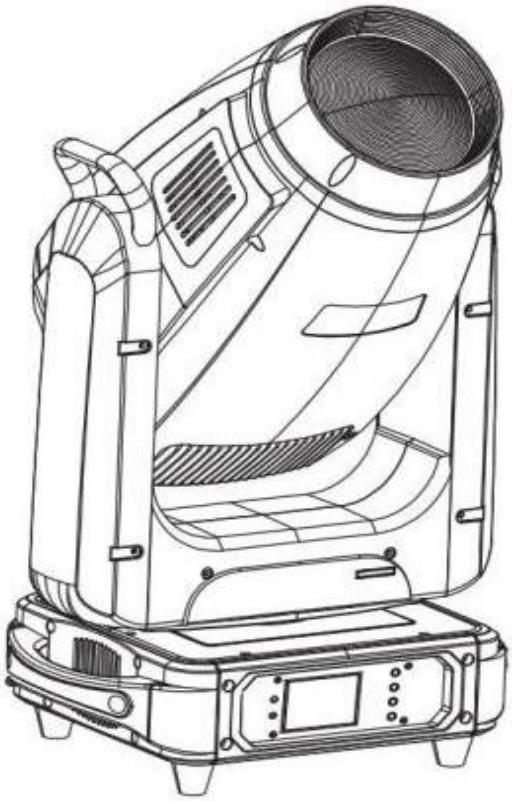
BSWF HP700

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: AC100~240V50/60Hz
Input power: 800W
Light source: 700w LED light source
Average life: ≥20000 hours

Optical

Beam Angle: electron linear zoom 6°-50°
Dimming: 0-100% linear dimming, 16bit resolution, dimming effect is particularly smooth
Aperture: 5%~100% smooth adjustment
Light source color temperature: 7500K

Controls

Control mode: 34CH channel
DMX signal connection: 3-core XLR input and output
RDM mode: With RDM function, you can play the address code directly on the console
Electronic control technology: in the case of non-console operation, if the position is accident ally touched and caused by the situation, the lamp can automatically return to the original po sition
LCD display, user-friendly interface, language support Chinese and English

Effect

Color wheel: 1 color wheel with 7 color pieces
CMY endless color mixing
CTO Color Temperature correction (3300-5800K)
Color rendering index: with adjustable display mode
Pattern plates: 2 pattern plates, one of which has a fixed pattern with 6 metal patterns + fire plates; The other is a rotating pattern plate with 7 replaceable glass patterns, with pattern po sitioning, two-way rotation, pattern water and shake effects
Dynamic effect tray: Super dazzling simulation of dynamic flames, gurgling water and other d ynamic effects
Cutting disc: 4-piece full cutting system, the cutting disc can be rotated 90 degrees
Prism: 1 rotary 3 prism
Atomization: 1 independent soft light mirror +1 display finger
Stroboscopic: electronic stroboscopic

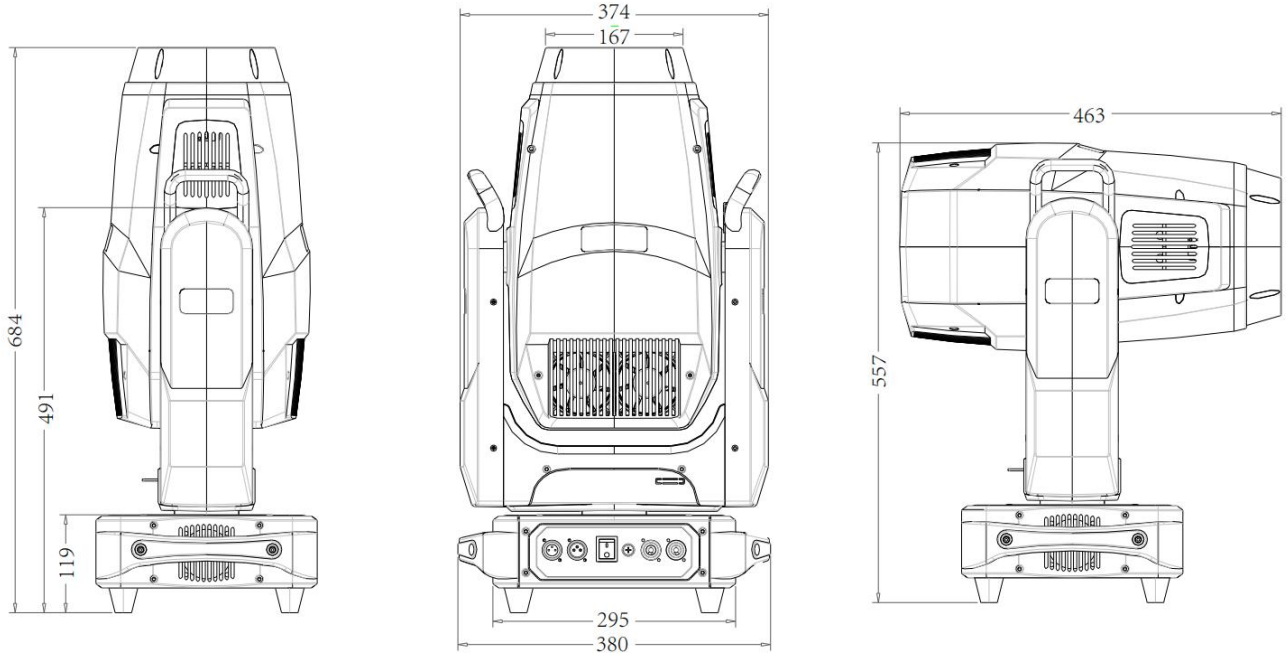
Construction

PAN=540/630°, TILT=270°, 16bit resolution
Heat dissipation system: intelligent fan speed adaptive function, temperature electronic sensi ng detection
Class of protection：IP20

Weight&Dimension

Product Size: 380.5x270x690mm
Net weight: 26kg

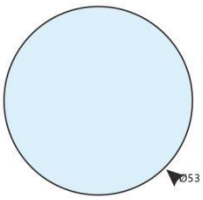
SIZE DRAWING



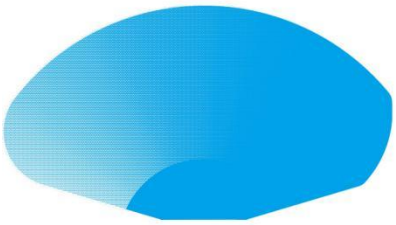
White part is hollowed out Inside15 Outside22.9 $^{+0}_{-0.2}$

Rotation Gobo Wheel

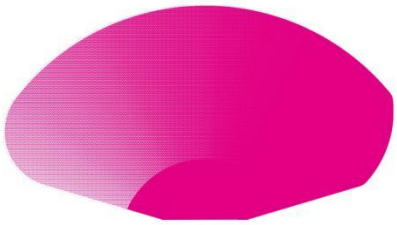
Thickness3.0MM
Deep white waves



CRI Wheel
Φ53Color Wheel

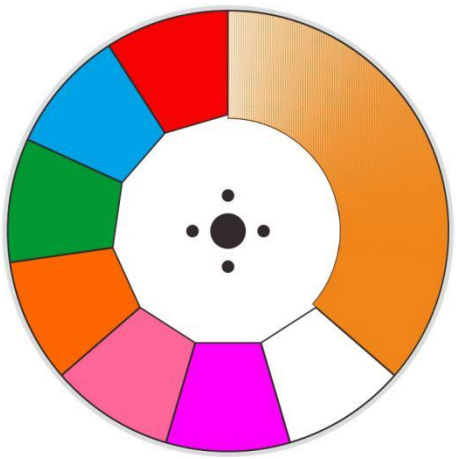


Blue530

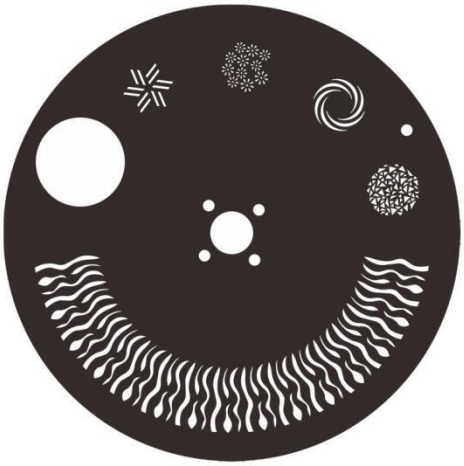


Rose Red450 / 630

Yellow530



Color Wheel



Gobo Wheel+Animation whee

Chapter 1 Installation and attention

1. Maintenance

- To reduce the risk of electrical shock or fire, do not expose this unit to rain or moisture.
- Intermittently using will extend this item's service life.
- Please clear the fan, fan net, and optical lens in order to keep good work state.
- Do not use the alcohol or any other organic solvent to wipe the shell.

2. Statement

The product has perfect performance and integrity packing. All users should be strictly complying 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.

Note: All information is subject to change without prior notice.

3. Safety Precaution

- In order to guarantee the product's life, please don't put it in the damp places or even the environment over 60degress.
- Always keep this unit in safe and stable matter.
- Install or dismantle should operate by professional engineer.
- Using lamp , the change rate of power voltage should be within±10%,If the voltage is too high , it will shorten the light's life; If it's not enough, will influence the effect.
- Please restart it 20 minutes later after turning off the light , until full-cooling. Frequent switching will reduce the life span of lamps and bulbs; intermittent using will improve the life of bulbs and lamps.
- In order to make sure the product is used well, please read the Manual carefully.

4. Cable connection（DMX）

Use a cable conforming to specifications EIA RS-485: 2-pole twisted, shielded, 120Ohm characteristic impedance, 22-24AWG,low capacity. Do not use microphone cable or other cable withcharacteristics differing from those specified. The end connections must be made using XLR type3 or 5-pin male/female connectors. A terminating plugmust be inserted intothe last projector with a resistance of 120Ohm (minimum 1/4 W) between terminals 2 and3.

IMPORTANT: The wires must not make contact with each other or with the metal casing of the connectors. The casing itself must be connected to the shield braid and to pin 1 of the connectors.

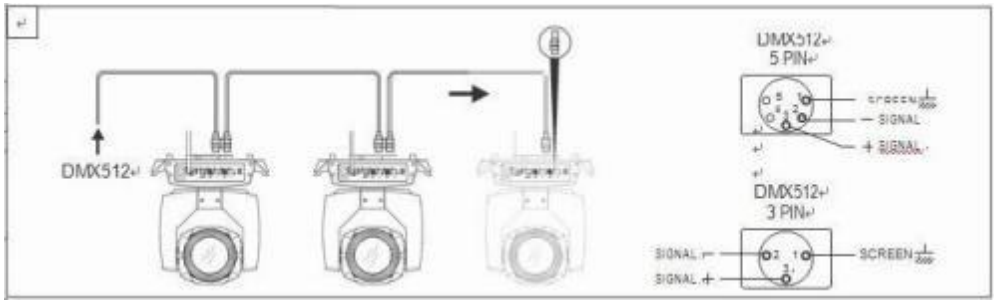


Figure 1 DMX Cable connection

5. Rigging (Optional)

This equipment can be positioned and fixed by clamp in every direction of the stage. Locking system makes it easy to fasten to the bracket.
Attention! Two clamps is needed to fix the equipment. Every clamp is locked by fastener of 1/4 kind. Fastener can only be locked clockwise.
Attention! Fasten a safety string to the additional hole of side aluminum piece. The secondary accessory can not hang on the delivery handle. Nip the equipment on bracket.

- Check if rigging clamp (not including the one inside) damaged or not? If stand ten times weight as the equipment. Make sure the architecture can stand ten times weight as all the equipments, clamps, wirings and other additional fixtures.
- Screws for clamping must be fixed firmly. Take one M12 screw (Grade 8.8 or higher) to clamp bracket, and then screw the nuts.
- Level the two hanging points at the bottom of clamp. Insert fastener to the bottom, lock the two levers by 1/4 rotating clockwise; then install another clamp.
- Install on safety string which stands at least ten times weight as equipment. Terminal of the accessory is designed for clamps.
- Make sure pan/tilt lock unlocked or not. Keep the distance more than 1M from equipment to flammable material or lighting source.

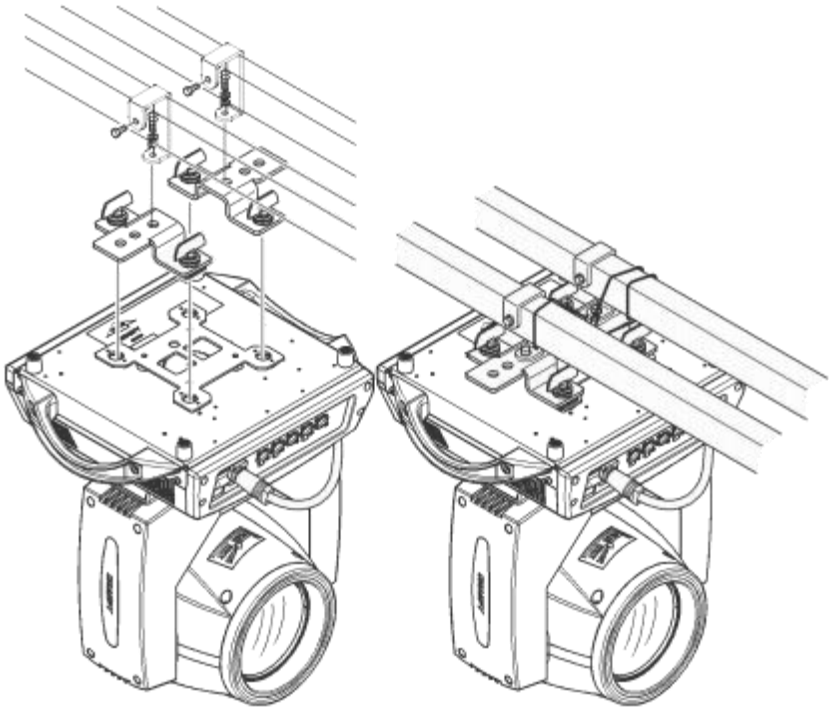


Figure 2 Installation

6. RDM Note

RDM is an extended version of DMX512-A protocol. It is a remote device management protocol.

Traditional DMX512 protocol communication is one-way communication. The protocol is based on RS-485 bus. RS-485 is a time-sharing multi-point, half-duplex protocol. Only one port is allowed to output at the same time. So, when using RDM, we should pay attention to it. The following points:

- To use console or host device that supports RDM host protocol.
- Use bidirectional signal amplifier, traditional one-way signal amplifier is not suitable for RDM protocol, because the RMD protocol needs feedback data, the use of one-way amplifier will block the return of data, resulting in no search fixture;
- All fixture must be set to DMX mode to ensure only one host on the cable.
- A 120 ohm impedance matching resistor must be inserted between terminals 2 and 3 of the terminal plug. When the signal line is longer, reducing the signal reflection will make the differential signal more stable and beneficial to the quality of communication.
- When the fixture appears to accept DMX control, but can not search by RDM host, first check the signal amplifier, and then check whether the signal line 2, 3 lines have bad contact.

Chapter 2 Panel operation

1. Brief

The light panel diagram show as Figure 3, above area is Title for fixture description, below area show fixture real-time status, such as DMX cable status, lamp status, error or information(ps. when there are message haven't been checked, echo 'ERR' in status bar, otherwise echo 'NOR').

Fixture TFT Displayer support touch, and right area is encoder or button, both of touch and coder button can operate fixture and setting.

Display & operation just like 'Android operation system', touch the item will set or modify setting.

RDM protocol is embed in fixture, user set DMX address via cable using the controller support RDM function. when fixture was searched by controller, displayer will echo 'RDM' indicate this RDM is working.

Note: Prevent damage of the touch or TFT displayer, Can not use sharp objects to chick displayer.

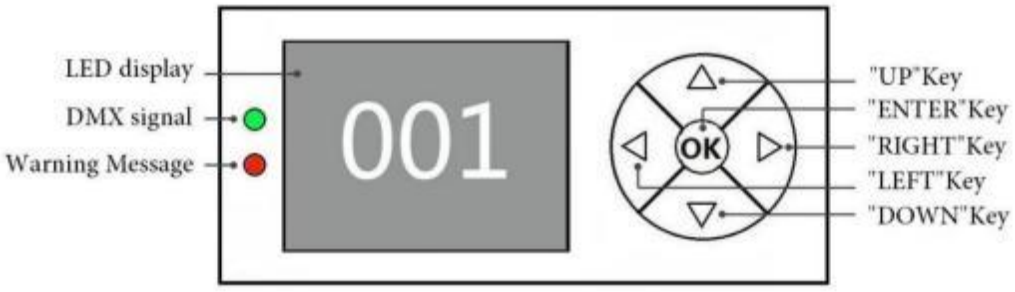


Figure 3 Panel diagram

2. Operation

1. Operate fixture with touch or encoder/button

- The left area is TFT Displayer and touch(product which support touch), click item or value to complete operation of set light setting(parameters) or view light state.
- The area on the right hand side is rotary encoder with button or key, As auxiliary input interface, if fixture disable touch function, the encoder/key can been choose to set or view the item, and then press the encoder button/key to confirm the selection, rotary encoder or push key again set the parameter value, finally, Press encoder button/key one again to save value or setting.

2. Parameter value setting

When the selected item value needed to modified, the dialog shown in Figure 4 will popup.

Figure 4 Dialog of value setting

- **Modify value**：Can quickly modify value via pull the slider to the desired position, or click the button of 'up' or 'down' on the right side to set the exact desired value, another way is roll encoder on the right hand side of panel.
- **Apply value**：When Value had been modified, press the bottom of 'apply' in the left corner to apply to the light, but haven't saved；
- **Save Value**：Any time, click on the lower right corner of the "OK" button, the setting will save into internal memory.

3. Boolean parameter setting

- when the selected parameters is a Boolean value (such as ON or OFF), can directly modify setting by chick corresponding item, the setting will save right now.
- When the parameter is a key item, chick corresponding item, a dialog shown in Figure 5 will been popup ask for the confirm. Chick 'sure' to confirm.

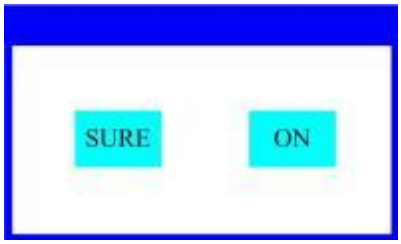


Figure 5 Dialog of confirm

4. Sub Menu（Parameter）

Figure 6 Parameter menu

3. Operation and parameter instruction

Chick item of main menu, enter corresponding sub menu shown in Figure 6, In main menu, chick 1/6 function button into corresponding parameter menu.

In sub menu(page), chick main item on the left side of displayer, can shift to corresponding sub menu(page) quickly.

1. DMX Address setting

Enter page show in Figure6-1, can set fixture DMX address, channel mode and so on.

The menu settings of fixture have optimized the setting of addresses. Several settings of the address are as follows:

- Select " previous " or "next", the fixture will be based on the current address and channel mode, automatically calculate the next or last address, make address setting can quickly;
- Click on the address value, you can enter the numeric editing window, where you can set any valid address, fixture system automatically get the current number of channels, automatically filter the unusable address (512 - the current number of channels).
- Fixture support RDM protocol, remote address can be set through RDM.

Provide two buttons:

- Channel mode: you can choose different channel modes by cycle.
- Fixture reset: reset all motors. Set Light work mode

2. Fixture operating mode setting

Through the page shown in Figure 6-2, the operating mode of the fixture can be set and the lamp can be controlled. The fixture supports four operating modes (DMX mode, auto mode, voice control mode and scene mode). Detailed parameter settings can be refer in the previous section. Specific parameter descriptions are as follows:

operating mode

DMX Mode	DMX mode, receive DMX signal, RDM signal	
Auto Run	Fixture run automatically according to built-in programs	
Sound Mode	When the fixture detects a strong sound, the fixture automatically runs a scene according to the built-in program, otherwise it will stay the last scene	
Scene Mode 01	runs in a set scene, which supports most of the custom editing of 10 scenes.	
	1~10	outputs the specified scene
	Auto	Automatically loops the output scene in the set scene time (non-zero) order, and the scene with time 0 automatically ignore
M/S Choose	Master and slave selection,non-DMX mode takes effect, select the mode of data output, fixture detect DMX cable state automatic switch output, prevent data conflicts	
	Master	fixture runs built-in program. If DMX has no signal, it outputs data (synchronization), otherwise it does not output data.
	Slave	fixture runs built-in program and do not output data
	Auto	If DMX has no signal, the fixture will runs built-in program. Otherwise, the fixture will run in DMX Mode(follow DMX).
Lamp switch	(Lamp light source) pop-up confirmation dialog box, select "SURE" to confirm the current operation, turn on or off the lamp, switch time interval limited to 30 seconds	
	Off	the current lamp output is off
	On	The current lamp output is turned on

Scene mode applies to a single or a small number of fixture, just output a fixed scene, or need to run a simple program, you no need connect to the console, in the scene page can be edited.

If the light source is lamp, wait for 10 minutes before turning off the lamp.

3. Set display

The fixture support Chinese and English, invert display and so on. Enter the corresponding parameter settings as shown in Figure 6-3. The specific menu contents are as follows:

DISPLAY SETTING

Language	display language settings	
	English	English display
	Chinese	Chinese display
Screen saver	Set screen 30 seconds without operation, the screen's display content or method.	
	OFF	Keep the last operation page
	Mode1	Black
	Mode2	Black screen, showing the address code of the current fixture in the lower left corner.
	Mode3	Display trademark information, address code and operation mode.
Screen Rot	Set the display direction of the screen.	
	OFF	No reverse display
	ON	Reverse display
	AUTO	Automatically detect the direction of lamps and automatically switch direction.
DMX Indicate	Set the indication mode of DMX signal indicator.	
	Mode1	When signal is bright, no signal is off.
	Mode2	When signal is off, no signal is bright.
	Mode3	When signal is flash, no signal is off.
Signal Bright	Set the brightness of the signal indicator	
	1~10	10
Screen Light	Set the screen backlight for 10 seconds without operation	
	1~10	10
Touch switch	Choose whether to disable the touch function. When the screen touch is accidentally damaged, you can disable the touch function and use auxiliary input to set the fixture.	
Touch	When the screen touch function work anomaly, you can enter the corrected page correction screen touch	

Which fixture support touch function, if there is a bad touch, you can enter the correction page to re-calibrate the touch accuracy of the touch screen, under normal circumstances, do not enter this page. If the touch is damaged, please choose to disable the touch switch.

4. Scene

Enter the page shown in Figure 6-4, and the fixture enters the scene editing mode. Under this page, the fixture does not receive DMX console data, and the edited data will effect on the fixture immediately.

The content of the page depends on the currently selected channel mode, and the channel content and order displayed are consistent with the fixture channel table. Through this page, you can edit 10 scenes, as shown in the following table:

SCENE MODE

Scene Select	Select the current operation scenario.	
	1~10	The 10 scenes sets the format
Scene Time	Sets the retention time of the current scene when it is automatic, unit in 0. 1 seconds.	
	0	The current scene is not output in automatic scene output.
	1-255	0.. 1s-25.5s
1. PAN	0-255	Set up the data of each channel, and the contents and order of the display are one-to-one correspondence with the channel list of fixture.
·····	0-255	
·····	0-255	
N. Function	0-255	

If the reset channel in the scene edits the effective reset data, the fixture will reset, but after reset, the corresponding reset channel value will automatically set 0, preventing multiple consecutive resets.

Looking at this page, you can get the current channel table slot of the fixture. For specific channel data, please refer to the detailed channel description.

5. Set light run parameter

Enter the page shown in Figure 6-5, adjust the field parameters of fixture, facilitate the installation of fixture, etc.

ADVANCED SETTING

Pan Invert	Set the rotation direction of PAN	
	OFF	
	ON	
Tilt Invert	Set the rotation direction of TILT	
	OFF	
	ON	
P/T Rectify	Setting up fixture to detect XY lost step and correct	
	OFF	Uncorrected position after out of step
	ON	After losing step, the position is automatically corrected and the out of step fault is recorded.
Pan Offset	Setting the zero point of the PAN of the fixture	
	4-150	
Tilt Offset	Setting the zero point of the TILT of the fixture	
	4-48	
Data hold	When the fixture is not equipped with DMX signal, the output state of the fixture	
	OFF	No signal, so the motor and light source return to the position and state when reset is completed.
	ON	No signal, keep the last frame DMX data output.
Lamp mode	Set the way to first open the lamp after power up	
	Power on	Turn on the lamp at power up and reset the lamp after 30 seconds.
	After reset	Reset the fixture after 3 seconds when power-on, and turn on the lamp after reset.
	Manual	After reset, manually turn on the lamp through the menu or console.
Factory Setting	Pop up the confirmation box, select "SURE", and return the lamp parameters to the factory settings.	

When choosing power-on mode, the lamp will wait for 30 seconds after power-on, let the lamp fully start, internal voltage is stable enough, then start the reset program, if the field capacity is stable, recommend power-on mode.

When the fixture can not calibrate the position, please check whether the "P/T Rectify" is turned off.

When the signal is unplugged, check the Data Hold setting first if the position of the fixture is not output as expected.

When setting the XY offset, after setting up, please control XY with the maximum stroke first to check that XY will not bump into the positioning rod or shell.

6. Status and information

Entering the page shown in Figure 6-6, you can view the information and real-time status of the fixture to get their usage status. If the fixture need customer service, please provide the status information displayed on the page as a basis for judgment, as shown in the following table:

STATUS INFORMATION

Stepper info	Display information status of all motors and signals in fixture.	
	Hall	No display, indicating that the motor has no Hall, 0 indicating that the motor leaves the correction position point, 1 indicating that the motor is in the correction position point
	Status	Display motor reset status
	PAN	Display real-time position value of PAN optocoupler feedback
	TILT	Display real-time position value of TILT optocoupler feedback
	PAN OP	Displays the PAN TILT optocoupler two signal level state, binary
Error Logging	Show the latest 8 error records when the fixture is reset and running. The error records are not saved after power failure. The current power cycle is valid.	
	Error Logging	Total number of failures detected after power on
	12：:03	The time of power failure when the fault occurs is in minutes.
	Hall error	The effective hall signal is not detected when the motor is reset
	Hall short	When the motor is reset, the hall signal of the motor is always effective
	Optic error	No effective optocoupler signal is detected when the motor is reset.
	Lose stop	The corresponding motor is out of step during its operation.
	Hit	Striking the positioning rod when the motor is reset
	Lamp error	Lamp explosion accident
	NTC error	The temperature sensor signal is abnormal
	Fan error	The main fan is not working properly.
Fixture status	Displays the critical state data of the current fixture for reference.	
	Communication	0~100%, Communication quality of internal data link of lamps and lanterns
	Error count	The number of erroneous frames was detected after power on, and the total number of erroneous frames was detected.
	Light Temperature	Show the temperature of the current light source, "---" means no detection.

	Panel Temperature	Displays the temperature of the current display panel or the ambient temperature.
	Sensor1 Temperature	Display the ambient temperature of the motherboard temperature or the motherboard installation position.
Version	Display the information and version of the current fixture, important reference for after sales maintenance.	
	Device	The name of the fixture is the same as the equipment information of RDM.
	Model	The type of fixture is the same as the model information of RDM.
	Panel	Firmware version and serial number of display panel
	Main Board	Firmware version and serial number of mother board 1
Light time	Record the total cumulative time of light source opening, unit minute, user manual cleaning, as a reference for regular maintenance of light source time	
Total time	The total accumulated time for recording the opening of fixture is not allowed to be removed.	

Chapter 3 Channel description

1. Channel table

This luminaire channel can be viewed in scene mode in order, channel mode is set in the "Address Settings" page, specific details of the data as follows:

CHANNEL TABLE

39CH	FUNCTION	VALUE	DESCRIPTION
[CH1]	Cyan	0-255	Cyan
[CH2]	Magenta	0-255	Magenta
[CH3]	Yellow	0-255	Yellow
[CH4]	CTO	0-255	CTO
[CH5]	Color Mc	0-255	Color Mc
[CH6]	Colour wheel	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

		70-127	Rotate reverse (slow to fast)
		128-255	Linear colour
[CH7]	Strobe	0-3	Dark
		4-103	Pulse strobe slow to fast
		104-107	Open
		108-207	Fade strobe slow to fast
		208-212	Open
		213-251	Rand strobe slow to fast
		252-255	Open
[CH8]	Dimmer	0-255	0-100% dimmer
[CH9]	Dimmer Fine	0-255	Dimmer Fine
[CH10]	Iris	0-255	Iris
[CH11]	Gobo	0-8	White
		9-17	Gobo1
		18-26	Gobo2
		27-35	Gobo3
		36-44	Gobo4
		45-53	Gobo3
		54-62	Gobo2
		63-71	Gobo1
		72-113	Rotate reverse (fast to slow)
		114-117	Stop
		118-159	Rotate forward (slow to fast)
[CH11]	Gobo	160-173	Shake slow to fast Gobo1
		174-187	Shake slow to fast Gobo2
		188-200	Shake slow to fast Gobo3
		201-214	Shake slow to fast Gobo4
		215-227	Shake slow to fast Gobo3
		228-241	Shake slow to fast Gobo2
		242-255	Shake slow to fast Gobo1
		0-10	White
		11-20	Gobo1
		21-30	Gobo2
		31-40	Gobo3
		41-50	Gobo4
		51-60	Gobo5
		61-65	Gobo6
		66-71	Gobo7
		72-113	Rotate reverse (fast to slow)
		114-117	Stop
		118-159	Rotate forward (slow to fast)

[CH12]	Rotate Gobo	160-175	Shake slow to fast Gobo1
		176-191	Shake slow to fast Gobo2
		192-207	Shake slow to fast Gobo3
		208-223	Shake slow to fast Gobo4
		224-239	Shake slow to fast Gobo5
		240-247	Shake slow to fast Gobo6
		248-255	Shake slow to fast Gobo7
[CH13]	Gobo Rotation	0-127	0-360(degree)
		128-190	Rotate reverse (fast to slow)
		191-192	Stop
		193-255	Rotate forward (slow to fast)
[CH14]	Gobo Fine	0-255	Gobo Fine
[CH15]	Prism	0-127	None
		128-255	Insertion prism
[CH16]	Prism rotation	0-127	0-360(degree)
		128-190	Rotate forward (fast to slow)
		191-192	Stop
		193-255	Rotate reverse (slow to fast)
[CH17]	Effect entry	0-255	Effect entry
[CH18]	Gobo effect	0-255	Gobo effect
[CH19]	Frost	0-3	None
		4-255	Linear frost
[CH20]	Color2	0-255	Color2
[CH21]	Focus	0-255	Far to near
[CH22]	Zoom	0-255	big to small
[CH23]	Frame1	0-255	Frame1
[CH24]	Frame2	0-255	Frame2
[CH25]	Frame3	0-255	Frame3
[CH26]	Frame4	0-255	Frame4
[CH27]	Frame5	0-255	Frame5
[CH28]	Frame6	0-255	Frame6
[CH29]	Frame7	0-255	Frame7
[CH30]	Frame8	0-255	Frame8
[CH31]	Frame Rotation	0-255	Frame Rotation
[CH32]	Frame Macro	0-255	Frame Macro
[CH33]	Macro Speed	0-255	Macro Speed
[CH34]	Pan	0-255	0-540(degree)
[CH35]	Pan Fine	0-255	0-2(degree)
[CH36]	Tilt	0-255	0-270(degree)
[CH37]	Tilt Fine	0-255	0-1(degree)
		0-25	None

[CH38]	Reset	26-76	Reset Effect motor over 3 seconds
		77-127	Reset XY motor over 3 seconds
		128-255	Reset fixture over 3 seconds
[CH39]	Function	0-255	Function

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.