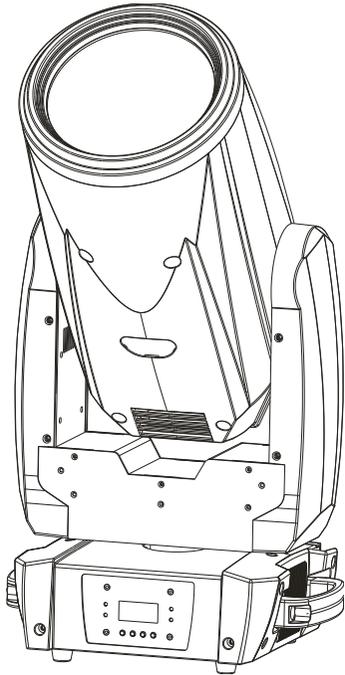




# LED BEAM 300



**LED-MB50**

**User**

**Guide**

Professional Entertainment Technology

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### 1. Safety Instruction



#### WARNING

Please read carefully the instruction, which includes important information about the installation, usage and maintenance.

Please keep this User Guide for future consultation. If you sell the unit to another user, be sure that they also receive this instruction booklet.

Unpack and check carefully there is no transportation damage before using the unit.

Before operating, ensure that the voltage and frequency of power supply match the power requirements of the unit.

It's important to ground the yellow/green conductor to earth in order to avoid electric shock.

The unit is for indoor use only. Use only in a dry location.

The unit must be installed in a location with adequate ventilation, at least 50cm from adjacent surfaces. Be sure that no ventilation slots are blocked.

Disconnect main power before replacement or servicing.

Make sure there is no flammable materials close to the unit while operating as it is fire hazard.

Use safety cable when fixes this unit. Don't handle the unit by taking its head only, but always by taking its base.

Maximum ambient temperature is  $t_a$ : 40°C. Don't operate it where the temperature is higher than this.

Unit surface temperature may reach up to 85°C. Don't touch the housing bare-hand during its operation. Turn off the power and allow about 15 minutes for the unit to cool down before replacing or serving.

In the event of serious operating problem, stop using the unit immediately. Never try to repair the unit by yourself. Repairs carried out by unskilled people can lead to damage or malfunction. Please contact the nearest authorized technical assistance center. Always use the same type spare parts.

Do not touch any wire during operation as high voltage might be causing electric shock.

## Warning

To prevent or reduce the risk of electrical shock or fire, do not expose the unit to rain or moisture.

Do not open the unit within five minutes after switching off.

The housing, the lenses, or the ultraviolet filter must be replaced if they are visibly damaged.

For power supply, do not connect in series more than 2 units, use another mains supply for the next units.

## Caution

There are no user serviceable parts inside the unit. Do not open the housing or attempt any repairs yourself. In the unlikely event your unit may require service, please contact your nearest dealer.

## Installation

The unit should be mounted via its screw holes on the bracket. Always ensure that the unit is firmly fixed to avoid vibration and slipping while operating. And make sure that the structure to which you are attaching the unit is secure and is able to support a weight of 10 times of the unit's weight. Also always use a safety cable that can hold 12 times of the weight of the unit when installing the fixture.

The equipment must be fixed by professionals. And it must be fixed at a place where is out of the touch of people and has no one pass by or under it.

## 2. Technical Specification

LED BEAM 300 that creates extremely powerful beam

Three operation modes: DMX, Master/Slave, Sound Active

DMX channels: 15/16

Rotating Gobo wheel: 6 gobos + open

Color Wheel: 7 colors + open

3 facet rotating, indexable and replaceable prism

Auto focus

Beam angle: 4°

Optional CA-8 easy controller or CA-9 RTX (wireless easy control kit) for instant lighting shows

Linear dimmer 0~100% and variable strobe

**Voltage:** 230V, 50Hz

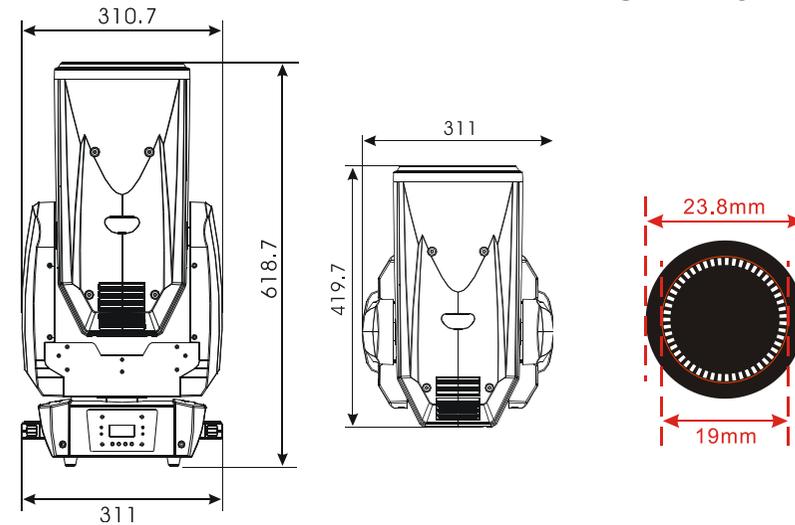
**Power consumption:** 180W

**Light source:** 1×50W White LED

**Dimension:** 419.7 X 311 X 618.7 mm

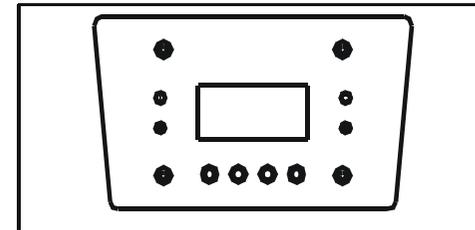
**Φ Rotating gobo =**19mm

**Weight:** 10.2 kg



## 3. How To Set The Unit

### 3.1 Control panel



### Display

To show the various menus and the selected functions

### LED

DMX	On	DMX input present
-----	----	-------------------

MASTER	On	Master Mode
SLAVE	On	Slave Mode
SOUND	Flashing	Sound activation

### Button

MENU	To select the programming functions
DOWN	To go backward in the selected functions
UP	To go forward in the selected functions
ENTER	To confirm the selected functions

### Only for remote control

Connecting with CA-8/CA-9/CA-9RTX to control the unit for Stand by, Function and Mode function.

### Mains input

Connect to power supply.

### Mains output

Connect to supply power for the next unit.

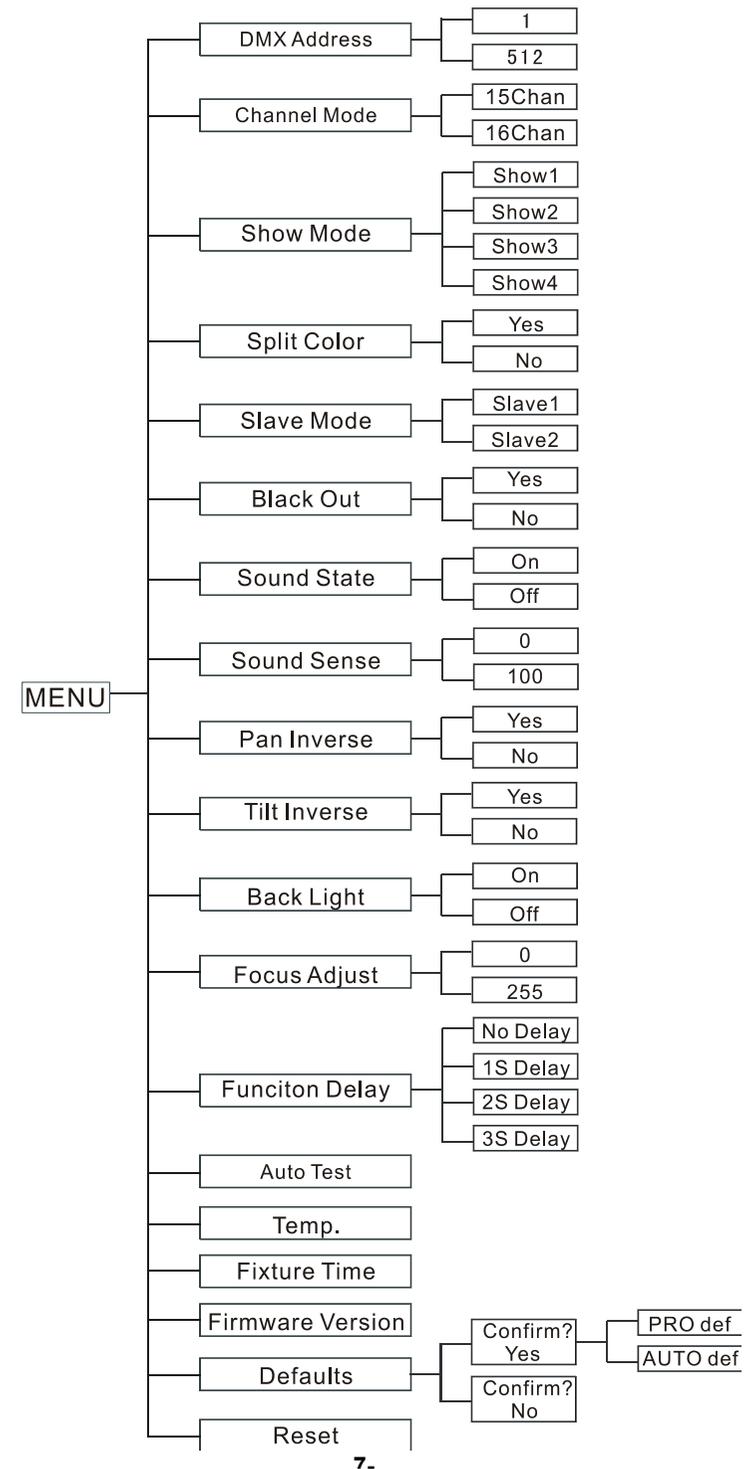
### DMX input/output

For DMX512 link, use 3/5-pin XLR cable to link the unit together.

### 3.2 Main Function

To select any of the given functions, press the **MENU** button up to when the required one is showing on the display. Select the function by **ENTER** button and the display will blink. Use **DOWN** and **UP** button to change the mode. Once the required mode has been selected, press the **ENTER** button to setup, to go back to the functions without any change press the **MENU** button again. Hold and press the **MENU** button about one second or wait for one minute to exit the menu mode.

The main functions are showing below:



### ***DMX Address***

Select **DMX Address**, press **ENTER** button to confirm, the present address will blink on the display. Use **UP** and **DOWN** button to adjust the address from **1** to **512**. Once the address has been selected, press the **ENTER** button to setup, to go back to the functions without any change press the **MENU** button again. Hold and press the **MENU** button about one second or wait for one minute to exit the menu mode.

### ***Channel Mode***

Select **Channel Mode**, press **ENTER** button to confirm, present mode will blink on the display. Use **DOWN** and **UP** button to select the **15 Chan** (15 Channel Mode) or **16 Chan** (16 Channel Mode) mode. Once the mode has been selected, press the **ENTER** button to setup, to go back to the functions without any change press the **MENU** button again. Hold and press the **MENU** button about one second or wait for one minute to exit the menu mode.

### ***Show Mode***

Select **Show Mode**, press **ENTER** button to confirm, present mode will blink on the display. Use **DOWN** and **UP** button to select the **Show 1** or **Show 2** or **Show 3** or **Show 4** mode. Once the mode has been selected, press the **ENTER** button to setup, to go back to the functions without any change press the **MENU** button again. Hold and press the **MENU** button about one second or wait for one minute to exit the menu mode.

### ***Split Color Mode***

Select **Split Color Mode**, press **ENTER** button to confirm, present mode will blink on the display. Use **DOWN** and **UP** button to select the **Yes** (Split Color mode) or **No** (normal) mode. Once the mode has been selected, press the **ENTER** button to setup, to go back to the functions without any change press the **MENU** button again. Hold and press the **MENU** button about one second or wait for one minute to exit the menu mode.

### ***Slave Mode***

Select **Slave Mode**, press **ENTER** button to confirm, present mode will blink on the display. Use **DOWN** and **UP** button to select the **Slave 1** (normal) or **Slave 2** (2 light show) mode. Once the mode has been selected, press the **ENTER** button to setup, to go back to the functions without any change press the **MENU** button again. Hold and press the **MENU** button about one second or wait for one minute to exit the menu mode.

### ***Black Out***

Select **Slave Mode**, press **ENTER** button to confirm, present mode will blink on the display. Use **DOWN** and **UP** button to select the **Yes** (yes blackout) or **No** (no blackout) mode. Once the mode has been selected, press the **ENTER** button to setup, to go back to the functions without any change press the **MENU** button again. Hold and press the **MENU** button about one second or wait for one minute to exit the menu mode.

### ***Sound State***

Select **Sound State**, press **ENTER** button to confirm, present mode will blink on the display. Use **DOWN** and **UP** button to select the **On** (sound on) or **Off** (sound off) mode. Once the mode has been selected, press the **ENTER** button to setup, to go back to the functions without any change press the **MENU** button again. Hold and press the **MENU** button about one second or wait for one minute to exit the menu mode.

### ***Sound Sense***

Select **Sound Sense**, press **ENTER** button to confirm, present mode will blink on the display. Use **DOWN** and **UP** button to select the **0 ...100** mode. Once the mode has been selected, press the **ENTER** button to setup, to go back to the functions without any change press the **MENU** button again. Hold and press the **MENU** button about one second or wait for one minute to exit the menu mode.

### ***Pan Inverse***

Select **Pan Inverse**, press **ENTER** button to confirm, present mode will blink on the display. Use **DOWN** and **UP** button to select the **Yes** (pan inversion) or **No** (normal) mode. Once the mode has been selected, press the **ENTER** button to setup, to go back to the functions without any change press the **MENU** button again. Hold and press the **MENU** button about one second or wait for one minute to exit the menu mode.

### ***Tilt Inverse***

Select **Pan Inverse**, press **ENTER** button to confirm, present mode will blink on the display. Use **DOWN** and **UP** button to select the **Yes** (tilt inversion) or **No**(normal) mode. Once the mode has been selected, press the **ENTER** button to setup, to go back to the functions without any change press the **MENU** button again. Hold and press the **MENU** button about one second or wait for one minute to exit the menu mode.

### **Back Light**

Select **Back Light**, press ENTER button to confirm, present mode will blink on the display. Use **DOWN** and **UP** button to select the **On** (Led on) or **Off** (Led off) mode. Once the mode has been selected, press the **ENTER** button to setup, to go back to the functions without any change press the **MENU** button again. Hold and press the **MENU** button about one second or wait for one minute to exit the menu mode.

### **Focus Adjust**

Select **Focus Adjust**, press ENTER button to confirm, present mode will blink on the display. Use **DOWN** and **UP** button to select the **0 ...255** mode. Once the mode has been selected, press the **ENTER** button to setup, to go back to the functions without any change press the **MENU** button again. Hold and press the **MENU** button about one second or wait for one minute to exit the menu mode.

### **Function Delay**

Select **Function Delay**, press ENTER button to confirm, present mode will blink on the display. Use **DOWN** and **UP** button to select the **No Delay** or **1S/2S/3S Delay** (Wait for 1/2/3 seconds before these Functions of 15/16 CH are activated/deactivated) mode. Once the mode has been selected, press the **ENTER** button to setup, to go back to the functions without any change press the **MENU** button again. Hold and press the **MENU** button about one second or wait for one minute to exit the menu mode.

### **Auto-Test**

Press the **MENU** button up to when the **Auto-Test** is blinking on the display. Pressing **ENTER** button and the unit will run self-test by built-in program. To go back to the functions press the **MENU** button again. Hold and press the **MENU** button about one second or wait for one minute to exit the menu mode.

### **Temperature**

Press the **MENU** button up to when the **Temperature Test** is blinking on the display. Pressing **ENTER** button and the display will show the temperature of the unit. To go back to the functions press the **MENU** button again. Hold and press the **MENU** button about one second or wait for one minute to exit the menu mode.

### **Fixture Time**

Press the **MENU** button up to when the **Fixture Time** is blinking on the display. Pressing **ENTER** button and the display will show the number of working hours of the unit. To go back to the functions press the **MENU** button again. Hold and press the **MENU** button about one second or wait for one minute to exit the menu mode.

### **Firmware Version**

Press the **MENU** button up to when the **Firmware version** is blinking on the display. Pressing **ENTER** button and the display will show the version of software of the unit. To go back to the functions press the **MENU** button again. Hold and press the **MENU** button about one second or wait for one minute to exit the menu mode.

### **Defaults Setting**

Press the **MENU** button to show **Defaults** on the display. Press the **ENTER** button and the display will blink. Use the **DOWN** and **UP** button to select the **Confirm? YES** or **Confirm? No**. Once the **Confirm? Yes** has been selected, press the **ENTER** button and use the **UP** and **Down** button to select the **PRO Def** or **AUTO Def**.

**PRO Defaults:** For professional users, detailed explanation as followings:

- F **Channel Mode**    à 16 Chan
- F **Split Color Mode** à Yes
- F **Slave Mode**       à Slave 1
- F **Black Out**         à Yes
- F **Sound State**      à Off
- F **Pan Inverse**      à No
- F **Tilt Inverse**     à No
- F **Back Light**       à Off
- F **Function Delay**   à 3S Delay

**AUTO Defaults:** Mostly automatic mode, for non professional users, detailed explanation as followings:

- F **Channel Mode**    à 15 Chan
- F **Split Color Mode** à No
- F **Slave Mode**       à Slave 1

- F **Black Out**      à No
- F **Sound State**    à On
- F **Pan Inverse**      à No
- F **Tilt Inverse**      à No
- F **Back Light**      à On
- F **Function Delay** à 3S Delay

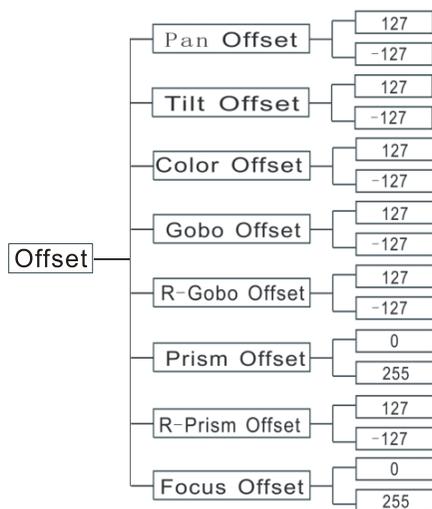
(Notice: Other settings are NOT changed while choosing Defaults Setting!)

Press the **ENTER** and the corresponding functions will set to defaults setting, to go back to the functions without any change press the **MENU** button again. Hold and press the **MENU** button about one second or wait for one minute to exit the menu mode.

### Reset

Press the **MENU** button up to when the **Reset** is blinking on the display. Pressing **ENTER** button and all channels of the unit will return to their standard position.

### 3.3 Home Position Adjust



In the main functions, hold **Enter** button for at least 3 seconds into offset mode, use **DOWN** and **UP** button up to chose **Pan Offset**, **Tilt Offset**, **Color Offset**, **Gobo Offset**, **R-Gobo Offset**, **Prism Offset**, **R-Prism Offset** or **Focus Offset**, pressing **ENTER** Pressing **ENTER**

button and the display will blink. Use **DOWN** and **UP** button to adjust the home position of the Pan, Tilt, color, Gobo1, R-Gobo, Prism, R-Prism, or Focus. Once the position has been selected, press the **ENTER** button to setup, to go back to the functions without any change press the **MENU** button again. Hold and press the **MENU** button about one second or wait for one minute to exit the menu mode.

## 4. How To Control The Unit

You can operate the unit in three ways:

1. Master/slave built-in preprogram function
2. Easy controller
3. Universal DMX controller

There is no need to turn the unit off when you change the DMX address, as new DMX address setting will be effect at once. Every time you turn the unit on, it will show “LED-MB50” on the display and move all the motors to their ‘home’ position and you may hear some noises for about 20 seconds. After that the unit will be ready to receive DMX signal or run the built in programs.

### 4.1 Master/Slave Built In Preprogrammed Function

By linking the units in master/slave connection, the first unit will control the other units to give an automatic, sound activated, synchronized light show. This function is good when you want an instant show. You have to set the first unit in master mode **Show Mode** and select show **1** or **show 2** or **show 3** or **show 4** mode. Its DMX input jack will have nothing plugged into it, and Its master LED will be constantly on and sound LED will flash to the music. The other units will have to set in **slave mode** and select **Slave 1** (normal) or **Slave 2** (2 light show) mode, Their DMX cables plugged into the DMX input jacks (daisy chain) and the slave led lights will constantly on.

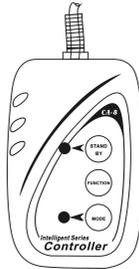
### 2-light show

In **slave mode**, **Slave 1** means the unit works normally and **Slave 2** means 2-light show. In order to create a great light show, you can set **Slave 2** on the second unit to get contrast movement to each other, even if you have two units only.

### 4.2 Easy Controller

The easy remote control is used only in master/slave mode. By connecting to the 1/4" microphone jack of the first unit, you will find that the remote controller on the first unit will control all the other units in Stand by, and Mode selection.

Stand By	Blackout the unit		
Function	1. Sync. Strobe 2. Async strobe 3. Sound Strobe	Show 1-4	1. Press to select color 2. Hold to select gobo
Mode	Sound (LED OFF)	Show (LED Slow Blinking)	LED ON



### 4.3 DMX Controller

By using a universal DMX controller to control the units, you will need to set DMX address from 1 to 512 so that the units can receive DMX signal.

Press the **MENU** button up to when the **DMX Address** is showing on the display. Pressing **ENTER** button and the display will blink. Use **DOWN** and **UP** button to change the DMX512 address. Once the address has been selected, press the **ENTER** button to setup, to go back to the functions without any change press the **MENU** button again. Hold and press the **MENU** button about one second or wait for one minute to exit the menu mode.

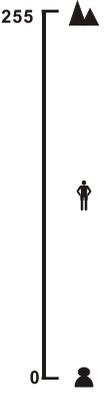
Please refer to the following diagram to address your DMX512 channel for the first 4 units :

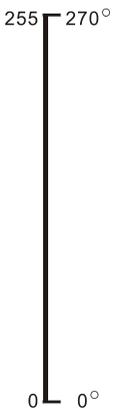
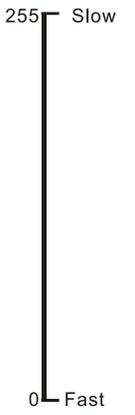
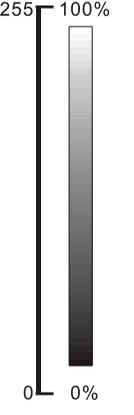
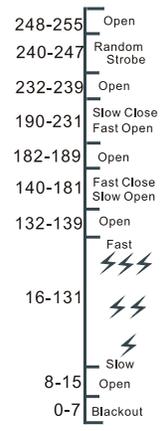
Channel mode	Unit 1 Address	Unit 2 Address	Unit 3 Address	Unit 4 Address
15channels	1	16	31	46
16channels	1	17	33	49

### 4.4 DMX 512 Configuration

15 channel modes:

15 Channel Mode				
Ch1	Ch2	Ch3	Ch4	Ch5
Pan	Pan Fine	Tilt	Tilt Fine	Pan/Tilt Speed
255 540° 0 0°	255 0	255 270° 0 0°	255 0	255 Slow 0 Fast
Ch6	Ch7	Ch8		Ch9
Dimmer	Shutter	Color Wheel (Normal)	Color Wheel (Split Color)	Gobo 1
255 100% 0 0%	248-255 Open 240-247 Random Strobe 232-239 Open 190-231 Slow Close Fast Open 182-189 Open 140-181 Fast Close Slow Open 132-139 Open Fast 16-131 Slow 8-15 Open 0-7 Blackout	255 Rotation Fast 194 Rotation Slow 190-193 Stop 189 Rotation Slow 128 Rotation Fast 099-127 Color7 085-098 Color6 071-084 Color5 057-070 Color4 043-056 Color3 029-042 Color2 015-028 Color1 000-014 White	255 Rotation Fast 194 Rotation Slow 190-193 Stop 189 Rotation Slow 128 Rotation Fast 105-127 Color14 098-104 Color13 090-097 Color12 083-089 Color11 075-082 Color10 068-074 Color9 060-067 Color8 053-059 Color7 045-052 Color6 038-044 Color5 030-037 Color4 023-029 Color3 015-022 Color2 008-014 Color1 000-007 White	255 Rotation Fast 194 Rotation slow 190-193 Stop 189 Rotationslow 128 Rotation Fast 119-127 Gobo6 shaking 110-118 Gobo5 shaking 101-109 Gobo4 shaking 092-100 Gobo3 shaking 083-091 Gobo2 shaking 074-082 Gobo1 shaking 064-073 White shaking 055-063 Gobo6 046-054 Gobo5 037-045 Gobo4 028-036 Gobo3 019-027 Gobo2 010-018 Gobo1 000-009 White

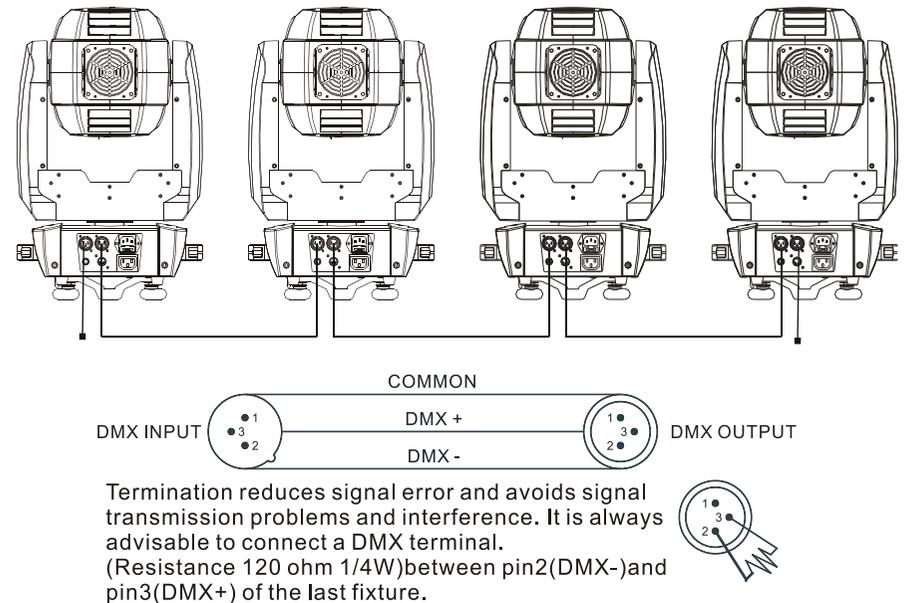
15 Channel Mode					
Ch10	Ch11	Ch12	Ch13	Ch14	Ch15
R-Gobo 1	No Function	Prism	R-Prism	Focus	Function
255 Rotation Fast  194 Rotation Slow 190-193 Stopped 189 Rotation Slow  128 Rotation Fast  000-127 Index		<b>008-255 Prism On</b>  <b>000-007 Prism Off</b>	255 Rotation Fast  194 Rotation Slow 190-193 Stopped 189 Rotation Slow  128 Rotation Fast  000-127 Stopped		250-255 Sound Active 210-249 No Function 200-209 Reset All 130-199 No Function 120-129 Disable Blackout while Gobo Change 110-119 Enable Blackout while Gobo Change 100-109 Disable Blackout while Color Change 090-099 Enable Blackout while Color Change 080-089 Disable Blackout while Pan/Tilt Move 070-079 Enable Blackout while Pan/Tilt Move 000-069 No Function

16 Channel Mode				
Ch1	Ch2	Ch3	Ch4	Ch5
Pan	Tilt	Pan/Tilt Speed	Dimmer	Shutter
				
Color Wheel (Normal)	Color Wheel (Split Color)	No Function	No Function	Gobo 1
255 Rotation Fast  194 Rotation Slow 190-193 Stop 189 Rotation Slow  128 Rotation Fast  099-127 Color7 085-098 Color6 071-084 Color5 043-056 Color3 029-042 Color2 015-028 Color1 000-014 White	255 Rotation Fast  194 Rotation Slow 190-193 Stop 189 Rotation Slow  128 Rotation Fast  105-127 Color14 098-104 Color13 090-097 Color12 083-089 Color11 075-082 Color10 068-074 Color9 060-067 Color8 053-059 Color7 045-052 Color6 038-044 Color5 030-037 Color4 023-029 Color3 015-022 Color2 008-014 Color1 000-007 White			255 Rotation Fast  194 Rotation slow 190-193 Stop 189 Rotationslow  128 Rotation Fast  119-127 Gobo6 shaking 110-118 Gobo5 shaking 101-109 Gobo4 shaking 092-100 Gobo3 shaking 083-091 Gobo2 shaking 074-082 Gobo1 shaking 064-073 White shaking 055-063 Gobo6 046-054 Gobo5 037-045 Gobo4 028-036 Gobo3 019-027 Gobo2 010-018 Gobo1 000-009 White

16 channel modes:

16 Channel Mode						
Ch10	Ch11	Ch12	Ch13	Ch14	Ch15	Ch16
R-Gobo 1	Prism	R-Prism	Focus	Pan Fine	Tilt Fine	Function
255 Rotation Fast  194 Rotation Slow 190-193 Stopped 189 Rotation Slow  128 Rotation Fast 000-127 Index	<b>008-255 Prism On</b>  <b>000-007 Prism Off</b>	255 Rotation Fast  194 Rotation Slow 190-193 Stopped 189 Rotation Slow  128 Rotation Fast 000-127 Stopped	255   0 	255 0	255 0	250-255 Sound Active 210-249 No Function 200-209 Reset All 130-199 No Function 120-129 Disable Blackout while Gobo Change 110-119 Enable Blackout while Gobo Change 100-109 Disable Blackout while Color Change 090-099 Enable Blackout while Color Change 080-089 Disable Blackout while Pan/Tilt Move 070-079 Enable Blackout while Pan/Tilt Move 000-069 No Function

#### 4.5 DMX512 Connection



1. If you using a controller with 5 pins DMX output, you need to use a 5 to 3 pin adapter-cable.
2. At last unit, the DMX cable has to be terminated with a terminator. Solder a 120 ohm 1/4W resistor between pin 2(DMX-) and pin 3(DMX+) into a 3-pin XLR-plug and plug it in the DMX-output of the last unit.
3. Connect the unit together in a `daisy chain` by XLR plug from the output of the unit to the input of the next unit. The cable can not branched or split to a `Y` cable. DMX 512 is a very high-speed signal. Inadequate or damaged cables, soldered joints or corroded connectors can easily distort the signal and shut down the system.
4. The DMX output and input connectors are pass-through to maintain the DMX circuit, when one of the units' power is disconnected.
5. Each lighting unit needs to have an address set to receive the data sent by the controller. The address number is between 0-511 (usually 0 & 1 are equal to 1).
6. The end of the DMX 512 system should be terminated to reduce signal errors.
7. 3 pin XLR connectors are more popular than 5 pin XLR.  
 3 pin XLR: Pin 1: GND, Pin 2: Negative signal (-), Pin 3: Positive signal (+)  
 5 pin XLR: Pin 1: GND, Pin 2: Negative signal (-), Pin 3: Positive signal (+), Pin 4/Pin 5: Not used.

## 5. Troubleshooting

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

### A. The unit does not work, no light and the fan does not work

1. Check the connection of power and main fuse.
2. Measure the mains voltage on the main connector.
3. Check the power on 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 unit 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. Some units don't respond to the easy controller

1. You may have a break in the DMX cabling. Check the LED for the response of the master/ slave mode signal.
2. Wrong DMX address in the unit. Set the proper address.

### D. No response to the sound

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

### E. 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 condition

## 6. Fixture Cleaning

The cleaning of internal and external optical lenses and/or mirrors must be carried out periodically to optimize light output. Cleaning frequency depends on the environment in which the fixture operates: damp, smoky or particularly dirty surrounding can cause greater accumulation of dirt on the unit's optics.

Clean with soft cloth using normal glass cleaning fluid.

Always dry the parts carefully.

Clean the external optics at least every 20 days. Clean the internal optics at least every 30/60 days.

### Fresnel Lens:

Clean the lens with neutral soap and water, and then dry it with soft cloth. Be aware that alcohol or other detergent could cause damage to lens. Please note the lens would be burnt yellow or cracked after three-month use of average 8 hours per day, which can reduce the output in some degree. The lens is consumable with a warranty of three months only.

Please change with genuinely new lens when necessary.

### **EC Declaration of Conformity**

We declare that our products (lighting equipments) comply with the following specification and bears CE mark in accordance with the provision of the Electromagnetic Compatibility (EMC) Directive 89/336/EEC.

EN55014-2: 1997 A1: 2001, EN61000-4-2: 1995; EN61000-4-3: 2002;

EN61000-4-4: 1995; EN61000-4-5: 1995, EN61000-4-6: 1996, EN61000-4-11: 1994.

**&**

### **Harmonized Standard**

EN60598-1: 2000+ALL: 2000+A12: 2002

Safety of household and similar electrical appliances

Part 1: General requirements

# Innovation, Quality, Performance