Mini BEAM 420 IP

User Manual

Guangzhou Mitek Light Co.,LTD
Email: info@miteklight.com
Website: www.miteklight.com
Add: No. 21 Dongfeng Avenue, Automobile Industry Base, Huadu District, Guangzhou

TECHNICAL PARAMETERS

Light source

Voltage: Wide voltage range 110V-240V 50-60Hz
Power: 550W
Philips 420W+LED Ring

Optical

Beam Angle: 0-1.8°
Lens diameter: 165mm

Controls

Control Methods: DMX 512, RDM, self-propelled, master-slave self-propelled.
Display: LCD display adapts to various installation positions.
Latest motherboard programming: Supports RDM and built-in programs: Multiple built-in effects programs are available, including single-beam white slow swing, single-beam color-changing slow swing, and multi-beam color-changing slow swing.

Effect

Color: Color wheel: 13 + 1 + rainbow effect + fog function
Gobo: Gobo wheel: 13 fixed gobos + 1 white light
Focus: Electronic linear high-definition dynamic focus, using high-density glass optical lens
Linear dimming curve: 0%-100% linear dimming
Prism: 8 prisms or 8+16 prisms stacked and rotatable, with macro functionality.

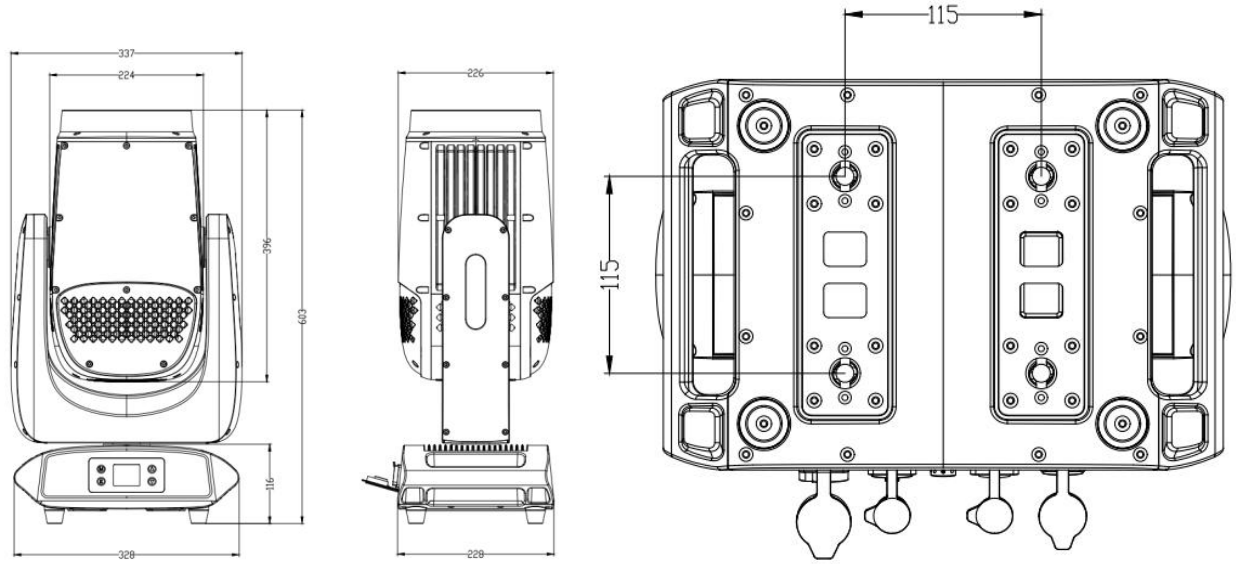
Construction

XY Motor: Three-phase electric drive, powerful, fast, stable, and quiet.
Horizontal/Vertical: The waterproof lamp features a 540° horizontal or 270° vertical scanning speed, with fast and stable speed.
The lamp is equipped with an intelligent photoelectric reset correction system, automatically returning to its original position in the event of an accidental misoperation. It also features horizontal and vertical lock buttons for easier maintenance and transportation.

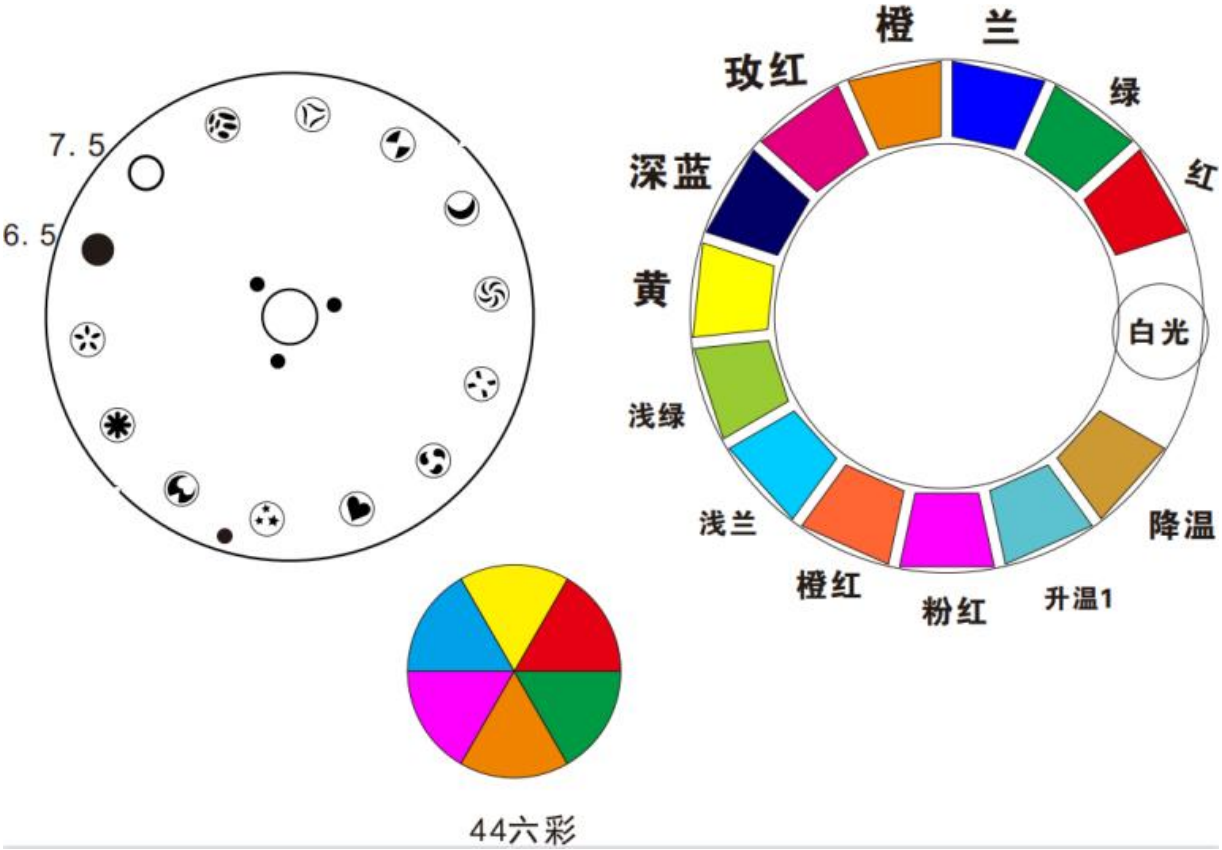
Weight&Dimension

Lamp Dimensions: 329*228*603mm
Net Weight: 19.8KG
Packing Dimensions: 64.5*49*42cm
Gross Weight: 24KG
Flight Case : 80*40*81cm(2in1)

SIZE DRAWING



Color + pattern + colorful



Effect

Chapter 1 Precautions and Installation

Installation

1.1 Declaration

Thank you for choosing our products! 8, This product is in good condition and the package is complete when it leaves the factory. For your safe and effective use of this product, before you use this product, please read this manual carefully and completely. This manual contains important information for installation and use. 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 all responsibility for damage to lamps or other performance due to individuals not operating in accordance with 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.
- This lamp should be kept dry and avoid working in wet environment.
- Intermittent use will effectively extend the life of the luminaire.
- In order to obtain good ventilation and lighting effects, pay attention to cleaning the fan and fan net as well as the lens often.
- Do not rub the luminaires housing with organic solvents such as alcohol to avoid damage.

1.3 Product precautions

- This light fixture is for professional use only.
- Ensure that the power supply voltage matches the required power supply voltage of the equipment before operation.
- Do not place this product in a place that is easy to loose or shake.
- During use, if the lamp is abnormal, stop using the lamp in time.
- In order to ensure the service life of the product, this product should not be placed in a humid or leaking place, and should not work in an environment where the temperature exceeds 60 degrees.
- When the lamp is used, the power supply voltage change should not exceed ±10%, the voltage is too high, will shorten the life of the lamp, the voltage is too low, it will affect the light color of the lamp.
- After the power off, it takes 20 minutes to use the lamp to cool down fully before it can be used again.

- The rotating parts of the lamp and the attaching accessories must be checked regularly, and the loosening and shaking should be reinforced in time to prevent accidents.
- In order to ensure the normal use of this product, please read this instruction carefully.

1.4 Signal cable connection

Light fixtures feature standard DMX input and output 3-core or 5-core XLR sockets. Use a twisted-pair signal cable shielded specifically for DMX 512; The signal line is generally connected at a distance of 150 meters, and the DMX512 signal amplifier must be added for long distance signal transmission.
Use a shielded twisted-pair signal line from the DMX outlet of the controller to the DMX input of the first device, and from the DMX outlet of the first device to the DMX input of the second device, and so on, until all the lamps are connected. Then install a terminal plug on the last 3-pin connector of the connecting luminaire output on each line. (Weld a 4/1W, 120Ω resistor between the 2 and 3 pins of the 3-pin pin cannon plug).

Important: The wires should not touch each other or the metal housing.

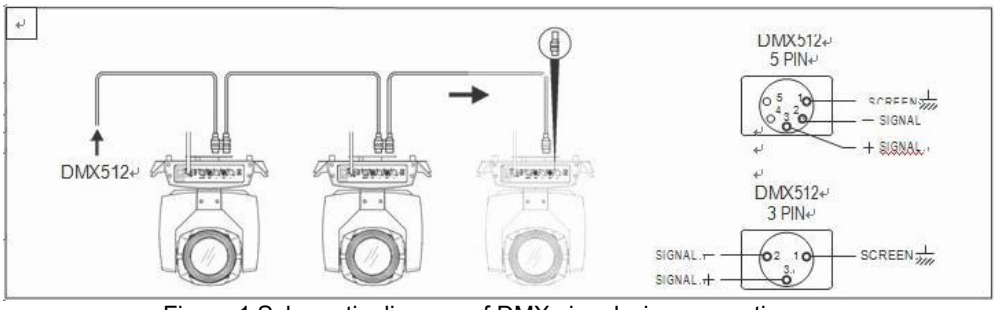


Figure 1 Schematic diagram of DMX signal wire connection

➢ The calculation method of the starting address code of the lamp:
The initial address code of the current luminaire is equal to (the initial address code of the previous luminaire)+(the number of channels of the luminaire)
1: The initial address code value of the first luminaire A001.
2: The basic channel number of the controller should be greater than or equal to the total number of channels used by the luminaire.
3: Note: when using any controller, each luminaire should have its own starting address code, if the first luminaire's starting address code is set A001, the number of luminaire channels is 16CH; Then 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 also needs to be determined according to different consoles)

1.5 Luminaire installation

Luminaires can be placed horizontally, hung diagonally, and hung upside down. Be sure to pay attention to the installation method when hanging diagonally and upside down.

As shown in Figure 2, before positioning the luminaire, it is necessary to ensure the stability of the installation site. During the reverse hanging installation, it is necessary to ensure that the luminaire does not fall down on the support frame. It is necessary to use the safety rope to pass through the support frame and the luminaire handle for auxiliary hanging to ensure safety. Prevent the luminaire from falling and sliding.

During the installation and commissioning of the lamp, pedestrians are prohibited from passing under the lamp, and the safety rope is regularly checked for wear and whether the hook screws are loose.

If the hanging installation is not stable, resulting in the fall of the lamp and all the consequences, our company does not assume any responsibility.

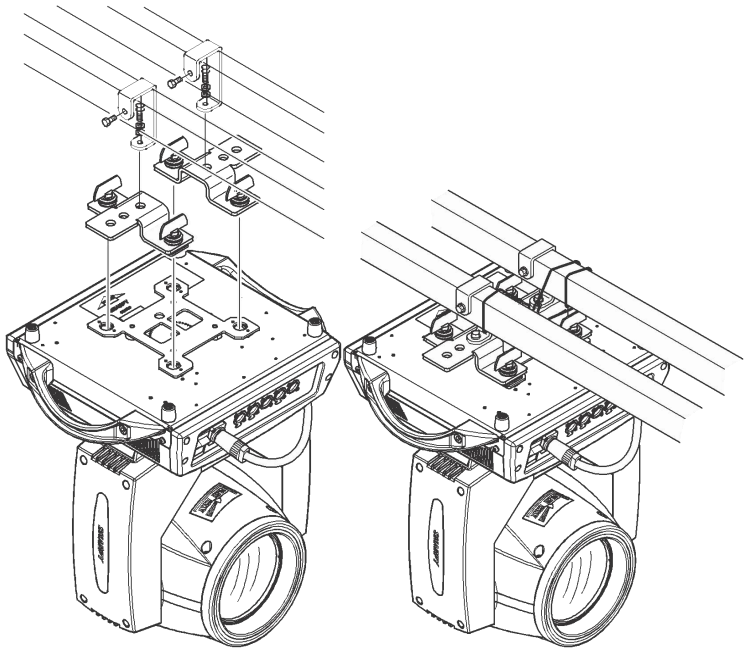


Figure 2 Schematic diagram of the lamp hanging upside down

Control panel

2.1 Key Instructions

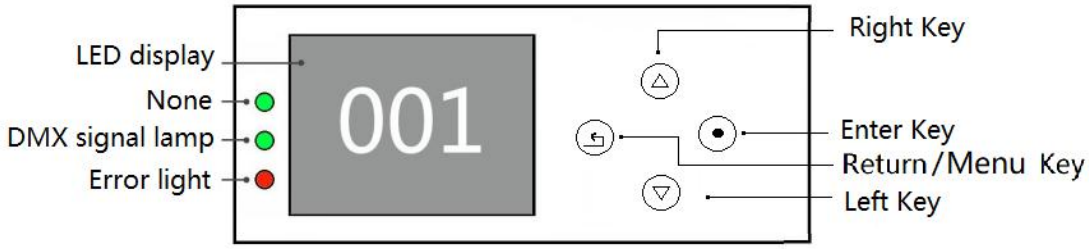


Figure 3 Schematic diagram of key description on the panel

The following takes "Modify DMX address code" as an example to describe the use of keys:
1, if the current is not the main interface, press the "left" key (one or more times) to return to the main interface
2, in the home screen, press the "up" key or "down" key to select the "Settings" button
3. Press the "OK" key to enter the "Settings" interface
4, in the "Settings" interface, press the "up" key or "down" key to select "DMX address"
5, press the "OK" key to enter the editing state
6, press the "up" key or "down" key to modify the DMX address code
7, press the "OK" key to exit the editing state

2.2 Menu Description

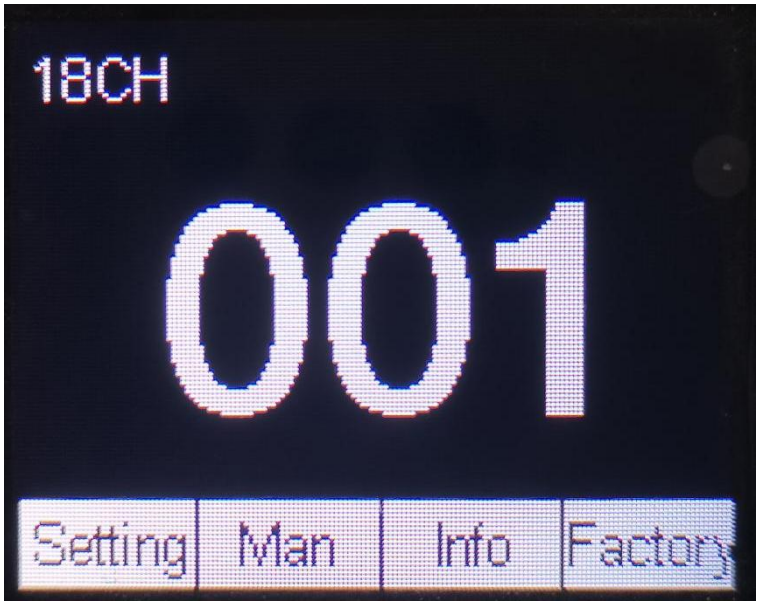


Figure 4 Schematic diagram of main menu

2.2.1 Settings

Options	Instructions	
Run	DMX	Slave state: Receives DMX signals from the console or host
	Bootstrap	Host status: Self-drive and send DMX signal to slave
	Voice Control	
Scene setting		
DMX address	1-512	Press "OK" to enter the editing state. At this time, the hundreds digit is selected, and press the "up" and "down" keys to change the address code. Press the "OK" key again to select the tens edit. Press "OK" again to select the ones edit. Press again to exit the editing state
Bulb	Off	Off Bubble
	On	Bright Bubble
Motor reset	Off	
	On	Light fixture reset
Channel	Standard 16CH	Standard 16 channel mode
	Extended 24CH	Expand 24 channel mode
Language	English	Set to English interface
	Chinese	Set to the Chinese interface
Screen flip	Off	Front display
	On	Screen inverted display
X Inversion	Off	
	On	X Motor direction rotation 540 degrees
Y reversal	Off	
	On	Y Turn the motor 270 degrees in the direction
XY switching	Off	
	On	Channel for switching XY axes (including fine tuning)
XY encoder	On	Use an encoder (optocoupler) to judge out of step and automatically correct the position

	Off	Correct position without using an encoder (optocoupler)
DMX signal	Hold	Continue running in its original state
	Reset	Turn the motor back and stop running
Turn on bright bubble	Off	
	On	Bright bubble after turning on
Linear color	On	The color wheel changes linearly
	Off	Color wheel nonlinear change, half-color change
Clear scene data		Press the "OK" key to clear scene data
Restore default	On	
	Off	Press "OK" to see the confirmation dialog box, press "OK" again to restore the default Settings

➢ **Scene Setup Instructions**

Options	Instructions	
Scene selection	01-20	Select Scenario 1- Scenario 20 for programming
Scene time	0-255.	Set the running time of the current scene, up to 255 seconds
Scene Run	On	The default is on, which will be executed during auto run, and if it is set to interrupt, it will skip the current scene and run the next scene
	Off	
Step 1: Color	0-255.	Set console values 0-255
2 Cut light/strobe	0-255.	
3 Dimmer	0-255.	
4 Pattern plates	0-255.	
5...	0-255.	
6...	0-255.	

2.2.2 Manual control

This interface is used to control the current luminaire (does not receive DMX signals), corresponding to the channel. Refer to the channel table for details

Options	Instructions	
1CH.	0 ~ 255	Press "OK" to enter the editing state. At this time, the hundreds digit is selected, and press the "up" and "down" keys to change the channel value. Press the "OK" key again to select the tens edit. Press "OK" again to select the ones edit. Press again to exit the editing state
...	0 ~ 255	
15CH.	0 ~ 255	
...	0 ~ 255	

2.2.3 Information

Options	Instructions	
Ver		Show software version
DIS		Display board software version
MT		Motor board software version

Time information	Time information Steps 1 Total brightening bubbles 2. Total use	Record the cumulative bright-bubble time Record the lighting time
System error		If the red ERR indicator is bright, it indicates that the lamp is running incorrectly. You can go to the subinterface to view the details. After viewing, you can press the "Clear" button to clear the error record
Blower speed		Displays the current blower speed
Hall Status	0000	0 when magnetic is detected, 1 otherwise
The X-axis encodes the disk step value	0000	The number of steps should increase for forward travel and decrease for reverse travel. The number should be normal every time you reach the same point
The Y-axis encodes the disk step value	0000	The number of steps should increase for forward travel and decrease for reverse travel. The number should be normal every time you reach the same point
Permission Duration		9999 No encryption; Other values can be used with encryption

A. Error message description

Common Error Messages	Instructions
MT board connection failed	Motor board not responding. There is a problem with the serial communication line connecting the display board to the motor board, or there is a problem with the motor board.
X-axis reset failed	There is a problem with the X-axis photoelectric switch, or the X-axis motor or motor board
Y-axis reset failed	Y-axis photoelectric switch, or Y-axis motor or motor board problem
X-axis Hall error	X-axis Hall, or a problem with the motor board
Y-axis Hall error	Y-axis Hall, or a problem with the motor board
Color disk reset failed	Color disk Hall, or there is a problem with the color disk motor
The pattern plate failed to reset	Pattern plate Hall, or pattern plate motor has a problem
The focus reset failed	Focusing Hall, or a problem with the focusing motor
Bulb control failure	Failure to light or extinguish bubbles, lamplighter or bulb problem

2.2.4 Factory

Calibrate	Fan adjustment (test)	Fan regulation
		Blower speed
		Wind speed low off Bubble on/off
	Data download	After changing the display board, download the calibration data of the original display board from the motor board
	X	After entering the sub-interface, the reset position of the motor such as X axis and Y axis can be adjusted to make up for the error on the hardware installation. The adjustment range is -128~+127, and +0 indicates no adjustment.
	Y	
	Colors	
	Gobo	
	Focus	
	Dimming	
	Prism 1 Zero	
	Prism 1 Stroke	

	Prism 2 Zero	
	Prism 2 Stroke	
	Frost white light	
	Frost stroke	
	Colorful mirror stroke	
	Zeroing	close
		On, the data is restored to default values
	X Hall	Off, X Hall report wrong off
		On, X Hall reports the wrong off
	Y Hall	Off, Y Hall reports wrong off
		On, Y Hall reports an error
	Half power	Off, no half power function
		On, with half power function

Channel function

3.1 Channel Table

Channels	24 channel mode
1	Color Wheel
2	Shutter
3	Dimming
4	Gobo
5	Prism 1
6	Prism 1 Rotation
7	Prism 2
8	Prism 2 Rotation
9	Focus
10	X
11	X Fine
12	Y
13	Y Fine
14	XY Speed
15	Frost /Colorful
16	Lamp& Reset
17	LED_Dimming
18	LED_Shutter
19	LED_Red
20	LED_Green
21	LED_Blue
22	LED_Color macro
23	LED_Scene
24	LED_Scene Speed

Channel parameter values (full version) :

Channel	Features	Channel values	Effects
1	Color	000 - 004	White Light
		005 - 009	White light + Color 1
		010 - 014	Color 1
		015 - 019	Color 1+ Color 2
		020 - 024	Color 2
		025 - 029	Color 2+ Color 3
		030 - 034	Color 3
		035 - 039	Color 3+ Color 4
		040 - 044	Color 4
		045 - 049	Color 4+ Color 5
		050 - 054	Color 5
		055 - 059	Color 5+ Color 6
		060 - 064	Color 6
		065 - 069	Color 6+ Color 7
		070 - 074	Color 7
		075 - 079	Color 7+ Color 8
		080 - 084	Color 8
		085 - 089	Color 8+ Color 9
		090 - 094	Color 9
		095 - 099	Color 9+ Color 10
		100 - 104	Color 10
		105 - 109	Color 10+ Color 11
		110 - 114	Color 11
		115 - 119	Color 11+ Color 12
		120 - 124	Color 12
		125 - 129	Color 12+ Color 13
		130 - 134	Color 13
		135 - 139	Color 13+ Color 14
		140 - 144	Color 14
		145 - 149	Color 14+white light
		150 - 202	Backward running water (from fast to slow)
		203 - 255	Forward flow (slow to fast)
2	Shutter	000-003	Light brake open
		004-103	Stroboscopic from slow to fast
		104-107	Light gate on → (controlled by dimmer channel)
		108-207	Pulse stroboscopic from slow to fast
		208-212	Light gate open → (controlled by dimmer channel)
		213-251	Random strobe from slow to fast
		252-255	Light gate open → (controlled by dimming channel)
3	Dimming	000-255.	Dark to light
4	Gobo	000-004	Gobo 1
		005-009	Gobo 2
		010-014	Gobo 3
		015-019	Gobo 4
		020-024	Gobo 5
		025-029	Gobo 6
		030-034	Gobo 7
		035-039	Gobo 8
		040-044	Gobo 9
		045-049	Gobo 10
		050-054	Gobo 11
		055-059	Gobo 12
		060-064	Gobo 13
		065-069	Gobo 14

		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	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) Positive flowing water (from fast to slow) Backward flow (slow to fast)
5	Prism 1	000-127. 128-255.	None Prism 1 Cut in
6	Prism 1 Rotate	000-127. 128-190. 191-192. 193-255.	Prism 1 Angle adjustment Reverse rotation (from fast to slow) Stop Forward rotation (slow to fast)
7	Prism 2	000-127. 128-255.	None Prism 1 Cut in
8	Prism 2 Rotate	000-127. 128-190. 191-192. 193-255.	Prism 1 Angle adjustment Reverse rotation (from fast to slow) Stop Forward rotation (slow to fast)
9	Focus	000-255.	Gobo clarity from far to near
10	X	000-255.	Horizontal 540 degree scan
11	X Fine	000-255.	Horizontal 1.2 degree fine tuning
12	Y	000-255.	Vertical 270 degree scan
13	Y Fine	000-255.	Vertical 1.2 degree fine trim
14	XY Speed	000-255.	Speed from fast to slow
15	Frost & Colorful	000-127. 128-191. 192-255.	None Colorful cut in Frost cut in
16	Lamp& Reset	000-025. 026-050. 061-085. 100-109. 200-209. 251-255.	Safe Reset Effect Reset XY Lamp Off Lamp Off Reset All
17	LED_Dimming	000-255.	Dark to light
18	LED_Shutter	000-003. 004-255.	Light brake open Light brake on → (controlled by light with 17 channel)
19	LED_Red	000-255.	0-100% from dark to light
20	LED_Green	000-255.	0-100% from dark to light
21	LED_Blue	000-255.	0-100% from dark to light
22	LED_Color macro	0-255	
23	LED_Scene	000-031 032-255	
24	LED_Scene speed	000-255	

Common fault

According to some common faults, the corresponding solutions are put forward. Any problems that cannot be solved should be dealt with by professionals. Disconnect the light fixture from the power supply before maintaining it.

The light bulb is not working

- Check that the voltage that matches the light fixture is installed;
- Check whether the lamp power supply connection or control switch is in poor contact;
- Check whether the power supply is insufficient;
- Check that the DMX512 controller is sending instructions.

The light fixture does not accept control from the console after normal reset

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

Luminaire does not start

- Check that the power supply parameters are consistent with the luminaire;
- 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 internal wire integration connector of the lamp has fallen off and is loose.
- Check whether the electronic components of the lamp (such as electronic transformer, PCB board, motor control board, etc.) are loose, short circuit and burned out.

When working, the action of the X axis or Y axis of the luminaire is abnormal

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

REMARK

The product has perfect performance and intergrity 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.