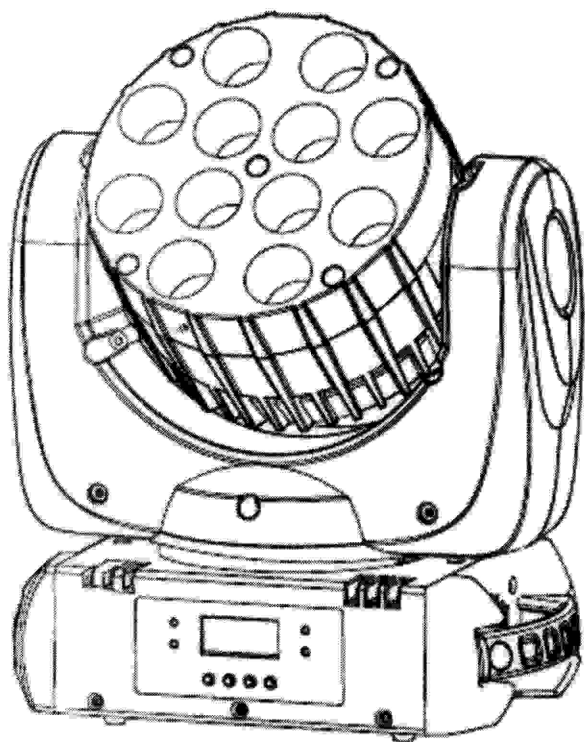


LED BEAM MOVING HEAD 12

User's Manual



Professional Entertainment Technology

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1. Safety Instruction



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

WARNING

- 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 $t_a: 40^{\circ}\text{C}$. 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.

Warning

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

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 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 which is out of the touch of people and has no one pass by or under it.

2. Technical Specification

- ◇ Extremely small, fast and powerful LED Moving beam.
- ◇ DMX Channels: 9/12/28CH
- ◇ Pan/Tilt: $630^{\circ}/200^{\circ}$ speed adjustable
- ◇ Smooth electronic dimming: 0-100%
- ◇ Electronic strobe with pulse and random effects
- ◇ High efficiency, low power consumption
- ◇ Super compact, low weight

Voltage: 100V-240V, 50/60Hz

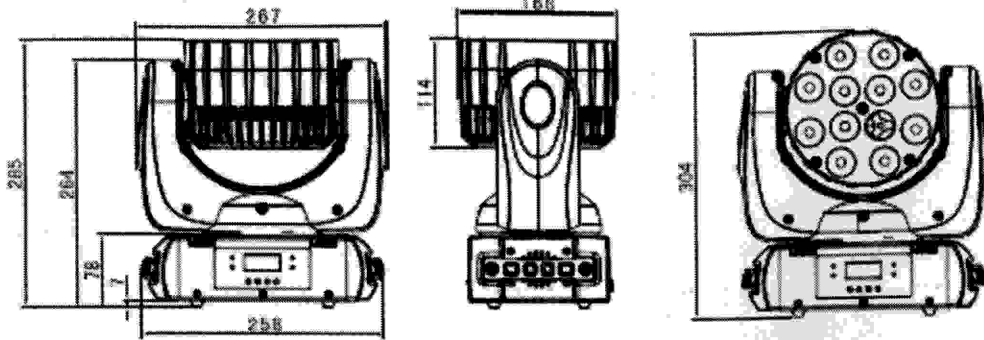
Fuse: T6.3A

Power consumption: 150W

Light source: 12pcs LED x 10 (4 in 1)

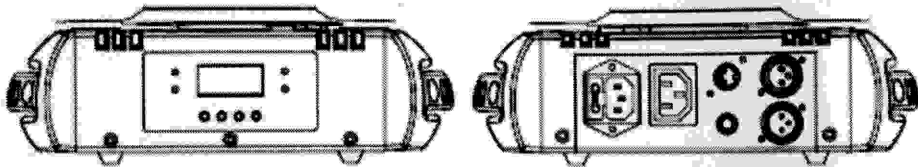
Dimension: 375x322x445mm

Weight: 5.7kg



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 |

Mains Input

Connect to power supply.

Mains Output

Connect to supply power to the next unit

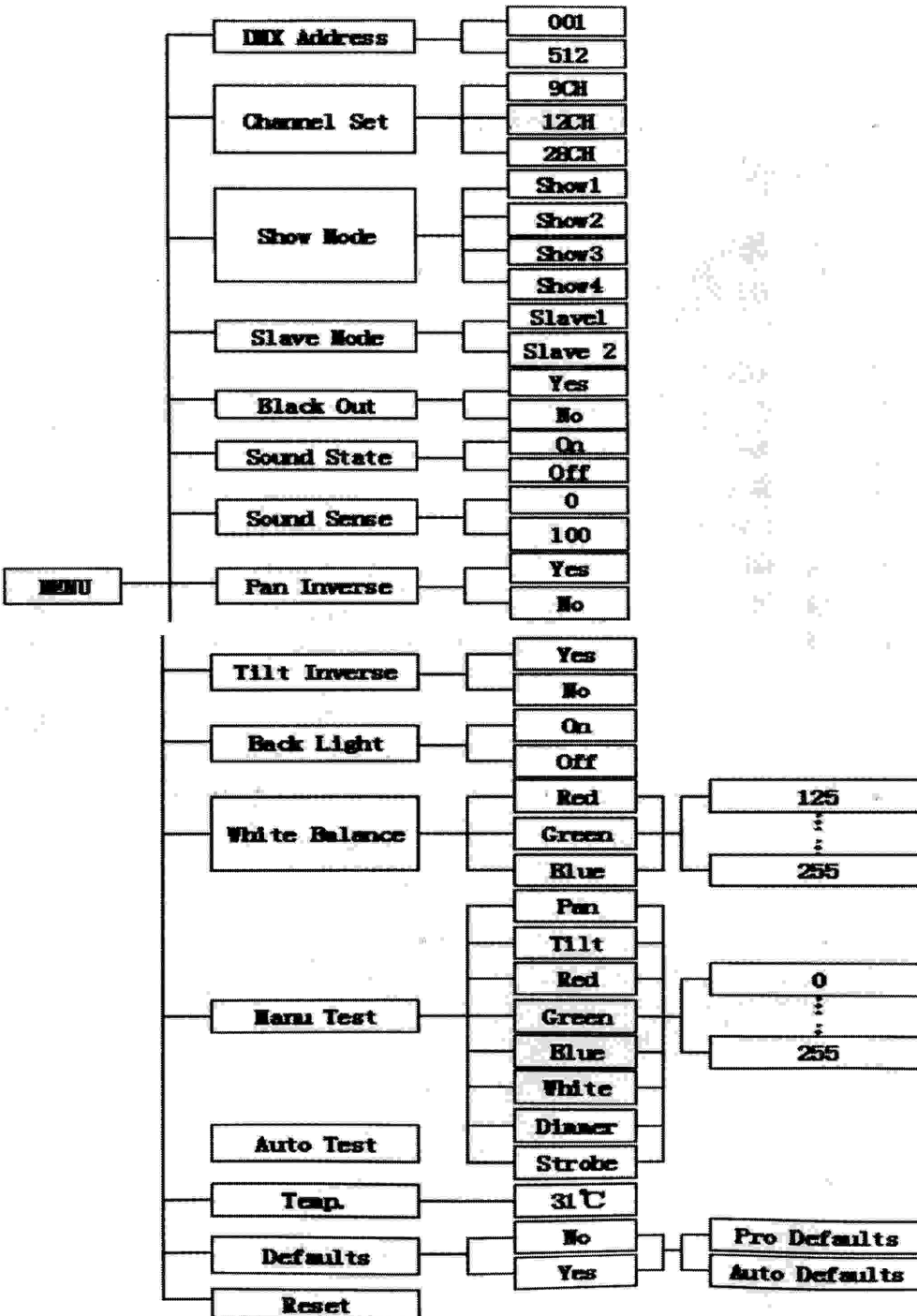
DMX Input / Output

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:



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

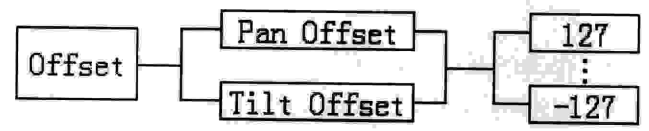
- ⊖ Slave Mode ⊖ Slave 1
- ⊖ Black Out ⊖ No
- ⊖ Sound State ⊖ On
- ⊖ Pan Inverse ⊖ No
- ⊖ Tilt Inverse ⊖ No
- ⊖ Back Light ⊖ On

(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** or **Tilt Offset**, Pressing **ENTER** button and the display will blink. Use **DOWN** and **UP** button to adjust the home position of the Pan, Tilt, Once the opposition 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 two ways:

1. Master/Slave built-in preprogram function
2. Universal DMX controller

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 "M108RGBW" 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 lining 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

DMX Address

Select **DMX Address**, Press the **ENTER** button to confirm, the present address will blink on the display. Use the **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 Set

Select **Channel Set**, Press the **ENTER** button to confirm, the present set will blink on the display. Use the **UP** and **DOWN** button to select channel 9/12/16. Once the set 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 the **ENTER** button to confirm, present mode will blink on the display. Use the **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

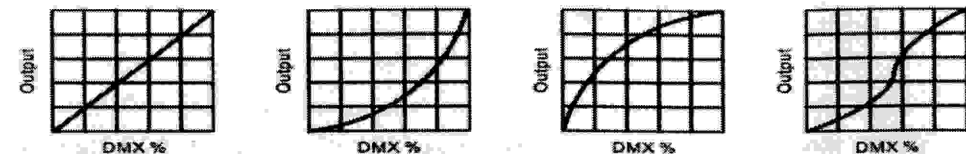
Slave Mode

Select **Slave Mode**, Press the **ENTER** button to confirm, present mode will blink on the display. Use the **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 the **ENTER** button to confirm, present mode will blink on the display. Use the **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

Dimmer Modes



Mode 1 (Optically Linear): The increase in light intensity appears to be linear as DMX value is increased.

Mode 2 (Square Law): Light intensity control is finer at low levels and coarser at high levels.

Mode 3 (Inverse Square Law): Light intensity control is coarser at low levels and finer at high levels.

Mode 4 (S-curve): Light intensity control is finer at low levels and high levels and coarser at medium levels.

Sound State

Select **Sound State**, Press the **ENTER** button to confirm, present mode will blink on the display. Use the **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 the **ENTER** button to confirm, present mode will blink on the display. Use the **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 the **ENTER** button to confirm, present mode will blink on the display. Use the **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

4.2 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 |
|--------------|----------------|----------------|----------------|----------------|
| 9 channels | 1 | 10 | 19 | 28 |
| 12 channels | 1 | 13 | 25 | 37 |
| 28 channels | 1 | 29 | 57 | 85 |

4.3 DMX 512 Configuration

9 Channel Modes:

| DMX Configuration | | | | | | | | |
|-------------------|----------|---|----------|----------|----------|----------|----------|--|
| 9 Channel mode | | | | | | | | |
| Ch1 | Ch2 | Ch3 | Ch4 | Ch5 | Ch6 | Ch7 | Ch8 | Ch9 |
| Pan | Tilt | Strobe | Red | Green | Blue | White | Dimmer | Function |
| 255-0° | 255-240° | 248-255 240-247 232-239 190-207 182-189 140-181 132-139 15-131 0-15 0-15 0-15 | 255-100% | 255-100% | 255-100% | 255-100% | 255-100% | 255-255 Standalone 215-248 No Function 203-209 Reset 000-195 No Function 000-000 Double Effect 070-079 Double Effect 000-000 No Function |

12 Channel Modes:

| Channel List | Value | Function |
|--------------|---------|----------------------------------|
| CH1 | 0-255 | Strobe |
| CH2 | 0-255 | Dimmer(0%-100%) |
| CH3 | 0-255 | Pan(0°-630°) |
| CH4 | 0-255 | Pan Fine(Least significant bit) |
| CH5 | 0-255 | Tilt (0°-200°) |
| CH6 | 0-255 | Tilt Fine(Least significant bit) |
| CH7 | 000-255 | Sound activation |
| CH8 | 000-255 | Color Effect |
| CH9 | 000-255 | Red (0%-100%) |
| CH10 | 000-255 | Green (0%-100%) |
| CH11 | 000-255 | Blue (0%-100%) |
| CH12 | 000-255 | White (0%-100%) |

Tilt Inverse

Select **Tilt Inverse**, Press the **ENTER** button to confirm, present mode will blink on the display. Use the **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 the **ENTER** button to confirm, present mode will blink on the display. Use the **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

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 12CH 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.

White Balance

Select **White Balance**, press the **ENTER** button to confirm, present mode will blink on the display. Use the **DOWN** and **UP** button to select the **Red** or **Green** or **Blue**. Once the mode has been selected, press the **ENTER** button to setup, use the **DOWN** and **UP** button to change the value (125~255). Once the mode has been selected, press the **ENTER** button to setup, 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.

Manu Test

Select **Manu Test**, press the **ENTER** button to confirm, present mode will blink on the display. Use the **DOWN** and **UP** button to select the **Pan/ Tilt/ Red/ Green/ Blue/ White/Dimmer** or **Strobe**. Once the mode has been selected, press the **ENTER** button to setup, use the **DOWN** and **UP** button to change the value (0~255). Once the mode has been selected, press the **ENTER** button to setup, 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.

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 **YES** or **No**. Once the **Yes** has been selected, press the **ENTER** button and use the **UP** and **Down** button to select the **PRO Defaults** or **AUTO Defaults**.

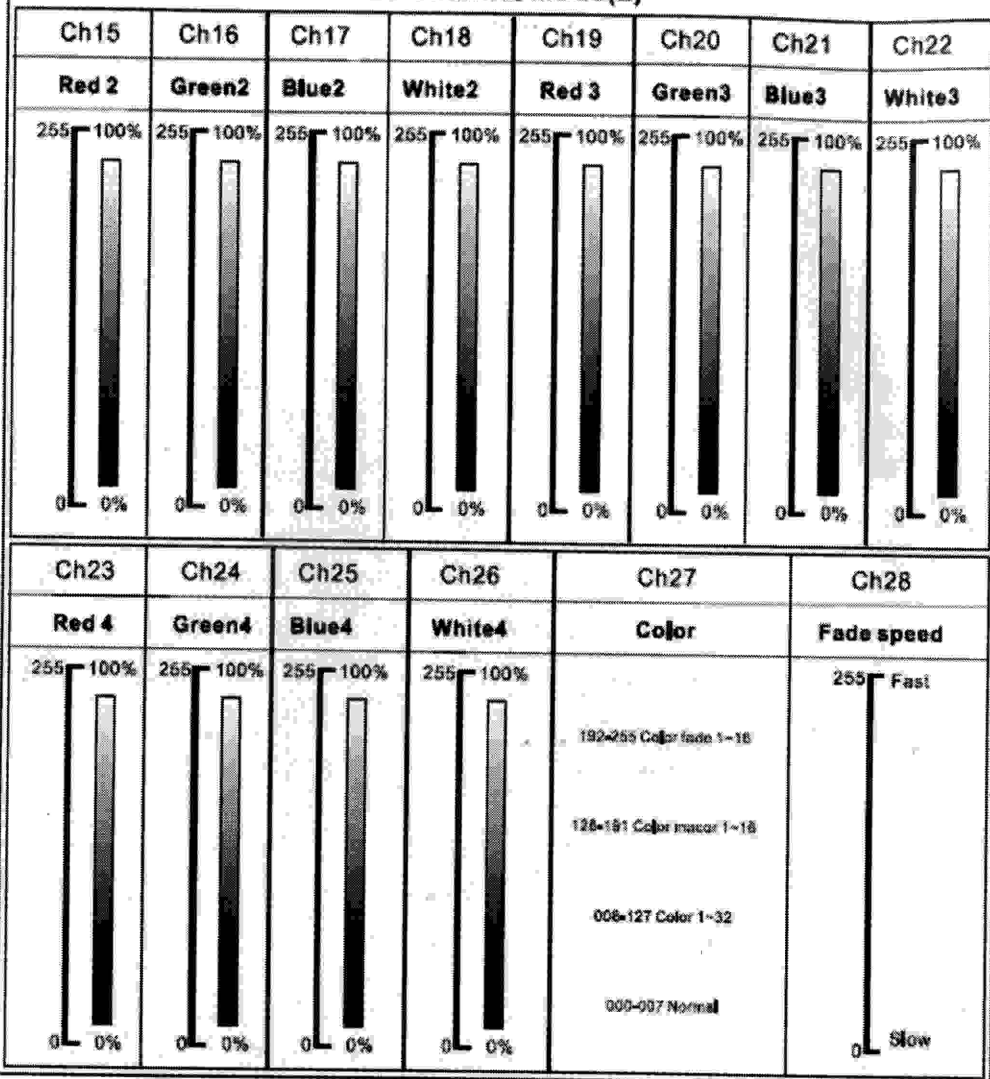
PRO Defaults: For professional users, detailed explanation as followings:

- ☉ Slave Mode ☉ Slave 1
- ☉ Black Out ☉ Yes
- ☉ Sound State ☉ Off
- ☉ Pan Inverse ☉ No
- ☉ Tilt Inverse ☉ No
- ☉ Back Light ☉ Off
- ☉ Function Delay ☉ 3S Delay

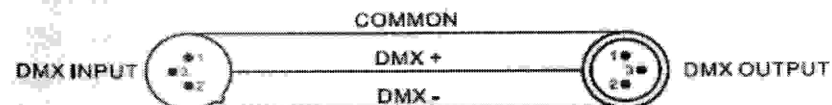
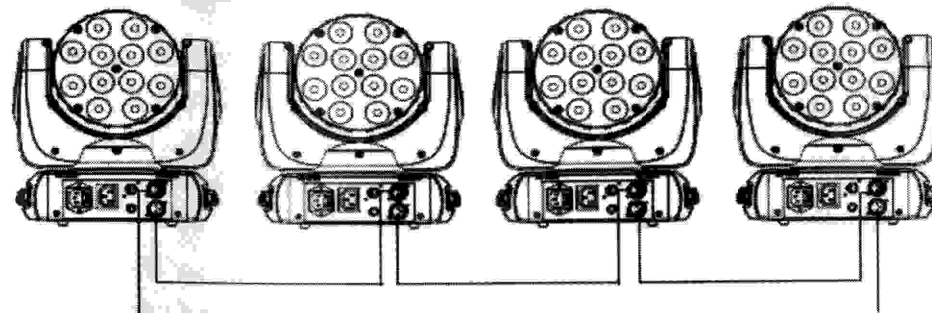
28 Channel Modes

| 28 Channel Mode(1) | | | | | | |
|--|------------|--|------------|----------------|--|----------------------|
| Ch1 | Ch2 | Ch3 | Ch4 | Ch5 | Ch6 | Ch7 |
| Pan | Pan Fine | Tilt | Tilt Fine | Pan/Tilt Speed | Pan/Tilt Macro | Pan/Tilt Macro Speed |
| 255 540° | 255 | 255 270° | 255 | 255 Slow | 236-255 Macro 12 216-235 Macro 11 196-215 Macro 10 176-195 Macro 9 156-175 Macro 8 136-155 Macro 7 116-135 Macro 6 096-115 Macro 5 076-095 Macro 4 056-075 Macro 3 036-055 Macro 2 016-035 Macro 1 006-015 No effect | 255 Slow |
| 0 0° | 0 | 0 0° | 0 | 0 Fast | | 0 Fast |
| Ch8 | Ch9 | Ch10 | Ch11 | Ch12 | Ch13 | Ch14 |
| Function | Dimmer | Strobe | Red 1 | Green1 | Blue 1 | White1 |
| 250-255 Stand alone | 255 100% | 246-255 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 Fan 16-131 ⚡⚡⚡ 8-15 ⚡ 0-7 Blackout | 255 100% | 255 100% | 255 100% | 255 100% |
| 210-249 No Function | | | | | | |
| 200-209 Reset # | | | | | | |
| 090-199 No Function | | | | | | |
| 085-089 Disable Blackout while Pan/Tilt Move | | | | | | |
| 070-079 Enable Blackout while Pan/Tilt Move | | | | | | |
| 000-099 No Function | 0 0% | 0 | 0 0% | 0 0% | 0 0% | 0 0% |

28 Channel Mode(2)



4.4 DMX512 Connection



Termination reduces signal errors and avoids 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.



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.DMX512 is a very high-speed signal.Inadequate or damaged cables,soldered joints or corroded connectors can easily distort the signal and shut down the systems.
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 0)
6. The end of the DMX512 system should be terminated to reduce signal errors
7. 3 pin XLR connector 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 setting 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 cable connected to 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 units'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

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.

**EN55014-2:1997A1:2001;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**