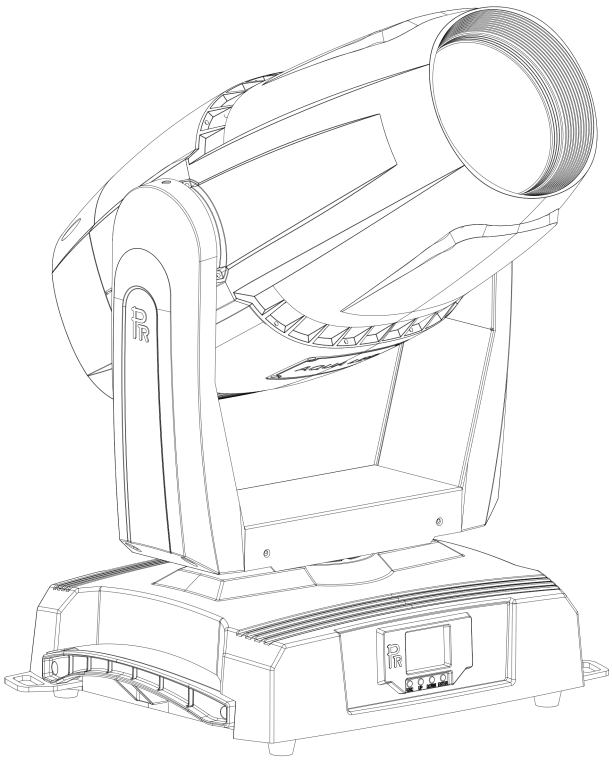
珠江灯光



AQUA LED 1800-W SPOT

PR-8168

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.

PR LIGHTING LTD.
http://www.pr-lighting.com

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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	Pcs	
User 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, IP66.
- 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
- 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 .

•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 is45℃.After stable operation , its temperature is 80℃.
•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

The projector's protective devices should be periodically checked. For example, check if the fuse is blown or not. If true, replace it with a new fuse with same rating. Please be advised they be of same rating.

Please periodically check the cooling devices with the projector having protective unit for over-temperature （If over-temperature occurs, the protective unit will trigger power-off automatically）. The cooling devices include cooling fan, heat sink and other cooling components. Please check if the fan runs normally and the fan and the air-inlet and outlet are blocked by dust. Please ensure that the air inlet and outlet are clean and clear. The cooling fan must be cleaned once every 15 days.

For those projector with optical lens, reflector and coated color filters, it is necessary to make it clean for reliable operation because of easy accumulation of smoke, oil and dust on the lens, thus decreasing the light output. Then internal optical lens, flat glass, reflector and coated color filters must be periodically cleaned for optimal light output.

For the projector with some IP rating, unless approved by professional service people and internal parts requiring to be replaced, it's prohibited to dismantle it. For this type of projector, if without any fan, please keep it clean; if yes, please refer the above mentioned method for cleaning.

The cleaning intervals depend on how often it's used and its running environment. Use soft clothing and normal glass detergent for cleaning. It's advised the external optical system be cleaned once every 20days, internal optical system once every 30/60 days at least. For the projector with higher IP rating, if there is no damage inside, just clean the projector's surface in principle. Keep the lens clean and don't touch the 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.

•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.

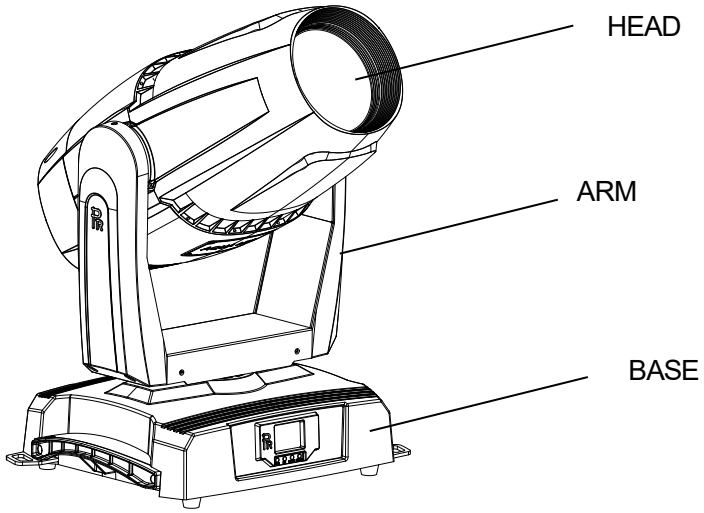
•LUBRICATION

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.
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.

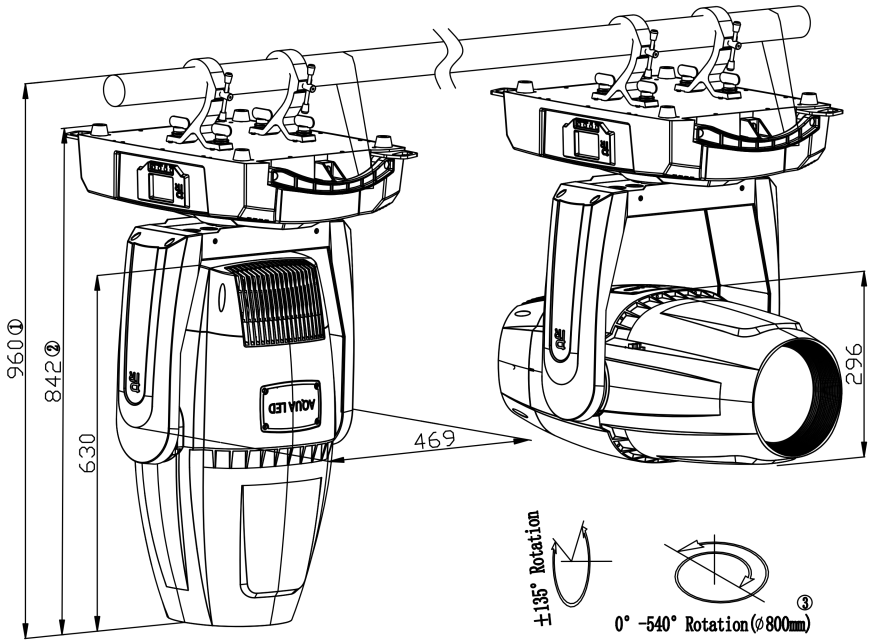
3. APPEARANCE



4. INSTALLATION

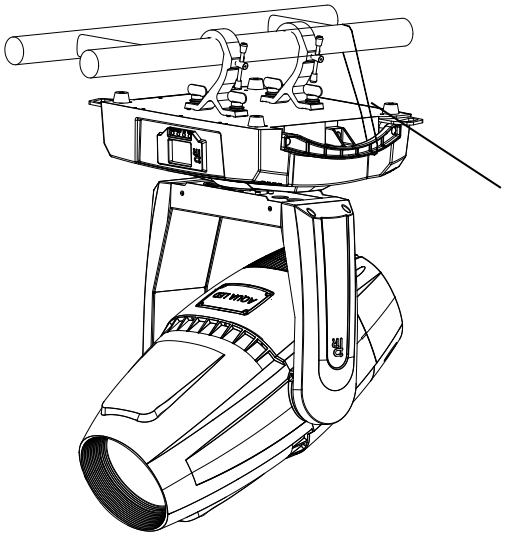
•RIGGING

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



Note:

1. the distance between the foot of the base and the front lens cover(the head facing downward)
2. the distance between mounting truss and the front lens cover(the head facing downward)
3. The maximum diameter of the rotating head (minimum spacing between fixtures)



WARMING

Please run safety cord through 2 safety holes for 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**

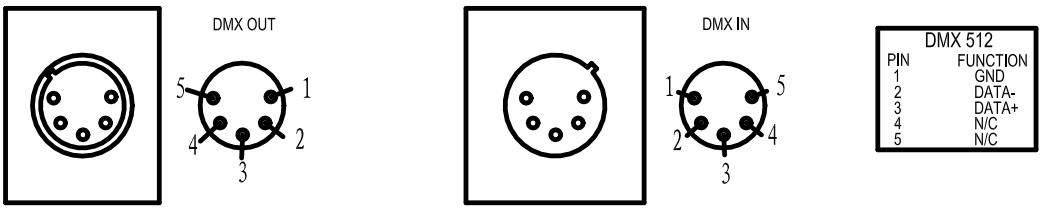
Connect the power cord as follows:

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.

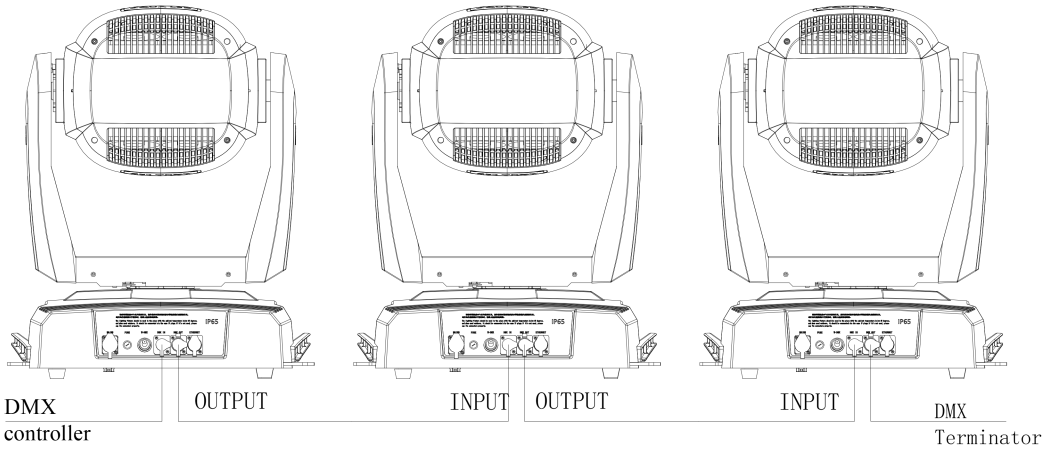
•DMX CONTROL CONNECTION



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.

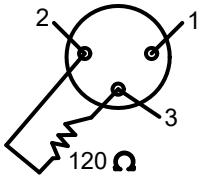


•DMX TERMINATOR

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

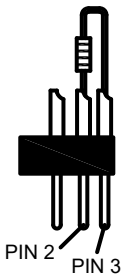
into the output socket on the last projector in the chain. The connections are illustrated below



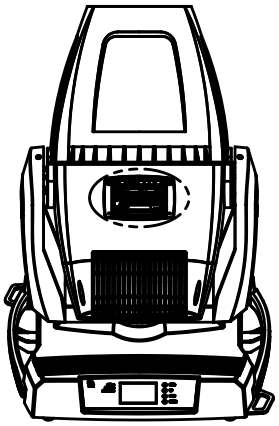
DMX TERMINATOR

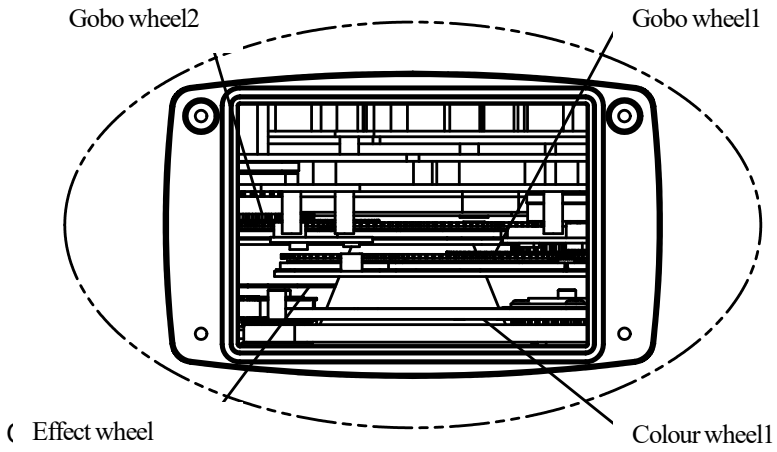
CONNECTION

Connect a 120Ω(OHM) resistor across pins 2 and 3 in an XLR plug and insert into the DMX out socket on the last unit in the chain.

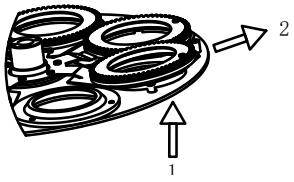


•REPLACEMENT OF GOBOS





Lock the tilt and unfasten 4 fast fit screws of the chamber cover. Open the cover and you'll see the structures as the figures above.
For the rotating gobos: remove the rotator by hand as the figure hereinafter in the sequences of1→2 ; remove the gobo after the tightening spring for the gobo is taken out. Place a new gobo in the rotator and put back the spring. And ensure the spring is into the narrow end of the rotator, i.e., inner ring of the rotator. At last, use a proper tool to pull the tightening clip and put the rotator back to the wheel with the help of the other hand in the opposite sequences of removal （2→1）.



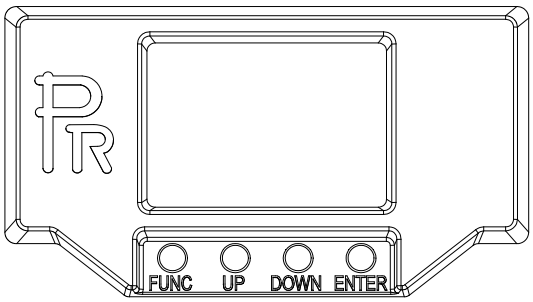
Note: Do not touch the color filters ,glass gobos with bare hand. There must be soft and clean paper or cloth between the hand and the glass gobo. Tighten the 4fast fit screws after the cover is put back. Unlock the Tilt.

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 LCD display.
Launch the projector and press button ENTER for more than 3 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 31 **c**hannels, so set the No. 1 projector's address 001, No. 2 projector's address 032, No. 3 projector's address 063, No. 4 projector's address094, 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),**then wireless indication in the front panel will be on, meaning 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

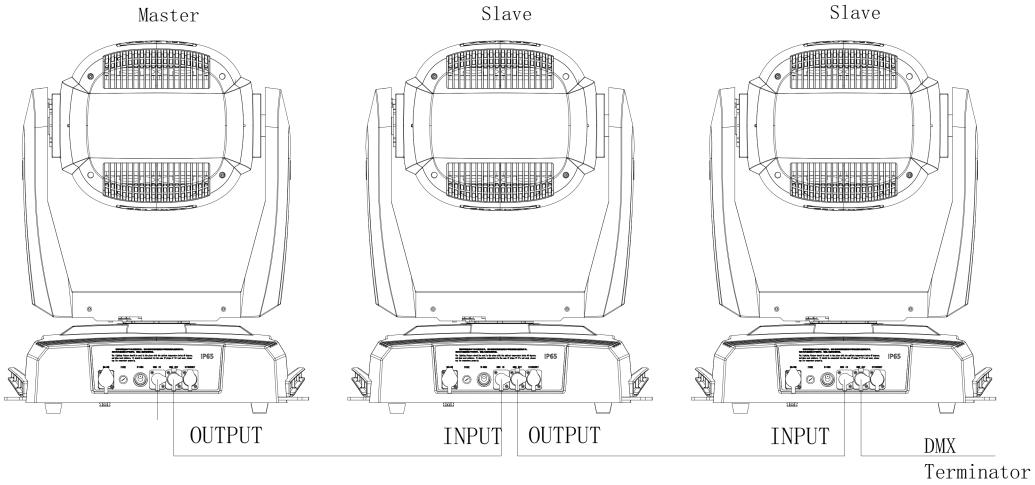
Operate the projector without connecting with a controller, enable the master mode through the operation panel, the projector will run in Stand-Alone mode automatically.
DMX address can be set at any number within 512.

•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	1-485（Short Mode） 1-481（Standard Mode） 1-474（Extended Mode）		
	IP Address	Default IP Address	2.X.X.X /10.X.X.X	
		Custom IP Address	X.X.X.X	
	SubNet Mask	X.X.X.X		
	ArtNet ArtNet Universe	0-255		
	sACN Universe	1-63999		
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		

		sACN Only		
		sACN 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 Information	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	
	View DMX Values			
	Lamp Hours	Reset Lamp Hours		
	Total Hours			
	Temperature	Display Board XX℃/F		
		Pan Board XX℃/F		
		Tilt Board XX℃/F		
		Driver Board 1 XX℃/F		
		Driver Board 2 XX℃/F		
		Driver Board 3 XX℃/F		
		Driver Board 4 XX℃/F		
		Fan Board XX℃/F		
		LED XX℃/F LED Sensor XX℃/F		
	Software Version	Display Board	System= XXX Boot =XXX	
		Pan Board	System= XXX Boot =XXX	
		Tilt Board	System= XXX Boot =XXX	
		Driver Board 1	System= XXX Boot =XXX	
		Driver Board 2	System= XXX Boot =XXX	

		Driver Board 3	System= XXX Boot =XXX	
		Driver Board 4	System= XXX Boot =XXX	
		Fan Board	System= XXX 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
		Edit Static Scene	Strobe XXX	
			Dimmer XXX	
			…	
	Init User Memory	Reset User Memory 1	Reset User Memory?	Input Password 123
		Reset User Memory 2	Reset User Memory?	Input Password 123
		Reset Static Scene	Reset Static Scene?	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	9
Colour Macro 1	10	11
Colour Macro 2	12	13
Colour Macro 3	14	15
Colour Macro 4	16	17
Colour Macro 5	18	19
Colour Macro 6	20	21
Colour Macro 7	22	23
Colour Macro 8	24	25
Colour Macro 9	26	27
Colour Macro 10	28	29
Colour Macro 11	30	31
Colour Macro 12	32	33
Colour Macro 13	34	35
Colour Macro 14	36	37
Colour Macro 15	38	39
Colour Macro 16	40	41
Colour Macro 17	42	43
Colour Macro 18	44	45
Colour Macro 19	46	47
Colour Macro 20	48	49
Colour Macro 21	50	51
Colour Macro 22	52	53
Colour Macro 23	54	55
Colour Macro 24	56	57
Colour Macro 25	58	59
Colour Macro 26	60	61
Colour Macro 27	62	63
Colour Macro 28	64	65
Colour Macro 29	66	67
Colour Macro 30	68	69
Colour Macro 31	70	71
Colour Macro 32	72	73
Colour Macro 33	74	75
Colour Macro 34	76	77
Colour Macro 35	78	79
Colour Macro 36	80	81
Colour Macro 37	82	83
Colour Macro 38	84	85
Colour Macro39	86	87
Colour Macro 40	88	89
Colour Macro 41	90	91
Colour Macro 42	92	93

Colour Macro 43	94	95
Colour Macro 44	96	97
Colour Macro 45	98	99
Colour Macro 46	100	101
Colour Macro 47	102	103
Colour Macro 48	104	105
Colour Macro 49	106	107
Colour Macro 50	108	109
Colour Macro 51	110	111
Colour Macro 52	112	113
Colour Macro 53	114	115
Colour Macro 54	116	117
Colour Macro 55	118	119
Colour Macro 56	120	121
Colour Macro 57	122	123
Colour Macro 58	124	125
Colour Macro 59	126	127
Colour Macro 60	128	129
Colour Macro 61	130	131
Colour Macro 62	132	133
Colour Macro 63	134	135
Colour Macro 64	136	137
Colour Macro 65	138	139
Colour Macro 66	140	141
Colour Macro 67	142	143
Colour Macro 68	144	145
Colour Macro 69	146	147
Colour Macro 70	148	149
Colour Macro 71	150	151
Colour Macro 72	152	153
Colour Macro 73	154	155
Colour Macro 74	156	157
Colour Macro 75	158	159
Colour Macro 76	160	161
Colour Macro 77	162	163
Colour Macro 78	164	165
Colour Macro 79	166	167
Colour Macro 80	168	169
Colour Macro 81	170	171
Colour Macro 82	172	173
Colour Macro 83	174	175
Colour Macro 84	176	177
Colour Macro 85	178	179

			Colour Macro 86	180	181
			Colour Macro 87	182	183
			Colour Macro 88	184	185
			Colour Macro 89	186	187
			Colour Macro 90	188	189
			Colour Macro 91	190	191
			Colour Macro 92	192	193
			Colour Macro 93	194	195
			Colour Macro 94	196	197
			Colour Macro 95	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)/Color 2(Green)	76	79
			Color 2(Green)	80	83
			Color 2(Green)/Color 3(Orange)	84	87
			Color 3(Orange)	88	91
			Color 3(Orange)/ Color 4(Pink)	92	95
			Color 4(Pink)	96	99
			Color 4(Pink) /Color 5(Red)	100	103
			Color 5(Red)	104	107
			Color 5（Red）/Color 6（Purple）	108	111

			Color 6(Purple)	112	115
			Color6(Purple)/ White	116	119
			White	120	127
			Anti-clockwise rainbow effect rotation speed from slow to fast	128	191
			Clockwise rainbow effect rotation speed from slow to fast	192	255
	10	14	**Color Wheel Fine**		
			Color 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	**Rotating gobo wheel 1**		
			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
12	14	19	**Rotating gobo wheel 1 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
	15	20	**Rotating gobo wheel 1rotation in 16 bit**		

			Rotating gobo wheel 1 fine rotation	0	255
13	16	21	**Rotating gobo wheel 2**		
			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
14	17	22	**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
	18	23	**Rotating gobo wheel rotation in 16 bit**		
			Rotating gobo wheel fine rotation	0	255
15	19	24	**Prism**		
			No Prism	0	16
			Prism	17	255
16	20	25	**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
17	21	26	**Effect Wheel**		
			No effect wheel	0	19
			Effect wheel in	20	255
18	22	27	**Effect Wheel Rotation**		
			Forwards rotation from slow to fast	0	127
			Reverse rotation from slow to fast	128	255
19	23	28	**Frost**		
			Light Frost from 0% to 100%	0	255
20	24	29	**Focus**		
			Linearly focusing	0	255

		30	**Focus Fine**		
			Focus in 16 precision	0	255
21	25	31	**Zoom**		
			Linearly zooming	0	255
		32	**Zoom Fine**		
			Zoom in 16 Bit precision	0	255
22	26	33	**Pan**		
			Pan movement	0	255
23	27	34	**Pan Fine**		
			Pan movement in 16 bit precision	0	255
24	28	35	**Tilt**		
			Tilt movement	0	255
25	29	36	**Tilt fine**		
			Tilt movement 16 bit precision	0	255
26	30	37	**Pan/Tilt speed**		
			Fast Speed Mode	0	1
			Pan &Tilt speed from fast to slow	2	255
27	31	38	**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 dimmer speed	53	54
			Midium dimmer speed	55	56
			Slow dimmer speed	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 15000Hz	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 wheel reset	150	159
			Gobo wheels reset	160	169
			Reserved	170	179
			Zoom/focus/frost/prism reset	180	189
			Others(Iris/ effect wheel) reset	190	199
			Total reset	200	209
			Reserved	210	229
			Reserved	240	255

Note:

1. Fan errors can cause LED lamps to be shut off;
2. "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. SIGNS ON THE DISPLAY

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

9. ERROR MESSAGE

The system can detect some errors during the reset, if  displayed, touch  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
Rotating gobo wheel1	Timeout	Check if wiring, positioning parts and motors are normal
Gobo rotation 1	Timeout	Check if wiring, positioning parts and motors are normal
Rotating gobo wheel2	Timeout	Check if wiring, positioning parts and motors are normal
Gobo rotation 2	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 board 2	Error	Check signal wire
Driverboard3	Error	Check signal wire
Driverboard4	Error	Check signal wire
Fan board	Error	Check signal wire
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

Input power: 1140W @ 100V AC

1080W @ 220V AC

Power factor: PF>0.9

SPECIFICATIONS OF LIGHT SOURCE

Lamp	800W
Colour Temperature	8000K
Manufacturers Rated Lamp Life	20000hrs

Ra ⩾70

Ra ⩾90, R9⩾90 Lamp : Optional

COLOR S (Optional)

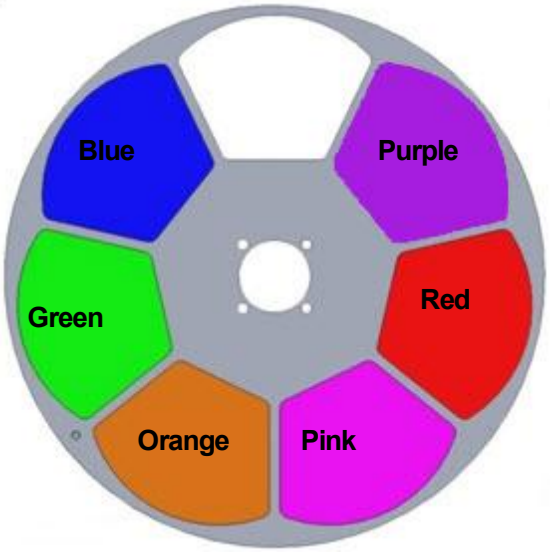
CMY linear coloring mixing system with macros

1 Color Wheel

6 color s+ white

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

Linear /stepping color changing



CTO

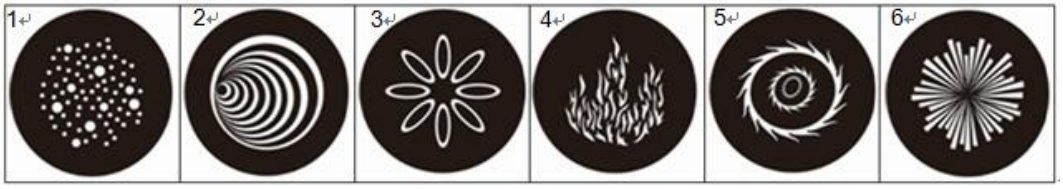
Linear CTO system(0-100%)

GOBOS(Optional**)**

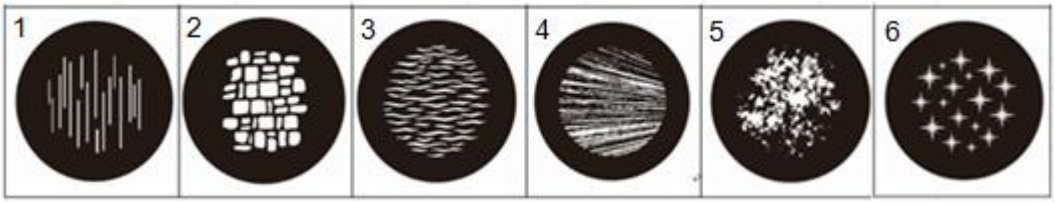
2 rotating gobo wheels: 6 exchangeable+ white, glass or metal gobos

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

Rotating gob wheel1:



Rotating gob wheel2:



Gobo external size: 37.5mm

Image size of rotating gobo isΦ24mm

PRISM

1pc 4 facet prism, bi-directional rotation with varied speeds and indexing function

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 540º, Tilt 270º with auto position correction

BEAM ANGLE

Linear zoom 6°～ 56°with 16 bit precision

CONTROL

International standard DMX512 signal , 5 pin interface
RDM control protocol
ArtNet protocol
27channels in short mode, 31channels in standard mode,38channel in extended mode
Master/Slave mode
Stand-alone mode
Self test 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
DMX512 wireless receiver
DMX512 wireless transmitter (optional)

HOUSING

High tensile cast aluminum and high temperature resistant ABS, IP66

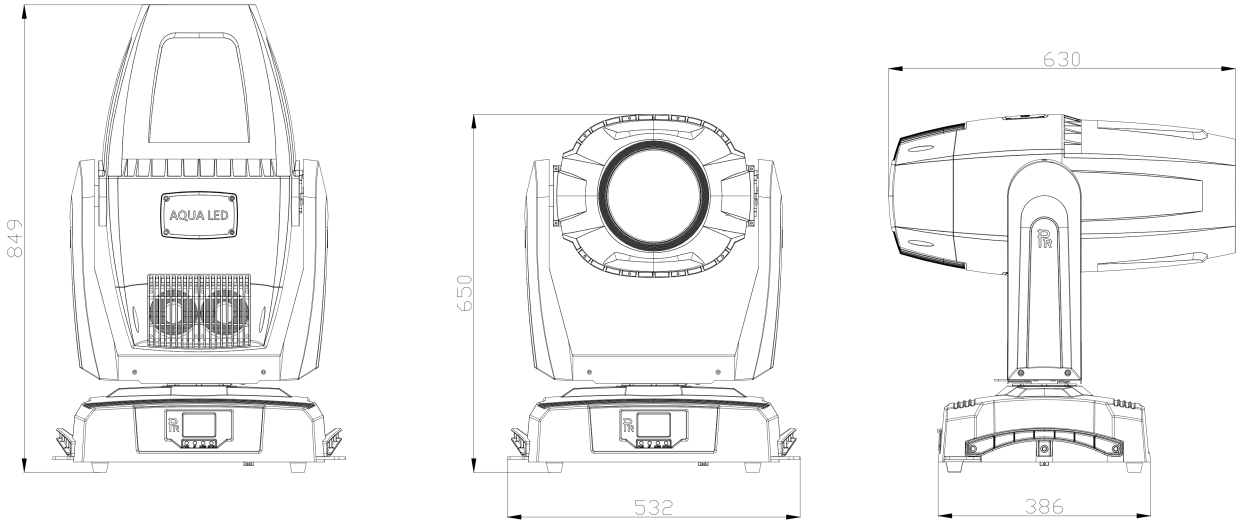
AMBIENT TEMPERATURE

-20℃ ～45℃
Note: if the ambient temperature is below -20°C, please preheat the lamp more than 30 minutes and reset it again.

WEIGHT

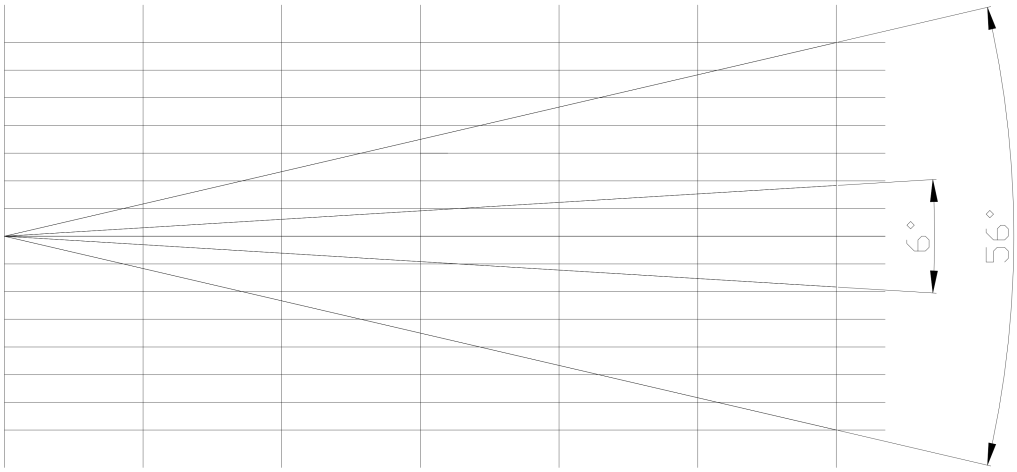
55Kg

SIZES:



LIGHT OUTPUT

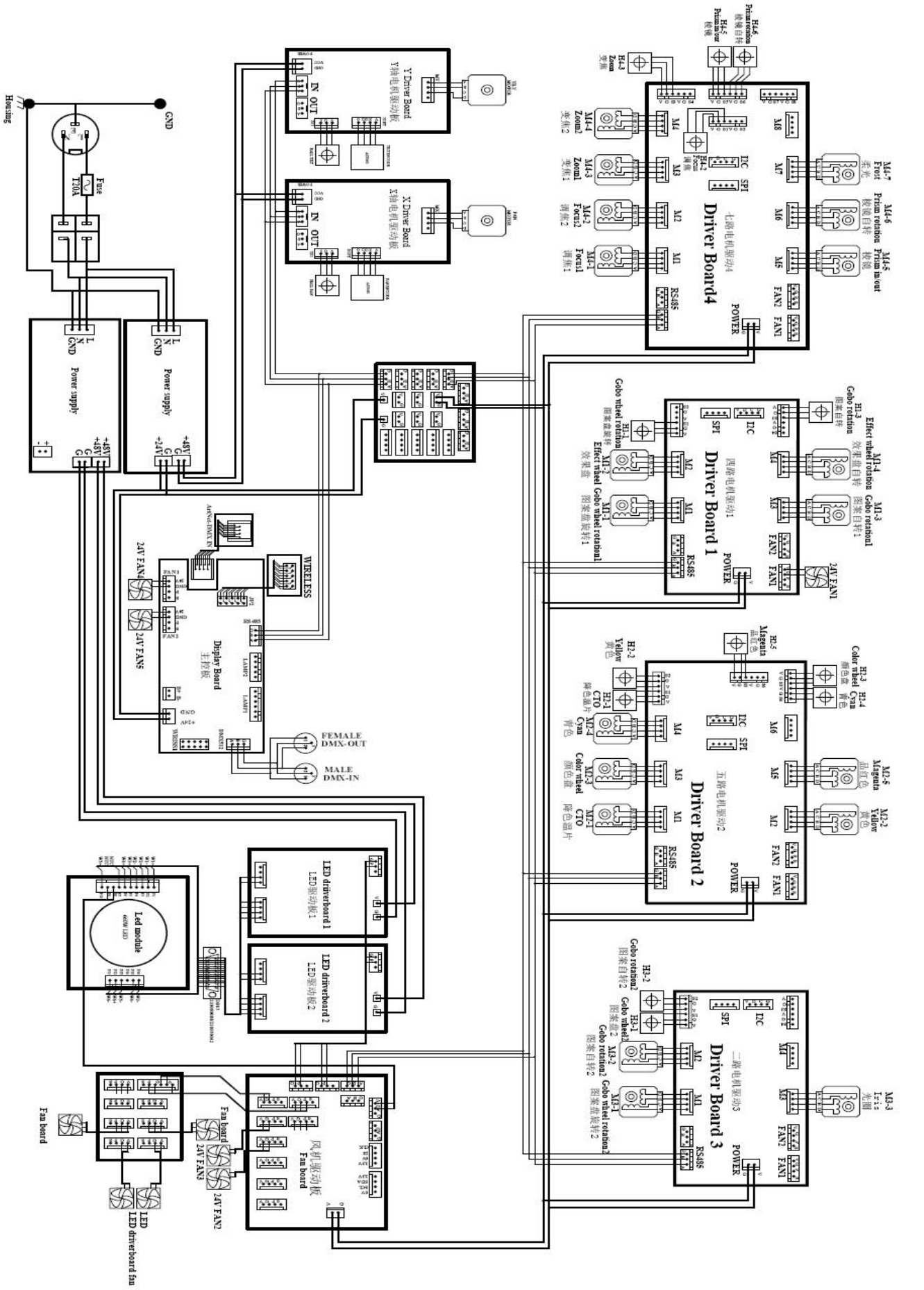
56° Lux	0	1886	472	210	118	75	52
6° Lux	0	72985	18246	8109	4562	2919	2027



DISTANCE (m)	0	5	10	15	20	25	30
6° DIAMETER(m)	0	ø0.62	ø1.23	ø1.85	ø2.47	ø3.08	ø3.70
56° DIAMETER(m)	0	ø5.07	ø10.15	ø15.22	ø20.29	ø25.37	ø30.44

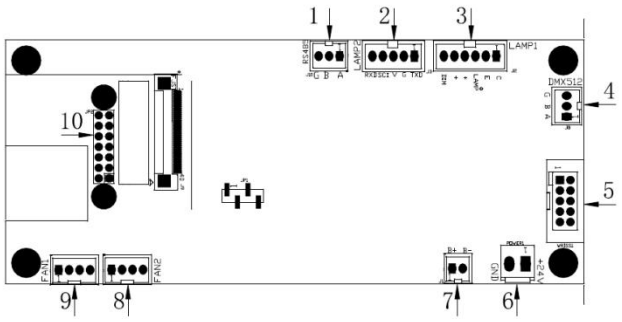
11. CIRCUIT DIAGRAM AND PCB CONNECTIONS

CIRCUIT DIAGRAM



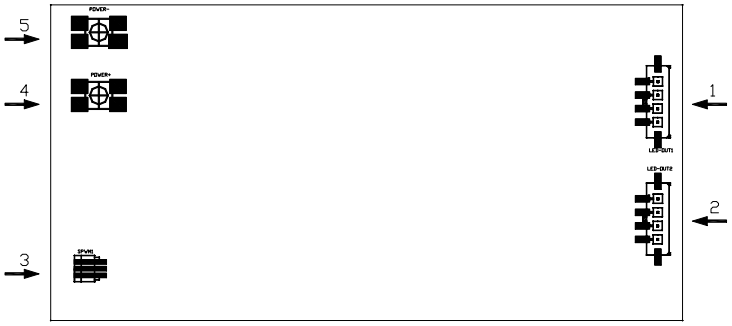
•PCB CONNECTIONS

Master Board of PR-8168



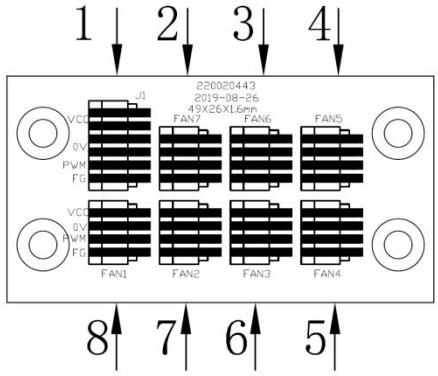
No	Name
1	485 signal
2-3	Reserved
4	512 signal
5	Wireless interface
6	Power Input
7	Reserved
8-9	Fan
10	Ethernet board interface

LED Drive r Board of PR-8168



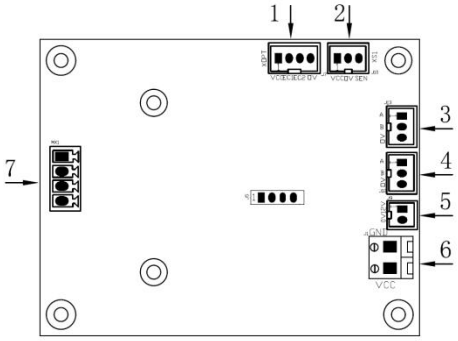
No	Name
1	LED driver output
2	LED driver output
3	PWM dimmer input
4	48V positive input
5	48Vnegtive input

Fan adaptor board of PR-8168



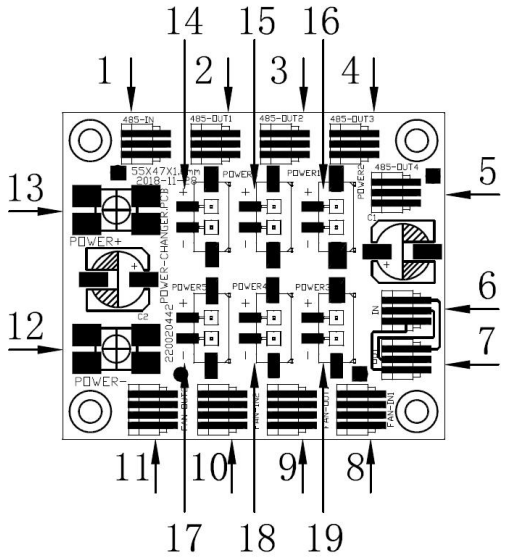
No	Name
1	Fan input
2-8	Fan output

Pan and Tilt Board of PR-8168



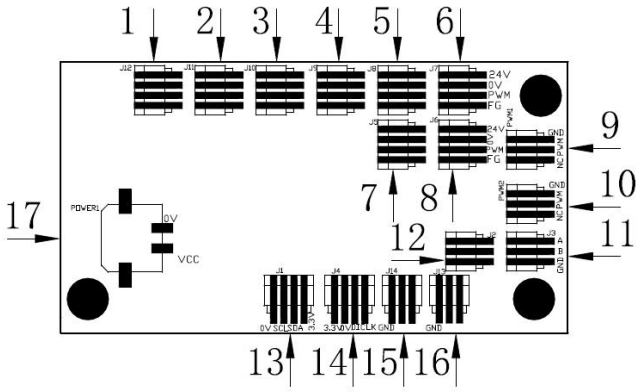
No	Name
1	Pan/Tilt encoder
2	Pan/Tilt magnet sensor
3-4	485 signal
5	Reserved
6	24V input
7	Pan/Tilt motor

Power adaptor board of PR-8168



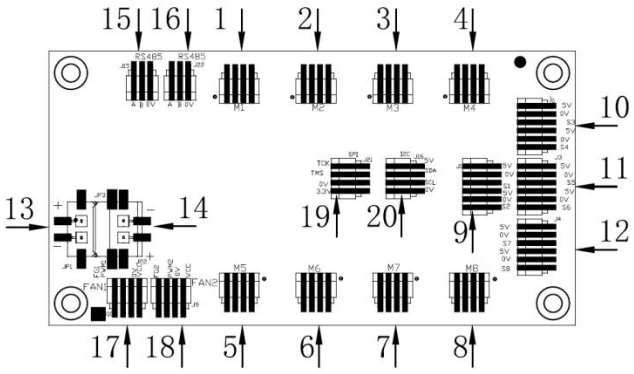
No.	Name
1-5	485 singal
6-11	Reserved
12	+24V power input
13	-24V power input
14-19	24V power ouput

8 channel fan speed adjusting board of PR-8168



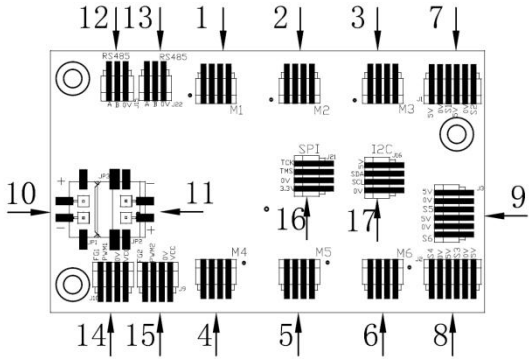
No	Name
1-8	Adjusting fan ouput
9	PWM output
10	PWM output
11-12	485 signal
13-15	Reserved
16	Thermal switch
17	Power input

7 channel driver board of PR-8168(Zoom and Focus)



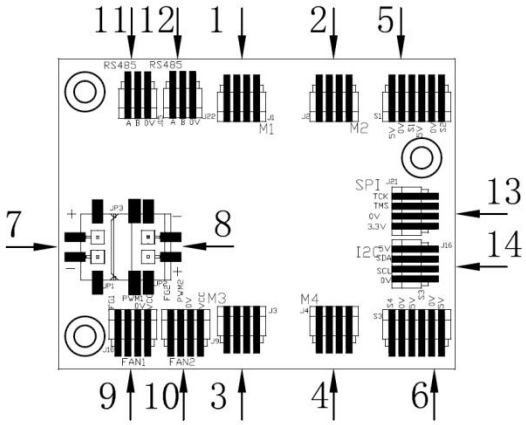
No	Name
1-2	Focus motor
3-4	Zoom motor
5	Prism in/out motor
6	Prism rotation motor
7	Frost motor
8	Reserved
9	Foucs magnet sensor
10	Zoom magnet sensor
11	Prism in/out and Prism rotation magnet sensors
12	Reserved
13-14	Power input
15	485 signal input
16	485 signal output
17-20	Reserved

5 Channel Motor Driver Board(CMY) of PR-8168



No	Name
1	CTO motor
2	Color wheel motor
3	Cyan motor
4	Yellow motor
5	Magenta motor
6	Reserved
7	CTO/Yellow magnet sensor
8	Color wheel/Cyan magnet sensor
9	Cyan magnet sensor
10-11	Power input
12	485 signal input
13	485 signaloutput
14-15	Fan
16-17	Resvered

4Channel Motor Driver Board(Gobo wheel1) of PR-8168

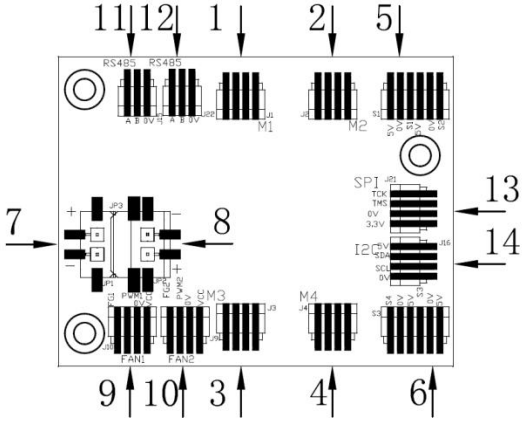


No	Name
1	Rotating gobo wheel1 motor
2	Effect wheel motor
3	Gobo1 rotation motor
4	Effect wheel rotation motor
5	Rotating gobo wheel magnet sensor
6	Gobo rotation magnet sensor
7-8	Power input
9-10	Fan
11	485 signal input
12	485 signaloutput
13-14	Resvered

No	Name
1	Rotating gobo wheel2 motor
2	Effect wheel motor
3	Gobo2 rotation motor
4	Effect wheel rotation motor
5	Rotating gobo wheel magnet sensor
6	Gobo rotation magnet sensor
7-8	Power input
9-10	Fan
11	485 signal input
12	485 signaloutput

13-14	Resvered

2Channel Motor Driver Board(Gobo wheel2) of PR-8168



12. COMPONENT ORDER CODES

NAME	CODE NUMBER	QTY	REMARK
SWITCHING POWER SUPPLY	192010220	1	
SWITCHING POWER SUPPLY	192010224	1	
LED ENGINE MODULE	150020313	1	
LED ENGINE MODULE FAN	030060109	4	
COLOR WHEEL TURBO FAN	030060072	1	
DRIVER POWER FAN	030060075	2	
LED DRIVER BOARD FAN	030060084	4	
LENS FAN	030060050	1	
PAN BELT	290151430	1	
TILT BELT		1	
FOCUS MOTOR	030040213	2	
ZOOM MOTOR	030040154	2	
PRISM IN/OUT MOTOR	030040132A	1	
PRISM ROTATION MOTOR	030040203	1	
FROST MOTOR	030040220A	1	
ROTATING GOBO WHEEL 1# MOTOR	030040132A	1	
GOBO ROTATION 1# MOTOR	030040060	1	
ROTATING GOBO WHEEL 2# MOTOR	030040132A	1	
GOBO ROTATION 2# MOTOR	030040060	1	
IRIS MOTOR	030040244	1	
EFFECT WHEEL IN/OUT MOTOR	030040236	1	
EFFECT WHEEL ROTATING MOTOR	030040060	1	
COLOR WHEEL MOTOR	030040221A	1	
CYM MOTOR	030040211A	3	
CTO MOTOR		1	
PAN MOTOR	030040252	1	
TILT MOTOR		1	

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