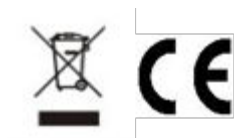


Instruction Manual

PROFESSIONAL STAGE LIGHTING EQUIPMENT



HL-MB480



-----Please Read The Manual Carefully-----

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

- Light source power: 480W;
- Voltage: AC 200V~240V/50~60Hz;

- Color plate: each color plate is composed of 13 color plates + white light;
- Pattern plate: 15 pattern effects;
- 540 degrees translation, 270 degrees tilt.
- Overheating protection;
- Control mode: DMX512/ master slave/automatic;
- IP20 protection level

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 ω resistor between the 2 and 3 pins of the 3-core card plug with a needle).

Important: Wires should not touch each other or metal enclosures.

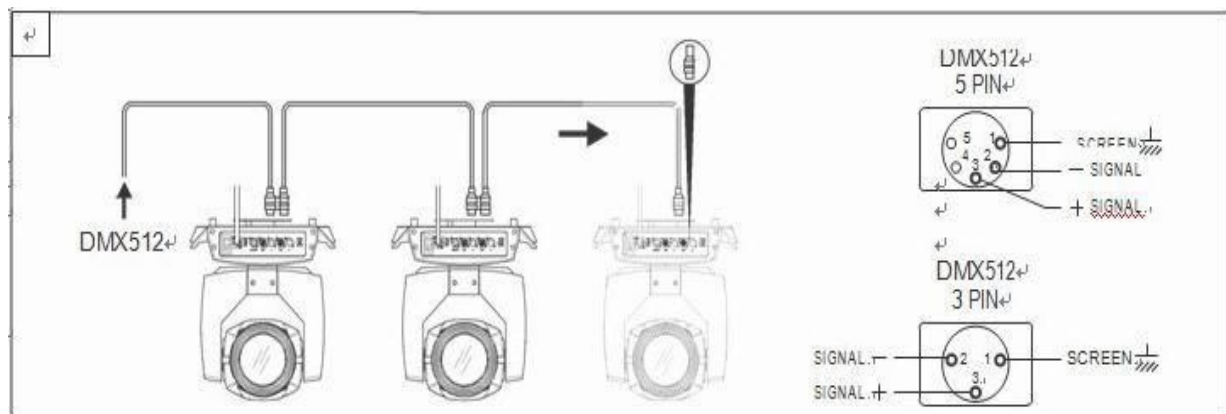


Figure 1 Schematic diagram of DMX signal cable connection

◆ 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 in Figure 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.

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.

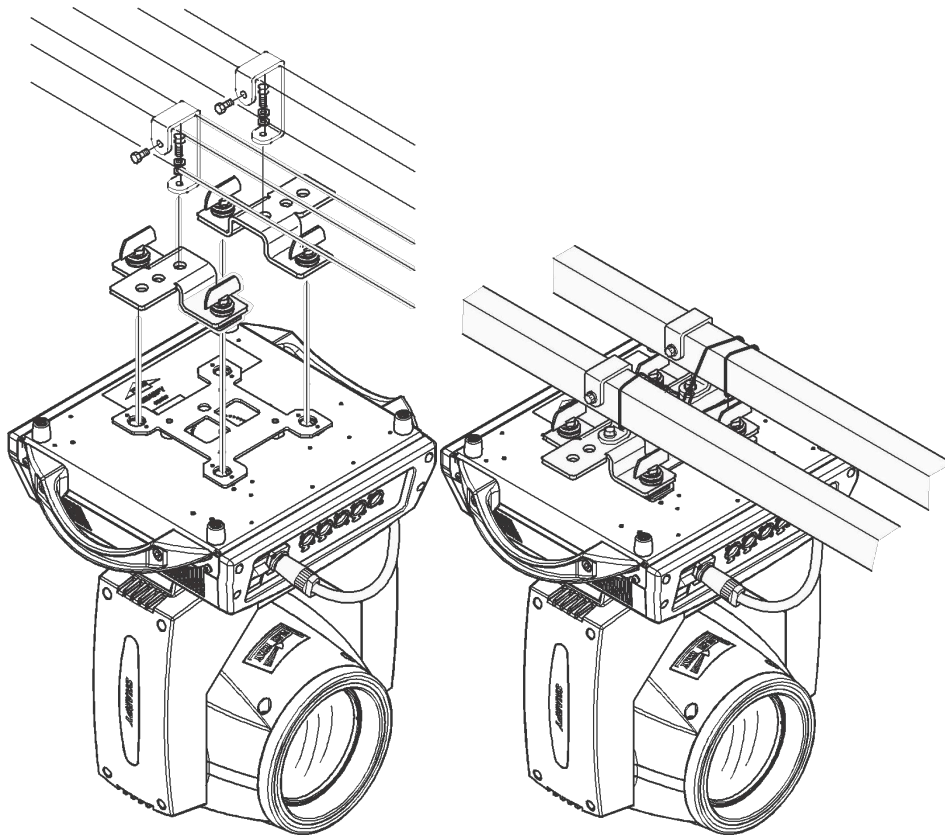


FIG. 2 Schematic diagram of upside-down lamps

2. The control panel

2.1 Key Description

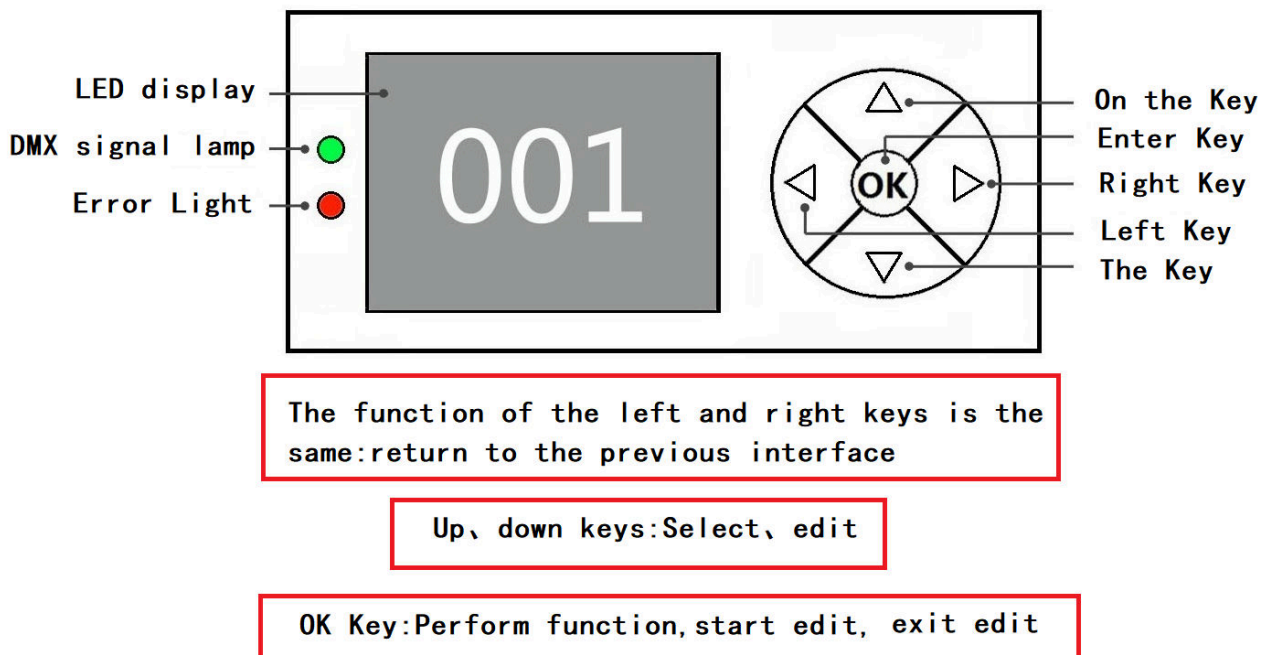


FIG. 3 Schematic diagram of panel keys

The following takes "modify DMX address code" as an example to describe the use of keys:

1. If the current screen is not the main screen, press the "Left" key (one or more times) to return to the main screen
2. On the home screen, press the Up or Down key to select the Settings button
3. Press "OK" to enter the "Settings" interface
4. In the "Settings" interface, press "Up" or "Down" to select "DMX Address".
5. Press "OK" to enter editing mode
6. Press the "Up" or "Down" key to modify DMX address code
7. Press OK to exit the editing mode
8. Press the right button on the main interface to enter the calibration menu shortcut key.

2.2 Menu Description

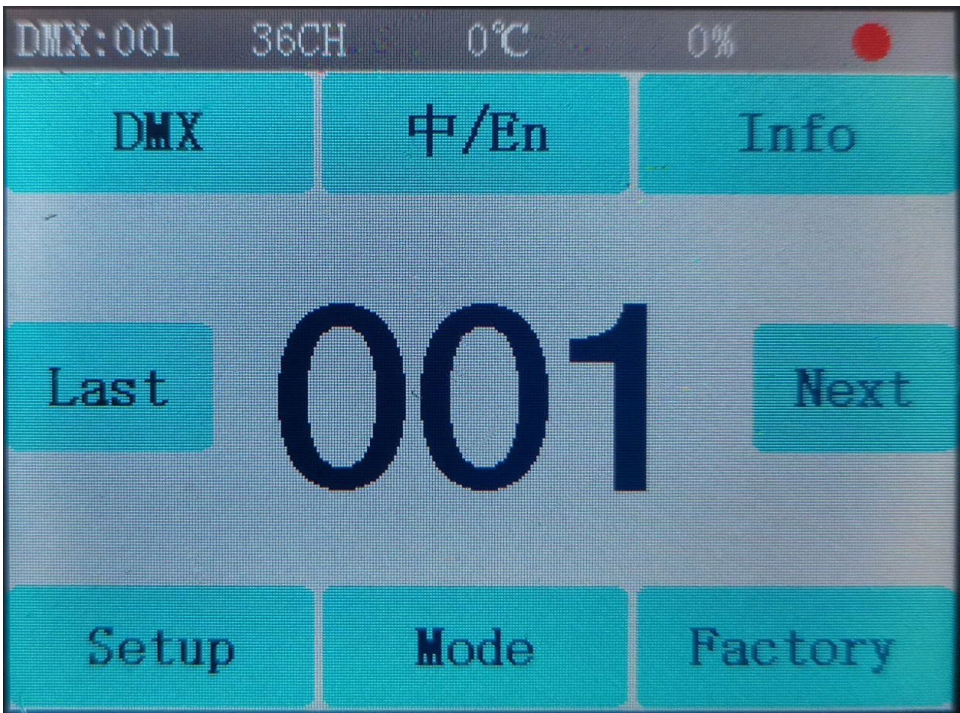


FIG. 4 Schematic diagram of main menu

2.2.1 DMX Settings

- 1. Key description: press up or down is +1 or -1 mode;Press the left and right keys to go up or go down, which is collectively referred to as the quick adjust address code mode.Press ok to return
- 2. Manual description: first input hundreds, then tens, and finally a bit.(For example, to enter 286, press 2, then 8, then 6)

2.2.2 / En

Switching between Chinese and English interface;

2.2.3 System Information

options	instructions	
System version	DIS	Display board software version
	MT	Motor board software version
The temperature information		Display bead temperature
Fan information	The fan speed	Displays the fan speed information
The time system	Total light bubble	Cumulative bubble time (accurate to minutes)
	The bright bubble	Time of this bubbling (accurate to minutes)
	Total service time	Total usage time (accurate to minutes)
	Time of use	Usage time since this startup (accurate to minute)

	Manufacture date	Right-click to change the factory date
	The access time	9999 means no encryption and can be used for a long time. Other values indicate the remaining use time, with encryption;
Sensor monitoring	X hall	0 when magnetic is detected, 1 otherwise
	Y hall	0 when magnetic is detected, 1 otherwise
	Color disc hall	0 when magnetic is detected, 1 otherwise
	CMY hall	0 when magnetic is detected, 1 otherwise
	The CTO hall	0 when magnetic is detected, 1 otherwise
	Fixed pattern disc	0 when magnetic is detected, 1 otherwise
	Glass hall	0 when magnetic is detected, 1 otherwise
	Glass pattern spin hall	0 when magnetic is detected, 1 otherwise
	Adjustable JiaoHuoEr	0 when magnetic is detected, 1 otherwise
	Enlarge hole,	0 when magnetic is detected, 1 otherwise
	Prism 1 rotates Hall	0 when magnetic is detected, 1 otherwise
	X indicates the disk status	Two digits, each corresponding to a photoelectric switch on the coding disk
	Y Indicates the status of the encoding disk	Two digits, each corresponding to a photoelectric switch on the coding disk
	X-axis encoding disk step value	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
	Y-axis encoding disk step value	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
System error		If the red ERR indicator lights up, it indicates that the lamp is running wrong. Details can be viewed in the sub-interface.After viewing, you can press the "Clear" button to clear error records
DMX channel value monitoring		This leads to a subinterface that displays channel values in numerical and percentage terms for viewing

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 X-axis reset fails	X-axis photoelectric switch, or X-axis motor or motor board problem
The Y-axis reset fails	Y photoelectric switch, or Y motor or motor board problem
X-axis Hall error	X axis Hall, or motor plate problem
Y-axis Hall error	Y axis Hall, or motor plate problem
The color disk failed to reset. Procedure	Color plate Hall, or color plate motor problem
Failed to reset the pattern disk	Pattern plate Hall, or pattern plate motor problem
The focus reset failed	There is a problem with the focusing hall or the focusing motor

2.2.4 Lighting Settings

options	instructions	
DMX channel	36CH	36 channel mode
language	Chinese	Set the interface to Chinese
	English	Set the interface to English
Screen rotation	guan	Positive display
	open	The screen is displayed inversely
Automatic screen flip	guan	Positive display
	open	The screen is displayed inversely
The dimming curve	Square	index
	linear	A straight line
	SCurve	sine
	InSquare	logarithmic
RDM function	guan	The RDM function is enabled
	open	Disable the RDM function
DMX signal	keep	Continue running as before
	reset	Motor back, stop running
Screen saver	guan	Close the screen saver
	open	Open the screen saver
X inversion	guan	
	open	

Y inversion	guan	
	open	
XY exchange	guan	
	open	Channels for exchanging XY axis (including fine tuning)
XY encoder	open	Use an encoder (optocoupler) to determine out-of-step and automatically correct position
	guan	No encoder (optocoupler) is used to correct position
Color wheel changes linearly	open	Color wheel changes linearly
	guan	Color wheel nonlinear change, half-color change
Restore default Settings		Press OK to see the confirmation dialog box. Press OK again to restore the default Settings

2.2.5 Operating Mode

Since walking pattern	DMX	Slave state: receiving DMX signal from console or host
	Since the go	Host state: self-powered and sends DMX signal to slave
	Voice control	

◆ **Manual control** (Click the Operation mode menu on the main interface, select manual control, and press "confirm" to enter manual control)

1. This interface is used to control the current lamps and lanterns, and automatically enter the host state (do not receive DMX signal, send DMX signal to the bus to the slave).
2. The manual menu will display 36 channels according to the standard 36 channels set in the Settings menu.

options	instructions	
1CH. X	0~255	Press "OK" to enter editing mode. At this time, select the hundreds and press the "up" and "down" keys to change the channel value. 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
...	0~255	
35 ch. Aperture	0~255	
36 ch. Reset		Press "OK" to see the confirmation dialog box. Press "OK" again to enter the reset interface and reset all the motors
ALL reset		Press "OK" to see the confirmation dialog box. Press "OK" again to enter the reset interface and reset all the motors
XY reset		Press "OK" to see the confirmation dialog box. Press "OK" again to enter the reset interface. XY is reset

MT reset		Press "OK" to see the confirmation dialog box. Press "OK" again to enter the reset interface and reset the small motor
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2.2.6 Factory Settings

Options	Instructions	
Electrical calibration	The X axis	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 adjustment range is -128~+127, +0 means no adjustment.
	Y	
	Color plate	
	Fixed pattern disc	
	Glass patterned disc	
	Glass pattern rotation	
	Effect disk zero	
	Effect plate stroke	
	Show refers to zero	
	Show refers to travel	
	Color temperature cyan	
	magenta	
	yellow	
	focusing	
	amplification	
	Prism 1 zero	
	Prismatic 1 stroke	
	Prism 2 zero	
	Prismatic 2 stroke	
	Prism 1 rotation	
	Prism 2 rotation	
	Atomization zero	
	Atomization trip	
	Cutting disc	
	The aperture	
XY speed regulation	The X axis speed	000-255, slow to fast adjustment
	The Y axis speed	
Fan regulation	Fan regulation	Do only temporary adjustment, power does not save
	The fan speed	

3. 16 Channel function

3.1 The Channel List

Channel	Function
1	Pan
2	Pan fine
3	Tilt
4	Tilt fine
5	PT speed
6	Strobe
7	Dimmer
8	Color
9	Gobo
10	Focus
11	Prism 1
12	Prism 1 rotation
13	Prism 2
14	Prism 2 rotation
15	Bulb control & reset
16	Lamp & Reset

Channel description:

Channel	Function	Value	Function description
1	X	000-255.	Horizontal 540 degree scan
2	X Fine	000-255.	Horizontal 1.2 degree fine tuning
3	Y	000-255.	Vertical 270 degree scan
4	Y Fine	000-255.	Vertical 1.2 degree fine tuning
5	XY Speed	000-255.	Speed from fast to slow
6	Shutter	000 001-050. 051-240. 241-249. 250-252. 253-255.	Light brake closed Light gate open → (controlled by dimming channel) Stroboscopic from slow to fast Light brake on → (controlled by dimmer channel) Light brake closed Light gate open → (controlled by dimming channel)

7	Dimming	000-255.	Dark to light
8	Color	000-004. 005-009 0010-014 015-019 020-024 025-029 030-034 035-039 040-044 045-049 050-054 055-059 060-064 065-069 070-074 075-079 080-084 085-089 090-094 095- 099 100-104 105-109 110-114 115-119 120-124 125-129 130-134 135-139 140-200 201-255	White light White light + Color 1 Color 1 Color 1+ Color 2 Color 2 Color 2+ Color 3 Color 3 Color 3+ Color 4 Color 4 Color 4+ Color 5 Color 5 Color 5+ Color 6 Color 6 Color 6+ Color 7 Color 7 Color 7+ Color 8 Color 8 Color 8+ Color 9 Color 9 Color 9+ Color 10 Color 10 Color 10+ Color 11 Color 11 Color 11+ Color 12 Color 12 Color 12+ white light Color 13 Color 13+ white light Positive flowing water (from fast to slow) Reverse flow (slow to fast)
9	Gobo	000-004 005-009 010-014 015-019 020-024 025-029 030-034 035-039 040-044 045-049 050-054 055-059 060-064. 065-069. 070-074. 075-079	Gobo 1 Gobo 2 Gobo 3 Gobo 4 Gobo 5 Gobo 6 Gobo 7 Gobo 8 Gobo 9 Gobo 10 Gobo 11 Gobo 12 Gobo 13 Gobo 14 Gobo 15 Gobo 16

		080-084. 085-089. 090-094. 095-099. 100-104. 105-109. 110-114. 115-119. 120-124. 125-129. 130-134. 135-139. 140-144. 145-149. 150-154. 155-159. 160-164. 165-169. 170-210. 212-255.	Gobo 17 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) Gobo 8 Shake(from slow to fast) Gobo 9 Shake(from slow to fast) Gobo 10 Shake(from slow to fast) Gobo 11 Shake(from slow to fast) Gobo 12 Shake(from slow to fast) Gobo 13 Shake(from slow to fast) Gobo 14 Shake(from slow to fast) Gobo 15 Shake(from slow to fast) Gobo 16 Shake(from slow to fast) Gobo 17 Shake(from slow to fast) Forward flowing water (from slow to fast) Reverse flow (slow to fast)
10	Focus	000-255.	Gobo clarity from far to near
11	Prism 1	000-127. 128-255.	None Prism cut in
12	Prism 1 Rotate	000-127. 128-191. 192-255.	Prism Angle adjustment Reverse rotation (from fast to slow) Forward rotation (from slow to fast)
13	Prism 2	000-127. 128-255.	None Prism cut in
14	Prism 2 Rotate	000-127. 128-191. 192-255.	Prism Angle adjustment Reverse rotation (from fast to slow) Forward rotation (from slow to fast)
15	Frost	000-127. 128-255.	None Frost cut in
16	Lamp& Reset	000-009. 100-105. 200-205. 250-255	None Lamp Off Lamp On Reset All

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.

TECHNICAL PARAMETERS

Light Source

Light source: 480W

Life expectancy: 2,000 hours

Optical System

Luminous flux: 29000LM

Light output angle: 1.9°

Color temperature: 7000K

Lens diameter: 180MM

Lens: high-precision optical lens

Power Supply

Input voltage: AC115/230V 50/60Hz

Input power: 650W

Functional Effect

Color wheel: 13 colors + white light, two-way variable speed rainbow effect

Gobo wheel: 17 fixed gobos + white light

Atomization: 1 atomizing mirror
Double prism: 8-16 prism bidirectional variable speed rotation
Dimming: 0-100% linear adjustment
Strobe: 1-13 times/second
Focus: electronic focus
Controls and Procedures
Control mode: DMX/DRM/DMX antenna (optional)
Channel mode: 19 channels in simplified mode, 24 channels in standard mode
Display system: LED touch screen can be rotated 180 degrees

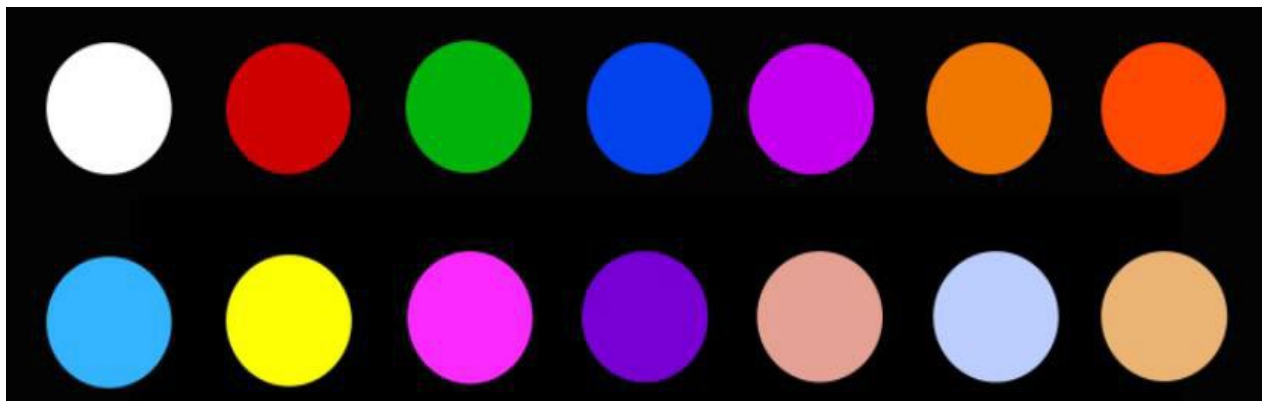
Pan&Tilt Axis

Pan rotation angle: 540° (8/16 bits)
Tilt rotation angle: 270° (8/16 bits)
Pan&Tilt axis position correction

Lighting Specifications

Height: 640mm
Width: 400 mm
Depth: 285mm
Net weight: 21.5KG
Protection class: IP20
Working environment: 0-45°C

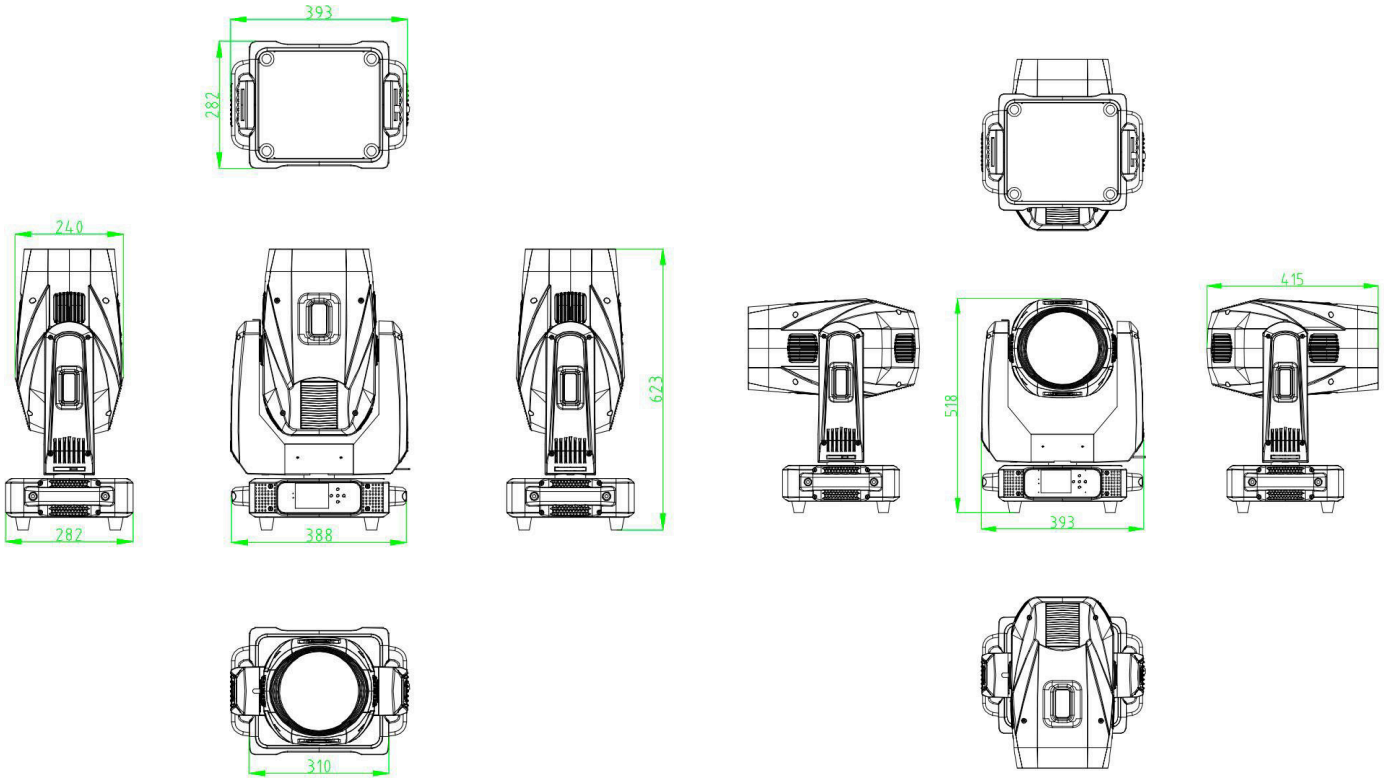
COLOR WHEEL



GOBO WHEEL



FIXTURE SIZE



REMARK

The product has perfect performance and integrity packing. All users should be strictly comply with the warning

and operating instructions as stated. Or we aren't in charge of any result by misusing. Any damage resulting by misuse is not within the Company's warranty.

Any fault or problem caused by neglecting the manual is also not in the charge of dealers. Errors and omissions for every information given in this manual excepted.

All information is subject to change without prior notice.

Thank you again for your patronage!

We will be offering sincere service as always, wish you have a good lighting journey!

Innovation, Quality, Performance