

# 450W Moving Head Light(BSW)

## User Manual



CE   IP20 LED  9.2mm  t, 40°C t, 150°C

Note: This manual include important information on how to install and use it safely. Please read it carefully before install and operate as required. At the same time, please keep this manual properly for emergencies.

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## Accessories:

The following random accessories have been packaged with light, please check and verify:



When this product leaves the factory, the performance is intact and the packaging is complete. All users should strictly abide by the warnings and operating instructions stated in this manual. Any damage caused by misuse is not covered by the company's warranty. Failures and problems caused by ignoring the operating manual are not within the scope of the dealer's responsibility.

This manual is subject to technical changes without notice.

Note: The company's products are calculated based on the company's delivery date. The warranty period of the whole machine is one year, and the light source is not within warranty.

# 1 SAFETY INSTRUCTIONS



## Notice

Please read the safety requirements in this section carefully before installing, energizing, operating or repairing !

The following important safety signs will be used in this product manual



- After receiving the lamp, please unpack and check whether there is any damage caused by transportation. If there is damage caused by transportation, please do not use this lamp, and contact the dealer or manufacturer as soon as possible.
- The manufacturer will not be held responsible for the losses caused by not following this manual and changing the lamps at will.
- Please note that the damage to the lamp caused by the modification of the lamp is not covered by the warranty.
- If you have any questions or suggestions, please contact the dealer or manufacturer in time.



- When the lamp is in use, it must be kept away from high temperature, fire, electric shock, vibration and strong light environment.
- Qualified operators can carry out installation, maintenance and repair, and ensure that they operate in strict accordance with the operating procedures of this manual
- There are no children who can be repaired by the user inside this lamp, please do not open the lamp to repair by yourself.
- Do not look directly at the light source of the lamp (especially for patients with epilepsy) to avoid damage to the eyes!



- Do not connect this lamp to any other dimming device.
- If visible damage occurs to the light source, lens or display protective cover on the lamp, it is damaged to the extent of failure. If cracks or deformation occur, please stop using it and contact the manufacturer to

replace the original accessories, otherwise normal use will be affected.

- The installation position of the luminaire should be such that it will not be stared at at a distance of less than 4 meters for a long time.



- Before starting to operate the lamp, please check whether all the covers (or shells) have been installed and whether the screws have been tightened reliably. It is forbidden to use the lamp with the cover (or shell) open.
- Keep the lamp clean and do not touch the lamp glass directly with your hands.
- During operation, it is recommended to wear necessary protective equipment, such as goggles, gloves, etc.



- The person who connects the electrical part must have the corresponding qualifications before the operation.
- Before installation, please make sure that the power supply voltage you are using matches the voltage marked on the lamp.
- Each lamp should be properly grounded, and electrical installation should be carried out in accordance with relevant standards.
- Do not use power cords with damaged insulation, and do not overlap power cords with other wires.
- When the lamp is not in use or cleaning, please hold the power cord plug to unplug it, do not pull or directly pull the power cord.
- Make sure that the power cord used complies with safety regulations.
- If the lamp is not waterproof or dustproof, please be careful not to short-circuit the lamp when it is exposed to rain or moisture during the operation of the lamp.
- Do not turn on or off the lamp repeatedly within a short period of time, as this will shorten the life of the lamp light source or other electrical components.



- There is a safety rope connection hole at the bottom of the lamp. For safety reasons, please pass the safety rope equipped with the lamp through the safety rope connection hole for auxiliary lifting.
- Before any installation, maintenance and cleaning of the lamp, please make sure that the power supply has been cut off!



- Under normal working conditions at room temperature, the temperature of the outer metal surface of the lamp (including the surface of the radiator) will reach 50°C at the highest temperature.

- There will be smoke and peculiar smell before the light is turned on for the first time. This is a normal process and does not mean that the lamp is defective.

- When using, do not touch the shell with bare hands to avoid burns!



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

- Do not project the lamp directly on combustible objects, and the distance between the lamp and the illuminated object is more than 10 meters.

- The lamp should be installed in a well-ventilated place, and the distance from the wall should be kept at least 50 cm. At the same time, please check whether the fan and ventilation holes are unblocked.

- Please do not expose the front glass to sunlight or other strong light sources from any angle. The lens may focus the light in the lamp, which may cause a potential fire hazard.

- This product complies with the "General Technical Requirements Standards for the Recycling of Waste Electrical and Electronic Products"



- When the product reaches the scrap standard and needs to be scrapped, the customer can scrap and recycle the product.



## **2** ***USER INSTRUCTIONS***

### **Cleaning and Maintenance**

When the lamp cannot be started, please check whether the power fuse of the lamp is blown. The lamp is equipped with an overheating protection device. The protection device will automatically cut off the power when it is overheated. When this happens, please check whether the fan is running normally and whether the fan and fan net are

blocked by dust. Find out the fault and repair it before starting the lamp.

Because substances such as smoke oil and dust tend to adhere to the lens and reduce the light output, in order to ensure the reliable use of the lamp, it is very necessary to keep the lamp clean. The cooling fan should be cleaned every 15 days. The cleaning of internal and external optical lenses, mirrors, and coated color filters must be performed periodically to optimize light output.

The cleaning frequency depends on the operating frequency of the lamp and the surrounding environment. When cleaning, use a soft cloth and general glass cleaning products to clean. It is recommended to clean the external optical system at least once every 20 days, and clean the internal optical system at least once every 30/60 days. Keep the lens clean and do not directly touch the optics of the lamp with your hands.



- Before performing any maintenance and cleaning the lamp, please make sure that the power has been cut off!
- Only qualified technicians can carry out maintenance work.
- Before maintenance, the power must be completely cut off!



- In order to prevent sunlight or other light from directly irradiating the head lens and focusing on the inside of the lamp body to cause high temperature damage to the lamp, before the lamp is powered off, please use the Y-axis control channel to keep the lamp head down.
- Do not wipe the lamp housing with organic solvents such as alcohol to avoid damage.
- Do not use any solvents containing chemical components to clean the coated color filters.

### ● Lubrication

In order to maintain the smooth rotation of the gobo and the smooth movement of the focus lens, it is recommended to give the focus lens every two months

The 3 guide rails and the 2 guide rails of the magnifying lens are lubricated once. Good and high-temperature-resistant lubricating oil/grease should be used.

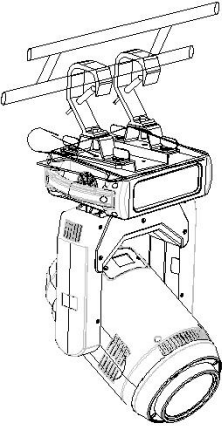
●**Ordinary Troubleshooting**

Fault description	Take countermeasures
The lamp can't work normally	check if the power fuse is blown Check if the bulb is in good condition
The lamps are not controlled by the controller	Check if the DMX start address of the lamp is set correctly Check if the XLR signal cable is damaged
The lamps work intermittently	Check whether the fan is working normally, and whether dust is blocking the fan and the fan net
The light is dim and the brightness is obviously reduced	Check whether the lamp light source has reached the expiration date Check whether the internal and external optical system is clean
The beam is impure (has a halo)	Clean the dust and oil from the lens and other parts
Serious beam distortion	Check if the lens is broken Clean the lens dust or oil

**3** ***LIGHT APPEARANCE***

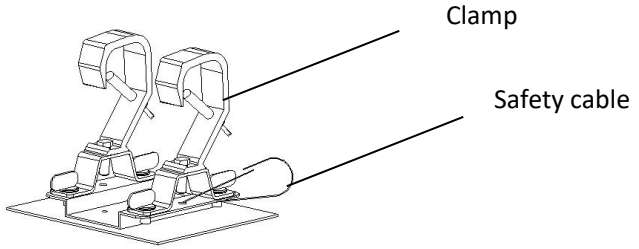


## 4 INSTALLATION



### Warning!!

To ensure safety, please pass the safety rope through the connection hole to ensure safety.



Take out the 2 hooks and 1 safety rope that came with the machine, use the 4 hook quick knobs attached to the hooks to install the 2 hooks on the bottom of the luminaire, and then hang the luminaire on the fixed bracket with the hooks and twist Tighten the hook and lock bolts to fix the whole lamp. Please confirm that the lamp is installed firmly and reliably, and ensure that the hoisting position has enough strength to bear the weight of the lamp. For safety reasons, please follow the warning shown in the figure above to pass the safety rope provided with the lamp through the safety hole at the bottom of the lamp holder for auxiliary lifting to ensure safety.



### Warning!!

- The hook is only used when hoisting the lamp. It is strictly forbidden to use the hook as a handle to carry the lamp. Please use the handle when carrying.
- For safety reasons, please use a safety rope that can withstand 10 times the weight of the lamp to pass through the safety hole of the lamp for auxiliary lifting.

### ● Power connection:

The power cord connection is as follows:

L (fire wire) = brown wire

E (ground wire) = yellow/green two-color wire



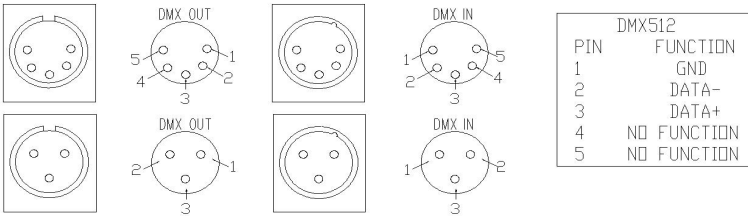
N (center line) = blue line

When connecting the power supply, please note that the power supply voltage and frequency must be consistent with the voltage and frequency marked on the nameplate of the lamp. When multiple lamps are used at the same time, it is recommended to connect the power supply of each lamp separately, so that each lamp can be individually controlled on/off.



- When connecting the power supply, the ground wire (yellow/green two-color wire) must be safely grounded, and the electrical installation must comply with all relevant standards.
- If you have any questions about electrical installation, please do not operate and consult a qualified electrician.

● **Connection of control signal:**



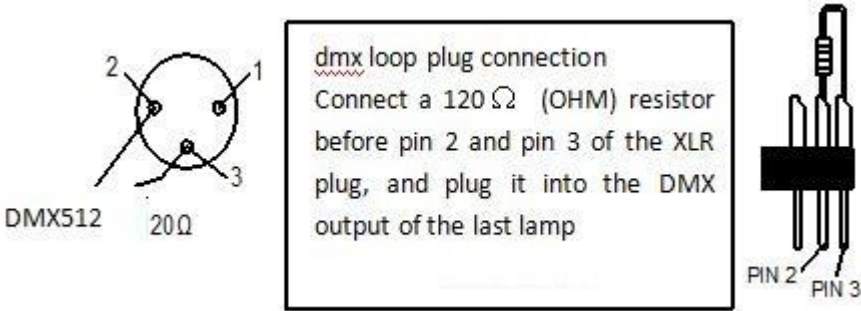
The connection between the lamp and the controller and between the lamp and the lamp must use a two-core shielded wire with a diameter of not less than 0.5 mm. Please use a 3-pin (included) XLR plug/seat to connect the DMX512 output/inlet of the lamp. The connection between the XLR plug/socket and the wire is shown in the list above. It must be noted that the 3-core of the XLR plug/seat cannot be in contact with the inner shell and the core and the core cannot be in contact during the connection. Except for the connection methods shown in the list above, the XLR plug/seat and the XLR control line cannot be connected in any other way. This product receives the international standard DMX512 (1990) control signal.

Use the XLR-XLR control cable to connect the DMX output port of the controller to the DMX input port of the first slave, and connect the DMX output port of the first slave to the DMX input port of the second slave, and so on By analogy, until all the slaves are connected, and finally the circuit is connected to the signal output port of the last lamp to

complete the controller mode connection. As shown below:

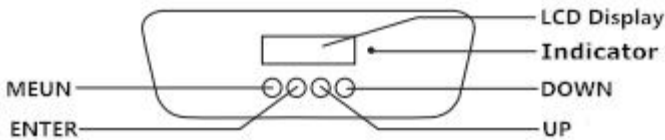
### DMX loop plug

In the "controller mode", the DMX output port of the last lamp must be connected to the DMX loop plug. This circuit is inserted between pin 2 and pin 3 of the "Canon" plug and connected with a resistance of about  $120\ \Omega$  (OHM) (as shown in the figure below). Plug this loop into the output port of the last lamp, which can effectively avoid the noise and reflection caused by the DMX512 signal during the transmission process.



## 5 FUNCTION SETTING

### •Display operation



To view or modify the function settings of the lamp, press any key (in the power-on state) to light up the screen, and then press the UP and DOWN keys to enter the corresponding menu of the lamp. There are corresponding sub-menus in the function operation main menu, and each menu represents a specific function of the lamp. For details, see the sixth point "Operation Menu" below.

1. In the lamp function menu setting page, press the UP and DOWN keys to select the corresponding function.

2. When operating the menu, the MENU button is the menu button, and the ENTER button is the confirmation button. Press the ENTER button to save your changes or enter the submenu. Press the UP or DOWN button to modify the value (increase or decrease the value).

Press the MENU button to return to the previous menu. If you don't press it, the system will automatically return to the display state.

### ● **Lamp DMX start address setting**

When using a controller to control multiple lamps, each lamp must be set with a DMX start address to receive the signal from the controller and respond correctly. This product has 2 control modes, namely standard mode and simplified mode. Take the standard mode as an example: the product has 18 channels, the DMX start address of the first lamp is set to 001, the second is 019, the third is 037, and so on, and so on.

Turn on the lamp, after the initialization of the lamp is completed, press any key to light up the operation panel, and then press the UP or DOWN key to enter the corresponding operation menu of the lamp

Select the "DMX setting" icon and press the ENTER key or click directly on the screen, and select DMX address setting in the secondary menu;

Press the UP and DOWN keys to get the set value;

Then press ENTER to confirm,

Press the MENU button to return to the previous menu.

### ● **Stand-alone mode**

Do not connect the controller and the control line. When the automatic program of the host mode of the lamp is set to be valid, the lamp will run in the stand-alone mode.

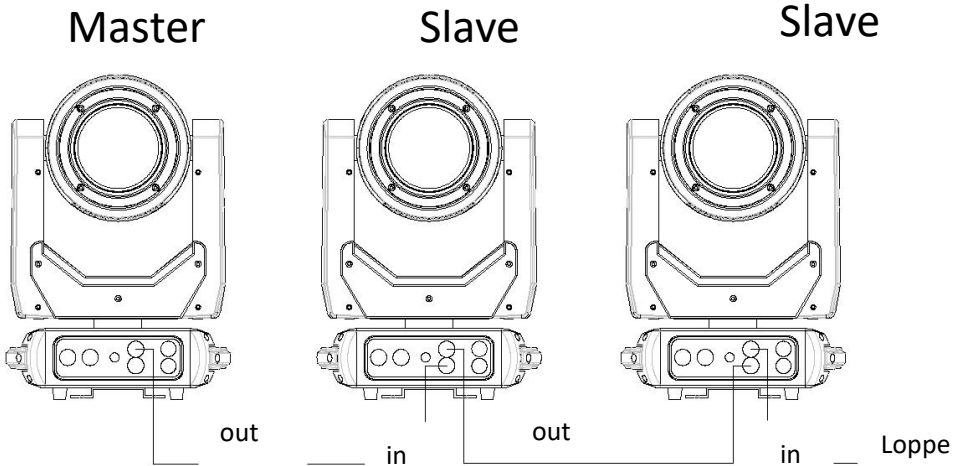
### ● **Master/Slave synchronization mode**

If you need to connect multiple lamps to the master/slave synchronization mode, first connect the XLR-XLR control line from the DMX output port of the first lamp to the DMX input port of the second lamp, and from the DMX output port of the second lamp to the DMX input port of the third lamp, and so on, until all lamps are connected, and then plug the loop into the signal output port of the last lamp to complete the connection. Then the first lamp is the master, and the other lamps are the slaves.

Set the address code of the slave to 001; the operating mode of the master is set to any

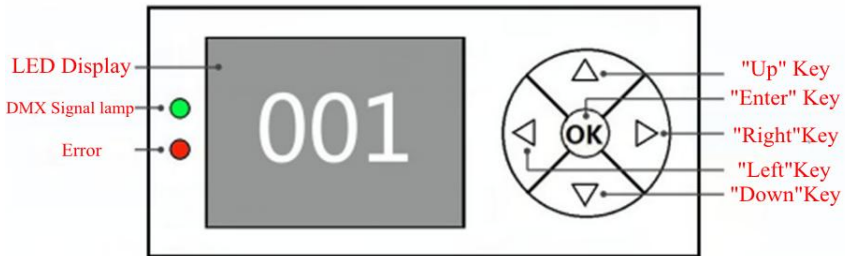
one of the operating modes of the master, and the operating mode of the slave is set to the slave operating mode corresponding to the operation of the master.

After power on, the fixture group runs in master/slave synchronization mode.



## 6 Menu Operation

### Key description



The function of left and right keys are the same, return to the previous interface

Up, down key: Select, edit

Enter key: Perform function, start edit, exit edit

The following takes "modify DMX address code" as an example to describe the use of keys:

1. If the current screen is not the main screen, press the "Left" key (one or more times) to return to the main screen
2. On the home screen, press the Up or Down key to select the Settings button
3. Press "OK" to enter the "Settings" interface
4. In the "Settings" interface, press "Up" or "Down" to select "DMX Address".
5. Press "OK" to enter editing mode
6. Press the "Up" or "Down" key to modify DMX address code
7. Press OK to exit the editing mode

### Menu Description

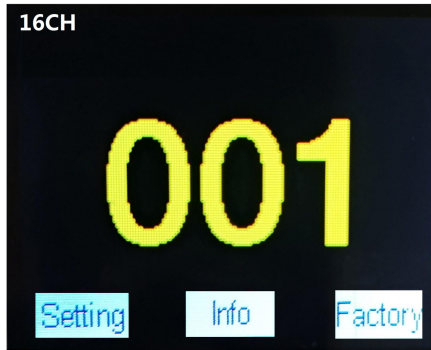


FIG. 4 Schematic diagram of main menu

Options	Instructions	
Operation mode	DMX	Slave state: receiving DMX signal from console or master
	Auto	Master state: self-powered and sends DMX signal to slave
	Sound control	
DMX address	1-512	Press "OK" to enter editing mode. At this time, select hundreds and press the "up" and "Down" keys to change the address code. Press OK again to select the ten place edit. Press "OK" again to select the bits to edit. Press again to exit the edit mode
Lamp	Off	Lamp off
	On	Lamp on

Motor reset	Off	
	On	Light reset
Channel mode	Standard 22CH	Standard 22-channel mode
Language	Chinese	Set the interface to Chinese
	English	Set the interface to English
Screen rotation	Off	Positive display
	On	The screen is displayed inversely
Pan inversion	Off	
	On	
Tilt inversion	Off	
	On	
XY exchange	Off	
	On	Channels for exchanging XY (including fine tuning)
XY encoder	On	Use an encoder (optocoupler) to determine out-of-step and automatically correct position
	Off	No encoder (optocoupler) is used to correct position
DMX signal	keep	Continue running as before
	Reset	Motor reset, stop running
Low wind speed lamp off	On	Blower speed is too low, lamp automatically off
	Off	If the blower speed is too low, the lamp won't turn off automatically
Switch on light bubble	Off	Directly reset after power on, no light bulb (need to use menu or console to manually light bubbles)
	On	After the lamp is powered on, it will automatically light up and reset until the bulb successfully lights up
Color wheel changes linearly	On	Color wheel changes linearly
	Off	Color wheel nonlinear change, half-color change
Restore default Settings		Press OK to see the confirmation dialog box. Press OK again to restore the default Settings

## System

Options	Instructions	
DIS		Display board software version

MT		Motor board software version
Manual control		
Time information	9999	9999 means no encryption and can be used for a long time. Other values indicate the remaining use time, with encryption;
Blower speed		Display current blower speed
System error		If the red ERR indicator lights up, it indicates that the lamp is running wrong. Details can be viewed in the sub-interface.After viewing, you can press the "Clear" button to clear error records
Hall state	0000000	0 when magnetic is detected, 1 otherwise
Pan encoding disk step value	0000	In the positive direction, the step value should increase, in the opposite direction, the step value should decrease.The same value is normal every time you turn to the same point
Tilt encoding disk step value	0000	In the positive direction, the step value should increase, in the opposite direction, the step value should decrease.The same value is normal every time you turn to the same point

## Common error messages

This interface is used to control the current lamps and lanterns, and automatically enter the host state (do not receive DMX signal, send DMX signal to the bus to the slave).

Common error messages	instructions
MT board connection failed. Procedure	Motor board is not responding.The serial communication line connecting the display board to the motor board is faulty, or the motor board is faulty.
Pan reset fails	Pan photoelectric switch, or pan motor or motor board problem
Tilt reset fails	Tilt photoelectric switch, or tilt motor or motor board problem

Pan Hall error	Pan Hall, or motor plate problem
Tilt Hall error	Tilt Hall, or motor plate problem
Color wheel failed to reset. Procedure	Color wheel Hall, or color plate motor problem
Failed to reset the gobo wheel	Gobo wheel Hall, or pattern plate motor problem
Focus reset failed	There is a problem with the focusing hall or the focusing motor
Lamp control failure	Failed to light or extinguish the bubble. The light lighter or bulb is faulty

## Factory

The calibration	Pan	After entering the sub-interface, you can adjust the reset position of the pan, tilt and other motors to compensate for errors in hardware installation. The adjustment range is -128~+127, +0 means no adjustment.
	Tilt	
	Color	
	Static Gobo	
	Rotation gobo	
	Focus	
	Zoom	
	Dimmer	
	Prism 1 zero	
	Prism 1 stroke	
	Prism 2 zero	
	Prism 2 stroke	
	Prism rotating	
	Frost zero	
Frost stroke		

## 7 DMX CHANNEL



<b>CHANNEL</b>	<b>Function</b>	<b>VALUE</b>	<b>DERIF</b>
CH1	Pan	0-255	0-540 degrees
CH2	Pan fine	0-255	0-2 degrees
CH3	Tilt	0-255	0-270 degrees
CH4	Tilt fine	0-255	0-1 degrees
CH5	X/Y speed	0-255	Speed from fast to slow
CH6	Dimmer	0-255	0-100% dimmer
CH7	Strobe	0-3	Lamp off
		4-103	From slow to fast pulse strobe
		104-107	Lamp on
		108-207	From slow to fast gradient strobe
		208-212	Lamp on
		213-251	From slow to fast random strobe
		252-255	Lamp on
CH8	Color Wheel	0-4	0-540degree
		5-9	White + color 1
		10-14	Color 1
		15-19	Color 1 + color 2
		20-24	Color 2
		25-29	Color 2 + color 3
		30-34	Color 3
		35-39	Color 3 + color 4
		40-44	Color 4
		45-49	Color 4 + color 5
		50-54	Color 5
		55-59	Color 5 + color 6
		60-64	Color 6
		65-69	Color 6 + color 7
		70-74	Color 7
		75-79	Color 7 + color 8
		80-84	Color 8
85-89	Color 8 + color 9		
90-94	Color 9		

		95-175	Clockwise water flow fast-slow
		176-255	Anti clockwise water flows slow-fast
CH9	Color Temperature	0-255	Linear change
CH10	Gobo Wheel	0-4	Gobo 1
		5-9	Gobo 2
		10-14	Gobo 3
		15-19	Gobo 4
		20-24	Gobo 5
		25-29	Gobo 6
		30-34	Gobo 7
		35-39	Gobo 8
		40-44	Gobo 9
		45-49	Gobo 10
		50-54	Gobo 11
		55-59	Fixed Gobo 1 shaking(from slow to fast)
		60-64	Fixed Gobo 2 shaking(from slow to fast)
		65-69	Fixed Gobo 3 shaking(from slow to fast)
		70-74	Fixed Gobo 4 shaking(from slow to fast)
		75-79	Fixed Gobo 5 shaking(from slow to fast)
		80-84	Fixed Gobo 6 shaking(from slow to fast)
85-89	Fixed Gobo 7 shaking(from slow to fast)		
90-94	Fixed Gobo 8 shaking(from slow to fast)		
95-99	Fixed Gobo 9 shaking(from slow		

			to fast)
		100-104	Fixed Gobo 10 shaking(from slow to fast)
		105-109	Fixed Gobo 11 shaking(from slow to fast)
		110-180	Clockwise water flow fast-slow
		181-255	Anti clockwise water flows slow-fast
CH11	Glass Gobo	0-4	Beam
		5-9	Open
		10-19	Gobo 1
		20-29	Gobo 2
		30-39	Gobo 3
		40-49	Gobo 4
		50-59	Gobo 5
		60-69	Gobo 6
		70-79	Gobo 7
		80-89	Fixed Gobo 1 shaking(from slow to fast)
		90-99	Fixed Gobo 2 shaking(from slow to fast)
		100-109	Fixed Gobo 3 shaking(from slow to fast)
		110-119	Fixed Gobo 4 shaking(from slow to fast)
		120-129	Fixed Gobo 5 shaking(from slow to fast)
		130-139	Fixed Gobo 6 shaking(from slow to fast)
		140-149	Fixed Gobo 7 shaking(from slow to fast)
		150-200	Clockwise water flow fast-slow
		201-255	Anti clockwise water flows

			slow-fast
CH12	Glass Gobo Rotation	0-127	Angle adjustable
		128-191	Clockwise rotating(from slow to fast)
		192-255	Anti clockwise rotating(from slow to fast)
CH13	Prism 1	0-127	Prism 1 exit
		128-255	Prism 1 enter
CH14	Prism 1 Rotation	0-127	Prism angle adjustable
		128-189	Clockwise rotating(from fast to slow)
		190-192	Stop
		193-255	Anti clockwise rotating(from slow to fast)
CH15	Prism 2	0-127	Prism 1 exit
		128-255	Prism 1 enter
CH16	Prism 2 Rotation	0-127	Prism angle adjustable
		128-189	Clockwise rotating(from fast to slow)
		190-192	Stop
		193-255	Anti clockwise rotating(from slow to fast)
CH17	Frost	0-127	Frost exit
		128-255	Frost enter
CH18	Zoom	0-255	Gobo clarity from far to near
CH19	Focus	0-255	Gobo clarity from far to near
CH20	Focus Fine	0-255	Gobo clarity from far to near
CH21	Auto Focus	0-20	No function
		21-59	5 meters
		60-98	7 meters
		99-137	9 meters
		138-177	11 meters
		178-215	13 meters

		216-255	15 meters
CH22	Lamp/Reset	0-49	No function
		50-59	X/Y Reset
		100-105	Lamp off
		150-159	Small motor reset
		200-205	Lamp on
		250-255	Reset

## 8 TECHNICAL PARAMETER

- Roccer R20 450W
- 1,500 hours lifespan
- Temperature protect function, when the internal Temperature is up to 40° then the fans begin to work, when the internal temperature is up to 70°and the brightness reduce half.
- Lens: Anti-reflective coated glass lens
- Focus: Linear motorized focus
- Dimmer: 0-100% linear dimming
- Beam Angle: 2.2-54 degrees
- Color Wheel: 9 colors +linear CTO+open, color fine tuning, rotation with variable direction and speed,with rainbow effect.
- 1 Fixed Gobo wheel: 11 gobos+open, wheel rotation and shake,
- 1 Rotation Gobo Wheel: 7 gobos + open, wheel rotation and shake,
- Prism: 8 facet prism and 3 facet Prism, bi-directional rotatable at variable speeds
- Frost effect+linear focus
- High speed strobe effect with 0.3-25 flashers per second
- Internal program available
- 20 DMX Channels USITT DMX-512
- DMX 512, master-slave and sound activated controllable or auto operation
- LCD display
- Efficient low noise fan cooling system
- PowerCon IN/OUT

- 3-pin XLR connectors IN/OUT
- Folding Clamps
- IP 20 protection rating

## **Specifications**

Input Voltage: AC90-260V 50/60Hz

Light Source: Philips MSD Silver 380 EC

Control Signal: DMX 512, master-slave and sound activated or auto operation

Control Channel: 22 DMX Channels USITT DMX-512

Power Consumption: 600W

Packing size: 480(L)\*410(W)\*650(H)mm

Net Weight: 18.8kg,Gross Weight: 21kg