

20R MOVING HEAD USER MANUAL

(Color, display, touch operation)



catalogue

Chapter 1 precautions and installation.....	1
1. Maintenance.....	1
2. Declaration.....	1
3. Precautions for products.....	1
4. Product introduction.....	1
5. Signal line connection (DMX).....	2
6. Installation of lamps.....	2
Chapter 2 panel operation.....	3
1. General.....	3
2. Operation.....	3
1. Use visual touch or encoder to operate lamps.....	3
2. Parameter value input.....	3
3. Set Boolean parameters.....	4
4. Sub page (parameter).....	4
3. Function operation and parameter setting.....	4
1. Set DMX address code.....	4
2. Set the working mode of lamps.....	5
3. Setting panel display settings.....	6
4. Test lamps.....	6
5. Setting the working parameters of lamps.....	7
6. Check the current status of lamps.....	7
Chapter 3 channel description.....	8
1. Channel table.....	8
Chapter 4 common faults and precautions for use.....	11
1. Common fault handling.....	11
2. Precautions for use.....	11

Chapter 1 precautions and installation

• Maintenance1. Maintenance

- The lamp shall be kept dry to avoid working in humid environment.**
- Intermittent use will effectively prolong the service life of the lamp.**
- In order to obtain good ventilation effect and lighting effect, pay attention to regularly cleaning the fan, fan net and lens.**
- Do not wipe the lamp shell with alcohol or other organic solvents to avoid damage.**

• Declaration2. Declaration

- This product has good performance and complete packaging when leaving the factory. All users shall strictly abide by the warnings and operating instructions stated above. Any damage caused by misuse is not within the warranty of the company, and the faults and problems caused by ignoring the operating manual are not within the scope of the distributor's responsibility.**
- This manual is subject to technical changes without notice.**

• Product precautions 3. Product precautions

- In order to ensure the service life of the product, the product shall not be placed in a wet or leaking place, nor shall it work in an environment with a temperature of more than 60 °C**
- Do not place the product in a place easy to loosen or shake.**
- In order to avoid the danger of electric shock, please ask a professional for maintenance of this product.**
- When the bulb is used, the change of power supply voltage shall not exceed $\pm 10\%$. If the voltage is too high, the service life of the bulb will be shortened. If the voltage is too low, the light color of the bulb will be affected.**
- After power failure, the lamp shall be fully cooled after 20 minutes before it can be powered on again.**
- To ensure the normal use of this product, please read this instruction carefully.**

• Product introduction4. Product introduction

- Light source power: 380W;**
- Rated power: 500W (high efficiency and reliable switching power supply);**
- Power supply: high efficiency and reliable switching power supply;**
- Color disk: one color disk, each color disk is composed of 14 color chips + white light;**

Pattern disc: 14 pattern effects, 9 rotating pattern effects;

- **Effect wheel: a rotatable 8 prism and a 6-sided array of mirrors;**
- **Dimming: 0-100% electronic dimming;**
- **Large adjustable range of beam angle;**
- **Stroboscopic: support mechanical stroboscopic and adjustable speed stroboscopic effects, and support stroboscopic macro functions;**
- **Lens group optical system, electric focusing, beam angle 3.8 ° - 45 ° , linearly adjustable;**
- **Photoelectric reset system is adopted, which can automatically retrieve and reset in case of accidental disoperation;**

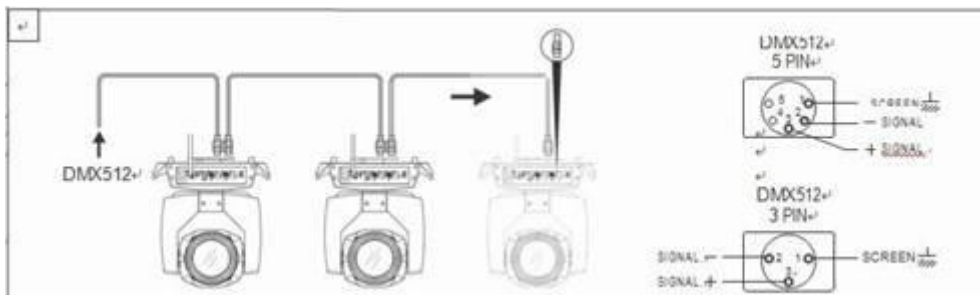
Horizontal 540 ° , resolution 8bit / 16bit;

Vertical 270 ° , resolution 8bit / 16bit;

- **Overheating protection;**
- **Control mode: DMX512 / master-slave / automatic;**
- **Protection grade: IP20;**

• **5. Signal line connection (DMX)5. Signal line connection (DMX))**

- **Use RS-485 cables that meet the specifications: shielded, 120ohm characteristic impedance, 22-24 AWG, low capacitive reactance. Do not use microphone cables or cables with different specified characteristics. The terminals must be connected with 3 or 5-pin XLR male / female connectors. A 120ohm impedance matching resistance (minimum 1 / 4 W) must be inserted between terminals 2 and 3 of the terminal plug.**
- **Important: wires shall not contact each other or metal shell.**



• **Figure 1 DMX signal line connection diagram**

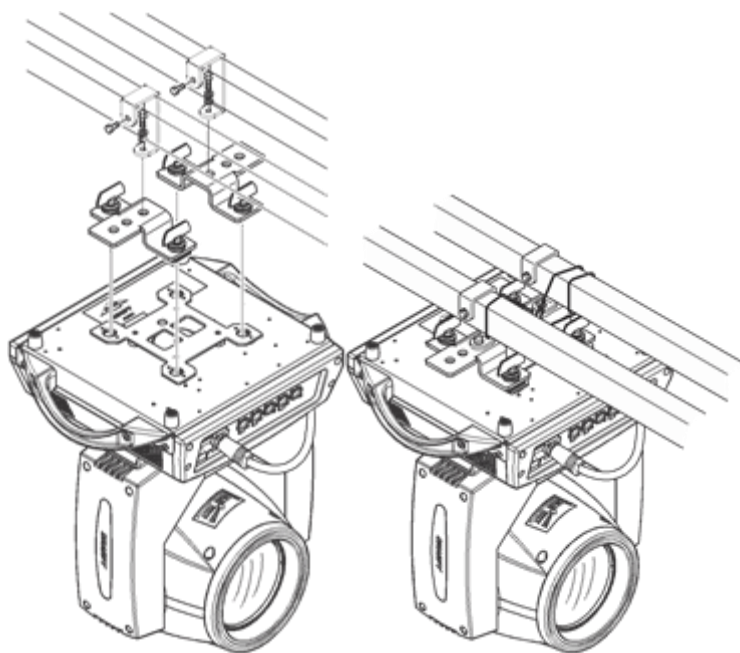
• **6. Lamp installation6. Lamp installation**

Lamps can be placed horizontally, hung obliquely and upside down. Pay attention to the installation method when hanging obliquely and upside down

As shown in Figure 2, before positioning the lamp, ensure the stability of the installation site. During reverse hanging installation, ensure that the lamp does not fall on the support frame. It is necessary to use safety rope to pass through the support frame and lamp handle for auxiliary hanging to ensure safety and prevent the lamp from falling and sliding.

During the installation and commissioning of lamps, pedestrians are not allowed to pass below. Regularly check whether the safety rope is worn and whether the hook screw is loose.

If the lamp falls due to unstable hanging and installation, our company will not bear any responsibility.



Chapter 2 panel operation

1. General

The schematic diagram of the lamp panel is shown in Figure 3 (this diagram is a 4-key key). The TFT display screen on the left supports touch operation, and the 4-key or 5-key keys or encoder knob on the right can directly operate the lamp or set system parameters.

The display and operation are similar to "Android operating system". If the product you select supports touch operation, you can click the corresponding item with your fingertips or blunt objects.

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

chart3 Display panel diagram

2. Operation

1. Use visual touch or encoder to operate lamps

The left area is TFT display area and touch area. Click the panel content with your finger or blunt hardware to complete parameter setting or view status.

The right area is the "rotary encoder" as auxiliary input. If you do not use the touch function of TFT, you can rotate the encoder to select the item to be set or viewed, then press the encoder to confirm the selection, rotate the encoder to set the parameter value again, and finally press the encoder protection setting to complete the operation.

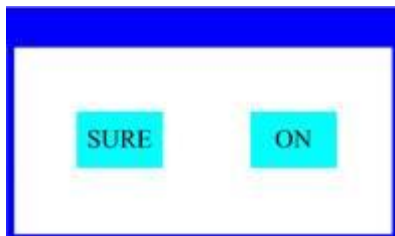
2. Parameter value input

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



chart4 Value setting page

- **Set 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 accurately set the required value Or rotate the "rotary encoder" on the right to set it;
- **Application value:**When the data is set through the "up" or "down" buttons, then press the button in the lower left corner“apply”Application key, the value is sent to the lamp immediately, but the value is not saved;
- **Save value:**At any time, click the "OK" button in the lower right corner, that is, save the current value to the internal memory, and apply the saved value to the lamp next time.
- **3. Set Boolean parameters**
- **When the set parameter is Boolean (such as on or off)**When pressing, you can directly click the corresponding item to switch the parameter value, and the modified parameters will be saved to the internal memory. Press the parameter option on the right, and the corresponding option will become gray. When you release your hand, the corresponding parameters will be changed and saved. If the pressed parameter option is not the parameter you want to change, you can move your finger to other parts of the screen, and the corresponding parameters will not be changedChange.
- **Important Boolean parameters will be set through the confirmation window, as shown in Figure 5 below:**



- **chart5 OK input window**
- **4. Sub page (parameter)**
- **Click the main menu to enter the sub menu page, as shown in Figure 6. There are 6 sub pages, including different types of parameters or states, as follows:**
- **Address:** set the DMX address of the lamp;
- **Work mode:** set the working mode and master / slave mode of the lamp;
- **Display:** set the parameters of the display interface, such as language, screensaver mode, etc;
- **Test:** it is mainly used to test lamps and simulate the values of corresponding DMX channels. Refer to the channel menu for the corresponding functions of channel values;
- **Advance:** set the operating parameters of lamps;
- **Status:** view the current status of lamps.

- **chart6 Page graph**
- **3. Function operation and parameter setting3. Function operation and parameter setting**
- **Enter the setting interface, as shown in Figure 6:**
- **In the main interface, you can touch six buttons to enter the corresponding parameter setting interface.**
- **In the parameter setting interface, you can press the blue option on the left to quickly switch to other setting interfaces.**

1. Set DMX1. Set DMXAddress code

- **Click and select "address (addr)" to enter the DMX address code setting page. The address code value range is 1 ~ 512, and the address code cannot be greater than (512 channel number), otherwise the lamp will not be controlled. The specific setting operations are as follows:**
- **Enter the DMX setting interface, as shown in Figure 7, click the white area on the right to pop up the parameter setting window as shown in Figure 4. You can directly pull the red square of the progress bar to quickly set the DMX address code value, or press the "up" or "down" key to accurately set the desired DMX address code, and then press the Enter key to save the data to complete the address code setting operation.**

• **chart7 Address code setting page**

- **2. Set the lamp working mode2. Set the lamp working mode**
- **The operation mode, control light gun and channel mode of the lamp can be set through the page shown in Figure 8. The lamp supports three operation modes (DMX mode, self-propelled mode and voice control mode). Please refer to the previous section for detailed parameter value settings. The specific parameters are described as follows:**
- **DMX mode:**In this mode, the lamp receives data from the console and operates according to the data of the console (common mode);
- **Self propelled mode:**In this mode, the lamp does not receive console data and runs by itself with an internal fixed program;
- **Voice control mode:**In this mode, the lamp does not receive console data. When there is a strong sound in the environment, the lamp will run a scene, otherwise it will maintain the last scene.
- **Master slave selection:**"Master-slave selection" only takes effect when the lamp works in "self-propelled mode" or "voice control mode". When this option is turned off, the internal program data of lamp operation will not passDMXThe data line is sent to other lamps. When it is turned on, the data will be sent to other lamps in real time, and

other lamps (slave) of the same type will run synchronously with the lamp (host).

- **Lamp switch:**Through this setting, the opening and closing of the lamp can be controlled. Note that the lamp can not be opened and closed too frequently, which will reduce the service life of the lamp. The time interval between turning on and off the lamp has been limited to 30 Seconds, that is, after the light bulb changes state 30 Within seconds, multiple on and off operations are ignored, and only the last operation is retained.
- **Channel mode:**The lamp supports two channel modes, "simplified" channel saves several channels for setting motor speed, and each operation mode channel saves energy DMX For channel utilization, the "extended" channel is more than the "thin" channel, as described above. Please refer to The first 3 chapter Channel table description for.
- **chart8 Operation mode setting page**
- **3. Set panel display settings**
- **The lamp supports bilingual Chinese and English, inverted lamp display, etc. enter the corresponding parameter setting as shown in Figure 9:**
- **Language:**Select Chinese or English to display, and the selection will take effect immediately.
- **Screen saver:**When the lamp is not set for a period of time (10 Seconds), the screen will enter the screensaver state. When this item is set to "mode"1 When, the screen saver status is off screen (black screen); set to "mode"2 When, the screen saver status is displayed DMX Address code (DMX Mode) or display icon (self-propelled or voice control mode); when it is set to "off", it does not enter the screen saver and displays the main interface.
- **Screen rotation:**Select whether the screen is displayed in 108 Degree rotation display. When the lamp is upside down, this option can be turned on to make the display more intuitive and clear.
- **Touch screen switch:**When "off" is selected, the touch screen function of the display screen is turned off, and only the encoder knob can be used.
- **Touch screen correction:**Click this item to enter the correction page to re correct the touch accuracy of the touch screen. Under normal circumstances, please do not enter this page.
- **chart9 Display settings page**
- **4. Test lamps**
- **Enter the page as shown in Figure 10, and the lamp enters the test mode. In this mode, the lamp does not receive DMX console data. The parameters on the page correspond to the value of DMX channel. The**

data of corresponding parameter items can be changed to control the operation of the lamp:

- **X-axis motor (Pan): value (0 ~ 255);**
 - **Y-axis motor (tilt): value (0 ~ 255);**
 - **Focus motor: value (0 ~ 255);**
 - **Color: value (0 ~ 255);**
 - **Drawing disc (gobo): value (0 ~ 255);**
 - **Prism: value (0 ~ 255). When the prism is inserted, the prism rotation starts at the same time;**
 - **Fog mirror (Frost): value (0 ~ 255);**
 - **On off valve (STROBE): value (0 ~ 255).**
-
- **chart10 Test mode page**
 - **5. Set the working parameters of lamps**
 - **5. Set the working parameters of lamps**
 - **Enter the page shown in Figure 11 to adjust the field parameters of lamps to facilitate the field installation of lamps, etc**
 - **Pan invert of x-axis motor: the initial position and end position of x-axis motor are exchanged;**
 - **Tilt invert of y-axis motor: the initial position and end position of y-axis motor are exchanged;**
 - **Opt coupler correction: select whether to use the optocoupler to automatically correct the position of X and Y. when "on", if the X or Y axis motor is out of step, the lamp will automatically correct back to the position it should be in;**
 - **Pan offset: sets the offset angle of the initial position of the x-axis motor;**
 - **Tilt offset: sets the offset angle of the initial position of the y-axis motor;**
 - **Lamp up when: set the switching state of the bulb when powered on;**
 - **Factory setting: set all parameters to factory values.**
-
- **chart11 Advanced settings page**
 - **6. Check the current status of lamps**
 - **6. Check the current status of lamps**
 - **Enter the page shown in Figure 12:**
 - **In this interface, you can view the operation status of the current lamp and the version information of the lamp;**
 - **DMX clear (dmxclr): clear the DMX data;**
 - **Motor reset (sysrst): system reset button;**
-
- **chart12 Status information page**

- Chapter 3 channel description

1. Channel table1. Channel table

Watch1 Channel description (v1.10)

Channel 1	Channel 2	Name	numerical value	describe
CH1	CH1	X axis	0-255	0-540degree
CH2		X-axis trim	0-255	0-2degree
CH3	CH2	Y axis	0-255	0-270degree
CH4		Y-axis trim	0-255	0-1degree
CH5	CH3	XY speed	0-255	From fast to slow
CH6	CH4	Function	30-50	3Full power after seconds
			60-80	3Second half power
			100-105	3Turn off the light gun for more than seconds
			200-205	3Turn on the light gun for more than seconds
			240-255	3Reset for more than seconds
CH7	CH5	Colour	0-129	Linear color matching
			130-134	Color 1
			135-138	Color 2
			139-143	Color 3
			144-147	Color 4
			148-152	Color 5
			153-157	Color 6
			158-161	Color 7
			162-166	Color 8
			167-171	Color 9
			172-176	Color 10
			177-180	Color 11
			181-185	Color 12
			186-189	Color 13
190-220	From fast to slow forward flow			
221-224	stop it			
225-255	Reverse flow from slow to fast			
CH8		Color tuning	0-255	Ch7 enabled when dimming linearly
CH9	CH6	Pattern	0-3	white light
			4-9	Pattern 1
			10-15	Pattern 2
			16-21	Pattern 3
			22-27	Pattern 4
			28-33	Pattern 5
			34-39	Pattern 6
			40-45	Pattern 7

			46-51	Pattern 8
			52-57	Pattern 9
			58-63	Pattern 10
			64-69	Pattern 11
			70-75	Pattern 12
			76-81	Pattern 13
			82-87	Pattern 14
			88-95	Shake pattern 1 from slow to fast
			96-103	Shake pattern 2 from slow to fast
			104-111	Shake pattern 3 from slow to fast
			112-119	Shake pattern from slow to fast 4
			120-127	Shake pattern from slow to fast 5
			128-135	Shake pattern from slow to fast 6
			136-143	Shake pattern from slow to fast 7
			144-151	Shake pattern from slow to fast 8
			152-159	Shake pattern from slow to fast 9
			160-167	Shake pattern 10 from slow to fast
			168-175	Shake pattern 11 from slow to fast
			176-183	Shake pattern 12 from slow to fast
			184-199	Shake pattern 13 from slow to fast
			200-201	white light
			202-227	From fast to slow forward flow
			228-229	stop it
			230-255	Reverse flow from slow to fast
CH10	CH7	Rotation pattern	0-4	white light
			5-8	Pattern 1
			9-12	Pattern 2
			13-16	Pattern 3
			17-20	Pattern 4
			21-24	Pattern 5
			25-28	Pattern 6
			29-32	Pattern 7
			33-36	Pattern 8
			37-40	Pattern 9

			41-48	Shake pattern 1 from slow to fast
			49-56	Shake pattern 2 from slow to fast
			57-64	Shake pattern 3 from slow to fast
			65-72	Shake pattern from slow to fast 4
			73-80	Shake pattern from slow to fast 5
			81-88	Shake pattern from slow to fast 6
			89-96	Shake pattern from slow to fast 7
			97-104	Shake pattern from slow to fast 8
			105-112	Shake pattern from slow to fast 9
			113-119	white light
			120-185	From fast to slow forward flow
			186-189	stop it
			190-255	Reverse flow from slow to fast
CH11	CH8	Gobo Rotation	0-127	0-400degree
			128-190	From fast to slow forward flow
			191-192	stop it
			193-255	Reverse flow from slow to fast
CH12		Rotation fine adjustment	0-255	
CH13	CH19	Prism 1	0-63	Remove the prism
			64-255	Insert prism 2
CH14	CH10	Prism 1 rotation	0-127	0-400degree
			128-190	From fast to slow forward flow
			191-192	stop it
			193-255	Reverse flow from slow to fast
CH15	CH11	Prism 1	0-63	Remove the prism
			64-255	Insert prism 2
CH16	CH12	Prism 2 rotation	0-127	0-400degree
			128-190	From fast to slow forward flow

			191-192	stop it
			193-255	Reverse flow from slow to fast
CH17	CH13	Atomization	0-127	nothing
			128-255	atomization
CH18	CH14	Enlarge	0-255	From small to large
CH19		Zoom in and fine tune		
CH20	CH15	Focusing	0-255	From far to near
CH21		Focusing fine adjustment		
CH22		Empty		
CH23	CH16	Stroboscopic	0-3	Guan Guang
			4-103	From slow to fast pulse stroboscopic
			104-107	Open light
			108-207	Gradually variable frequency flashing from slow to fast
			208-212	Open light
			213-251	Random stroboscopic from slow to fast
			252-255	Open light
CH24	CH17	Dimming	0-255	0-100% dimming

Chapter 4 common faults and precautions

- **Common fault handling**
- **1. Common fault handling**
- **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 disassemble the lamp and related accessories without authorization.**
- **The bulb doesn't work**
- **Possible causes: the bulb is not completely cooled, or the bulb has reached its service life. The treatment is as follows:**
- **If the bulb is not completely cooled due to abnormal operation, the lamp body shall be cooled for more than 10 minutes to completely return to the normal state, and then start the power supply again;**
- **Check whether the bulb has reached its service life and replace it with a new one;**
- **Check whether there is leakage, falling off or poor contact between the bulb and the lighter circuit;**
- **Replace the lamp with a new one.**
- **The beam looks dim**
- **Possible causes: the bulb has been used for a long time or the optical path is not clean. The treatment is as follows:**
- **Check whether the bulb has reached its service life and replace it with a new one;**
- **Check whether the optical components or bulbs are clean and whether there is dust accumulated on the bulbs and other optical components. The bulbs and components in the lamps shall be cleaned and maintained regularly.**
- **Pattern projection blur**
- **Check whether the value of the electronic focus channel is appropriate for the current projection distance.**
- **Lamps operate intermittently**
- **Possible causes: the internal circuit enters the protection state, and the treatment is as follows:**
- **Check whether the fan operates normally or becomes dirty, resulting in an increase in the internal temperature of the lamp;**
- **Check whether the internal temperature control switch is closed;**
- **Check whether the bulb has reached its service life and replace it with a new one.**
- **The lamps will not be controlled by the console after normal reset**
- **Possible causes: signal line failure or abnormal lamp parameter setting, the treatment is as follows:**

Check the start address code and the connection of DMX signal line (whether the signal line cable is intact and whether the connector is loose);

- **Add signal amplifier and 120 ohm terminal resistance;**
- **6. The lamp cannot be started**
- **Possible causes: the power circuit is poor, and the treatment is as follows:**
- **Check whether the fuse on the power input socket is blown and replace the fuse;**
- **Poor line contact caused by vibration of lamps during long-distance transportation**
- **Check the input power supply, computer board and other plug-in devices.**

2. Precautions for use

- **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;**
- **Do not use the power cord with damaged insulation, and do not lap the power cord on other conductors;**
- **The lamps are cooled by strong wind, which is easy to accumulate dust. They must be cleaned once a month, especially the heat dissipation outlet, otherwise they will be blocked by accumulated dust, resulting in poor heat dissipation and abnormal lamps.**
- **When installing lamps, the fixing screws must be fastened, equipped with safety ropes, and checked regularly;**

During the installation and positioning of lamps, the minimum distance between any point on the surface of lamps and any inflammable and explosive objects shall be 10m and 2.5m from the irradiated objects. Please do not install lamps directly on the surface of combustible substances;

- **It is recommended that the continuous working time of lamps should not exceed 10 hours, and the interval between continuous starting lamps should not be less than 10 minutes, otherwise it will not be triggered normally due to bulb overheating protection;**
- **The closing time of the on-off valve shall not exceed 5 minutes. If it is necessary to close the light for a long time, the control console (lamp control channel) shall be used to close 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 completing the current scene, that is, start the next scene action. It is best that this state should not exceed 3 minutes to ensure that multiple lamps can operate synchronously.**
- **In the process of use, if the lamp is abnormal, stop using the lamp in time to prevent inducing other faults;**