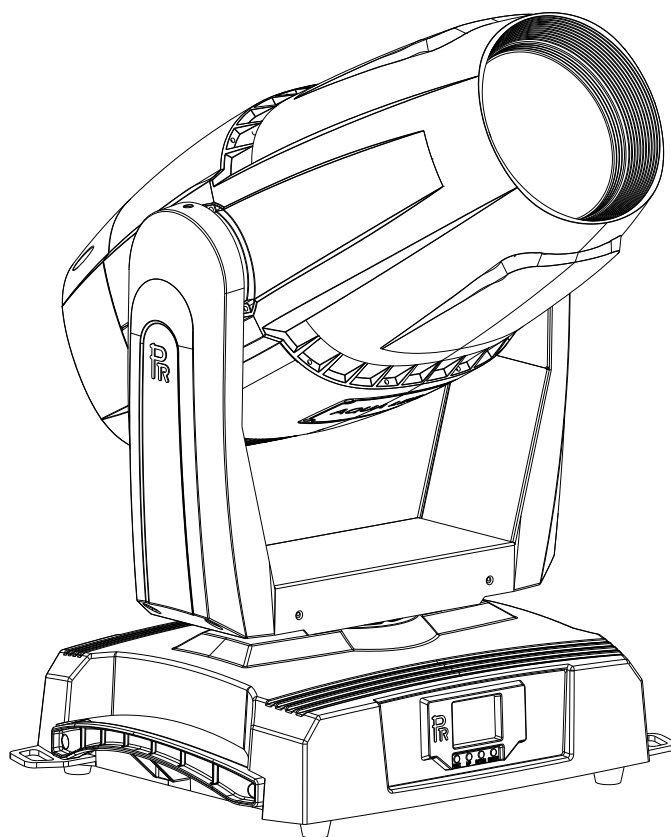




AQUA LED 1800 FRAMING

PR-8169

This product manual contains important information about the safe installation and use of this projector. Please read and follow these instructions carefully and keep this manual in a safe place for future reference.

INDEX

1. SAFETY AND WARNINGS.	3
2. INSTRUCTIONS	4
•CLEANING AND MAINTENANCE	4
•LUBRICATION.....	5
•TROUBLESHOOTING	5
3. APPEARANCE	5
4.INSTALLATION	5
•RIGGING	5
•POWER CONNECTIONS	6
•DMX CONTROL CONNECTION	6
•DMX TERMINATOR	7
•REPLACEMENT OF GOBOS	7
5. SETUP AND CONFIGURATION	8
•FRONT PANEL OPERATION	8
•DMX START ADDRESS	8
•DMX WIRELESS CONTROL	9
•STAND-ALONE MODE	9
•MASTER/SLAVE MODE	9
6.OPERATION MENU	10
7. DMX PROTOCOL	12
8.LOGOS ON THE SCREEN	19
9. ERROR INFORMATION	20
10.TECHNICAL DATA	20
11.CIRCUIT DIAGRAM AND PCB CONNECTIONS	24
•CIRCUIT DIAGRAM	24
•PCB CONNECTIONS	25
12.COMPONENT ORDER CODES	30

The following items are supplied with the projector and please check:

Name	Quantity	Unit	Remark
G clamp	2	Pcs	
XLR connector	1	Set	Male and female
Safety cord	2	Pc	
This manual	1	Pc	
Ω clamp	2	Pcs	Optional
Power Cord	1	Pc	

Please note that as part of our ongoing commitment to continuous product development, specifications are subject to change without notice. Whilst every care is taken in the preparation of the manual we reserve the right to change specifications in the course of product improvement. The publishers cannot be held responsible for the accuracy of the information herein, or any consequence arising from them.

Every unit is tested completely and packed properly by the manufacturer. Please make sure the packing and / or the unit are in good condition before installation and use. Should there be any damage caused by transportation, consult your dealer and do not use the unit. Any damage caused by improper use will not be assumed by the manufacturer and / or dealer.

Any future technical changes are not subject to further notice.

Note: For the products made by Guangzhou PR lighting Ltd, the warranty for the whole product is one year starting from the delivery date but the light source is not within the warranty.

1. SAFETY AND WARNINGS



NOTE

Before a projector's installation, power-on, operation and maintenance, please carefully read the safety information hereinafter!

The following safety signs are used in the user manual.

Warning	User Manual	Electrical shock	Goggles	Protective Gloves	Flames	High Temperature



•When unpacking , check if there is transportation damage before using the projector. Should there be any damage caused by transportation, consult your dealer and do not use it.

- The manufacture is not responsible for loss caused by the user not following the manual or changing the projector as he/she likes
- Please be noted that the damage caused by changing the projector at will is not warranted.
- Do not hesitate to contact the dealer or the manufacturer if any questions or advice.



- The projector is for indoor and outdoor use, IP65.
- It can be used in humid and dusty areas. And it can contact water and other non-corrosive liquids.
- The projector should be kept away from high temperature, fire, electrical surge, vibration and strong light while being operated
- The projector is only intended for installation, operation and maintenance by qualified personnel. And the operation must strictly follow the procedures in the manual
- The projector is not for a user for any replacements and the user shouldn't open the projector for repair and

maintenance.



- Don't look straightly into the light sources especially for epileptics, otherwise eyes will be burned.
- Do not connect this device to any type of dimmer pack
- After lamp switched on, the minimum distance between the projector and illuminated surface is 5m
- If there are visible damages on the lamp, lens and protective cover for the screen, i.e., to the extent which affects its performance like cracking or deformation, please stop using it and contact the manufacture for their replacement with original parts, otherwise its performance will be compromised
- For the location of a lighting fixture, it shouldn't be seen in the distance of less than 4 meters.



- Before operation, please confirm that all covers(housing) are on and screws tightened. It's forbidden to use a projector while covers(housing)are off
- Keep the lamp clean and do not touch it with bare hands.
- While operating it, wear protective items.



- Any electrical connection must be carried out by a qualified person .
- Before installation, please confirm the voltage supplied matches what is required for the projector
- Each projector must be properly earthed and installed as per related electrical standards.
- Do not use power cord with its insulator damaged and connect the power cord with other cables.
- If the projector is not used or under cleaning,, please hold the plug and unplug it. Do not unplug it forcefully or by pulling the power cable.

- All power cords must conform to related safety and regulations
- Do not switch on and off the projector constantly in very short intervals, otherwise the light source's and other electrical parts' life will be shortened .
- The projector is of class IP65, and not used in the environment higher than it.



- There are safety cord holes at the bottom of the base of a projector. In view of safety, please run the safety cord supplied through the safety cord holes for safety support.
- Before any installation, maintenance and cleaning work, please ensure the projector is disconnected from power mains.



- After running for 5minutes, the temperature of the housing of the projector is 45°C. After stable operation , its temperature is 80°C.
- While the lamp is stricken for the first time, there will be smoke and strange smell. It's normal and does not mean the projector has some defects.
- Don't touch the covers of the working projector(They are very hot!)

•While a lighting fixture works properly under normal ambient temperature, the maximum temperature of the external surface of the control device(The integrated control device means the external surface of the housing of the lighting fixtures electric chamber)allowed is 75 Celsius degrees.



- Do not mount the projector directly on inflammable surface.
- Do not project the beam straightly on combustible items and the minimum distance between the projector and illuminated items is 5m.
- A projector should be installed with good ventilation and the minimum distance between the projector and walls is 50cm. At the same time, please ensure the fans and air inlets and outlets are workable.

2. INSTRUCTIONS

•CLEANING AND MAINTENANCE

If a projector can't start. Please check if the fuse is blown up. If it does, replace it with a new fuse with same ratings. And the projector has over-temperature protective device. If the temperature is too high, the protective device will be triggered to shut the projector off. When it happens, please check if the fans run normally or fan shield is blocked by dust. After the issue is solved, restart the projector.

The accumulation of oil, smoke and dust on the lens will compromise the light output. Cleaning a projector is very necessary to ensure a reliable use of it. Cooling fans need to be cleaned every 15days. Internal lens, reflector and hot mirror need to be cleaned periodically to optimize light output.

The cleaning frequency of cooling fans and heat sink is decided by the operations, environment and climate. It is advised to clean it every 15days or less . Use rubber or bush or other non- metallic tools to carry out cleaning. The tools can't scratch or deform the heat sink and fans.

Cleaning frequency is to be decided by operations and its environment. Use soft cloth and normal detergent for glass for cleaning work. It's advised external optical system be cleaned every 20days and internal optical systems every 30/60days. Keep lens clean and do not touch optical parts with bare hands.

Special note:

It's normal phenomena that there will be mild water mist on the lens while the waterproof product is in use.



- Before any maintenance and cleaning, please ensure the project is off the power
- Only qualified person is allowed to do maintenance
- During maintenance and before maintenance, the projector must be off power.



- To avoid internal damage, sun light or other light mustn't penetrate into the projector via front lens whether it runs or not
- Do not use alcohol or other organic solvent to clean the housing to avoid damage.
- Do not use any solvent with chemical elements to clean color filters or hot mirror.

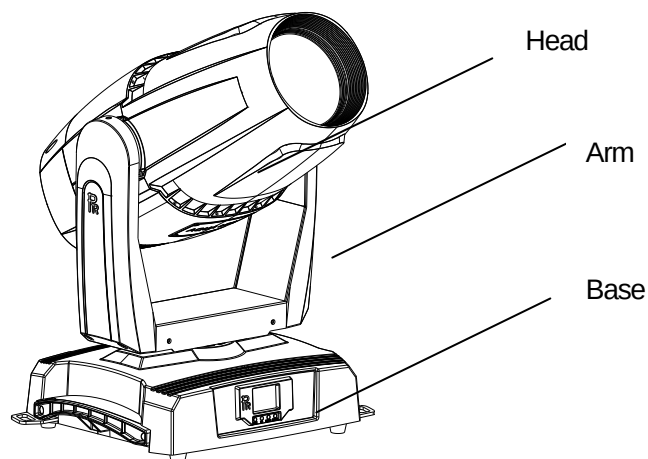
•LUBRICATION

To ensure smooth movement of gobos and focus lens, it's advised rotators' bearings and 2 sliding bars for focus lens be lubricated every 2 months. High quality and high temperature lubricant/grease is advised..

•TROUBLESHOOTING

PROBLEM	ACTION
The projector can't be switched on	➤ Check if the fuse is burned ➤ Check if the power cord is connected well ➤ Check if the switching power supply is bad or not connected well. A professional technician is required for the repair ➤ Check if the control board is connected well. .A professional technician is required for the repair
The projector can be switched on , but the LED lamp's brightness can't be controlled	➤ Check if the LED driver board is connected well. A professional technician is required for the repair
The projector can be switched on normally, but not controlled by the DMX controller	➤ Make sure that the fixture's start address is right ➤ Replace or repair the XLR signal cable.
The beam is not bright and its brightness decreases sharply	➤ Make sure the fans are working well or fans and their shields are not blocked by dust. ➤ Make sure that the internal optics is clean.
Beam appears dim, Low in brightness	➤ Make sure the lamp is within its lifespan ➤ Remove dust or grease from the lenses.
The project image appears to have a halo	➤ Carefully clean the LED lamp, optical lenses and other components.
Heavily Defective Beam	➤ Check if lens are in good condition(not cracked) ➤ Clean dust or grease on the lens.

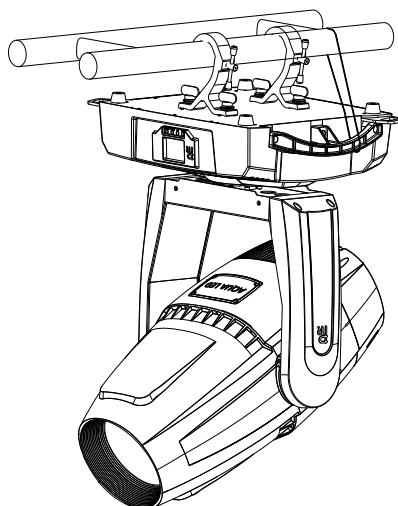
3. APPEARANCE



4. INSTALLATION

•RIGGING

During transportation, please lock the projector well; Before the use of projector please unlock the head. It's forbidden to run the projector without unlock Pan and Tilt.



Warning
please run the safety cords through 2 safety
cord holes to ensure safety

Take 2 clamps and 1 safety cords out from the package and mount 2 clamps on the underside of fixture with 4 retainers attached to each clamp. Hang the fixture on the structure and fasten the screws attached to each clamp. (See the **WARNING** on the underside of the base as shown above) Always ensure that the projector is firmly anchored to avoid vibration and slipping whilst functioning. Always ensure that the structure that you are going to mount the projector is secure and is strong enough to support the weight of the fixture.



WARNING:

- The projector **MUST** be lifted or carried by the **HANDLES** instead of clamps.
- For safety the safety cord should afford 10 times the Projector's weight.
- For safety, it should not be hung by its sides.

• **POWER CONNECTIONS**

Connect the power cord as follows:

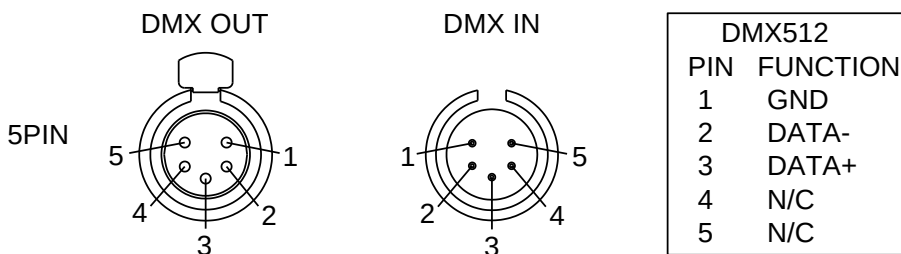
L (live) =brown
E (earth) =yellow/green
N (neutral) =blue

Before power connection, please ensure the power supplied must match what the nameplate says. It is recommended that each projector be connected with power separately so that they may be individually switched on and off.



- The earth wire(yellow/green) must be connected to the ground. And electrical connection must be in accordance with the standards concerned.
- If any questions about the electrical installation, do not continue but consult a qualified electrician.
- The lighting fixture is with waterproof power socket, it should be equipped with same IP rating power plug.

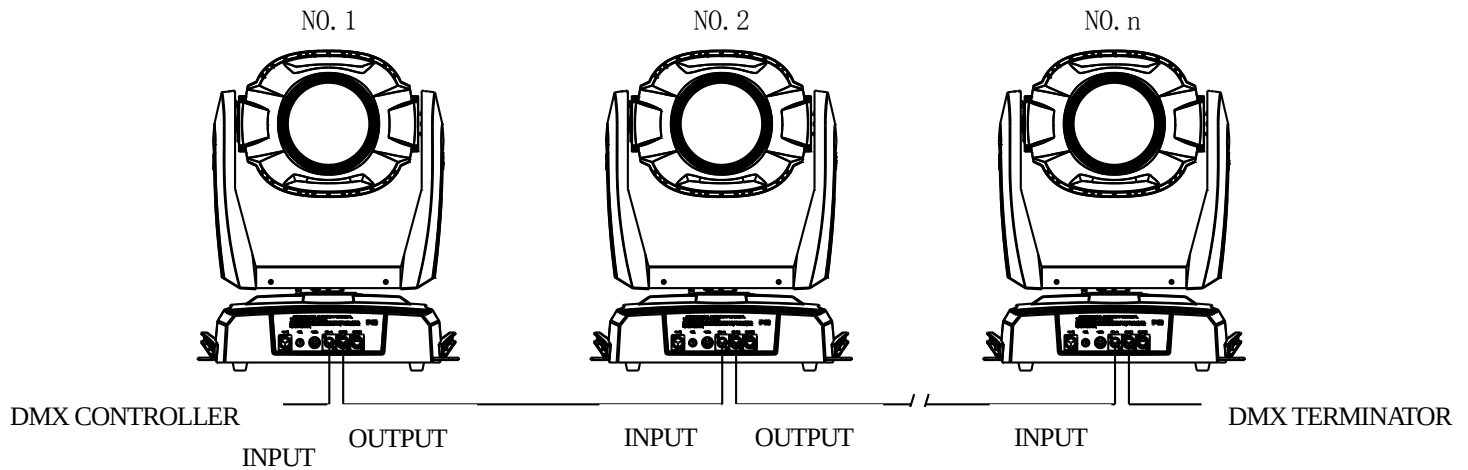
•**DMX CONTROL CONNECTION**



Connection between controller and projector and between one projector and another must be made with a twin-screened cable, with each wire having at least a 0.5mm in diameter. Connection to and from the projector is via cannon 5 pin (which are included with the projector) or 5 pin XLR plugs and sockets. The XLR's are connected as shown in the figure above.

Note: care should be taken to ensure that none of the pins touch the metallic body of the plug or each other. XLR plugs and sockets mustn't be connected in any way other than mentioned in the above figure. The projector accepts digital control signals in protocol DMX512 (1990).

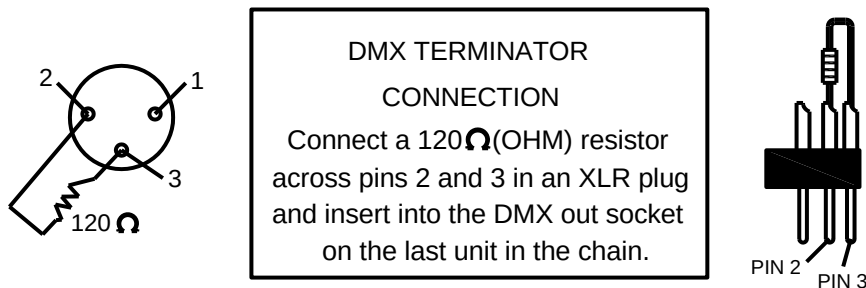
Connect the controller's DMX output to the first fixture's DMX input, and connect the first fixture's DMX output to the second fixture's DMX input and connect the rest fixtures in the same way. Eventually connect the last fixture's DMX output to a DMX terminator as shown in the figure below.



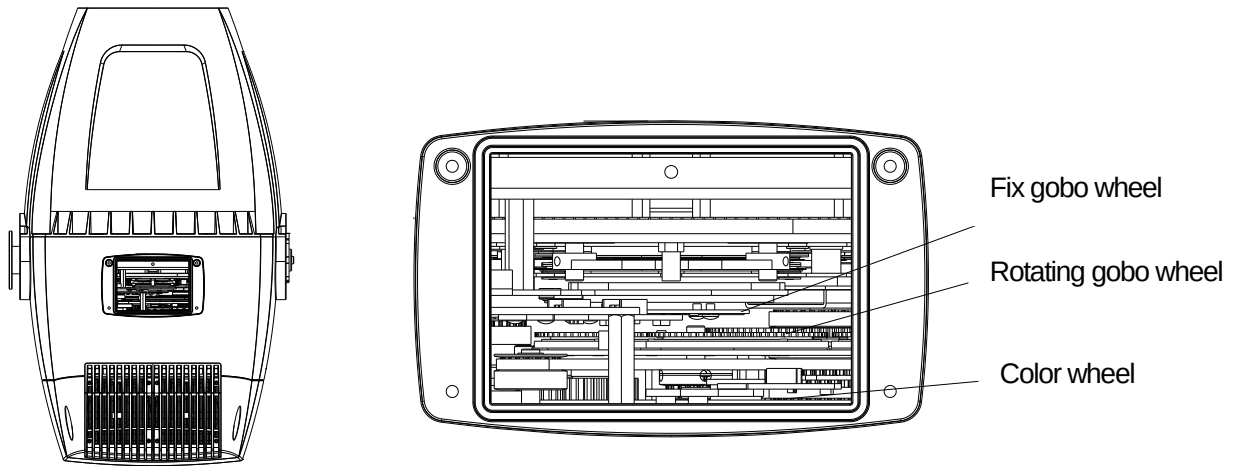
•DMX TERMINATOR

In the Controller mode, at the last fixture in the chain, the DMX output has to be connected with a DMX terminator. This prevents electrical noise from disturbing and corrupting the DMX control signals.

The DMX terminator is simply an XLR connector with a 120Ω (ohm) resistor connected across pins 2 and 3, which is then plugged into the output socket on the last projector in the chain. The connections are illustrated below



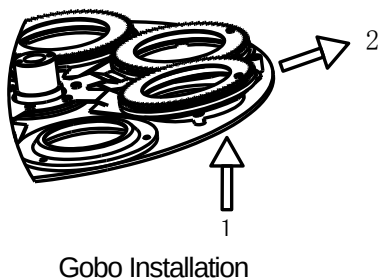
•REPLACEMENT OF GOBOS



Lock tilt and unfasten 4 screws of the small cover of the head. Open the cover and you'll see the structure as above.

Replacement of the color filter. Pull out the color filter directly by hand as the figure hereinafter in the sequence 1→2. It's installation is in reverse sequence as the removal (2→1) .

Rotating gobos. Pull out the rotator as the figure hereinafter and the removal is in the sequence 1→2. Remove spring of the gobo and take the gobo out. Place a new gobo in the rotator with the spring and ensure the spring is in the narrow groove of the rotator ,i.e. its inner ring, then flatten it. At last use proper tool to push the tightening plate upward for the spring and use another hand to help place the rotator in the original place. It is in the reverse sequence of the removal 2→1.



Note: Do not touch color filters and glass gobos with bare hands. There should be clean and soft paper or cloth between hand and glass. Install the chamber cover, tighten 4 inner hexagon screws and unlock Tilt.

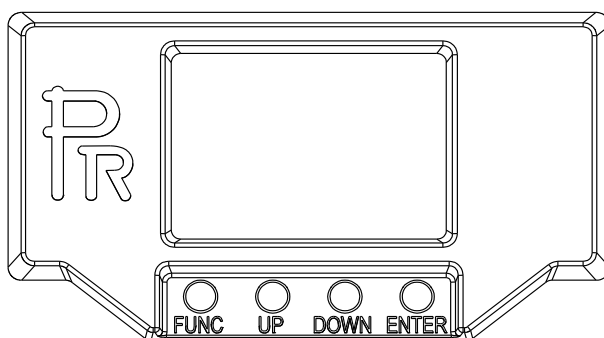


DANGER!

BEFORE THE REPLACEMENT OF GOBO AND COLOR FILTER, THE PROJECTOR MUST BE OFF POWER.

5. SETUP AND CONFIGURATION

•FRONT PANEL OPERATION



Projector configuration can be set conveniently via push button and color touch screen.

Launch the projector and press button **ENTER** for more than 5 seconds to unlock the panel, the LCD will show the function menu of the projector, each main menu has its submenus and each submenu has a specific function. For details, please see the “OPERATION MENU” section.

Press button **UP** or **DOWN** if you want to browse through the various Setup Options.

Press button **ENTER** to save your settings or enter the submenu.

Press button **UP** or **DOWN** to change values(plus or minus)

Press button **FUNC**, it will return to the upper menu. If button **FUNC** not pressed, the default will show display status automatically.

•DMX START ADDRESS

Each projector must be given a DMX start address so that the correct projector responds to the correct control signals. This DMX start address is the channel number from which the projector starts to “listen” to the digital control information being sent out from the controller. The projector has 3 DMX modes. There are short mode ,standard mode and extended mode. For example standard mode has 38 channels, so set the No. 1 projector’s address 001, No. 2 projector’s address 039, No. 3 projector’s address 077, No. 4 projector’s address115, and so on.

Launch the projector. Press button **ENTER** more than 3seconds to unlock panel.

Press button **ENTER** to display DMX address;

Press button **UP** and **DOWN**, you can set the address;

Press button **ENTER** to confirm; after powered on next time, the default will be last value saved

Press button **FUNC**, it will return to the upper menu

.

•DMX WIRELESS CONTROL

The projector has wireless control function with wireless receiver module and antenna for remote control.

The setup of it is below:

1. Enter into the projector’s menu. Select the menu “Config Settigns” via the bottoms of **UP** and **DOWN**
2. Select **DMX control Mode--- Wireless First** (Note: Do not select **XLR ONLY**). The DMX wireless control function is activated.

Only after the projector is linked with a transmitter, can it receive wireless signal sent by the transmitter. If unlinking it, Press “Enter” for the menu of Unlink Wireless under the upper level menu of Config Settigns.

•STAND-ALONE MODE

Operate the projector without connecting with a controller, enable the master mode through the operation panel, the projector will run in Stand-Alone mode automatically.

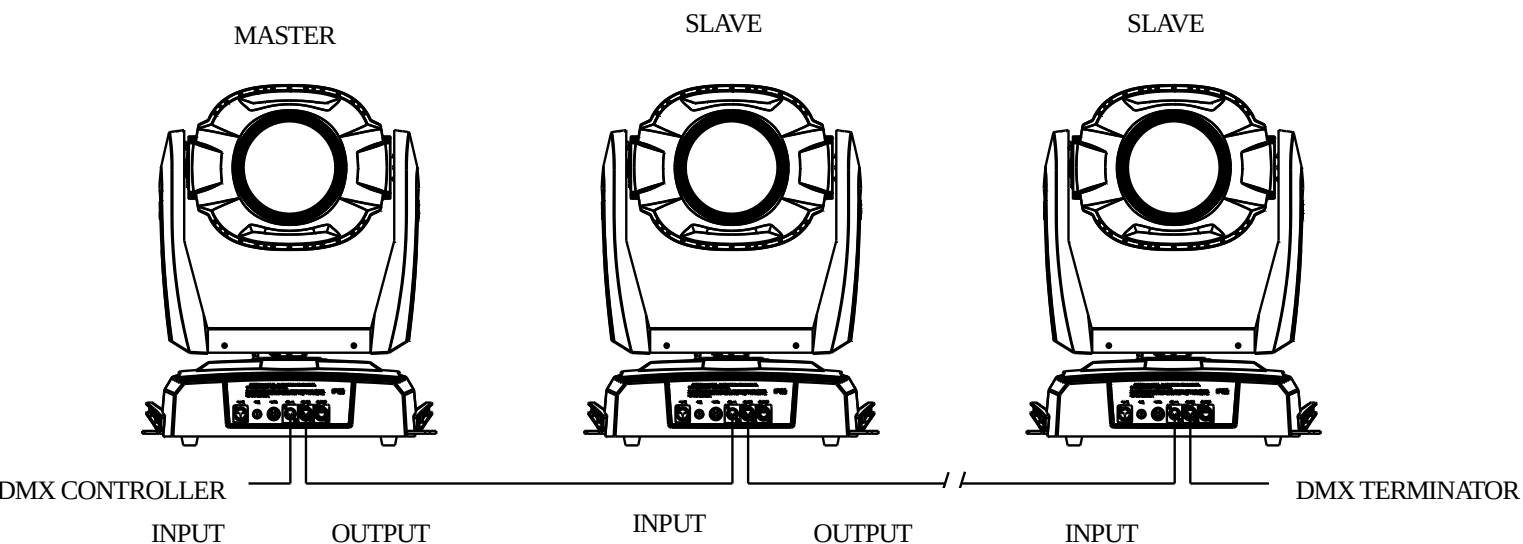
DMX address can be set at any number within 512.

•MASTER/SLAVE MODE

Many projectors can run synchronously in the Master/Slave mode by linking them with each other. First, connect the first fixture’s DMX output to the second fixture’s DMX input using XLR-XLR control cable and then connect the second fixture’s DMX output to the third fixture’s DMX input, and so on until all projector are connected in this way. Eventually connect the last fixture’s DMX output to a DMX terminator. Set 1st projector as the master and others are Slaves.

Start Addresses of all Slaves are 001; Operation mode of the Master can be set any mode for a Master’ and Slaves’ operation mode can be set accordingly.

After Powered on, the group will run in Master/Slave Mode



6. OPERATION MENU

1st LEVEL	2nd LEVEL	3rd LEVEL	4th LEVEL	5th LEVEL
Address	DMX Address	1-477 1-474 1-458		
	IP Address	Default IP Address Custom IP Address	2.X.X.X /10.X.X.X X.X.X.X	
	SubNet Mask	X.X.X.X		
	ArtNet	0-255		
	ArtNet Universe			
Reset	Total Reset	Really Reset?	Confirm/ Cancel	
	Pan&Tilt Reset	Really Reset?	Confirm/ Cancel	
	Colour System Reset	Really Reset?	Confirm/ Cancel	
	Gobo Reset	Really Reset?	Confirm/ Cancel	
	Zo.Fo.Fr.Pr. Reset	Really Reset?	Confirm/ Cancel	
	Other Reset	Really Reset?	Confirm/ Cancel	
Config Settings	DMX Channel Mode	Short Mode		
		Standard Mode		
		Extended Mode		
		View Selected Mode	Strobe	
	Signal Select	XLR Only		
		XLR First		
		Wireless Only		
		Wireless First		
		Wireless In/XLR Out		
		Artnet Only		
		Artnet In/XLR Out		
	Loss of DMX	Normal time out		
		Hold Last Value		
	Display Config	Display Mode	Off After Delay	
			On Always	
		Display Invert	Invert OFF	
			Invert ON	
			Invert Auto	
		Language Setting	English	
			Chinese	
	Temperature Unit	Celsius Degree		
		Fahrenheit Degree		

	Un-Link Wireless	Really Un-Link?	Confirm/ Cancel	
	Defaults	Restore Defaults?	Confirm/ Cancel	
Option Settings	Pan/Tilt Settings	Pan DMX Invert	OFF/ ON	
		Tilt DMX Invert	OFF/ ON	
		Pan Tilt Swap	OFF/ ON	
		XY Feedback	OFF/ ON	
		Pan/Tilt mode	Speed/Time	
	Invert Settings	Iris Invert	OFF/ ON	
		Zoom Invert	OFF/ ON	
		CYM Invert	OFF/ ON	
		CTO Invert	OFF/ ON	
	Dimmer Settings	Gamma Curve	Gamma 2.0/2.2/2.4/2.6	
		LED Refresh Rate	1200/2400/4800/10000/12000/15000/20000/25000Hz	
		Dimmer Speed	Fast/Medium/Slow Speed	
	Fan Settings	Standard/Theatre		
	Defaults	Restore Defaults?	Confirm/Cancle	
Information	View DMX Values			
	Lamp Hours	Reset Lamp Hours		
	Total Hours			
	Temperature	Display Board XX°C/F		
		Pan Board XX°C/F		
		Tilt Board XX°C/F		
		Driver Board 1 XX°C/F		
		Driver Board 2 XX°C/F		
		Driver Board 3 XX°C/F		
		Driver Board 4 XX°C/F		
		Blade Board XX°C/F		
		Fan Board XX°C/F		
		LED XX°C/F LED Sensor XX°C/F		
	Software Version	Display Board	System= XXXX Boot =XXX	
		Pan Board	System= XXXX Boot =XXX	
		Tilt Board	System= XXXX Boot =XXX	
		Driver Board 1	System= XXXX Boot =XXX	
		Driver Board 2	System= XXXX Boot =XXX	
		Driver Board 3	System= XXXX Boot =XXX	
		Driver Board 4	System= XXXX Boot =XXX	
		Blade Board	System= XXXX Boot =XXX	
		Fan Board	System= XXXX Boot =XXX	
	Electronic SN	Electronic SN= *****		
	RDM Device Label	RDM Device Label ANSI E1.20 RDM Version X.X		
	Fan Status	Head Fan		
Service	Manual Effect Control	Strobe XXX		

		Dimmer XXX		
		...		
	Factory Test			
Operation Mode	DMX Mode	Change Operation Mode?	Confirm/ Cancel	
	Master Mode	Preset Memory	Change Operation Mode?	Confirm/ Cancel
		User Memory 1	Change Operation Mode?	
		User Memory 2	Change Operation Mode?	
	Stand-Alone Mode	Preset Memory	Change Operation Mode?	
		User Memory 1	Change Operation Mode?	
		User Memory 2	Change Operation Mode?	
	Static Scene	Change Operation Mode?		
User Memories	Edit User Memory	Edit User Memory 1 / Edit User Memory 2	Scene XX (1~200 Scenes)	Strobe XXX
				Dimmer XXX
				...
				Delay Time XXX
				Delay Unit
				Link To Step XXX
	Init User Memory	Reset User Memory 1 Reset User Memory 2 Reset Static Scene	Strobe XXX Dimmer XXX ...	
				Input Password 123
				Input Password 123
				Input Password 123

7.DMX PROTOCOL

Short mode	Standard mode	Extended mode	Function Description	Decimal Low	Decimal High
1	1	1	Strobe		
			Close	0	0
			Pulse strobe speed from slow to fast	1	127
			Strobe speed slow to fast	128	255
2	2	2	Dimmer		
			Close	0	0
			Dimmer from dark to light (0-100%)	1	255
	3	3	Dimmer Fine		
			Fine dimmer	0	255
3	4	4	CYM Macro		
			The following functions can be used after CMY,CTO, and Color Wheels1 and Color Wheel2		
			No Function	0	7
			Colour Macro 1	8	9
			Colour Macro 2	10	11
			Colour Macro 3	12	13
			Colour Macro 4	14	15
			Colour Macro 5	16	17
			Colour Macro 6	18	19
			Colour Macro 7	20	21
			Colour Macro 8	22	23
			Colour Macro 9	24	25

Colour Macro 10	26	27
Colour Macro 11	28	29
Colour Macro 12	30	31
Colour Macro 13	32	33
Colour Macro 14	34	35
Colour Macro 15	36	37
Colour Macro 16	38	39
Colour Macro 17	40	41
Colour Macro 18	42	43
Colour Macro 19	44	45
Colour Macro 20	46	47
Colour Macro 21	48	49
Colour Macro 22	50	51
Colour Macro 23	52	53
Colour Macro 24	54	55
Colour Macro 25	56	57
Colour Macro 26	58	59
Colour Macro 27	60	61
Colour Macro 28	62	63
Colour Macro 29	64	65
Colour Macro 30	66	67
Colour Macro 31	68	69
Colour Macro 32	70	71
Colour Macro 33	72	73
Colour Macro 34	74	75
Colour Macro 35	76	77
Colour Macro 36	78	79
Colour Macro 37	80	81
Colour Macro 38	82	83
Colour Macro 39	84	85
Colour Macro 40	86	87
Colour Macro 41	88	89
Colour Macro 42	90	91
Colour Macro 43	92	93
Colour Macro 44	94	95
Colour Macro 45	96	97
Colour Macro 46	98	99
Colour Macro 47	100	101
Colour Macro 48	102	103
Colour Macro 49	104	105
Colour Macro 50	106	107
Colour Macro 51	108	109
Colour Macro 52	110	111

Colour Macro 53	112	113
Colour Macro 54	114	115
Colour Macro 55	116	117
Colour Macro 56	118	119
Colour Macro 57	120	121
Colour Macro 58	122	123
Colour Macro 59	124	125
Colour Macro 60	126	127
Colour Macro 61	128	129
Colour Macro 62	130	131
Colour Macro 63	132	133
Colour Macro 64	134	135
Colour Macro 65	136	137
Colour Macro 66	138	139
Colour Macro 67	140	141
Colour Macro 68	142	143
Colour Macro 69	144	145
Colour Macro 70	146	147
Colour Macro 71	148	149
Colour Macro 72	150	151
Colour Macro 73	152	153
Colour Macro 74	154	155
Colour Macro 75	156	157
Colour Macro 76	158	159
Colour Macro 77	160	161
Colour Macro 78	162	163
Colour Macro 79	164	165
Colour Macro 80	166	167
Colour Macro 81	168	169
Colour Macro 82	170	171
Colour Macro 83	172	173
Colour Macro 84	174	175
Colour Macro 85	176	177
Colour Macro 86	178	179
Colour Macro 87	180	181
Colour Macro 88	182	183
Colour Macro 89	184	185
Colour Macro 90	186	187
Colour Macro 91	188	189
Colour Macro 92	190	191
Colour Macro 93	192	193
Colour Macro 94	194	195
Colour Macro 95	196	197

			Colour Macro 96	198	199
			CMY colour mixing from slow to fast	200	255
4	5	5	Cyan		
			Cyan (Linear 0-100%)	0	255
		6	Cyan Fine		
			Cyan in 16 Bit precision	0	255
5	6	7	Yellow		
			Yellow (Linear 0-100%)	0	255
		8	Yellow Fine		
			Yellow in 16 Bit precision	0	255
6	7	9	Magenta		
			Magenta (Linear 0-100%)	0	255
		10	Magenta Fine		
			Magenta in 16 Bit precision	0	255
7	8	11	CTO		
			Linear adjust from high to low	0	255
		12	CTO Fine		
			CTO in 16 Bit precision	0	255
8	9	13	Colour Wheel		
			Continual positioning		
			index 0-360 °	0	63
			positioning		
			White	64	67
			White/color1(Blue)	68	71
			Color1(Blue)	72	75
			Color1(Blue)/colour 2(Green)	76	79
			Colour2(Green)	80	83
			Colour 2(Green)/colour 3(Orange)	84	87
			Colour3(Orange)	88	91
			Colour 3(Orange) /colour 4 (Magenta)	92	95
			Colour4 (Magenta)	96	99
			Colour 4 (Magenta)/colour 5(Red)	100	103
			Colour 5(Red)	104	107
			Colour 5(Red)/colour 6 (Purple)	108	111
			Colour 6 (Purple)	112	115
			Colour 6 (Purple) White	116	119
			White	120	127
			Clockwise rainbow effect rotation speed from slow to fast	128	191
			Anti-clockwise rainbow effect rotation speed from slow to fast	192	255
	10	14	Colour Wheel Fine		
			Colour Continual positioning in 16 Bit precision	0	255
9	11	15	Iris		
			Linear Iris from small to big 0-100%	0	255

		16	Iris in 16 bit		
			Iris in 16 bit precision	0	255
10	12	17	Iris Macro		
			Iris Macro disabled	0	10
			Iris Macro1: from big to small with speed from slow to fast	11	74
			Iris Macro2: from small to big with speed from slow to fast	75	138
			Iris Macro3: Iris contracts from slow to fast	139	202
			Iris Macro4(Macro1 at random) with speed from slow to fast	203	210
			Iris Macro5(Macro2 at random) with speed from slow to fast	211	218
			Iris Macro6(Macro3 at random) with speed from slow to fast	219	226
			Open	227	255
11	13	18	Fixed gobo wheel		
			White	0	15
			Gobo1	16	31
			Gobo2	32	47
			Gobo3	48	63
			Gobo4	64	79
			Gobo5	80	95
			Gobo6	96	111
			Gobo7	112	127
			Clockwise rotation from slow to fast	128	149
			Anti-clockwise rotation from slow to fast	150	171
			Gobo1 shake from slow to fast	172	183
			Gobo2 shake from slow to fast	184	195
			Gobo3 shake from slow to fast	196	207
			Gobo4 shake from slow to fast	208	219
			Gobo5 shake from slow to fast	220	231
			Gobo6 shake from slow to fast	232	243
			Gobo7 shake from slow to fast	244	255
12	14	19	Rotating gobo wheel		
			White	0	31
			Gobo1	32	47
			Gobo2	48	63
			Gobo3	64	79
			Gobo4	80	95
			Gobo5	96	111
			Gobo6	112	127
			Clockwise rotation from slow to fast	128	143
			Anti-clockwise rotation from slow to fast	144	159
			Gobo1 shake from slow to fast	160	175
			Gobo2 shake from slow to fast	176	191
			Gobo3 shake from slow to fast	192	207

			Gobo4 shake from slow to fast	208	223
			Gobo5 shake from slow to fast	224	239
			Gobo6 shake from slow to fast	240	255
13	15	20	Rotating gobo wheel rotation		
			Indexing 0-360 °	0	128
			Clockwise rotation from slow to fast	129	188
			Stop	189	195
			Anti-clockwise rotation from slow to fast	196	255
	16	21	Rotating gobo wheel rotation in 16 bit		
			Rotating gobo wheel fine rotation	0	255
14	17	22	Framing blade 1 left		
			Framing blade 1 left linearly closing from big to small	0	255
		23	Framing blade 1 left in 16 bit		
			Framing blade 1 left fine adjustment	0	255
15	18	24	Framing blade 1 right		
			Framing blade 1 right linearly closing from big to small	0	255
		25	Framing blade 1 right in 16 bit		
			Framing blade 1 right fine adjustment	0	255
16	19	26	Framing blade 2 left		
			Framing blade2 left linearly closing from big to small	0	255
		27	Framing blade 2 left in 16 bit		
			Framing blade 2 left fine adjustment	0	255
17	20	28	Framing blade 2 right		
			Framing blade 2 right linearly closing from big to small	0	255
		29	Framing blade 2 right in 16 bit		
			Framing blade 2 right fine adjustment	0	255
18	21	30	Framing blade 3 left		
			Framing blade 3left linearly closing from big to small	0	255
		31	Framing blade 3 left in 16 bit		
			Framing blade 3 left fine adjustment	0	255
19	22	32	Framing blade 3 right		
			Framing blade 3 right linearly closing from big to small	0	255
		33	Framing blade 3right in 16 bit		
			Framing blade 3right fine adjustment	0	255
20	23	34	Framing blade 4 left		
			Framing blade 4left linearly closing from big to small	0	255
		35	Framing blade 4left in 16 bit		
			Framing blade 4 left fine adjustment	0	255
21	22	36	Framing blade 4 right		
			Framing blade 4 right linearly closing from big to small	0	255
		37	Framing blade 4right in 16 bit		
			Framing blade 4right fine adjustment	0	255
22	25	38	Framing module rotation		

			Framing module indexing(0-360degrees)	0	127
			Stop	128	
			Framing module clockwise rotation from slow to fast	129	188
			Stop	189	195
			Framing module anti-clockwise rotation from slow to fast	196	255
		39	Framing module rotation in 16 bit		
			Framing module fine rotation	0	255
23	26	40	Prism		
			No Prism	0	16
			Prism	17	255
24	27	41	Prism rotation		
			Prism index	0	127
			Prism stops	128	
			Rotation speed from slow to fast	129	191
			Stop rotating	192	
			Reverse rotation speed from slow to fast	193	255
25	28	42	Effect Wheel		
			No effect wheel	0	19
			Effect wheel in	20	255
26	29	43	Effect Wheel Rotation		
			Forwards rotation from slow to fast	0	127
			Reverse rotation from slow to fast	128	255
27	30	44	Frost		
			Light Frost from 0% to 100%	0	255
28	31	45	Focus		
			Linearly focusing	0	255
		46	Focus Fine		
			Focus in 16 precision	0	255
29	32	47	Zoom		
			Linearly zooming	0	255
		48	Zoom Fine		
			Zoom in 16 Bit precision	0	255
30	33	49	Pan		
			Pan movement	0	255
31	34	50	Pan Fine		
			Pan movement in 16 bit precision	0	255
32	35	51	Tilt		
			Tilt movement	0	255
33	36	52	Tilt fine		
			Tilt movement 16 bit precision	0	255
34	37	53	Pan/Tilt speed		
			Fast Speed Mode	0	1
			Pan &Tilt speed from fast to slow	2	255

35	38	54	Power/Special functions		
			No function:	0	4
			Reserved	5	19
			To activate following functions, stay in DMX value for at least 5 s		
			Graphic display On	20	24
			Graphic display Off	25	29
			Reserved	30	44
			Reserved	45	46
			Fan standard mode	47	48
			Fan theater mode	49	50
			Reserved	51	52
			Fast speed dimmer	53	54
			Mid speed dimmer	55	56
			Slow speed dimmer	57	58
			Gamma curve 2.0	59	60
			Gamma curve 2.2	61	62
			Gamma curve 2.4	63	64
			Gamma curve 2.6	65	66
			LED refresh rate 1200Hz	67	68
			LED refresh rate 2400Hz	69	70
			LED refresh rate 4800Hz	71	72
			LED refresh rate 10000Hz	73	74
			LED refresh rate 12000Hz	75	76
			LED refresh rate 1500Hz	77	78
			LED refresh rate 20000Hz	79	80
			LED refresh rate 25000Hz	81	82
			Reserved	83	89
			Pan/Tilt speed mode	90	94
			Pan/Tilt time mode	95	99
			Reserved	100	129
			Reserved	130	139
			Pan/Tilt reset	140	149
			Colour system reset	150	159
			Gobo wheels reset	160	169
			Reserved	170	179
			Zoom/focus/frost/prism reset	180	189
			Others(Iris/ effect wheel/Framing module) reset	190	199
			Total reset	200	209
			Reserved	210	229
			Reserved	240	255

Note:

1. Fan error can automatically turn the LED lamp off.

2. Note: "Speed Mode" means Pan and Tilt will move from Point A to Point B at their respective maximum speeds."Time Mode" means both Pan and Tilt will arrive at designated point at the same time. It's advised Time Mode be used if the projector runs circles or in oblique lines.

8. LOGOS ON THE TOUCH SCREEN

	Config Settings		Option Settings
			Information
	Error Messages		Service
	Address		Operation Mode
	Reset		User Memories

9. ERROR INFORMATION

The system can detect some errors during the reset, if  displayed, touch the logo  to view the error.
The error messages are as follows:

Name	Type	Correction
Pan	Timeout/magnet Sensor/Encoder	Check if wiring, positioning parts and motors are normal
Tilt	Timeout/magnet Sensor/Encoder	Check if wiring, positioning parts and motors are normal
Cyan	Timeout	Check if wiring, positioning parts and motors are normal
Yellow	Timeout	Check if wiring, positioning parts and motors are normal
Magenta	Timeout	Check if wiring, positioning parts and motors are normal
CTO	Timeout	Check if wiring, positioning parts and motors are normal
Color Wheel	Timeout	Check if wiring, positioning parts and motors are normal
Fixed gobo wheel	Timeout	Check if wiring, positioning parts and motors are normal
Rot. Gobo Wheel	Timeout	Check if wiring, positioning parts and motors are normal
Rot. Gobo1Rotation	Timeout	Check if wiring, positioning parts and motors are normal
Dimmer	Timeout	Check if wiring, positioning parts and motors are normal
Prism	Timeout	Check if wiring, positioning parts and motors are normal
Prism Rotation	Timeout	Check if wiring, positioning parts and motors are normal
Focus	Timeout	Check if wiring, positioning parts and motors are normal
Zoom	Timeout	Check if wiring, positioning parts and motors are normal
Effect wheel	Timeout	Check if wiring, positioning parts and motors are normal

Effect wheel Rotation	Timeout	Check if wiring, positioning parts and motors are normal
Pan Board	Error	Check signal wire
Tilt Board	Error	Check signal wire
Driver Board 1	Error	Check signal wire
Driver Board2	Error	Check signal wire
Driver Board3	Error	Check signal wire
Blade Board	Error	Check signal wire
Fan Board	Error	Check signal wire
Lamp on	Timeout	Check if the lamp is damaged
Lamp Life	Timeout /Warning	
Lamp Off[Fan Error]	Error	Check if all fans are normal
Time IC	Error	

10. TECHNICAL DATA

ELECTRICAL PARAMETERS

Input voltage: 100V-240V AC, 50/60Hz

Maximum power: 1100W @ 220V

1150W @ 100V

Power factor: PF>0.9

SPECIFICATIONS OF LIGHT SOURCE

Lamp

800W ,LED white

Colour Temperature

8000K

Manufacturers Rated Lamp Life

20000hrs

Ra $\geq$ 70

Ra $\geq$ 95, R9 $\geq$ 90 Lamp : Optional

COLOR S

CMY linear coloring mixing system with macros

1 Color Wheel

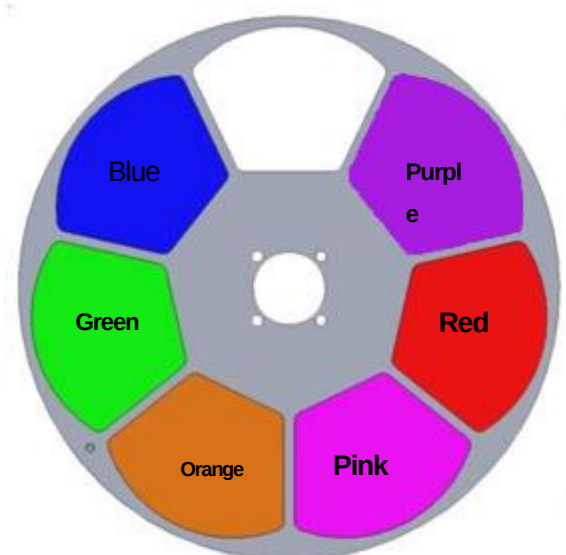
6 color + white

Bi-directional rainbow effect with variable speeds and half color effect

Linear /stepping color changing

CTO

Linear CTO system(0-100%)

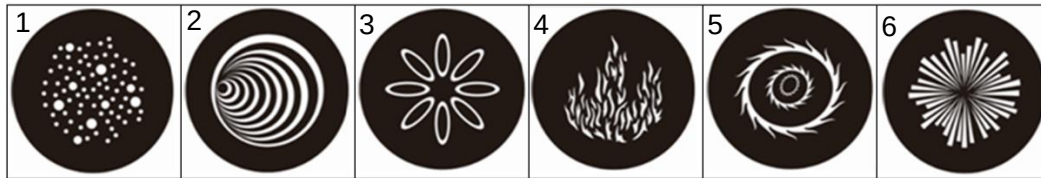


GOBOS

1 rotating gobo wheel: 6 exchangeable+ white, glass or metal gobos

Bi-directional rotation, indexing, shake with varied speeds, bi-directional scrolling with varied speeds

Rotating gob wheel:



Rotating gobo external size: 37.5mm Image size 24mm ; fixed gobo size 36.3mm

Image size 23mm



1 fixed gobo wheel

7 exchangeable gobos+ white

Shake effect with varied speeds and bi-directional rotation with varied speeds

Fixed gobo wheel

FRAMING MODULE

Continual rotation with graphics with different sizes and shapes

4 blades for complete curtain effect

PRISM

1pc 4 facet prism, bi-directional rotation with varied speeds and indexing function (Option: color 4 facet prism)

FROST

Linear frost (0-100%)

EFFECT WHEEL

1 exchangeable graphic effect wheel, bi-directional rotation with varied speeds

FOCUS

0-100% linearly adjustable by DMX

DIMMER

Linear dimmer 0-100%

3 dimmer speeds

4 dimmer gamma curves

Dimmer frequency(1.2K~2.5K) good for high speed 4K video camera

IRIS

Linear iris 5-100% with macros

STROBE

Double shutter blades, 0.3~25 F.P.S

HEAD MOVEMENT

Pan 540 °; Tilt 270 °with auto position correction

BEAM ANGLE

Beam angle: 6° ~ 58°

Rotation Gobo wheel : 8° ~ 48°

Fixed Gobo wheel : 6° ~ 47°

Linear zoom with 16 bit precision

CONTROL

International standard DMX512 signal , 5 pin interface(Optional 3pin interface)

RDM control protocol

ArtNet protocol(Optional)

35channels in short mode, 38channels in standard mode,54channel in extended mode

Master/slave synchronized mode

Stand-alone mode

OTHER FUNCTIONS

Adjustable Pan & Tilt speeds

Pan and Tilt swappable and invertible

Fixture and lamp hours' display

Color screen, Chinese-English menus, brightness and contrast adjustable

Diagnostic system with sensors

Software version display

Protection and insulation of input signals

Modular construction for easy maintenance

ArtNet interface(Optional)

DMX512 wireless receiver

DMX512 wireless transmitter (optional)

HOUSING

High tensile cast Aluminum, high temperature resistant/anti-UV ABS, IP65

AMBIENT TEMPERATURE

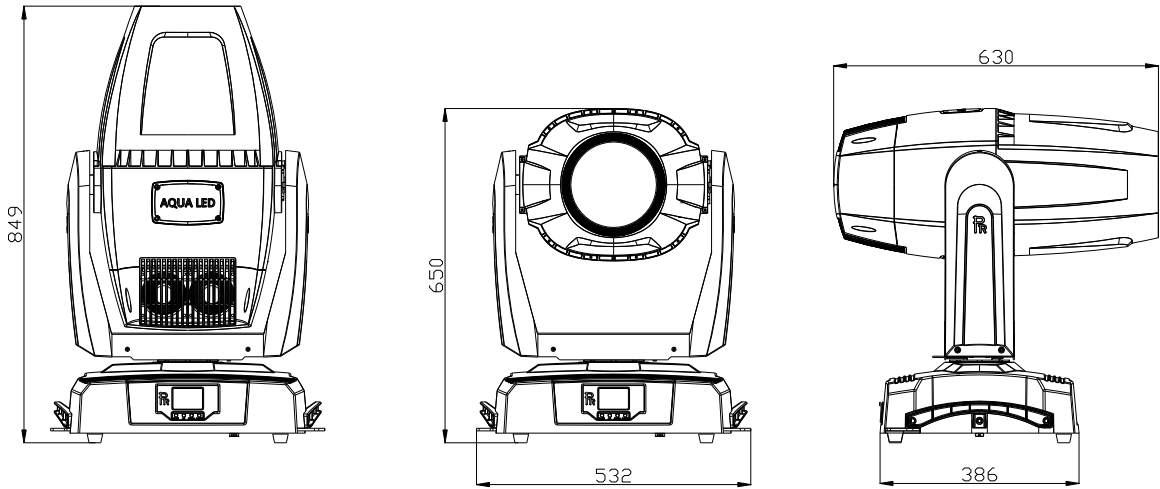
-20℃ ~ 45℃

Note: if the ambient temperature is below -20 ℃, please preheat the lamp more than 30 minutes and reset it again.

WEIGHT

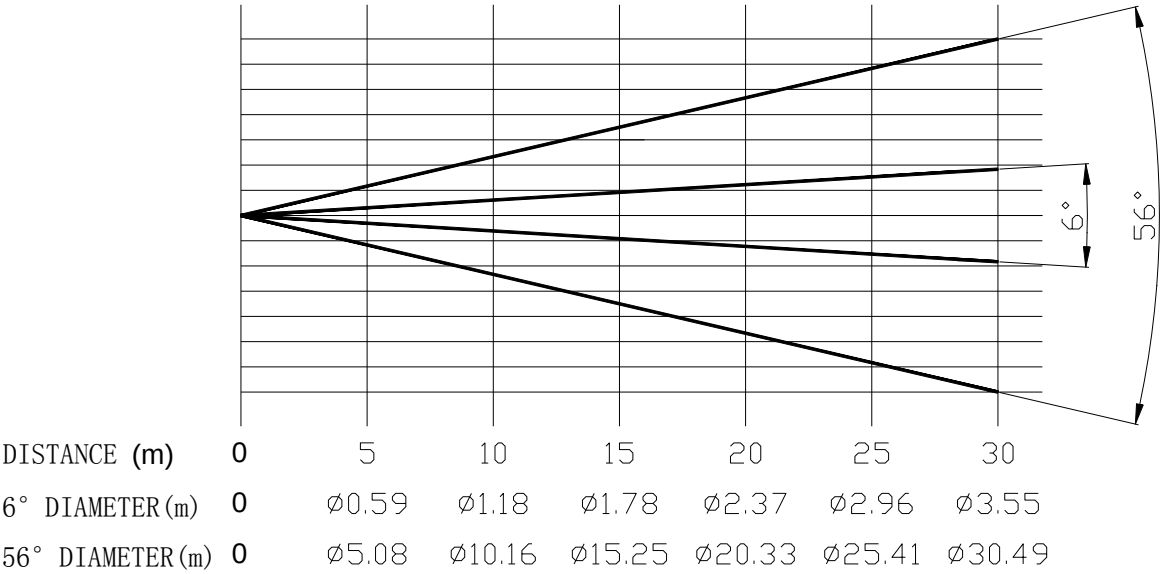
56Kg

SIZES:



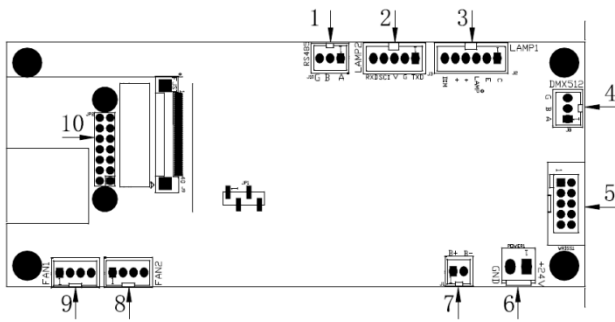
LIGHT OUTPUT:

56° Lux	0	1812	453	201	113	72	50
6° Lux	0	79155	19789	8795	4947	3166	2199



11. CIRCUIT DIAGRAM AND PCB CONNECTIONS
CIRCUIT DIAGRAM

Display board



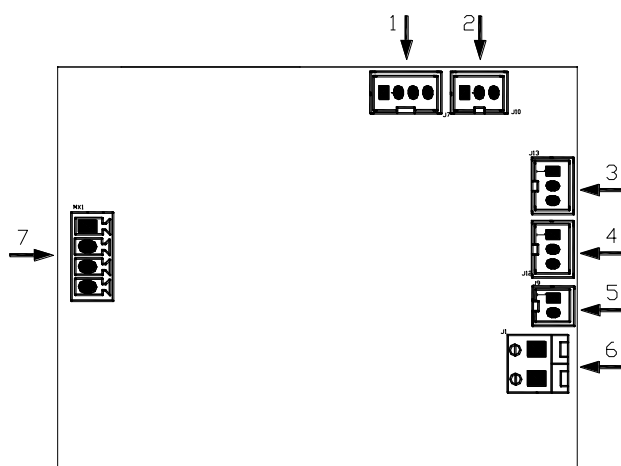
No	Name
1	485 Signal
2-3	Reserved
4	DMX 512 Signal
5	Wireless
6	Power Input
7	Reserved
8-9	Fan
10	Internet Input

Driver board 1



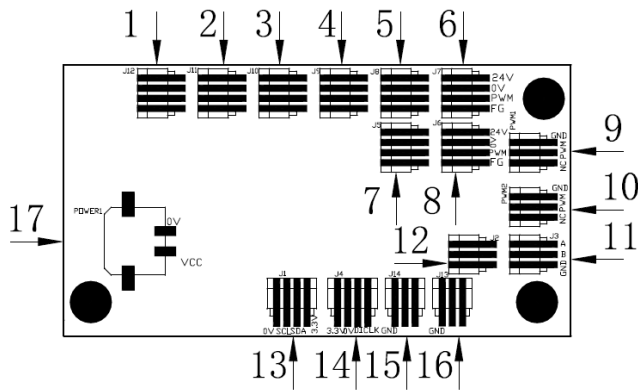
No	Name
1	LED driver Output
2	LED driver Output
3	PWM Input
4	48V Input +
5	48V Input -

Pan and Tilt board



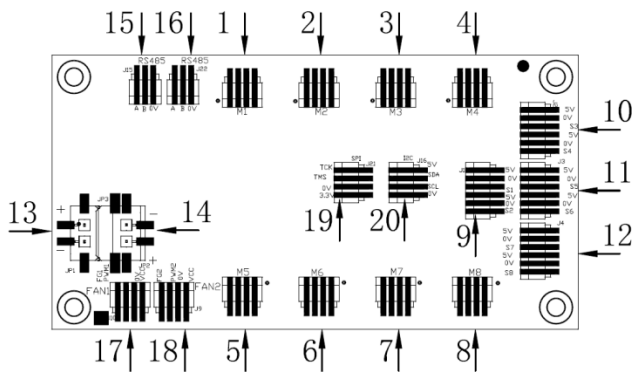
No	Name
1	Pan & Tilt encoder
2	Magnet sensors for pan and tilt
3	DMX signal input
4	DMX signal output
5	Reserved
6	24V input
7	Motors for Pan and Tilt

Fan board



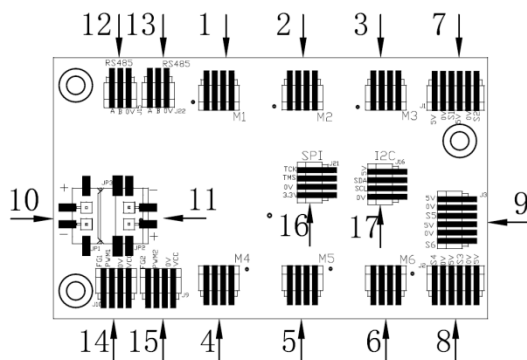
No	Name
1-8	PWM Fan Output
9	PWM Output
10	PWM Output
11-12	485 Signal
13-15	Reserved
16	Temperature
17	Power Input

Driver board3



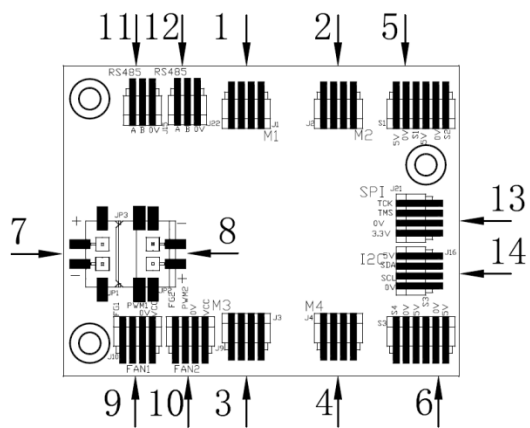
No	Name
1-2	Zoom Motor
3-4	Focus Motor
5	Prism In/Out Motor
6	Prism rotation Motor
7	Frost Motor
8	Reserved
9	Magnet sensors Zoom
10	Magnet sensors Focus
11	Prism/Prism rotation magnet sensor
12	Reserved
13-14	Power Input
15	485 Signal fo Input
16	485 Signal Output
17-20	Reserved

Driver board2



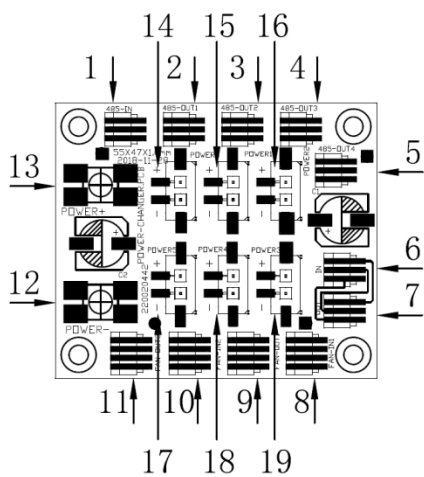
No	Name
1	CTO Motor
2	Colour wheel Motor
3	Cyan Motor
4	Yellow Motor
5	Pink Motor
6	Reserved
7	Magnet sensor for CTO
8	Magnet sensors for Colour wheel/Cyan
9	Magnet sensors Pink
10-11	Power Input
12	485 Signal Input
13	485 Signal Output
14-15	Fan
16-17	Reserved

Driver board 3



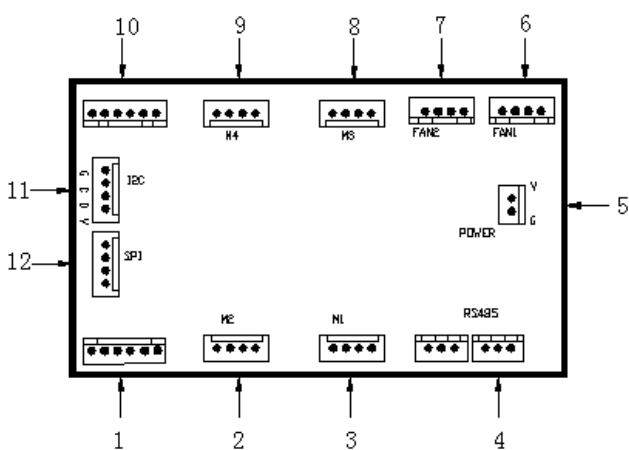
No	Name
1	Rotating gobo wheel rotation motor
2	Effect wheel In/Out motor
3	Gobo rotation motor
4	Effect wheel rotation motor
5	Rotating gobo wheel magnet sensor
6	Gobo rotation sensor
7-8	Power Input
9-10	Fan
11	485 Signal Input
12	485 Signal Output
13-14	Reserved

Driver board 4



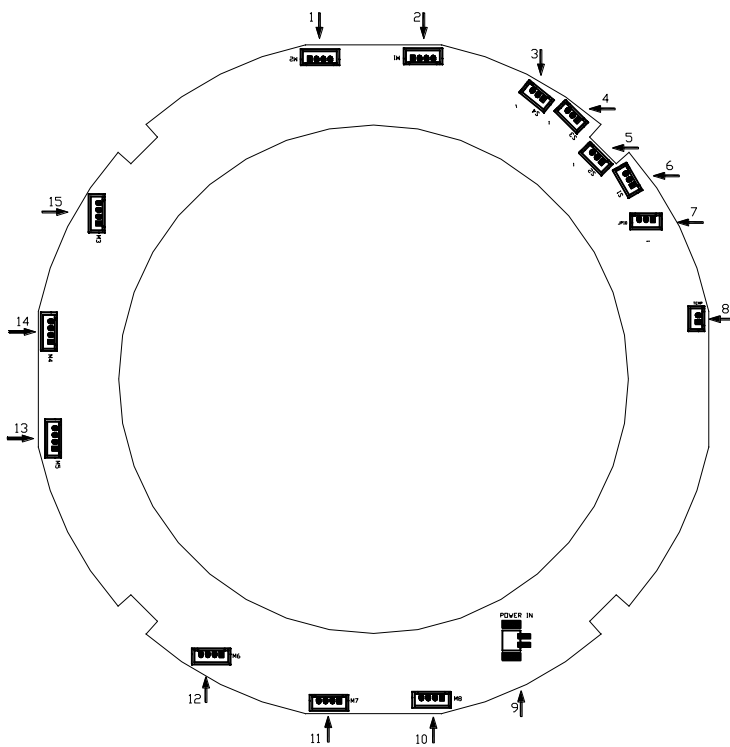
No	Name
1-5	485 Signal
6-11	Reserved
12	24V Input +
13	24V Input -
14-19	24V Output

Driver board 5



No	Name
1	Magnet sensors
2	Framing Motor
3	Gobo Motor
4	485Signal
5	24V Input
6-12	Reserved

Framing module board



No	Name
1	Framing motor2
2	Framing motor 1
3	Reserved
4	Reserved
5	Reserved
6	Reserved
7	Software flashing interface
8	Reserved
9	24V Input
10	Framing Motor 8
11	Framing Motor 7
12	Framing Motor 6
13	Framing Motor 5
14	Framing Motor 4
15	Framing Motor 3

12. COMPONENT ORDER CODES

NAME	PART NO.	QUANTITY	REMARK
POWER SUPPLY	192010220	1	
POWER SUPPLY	192010224	1	
LED ENGINE	150020323	1	
FAN FOR LED ENGINE	030060109	2	
TURBO FAN FOR COLOR WHEEL	030060072	1	
TURBO FAN FOR BASE	030060064	1	
LED DRIVER FAN	030060084	2	
FAN FOR BASE	030060084	2	
FAN FOR LENS	030060084	2	
TURBO FAN FOR LENS	030060050	1	
FOCUS MOTOR	030060072	1	
ZOOM MOTOR	030040213A	2	
PRISM IN/OUT MOTOR	030040154A	2	
PRISM ROTATION MOTOR	030040132A	1	
FROST IN/OUT MOTOR	030040203	1	
MOTOR FOR ROTATING GOBO WHEEL	030040220A	1	
MOTOR FOR FIXED GOBO WHEEL	030040060	2	
MOTOR FOR IRIS	030040154A	1	
MOTOR FOR EFFECT IN/OUT WHEEL	030040088	1	
MOTOR FOR EFFECT WHEEL ROTATION	030040236	1	

MOTOR FOR COLOR WHEEL	030040060	1	
MOTOR FOR CMY	030040211A	3	
MOTOR FOR CTO		1	
MOTOR FOR PAN	030040252	1	
MOTOR FOR TILT		1	
CONTROL PANEL	230061226B	1	
PAN DRIVER BOARD	230061231	1	
TILT DRIVER BOARD	230061232	1	
ENCODER BOARD	230060932	2	
LED MODULE DRIVER BOARD (3 CHANNEL)	230061244	1	
LED MODULE DRIVER BOARD(3 CHANNEL)	230061313	2	
5 CHANNEL MOTOR DRIVER BOARD	230061227A	1	
4 CHANNEL MOTOR DRIVER BOARD	230061228A	1	
6 CHANNEL MOTOR DRIVER BOARD	230061197	1	
8 CHANNEL MOTOR DRIVER BOARD	230061201A	1	
BASE BOTTOM PLATE SEAL1	290190116	1	
FRONT COVER SEAL	290190117	1	
HEAT SINK SEAL	290190114	1	
SMALL COVER SEAL	290190115	2	
PAN BEARING SEAL	290010557	1	External diameter x Internal diameter: Φ1.8xΦ40
TILT BEARING STAND SEAL1	290190124	2	External diameter x Internal diameter: Φ2.65xΦ61.5
TILT BEARING STAND SEAL2	290190125	2	External diameter x Internal diameter: Φ1.8xΦ43.7
TILT BEARING SEAL	290190128	2	External diameter x Internal diameter: Φ1.8xΦ30
PAN BELT	290151430	1	HTD-459-3M-12
TILT BELT	290151430	1	HTD-459-3M-12
EFFECT WHEEL ROTATING BELT	290151452	1	HTD-192-3M-3
EFFECT WHEEL IN/OUT BELT	290151454	1	HTD-225-3M-3
ROTATING GOBO WHEEL BELT	290151384	1	HTD-291-3M-3
GOBO ROTATION BELT	290151453	1	HTD-360-3M-3
COLOR WHEEL BELT	290151451	1	HTD-366-3M-3
FIXED GOBO WHEEL BELT	290151443	1	HTD-270-3M-5
FRAMING MODULE ROTATION BELT	290151425	1	HTD-675-3M-4
CMY BELT	290151422	4	B222-MXL-3
ZOOM BELT	290151324	2	118-MXL-4
FOCUS BELT	290151372	2	58.4-MXL-5
PRISM IN/OUT BELT	290151379	1	HTD-186-3M-5

PR LIGHTING LTD.

1582 Xingye Avenue, Nancun Panyu
Guangzhou, 511442 China
TEL: +86-20-3995 2888
FAX: +86-20-3995 2330

PR lighting will try its best to offer accurate and overall information about a product's technical data. Any changes won't be notified if necessary.
Patented Products. Counterfeiting Will be Prosecuted!

P/N: 320020903
OldVersion:20200723
New Version:20200804