

## Smart 280 Spot-Beam-Wash



This product manual contains important information about the safe installation and use of this projector. Please read and follow these instructions carefully and keep this manual in a safe place for future reference.

### User manual

Please read the instructions carefully before use

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# 1. Precautions and Installation Precautions and installation

## 1.1 The statement

Thank you for choosing our products!When this product leaves the factory, the performance is intact, the package is complete.In order to use this product safely and effectively, please read this instruction manual carefully and completely before using this product.This manual contains important installation and use information, please install and operate according to the requirements of the manual, at the same time, please keep this manual properly for use at any time.Our company does not assume any responsibility for the damage of the lighting or other performance caused by the failure of the individual to operate according to the instructions during installation, use and maintenance.

This manual is subject to technical changes without prior notice.

## 1.2 maintenance

- Disconnect the power supply before performing maintenance.
- The lamp should be kept dry, avoid working in damp environment.
- Intermittent use will effectively prolong the life of the lamps.
- For good ventilation and lighting, take care to clean fans and fan nets and lenses frequently.
- Do not use alcohol and other organic solvents to wipe the lamp shell, so as not to cause damage.

## 1.3 Product Precautions

- This lamp is for professional use only.
- Before operation, ensure that the power supply voltage is consistent with equipment requirements.
- Do not place the product in places where it is easy to loose or shake.
- In the process of use, if the lamp is abnormal, stop using the lamp in time.
- To ensure the service life of the product, do not put the product in the damp or leaking place, and do not work in the environment where the temperature is above 60 degrees.
- When the bulb is used, the voltage change of the power supply should 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 off, it is necessary to use the lamp to cool down fully after 20 minutes before power on again.
- Rotating parts of lamps and lanterns and sticking accessories must be checked regularly, loose, shaking timely reinforcement, in case of accidents.
- To ensure the normal use of this product, please read this instruction carefully.

## 1.4 Product introduction

Input voltage: AC110V-240V / 50-60Hz

Light source: LED White 280W

Life time: 50000 hours

Rated power: 300 W

Channel mode: 17CH

Pan/Tilt movement: 540°/270°, adopting a function which resets 16bit accurately and automatically

Dimmer: 0-100%, electronic linear dimming

Frost : 1 independent frost lens, soft and natural light spot

Zoom range: 9-30 degrees

Strobe: 1-25Hz, strobe speed adjustable

Color: 9 colors + white light

Fixed gobo wheel: 9 gobos + white light

Rotation gobo wheel: 7 glass gobos + white light, each glass gobos can independently rotate forward and backward

Prism: 3 prisms, independent rotation forward and backward

Working mode: DMX512 control, Auto mode, master/slave mode

RDM Display: LCD

Control signal: international standard DMX512. With the RDM function, you can upgrade software online and dial address codes

Cooling: Active fan

Material: Aluminum, copper, steel, plastic

Working environment :-20 degrees ~ 40 degrees

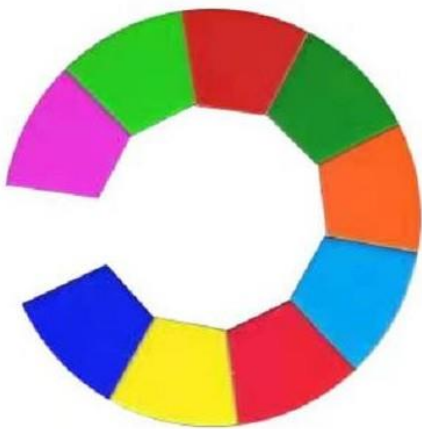
Protection level: IP20

Product size: 300\*205\*542mm

Net weight: 13kg

Color:

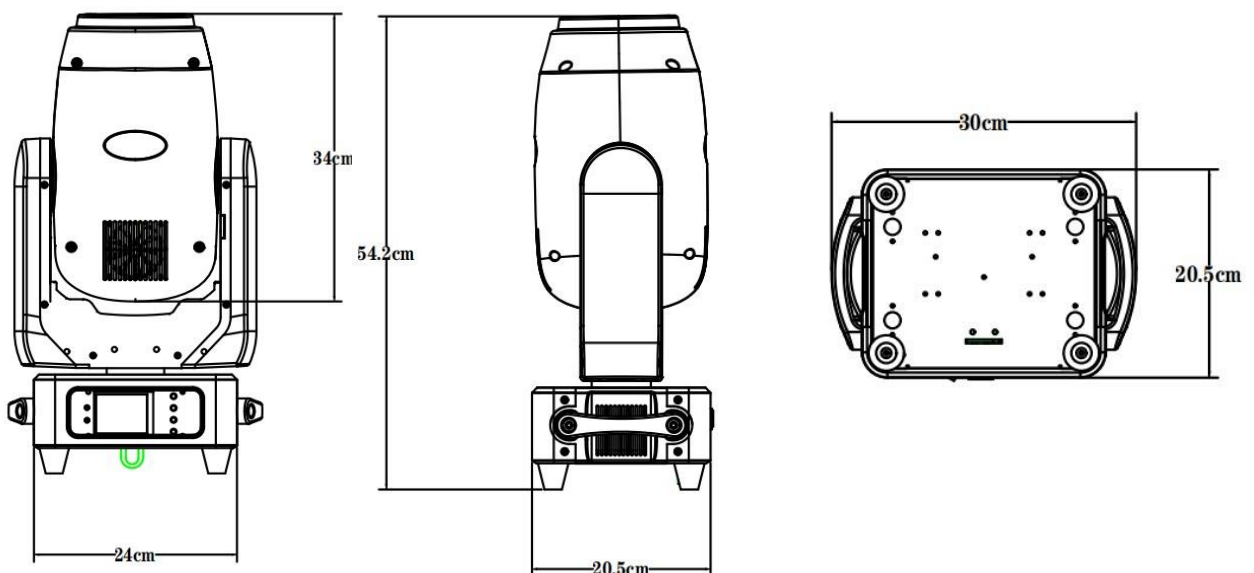
Static Gobo:



Rotation Gobo



Size:



## 1.5 Signal line connection

Lamps feature standard DMX input and output 3-core or 5-core XLR sockets. Please use shielded twisted-pair signal cable specially for DMX 512; The signal line is generally connected at a distance of 150 meters. When long-distance signal is transmitted, DMX512 signal amplifier must be added.

A shielded twisted-pair signal line is used to connect the DMX output port of the controller to the DMX input port of the first device, and from the DMX output port of the first device to the DMX input port of the second device, and so on, until all lamps are connected. Then install a terminal plug on the 3-core jack of the last connecting lamp output in each circuit. (Weld a 4/1W, 120  $\omega$  resistor between the 2 and 3 pins of the 3-core card plug with a needle).

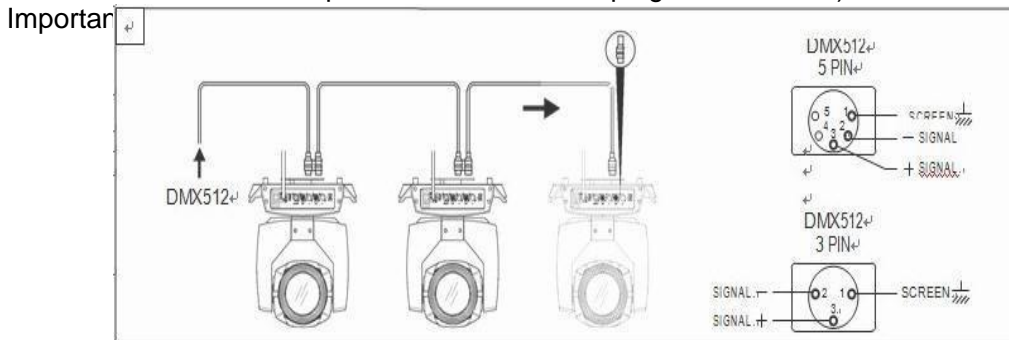


Figure 1 Schematic diagram of DMX signal cable connection

### ➤ Calculation method of initial address code of lamps:

The start address code of the current lamp is equal to (the start address code of the previous lamp)+(the number of channels of the lamp)

1: the start address of the first lamp is A001.

2: the basic number of channels of the controller should be greater than or equal to the total number of channels used by the lamp.

3: Note: when using any controller, each lamp should have its own start address code, if the start address code of the first lamp is set to A001, the number of lamps is 16CH; The starting address code of the second lamp is set to A017. The starting address code of the third lamp is set to A033; And so on, (this setting method also needs to be determined according to different console)

## 1.6 Installation of lamps and lanterns

Lamps can be placed horizontally, diagonally or upside down. Pay attention to the installation method when slant and upside down.

As shown Fixed gobo 2, it is necessary to ensure the stability of the installation site before positioning the lamp. During the installation of the inverted hanging, it is necessary to ensure that the lamp does not fall off from the support frame, and the safety rope should be used to pass through the support frame and the handle of the lamp for auxiliary hanging to ensure safety. Prevent lamp from falling and sliding. FIG. 2 Schematic diagram of upside-down lamps1

During the installation and debugging of the lamps, pedestrians are not allowed to pass under the lamps. Check regularly whether the safety ropes are worn or the hook screws are loose.

Our company will not assume any responsibility for any consequences caused by falling of the lamp due to unstable hanging installation.

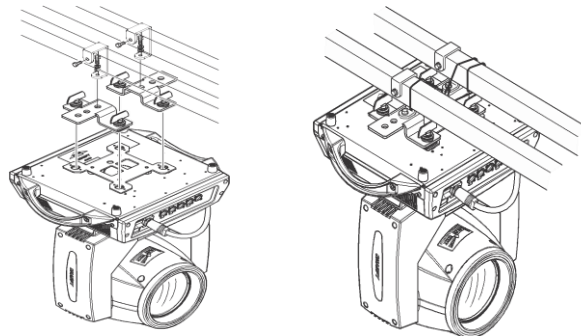
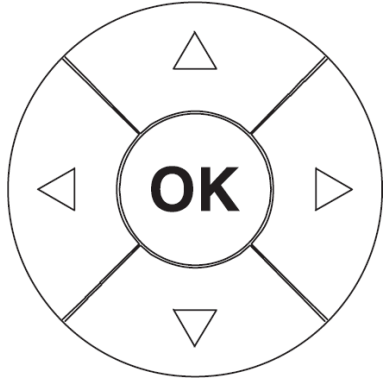





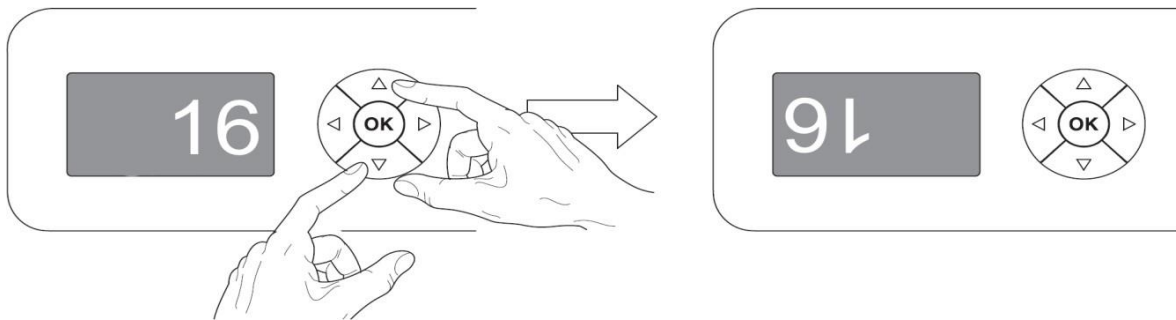


FIG. 2 Schematic diagram of upside-down lamps1

## 2. The control panel

### 2.1 FUNCTIONS OF BUTTONS

	 Confirms the displayed value, or activates the displayed function, or enters the successive menu.
	 Decreases the value displayed (with auto-repetitions) or passes to the next item in the menu.
	 Increases the value displayed (with auto-repetitions) or passes to the previous item in a menu.
	 Return to the top level.
	 Commute from units, tens, hundreds, in the "Address", "Fixture ID" and "Calibration" menu.



#### Reversal of the display

To activate this function, press UP and DOWN keys simultaneously while the display is in the rest mode. This status will be memorised and maintained even for the next time it will be switched on. To return to the initial state, repeat the operation all over again.

FIG. 3 Schematic diagram of panel keys

#### USING THE MENU:

- 1) Press "OK" once - "Main Menu" appears on the display.
- 2) Use the UP and DOWN keys to select the menu to be used:
  - Setup (Setup Menu): To set the setting options.
  - Option (Option Menu): To set the operating options
  - Informations (Informations Menu): To read the counters, software version and other information.
  - Manual Control (Manual control Menu): To trigger the test and manual control functions.
  - Test (Test Menu): To check the proper functioning of effects
  - Advanced (Advanced Menu): Access to the "Advanced menu" is recommended for a trained technical personnel.
- 3) Press "OK" to display the first item in the selected menu.
- 4) Use the UP and DOWN keys to select the MENU items.

## 2.2 Menu Description



FIG. 4 Schematic diagram of main menu

### 2.2.1 setting

options	instructions	
Run Mode	DMX	Slave status: receive DMX signal from controller or master
	AUTO	Master status: auto run, send DMX signal to slave
	Sound	
DMX address	1-512	Press "OK" to enter editing mode. At this time, select hundreds and press the "up" and "Down" keys to change the address code. Press OK again to select the ten place edit. Press "OK" again to select the bits to edit. Press again to exit the edit mode
Device Reset	OFF	
	ON	Device Reset
Channel mode	17 ch	Standard 17 channel mode
Language	Chinese	Set the language to Chinese
	English	Set the language to English
Screen rotation	OFF	Positive display
	ON	The screen is displayed inversely
Invert PAN	OFF	Invert PAN off
	ON	Invert PAN open
Invert Tilt	OFF	Invert Tilt off
	ON	Invert Tilt open
Pan-Tilt Swap	OFF	
	ON	Exchange pan tilt channel ( include fine )
Pan-Tilt encoder	OFF	Use encoder (optocoupler) to determine out of step and automatically correct position
	ON	Correct position without encoder (optocoupler)
DMX signal	keep	Continue running as it is
	clear	The motor returns to the position and stops running.
Linear color	OFF	
	ON	Linear color
Load Default		Press OK to see the confirmation dialog box. Press OK again to restore the default Settings

### 2.2.1 manually

## Consistent with channel table!

### 2.2.3 factory

The calibration	Pan	After entering the sub-interface, you can adjust the reset position of the X axis, Y axis and other motors to compensate for errors in hardware installation. The
	Tilt	
	Color	

	Gobo	adjustment range is -128~+127, +0 means no adjustment.
	Focus	
	Dimmer	
	Prism 1 cal	
	Prism 2 zero	
	Prism 2 cal	
	Frost	
	Clear	

## 2.2.4 information

options	instructions	
Hall state	0000000	0 when magnetic is detected, 1 otherwise
Pan wheel step	0000	In the positive direction, the step value should increase, in the opposite direction, the step value should decrease. The same value is normal every time you turn to the same point
Tilt wheel step	0000	In the positive direction, the step value should increase, in the opposite direction, the step value should decrease. The same value is normal every time you turn to the same point
Authority hours	9999	9999 means no encryption and can be used for a long time. Other values indicate the remaining use time, with encryption;

## Common error instructions

Common error messages	instructions
MT board connection failed. Procedure	Motor board is not responding. The serial communication line connecting the display board to the motor board is faulty, or the motor board is faulty.
The Pan reset fails	Pan photoelectric switch, or X-axis motor or motor board problem
The Tilt reset fails	Tilt photoelectric switch, or Y motor or motor board problem
Pan Hall error	Pan axis Hall, or motor plate problem
Tilt Hall error	Tilt Hall, or motor plate problem
The color disk failed to reset. Procedure	Color plate Hall, or color plate motor problem
Failed to reset the Gobo disk	Gobo plate Hall, or Gobo plate motor problem
The focus reset failed	There is a problem with the focusing hall or the focusing motor
Bulb control failure	Failed to light or extinguish the bubble. The light lighter or bulb is faulty



### 3. Channel function

#### 3.1 The 17 channel

CH	Detail
1	Pan
2	Pan fine
3	Tilt
4	Tilt fine
5	Pan tilt speed
6	Dimmer
7	Shutter/ strobe
8	Color plate
9	Fixed gobo
10	Glass gobo
11	Glass Gobo rotation
12	Focusing
13	Zoom
14	Prism
15	Prism rotating
16	Frost
17	Reset

#### 17 DMX Channel Details

Channel	Function	Value	Detail
1	Pan	000-255.	Pan
2	Pan fine	000-255.	Pan fine
3	Tilt	000-255.	Tilt
4	Tilt fine	000-255.	Tilt fine
5	Pan tilt speed	000-255.	From fast to slow

6	Dimmer	000-255.	From dark to bright
7	Shutter/ strobe	000-003. 004-250. 251-255.	Brake light off Strobe from slow to fast Light switch open → (controlled by dimming channel)
8	Color plate	000-002 003 -005 006- 008 009 - 011 012- 014 015- 017 018- 020 021- 023 024- 026 027- 029 030- 032 033- 035 036- 038 039- 041 042- 044 045- 047 048- 050 051- 053 054- 056 057- 059 060-159 160 -205 206 - 255	The white light White light + color 1 Color 1 Color 1 plus color 2 Color 2 Color 2 plus color 3 Color 3 Color 3 plus color 4 Color 4 Color 4 plus color 5 Color 5 Color 5 plus color 6 Color 6 Color 6 plus color 7 Seven colors Color 7 plus color 8 Color 8 Color 8 plus color 9 Color 9 Color 9 + white light Color linear Forward flow (from fast to slow) Reverse flow (from slow to fast)

9	Fixed gobo	000 - 009 010 - 019 020 - 029 030 - 039 040 - 049 050 - 059 060 - 069 070 - 079 080 - 089 090 - 099 100 - 104 105 - 109 110 - 114 115 - 119 120 - 124 125 - 129 130 - 134 135 - 139 140 - 144 145-200 201 - 255	White Fixed gobo 1 Fixed gobo 2 Fixed gobo 3 Fixed gobo 4 Fixed gobo 6 Fixed gobo 7 Fixed gobo 8 Fixed gobo 9 White shake (from slow to fast) Fixed gobo 1 shake (from slow to fast) Fixed gobo 2 shake (from slow to fast) Fixed gobo 3 shake (from slow to fast) Fixed gobo 4 shake (from slow to fast) Fixed gobo 5 shake (from slow to fast) Fixed gobo 6 shake (from slow to fast) Fixed gobo 7 shake (from slow to fast) Fixed gobo 8 shake (from slow to fast) Fixed gobo 9 shake (from slow to fast) Reverse flow (from fast to slow) Forward flow (from slow to fast)
10	Glass gobo	000 - 009 010 - 019 020 -029 030 -039 040 - 049 050 - 059 060 - 069 070- 079 080- 089 090- 099 100- 109 110- 119 120 - 129 130- 139 140- 149 150- 200 201- 255	White Gobo 1 Gobo 2 Gobo 3 Gobo 4 Gobo 5 Gobo 6 Gobo 7 Gobo 1 shake (from slow to fast) Gobo 2 shake (from slow to fast) Gobo 3 shake (from slow to fast) Gobo 4 shake (from slow to fast) Gobo 5 shake (from slow to fast) Gobo 6 shake (from slow to fast) Gobo 7 shake (from slow to fast) Reverse flow (from fast to slow) Forward flow (from slow to fast)

11	Glass Gobo rotation	000-127. 128-191. 192-255.	Angle adjustment Reverse from fast to slow Forward from slow to fast
12	Focusing	000-255.	Gobo clarity from far to near
13	Zoom	000-255.	From big to small
14	Prism	000-127. 128-255.	None Prism
15	Prism rotating	000-127. 128-191. 192-255.	Prism Angle adjustment Reverse rotation (from fast to slow) Forward rotation (from slow to fast)
16	Frost	000-127. 128-255.	None Insert frost
17	Reset	000-249. 250-255.	None Reset

#### 4. Common faults

In view of some common faults, the corresponding solutions are put forward. Any problems that can't be solved should be dealt with by professionals. Disconnect the power supply before servicing the lamp.

##### 1. The light bulb not bright

- Check whether the voltage matching the lamps and lanterns is installed;
- Check whether the lamp power supply connection or control switch is in bad contact;
- Check whether electricity supply is insufficient;
- Check whether the DMX512 controller is sending instructions.

##### 2. The lamp does not accept the control of the console after normal reset

- Check the luminaire digital start address value and function options are correct;
- Check whether the connection of communication control line is correct, communication line is too long or has been interrupted;
- Check whether the control equipment fails, check whether the serial access signal amplifier fails;
- Check whether the communication line is too long or other devices interfere with each other;
- Optimize wiring, shorten the length of control signal lines, separate high voltage and low voltage lines;
- Add signal amplifier;
- High quality shielded twisted-pair cable is used for signal cable;
- Connect the signal terminal resistor (120 ohms) at the end of the lamp.

##### 3. Luminaire does not start

- Check whether the power supply parameters are consistent with the lamps;
- Check the lamps in the long-distance transportation process due to extrusion deformation, internal parts vibration, moisture and other reasons, resulting in poor contact  
Or fall off.
- Please check whether the inner conductor connector of the lamp falls off or loosens.
- Check the electronic components of the lamp (such as electronic transformer, PCB board, motor control board, etc.) for loosening, short circuit and burning.

4. When working, the action of X or Y axis of the lamp is abnormal

- Check one by one according to the previous step;
- Check whether the transmission belt corresponding to X and Y axis direction in the lamp falls off and breaks;
- Check whether the data feedback receiver (photocoupler) corresponding to X and Y directions in the lamp is damaged;
- Reboot and reset once.