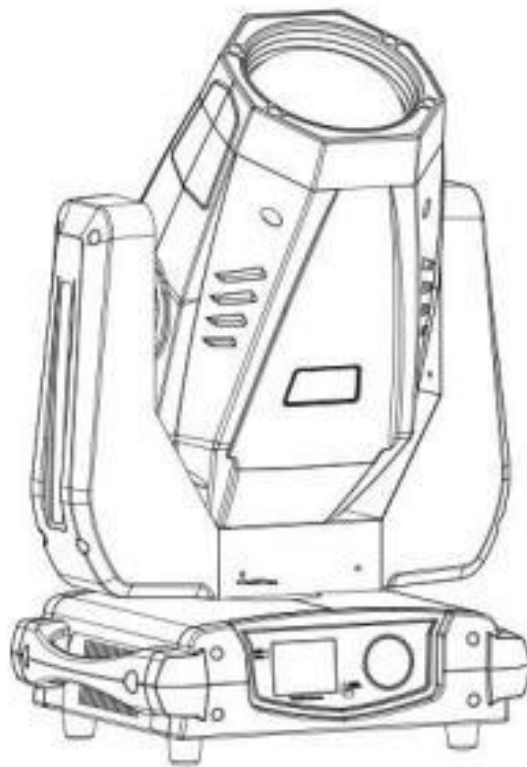


BSW 420

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

Input voltage: AC 200~240V, 50/60Hz (AC100~ 120V, 50/60Hz optional)

power: 650W

lamp source: Philips MSD Platinum 420W Lamp

style: pattern, dyeing, light beam three in one lamp

color temperature can reach 8000K

Optical

lens group optical system, electric focusing

beam angle: 0-20 degree, linear adjustable

Controls

8Bit/16Bit 15.DMX channel: 16CH/22CH

control panel: 2.8 inch color LCD display, can be inverted 180 degrees display.

Effect

color plate: a color plate, with 13 color plates and white light.

pattern plate: two pattern plates, fixed pattern plates, 13 patterns + white light, 9 rotation

patterns. Rotating pattern plate diameter: 15.4mm effective inner diameter: 13mm

effect wheel: two rotatable prisms, a circle eight prism, a straight line six prism, (prism optional).

independent atomization function.

100% mechanical dimming, supporting mechanical strobe and adjustable speed stroboscopic effect, supporting stroboscopic macro function.

Construction

the magnetic reset system is more accurate than the traditional photoelectric reset, and it can be automatically retrieved after accidental malfunction.

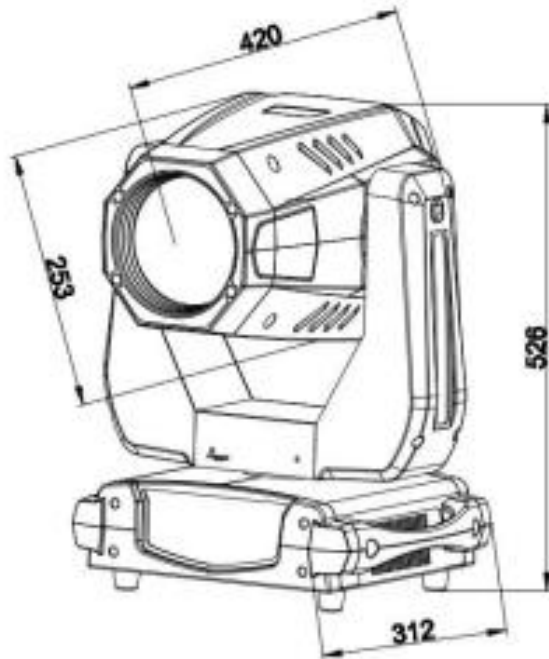
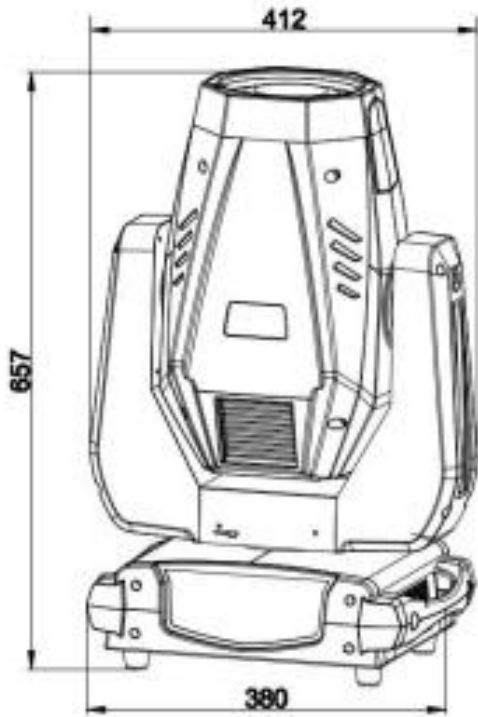
level 540 degree, resolution 8Bit/16Bit, vertical 270 degree, resolution

cooling system, built-in convection fan, with overheating protection function.

IP protection level: IP20

high efficiency and reliable switching power supply

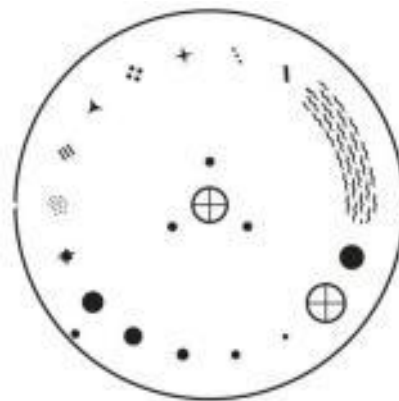
SIZE DRAWING



COLOR WHEEL



FIXED GOBO & ANIMATION WHEEL



ROTATING GOBO WHEEL



Preface

First! Thank you very much for choosing our moving head light.

This product is a high performance beam moving head light, the appearance structure high end atmosphere, the advanced electronic control technology and the excellent humanized industrial design. The light lamp cup and the bulb are a whole, the arc length is very short, the output brightness is strong and the light angle is small, the average service life of the light source is 1500 hours, equipped with Rich color and pattern, 2 rotating prism, 1 atomization effect. Light weight, fast vertical and horizontal scanning speed, low operation noise, low power 500W, energy saving and environmental protection..

It has a wide range of applications and simple installation; it can be used for large fixed stage lighting, background dyeing, large theatrical performances, gymnasium lighting, temporary stage performance, city lighting system, television station, conference center, professional theater, park, singing and dancing hall, bar, small literary and art performances and public environment lighting.

Note

After receiving the luminaire, please open the package to check whether there is any damage caused by transportation. If there is any damage caused by transportation, please do not use this lamp, and as soon as possible with the dealer or manufacturer.

This manual contains important information about the installation and use of this luminaire. Please strictly follow these instructions when installing and using.



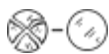
★Please read all the contents of this manual carefully. (use the handbook to keep the lamp at the same time for reference)

★In order to ensure proper, safe installation, use and maintenance of this product, we must understand and follow the contents of this manual.



★The manufacturer shall not be liable for any lamp, property or personal injury caused by failure to install, use and maintain the manual.

★If you have other questions about how to operate the equipment safely, please contact the distributor or call the service hotline.



!!! Warning: a protective screen, lens, or lens on a lamp, if there is a visible damage (that is, the damage to the degree of failure), such as a crack or a deep mark, should be replaced and used again.



When suspending the installation of luminaires, it is necessary to verify that the suspension facilities and the lamp hooks can bear more than 10 times the weight of the luminaire and there is no damage to the installation facilities. After installation, the safety rope must be used as an auxiliary safety mode, and the lamps should be fixed to other facilities that can bear the weight of lamps.



The personnel who have electrical connection to the luminaire must have the corresponding operation qualification before they can operate.

When energizing, make sure that the power supply voltage you use is consistent with the voltage indicated by the luminaire, and there is overload or leakage protection..



The minimum distance between any point on the luminaire surface and any combustible material is 5 meters when the lamp is installed and positioned. .

Please do not install lamps directly on the surface of ordinary combustible materials.



$t_a = 45^{\circ}\text{C}$

Lamps should be dry and avoid being used in damp, overheated or dusty environments.

Ensure that the ambient temperature of normal and stable lamps is not more than 45 C, and the minimum temperature should not exceed -20 C.

Under the condition of stable heat dissipation, the maximum temperature of the surface of the luminaire can reach 75 degrees centigrade. Do not touch it with your hands.

Before lamps are not used, cleaned or maintained, please ensure that the power is in a state of disconnection, and do not pull or drag the power cord directly.

Special precautions for the use of products

- In order to ensure the service life of the product, the product should not be placed in damp or leaking places, and can not work in the environment with a temperature above 60 degrees.
- Do not place this product in loose or vibrant places.
- To avoid danger of electric shock, please repair the product for professional maintenance.
- When the bulb is used, the supply voltage should not exceed 10%. If the voltage
- is too high, the life of the bulb will be shortened. If the voltage is too low, the light color of the bulb will be affected.
- In order to ensure the normal use of this product, please read the instructions carefully.
- This lamp should be kept dry and avoid working in damp environment.
- The intermittent use will effectively prolong the service life of this luminaire.
- In order to obtain good ventilation effect and lighting effect, clean the fan net and lens frequently.
- Please do not use the organic solvents such as alcohol to wipe the shell of the lamp to avoid damage.

★ After power failure, it will take 20 minutes to fully cool the lamp before it can be energized again.

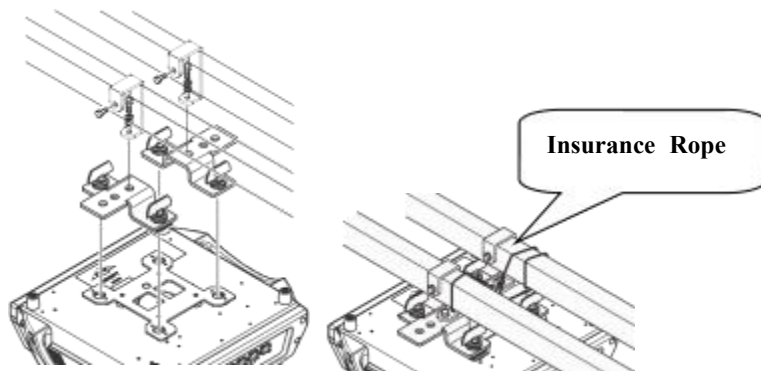
Schematic drawing of lamps and lanterns

Luminaire can be placed horizontally, slant and upside down. It is necessary to pay attention to the installation method when it is slant and upside down.

As shown below, to ensure the stability of the installation location before the positioning of the lamp, it is necessary to ensure that the lamp should not fall down on the support frame when the reverse hanger is mounted and that the safety rope is required to be suspended through the support frame and the lamp holder in order to ensure safety and prevent the falling and sliding of the lamps.

When the luminaire is installed and tested, pedestrians are forbidden to pass through. The safety rope is regularly checked for wear and whether the hook screws are loose.

If the hanging installation is not stable, resulting in all the consequences of the fall of lamps, I will not assume any responsibility.



After the lamp is hung up, add an insurance rope to the lamp holder!

DMX Signal connection

DMX signal connection method: from the controller to the input of the first luminaire near the controller, and then from the output end of the lamp to the input end of the next lamp. And so on, until the lamp connection is finished.

When the long distance transmission signal (more than 150m) or more than 30 single road lamps and lanterns is over, the DMX512 signal amplifier is added to the middle of the line to ensure the signal connection is stable and normal, and then the final fixtures are inserted with the terminal to improve the data transmission quality.

★To ensure stable transmission of signals, use shielded twisted pair cable to comply with DMX512 signal transmission.

Display panel operation and function settings

Note: do not use sharp or sharp objects to click on the display screen to prevent damage.

LCD display home page Introductions

- 2 — click to open main menu.
- 3 — click to set the language.
- 4 — click to turn on or off the lamp, or select the dim curve for LED light.
- 5 —
- 6 — click to reverse the display.

7 — Show the DMX signal state. Click to toggle Master/Slave mode, and the figure 's meaning is as follows:

Green down arrow: The device is receiving DMX signal from console.

Yellow "X" : The DMX signal is lost.

Blue up arrow: The device is working on master mode, and it is sending signal to outside now.

8 — click to set the running mode. If the figure is highlighted, that means the device is running in this mode as is shown.

9 —Click to open the error information menu for more details.

10 — click to show the version of the firmware.

2		
1		3
		4
		5
6	空	7
8	9	10

1 — Shows current DMX address in big font size.

2 — Customer logo display area.

3 — DMX signal frame rate (FPS).

4 — Display the channels mode, and the figures shows current channels number.

5 — Fan speed display. (select whether to display according to the lighting conditions) 6 —Current mode (Master or slave).

7 — Current operating mode (DMX512, self-propelled, user).

8 — error information. It turns yellow if has some errors when self-test.(Press the down key to view specific error messages)

9 — Temperature display or other(according to lamp configuration).

10 — Sn term display.

Display operation and function description

DMX address: display the current DMX address

Menu settings: click into the main menu

Language switching: click setting interface language

Switch light bulb: click on the switch bulb

Channel mode: Click to set up the current channel mode, and the number shown is the number of current channels.

Reverse display: click back display screen

Signal status: displays the status of the current signal and clicks the switchable master slave mode.

The green arrow down indicates that the external DMX signal is currently being received.

Yellow fork number: there is no external DMX signal

The blue up arrow: indicates that the current host mode is sending signals outwards.

Run mode: Click to set the current run mode. If the icon is highlighted, it indicates that the mode is currently running.

No signal status: shows the action of the local machine when the external DMX signal is lost. If the icon is highlighted, it indicates that the mode is currently running. This mode is valid only when boot is started. Please refer to the explanation of the menu [operation settings] - "no DMX time".

Error message: if a green check is displayed, it indicates that the current self checking status is good. If a yellow exclamation mark is displayed, it indicates that there is an error in self checking. Click on the icon to enter the error information menu to view the specific error information.

Blue LED: when flashing, it shows DMX signal. When it is long, it indicates the host mode. When it goes out, it means there is no DMX signal. It can be set to "automatic" in the menu [display settings] [indicator], so that the indicator lights go out with the LED backlight.

Red LED: when flashing, it indicates the current voice control mode. When it is bright, it indicates that the error was detected. It can be set to "automatic" in the menu [display settings] [indicator], so that the indicator lights go out with the LED backlight.

Menu structure and functional operation instructions

Since the product model is numerous, the function is different, and often upgrades, causes the menu content to change frequently, this manual instruction is hard to update in time, therefore only lists part of the important menu items here.

DMX Addr: Use the menu to set desired fixture address setting

Channel Mode: Use the menu to select desired DMX channel mode. The numbers on the menu represents the number of control channels.

Reset Operating: Reset Motors

Motor power off: Select "Y" to turn off the motors power , and select "N" to turn on the motors power, it will reset automatically. You can plug the motor and reset it without turn off main power supply via this menu.

Pan/Tilt: Use the menu to reset Pan and Tilt

... ..

Run: Use the menu to select operational mode

Following is the instructions of the menu options(Note: the "test" mode option may be different according to product model):

- DMX: Controlled by DMX512 signal.
- Test(factory) : Controlled by built-in program which is for factory test.
- Program: Controlled by User's program。 User the menu [Running Cnfg]- [Mixed Scene] and [Scene Edit] to set up or edit the scenes。

Lamp: Use the menu to turn on or off the lamp. It will take effect after 3 seconds , if the value was switched back in 3 seconds, the operation will be canceled. If the lamp was turn off, it must wait for 1 to 2 minutes before it can turn on again。 You can set the menu value to "on" and it will turn on automatically after 1 to 2 minutes。 An example of the value is shown below :

Manual Control: Set DMX value manually

CHN1: Set the DMX value of CHN 1.

CHN2: Set the DMX value of CHN 2.

CHN3: Set the DMX value of CHN 3.

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Running Cnfg: configuration of Running.

M/S Mode: Slave mode is for receiving external DMX signals and Master mode is for sending DMX signals to external slave fixtures

Maunual Pan/Tilt: Select "Y" to Manual Pan/Tilt.

Pan Reverse cnfg:

Reverse: The item allows to invert Tilt movement

Tilt Reverse cnfg:

Reverse: The item allows to invert Tilt movement

Pan Cnfg:

Origin: Set desired Origin value to change Pan Movement range (set the DMX value to 0 before changing this value, the tile motor will move when changing this value)

End: Set desired final stop value to change Pan movement range (set the DMX value to 255 before changing this value, the tile motor will move when changing this value)

Tilt Cnfg:

Origin: Set desired Origin value to change Tilt movement range (set the DMX value to 0 before changing this value, the tile motor will move when changing this value)

End: Set desired final stop value to change Tilt movement range (set the DMX value to 255 before changing this value, the tile motor will move when changing this value)

Color linear: You can set the color wheel rotate by "half color" or "linear" .

Dim Curves: Select the dim curve (For LED light only).

DMX Lost:

Advanced:

Fine Adj: This is the factory adjustment function locked with password.

DMX Lost: Use the menu to select run mode when external DMX cannot be connected.

Start Up: Following is the instructions of the menu options:

- Middle: The DMX of pan and tilt are set to 128, all other DMX are set to 0.
- Test (factory/gobo/color) : Controlled by built-in program. Refer to the menu "Run" for more information.
- Program : Program : Controlled by User's program . User the menu [Running Cnfg]- [Mixed Scene] and [Scene Edit] to set up or edit the scenes.

Running: Whenever the DMX is lost:

- Keep: Keep the last state when reset finished.. ●
Shutter Off:..shutter off.

Fan Speed: Set the fan speed mode. This function is only valid on some models, please refer to the specification for more information.

Language: Use the menu to select desired system language

Lamp Off: Use the menu to select what the motor should do when lamp is off. If

"No Act" is selected, lamp doesn't lead to any changes of motors. If "Sleep" is selected, motors except Pan/Tilt will sleep when lamp is off.

Info:

DMX Monitor: Display the DMX value from controller

Chn: Use the menu to select desired channel which you need to watch. **Value:** Show the current value of the selected channel

Err State: Error information (If there is any error shown in this menu, a exclamatory mark will show at the top right corner of menu cover) **Storage:** This

message will appear when Flash goes bad. **Sensor Err:** The states of all of the sensors

Pan Raster: Is the position sensor (raster) error.

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Lamp: The communication between CPU and lamp driver. If this communication go out of work, the CPU cannot determine the lamp is on or off, and some functions may be affected.

Bus: This message informs you that the communication between the display PCB in the fixture base and the motor driver PCB in the fixture head failed, and cables may be broken.

Lamp Driver: The communication between CPU and lamp driver. If this communication go out of work, the CPU cannot determine the lamp is on or off, and some functions may be affected.

RAM Err: A memory allocation failure occurs. Please contact your Dealer or Fabricator for repair assistance.

Fan Stalling: Fan stop.

Lamp Service time: Lamp service time

ThisTime (m) : The menu shows the total number of the operation hours with the lamp on since the last operation of clear.

Clear Lamp Time: Use the menu to reset the counter of operation hours with the lamp to 0, when a new lamp replaces the old one.

Test mode: for factory test, users do not need to pay attention to it

Product Code: the internal code of the product, which is only for product production and maintenance reference.

DMX Channel Table

Channel		DMX	Function
22	16		
1	1		Pan
		0-255	Pan 540°
2	*		Pan Fine
		0-255	Pan Fine 2. 11°
3	2		Tilt
		0-255	Tilt 246°
4	*		Tilt Fine
		0-255	Tilt Fine 1°
5	3		Pan/Tilt Speed
		0	Max speed
			Speed mode
		1-255	Speed from max. to min.
			Time mode
		1-255	Time from 0. 1 sec to 25.5 sec
6	4		Power/ Special functions
		0- 19	Empty
			To activate the following functions, stop in DMX value for at least 3s and shutter must be closed at least 3s("Shutter/Strobe" channel 22/ 15/28/ 17 must be at range:0-31 DMX). Corresponding menu items are overwritten temporarily.
		20-24	ECO mode (Lamp power 230W)
		25-29	Standard mode (Lamp power 280W)

		30-39	Rot. Gobo speed mode
		40-49	Rot. Gobo time mode
		50-59	Pan/Tilt speed mode
		60-69	Pan/Tilt time mode
		70-79	Blackout while pan/tilt moving
		80-89	Disabled blackout while pan/tilt moving
		90-99	Blackout while color wheel moving
		100-109	Disabled blackout while color wheel moving
		110-119	Blackout while gobo wheel moving
		120-129	Disabled Blackout while gobo wheel moving
			To activate the following functions, stop in DMX value for at least 3 seconds:
		130-139	Lamp On, reset (total reset except pan/tilt)
		140-149	Pan/Tilt reset
		150-159	Color system reset
		160-169	Gobo system reset
		170-179	Dimmer/ Shutter reset
		180-189	Zoom/focus/prism reset
		190-199	Reserved
		200-209	Total reset
		210-219	Synchronization of random strobe - On
		220-229	Synchronization of random strobe - Off
		230-239	Lamp Off
		240-255	Empty
7	5		Color wheel

		0-129	Continual positioning
		130-189	Step Positioning
		190-218	Forwards rainbow effect from fast to slow
		219-220	No rotation
		221-249	Backwards rainbow effect from slow to fast
		250-255	Auto random color selection from fast to slow
8	*		Color wheel fine positioning
		0-255	Fine positioning
9	6		Static gobo wheel
		0-3	Open/ Hole
		4-87	Gobos with no shake

		88-200	Shaking gobos
		201	Open/ Hole
		202-224	Forward gobo wheel rotation from fast to slow
		225-226	No rotation
		227-249	backward gobo wheel rotation from slow to fast
		250-255	Auto random gobo selection from fast to slow
10	7		Rotating gobo wheel
		0-4	Open/ Hole
		5-76	Gobos with no shake
		77- 199	Shaking gobos
		200-201	Open/hole
		202-224	Forward gobo wheel rotation from fast to slow
		225-226	No rotation
		227-249	Backward gobo wheel rotation from slow to fast
		250-255	Auto random gobo selection from fast to slow

11	8		Rot. gobo indexing and rotation
		0	No rotation
		1- 127	Gobo indexing
		128- 190	Forward gobo rotation from fast to slow
		191- 192	No rotation
		193-255	Backward gobo rotation from slow to fast
12	9		Prism
		0- 19	Open position (hole)
		20-75	Prism 1
		76- 127	Prism 2
		128-255	Double Prisms
13	10		Prism 1 rotation
		0- 127	Indexing
		128- 190	Forward prism rotation from fast to slow
		191- 192	No rotation
		193-255	Backward prism rotation from slow to fast
14	11		Prism 2 rotation
		0- 127	Indexing
		128- 190	Forward prism rotation from fast to slow
		191- 192	No rotation
		193-255	Backward prism rotation from slow to fast

15	12		Zoom
		0-255	Zoom from max. to min beam angle
16	*		Zoom (Fine)
		0-255	Fine: Zoom from max. to min beam angle
17	13		Focus
		0-255	Continuous adjustment from far to near
18	*		Focus (Fine)
		0-255	Fine: from far to near
19	14		Shutter/ Strobe
		0-31	Shutter closed (Lamp power reduced to 230W)
		32-63	Shutter open, full lamp power
		64-95	Strobe effect from slow to fast
		96- 127	Shutter open
		128- 143	Opening pulse in sequences from slow to fast
		144- 159	Closing pulse in sequences from fast to slow
		160- 191	Shutter open
		192-223	Random strobe effect from slow to fast
		224-255	Shutter open , full lamp power
20	15		Dimmer
		0-255	Dimmer intensity from 0% to 100%
21	*		Dimmer (Fine)
		0-255	Dimmer intensity from dark to bright
22	16		Frost
		0-63	No frost
		64-255	Frost

Matters needing attention

- Check whether the local power supply meets the rated voltage requirements of the product, and the leakage protector and overcurrent protector meet the load requirements.
- Please do not use insulated conductor which has been damaged.
- The lamps and lanterns use strong wind refrigeration, easy to accumulate dust, it must be cleaned once a month, especially the heat dissipation tuyere, otherwise the dust will be blocked, resulting in bad heat dissipation and abnormal luminaires.

- When fixing the luminaire, the fastening screws must be fastened and equipped with safety cables and checked regularly.
- In the installation and positioning of the lamps and lanterns, any point on the surface of the lamp and any easy to burn explosive, keep the minimum distance of 10 meters and the distance of 4 meters from the illuminant, please do not install the lamp directly on the surface of the combustible material.
- The continuous working time of lamps and lanterns should not be more than 10 hours, the interval of continuous starting lamps should not be less than 10 minutes, otherwise it will not be triggered normally because of the protection of the light bulb.
- The closing time of using on-off valve should not exceed 5 minutes. If you need to shut down the light for a long time, you should use the console (light control channel) to turn off the light bulb.
- In order to ensure that many lamps and lanterns comply with the effect of the scene better, the lamps should not always be in the unfinished scene, that is, start the next scene action, it is best not more than 3 minutes to ensure that multiple lamps can run synchronously.
- During the process of use, if lamps and lanterns are abnormal, they should stop using lamps in time to prevent other faults.

Common faults and attention to use

★ The lamps and lanterns contain specialized components such as PCB, high voltage power and so on. For your safety and product life, non professionals should not disassemble the lamps and accessories without authorization.

★ Light bulb is not bright

Possible cause: the bulb is not completely cooled or the bulb reaches its life.

Because of abnormal operation, the light bulb is not completely cooled, the lamp body should be cooled for more than 10 minutes, so that the interior of the lamp is fully restored to normal state, and then the power supply can be restarted again.

To check whether the bulb reaches service life, new bulbs should be replaced.

Check whether the lamp and the lamp line are leakage, falling off or poor contact. Replace the new lighting device.

★ The light is dim

Possible reasons: light bulbs are used for a long time or the light path is not clean. To check whether the bulb reaches service life, new bulbs should be replaced.

Check whether the optical components or light bulbs are clean, and whether there is dust on the light bulb and other optical devices, it is necessary to regularly clean and maintain the light bulb and the components in the lamps and lanterns.

★ Pattern projection blur

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

★ The lamps and lanterns work intermittently

Possible reasons: the internal line is protected.

Check whether the fan operates normally or whether it is dirty or not, causing the interior temperature of the luminaire to rise.

Check if the internal temperature control switch is closed.

Check whether the bulb is in service life and replace the new bulb.

★ After the restoration of normal lamps do not accept the control console

Possible reasons: signal line fault or lamp parameter setting is not normal, are as follows:

Check the connections starting address code and check the DMX signal line (the signal line cable is intact, connect head connection is loose); With the signal amplifier, plus 120 ohm resistor terminal;

Check lamp parameters, ensure lamps in DMX mode.

★ The luminaire can not start

Possible cause: poor power supply line, handling as follows:

Check whether the fuse on the power input socket is blown or not, and replace the insurance. Lamps cause poor contact in long distance transportation due to vibration.

REMARK

The product has perfect performance and integrity packing.

All users should be strictly comply with the warning and operating instructions as stated.

Or we aren't in charge of any result by misusing.

Any damage resulting by misuse is not within the Company's warranty.

Any fault or problem caused by neglecting the manual is also not in the charge of dealers.

Errors and omissions for every information given in this manual excepted.

All information is subject to change without prior notice.