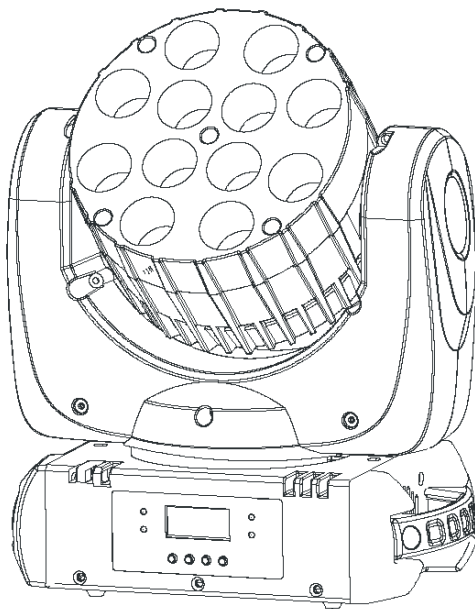


@Lumen8

Kudos 120



Order Code: ELUM031

User Guide

Professional Entertainment Technology

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1. Safety Instructions
2. Features and Technical Specifications
3. How To Set Up The Unit
4. How To Control The Unit
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1. Safety Instructions



WARNING

Please read carefully the instructions, which include important information about the installation, operation 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.
- Use safety cable when installing this unit. Don't handle the unit by holding its head only, but always by holding its base.
- Maximum ambient temperature is 40°C. Don't operate it where the temperature is higher than this.
- 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.
- Damaged Parts must be replaced.

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.

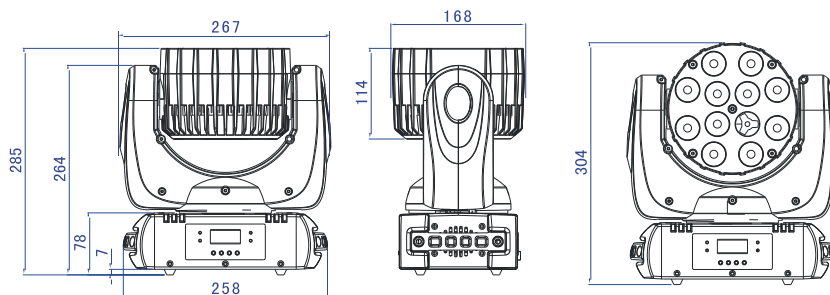
Installation

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 it is out of the way of people.

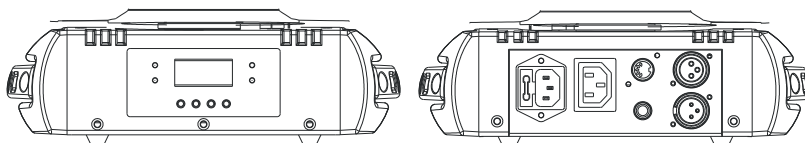
2. Features and Technical Specification

- DMX Channels: 9/12/14/16/28
- Pan/Tilt: 630°/200°, speed adjustable
- Smooth electronic dimming: 0-100%
- Electronic strobe with pulse and random effects
- Optional easy controller CA-8 or CA-9 RTX
- High efficiency, low power consumption
- Super compact, low weight
- Voltage: 100V~240V, 50/60Hz
- Fuse: T 6.3A
- Power consumption: 150W
- Light source: 12 X 10W quad colour LEDs
- Dimensions: 304 X 267 X 168 mm
- Weight: 5.8Kgs



3. How To Set Up 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 to the next unit.

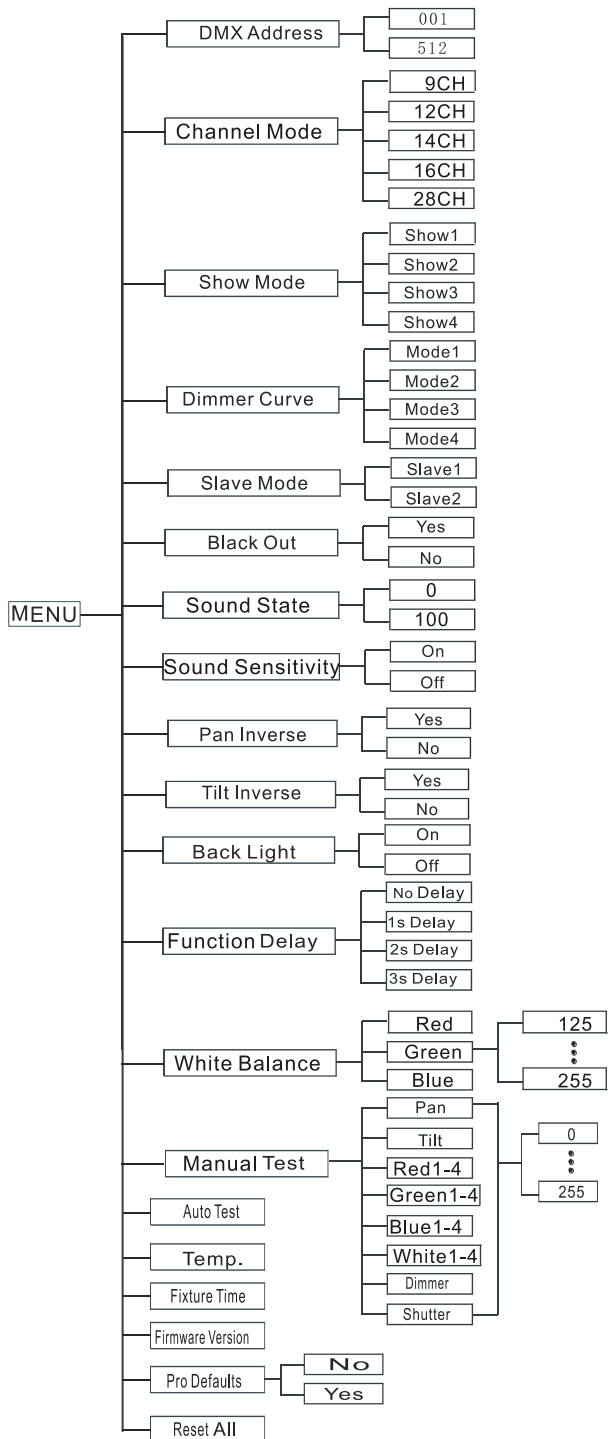
DMX input/output

For DMX512 link, use 3-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 overleaf:



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 Mode

Select **Channel Mode**, press the **ENTER** button to confirm, present mode will blink on the display. Use the **DOWN** and **UP** button to select the **9 chan** or **12 chan** or **14 chan** or **16 chan** or **28 chan** 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.

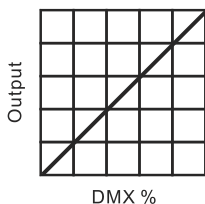
Show Mode

Select **Show Mode**, press 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.

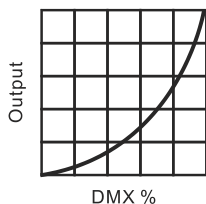
Dimmer curve

Select **Dimmer curve**, press the **ENTER** button to confirm, present mode will blink on the display. Use the **DOWN** and **UP** button to select the **Mode1** or **Mode 2** or **Mode 3** or **Mode 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.

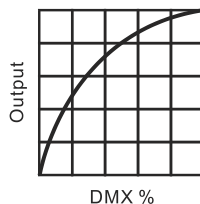
Dimmer Modes



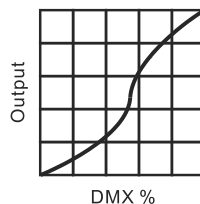
Optically Linear



Square Law



Inverse Square Law



S-curve

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-cure): Light intensity control is finer at low levels and high levels and coarser at medium levels.

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.

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 Sensitivity

Select **Sound Sense**, press the **ENTER** button to confirm, present mode will blink on the display. Use the **DOWN** and **UP** button to change the sound sense from **0 ...100**. 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.

Tilt 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** (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 9/16/28CH 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.

Manual 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/ Red1/ Green1/ Blue1/ White1/...Red4/ Green4/ Blue4/ White4/ 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. Press the **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.

PRO Defaults

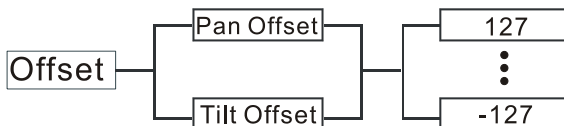
Press the **MENU** button to show **PRO Defaults** on the display. Press the **ENTER** button and the display will blink. Use the **DOWN** and **UP** button to select the **Yes** (run built-in program to set the fixture to PRO Defaults settings) or **No**. Press the **ENTER** button to setup, to go back 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	→ 28chan
Slave Mode	→ Slave1
Black Out	→ Yes
Sound State	→ Off
Pan Inverse	→ No
Tilt Inverse	→ No
Back Light	→ Off
Function Delay	→ 3S Delay

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 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

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 “CM-120” 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

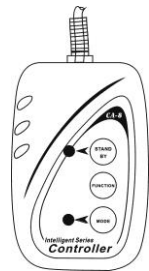
By linking the units in master/slave connection, the first unit will control the other units to give an automatic, sound activated, synchronized light show. This function is good when you want an instant show. You have to set the first unit in master mode **Show Mode** and select **show 1** or **show 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 (for CA-8) or 5-pin socket (for CA-9RTX) of this 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	Show 1-4	1. Pan index	Fade Speed 1. Fast 2. Middle 3. Slow
	2. Async strobe		2. Tilt index	
	3. Sound Strobe		3. Dimmer	
Mode	Sound	Show (LED Slow Blinking)	Show (LED Fast Blinking)	LED ON
	(LED OFF)			

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
9channels	1	10	19	28
12channels	1	13	25	37
14channels	1	15	29	43
16channels	1	17	33	49
28channels	1	29	57	85

4.4 DMX 512 Configuration

9 channel mode:

DMX Configuration								
9 Channel mode								
Ch1	Ch2	Ch3	Ch4	Ch5	Ch6	Ch7	Ch8	Ch9
Pan	Tilt	Strobe	Red	Green	Blue	White	Dimmer	Function
								250-255 Stand alone 210-249 No Function 200-209 Reset All 090-199 No Function 060-089 Disable Blackout while Pan/Tilt Move 070-079 Enable Blackout while Pan/Tilt Move 000-069 No Function

12 channel mode:

12Channel mode					
Ch1	Ch2	Ch3	Ch4	Ch5	Ch6
Electronic shutter effect	Dimmer	Pan	Pan Fine	Tilt	Tilt Fine
245-255 Shutter open 230-244 Strobe 10:burst(fast to slow) 225-229 Shutter open 210-224 Strobe 9:sine wave(fast to slow) 205-209 Shutter open 190-204 Strobe 8:random burst pulse(fast to slow) 185-189 Shutter open 170-184 Strobe 7:burst pulse(fast to slow) 165-169 Shutter open 150-164 Strobe 6:random closing pulse(fast to slow) 145-149 Shutter open 130-144 Strobe 5:random opening pulse(fast to slow) 125-129 Shutter open 110-124 Strobe 4: random strobe(fast to slow) 105-109 Shutter open 090-104 Strobe 3:closing pulse(fast to slow) 085-089 Shutter open 070-084 Strobe 2: opening pulse(fast to slow) 065-069 Shutter open 050-064 Strobe 1:(fast to slow) 020-049 Shutter open 000-019 Shutter closed					

12Channel mode					
Ch7	Ch8	Ch9	Ch10	Ch11	Ch12
Fixture control settings	Color wheel effect	Red	Green	Blue	White
250-255 Stand alone 125-249 Illuminate display 120-124 Smooth dimming,speed of changes restricted slightly 115-119 No function 110-114 Fast dimming,speed of changes unrestricted 105-109 Disable Blackout while Pan tilt 100-104 No function 095-099 Enable Blackout while Pan tilt 075-094 No function 070-074 Fan mode regulated 065-069 No function 060-064 Fan mode full 055-059 No function 050-054 Pan and tilt speed=slow 045-049 Pan and tilt speed=fast 040-044 Pan and tilt speed=norm 015-039 No function 010-014 Reset entire fixture 000-009 No function					












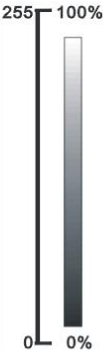
14 channel mode:














14 Channel Mode						
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° 0 0°	255 0	255 270° 0 0°	255 0	255 Slow 0 Fast	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 1 000-015 No effect	255 Slow 0 Fast
Ch8	Ch9	Ch10	Ch11	Ch12	Ch13	Ch14
Function	Dimmer	Strobe	Color 1	Color 2	Color 3	Color 4
250-255 Stand alone 210-249 No Function 200-209 Reset All 090-199 No Function 080-089 Disable Blackout while Pan/Tilt Move 070-079 Enable Blackout while Pan/Tilt Move 000-069 No Function	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 16-131 Fast 0-15 Slow Open	255 0 Color 1~31	255 0 Color 1~31	255 0 Color 1~31	255 0 Color 1~31

16 channel mode:

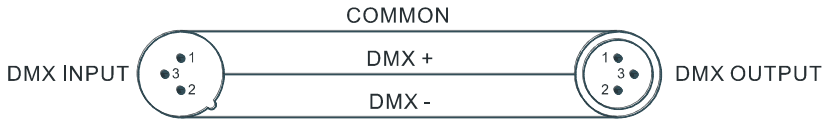
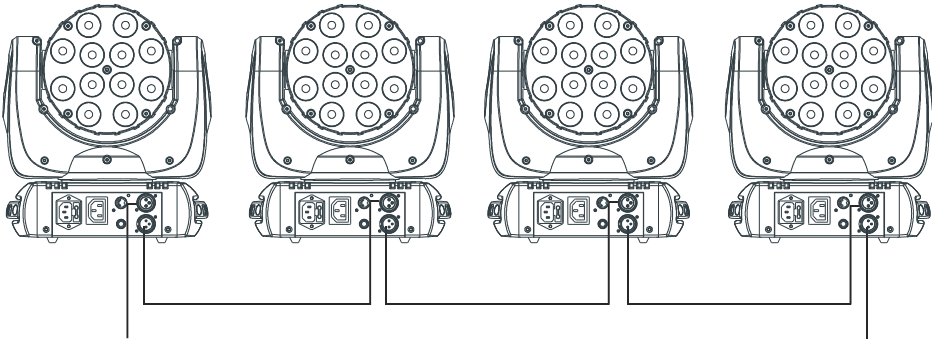
16 Channel Mode							
Ch1	Ch2	Ch3	Ch4	Ch5	Ch6	Ch7	Ch8
Pan	Pan Fine	Tilt	Tilt Fine	Pan/Tilt Speed	Pan/Tilt Macro	Pan/Tilt Macro Speed	Function
					236-255 Macro 12 216-235 Macro 11 196-215 Macro 10 176-195 Macro 9 156-175 Macro 8 136-155 Macro 7 116-135 Macro 6 096-115 Macro 5 076-095 Macro 4 056-075 Macro 3 036-055 Macro 2 016-035 Macro 1 000-015 No effect		250-255 Stand alone 210-249 No Function 200-209 Reset All 090-199 No Function 080-089 Disable Blackout while Pan/Tilt Move 070-079 Enable Blackout while Pan/Tilt Move 000-069 No Function
Ch9	Ch10	Ch11	Ch12	Ch13	Ch14	Ch15	Ch16
Dimmer	Strobe	Red	Green	Blue	White	Color	Fade speed
						192-255 Color fade 1~16 128-191 Color macor 1~16 008-127 Color 1~32 000-007 Normal	

28 channel mode:

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
					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 1 000-015 No effect	
Ch8	Ch9	Ch10	Ch11	Ch12	Ch13	Ch14
Function	Dimmer	Strobe	Red 1	Green1	Blue 1	White1
250-255 Stand alone 210-249 No Function 200-209 Reset All 090-199 No Function 080-089 Disable Blackout while Pan/Tilt Move 070-079 Enable Blackout while Pan/Tilt Move 000-069 No Function						

28 Channel Mode							
Ch15	Ch16	Ch17	Ch18	Ch19	Ch20	Ch21	Ch22
Red 2	Green2	Blue2	White2	Red 3	Green3	Blue3	White3
255 100%  0 0%	255 100%  0 0%	255 100%  0 0%	255 100%  0 0%	255 100%  0 0%	255 100%  0 0%	255 100%  0 0%	255 100%  0 0%
Ch23	Ch24	Ch25	Ch26	Ch27		Ch28	
Red 4	Green4	Blue4	White4	Color		Fade speed	
255 100%  0 0%	255 100%  0 0%	255 100%  0 0%	255 100%  0 0%	192-255 Color fade 1~16 128-191 Color macro 1~16 008-127 Color 1~32 000-007 Normal		255 Fast  0 Slow	

4.5 DMX512 Connection



Termination reduces signal errors and avoids signal transmission problems and interference. It is always advisable to connect a DMX Termination Plug (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. 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.

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