6 MAINTENANCE AND CLEANING

The following points have to be considered during the inspection:
1) All screws for installing the devices or parts of the device have to be tightly connected and must not be corroded.
2) There must not be any deformations on the housing, color lenses, fixations and installation spots (ceiling, suspension, trussing).
3) Mechanically moved parts must not show any traces of wearing and must not rotate with unbalances.
4) The electric power supply cables must not show any damage, material fatigue or sediments.

Further instructions depending on the installation spot and usage have to be adhered by a skilled installer and any safety problems have to be removed.

CAUTION
Disconnect from mains before starting maintenance operation.

In order to make the lights in good condition and extend the life time, we suggest a regular cleaning to the lights.
1) Clean the inside and outside lens each week to avoid the weakness of the lights due to accumulation of dust.
2) Clean the fan each week.
3) A detailed electric check by approved electrical engineer each three month, make sure that the circuit contacts are in good condition, prevent the poor contact of circuit from overheating.

We recommend a frequent cleaning of the device. Please use a moist, lint- free cloth. Never use alcohol or solvents.
There are no serviceable parts inside the device. Please refer to the instructions under "Installation instructions".
Should you need any spare parts, please order genuine parts from your local dealer.

ADD F1-5, Block 3, No.95, Guangzhu Rd, Lanhe Town, Nansha District, Guangzhou 511480
Tel. +86 20 8499 2310/2320/2330
Fax +86 20 8499 2360
E-mail info@color-imagination.com
Website www.color-imagination.com

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Color IMAGINATION
the POWER of DREAM

GL360

GRAND 360

IP20 t_a 40℃ t_c 100℃

User Manual

KEEP THIS MANUAL FOR FUTURE NEEDS

1 SAFETY INSTRUCTIONS

CAUTION

Becareful with your operations.With a dangerous voltage you cansuffer a dangerous electric shock when touching wires!

This device has left the factory in perfect condition. In order to maintain this condition and to ensure a safe operation, it is absolutely necessary for the user to follow the safety instructions and warning notes written in this user manual.

IMPORTANT

Damages caused by the disregard of this user manual are not subject to warranty.
The dealer will not accept liability for any resulting defects or problems.

If the device has been exposed to temperature changes due to environmental changes, do not switch it on immediately. The arising condensation could damage the device. Leave the device switched off until it has reached room temperature.

This device falls under protection-class I. Therefore it is essential that the device be earthed.

The electric connection must carry out by qualified person.

The device shall only be used with rate voltage and frequency.

Make sure that the available voltage is not higher than stated at the end of this manual.

Make sure the power cord is never crimped or damaged by sharp edges. If this would be the case, replacement of the cable must be done by an authorized dealer.

Always disconnect from the mains, when the device is not in use or before cleaning it. Only handle the power cord by the plug. Never pull out the plug by tugging the power cord.

During initial start-up some smoke or smell may arise. This is a normal process and does not necessarily mean that the device is defective, it should decrease gradually.

Please don't project the beam onto combustible substances.

Fixtures cannot be installed on combustible substances, keep more than 50cm distance with wall for smooth air flow, so there should be no shelter for fans and ventilation for heat radiation.

If the external flexible cable or cord of this luminaire is damaged, it shall be exclusively replaced by the manufacturer or his service agent or a similar qualified person in order to avoid a hazard.

		0-255	Not have
[CH23]	Enlarge	0-255	From big to small
[CH24]	Focusing	0-255	From far to near
[CH25]	Reset/function		
		0-209	No function
		210-215	Reset the XY motor after 3 seconds
		216-219	No function
		220-235	Reset effect motor after 3 seconds
		236-239	No function
		240-255	Reset the whole light after 3 seconds
[CH26]	Result	0-255	
[CH27]	Effect speed	0-255	

		10-19	Pattern 1
		20-29	Pattern 2
		30-39	Pattern 3
		40-49	Pattern 4
		50-59	Pattern 5
		60-69	Pattern 6
		70-79	Pattern 7
		80-89	Pattern 8
		90-94	Shake pattern from slow to fast 1
		95-99	From slow to fast jitter pattern 2
		100-104	From slow to fast shaking pattern 3
		105-109	From slow to fast shaking pattern 4
		110-114	Shake pattern from slow to fast 5
		115-119	Shake pattern from slow to fast 6
		120-124	From slow to fast shaking pattern 7
		125-129	Shake pattern from slow to fast 8
		130-199	From fast to slow, flowing
		200-255	Reverse flow from slow to fast
[CH15]	Self-spont		
		0-127	0-360 degrees
		128-190	Reverse flow from fast to slow
		191-192	Stop
		193-255	From slow to fast flowing
[CH16]	Effect cut-in	0-255	
[CH17]	Picture disk effect	0-255	
[CH18]	Prism 1		
		0-49	Not have
		50-99	Insert the prism 1
		100-149	Insert the prism 1
		150-199	Insert the prism 1
		200-255	Insert the prism 1
[CH19]	Prism rotation		
		0-127	0-360 degrees
		128-190	From fast to slow, flowing
		191-192	Stop
		193-255	Reverse flow from slow to fast
[CH20]	Prism 2		
		0-49	Not have
		50-99	Insert Prism 2
		100-149	Insert Prism 2
		150-199	Insert Prism 2
		200-255	Insert Prism 2
[CH21]	Prism 2 rotation		
		0-127	0-360 degrees
		128-190	From fast to slow, flowing
		191-192	Stop
		193-255	Reverse flow from slow to fast
[CH22]	Colorful mirror		

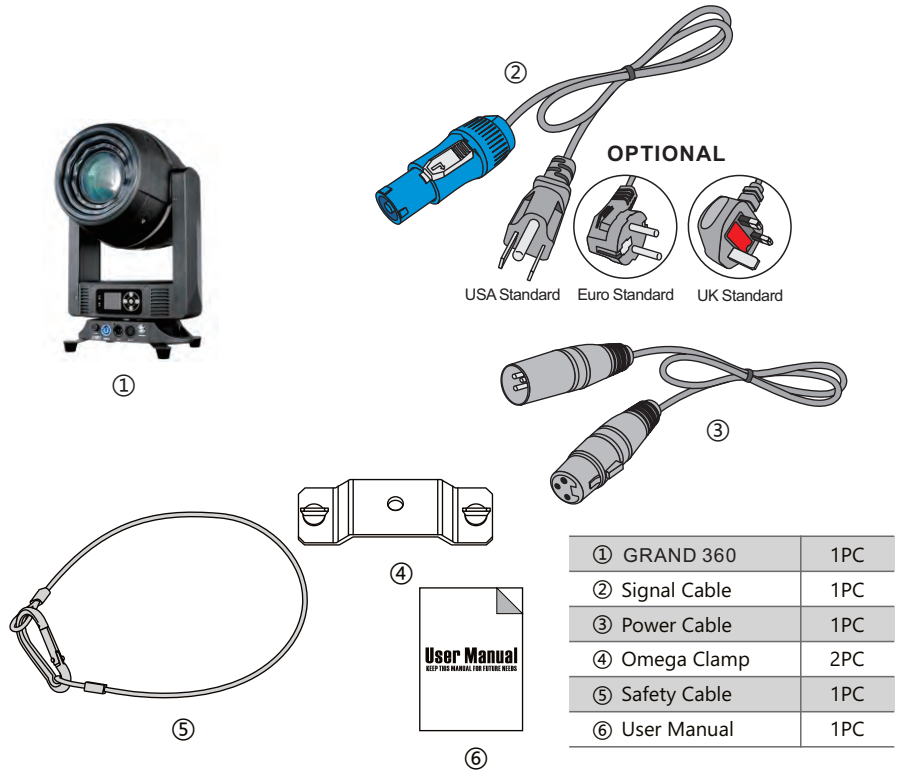
2 UNPACKING

SPOT+BEAM+WASH, 3-Ring Strip Effect, 2 Prism Wheels, Animation Wheel, Continuous PAN/TILT

The GRAND 360 is a new generation professional and intelligent compact LED BSW moving head light designed with smooth and linear zoom from 4°-32°. The SPOT features a new high intensity and efficiency Appotronics 360W 9500K LED module delivering ultra high light output through a set of high resolution and precise optics that helps to provide extremely clear and even spot coverage. The 3-ring strip light in the front head delivers magic and vivid dynamic lighting effect created by 108*0.2W 3-IN-1 SMD RGB LEDs.

It offers a full complement of other professional characteristics, rotating gobo wheel, static gobo wheel, color wheel, 6-color effect wheel, animation wheel, 2 prism wheels, frost filter, motorized focus, linear dimmer, strobe, etc. It provides 360°continuous fast and smooth PAN/TILT movement with variable speed which delivers even more vivid visual effect to the show. The fixture supports DMX, RDM (Remote Device Management).

It's fast and quiet operation LED BSW moving head. The fixture is tuned with proper LED refresh rate for flicker free operation for TV and FILM. It's a perfect option for live concerts, TV productions, road shows, theatre, conference halls, club/bars, etc.



① GRAND 360	1PC
② Signal Cable	1PC
③ Power Cable	1PC
④ Omega Clamp	2PC
⑤ Safety Cable	1PC
⑥ User Manual	1PC

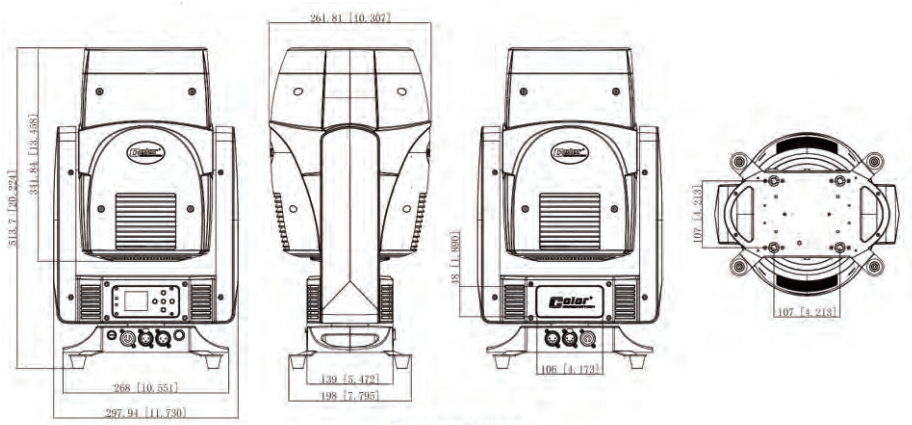
3 FEATURES & SPECIFICATIONS

1*Appotronics 360W White LED module
(30+36+42)*0.2W 3-IN-1 SMD RGB LEDs
Color Temperature: 9500K(±500K)
CRI: ≥70
16000 Lumen (Source)
Flicker free operation for broadcast TV and FILM
Life Span: 20000H
A set of high resolution and precise optics
Smooth and quiet linear motorized zoom
SPOT Mode: 4°-32°
Beam Mode:2.5°
Smooth and precise linear focus
PAN: 2 modes
1. 360°Continuous movement
2. 540°(8/16 bit)
TILT: 2 modes
1. 360°Continuous movement
2. 270°(8/16 bit)
Fast, quiet, smooth and precise 2-Phase motors
Smooth, fast and precise resolution for PAN/TILT movement with low noise operation
Scan position memory, auto reposition after unexpected movement
PAN/TILT reversible
1 Color wheel with 13 dichroic colors plus open (half color mode available)
Variable direction rainbow effect with speed adjustable
6-Color effect wheel
1 Rotating gobo wheel with 8 rotatable and interchangeable glass gobos plus open with speed adjustable, stream effect, dithering effect and rotatable clockwise or anticlockwise
1 Static gobo wheel with 12 gobos plus open
Gobo overlay (gobo morphing)
Special dynamic flame or water effect, etc
2 Prism wheel design
Prism 1: 4 different prisms, 5-Facet linear prism/3-Facet circular prism/8-Facet circular prism/4+8+16-facet circular prism with variable speed and direction
Prism 2: 4 different prisms, 6-Facet linear prism/12-facet circular prism/16-facet circular prism/8+16-facet circular prism with variable speed and direction
Prism indexing
Prism overlay (prism morphing)
16 Kinds of prism morphing effect
24 Kinds of prism effect in total
Linear frost filter (Hybrid effect for wash)
Even and soft coverage
0-25Hz LED shutter/strobe effect with variable speed
Preset variable/random strobe and dimming pulse effect
0-100% Smooth linear LED dimming
27 DMX channels USITT DMX-512
DMX512, master-slave, or auto operation
DMX recorder and edit function integrated
RDM available (Remote Device Management)
Art-NET (Optional)
Wireless receiver system built-in (Optional)
Shielded input signal protection for stable signal without interference
RJ45 etherCON IN/OUT (Optional with Art-Net)
3-Pin and 5-pin XLR DMX connectors IN/OUT
Electronic supply with active PFC
AC100-240V 50/60Hz
PowerCON IN/ OUT with fuse
395W Power consumption
-25℃ to 45℃ ambient temperature
IP20 protection rating

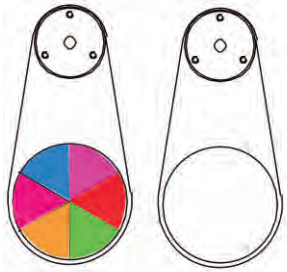
		95-99	Color 9+ Color 10
		100-104	Color 10
		105-109	Color 10+ Color 11
		110-114	Color 11
		115-119	Color 11+ Color 12
		120-124	Color 12
		125-129	Color 12+ Color 13
		130-134	Color 13
		135-139	Color 13+ Color 14
		140-200	From fast to slow, flowing
		201-255	Reverse flow from slow to fast
[CH12]	Explicit		
		0-32	Not have
		33-255	Cut into the obvious finger
[CH13]	Picture plate		
		0-4	White light
		5-9	Pattern 1
		10-14	Pattern 2
		15-19	Pattern 3
		20-24	Pattern 4
		25-29	Pattern 5
		30-34	Pattern 6
		35-39	Pattern 7
		40-44	Pattern 8
		45-49	Pattern 9
		50-54	Pattern 10
		55-59	Pattern 11
		60-64	Pattern 12
		65-69	Pattern 13
		70-129	Reverse flow from fast to slow
		130-134	White light
		135-190	From slow to fast flowing
		191-195	Shake pattern from slow to fast 1
		196-200	From slow to fast jitter pattern 2
		201-205	From slow to fast shaking pattern 3
		206-210	From slow to fast shaking pattern 4
		211-215	Shake pattern from slow to fast 5
		216-220	Shake pattern from slow to fast 6
		221-225	From slow to fast shaking pattern 7
		226-230	Shake pattern from slow to fast 8
		231-235	From slow to fast jitter pattern 9
		236-240	From slow to fast jitter pattern 10
		241-245	From slow to fast shaking pattern 11
		246-250	From slow to fast jitter pattern 12
		251-255	From slow to fast jitter pattern 12
[CH14]	Rotate the drawing tray		
		0-9	White light

5 DMX CHANNELS

Channel 1	Name	Numerical value	Describe
[CH1]	X-rotation	0-255	
[CH2]	Y-rotation	0-255	
[CH3]	X-axis	0-255	0-540 degrees
[CH4]	Y axis	0-255	0-270 degrees
[CH5]	X-axis fine-tuning	0-255	0-2 degrees
[CH6]	Y-axis fine-tuning	0-255	0-1 degree
[CH7]	XY speed	0-255	From fast to slow
[CH8]	Atomize		
		0-127	Not have
		128-255	Atomize
[CH9]	Strobe		
		0-3	Guan Guang
		4-127	From slow to fast pulse strobe
		128-191	From slow to fast gradient strobe
		192-251	Random strobe from slow to fast
		252-255	Consecrate
[CH10]	Dimming	0-255	0-100% dimming
[CH11]	Color plate		
		0-4	White light
		5-9	White light + 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



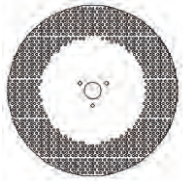
Dimensions



6-Color

Frost Filter

Rotating gobo



Animation wheel

Static gobo

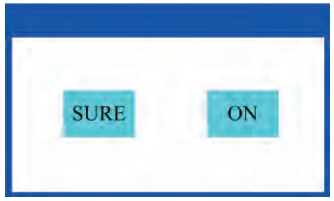
Color wheel

value is not saved;

- **Save the value:**At any time, click on the lower right corner."Certain"Key, that is, save the current value to the internal storage, and the next time you turn on the saved value to apply it to the lamp.

3. Set Boolean parameters

- When the set parameter is a Boolean value (such as ON or OFF), you can directly click the corresponding item to switch the parameter value, which will be saved to the internal storage after modification. Press the parameter option on the right, and the corresponding option will turn gray. When you let go, the corresponding parameters will change and save. If the 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 change.
- The determination of important Boolean parameters will be set through the confirmation window, as followsPicture5As shown:



Picture5Confirm the input window

7. Function operation and parameter setting

Enter the settings interface, as shown in Figure 6:

- 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 settings interfaces.

5. Set the DMX address code

Through the figure6-1The D of the lamp can be set on the page shown.MXAddress, channel mode, etc.

		RDM.
	Model	The model of the lamp is the same as the model information of RDM
	Display board	Firmware version and serial number of the display board
	Motherboard 1	Firmware version and serial number of motherboard 1
Light source time	Record the total cumulative time of turning on the light source, in minutes, and the user manually clears it as a reference for the time of regular maintenance of the light source.	
Lighting time	Record the total cumulative time of lighting is opened, and the unit minutes cannot be cleared.	

When the lamp cannot be corrected, please check whether it is turned off first."Optocouple correction".

After the signal is unplugged, if the position of the lamp is not output as expected, please check first."Data retention"Settings.

Set XYWhen the offset is set, please control X with the maximum stroke first.Y, after checking the settings, XYIt will not hit the positioning rod or shell.

10. Check the current status of the lamp

Enter as shown in the figure6-6On the displayed page, you can view the information and real-time status of the lamp to know the use status of the lamp. If the lamp needs after-sales service, 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 the information status of all motors and signals in the lamp	
	Hall	It is not displayed, indicating that the motor has not been corrected by Hall, 0 means that the motor has left the correction position, and 1 indicates that the motor is at the correction position.
	State	Display the completion status of motor reset
	X-axis	Display the real-time position value of X-axis optocoupler feedback
	Y axis	Display the real-time position value of Y-axis optocoupler feedback
	Optocoupler	Display the level status of the X and Y axis optocoupler signals, binary
Failure/status record	Display the last 8 fault records during the reset and operation of the lamp	
	Fault data	The total number of faults detected after powering
	12：:03	The power-on time at the time of failure is in minutes.
	Hall's fault	The motor did not detect a valid Hall signal when the corresponding motor was reset.
	Hall short circuit	The Hall signal of the motor has been valid when the corresponding motor is reset.
	Optocoupler failure	No effective optocoupler signal was detected when the corresponding motor was reset.
	Loss of pace	The corresponding motor loses step during operation.
	Hit the pole	Collision with the positioning rod when the corresponding motor is reset
	Light bulb failure	The light bulb accidentally extinguished
	Sensor failure	The temperature sensor signal is abnormal,
	Fan failure	The main fan is not working properly.
Status of lamps	Display the key status data of the current lamp for reference	
	Correspond	0~100%, the communication quality of the internal data link of the lamp
	Error count	After powering up, a total number of error frames was detected, accumulating
	Light source temperature	Display the temperature of the current light source,"---"Indicates no detection
	Display board temperature	Display the temperature of the current display board or nearby 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 lamp, an important reference for after-sales maintenance	
	Equipment	The name of the lamp is the same as the equipment information of

The menu setting of the lamp optimizes the setting of the address. Several setting address codes are as follows:

- Choose"The last one"Someone"The next one"The lamp will automatically calculate the address code of the next or the previous one according to the current address code and channel data, which can be set quickly;
- Click the address code value to enter the value editing window, where you can use any valid address code. The lamp automatically obtains the current channel number of the lamp and automatically filters the unusable address code (5)12-Current number of channels).
- Lamps support RDMThe protocol can be passed through RDMRemotely set the lamp address code.

Provide two buttons:

- Channel mode: different channel modes can be selected circularly;
- Lamp reset: reset all motors.

6. Set the working mode of lamps

Through the figure6-2The displayed page can set the operation mode of the lamp and control the lamp cannon. The lamp supports four operating modes (DMX mode, self-propelled mode, voice control mode and scene mode). Please refer to the previous section for detailed parameter numerical settings. The specific parameter description is shown in the following table:

Operation mode

DMX mode	Console mode, receive DMX signal, RDM signal	
Self-propelled mode	The lamp runs automatically according to the built-in program.	
Voice control mode	When the lamp detects a strong sound, the lamp automatically runs a scene according to the built-in program, otherwise the last scene will be maintained.	
Scene Mode 01	Run in a set scene and support custom editing of up to 10 scenes.	
	1~10	Output the specified scene
	Voluntary	Automatically cycle the output scene in the order of set scene time (non-0), and the scene with 0 time is automatically skipped and ignored.
Master-slave selection	It takes effect when it is not DMX mode. Select the mode of data output, and the lamp automatically detects the DMX state and automatically switches the output to prevent data conflicts.	
	Main engine	The lamp runs according to the built-in. If DMX has no signal, it will output data (synchronization), otherwise it will not output data.
	From the machine	The lamp runs as built-in and does not output data (not synchronized with other lamps)
	Voluntary	If DMX has no signal, the lamp will run according to the built-in, otherwise, the lamp will work according to the DMX signal.
Light bulb switch	(Bulb light source) pops up the confirmation dialog box, select "SURE" to confirm the current operation, turn the bulb on or off, and the switching interval is limited to 30 seconds.	
	Shut	The current light bulb output is turned off.
	Open	The current light output is on.

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

If the light source of the lamp is a light bulb, please wait 1 after turning off the light bulb.0Turn on the light bulb in a minute.

7. Panel display settings

The lamps support Chinese and English bilingual, upside-down display, etc., as shown in the figure.6-3Set the corresponding parameter settings shown, and the specific menu content is shown in the following table:

Display settings

Language	Set the language displayed	
	English	English display
	Chinese	Chinese display
Screen saver	After setting the screen for 30 seconds, the display content or method of the screen	
	Shut	Keep the last operation page and brighten the screen.
	Mode 1	Screen extinguishing
	Mode 2	Black screen, showing the address code of the current lamp in the lower left corner.
	Mode 3	Display trademark information, address code and operation mode
Screen rotation	Set the display direction of the screen	
	Shut	No reversal display
	Open	Reverse display
	Voluntary	Automatically detect the direction of the lamp hanging lamp and automatically switch the display direction
DMX instructions	Set the indication of the DMX signal indicator	
	Mode 1	When there is a signal, it lights up, and when there is no signal, it goes out.
	Mode 2	When there is a signal, it goes out, and when there is no signal, it lights up.
	Mode 3	Flash when there is a signal and extinguish when there is no signal.
Signal indicating brightness	Set the brightness of the signal indicator light	
	1~10	10 levels
Screen backlight	Set the brightness of the screen backlight after 10 seconds without operation, and it is fully bright during operation.	
	1~10	10 levels
Touch screen switch	Choose whether to disable the touch screen. When the screen touch is accidentally damaged, you can disable the touch function and use the auxiliary input to set the lamp.	
Touch correction	When the screen touch is inaccurate, you can enter the correction page to correct the screen.	

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

8. Scene mode

Enter as shown in the figure6-4On the page shown, the lamp enters the scene editing mode. Under this page, the lamp does not receive DMX console data, and the edited data is immediately reflected on the lamp.

The content of the page depends on the channel currently selected, and the channel content and order displayed are consistent with the lamp channel list. Through this page, you can edit 10The scenarios are shown in the following table:

Scene mode

Scene selection	Select the current operation scenario	
	1~10	10 scene settings
Scene time	Set the retention time of the current scene in automatic time, in 0.1 seconds.	
	0	The current scene does not participate in the automatic scene output.
	1-255	0..1 seconds to 25.5 seconds
1. X-axis	0-255	Set the data of each channel, and the display content and order correspond to the channel table of the lamp one by one.
.....	0-255	
.....	0-255	
N. Function	0-255	

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

By viewing this page, you can get the current channel table order of the lamps. Please refer to the detailed channel description for specific channel data.

9. Set the working parameters of the lamp

Enter as shown in the figure6-5The page shown adjusts the on-site parameters of lamps, facilitates the on-site installation of lamps, etc.

Advanced settings

X-axis reverse	Set the direction of X-axis rotation	
	Shut	No reverse
	Open	Go in the opposite direction
Y-axis reverse	Set the direction of Y-axis rotation	
	Shut	No reverse
	Open	Go in the opposite direction
Optocouple correction	Set whether the lamp detects XY out of step and corrects it	
	Shut	Do not correct the position after stepping
	Open	Automatic correction of position after stepping
X-axis offset	Set the position of the X-axis zero of the lamp	
	4-150	
Y-axis offset	Set the position of the zero point of the Y axis of the lamp	
	4-48	
Data retention	Set the lamp without DMXWhen the signal, the output state of the lamp	
	Shut	There is no signal, so the motor and light source return to the position and state when the reset is completed.
	Open	No signal, keep the last frame DMXData output
Turn on the light mode	Set the way to turn on the bulb for the first time after it is powered on	
	Power up and bubble	When powering up, turn on the light bulb first, and reset the lamp after 30 seconds.
	Bubble after reset	Replace the lamp after 3 seconds of power-on, and turn on the light bulb after the reset is completed.
	Manual foaming	After the reset is completed, manually turn on the light bulb through the menu or console.
Factory settings	After the confirmation box pops up and selects SURE, the lamp parameters return to the factory settings.	

When choosing the power-on bubble mode, the lamp will wait for the bulb 3 after being powered on.0Second, let the bulb fully start, and after the internal voltage is stable enough, start the reset program. If the on-site power capacity is stable, it is recommended to turn on the light bulb mode.