

**BETOPPER**

# Moving Laser User Manual



Model: LS3000RGB

Please read the manual carefully before using



201830478508.1

**BIG DIPPER LASER SCIENCE & TECHNOLOGY CO., LTD**  
REV: 1.00



# LED Moving Beam After Sales Service


## Product warranty card

Please fill in the following content properly future maintenance. Accordingly, for your each purchase of our systems we have archive Serial number and parameters for future reference.

Testing: <input type="checkbox"/>	warranty: <input type="checkbox"/>	non-warranty: <input type="checkbox"/>
Mode :		Serial No.:
Distributor:		Address:
Tel :		
<p>About Product Warranty</p> <p>1 . Any product buy from our company (or authorized agent), which used properly, and with this card, can have 1 year warranty for Lights, mechanical parts, electronic parts. If out of the warranty situation, we can provide the paid maintenance service.</p> <p>2.The warranty is no longer valid in the following situations:</p> <ul style="list-style-type: none"> <li>* Warranty cards and products have no serial numbers. .</li> <li>* Product is damaged or show significant signs of self-disassembly.</li> <li>*Any unauthorized modification (removal or replacement) made to product or it?s components.</li> <li>*Improper or excessive use of inappropriate repairs which result in a repair failure or injury.</li> <li>* Did not follow instructions or use in an environment not suitable for product..</li> <li>*Product damage caused by strong impact</li> <li>*The warranty cannot be extended if the product as been serviced</li> <li>*Light Source normal degradation</li> <li>*Warranty card must be filled out with receipt of purchasing in order for the warranty to be valid.</li> <li>*Product is damaged due to abnormal voltage or caused by other accidents (ex. Natural disasters).</li> </ul> <p>3. The Company reserves the right to interpret the provisions above. The content of these articles is subject to change without notice!</p>		

# LS3000RGB User Manual

## Attention

1. Do not look directly at the bulb while the light is on.
2. Follow the instructions. Do not disassemble the unit by yourself. Please contact the skilled people in the event of a operating problem.
3. The unit shall be installed by professionals.
4. Place the unit away from the strobe light.
5. Keep the unit dry. Do not expose the unit to rain, moisture or dust. Waterproof protection is needed when the unit is exposed outdoors.
6. Do not touch the unit and pull the power cable with wet hand.
7. Do not turn on or off the unit frequently. Otherwise, the service time will be affected. Besides, keeping working for a long time should be avoided.
8. Fixed installation to prevent the unit from strong vibration or shock.
9. Prevent foreign objects from entering the unit to avoid malfunction.
10. Keep the distance between the unit and the objects in the lighting 50CM at least.
11. Do not connect the power cable or turn on the light before installation.
12. Make sure the plug has been wired up properly before being powered on.
13. Use the original shake-proof packing for re-transportation.
14.  This symbol indicates separate collection of electronics and electronic equipment.

**The Company reserves the right to interpret the above terms.**

## Inspection

In order to use the product securely and properly, please read the manual before using and follow the instructions strictly to prevent personal safety trouble and product damage caused by misuse.

Take care of the product, check the possibility of the product damage caused by transportation and check all the listed items are present upon receipt of the product.

Moving Laser*1	Use Manual*1	Power Cable*1
Power Adapter*1	Ring*1	Hanging bracket*1
Screw*2	Ceiling plate(optional)*1	TF card*1

## Installation

1. Make sure there is no flammable or explosive subjects within min 1.5 meter nearby the installation.
2. Before installation, please check and make sure the power supply voltage meet request of the system.
3. Please check ventilation and fans or exhaust passages are cleared.
4. The equipment should be fixed firmly.
5. For security reasons, the appliance must be earthed.

Requirements of embedded installation:

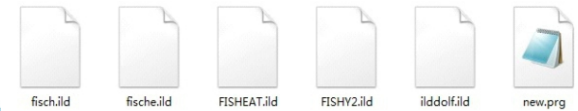
1. Drill a hole with diameter of 190mm on ceiling floor.
2. install embedded plate on ceiling floor, fix it with screws.
3. Hold light base and aim at the "unlock" point on the embedded plate.
4. Keep pushing up until the light base completely embedded in the plate, clockwise rotate 15°.
5. To ensure safety, user should clamp the light tightly before releasing hands in case of the light falling down.
6. The light base has hanging accessories, user can add the safety rope hanger according to site situation.

## TF card file description

1. This system only supports short file names, file names (including folder names) up to 8 bit file names and 3 bit extensions, file names and extensions by letters , numbers and underscores. The file name cannot be more than 8 digits. no support Chinese characters, or the file system can be not recognize.
2. TF card only special for TF file, cannot store with other files, support up to 255 ILDA files.
3. There should be a new folder in the TF card. There is a new.prg file (playlist file) and some ILDA file under the new folder. Each newly added ILDA file should be added into to the new.prg file. The format of the new.prg file is Use carriage return between each path, The last path ending with two consecutive carriage returns. The name of the ilda file corresponding to the path on the program list must same as add the name of the ilda file. or the system cannot find the corresponding ilda file.

```
1 0:/new/fisch.ILD
2 0:/new/fische.ILD
3 0:/new/FISHEAT.ILD
4 0:/new/FISHY2.ILD
5 0:/new/ilddolf.ILD
6
7 |
```

Content on the list file new.prg



TF card / new / path inside the file

4. The files supported by this system are standard ILDA format files, ie files with the extension ild.
5. The file system of the TF card should be in FAT format and support up to 16GB TF card (including 16GB).

## Declare

The unit is with good performance and complete package when it is delivered. The end-user of this unit should follow all the above instructions and warnings. Any damage caused by misuse, malfunction and problem caused by ignoring the instructions are not included in the repair guarantee of the manufacturer or dealers.

All the products manufactured by Big Dipper Laser Science and Technology CO., Ltd have anti-fake logo. Please check the anti-fake logo to make sure it's original to protect you. The anti-fake logo is on the bottom of product.

## Troubleshooting

Following are a few common problems that may occur during operation. Here are some suggestions for easy troubleshooting.

A. The fixture does not work, no light.

1. Check the connection of power and main fuse.
2. Make sure the mains voltage on the main connector.
3. Check the power LED.

B. Not responding to DMX controller.

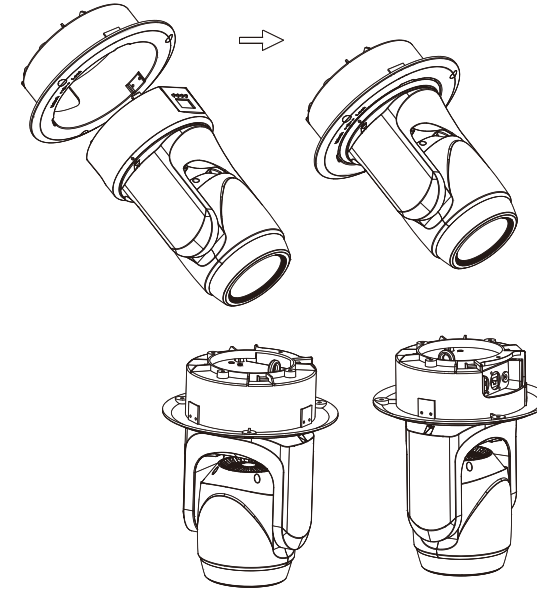
1. DMX LED should be on. If not, check DMX connectors, cables to see if link properly.
2. If the DMX LED is on and no response to the channel, check the address settings and DMX polarity.
3. If you have intermittent DMX signal problems, check the pins on connectors or on PCB of the fixture or the previous one.
4. Try to use another DMX controller.
5. Check if the DMX cables run near or run alongside to high voltage cables that may cause damage or interference to DMX interface circuit.

C. Not response to the sound.

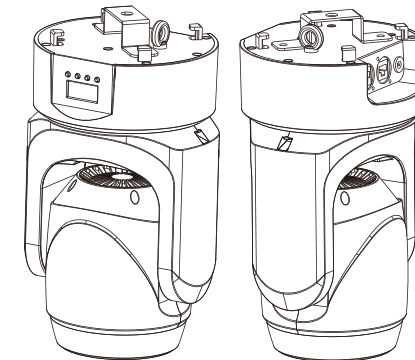
1. Make sure the fixture not receive DMX signal.
2. Check microphone to see if it is good by tapping the microphone.

D. One of the channels is not working well.

1. The stepper motor might be damaged or the cable connected to the PCB is broken,
2. The motor's drive IC on the PCB might be out of service.



Embedded installation



Independent installation

## Technical Specification

Model	<b>LS3000RGB</b>
Technical	
Light source	RGB synthetic laser 300mW R:638nm 120mW G:532nm 150mW B:450nm 30mW
Adapter	Input:AC 100-240V 50/60Hz Output: DC 24V 2A
Input power	50W
Control mode	Sound/Auto-play/ILDA file/Playlist file/DMX /master slave
DMX channel	20CH/22CH
Net weight	2.5 kg
Standard Paking	Power Adapter*1,Hanging bracket*1,Screw*2,Instruction manual*1,Ceiling plate(optional)
Effect	Lightweight and flexible,Combined with ceiling plate accessorie,Can be embedded in ceiling or wall mounting. Horizontal angel: Pan angle is 540° Vertical angel: Tilt angle is 180° Fantastic night light effect,Great for bar, slow shake, club, disco. Etc

1. At last fixture, the DMX cable has to be terminated with a terminator to reduce signal errors.Solder a 120-ohm 1/4W resistor between pin 2(DMX-) and pin 3(DMX+) into a 3-pin XLR-plugand plug it in the DMX-output of the last fixture.
2. Connect the fixture together in a "daisy chain"by XLR plug cable from the output of the fixture to the input of the next fixture.The cable can't be branched or split to a "Y" cable.
3. Inadequate or damaged cables,soldered joints or corroded connectors can easily distort the signal and shut down the system.  
The DMX output and input connectors are pass through to maintain the DMX circuit when one of the units'power is disconnected.

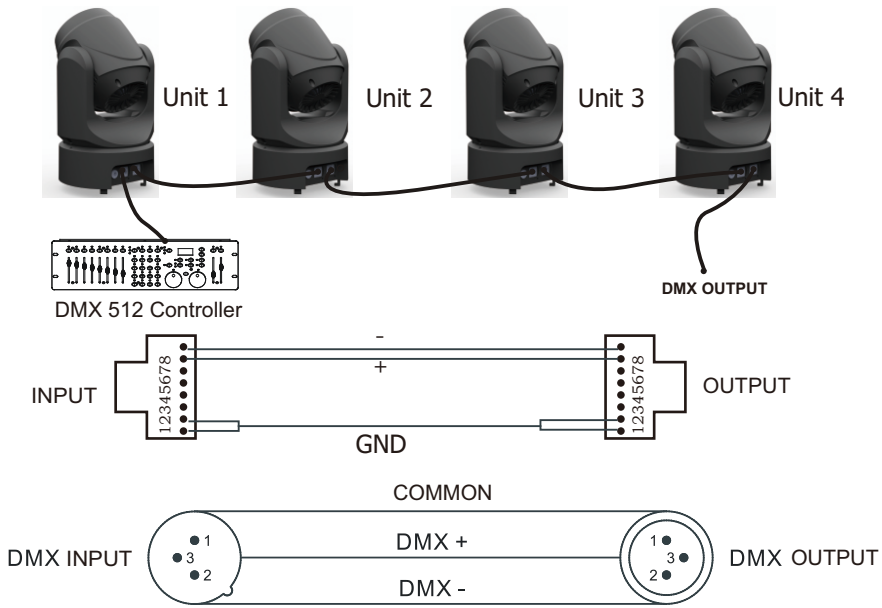
### Master-slave Connection



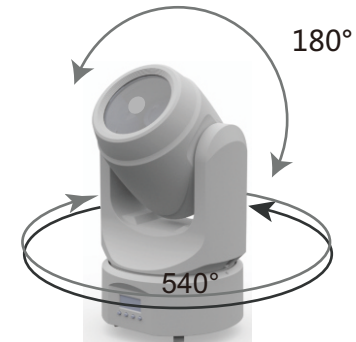
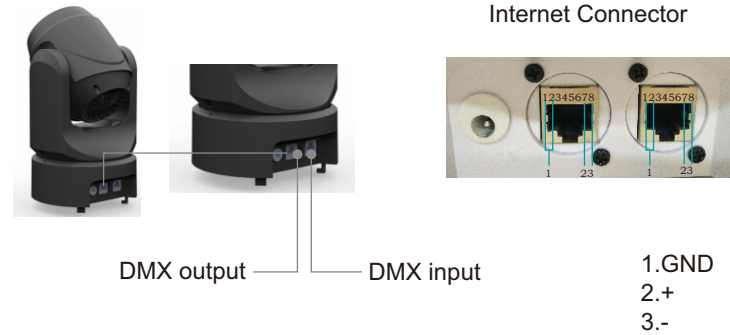
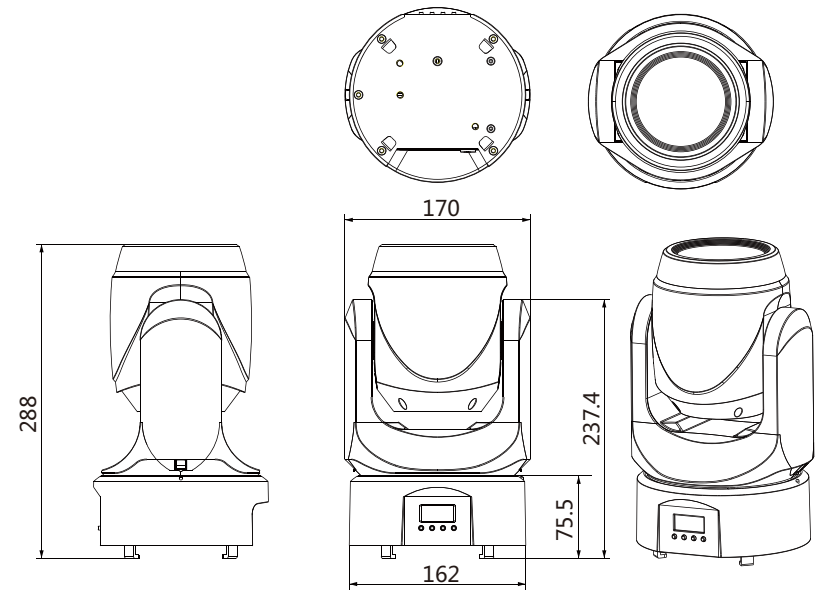
1. When there are multiple machines need to be connected, have to set one of them as master and in the sound control mode or auto mode, then set other machines as slave 1. **SLO1** or slave 2 **SLO2**
2. At last fixture, the DMX cable has to be terminated with a terminator to reduce signal errors.Solder a 120-ohm 1/4W resistor between pin 2(DMX-) and pin 3(DMX+) into a 3-pin XLR plugand plug it in the DMX-output of the last fixture.
3. Connect the fixture together in a "daisy chain"by XLR plug cable from the output of the fixture to the input of the next fixture.The cable can't be branched or split to a "Y" cable.
4. Inadequate or damaged cables,soldered joints or corroded connectors can easily distort the signal and shut down the system.  
The DMX output and input connectors are pass through to maintain the DMX circuit when one of the units'power is disconnected.

18	20	Speed/Sensitivity	000-255	Speed Slow-Fast (Auto and Programme Mode in Effect)
			000-255	Sound Sensitivity Less-Higher (Sound Display in Effect)
19	21	Laser phase setting	000-049	Default phase(Digital menu set phase)
			050-099	Phase setting 1
			100-149	Phase setting 2
			150-199	Phase setting 3
			200-255	Phase setting 4
20	22	Reset	200-255	(Stay 5S) Lamp Reset

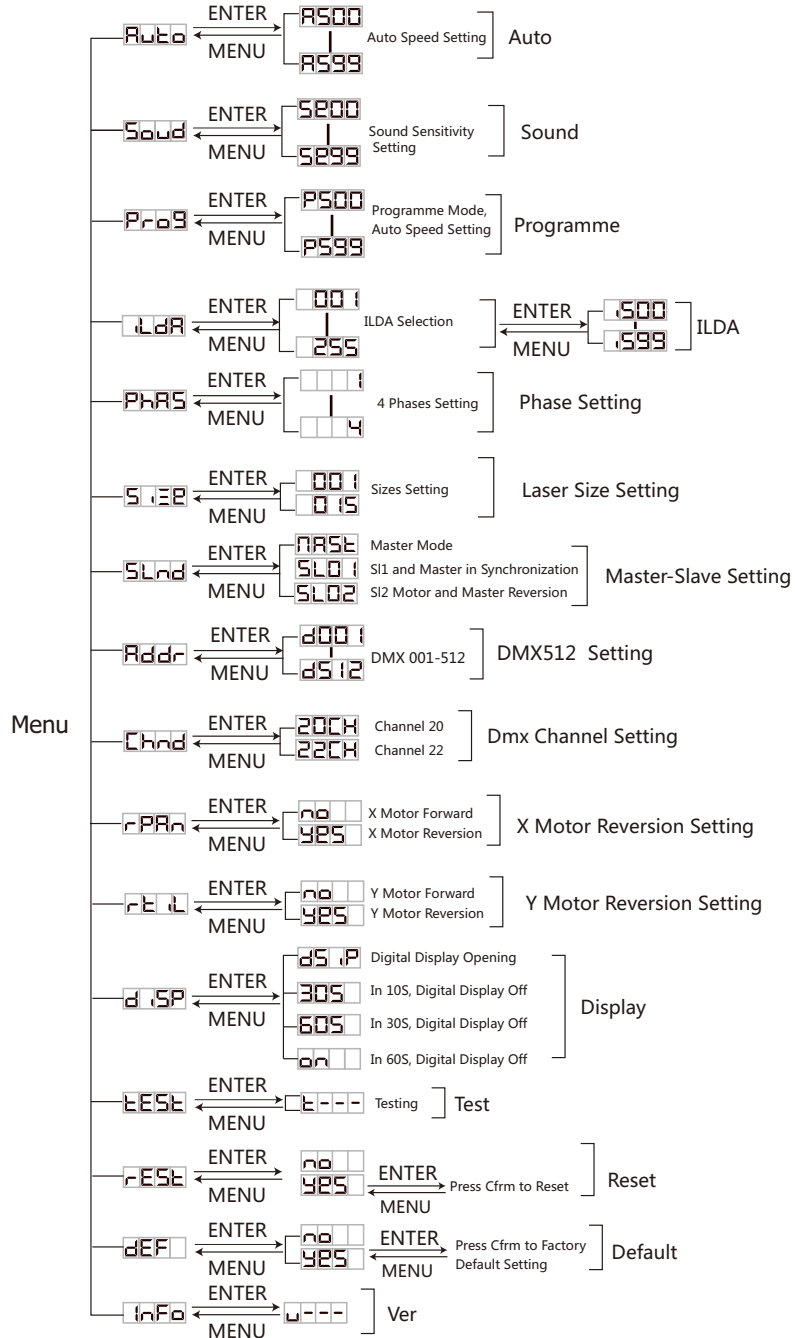
### DMX Connection



Termination reduces signal errors and avoid signal transmission problems and interference. It is always advisable to connect a DMX terminal. (Resistance 120 ohm 1/4W) between pin2(DMX-) AND pin3(DMX+) of the last fixture.



# Menu Functio



11	13	Laser Rotation with Y Direction	000	No Rotation
			001-150	Anually adjust the Y-axis rotation angle
			151-255	Automatic rotation around the Y axis
12	14	Laser Rotation in Middle	000	No Rotation
			001-180	Manually adjust the rotation angle
			181-217	Auto Rotation Clockwise
			218-255	Auto Roation Anticlockwise
13	15	Laser Drawing	000-001	Unchange
			002-149	Manual Adjust Drawing
			150-255	Automatic progressive subtraction cycle
14	16	Laser X Axis Wave	000-010	No waves
			011-200	Wave effect, fixed amplitude, slow speed----block
			201-255	Wave effect, fixed speed, small amplitude----large
15	17	Laser Display Mode Choose	000-069	Normal Indication
			070-139	Spot Display
			140-209	Phase Display
			210-255	Dot Display
16	18	Laser Colors	000-018	White
			019-037	Red
			038-056	Green
			057-075	Blue
			076-094	Yellow
			095-113	Purple
			114-132	Cyan
			133-151	Red, green and blue Tri-color segmentation
			152-170	Yellow blue purple Tri-color segmentation
			171-189	White red green blue yellow purple blue Seven-color segmentation
			190-208	Red, green and blue Three-color flow
			209-227	Yellow blue purple Three-color flow
			228-246	White red green blue yellow purple blue Seven-color flow
			247-255	Voice-activated change to color (need matching speed sensitivity channel)
			17	19
010-099	Auto Play(Laser Display Default Setting)			
100-199	Sound Control Play			
200-255	Prog ramme Mode Play(Laser Display as TF list)			



## DMX channel function

20 Channel	21 Channel	Function	Value	Percent/Setting
1	1	Pan	000-255	0-540°(8bit)
	2	Pan Fine	000-255	(16bit)
2	3	Tilt	000-255	0-180°(8bit)
	4	Tilt Fine	000-255	(16bit)
3	5	Pan/Tilt Speed	000-255	Fast to slow
4	6	Laser Mode Choose	000-049	Cut-off Light
			050-099	Sound (Controlled with Speed/Sensitivity channel)
			100-149	Auto
			150-199	prog model
			200-249	ilda model
250-255	Manual Mode			
5	7	Default Patterns Selection	000-255	3 Values 1 GOBO (Manual Mode)
		ILDA Files Choose	000-255	(ILDA Mode)
6	8	Strobe	000-009	Not Strobe (Manual Mode)
			010-255	Strobe Slow-Fast (Manual Mode)
7	9	Laser Patterns X Direction Movement	000-167	Laser gobo manually adjust the position
			168-188	Laser gobo automatic circulating motion, from Left to right
			189-209	Laser gobo automatic circulating motion, from right to left
			210-255	Laser gobo automatic circulating motion, right and left Irregular jump
8	10	Laser Patterns Y Direction Movement	000-167	Laser gobo Vertical manual adjust the position
			168-188	Laser gobo automatic circulating motion, from below to upper
			189-209	Laser gobo automatic circulating motion, from upper to below
			210-255	Laser gobo automatic circulating motion, below and upper Irregular jump
9	11	Laser Zoom	000-010	No Zoom
			011-104	Manual Zoom
			105-154	Auto Zoom+
			155-204	Auto Zoom-
			205-255	Recycle Zoom
10	12	Laser Rotation with X Direction	000	No rotation
			001-150	Manually adjust the X-axis rotation angle
			151-255	Automatic rotation around the X axis

## Instruction of Function

### Auto model

Press the "MENU" button until the digital display **Auto**, Press "ENTER" to enter the auto mode. Press the "UP"/"DOWN" button to adjust the speed of the auto mode. Speed adjustment range is from **AS00** to **AS99**, **AS00** is the slowest, **AS99** is the fastest.

Press "ENTER" to save the settings and exit the current menu to return to the previous menu.

### Voice control model

Press the "MENU" button until the digital display **Sound**, Press "ENTER" to enter the Voice control model. Press the "UP"/"DOWN" button to adjust the speed of the Voice control model. Speed adjustment range is from **SE00** to **SE99**, **SE00** has the lowest sensitivity and **SE99** has the highest sensitivity.

Press "ENTER" to save the settings and exit the current menu to return to the previous menu.

### Program list mode

Press the "MENU" button until the digital display **Prog**, Press "ENTER" to enter the Program list. Automatically loop the ILDA file on the playlist file. Press the "UP"/"DOWN" button to adjust the speed of the Program list. Speed adjustment range is from **PS00** to **PS99**, **PS00** has the lowest sensitivity and **PS99** has the highest sensitivity.

Press "ENTER" to save the settings and exit the current menu to return to the previous menu.

### ILDA model

Press the "MENU" button until the digital display **ILDA**, Press "ENTER" to enter the "ilad" document model. Press the "UP"/"DOWN" button to adjust the file rotation. ILDA file selection adjustment range is **001-255**. The actual adjustment range is determined by the number of ILDA files in the TF card.

Press "ENTER" to save the settings and exit the current menu to return to the previous menu.

### Phase setting

Press the "MENU" button until the digital display **PHAS**, Press "ENTER" to enter Phase setting. Press the "UP"/"DOWN" button to adjust phase setting. The speed phase setting is adjusted to **001-004**.

Press "ENTER" to save the settings and exit the current menu to return to the previous menu.

### Laser size setting

Press the "MENU" button until the digital display **SIZE**, Press "ENTER" to enter Laser size setting. Press the "UP"/"DOWN" button to adjust Laser size. The Laser size setting is adjusted to **001-015**. The **001** laser has the smallest size and the **015** laser has the largest size.

Press "ENTER" to save the settings and exit the current menu to return to the previous menu.

### Master-slave setting

Press "MENU" till screen show **SLAVE**, press "ENTER" to master-slave setting, press "UP"/"DOWN" to adjust master-slave setting. Press "ENTER" to save setting. Master-slave setting is **MS01**, **MS02** and **MS03**.

**MS01**: Master mode, several lamps connected together, there will be one lamp as master lamp, others are slave lamps

**SLO1** : Slave mode 1, same setting as master lamp. Display as master.

**SLO2** : Slave mode 2, same settings as master lamp, x ray ,y ray run opposite to master lamp. Partly LED color same as master lamp,partly difference.

Press "ENTER" to exist current menu and back to previous manue.

#### Address Setting

press "MENU" bottom till screen show **Addr** , press "ENTER" to adress setting, press "UP"/"DOWN"to adjust MDX address. Press "ENTER"to save setting.

The range of DMX address settings is **0001 - 0512**

Press "ENTER" to exist current menu and back to previous manue.

#### Channel Setting

Press "MENU" bottom till screen show **Chan** , press "ENTER"to channel setting. Press "UP"/"DOWN"to adjust channel setting.Press "ENTER"to save setting.

Channel setting is **20CH** and **22CH**

Press "ENTER" to exist current menu and back to previous manue.

#### X-axis inversion setting

press "MENU" bottom till screen show **PARA** , Press "ENTER"to X-axis inversion setting.

Press "UP"/"DOWN"to adjust X-axis inversion setting.

X axis setting is **no** and **YES**

**no** : X axis positive

**YES** : X axis negative

Press "ENTER" to exist menu and back to up previous manue.

#### Y-axis inversion setting

Press the "MENU" button until **REL** is displayed on the digital display,Press "ENTER" key to enter the Y-axis to reverse setting, press "UP"/ "DOWN" key to adjust the y-axis inversion setting

Y-axis inversion settings are **no** and **YES** respectively

**no** : Y-axis positive

**YES** : Y-axis reversed

Press "ENTER" to exit the current menu to return to the previous menue.

#### Display setting

Press "MENU" key until the digital display **DISP** , press "ENTER" key to enter the display settings, press "UP" / "DOWN"

Key to adjust the display settings.

Press "ENTER" to exit the current menu to return to the previous menue.

Display settings are **DISP** , **30S** , **60S** and **ON**

**DISP** : Digital display backward

**30S** : Displayed off after 30 seconds without pressing the button

**60S** : Displayed off after 60 seconds without pressing the button

**ON** : Digital display is steady

Press "MENU" to exit the current menu to return to the previous menu.

#### Test setup

Press the "MENU" button until the digital display **TEST** ,Enter the test mode luminaire to test each function in sequence.

Press the "menu" button to exit the test mode and return to the previous menu.

#### Reset

Press "MENU" key until the digital display **RESET** , press "ENTER" key to enter the reset setting, press "UP" / "DOWN"Key to adjust the reset setting.

Reset settings are **no** and **YES** respectively

**no** : Press ENTER to exit the current menu and return to the previous menu

**YES** : Press ENTER, the lamp is reset

Press "ENTER" to exit the current menu to return to the previous menu.

#### Restore the default settings

Press "MENU" key until the digital display **DEF** , press "ENTER" key to enter restore default settings, press "UP" /"DOWN" key to restore the default settings.

Restore default settings are **no** and **YES**

**no** : Press ENTER to exit the current menu and return to the previous menu.

**YES** : Press ENTER to restore the default setting

Press "ENTER" to exit the current menu to return to the previous menu.

#### The default factory values are as follows:

- 1.Auto model,speed is **RS01**
- 2.Sound control on, voice sensitivity **0050**
3. The Laser size are **015**
4. The main and auxiliary modes are **SLO1**
5. The channel is set to **22CH**
- 6.The address code is **0001**
- 7.X-axis positive, Y-axis positive
- 8.Digital display is positively lit

#### Information show

Press the "menu" button until the digital display **INFO** , press the "enter" button to view the information display.

If the luminaire is not equipped with a TF card, the digital prompt **TF** and **ERR0** .If the light has a card, but without documents in the card,file format is incorrect,file storage the path is in correct, digital display Prompt **FILE** and **ERR0** .