600W BSW 3IN1 MOVING HAED IP65

USER MANUAL

Technical parameters

●Voltage: AC90V-240V 50-60Hz

●Driver power supply: dual power supply, one 800w and one 300w

●Rating power: 750W

●Light source: LED 600W module

●Color temperature; （6500K-2700K）

●Color Wheel:7 color+white light+CMY+CTO+atomization function

●A color palette with 7 different colors can achieve bidirectional rainbow effect, half color, and linear adjustment

●CMY infinite color mixing with color macro function, CTO linear color temperature adjustment（6500K-2700K）

● Pattern Wheel: 12 fixed pattern +White

●Rotating pattern: 1 rotating pattern disc with 7 optional pattern pieces, capable of variable speed shaking and bi-directional rotation. The pattern rotation has a 16bit precision fine-tuning

●Focus system: electronic focus

●Atomization; It has the function of atomization and can achieve the soft light effect

●Stroboscopic; dual motor independent stroboscopic effect, 0.5-20 times/second, adjustable speed

●Motor: XY axis using encoder with three-phase motor, so that the lamp fast and slow speed stability is high, positioning angle is accurate

●Dimming curve: 0%-100% linear dimming, smooth without flicker

●Beam Angle: 4°-50°

●Channel: 26 channels

●Lens diameter: 148mm

●Waterproof rating: IP65

●Control mode 1:DMX 512, auto run, master and slave, RDM function

● Prism system1 3-prism, 1 8-prism capable of bi-directional variable speed rotation

● Display: LCD display, adapt to different installation positions, can rotate 180°

●Horizontal and vertical: adopt high-precision three-phase magnetic coding motor, accurate positioning, smooth operation, can automatically correct positioning

● Level: 540° rotation, 8/16bit resolution, with fine tuning

●Vertical: 270° rotation, 8/16bit resolution, with fine tuning '.

●Size: 43*30.6*71.8cm Packaging size:56*51*72cm

●Net weight: 30kg

Installation and attention

1. Maintenance

- The lamp can be used outdoor in rain/water/snow,but can not be soaked in water
- 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

- The product can not be directly soaked in water, and the use of lamps will not be affected in normal weather or rainy days, or in the periphery of the lamp body
- Always mount 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 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, 22-24 AWG, low capacity. Do not use microphone cable or other cable with characteristics differing from those specified. The end connections must be made using XLR type 3 or 5-pin male/female connectors. A terminating plug must be inserted into the 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.

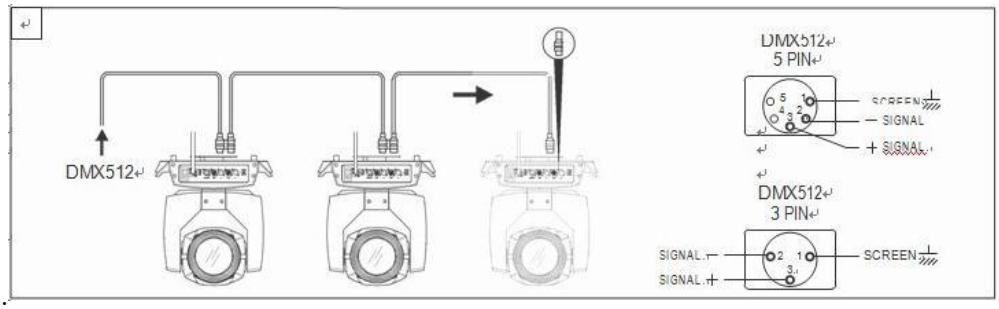

Figure 1 DMX Cable connection

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.

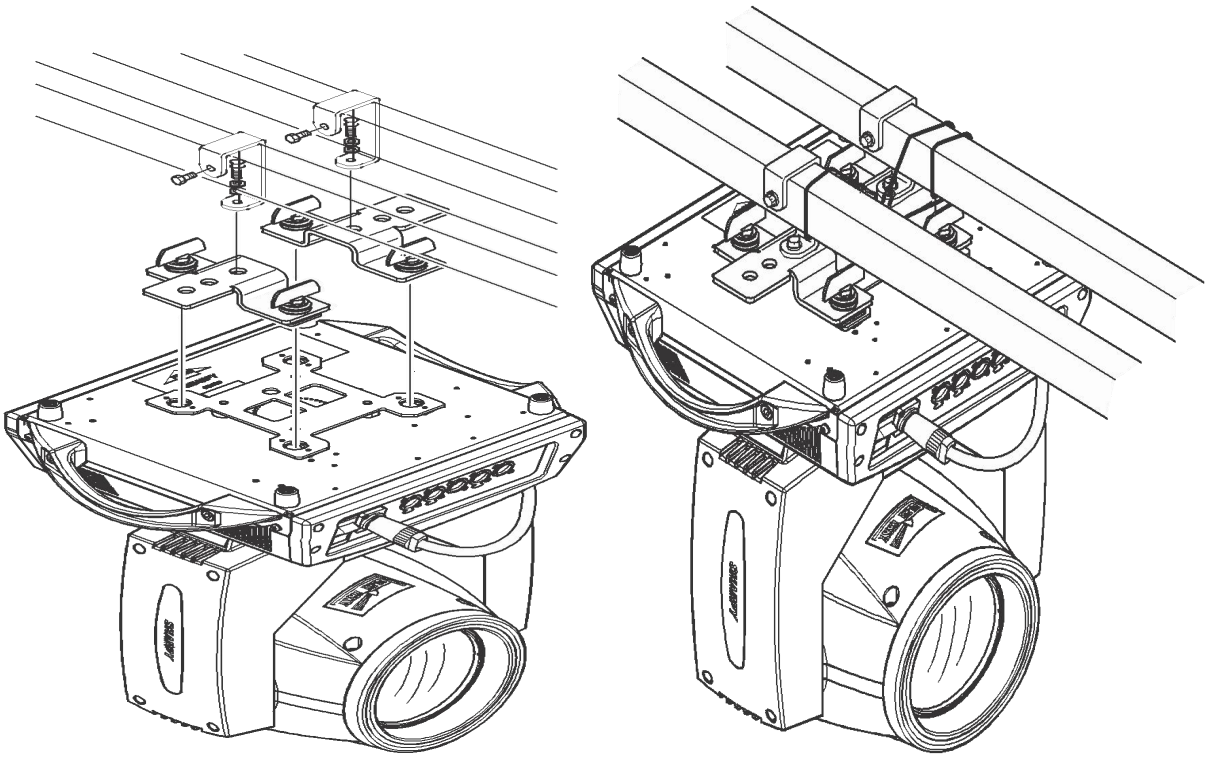

Figure 2 Installation

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 been search by RDM host, first check the signal amplifier, and then check whether the signal line 2, 3 lines have bad contact.

● 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 hav'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 surpport RDM function. when fixture was search by controller, displayer will echo 'RDM' indicate this RDM is work.

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

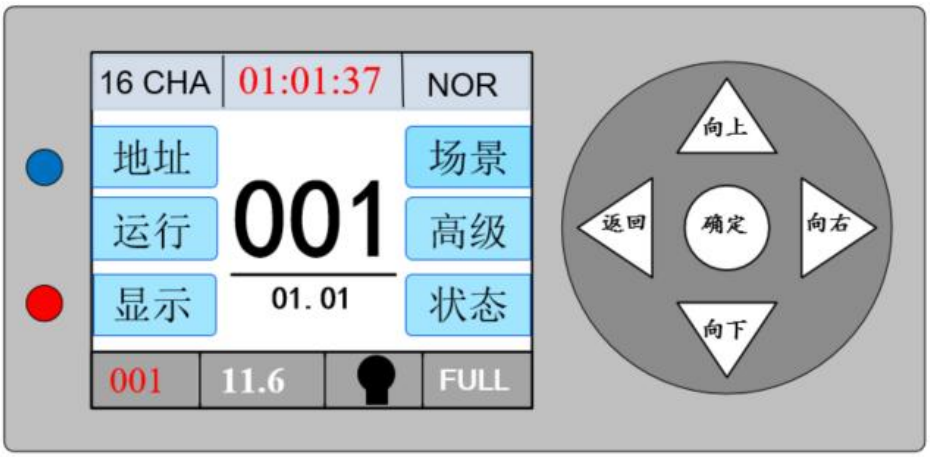

Figure 3 Panel diagram

2. Operation

1. Operate fixture with touch or encoder/button

1-1. The left area is the TFT display area and the touch area. Click the contents of the panel with your finger or blunt hardware to complete the parameter setting or check the status and other operations.

1-2. The right area is the auxiliary input. If you do not use the touch function that comes with TFT, you can use the auxiliary input to select the item to be set or viewed to complete the operation.

2. Parameter value setting

When the selected parameter item needs to enter a value, the window shown in Figure 4 will open..

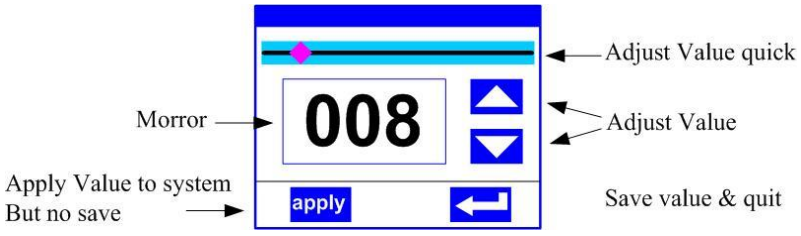

Figure 4 Dialog of value setting

- **Modify value：** You can directly pull the slider to quickly set the required value, or you can click the "up" or "down" button on the right to precisely set the required value or use the auxiliary input to set
- **Applied value：** When the data is set through the "up" or "down" button, and then press the "apply" application button in the lower left corner, the value is immediately sent to the fixture, but the value is not saved.；
- **Save Value：** At any time, click the "OK" button in the lower right corner to save the current value to the internal memory, and the saved value will be applied to the fixture next time it is turned on.

3. Boolean parameter setting

- When the set parameter is a Boolean value (such as ON or OFF), you can directly click the corresponding item to switch the parameter value, and the modified parameter will be saved to the internal storage. Press the parameter option on the right, the corresponding option will be grayed out. When the hand is released, the corresponding parameters are changed and saved. If pressing the parameter option is not the parameter you want to change, you can move your finger to other places on the screen, and the corresponding parameter will not be changed.
- The determination of important Boolean parameters will be passed, and the confirmation window will be set, as shown in Figure 5 below. Chick ‘sure’ to confirm.

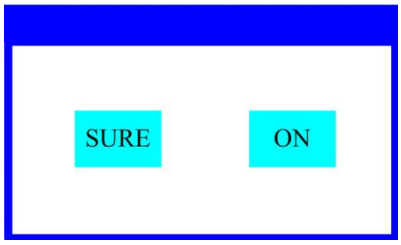

Figure 5 Dialog of confirm

4. Sub Menu（Parameter）

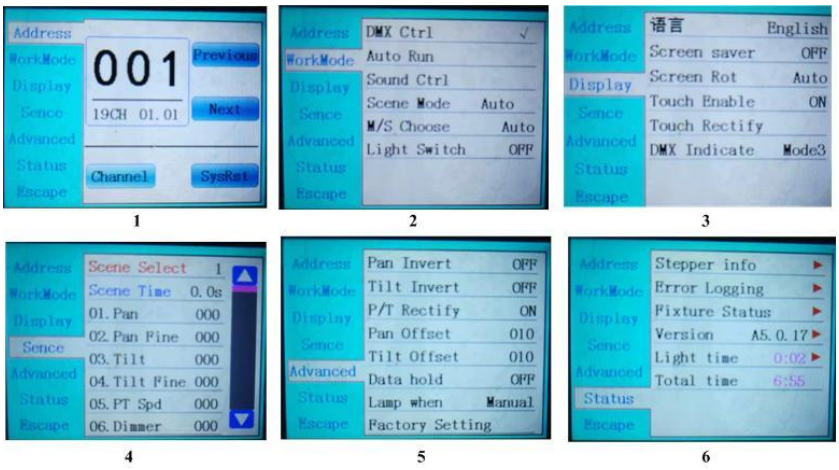

Figure 6　Parameter menu

3. Operation and parameter instruction

Enter the setting interface, as shown in Figure 6-1:

In the main interface, you can enter the corresponding parameter setting interface by selecting six buttons

In the parameter setting interface, you can press the blue option on the left to quickly switch to other setting interfaces

1. DMX Address setting

Through the page shown in Figure 6-1, the DMX address and channel mode of the fixture can be set.
The menu settings of the lamps optimize the address settings. The operations of several address codes are as follows:

- Select "Previous" or "Next", the fixture will automatically calculate the address code of the next or previous unit according to the current address code and channel data, which can be quickly set;
- Click the address code value to enter the value editing window, where you can set any valid address code, the fixture will automatically obtain the current channel number of the fixture, and automatically filter the unusable address code (512-current channel number)
- The lamps support RDM protocol, and the lamp address code can be set remotely 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, you can set the running mode of the fixture and control the fixture. The lamp supports four operating modes (DMX mode, auto run mode, sound control mode and scene mode). For detailed parameter value settings, please refer to the previous section. The specific parameter descriptions are shown in the following table:

operating mode

DMX Ctrl	DMX mode, receive DMX signal, RDM signal	
Auto Run	Fixture run automatically according to built-in programs	
Sound Ctrl	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	It takes effect when not in DMX mode, select the data output mode, the lamp automatically detects the DMX state and automatically switches the output to prevent data conflict	
	Master	The fixture operates as built-in, if there is no DMX signal, it will output data (synchronization), otherwise it will not output data
	Slave	The lamps operate as built-in and do not output data (other lamps are not synchronized)
	Auto	If there is no DMX signal, the fixture operates as built-in, otherwise, the fixture operates as DMX signal
Lamp switch	(Bulb source) A confirmation dialog box will pop up, select "SURE" to confirm the current operation, turn on or off the bulb, and the switching time interval is limited to 30 seconds	
	Off	the current lamp output is off
	On	The current lamp output is turned on

The scene mode is suitable for a single or a small number fixture. You only need to output a fixed scene, or you need to run a simple program. You can edit it in the scene page without connecting to the console.

If the light source is a bulb, after turning off the bulb, please wait 10 minutes before turning on the bulb.

Panel Display Settings

The lamps support Chinese and English, upside-down display, etc., enter the corresponding parameter settings as shown in Figure 6-3, and the specific menu contents are shown in the following table:

DISPLAY SETTING

Language	display language settings	
	English	English display
	Chinese	Chinese display
Screen saver	Set the display content or method of the screen after there is no operation on the screen for 30 seconds	
	OFF	Keep the last operation page and keep the screen on
	Mode1	screen off
	Mode2	The screen is black, and the address code of the current fixture is displayed in the lower left corner
	Mode3	Display trademark information, address code and operating 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 Lihgt	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	

For lamps that support touch operation, if there is a bad touch, you can enter the calibration page to recalibrate the touch accuracy of the touch screen. Under normal circumstances, please do not enter this page. If the touch is damaged, choose to disable the touch switch

Scene mode

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 is reflected on the fixture immediately.

The content of the page depends on the currently selected channel, and the displayed channel content and order are consistent with the fixture channel table. Through this page, 10 scenes can be edited, 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	Set the retention time of the current scene in automatic mode, the unit is 0.1 seconds	
	0	The current scene does not participate in automatic scene output
	1-255	0..1s-25.5s
1. PAN	0-255	Set the data of each channel, the display content and sequence are in one-to-one correspondence with the channel table of the fixture.
……	0-255	
……	0-255	
N. Function	0-255	

If you edit valid reset data in the reset channel in the scene, the fixture will reset, but after reset, the value of the corresponding reset channel will be automatically cleared to prevent multiple consecutive resets.

View this page, you can get the current channel list order of the fixture, please refer to the detailed channel description for specific channel data.

Set the working parameters

Enter the page shown in Figure 6-5, adjust the on-site parameters of the lamps, and facilitate the on-site installation of the lamps, 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	Set whether the fixture detects XY out of step and corrects it	

	OFF	Uncorrected position after out of step
	ON	Automatically correct position after out of step, and record out-of-step fault
Pan Offset	Set the position of the X-axis zero point of the fixture	
	4-150	
Tilt Offset	Set the position of the Y-axis zero point of the fixture	
	4-48	
Data hold	Set the output state of the fixture when the fixture has no DMX signal	
	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 the power-on mode is selected, after the lamp is powered on, it will wait for the bulb for 30 seconds to fully start the bulb. After the internal voltage is stable enough, the reset procedure will be started. If the on-site power consumption is stable, the power-on bulb mode is recommended. .

When the lamp cannot correct the position, please first check whether the "Optocoupler Correction" is turned off.

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

When setting the XY offset, after completing the setting, please control the XY with the maximum stroke first, to check that after the setting, the XY will not hit the positioning rod or the housing.

3. Status and information

Enter the page shown in Figure 6-6, you can view the information and real-time status of the lamps to know the use status of the lamps. If the lamps need after-sales, please provide the status information displayed on this 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	If it is not displayed, it means that the motor has no Hall calibration, 0 means that the motor leaves the calibration position, and 1 means that the motor is at the calibration position.
	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	Display the last 8 fault records when the lamp is reset and running. The fault records will not be saved after the power is turned off, and the current power-on cycle will be 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
	Opti 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 prec	0~100%, Communication quality of internal data link of lamps and lanterns
	Error cnt	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 Temperatrue	Displays the temperature of the current display panel or the ambient temperature.
	Sensor1 Temperatrue	Display the ambient temperature of the motherboard temperature or the motherboard installation position.
Version	Display the information and version of the current fixtrue, 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.	

Channel description

1. Channel table

This light 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

	LIST-1	NAME	VALUE	BRIEF			
	[CH1]	Pan	0-255	0-540(degree)			
	[CH2]	Pan Fine	0-255	0-2(degree)			
	[CH3]	Tilt	0-255	0-270(degree)			
	[CH4]	Tilt Fine	0-255	0-1(degree)			
	[CH5]	Cyan	0-255				
	[CH6]	Magenta	0-255				
	[CH7]	Yellow	0-255				
	[CH8]	Colour					
			0-9	White			
			10-14	White+colour1			
			15-19	Colour1			
			20-24	Colour1+Colour2			
			25-29	Colour2			
			30-34	Colour2+Colour3			
			35-39	Colour3			
			40-44	Colour3+Colour4			
			45-49	Colour4			
			50-54	Colour4+Colour5			
			55-59	Colour5			
			60-64	Colour5+Colour6			
			65-69	Colour6			
			70-74	Colour6+Colour7			
			75-79	Colour7			
			80-84	Colour7+Colour8			
			85-127	Linear colour			
			128-190	Rotate forward (fast to slow)			
			191-192	Stop			
			193-255	Rotate reverse (slow to fast)			
	[CH9]	Rot Gobo					

			0-9	White			
			10-19	Gobo1			
			20-29	Gobo2			
			30-39	Gobo3			
			40-49	Gobo4			
			50-59	Gobo5			
			60-69	Gobo6			
			70-79	Gobo7			
			80-89	Shake slow to fast Gobo1			
			90-99	Shake slow to fast Gobo2			
			100-109	Shake slow to fast Gobo3			
			110-119	Shake slow to fast Gobo4			
			120-129	Shake slow to fast Gobo5			
			130-139	Shake slow to fast Gobo6			
			140-149	Shake slow to fast Gobo7			
			150-200	Rotate forward (fast to slow)			
			201-205	Stop			
			206-255	Rotate reverse (slow to fast)			
	[CH10]	Gobo.Rot					
			0-127	0-360(degree)			
			128-190	Rotate reverse (fast to slow)			
			191-192	Stop			
			193-255	Rotate forward (slow to fast)			
	[CH11]	Gobo					
			0-4	White			
			5-9	Gobo1			
			10-14	Gobo2			
			15-19	Gobo3			
			20-24	Gobo4			
			25-29	Gobo5			
			30-34	Gobo6			

			35-39	Gobo7			
			40-44	Gobo8			
			45-49	Gobo9			
			50-54	Gobo10			
			55-59	Gobo11			
			60-64	Gobo12			
			65-69	Shake slow to fast Gobo1			
			70-74	Shake slow to fast Gobo2			
			75-79	Shake slow to fast Gobo3			
			80-84	Shake slow to fast Gobo4			
			85-89	Shake slow to fast Gobo5			
			90-94	Shake slow to fast Gobo6			
			95-99	Shake slow to fast Gobo7			
			100-104	Shake slow to fast Gobo8			
			105-109	Shake slow to fast Gobo9			
			110-114	Shake slow to fast Gobo10			
			115-119	Shake slow to fast Gobo11			
			120-124	Gobo12			
			125-190	Rotate reverse (fast to slow)			
			191-192	Stop			
			193-255	Rotate forward (slow to fast)			
	[CH12]	Prism1					
			0-127	None			
			128-255	Inert prism1			
	[CH13]	Prism1.R					
			0-127	0-360(degree)			
			128-187	Rotate forward (fast to slow)			
			188-195	Stop			
			196-255	Rotate reverse (slow to fast)			

	[CH14]	Prism2					
			0-127	None			
			128-255	Insert prism2			
	[CH15]	Prism2.R					
			0-127	0-360(degree)			
			128-187	Rotate forward (fast to slow)			
			188-195	Stop			
			196-255	Rotate reverse (slow to fast)			
	[CH16]	Dimmer	0-255	0-100% dimmer			
	[CH17]	Dimmer Spd	0-255				
	[CH18]	Strobe					
			0-3	Dark			
			4-103	Pluse strobe slow to fast			
			104-107	Open			
			108-155	FadeIn strobe slow to fast			
			156-207	Rand strobe slow to fast			
			208-212	Open			
			213-251	Rand strobe slow to fast			
			252-255	Open			
	[CH19]	Gobo.R F	0-255				
	[CH20]	Frost					
			0-127	None			
			128-255	Insert frost			
	[CH21]	Macro	0-255				
	[CH22]	Zoom	0-255	Large to small			

	[CH23]	**Focus**	**0-255**	**Far to near**			
	[CH24]	**Focus F**	**0-255**				
	[CH25]	**PT Spd**	**0-255**	**Fast to slow**			
	[CH26]	**Reset**					
			0-209	**None**			
			210-215	**Reset XY motor over 3 second**			
			216-219	**None**			
			220-235	**Reset Effect motor over 3 second**			
			236-239	**None**			
			240-255	**Reset fxiture over 3 second**			

The lighting channel can be viewed in the scene mode. The channel mode is set in the "address settings" page. The detailed data are shown in the table below:

Common faults and precautions

1. Common troubleshooting

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 bulb is not on (except LED light source)

Possible causes: the bulb is not completely cooled, or the bulb reaches its service life, the treatment is as follows:

●If the bulb is not completely cooled due to abnormal operation, the lamp body should be allowed to cool for more than 10 minutes to make its internal fully return to normal state, and then start the power supply again;

●Check whether the bulb has reached the service life and replace it with a new one;

●Check whether there is leakage, falling off or poor contact between the bulb and the lighting device;

●Replace the lamp with a new one.

2). the beam appears dim

Possible causes: the bulb has been used for a long time or the light path is not clean. The treatment is as follows:

●Check whether the bulb has reached the service life and replace it with a new one;

●Check whether the optical components or bulbs are clean and whether there is dust on the bulbs and other optical components, and regularly clean and maintain the bulbs and components in the lamps.

3). the light effect of pattern projection is fuzzy

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

4). The lamp 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 temperature inside the lamp to rise;

●Check whether the internal temperature control switch is closed;

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

5). the lamp will not be controlled by the console after normal reset

Possible causes: signal line fault or abnormal lamp parameter setting, 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 and the connector is loose);

●Add signal amplifier and 120 ohm terminal resistance;

6). The lamp cannot be started

Possible causes: poor power circuit, treatment as follows:

●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, computer board and other plug-in devices.

2. Precautions

●Check whether the local power supply meets the rated voltage requirements of the product, and whether the leakage protector and over-current protector meet the load requirements;

●Do not use the power cord with damaged insulation layer, and do not lap the power cord on other wires;

●The lamps and lanterns 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 lamps and lanterns 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 lamps should not exceed 10 hours, and the interval between continuous start lamps should not be less than 10 minutes, otherwise, it will not be triggered normally due to the bulb overheating protection;

●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 lamps can better comply with the scene effect, the lamps should not be in the current scene without completion, that is, start the next scene action, preferably this state should not exceed 3 minutes, so as to ensure that multiple lamps can run synchronously;

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

3. 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 unidirectional amplifier will block the returned data, resulting in no lamp search;

All lamps must be set to 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 long, reducing the signal reflection will make the differential signal more stable, 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.