<b>Total Time</b>	Record the total accumulated time of the fixture	

## 7. Offset:

In main surface, Long press **MENU** for 5s into offset mode, enter the password: **1324**

## DMX Channel:

16CH	20CH	Function	Value	Description
<b>CH1</b>	<b>CH1</b>	<b>Pan</b>	0-255	0-540degree
<b>CH2</b>	<b>CH2</b>	<b>Pan Fine</b>	0-255	0-2degree
<b>CH3</b>	<b>CH3</b>	<b>Tilt</b>	0-255	0-270degree
<b>CH4</b>	<b>CH4</b>	<b>Tilt Fine</b>	0-255	0-1degree

	<b>CH5</b>	<b>P/T Speed</b>	0-255	Speed from fast to slow
<b>CH5</b>	<b>CH6</b>	<b>Strobe</b>	0-3	OFF
			4-127	Pulse strobe from slow to fast
			128-191	Gradual strobe from slow to fast
			192-251	Random strobe from slow to fast
			252-255	ON
<b>CH6</b>	<b>CH7</b>	<b>Dimmer</b>	0-255	0-100% linear dimmer from dark to brighter
	<b>CH8</b>	<b>Dimmer Fine</b>	0-255	
<b>CH7</b>	<b>CH9</b>	<b>Colour</b>	0-4	White
			5-9	White + Colour1
			10-14	Colour1
			15-19	Colour1 + Colour2
			20-24	Colour2
			25-29	Colour2 + Colour3
			30-34	Colour3
			35-39	Colour3 + Colour4
			40-44	Colour4
			45-49	Colour4 + Colour5
			50-54	Colour5
			55-59	Colour5 + Colour6
			60-64	Colour6
			65-69	Colour6 + Colour7
			70-74	Colour7
			75-79	Colour7 +Colour8
			80-84	Colour8
85-89	Colour8 +Colour9			

			90-94	Colour9
			95-99	Colour9 + White
			100-180	Forward flow from fast to slow
			181-185	STOP
			186-255	Reverse flow from slow to fast
	<b>CH10</b>	<b>Color Fine</b>	0-255	
<b>CH8</b>	<b>CH11</b>	<b>Fixed Gobo</b>	0-9	White
			10-19	Gobo 1
			20-29	Gobo 2
			30-39	Gobo 3
			40-49	Gobo 4
			50-59	Gobo 5
			60-69	Gobo 6
			70-79	Gobo 7
			80-89	Gobo 8
			90-99	Gobo 9
			100-109	Gobo 1 Shake from slow to fast
			110-119	Gobo 2 Shake from slow to fast
			120-129	Gobo 3 Shake from slow to fast
			130-139	Gobo 4 Shake from slow to fast
			140-149	Gobo 5 Shake from slow to fast
			150-159	Gobo 6 Shake from slow to fast
			160-169	Gobo 7 Shake from slow to fast
			170-179	Gobo 8 Shake from slow to fast
			180-189	Gobo 9 Shake from slow to fast
			190-223	Forward flow from fast to slow
224-255	Reverse flow from slow to fast			

<b>CH9</b>	<b>CH12</b>	<b>Rot Gobo</b>	0-9	White
			10-19	Gobo 1
			20-29	Gobo 2
			30-39	Gobo 3
			40-49	Gobo 4
			50-59	Gobo 5
			60-69	Gobo 6
			70-79	Gobo 7
			80-89	Gobo 1 Shake from slow to fast
			90-99	Gobo 2 Shake from slow to fast
			100-109	Gobo 3 Shake from slow to fast
			110-119	Gobo 4 Shake from slow to fast
			120-129	Gobo 5 Shake from slow to fast
			130-139	Gobo 6 Shake from slow to fast
			140-149	Gobo 7 Shake from slow to fast
			150-199	Forward flow from fast to slow
200-255	Reverse flow from slow to fast			
<b>CH10</b>	<b>CH13</b>	<b>Gobo Rot</b>	0-127	0-400Degree
			128-190	Forward flow from fast to slow
			191-192	Stop
			193-255	Reverse flow from slow to fast
<b>CH11</b>	<b>CH14</b>	<b>Prism</b>	0-127	Prism Off
			128-255	Prism Insert
<b>CH12</b>	<b>CH15</b>	<b>Prism Rot</b>	0-127	0-400degree
			128-187	Forward flow from fast to slow
			188-195	Stop
			196-255	Reverse flow from slow to fast

<b>CH13</b>	<b>CH16</b>	<b>Frost</b>	0-127	No Function
			128-255	Frost
<b>CH14</b>	<b>CH17</b>	<b>Zoom</b>	0-255	From small to large
<b>CH15</b>	<b>CH18</b>	<b>Focus</b>	0-255	From far to near
	<b>CH19</b>	<b>Focus Fine</b>	0-255	
<b>CH16</b>	<b>CH20</b>	<b>Reset</b>	210-215	P/T Reset after 6s
			220-235	Small motors Reset after 6s
			240-255	All Reset after 6s

## Trouble Shooting

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

### 1. The light beam is dim

Possible causes: the LED has been used for a long time or the light path is not clean.

The treatment is as follows:

Check whether the LED has reached the service life and replace it with a new one;  
Check whether the optical components are clean and whether there is dust on the LED and other optical components, and regularly clean and maintain the LED and components

### 2. Blurred pattern projection

Check whether the electronic focusing value is suitable for the current projection distance.

### 3. The fixture works intermittently

Possible causes: the internal circuit enters the protection state, and the treatment is as follows:

Check whether the fan operates normally or gets dirty, causing the inside temperature to rise;

Check whether the internal temperature control switch is closed;

Check whether the LED has reached the service life and replace it with a new one.

### 4. The fixture is not controlled by the console after normal reset

Possible causes: signal line fault or fixture parameter setting fault, the treatment is as follows:

Check the starting address code and the connection of the signal line (whether the signal line is in good condition or the connector is loose);

Add signal amplifier and 120 ohm terminal resistance;

### 5. The fixture cannot be started

Possible causes: poor power circuit, treatment as follows:

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Check whether the fuse on the power input socket is broken, and replace the fuse;  
Bad line contact caused by vibration during long-distance transportation  
Check the input power supply, PCB and other plug-in devices.

## **Precautions**

Check whether the local power supply meets the rated voltage requirements, and whether the leakage protector and over-current protector meet the load requirements;  
Do not use power cords with damaged insulation, and do not overlap power cords with other wires

The fixture are cooled by strong wind, which is easy to accumulate dust. They must be cleaned once a month, especially the cooling air outlet. Otherwise, the fixture will be blocked due to the accumulation of dust, resulting in poor heat dissipation and abnormal lighting.

When installing lamps, the fixing screws must be tightened, and safety cables must be added, and regular inspection shall be carried out

During the installation and positioning of lamps, the minimum distance between any point on the surface of lamps and any inflammable and explosive materials shall be 10 meters, and the distance from the irradiator shall be 2.5 meters. Please do not install lamps directly on the surface of combustible materials

It is recommended that the continuous working time of the lamp should not exceed 10 hours, and the interval between continuous starting of the lamp should not be less than 10 minutes, otherwise it will not be triggered normally due to the overheating protection of the bulb

The closing time of on-off valve should not exceed 5 minutes. If the light needs to be closed for a long time, the control console (lamp control channel) should be used to turn off the lamp

In order to ensure that multiple fixtures can better comply with the scene effect, fixtures should not start the next scene action without completing the current scene. It is better that this state should not exceed 3 minutes to ensure that multiple lamps can operate synchronously

During use, if the fixture is abnormal, stop using the fixture in time to prevent other faults.

## **Precautions for RDM use**

RDM is an extended version of DMX512-A protocol. It is a remote device management protocol. The traditional DMX512 protocol communication is one-way communication. The protocol is based on RS-485 bus. RS-485 is a time-sharing multipoint and half duplex protocol. Only one port is allowed to output at the same time. Therefore, the following points should be paid attention to when using RDM  
The console or host equipment supporting RDM protocol host should be used;  
To use bidirectional signal amplifier, the traditional unidirectional signal amplifier is not suitable for RDM protocol, because RMD protocol needs feedback data, using

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unidirectional amplifier will block the returned data, resulting in no lamp search;  
The luminaire must be set in the mode of DMX to ensure that there is only one host 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, the differential signal will be used more stably, which is conducive to the quality of communication;  
When the lamp is under the control of the DMX, but the RDM cannot search for the lamp, check the signal amplifier first, and then check whether there is a bad contact between the 2 and 3 wires of the signal line.