Beam Moving Head Light

LX-300

User Manual

（RDM、Color LRD Display、Touch Operation）

Please read the user manual carefully before using

Contents

Chapter 1 Precautions and Installation

1. Maintenance

- This lamp should be kept dry to avoid working in a humid environment.
- Intermittent use will effectively extend the life of the lamp.
- In order to obtain good ventilation and lighting effects, pay attention to cleaning the fan and fan net and the lens frequently.
- Do not wipe the lamp body with organic solvents such as alcohol to avoid damage.

2. Statement

Its performance is intact and its packaging is complete before this product is shipped from the factory. All users should strictly observe the warnings and operating instructions stated above. Any damage caused by misuse is not covered by our warranty. Distributors are not responsible for failures and problems caused by ignoring the operation manual.

This manual is subject to technical changes without notice.

3. Product Precautions

- To ensure the life of the product, do not place the product in a humid or leaky place, and do not work in an environment where the temperature exceeds 60 degrees.
- Do not place this product where it is liable to become loose or vibration.
- To avoid the danger of electric shock, it need professional people to repair this product.
- When the lamp is used, the power supply voltage should not change more than ± 10%. If the voltage is too high, the life of the lamp will be shortened. If the voltage is too low, the light color of the lamp will be affected.
- After the power is cut off, it takes 20 minutes for the lamp to cool down sufficiently before it can be used again.
- To ensure the normal use of this product, please read this instruction carefully.
- The DMX connection uses an RS-485 cable with shielded, 120ohm characteristic impedance, 22-24 AWG and low capacitive reactance. The terminals must be connected using 3 or 5 pin XLR male / female connectors. (Minimum 1/4 W).
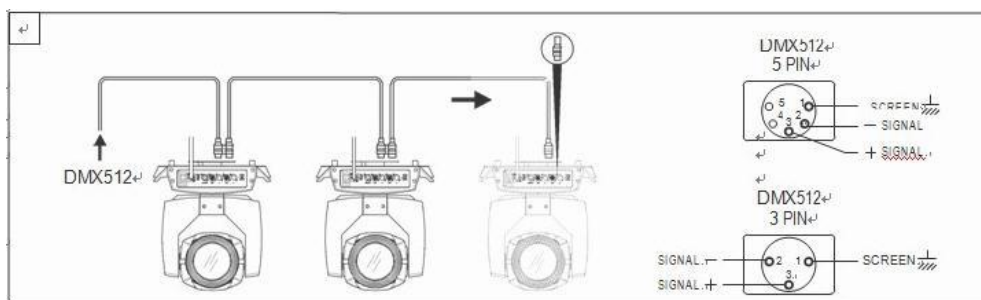 Important notice: The wires must not touch each other or the metal case.

Figure 1 Schematic diagram of DMX cable connection

4. Lighting Installation

The lamp can be placed horizontally, Oblique hanging and upside down hanging. Pay attention to the installation method when Oblique hanging and upside down hanging.

As shown in Figure 2, before positioning the lamp, you must ensure the stability of the installation site. When upside down installation, you must ensure that the lamp does not fall on the support frame, and you need to use a safety rope to pass through the support frame and the lamp handle to ensure safety and prevent the lamp from falling and sliding.

When the lamp is installed and debugged, no pedestrians are allowed to pass under it. Regularly check whether the safety rope is worn and the hook screws are loose.

We will not bear any responsibility for all the consequences caused by the falling

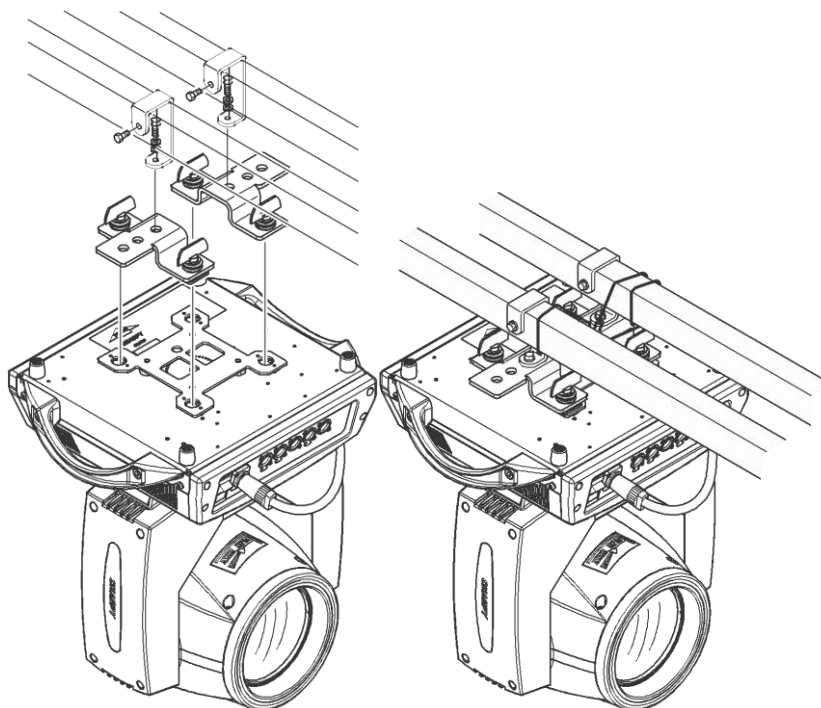of the lamp due to the unstable installation of the hanging.

Figure 2 Schematic diagram of upside down lamps

Chapter 2 Panel Operation

1. Overview

The schematic diagram of the luminaire panel is shown in Figure 3. The title above shows the name of the luminaire, and the status bar below shows the signal of the current luminaire, the status of the lamp, and the fault (When there is no fault information, "ERR" is displayed, otherwise "NOR" is displayed).

This fixture supports DMX / RDM protocol. When the fixture is searched by the RDM host, the three letters "RDM" will appear on the panel, indicating that the fixtures are enumerated normally.

The display and operation are similar to "Android operating system", and you can operate by clicking the corresponding item with your fingertip or a blunt object.

Note: Do not tap the display with sharp object to prevent damage.

Figure 3 Schematic diagram of display panel

2. Menu Operation

1. Select Menu Item

● The area on the left is the TFT display area and the touch area. Use your finger or blunt surface hardware to click on the contents of the panel, and you can complete parameters setting or viewing status and other operations.

● 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 items you want to set or view and complete the operation.

2. Parameter Value Input

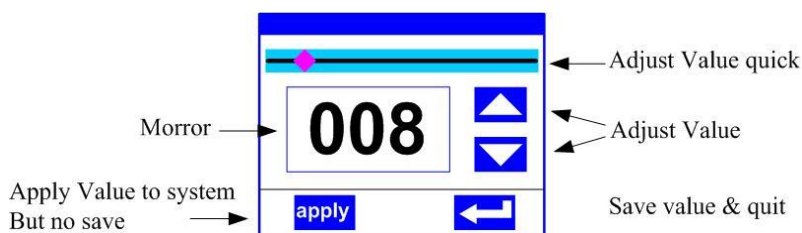When the selected parameter item needs to enter a value, the window shown in Figure 4 will open:

Figure 4 Value setting page

● **Value Settings：**You can directly pull the slider to set the required value quickly, or you can click the right "Up" or "Down" button to set the required value precisely or use auxiliary input to set it.

● **Apply Value：**When the data is set by the "Up" or "Down" button, and the "Apply" button in the lower left corner is pressed, the value is immediately sent to the fixture, but the value is not saved.

● **Vale Save：**Click the "OK" button in the lower right corner to save the current value to the internal memory and apply the saved value to the fixture at the next boot.

3. Setting Boolean Parameters

● When the parameter set is a Boolean value (such as ON or OFF), you can directly click the corresponding item to switch the parameter value. This type of parameter will be saved to the internal memory after modification. Press the parameter option on the right, the corresponding option will be grayed out. When you release your hand, the corresponding parameters will be changed and saved. If pressing the parameter option is not the parameter you want to change, you can move your finger to another part of the screen at this time, and the corresponding parameter will not change.

● The determination of important Boolean parameters will be set through the determination window, as shown in Figure 5 below:
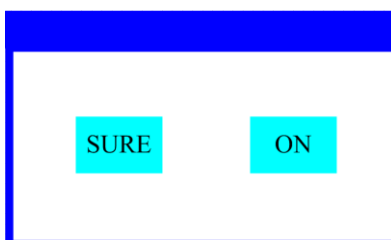

Figure 5 Confirm input window

4. Subpage (Parameters）
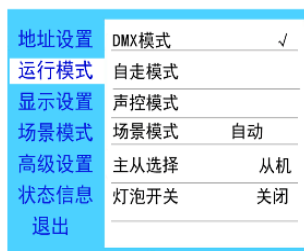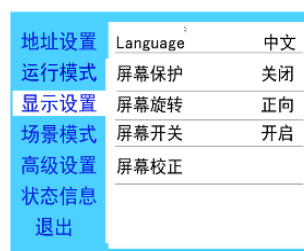

图 6-1地址设置　　　　图 6-2运行设置　　　　图 6-3显示设置
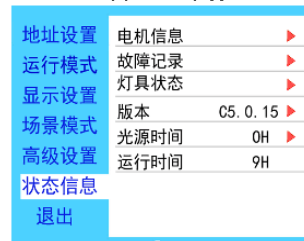
图 6-4场景设置　　　　图 6-5高级设置　　　　图 6-6状态信息

3. Function Menu Description

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 Code Settings

You can set the DMX address and channel mode of the fixture through the page shown in Figure 6-1.

The menu setting of the luminaire optimized the address setting. There are several operations for setting the address code:

● Select "Previous" or "Next", the fixture will automatically calculate the address code of the next or previous device based on the current address code and channel data, which can be set quickly

● Click the address code value to enter the value editing window. Here you can set any valid address code. The luminaire automatically obtains the current channel number of the luminaire and automatically filters the unusable address code (512-current channel number

The lamp supports the RDM protocol, and the lamp address code can be set remotely through RDM.

Two buttons are provided:

● Channel mode: different channel modes can be selected cyclically;

● Fixture reset: reset all motors.

2. Working Mode Settings

The page shown in Figure 6-2 can be used to set the lamp's operating mode and control the lamp. The luminaire supports four operating modes (DMX mode, self-propelled 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 mode	Console mode, receive DMX signal, RDM signal	
Self-propelled mode	Fixtures run automatically according to built-in program	
Sound control mode	When the luminaire detects a strong sound, the luminaire automatically runs a scene according to the built-in program, otherwise it keeps the last scene	
Scene mode 01	Run in set scene mode, support custom editing of up to 10 scenes	
	1~10	Output the specified scene
	Automatic	Automatically output scenes in the order of the set scene time (non-zero). Scenes with time 0 are automatically skipped and ignored.
Self-propelled mode	When not in DMX mode, select the data output mode, the fixture automatically detects the DMX status and automatically switches the output to prevent data conflicts	
	Host	The lamps operate according to the built-in. If there is no signal from DMX, data will be output (synchronized), otherwise no data will be output.
	Sub-host	Fixtures run as built-in, no data is output (other fixtures are not synchronized)
	Automatic	If there is no signal from DMX, the fixture will run as built-in; otherwise, the fixture will work according to DMX
Light bulb switch	(Bulb light source) Launch confirmation schedule, select "SURE" to confirm the current operation, turn the lamp on or off, the switch interval is limited to 30 seconds	
	Close	Current lamp output is off
	Open	Current lamp output is open

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

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

3. Panel Display Settings

The lamp supports Chinese-English bilingual, upside down display, etc. Enter the corresponding parameter settings as shown in Figure 6-3. The specific menu content is shown in the following table:

Display setting

Language	Set the display language	
	English	English display
	Chinese	Chinese display
Screen protector	Set the screen display content or mode after 30 seconds of no operation on the screen	
	Close	Keep last operation page, on screen
	Mode 1	Off screen
	Mode 2	Black screen, showing the address code of the current fixture in the lower left corner
	Mode 3	Display trademark information, address code and operation mode
Screen rotation	Set screen display orientation	
	Close	Do not reverse display
	Open	reverse display
	Automatic	Automatically detect the lamp hanging direction and automatically switch the display direction
DMX instructions	Set the DMX signal indicator	
	Mode 1	On when there is a signal, off when there is no signal
	Mode 2	Off when there is a signal, on when there is no signal
	Mode 3	Flashes when there is a signal, off when there is no signal
Signal indication brightness	Set the brightness of the signal indicator	
	1~10	10 levels
Screen backlight	Set the brightness after 10's of the screen backlight in no operation. Full light during operation	
	1~10	10 levels
Touch screen switch	Select whether to disable the touch screen. When the screen is accidentally damaged, you can disable the touch function and use auxiliary input to set the fixture.	
Touch correction	When the screen touch is not accurate, you can enter the calibration page	

For touch-enabled lamps, if a bad touch occurs, 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 broken, select Disable touch switch.

4. Scene Mode

Enter the page shown in Figure 6-4, the fixture enters the scene editing mode. In this page, the fixture does not receive DMX console data, and the edited data is reflected to 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 selection	Select the current operation scenario	
	1~10	10 scene setting formats
场景时间	Set the retention time of the current scene in auto mode, unit is 0.1 second	
	0	The current scene does not participate in automatic scene output
	1-255	0..1 to 25.5 seconds
1. X axis	0-255	Set the data of each channel. The display content and sequence correspond to the channel table of the fixture.
......	0-255	
......	0-255	
N. Function	0-255	

If the effective reset data is edited in the reset channel in the scene, the fixture will be reset, but after reset, the corresponding reset channel value will be automatically cleared to prevent multiple consecutive resets.

View this page to get the current channel table order of the fixture. For detailed channel data, please refer to the detailed channel description.

5. Parameters Settings

Enter the page shown in Figure 6-5 to adjust the field parameters of the luminaire to facilitate on-site installation of the luminaire, etc.

Advanced settings

X axis reverse	X axis reverse settings	
	Close	Do not reverse
	Open	reverse
Y axis reverse	Set Y-axis rotation direction	
	Close	Do not reverse
	Open	reverse
Optocoupler correction	Set whether the fixture detects XY out of step and corrects it	
	Close	Uncorrected position after out of step
	Open	Automatically correct position after out of step and record out of step failure
X axis offset	Set the position of the zero point of the X axis of the fixture	
	4-150	
Y axis offset	Set the position of the zero point of the Y axis of the fixture	
	4-48	
Data retention	Set the output status of the luminaire when there is no DMX signal	
	Close	No signal, the motor and light source return to the position and state when reset is complete
	Open	No signal, keep the last frame of DMX data output
Lighting mode	Set the way to turn on the lamp for the first time after power on	
	lighting	Turn on the lamp when power on, reset the lamp after 30 seconds
	Lighting after reset	Reset the lamp 3 seconds after power on, turn on the lamp after reset is completed
	Manual lighting	After resetting, manually turn on the lamp through the menu or console

Reset	A confirmation box pops up. After selecting "SURE", the lamp parameters return to the factory settings.

When the power-on mode is selected, the lamp will wait for 30 seconds after the power is turned on to allow the lamp to fully start. After the internal voltage is stable enough, the reset procedure is started. If the on-site power capacity is stable, the power-on lighting mode is recommended.

When the luminaire cannot correct the position, please first check whether the "optical coupling correction" is turned off.

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

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

6. View Fixture Status of Lighting

Enter the page shown in Figure 6-6, you can view the information and real-time status of the luminaire to know the use status of the luminaire. If the luminaire needs to after sale, please provide the status information displayed on this page as a basis for judgment, as shown in the following table:

Status information

Motor information	Display information status of all motors and signals in the light	
	Hall-calibrated	Not displayed, indicating that the motor is not Hall-calibrated, 0 indicates that the motor is away from the calibration position, and 1 indicates that the motor is at the calibration position
	Status	Display motor reset completion status
	X axis	Display real-time position value of X-axis optocoupler feedback
	Y axis	Display real-time position value of Y-axis optocoupler feedback
	Optocoupler	Display the level status of two signals of X, Y axis optocoupler, binary
Fault / status recording	Display the last 8 fault records during lamp reset and operation. The fault records will not be saved after power failure. The current power-on cycle is valid	
	Fault data	Total number of faults detected after power-on
	12：:03	Power-on time when the fault occurred, Unit is minute
	Hall fault	Corresponding motor does not detect a valid Hall signal when the motor is reset
	Hall short	Corresponding to the valid Hall signal detected when the motor is reset
	Optocoupler failure	No valid optocoupler signal detected when the corresponding motor is reset
	Out of step	Corresponding motor out of step during operation
	Impact positioning rod	Impact positioning rod when the motor is reset

	Bulb failure	Bulb accidentally extinguished
	Sensor failure	The temperature sensor signal is abnormal
	Fan failure	Main fan is not working properly
Lighting status	Display key status data of current light for reference	
	Communication	0~100%, Communication quality of the data link inside the luminaire
	Error count	Total number of error frames detected after power-on, cumulative
	Light source temperature	Display the current temperature of the light source, "---" means no detection
	Display board temperature	Display the current temperature of the display board or the surrounding ambient temperature
	Sensor 1 temperature	Display the current motherboard temperature or the ambient temperature of the motherboard installation location
Version Information	Display the information and version of the current light, an important reference for after-sales maintenance	
	device	The name of the light, the same as the equipment information of RDM
	model	Model of the lamp, same as the model information of RDM
	display board	Display board fixed version and serial number
	Motherboard 1	Fixed version and serial number of motherboard 1
Light source time	Record the total accumulated elapsed time when the light source is turned on, unit is minutes. The user manually clears it as a time reference for the regular maintenance of the light source.	
Light time	Record the total accumulated elapsed time for lighting which cannot be cleared. Unit is minutes	

Chapter 3 Channel Description

1. Channel Table

This lamp channel can be viewed in the scene mode. The channel mode is set in the "Address Settings" page. The detailed data is shown in the following table:

Channel	Name	Value	Description
CH1	X axis	0-255	0-540°
CH2	Y axis	0-255	0-270°
CH3	**X-axis fine-tuning**	0-255	0-2°

CH4	Y-axis fine-tuning	0-255	0-1°
CH5	XY speed	0-255	From fast to slow
CH6	Fog	0-127	No
		128-255	Insert fog
CH7	Strobe	0-3	Close light
		4-103	Slow to fast pulse strobe
		104-107	Open light
		108-207	Slow to fast strobe
		208-212	Open light
		213-251	Slow to fast random strobe
		252-255	Open light
CH8	Dimming	0-255	0-100% Dimming
CH9	Color	0-4	White
		5-8	White + Color 1
		9-12	Color1
		13-16	Color1 + Color2
		17-21	Color2
		22-25	Color2 + Color3
		26-29	Color3
		30-33	Color3 + Color4

		34-38	Color4
		39-42	Color4 + Color5
		43-46	Color5
		47-50	Color5 + Color6
		51-55	Color6
		56-59	Color6 + Color7
		60-63	Color7
		64-67	Color7 + Color8
		68-71	Color8
		72-76	Color8 + Color9
		77-80	Color9
		81-84	Color9 + Color10
		85-88	Color10
		89-93	Color10 + Color11
		94-97	Color11
		98-101	Color11 + Color12
		102-105	Color12
		106-110	Color12 + Color13
		111-114	Color13
		115-118	Color13 + Color14
		119-122	Color14

		123-127	Color14 + White
		128-191	Flowing from fast to slow
		192-255	Reverse flow from slow to fast
CH10	**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	Gobo13
		70-74	Gobo14
		75-127	Flowing from fast to slow
		128-130	Stop
		131-185	Reverse flow from slow to fast

		186-190	Slow to fast dithering pattern 1
		191-195	Slow to fast dithering pattern2
		196-200	Slow to fast dithering pattern3
		201-205	Slow to fast dithering pattern4
		206-210	Slow to fast dithering pattern5
		211-215	Slow to fast dithering pattern6
		216-220	Slow to fast dithering pattern7
		221-225	Slow to fast dithering pattern8
		226-230	Slow to fast dithering pattern9
		231-235	Slow to fast dithering pattern10
		236-240	Slow to fast dithering pattern11
		241-245	Slow to fast dithering pattern12
		246-250	Slow to fast dithering pattern13
		251-255	Slow to fast dithering pattern14
CH11	**prism1**	0-127	Remove the prism
		128-191	prism1
		192-255	prism2
CH12	**Prism 1 rotation**	0-127	0-400°
		128-187	Flowing from fast to slow
		188-195	Stop
		196-255	Reverse flow from slow to fast

CH13	prism2	0-127	Remove the prism
		128-191	prism3
		192-255	prism4
CH14	Prism 2 rotation	0-127	0-400°
		128-187	Flowing from fast to slow
		188-195	Stop
		196-255	Reverse flow from slow to fast
CH15	Dimming	0-255	From far to near
		100-105	Turn off the lamp for more than 5 seconds
		200-205	Turn on the lamp for more than 5 seconds
CH16	Reset	210-215	Reset XY for more than 5 seconds
		220-235	Reset effect motor for more than 5 seconds
		240-255	Reset for more than 5 seconds

Chapter 4 Common Failures and Cautions

1. Common Troubleshooting

The lamp contains professional components such as microcomputer circuit boards, high-voltage power supplies, etc. For your safety and product life, non-professionals must not disassemble the lamp and related accessories without authorization.

1. Bulb does not light (except LED light source)

Possible cause: The lamp is not completely cooled, or the lamp has reached the end of its life, the treatment is as follows:

● Due to abnormal operation, the bulb is not completely cooled. The lamp body should

be allowed to cool for more than 10 minutes to fully restore the interior to the normal state, and then turn on the power again;

- Check whether the lamp has reached the end of its life and should be replaced with a new one;
- Check if the light bulb and lighter circuit are leaking, falling off or having poor contact;
- Replace with a new ballast.

2. The beam become dim

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

- Check whether the lamp has reached the end of its life and should be replaced with a new one;
- Check whether the optical components or light bulbs are clean, and whether there is dust on the light bulb optical components. The bulbs and various parts in the lamps should be cleaned and maintained regularly.

3. The pattern is blurred

- Check whether the value of the electronic focus channel is suitable for the current projection distance.

4. The lamp works intermittently

Possible cause: The internal circuit enters the protection state, and the processing is as follows:

- Check whether the fan is running normally or is dirty, causing the internal temperature of the lamp to rise;
- Check whether the internal temperature control switch is closed;
- Check whether the lamp has reached the end of its life and replace it with a new one.

5. After the lamp is reset normally, it will not be controlled by the console.

Possible cause: The signal line is faulty or the lighting parameter settings are abnormal, and the processing is as follows:

- Check the start address code and the connection condition of the DMX signal cable (whether the signal cable cable is intact and the connection head is loose);
- Add signal amplifier and 120 ohm termination resistor;;

6. Light does not start

Possible cause: The power cable is bad, and the treatment is as follows:

- Check whether the fuse on the power input socket is blown and replace the fuse;
- Poor line contact due to vibration during long-distance transportation of lamps
- Check the input power, computer board and other plug-in devices

2. Precautions for Use

- Check whether the local power supply meets the requirements of the rated voltage of

the product, and the leakage protector, overcurrent protector, etc. meet the requirements of the load;

- Do not use power cords with damaged insulation, and do not connect power cords to other wires;

- The lamp uses strong wind cooling, which is easy to accumulate dust. It must be cleaned once a month, especially the cooling air vent, otherwise it will be blocked by the accumulated dust, resulting in poor heat dissipation and abnormality of the lamp.

- When installing the lamp, the fixing screws must be tightened with safety ropes, and checked regularly;

- When installing and positioning the lamp, keep the minimum distance between any point on the surface of the lamp and any flammable and explosive materials at 10 meters and the distance from the irradiated object is 2.5 meters. Please do not install the lamp directly on the surface of flammable substances;

- The continuous working time of the lamp is not recommended to exceed 10 hours, and the interval between continuous startup of the lamp should not be less than 10 minutes, otherwise it will not trigger normally due to overheating protection of the lamp;

- The closing time of the on-off valve should not exceed 5 minutes. If you need to close the light for a long time, you should use the console (lamp control channel) to turn off the lamp;

- In order to ensure that multiple lights better comply with the scene effect, the light should not always be in the current scene, that is, start the next scene action, it is best not to exceed 3 minutes to ensure that multiple fixtures can run synchronously;

- During use, if the lamp is abnormal, stop using the lamp in time to prevent other faults from being induced.

2. RDM Precautions for Use

RDM is an extended version of the DMX512-A protocol. It is a Remote Device Management protocol. The traditional DMX512 protocol communication is one-way communication. The protocol is based on the RS-485 bus. RS-485 is a time-sharing multipoint and half-duplex protocol. Only one port is allowed to be output by the host at the same time, so pay attention to the following points when using RDM:

- To use a console or host device that supports the RDM protocol host;

- To use a two-way signal amplifier, the traditional unidirectional signal amplifier is not applicable to the RDM protocol, because the RMD protocol requires feedback data, and the use of a unidirectional amplifier will block the returned data, resulting in the failure to search for the lamps;

- All lamps must be set to DMX mode to ensure that there is only one host on the signal line;

- A 120 ohm impedance matching resistor must be inserted between terminals 2 and 3 of the terminal plug. When the signal line is relatively long, reducing the signal reflection will let a differential signal to be more stable, which is beneficial to the quality of communication;

- When lamps are under DMX control, but cannot be searched by RDM, first check the

signal amplifier, and then check whether there is a bad contact between the 2 and 3 wires of the signal cable.