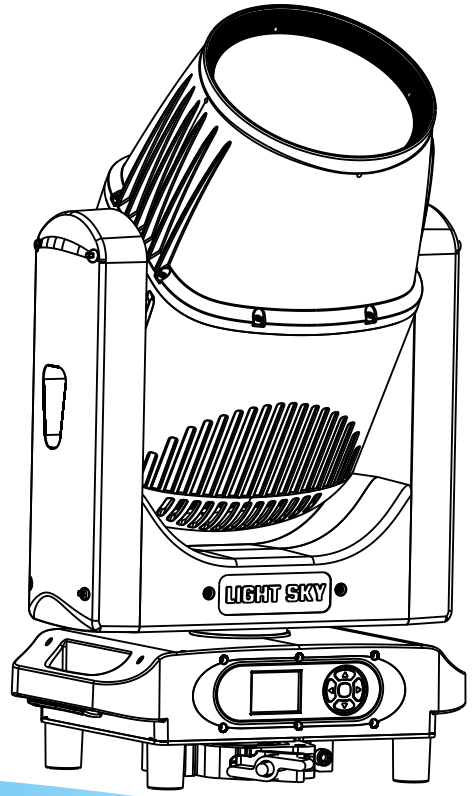
LiGHT SKY

FLY DRAGON LIGHTING EQUIPMENT CO.,LTD

MINI WHALE

User Manual



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LiGHT SKY

Please read the instruction carefully bef!

CONTENTS

Congratulations on choosing our company product! We thank you for your custom.

- Please keep in mind that this product, like other products of the company, adheres to the concept of people-oriented design and manufacture, and takes product quality as the foundation.
- We put the interests of customers first, and do our best to meet customer requirements.
- Please read this instruction manual carefully and keep it for future reference. In the case of fully understanding the product information, strictly abide by theUse the instruction manual to ensure that the product is installed, used and serviced correctly and safely.
- Our company is not responsible for any damage to lamps or other performance due to personal failure to follow the instructions during installation, use and maintenance.responsibility.
- Our company reserves the right to modify the manual at any time and without prior notice.

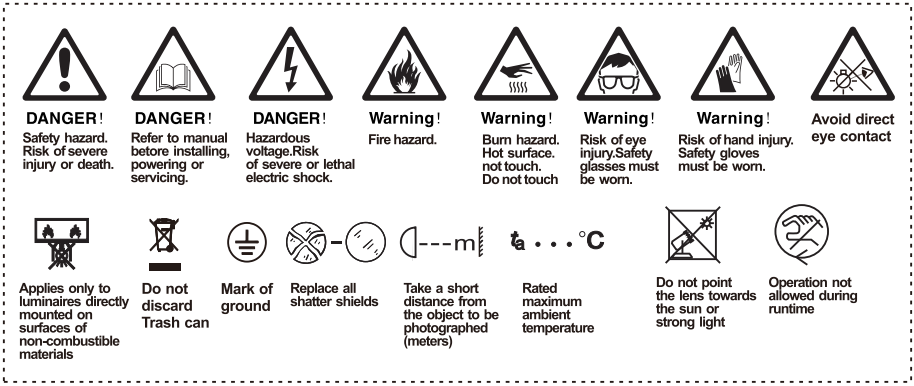
1.Safety Instructions

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

WARNING

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

The following symbols are used to identify important safety information on the product and in this manual:



Important:

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

— Unpack and check carefully to ensure that there is no transportation damage before using the unit.

— Do install and operate by qualified operator.

— The light source in this luminaire should be replaced by the manufacturer or its service agent or a similarly qualified person, always cut off the power supply before replacing he light source.

— Do not allow children to operate the fixture.

— Use safety chain when fixing the unit. Handle the unit by carrying its base instead of head only.

— The unit must be installed in a location with adequate ventilation, at least 20cm from adjacent surfaces.

— Be sure that no ventilation slots is blocked, otherwise the unit will be overheated.

— Before operation, ensure that you are connecting this product to the proper voltage in accordance with the specifications in this manual or on the product's specification label.

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

— Minimum ambient temperature Ta: -10°C. Maximum ambient temperature Ta: 40°C. Do not operate this product at a lower or higher temperature.

— Do not connect the device to any dimmer pack.

— When the lamp is running, do not place combustible objects next to it. The shortest distance between the device and inflammable and explosive objects or materials is 0.5m.

— Make sure the power cord is not crimped or damaged; replace it immediately if damaged.

— Unit's surface temperature may reach up to 80°C. Do not touch the housing bare-handedduring its operation.

— Avoid any flammable liquids, water or metal from entering the unit. Once it happens, cut off the mains power immediately.

— Do not operate in a dirty or dusty environment. Do clean the fixture regularly.

— Do not touch any wire during operation as there might be a hazard of electric shock.

— Avoid entanglement of the power cord with other wires.

— The minimum distance to objects/surface must be more than 12 meters.

— In the event of serious operating problem, stop using the unit immediately.

— Never turn on and off the unit time after time.

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

— Do not open the housing as there are no user serviceable parts inside.

— Do not attempt to operate this unit if it becomes damaged. Do not attempt any repairs yourself. Repairs carried out by unskilled people can lead to damage or malfunction. Please contact the nearest authorized technical assistance center if needed.

— Disconnect this product from its power source before servicing.

— Do use the original packaging if the device is to be transported.

— Avoid direct eye exposure to the light source while the product is on.

— Do not operate this product if you see damage on the housing, shields, or cables. Have the damaged parts replaced by an authorized technician at once.

Installation:

The fixture should be fixed on the clamp. Always ensure that the unit is firmly fixed to avoid vibration and slipping off during operation. Ensure that the trussing or area of installation must be able to hold 10 times the weight without any deformation.

Always install a safety

cable that can hold at least 12 times the weight of the fixture when installing.

Do install and operate by qualified operator. It must be installed in a place where there is out of the reach of people.

2.Technical Specifications

OPTICAL

- Light source: OSRAM NED40 / USHIO NSL U4
- Lamp angle: 1.3 ° (diameter 5mm white circular hole)、0.8 ° (diameter 3mm white circular hole)、0.5 ° (diameter 1.5mm white circular hole), can be flexibly switched.
- Optical lens: diameter 174mm
- Color temperature: 7200 K
- Color rendering index: Ra ≥ 80
- Illuminance: 720000 @ 10 meters

COLOUR

- 14 color chips+white light, can achieve bidirectional color rainbow, dual color step gradient (linear movement), color wheel bidirectional rotation.

PATTERN

- 1 fixed pattern plate: 17 patterns+white light, can achieve flowing and shaking effects.

EFFECT

- Prism 8+Prism 24: capable of bidirectional independent rotation, independent switching, and stacking.
- Soft light effect: adjustable independent soft light effect
- Focusing: High precision electric focusing
- Strobe: 0.5-12 times/second adjustable pulse flicker and random flicker.
- Dimming: 0-100% linear adjustment

CONTROL AND PROGRAMMING

- Control channel: 15CH
- Protocol: Standard DMX512 protocol, RDM protocol, ArtNet protocol (optional)
- Data connection: 3 core or 5 core signal input/output
- RJ45 interface (optional)
- Display: LCD screen
- Through DMX signal

X/Y AXIS MOTION ANGLE

- X-axis: 540 ° 8-bit/16bit precision scanning
- Y-axis: 270 ° 8-bit/16bit precision scanning

POWER SUPPLY AND POWER

- Input voltage: AC 100-240V 50/60Hz
- Maximum power: 460W
- Power factor: 0.98
- Maximum current of the lamp: 2.08A/220V, 4.56A/100V

SIZE & WEIGHT

- Product size: 344 × 238 × 601mm
- Carton packaging (default): 425 × 305 × 750mm
- N.W.: 22.1 kg G.W.: 25.7 kg

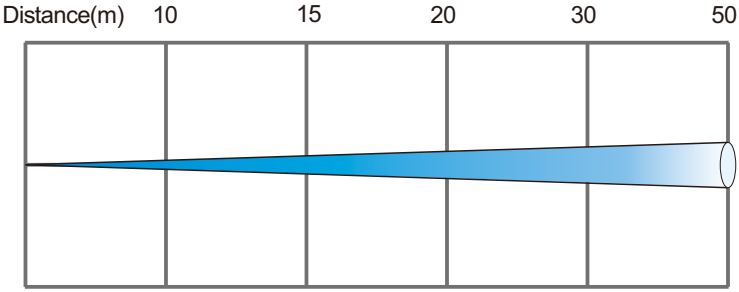
OTHERS

- Protection level: IP66
- Working environment: -10℃~40 ℃
- Maximum surface temperature of lamp body: ≤ 80 ℃

APPROVALS

- The product implementation standard: GB/T 7000.1-2023 、 GB/T 7000.217-2023
- Approved certifications: CE、RoHs
- The product complies with the following EU directives:
  Low Voltage Directive 2014/35/EU . EMC Directive 2014/30/EU

illumination diagram

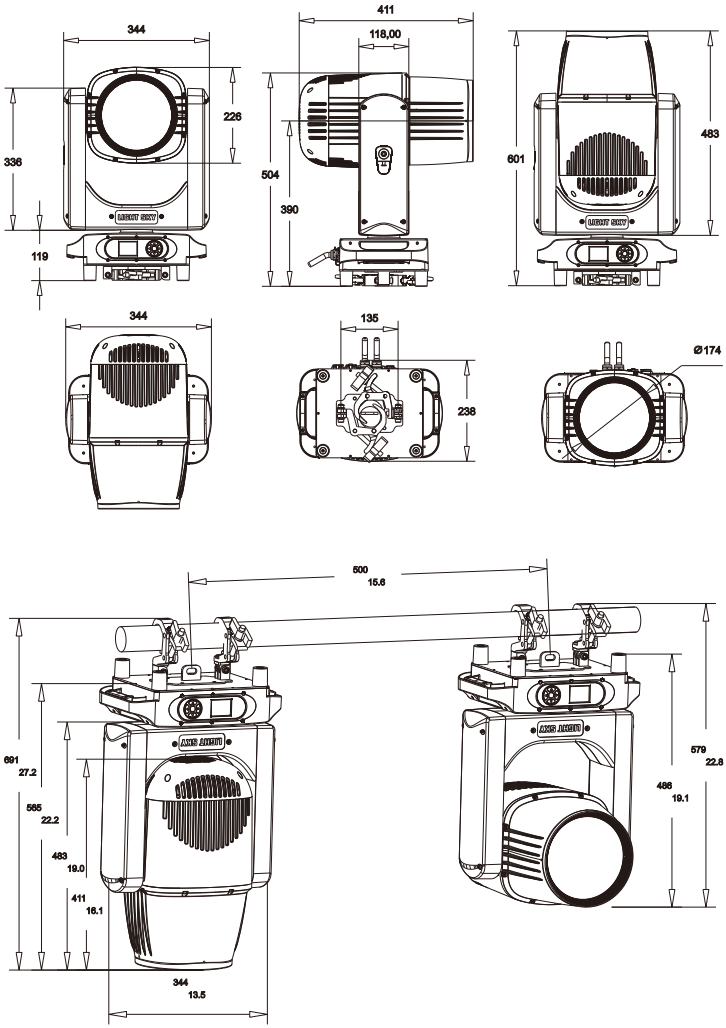


1.3° Lux	720000	320000	180000	80000	28800
diameter（m）	0.23	0.35	0.46	0.69	1.15

2.1.Attachment And Size

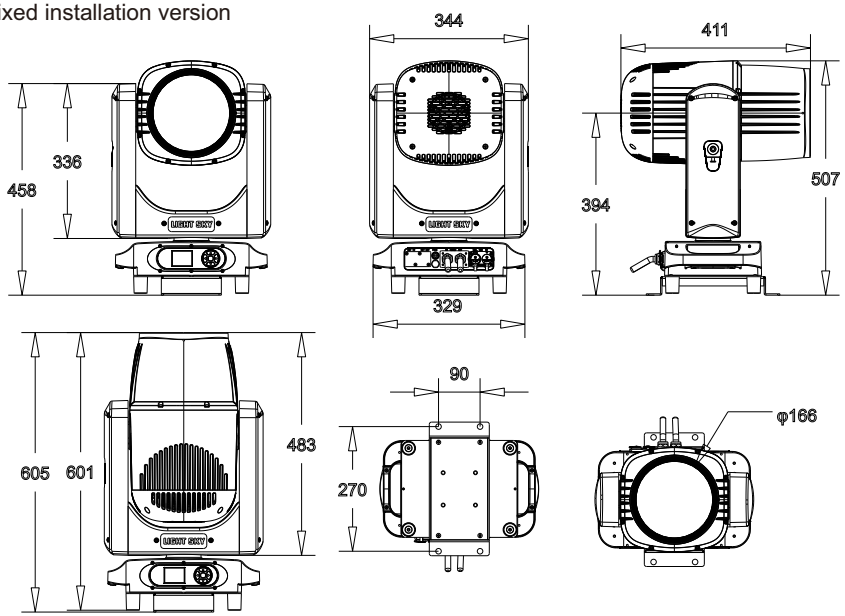
Attachment contents-Fig.1

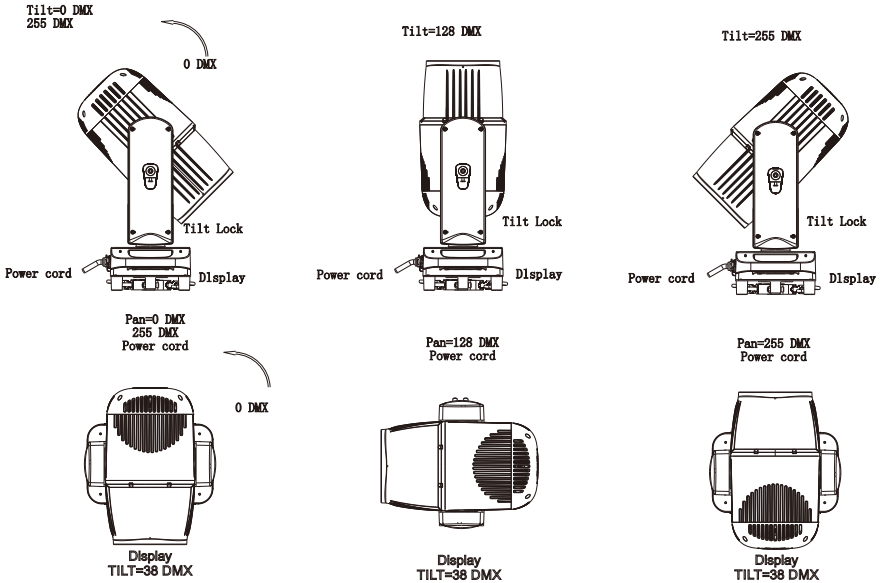
Size-Fig.2(Unit:mm)



Size-Fig.2-1(Unit:mm)

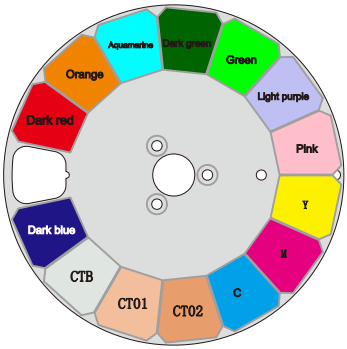
Fixed installation version



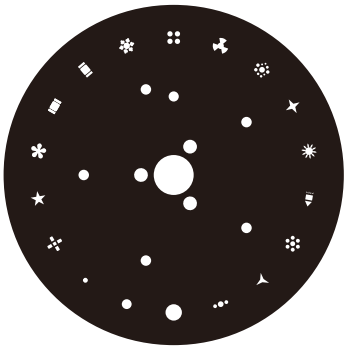


3. Color/Gobo/Prism

Color disk

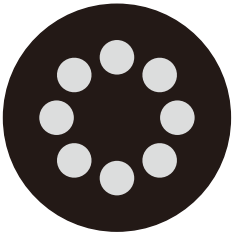


Static gobo wheel

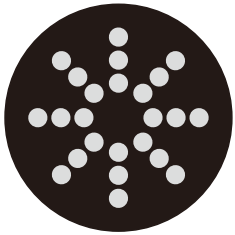


White

Prism



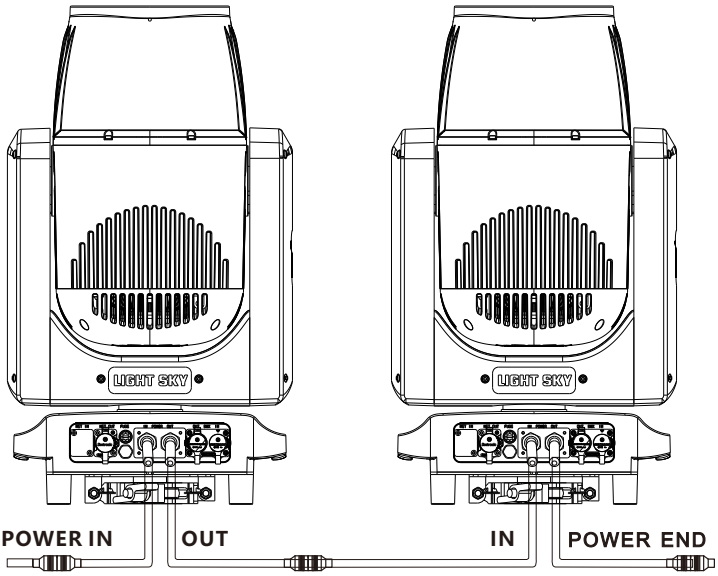
8 Prism



24 Prism

4.Connection and control

4.1.Power supply connection

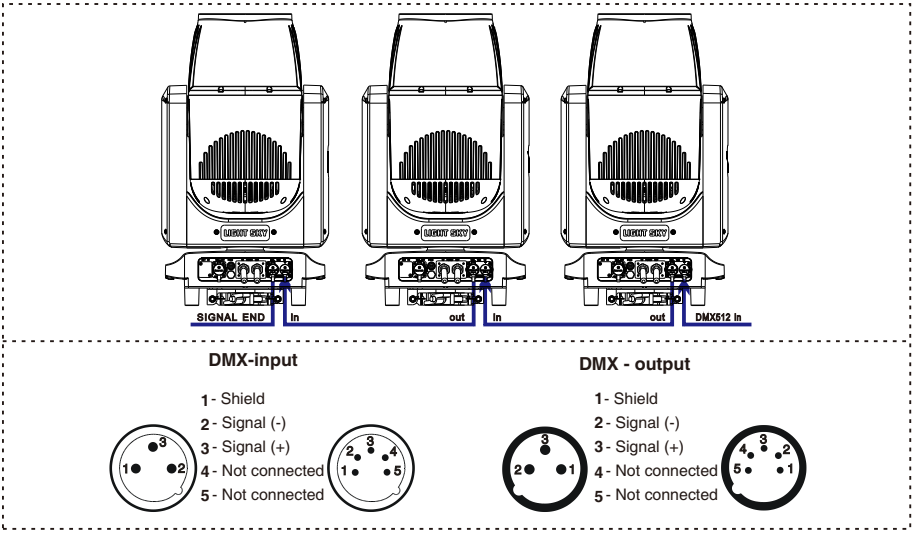


The color code and power connection of the power cord are shown in the table below:

Conductor	Symbol	Wire Color (EU models)	Wire Color (US models)
live	**L**	brown	black
neutral	**N**	blue	white
ground(earth)	⏚ or ⏚	yellow-green	green

- The bus connecting the power supply must be installed by a qualified professional technician.
- After completing all the above operations and ensuring that it is installed, you can power on the lamp to operate.

4.2.DMX 512 Connection



1. At last unit, the DMX cable has to be terminated with a terminator. Solder a 1200hm 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.

2. Connect the unit together in a “daisy chain” by XLR plug cable from the output of the unit to the input of the next unit. The cable cannot be 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.

3. The DMX output and input connectors are pass-through to maintain the DMX circuit, when one of the units’ power is disconnected.

4. Each lighting unit needs to have a DMX address to receive the data by the controller. The address number is between 1-512.

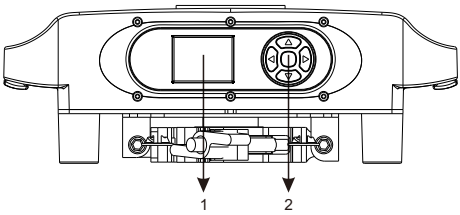
5. The end of the DMX 512 system should be terminated to reduce signal errors.

6. 3 pin XLR connectors are more popular than 5 pins 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 (+), Pin4, Pin5 not used.

4.3.Control Panel



1. Display: To show the various menus and the selected function.
2. Button：

OK	OK confirmation key
▲	UP
▼	DOWN
◀	To the left
▶	To the right

5.How To Set The Unit

5.1.Main Function

The lamp is powered on. When the system initialization and lamp reset are completed, and the standby interface is displayed on the display screen, press OK to enter the preset menu interface. The main functions are as follows:

Main menu	I menu	II menu	III menu
DMX Address	Address	1-512	
	Channel	15CH	
	State	Black	
		Hold	
Information	Time	Total Power Time	
		Power Time	
		Total Light Time	
		Light time	
	Temperature	PVE_TEM	
		Head Temp	
	Fan Info.	LampFan1Vol	
		LampFan1Speed	
		LampFan2Vol	
		LampFan2Speed	
		LampFan3Speed	
		OutFanVol	
		OutFanSpeed	
		FocusFanVol	
		FocusFanSpeed	
		BaseFanVol	
		BaseFanSpeed	
	Fixture state	1.MCU(XY) ***	
		2.MCU(COLOR) ***	
		3.MCU(PRISM) ***	
		4.MCU(FAN) ***	
		5.Pan ***	
		6.Tilt ***	
		7.Color ***	
		8.FixGobo ***	

Main menu	I menu	II menu	III menu
		9.LampFan1 ***	
		10.LampFan2 ***	
		11.LampFan3 ***	
		12.OutFan ***	
		13.FocusFan ***	
		14.BaseFan ***	
		15.Ballast***	
	RDM UID	3888： xxxxxxxx	
	DMX Live	DMX	
	Software	1.Display Ver. Vxxx	
		2.XY Ver. Vxxx	
		3.COLOR Ver. Vxxx	
		4.PRISM Ver. Vxxx	
		5.FAN Ver. Vxxx	
Personal	Auto Lamp On	Off/on	
	PanTilt Setting	Pan Invert	OFF / ON
		Tilt Invert	OFF / ON
		P/T Rectify	OFF / ON
	Display Setting	Language	EN /ZH
		Disp. Backlight	OFF / ON
		Disp. Direction	Forward / Reverse
		Dis.Blink	OFF / ON
Manual Control	Channel control	1.Pan ***	
	Reset	PanTilt	
		Head Module	
		All	
	Calibration	1.Pan ***	
		2.Tilt ***	
		3.Dimmer1 ***	
		4.Dimmer2 ***	
		5.Color ***	
		6.FixGobo ***	
		7.Prism1 ***	
		8.Prism1Rot ***	
		9.Prism2 ***	

Main menu	I menu	II menu	III menu
Service		10.Prism2Rot ***	
		11.Frost ***	
		12.Focus ***	
	Factory Reset	NO/ YES	
	Reset Timers	1.Total Power Time	NO / YES
		2.Total Light Time	NO / YES
		1.Power Time	NO / YES
		2.Light Time	NO / YES
	Developer	1.Logo Set	
		2.Up Logo	OFF / ON
		3.Language	EN /ZH
		4.Fixture Type	
	Firmware update		
Lamp Control	Off/On		
Test	Test PanTilt		
	Test Head Module		
	Test All		
Rotate Display			

5.2.Address Setting

Enter MENU, select the DMX setting function, select the address code setting, press the OK button to confirm, the current DMX address will be displayed on the display. Use the up/down buttons to select addresses 001~512, and press the OK button to save. Press the OK button to return to the previous menu.

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
15 CH	1	16	31	46

5.3.DMX 512 Configuration

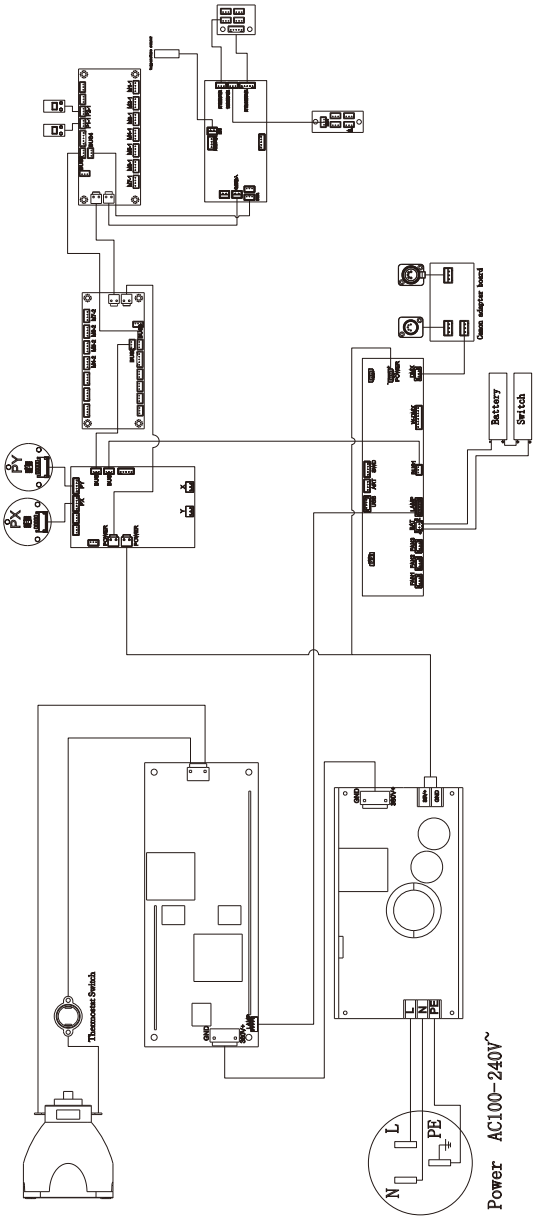
Please control the fixture by referring to the configurations below

15 Channel	DMX	Function	Note
1	0--255	**Pan positioning**	
2	0--255	**Fine Pan positioning**	
3	0--255	**Tilt positioning**	
4	0--255	**Fine Tilt positioning**	
5		**Function(Hold 3s)**	
	0-25	Unused Range	
	26-30	Effects Reset	
	31-35	PAN/TITL Reset	
	36-40	Complete Reset	
	41-79	Unused Range	
	80-84	Dis.Blink off	
	85-89	Dis.Blink on	
	90-180	Unused Range	
	181-200	Lamp OFF	
	201-220	Unused Range	
	221-255	Lamp ON	
6		**ColorWheel**	
	0-4	White	
	5-8	White+Red	
	9-12	Red	
	13-17	Red+Orange	
	18-21	Orange	
	22-25	Orange+Aquamarine	
	26-29	Aquamarine	
	30-34	Aquamarine+Green	
	35-38	Green	
	39-42	Green+Light Green	
	43-46	Light Green	
	47-51	Light Green+Lavender	
	52-55	Lavender	
	56-59	Lavender+Pink	
	60-63	Pink	
	64-68	Pink+Yellow	
	69-72	Yellow	
	73-76	Yellow+Magenta	
	77-80	Magenta	
	81-85	Magenta+Cyan	
	86-89	Cyan	
	90-93	Cyan+CTO 260	
	94-98	CTO 260/CTO2	
	99-102	CTO 260+CTO 190	
	103-106	CTO 190	
	107-110	CTO 190+CTB 8000	
	111-115	CTB 8000	
	116-119	CTB 8000+Blue	
	120-123	Blue	

15 Channel	DMX	Function	Note
	124-127	Blue+White	
	128-191	CW, Fast→Slow Rotation	
	192-255	CCW, Slow→Fast Rotation	
7		**FixgoboWheel**	
	0-8	Open	
	9-11	FixGobo 1	
	12-14	FixGobo 2	
	15-17	FixGobo 3	
	18-20	FixGobo 4	
	21-23	FixGobo 5	
	24-26	FixGobo 6	
	27-29	FixGobo 7	
	30-32	FixGobo 8	
	33-35	FixGobo 9	
	36-38	FixGobo 10	
	39-41	FixGobo 11	
	42-44	FixGobo 12	
	45-47	FixGobo 13	
	48-50	FixGobo 14	
	51-53	FixGobo 15	
	54-56	FixGobo 16	
	57-59	FixGobo 17	
	60-63	FixGobo1shake,slow to fast	
	64-67	FixGobo2shake,slow to fast	
	68-71	FixGobo3shake,slow to fast	
	72-75	FixGobo4shake,slow to fast	
	76-79	FixGobo5shake,slow to fast	
	80-83	FixGobo6shake,slow to fast	
	84-87	FixGobo7shake,slow to fast	
	88-91	FixGobo8shake,slow to fast	
	92-95	FixGobo9shake,slow to fast	
	96-99	FixGobo10shake,slow to fast	
	100-103	FixGobo11shake,slow to fast	
	104-107	FixGobo12shake,slow to fast	
	108-111	FixGobo13shake,slow to fast	
	112-115	FixGobo14shake,slow to fast	
	116-119	FixGobo15shake,slow to fast	
	120-123	FixGobo16shake,slow to fast	
	124-127	FixGobo17shake,slow to fast	
	128-187	FixGoboWheel CW fast to slow	
	188-189	Stop	
	190-249	FixGoboWheel CCW slow to fast	
	250-255	Auto random gobo selection from fast to slow	
8		**Prism**	
	0-3	Prism out	
	4-255	Prism In	

15 Channel	DMX	Function	Note
9		**PrismRot**	
	0-63	Prism indexing	
	64-127	Forwards prism rotation from fast to slow	
	128-191	Backwards prism rotation from slow to fast	
	192-207	from slow to fast 90°Swing	
	208-223	from slow to fast 180°Swing	
	224-239	from slow to fast 270°Swing	
	240-255	from slow to fast 360°Swing	
10		**Prism2**	
	0-3	Prism out	
	4-255	Prism In	
11		**PrismRot2**	
	0-63	Prism indexing	
	64-127	Forwards prism rotation from fast to slow	
	128-191	Backwards prism rotation from slow to fast	
	192-207	from slow to fast 90°Swing	
	208-223	from slow to fast 180°Swing	
	224-239	from slow to fast 270°Swing	
	240-255	from slow to fast 360°Swing	
12		**Frost**	
	0-3	Frost Out	
	4-255	Frost In	
13	0-255	**Focus**	
14		**Strobe**	
	0-31	Closed	
	32-63	Open	
	64-95	Slow-Fast Strobe	
	96-127	Open	
	128-143	Plus-Fast Close	
	144-159	Plus-Fast Open	
	160-191	Open	
	192-223	Random Slow-Fast Strobe	
	224-255	Open	
15	0-255	**Dimmer**	

6.Electrical Connection Diagram



7.Troubleshooting

The following are common faults of lamps and corresponding solutions. Faults that cannot be repaired by yourself should be handled by professionally qualified personnel. Disconnect the power supply to the lamp during maintenance!

● **The light source is not bright**

- Check that a suitable light source is installed for the luminaire.
- Check whether the power supply connection of the lamp or the control switch is in poor contact.
- Check whether the light source has reached the end of its service life or is damaged, and replace it with a high-quality light source of the same specification.
- Measure whether the power supply is insufficient.
- Check whether the light source has not cooled down completely due to abnormal operation. Let the lamp cool down for more than 15 minutes to allow the light source to cool down. After returning to the normal start-up range, turn the power on again and it can be used normally.
- Check whether the DMX512 controller sends a command to turn on the light source.
- Check whether the light source and trigger circuit are disconnected or defective.
- Check whether the wiring terminals on the internal trigger are in poor contact and tighten the plug.
- Check the "Fan Speed and Voltage" in the "Basic Information" menu to see if the speed of FAN1/FAN2/FAN3 is above 500RPN. If it is below 500RPM, the light source will not light up. Replace the fan with the same specification.
- Check whether the over-temperature protection temperature switch inside the lamp is damaged. Go to the menu "Basic Information" and select "Equipment Temperature" to check - whether the temperature measuring plate shows that the temperature is too high or there is no temperature display.

● **The beam appears dim and uneven**

- The light source may have reached the end of its service life and does not emit enough light. Replace it with a light source of the same specification.
- Check whether there is dust accumulated in the optical part and clean it.
- Measure whether the power supply is insufficient.
- Finely adjust the screw device used to change the height of the lamp until the ideal light is achieved. Enter the menu "Service Options" and select "Calibration" to enter color and pattern adjustment, which can be adjusted to the center.

● **The projected image is blurry**

- Check whether the DMX512 controller channel value corresponding to the electronic focus system is suitable for the current projection distance.
- Check whether the mechanical part of the focusing system is stuck, remove the dust and add antifreeze and temperature-resistant lubricating oil.

● **The light source of the lamp works intermittently**

- Check whether the fan is running normally or is blocked by dust and paper debris.
- Check whether the inlet and outlet cooling air vents are blocked by dust.
- Check whether the lamp has reached the end of its service life.
- Check whether the power supply is insufficient, and whether the power switch and wiring are in poor contact or aging.
- Check whether the over-temperature protection temperature switch inside the lamp is damaged.

● **Although it emits light, the lamp does not accept instructions from the controller**

- Check whether the digital start address value and function options of the lamp are correct.
- Check whether the connection of the communication control line is correct. The communication line is too long or has been interrupted.
- Check whether the control equipment fails and whether the signal amplifier connected in series fails.
- Check whether the communication line is too long or if other devices interfere with each other.
- Optimize wiring, shorten the length of control signal lines, and route high-voltage and low-voltage lines separately.
- Add signal amplifier isolator.
- The signal line is made of high-quality shielded twisted pair (impedance characteristic is 75Ω), and the signal terminal resistor is connected at the end of the lamp.
- Check that the circuit board communication IC or CPU is burned out because the bulb performs an abnormal operation when it is not completely cooled, causing the instantaneous ultra-high voltage leakage generated by the trigger, and replace the PCB board.

● **The lamp cannot be started**

- Check whether the power supply parameters match the lamps.

- Check whether the fuse at the light fixture's power input is blown.
- Check that the lamp has poor contact or falls off due to extrusion deformation, vibration of internal parts, moisture, etc. during long-distance transportation.
- Check whether the internal wires and connectors of the lamp are desoldered or loose.
- Check whether the electrical components of the lamp (such as power switch, transformer, ballast, capacitor, varistor, filter, power supply PCB board, motor control PCB board, etc.) are loose, short-circuited, burned out, etc.

● **Some functions of the lamp cannot accept controller instructions**

- Check whether the control device sends correct action instructions for these functions.
- Check whether the mechanical parts corresponding to these functions are loose or deformed.
- Check whether the motor sockets corresponding to these functions are loose or the corresponding driver chips are burned out.
- Check whether the motor wires corresponding to these functions are broken at the corners.
- Check whether the motors corresponding to these functions are damaged.

● **During operation, the X or Y direction of the lamp does not move normally**

- Click the previous step to check one by one.
- Check whether the corresponding drive belts in the X and Y directions of the lamp are detached or broken.
- Check whether the data feedback receiver (photoelectric sensor) corresponding to the X and Y directions in the lamp is damaged.
- Restart the computer and reset it once.

8.Fixture Cleaning

It is absolutely essential that the fixture is kept clean to ensure the maximum light-output and allow the fixture to function reliably throughout its life. The fixture must be cleaned regularly to avoid dust, dirt and smoke-fluid residues building up on or within the fixture. The cleaning frequency depends on the application environment. Clean the fixture immediately if the dust enters it to avoid damage to the optical lens due to excessive dust.

* A soft lint-free cloth moistened with any good glass cleaning fluid is recommended, under no circumstances should solvents be used.
* Always dry the parts carefully.
* Clean the external optical lens at least every 20 days and the internal optical lens every 30 days.

CAUTION！！！

Disconnect from mains before starting maintenance operation.

9.Duty exonerative and copyright protectio

* Light source belongs to consumption products, not within the scope of warranty.
* The manufacturer shall not bear any responsibility for any damage caused by failure to operate in accordance with this instruction.
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