

AQUA LED 1500 SPOT  
PR-8178A

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.

<b>Warning</b>	<b>User Manual</b>	<b>Electrical shock</b>	<b>Goggles</b>	<b>Protective Gloves</b>	<b>Flames</b>	<b>High Temperature</b>



- 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
- 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°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 combustibile 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.



- 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.

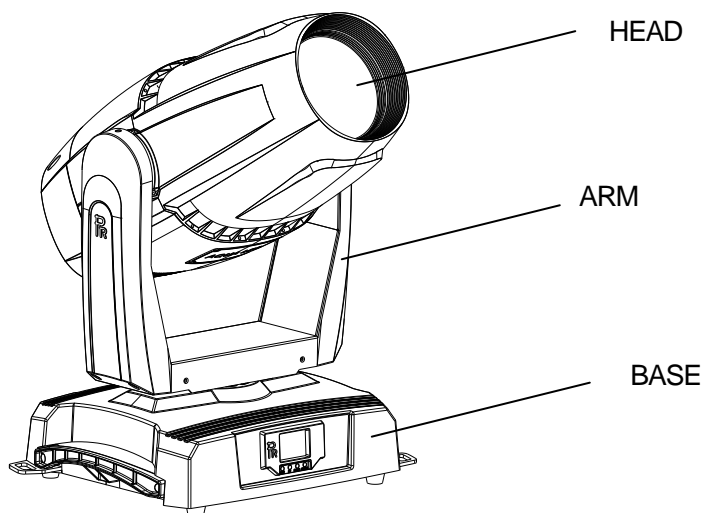
## .LUBRICATION

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	<ul style="list-style-type: none"> <li>➤ Check if the fuse is burned</li> <li>➤ Check if the power cord is connected well</li> <li>➤ Check if the switching power supply is bad or not connected well. A professional technician is required for the repair</li> <li>➤ Check if the control board is connected well. .A professional technician is required for the repair</li> </ul>
The projector can be switched on , but the LED lamp's brightness can't be controlled	<ul style="list-style-type: none"> <li>➤ Check if the LED driver board is connected well. A professional technician is required for the repair</li> </ul>
The projector can be switched on normally, but not controlled by the DMX controller	<ul style="list-style-type: none"> <li>➤ Make sure that the fixture's start address is right</li> <li>➤ Replace or repair the XLR signal cable.</li> </ul>
The beam is not bright and its brightness decreases sharply	<ul style="list-style-type: none"> <li>➤ Make sure the fans are working well or fans and their shields are not blocked by dust.</li> <li>➤ Make sure that the internal optics is clean.</li> </ul>
The project image appears to have a halo	<ul style="list-style-type: none"> <li>➤ Carefully clean the LED lamp, optical lenses and other components.</li> </ul>
Heavily Defective Beam	<ul style="list-style-type: none"> <li>➤ Check if lens are in good condition(not cracked)</li> <li>➤ Clean dust or grease on the lens.</li> </ul>

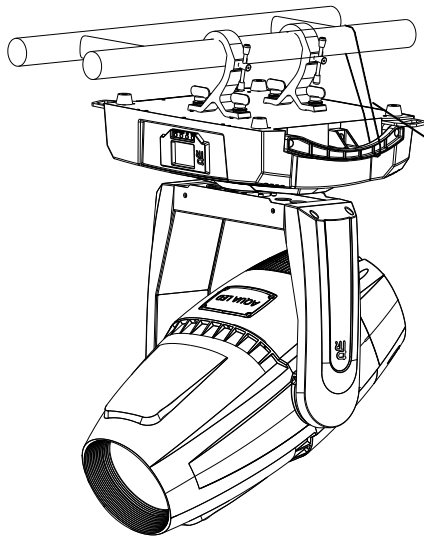
## 3. APPEARANCE



## 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 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:

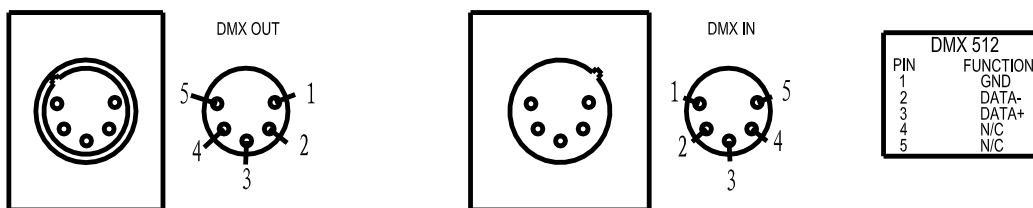
- L (live) =brown
- E (earth) =yellow/green
- N (neutral) =blue

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**

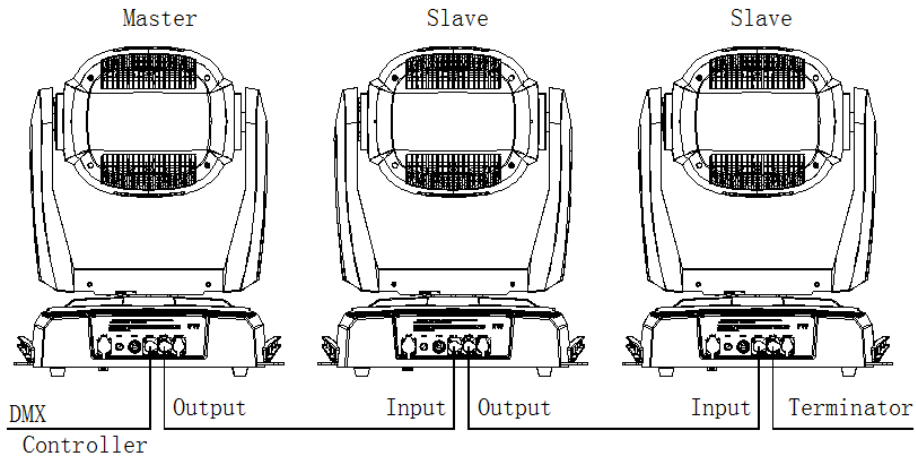


Connection between controller and projector and between one projector and another must be made with a twin-screened cable, with each wire having at least a 0.5mm in diameter. Connection to and from the projector is via cannon 5 pin (which are included with the

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).

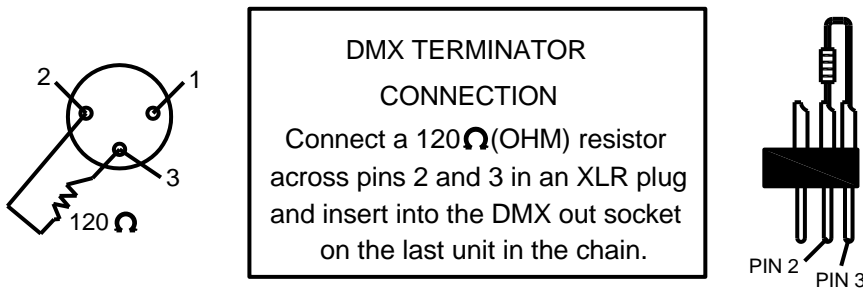
Connect the controller's DMX output to the first fixture's DMX input, and connect the first fixture's DMX output to the second fixture's DMX input and connect the rest fixtures in the same way. Eventually connect the last fixture's DMX output to a DMX terminator as shown in the figure below.



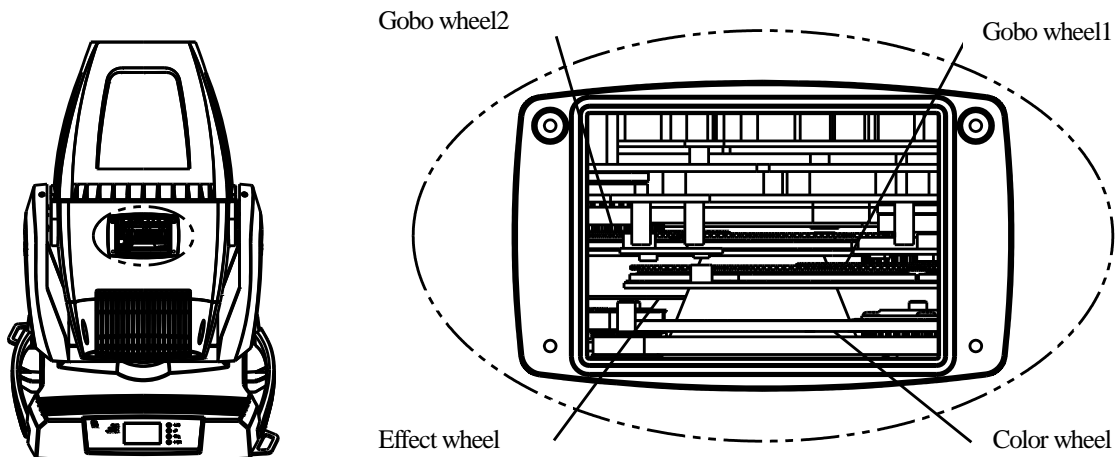
**.DMX TERMINATOR**

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.

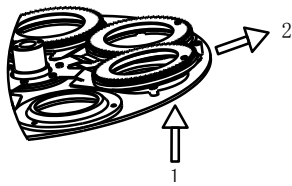
The DMX terminator is simply an XLR connector with a 120Ω (ohm) resistor connected across pins 2 and 3, which is then plugged into the output socket on the last projector in the chain. The connections are illustrated below



**.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 of 1→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) .



Gobo Installation

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.

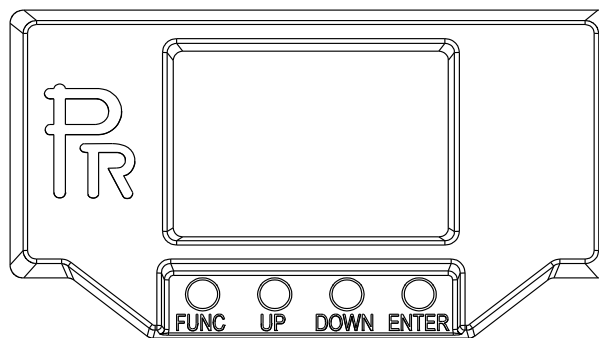


**DANGER!**

**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 channels, 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 Settings" 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 Settings.

### •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.

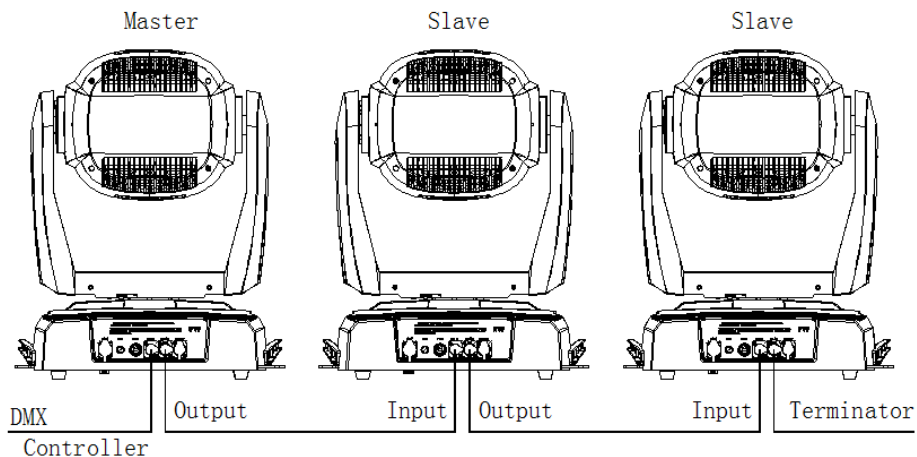
DMX address can be set at any number within 512.

### •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 1<sup>st</sup> 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	1-481		
	IP Address	Default IP Address	2.X.XX /10.X.XX	
		Custom IP Address	X.X.XX	
	SubNet Mask	X.X.XX		
	ArtNet ArtNet Universe	0-255		
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		
Factory 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			
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				

		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			
		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	Edit Static Scene			Strobe XXX	
					Dimmer XXX	
					...	
					Reset User Memory 1	Reset User Memory?
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	<b>Strobe</b>		
			Close	0	0
			Pulse strobe speed from slow to fast	1	127
			Strobe speed slow to fast	128	255
2	2	2	<b>Dimmer</b>		
			Close	0	0
			Dimmer from dark to light (0-100%)	1	255
	3	3	<b>Dimmer Fine</b>		
			Fine dimmer	0	255
3	4	4	<b>CYM Macro</b>		
			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	<b>Cyan</b>		
			Cyan (Linear 0-100%)	0	255
		6	<b>Cyan Fine</b>		
			Cyan in 16 Bit precision	0	255
5	6	7	<b>Yellow</b>		
			Yellow (Linear 0-100%)	0	255
		8	<b>Yellow Fine</b>		
			Yellow in 16 Bit precision	0	255
6	7	9	<b>Magenta</b>		
			Magenta (Linear 0-100%)	0	255
		10	<b>Magenta Fine</b>		
			Magenta in 16 Bit precision	0	255
7	8	11	<b>CTO</b>		
			Linear adjust from high to low	0	255
		12	<b>CTO Fine</b>		
			CTO in 16 Bit precision	0	255
8	9	13	<b>Colour Wheel</b>		
			<b>Continual positioning</b>		
			index 0-360 °	0	63

			<b>positioning</b>		
			White	64	67
			White/Color1(Bleu)	68	71
			Color1(Blue)	72	75
			Color1(Blue)/Color 2(Green)	76	79
			Color 2(Green)	80	83
			Color 2(Green)/Color 3(Yellow)	84	87
			Color 3(Yellow)	88	91
			Color 3(Yellow)/ 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
			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	<b>Color Wheel Fine</b>		
			Color Continual positioning in 16 Bit precision	0	255
9	11	15	<b>Iris</b>		
			Linear Iris from small to big 0-100%	0	255
		16	<b>Iris in 16 bit</b>		
			Iris in 16 bit precision	0	255
10	12	17	<b>Iris Macro</b>		
			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	<b>Rotating gobo wheel 1</b>		
			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	<b>Rotating gobo wheel 1 rotation</b>		
			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	<b>Rotating gobo wheel 1 rotation in 16 bit</b>		
			Rotating gobo wheel 1 fine rotation	0	255
13	16	21	<b>Rotating gobo wheel 2</b>		
			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	<b>Rotating gobo wheel rotation</b>		
			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	<b>Rotating gobo wheel rotation in 16 bit</b>		
			Rotating gobo wheel fine rotation	0	255
15	19	24	<b>Prism</b>		
			No Prism	0	16
			Prism	17	255
16	20	25	<b>Prism rotation</b>		
			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	<b>Effect Wheel</b>		
			No effect wheel	0	19
			Effect wheel in	20	255
18	22	27	<b>Effect Wheel Rotation</b>		
			Forwards rotation from slow to fast	0	127
			Reverse rotation from slow to fast	128	255
10	23	28	<b>Frost</b>		
			Light Frost from 0% to 100%	0	255
20	24	29	<b>Focus</b>		
			Linearly focusing	0	255
		30	<b>Focus Fine</b>		
			Focus in 16 precision	0	255
21	25	31	<b>Zoom</b>		
			Linearly zooming	0	255
		32	<b>Zoom Fine</b>		
			Zoom in 16 Bit precision	0	255
22	26	33	<b>Pan</b>		
			Pan movement	0	255
23	27	34	<b>Pan Fine</b>		
			Pan movement in 16 bit precision	0	255
24	28	35	<b>Tilt</b>		
			Tilt movement	0	255
25	29	36	<b>Tilt fine</b>		
			Tilt movement 16 bit precision	0	255
26	30	37	<b>Pan/Tilt speed</b>		
			Fast Speed Mode	0	1
			Pan &Tilt speed from fast to slow	2	255
27	31	38	<b>Power/Special functions</b>		
			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	89
			Pan/Tilt speed mode	90	94
			Pan/Tilt time mode	95	99
			Reserved	100	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

	Lamp Control		Option Settings
	Chinese/English		Information
	Error Messages		Service
	Address		Operation Mode
	Reset		User Memories
	Config Settings		

## 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
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: 90V-240V AC, 50/60Hz

Input power: 900W @ 100V

870W @ 220V

Power factor: PF>0.95

### SPECIFICATIONS OF LIGHT SOURCE

Lamp 600W

Colour Temperature 8000K

Manufacturers Rated Lamp Life 20000hrs

Ra $\geq$ 70

Ra $\geq$ 95, R9 $\geq$ 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

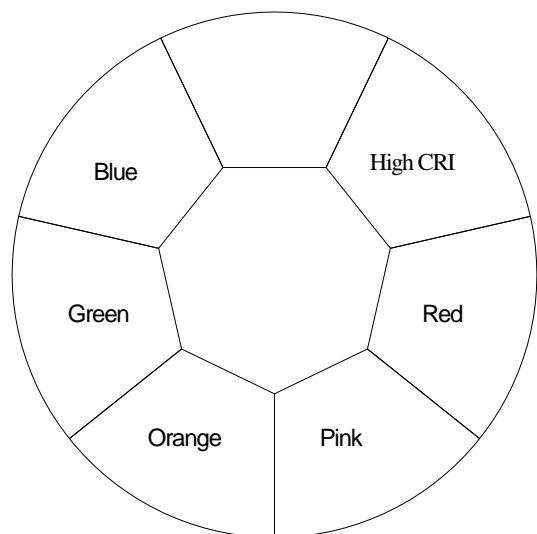
### CTO

Linear CTO system(0-100%)

### GOBOS(Optional)

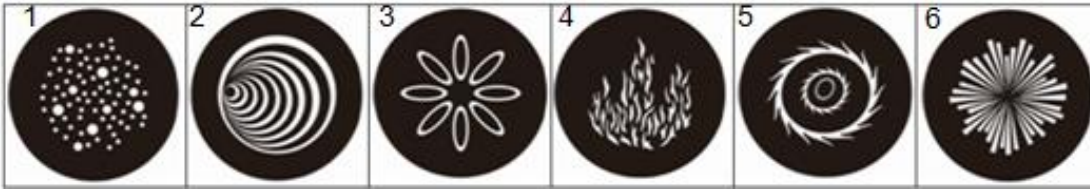
2 rotating gobo wheels: 6 exchangeable+ white, glass or metal gobos

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



scrolling with varied speeds

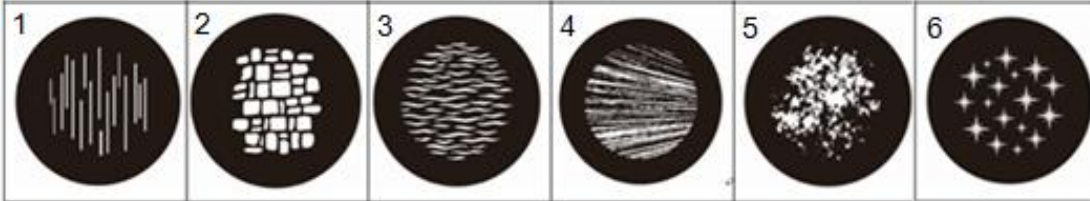
Rotating gob wheel1:



Gobo external size: 37.5mm

Image size of rotating gobo is  $\Phi 24$ mm

Rotating gob wheel2:



Gobo external size: 37.5mm

Image size of rotating gobo is  $\Phi 24$ mm

### **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 FPS

### **HEAD MOVEMENT**

Pan 540 °; Tilt 270 °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)

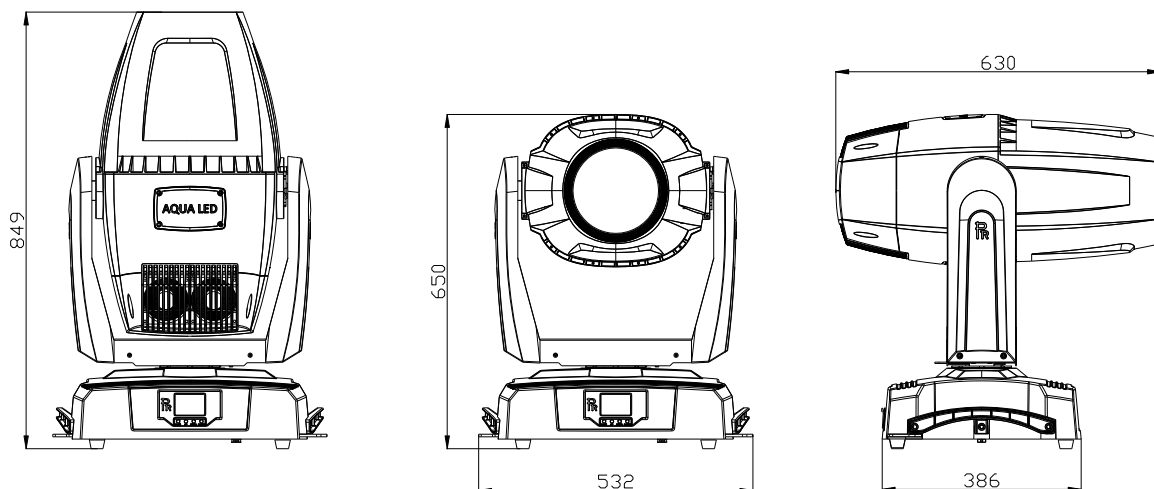
## HOUSING

High tensile cast aluminum and high temperature resistant ABS, IP65

## WEIGHT

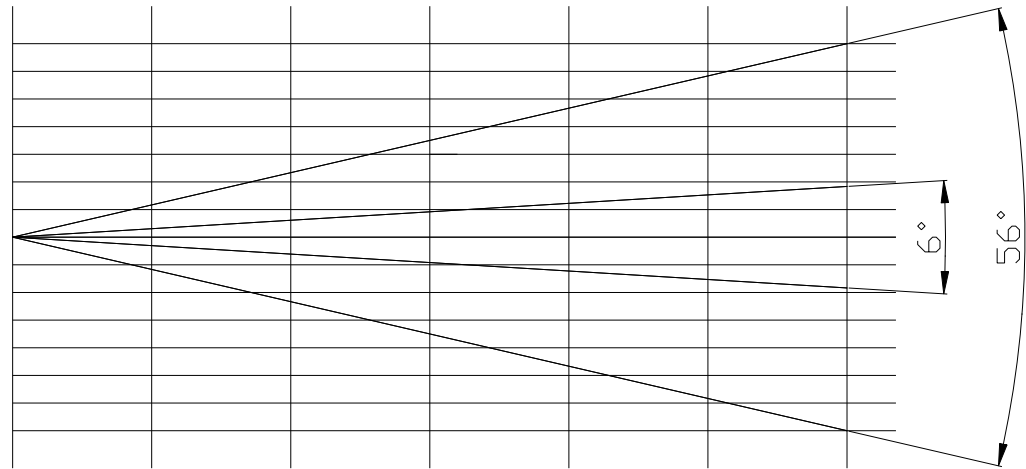
53Kg

## SIZES:



## LIGHT OUTPUT

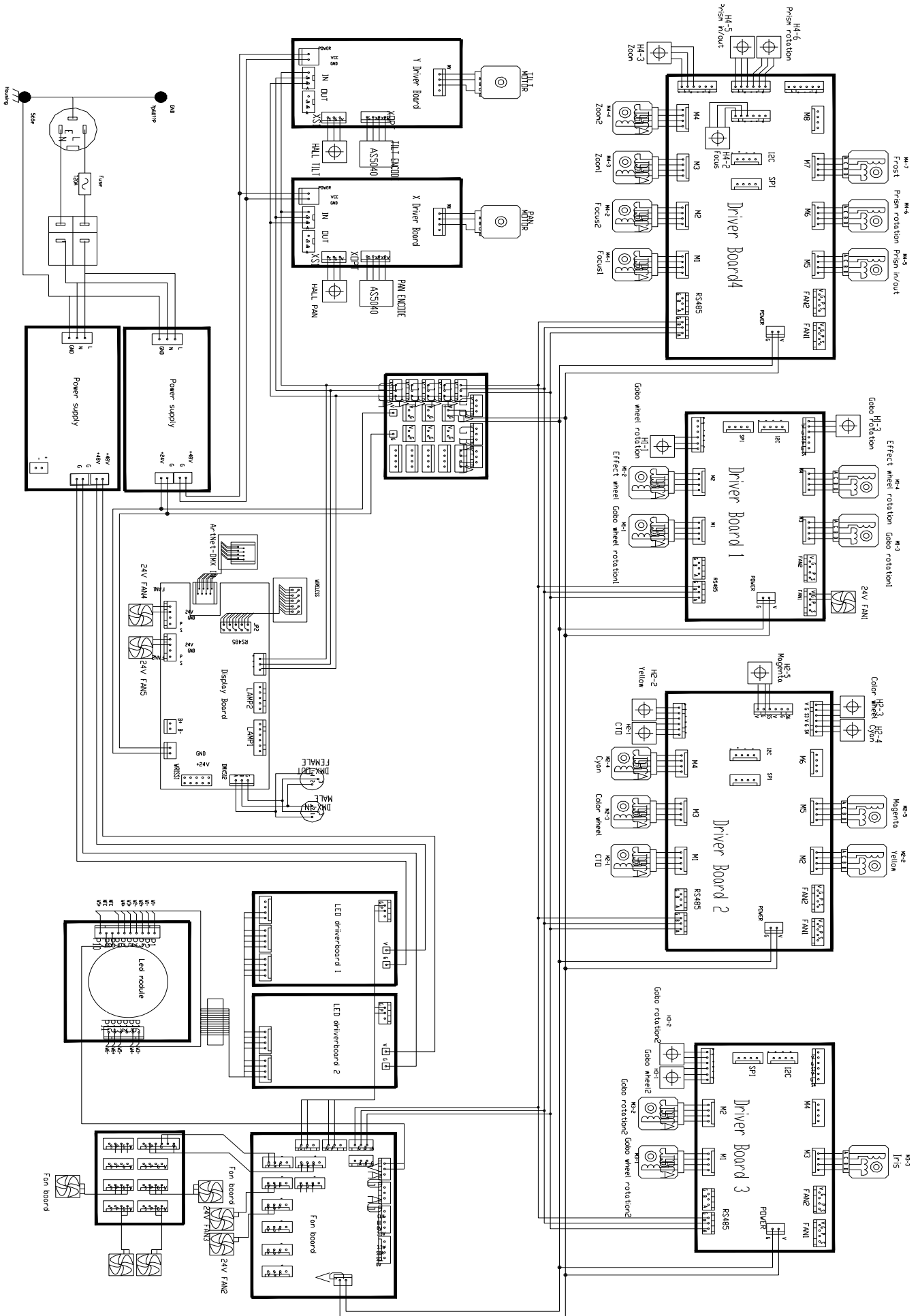
56° Lux	0	1340	335	149	83	53	37
6° Lux	0	69541	17385	7727	4346	2781	1932



DISTANCE (m)	0	5	10	15	20	25	30
6° DIAMETER (m)	0	∅0.58	∅1.15	∅1.73	∅2.30	∅2.88	∅3.45
56° DIAMETER (m)	0	∅4.89	∅9.79	∅14.68	∅19.57	∅24.47	∅29.36

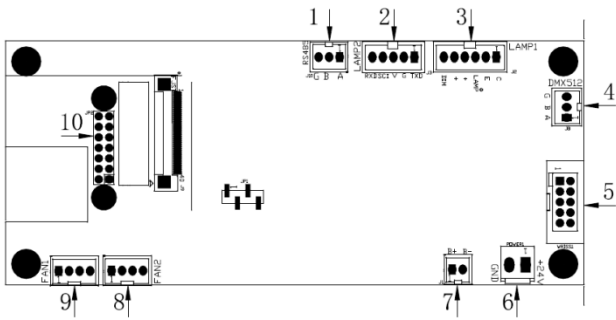
## 11. CIRCUIT DIAGRAM AND PCB CONNECTIONS

### CIRCUIT DIAGRAM



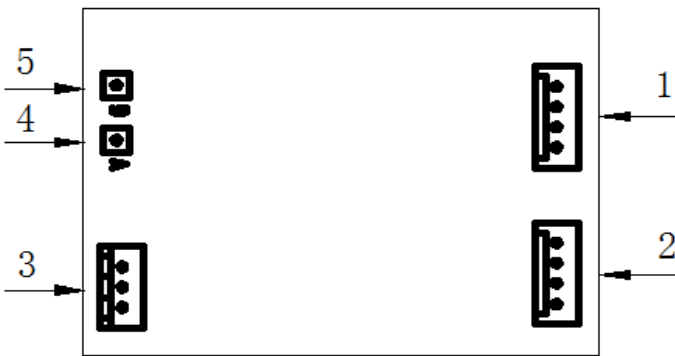
**.PCB CONNECTIONS**

PR-8178A master board



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

PR-8178A LED 4-channel driver board



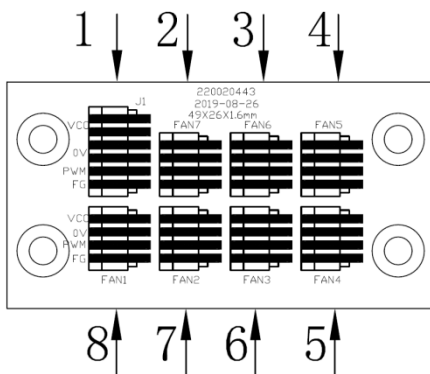
No	Name
1	LED driver output
2	LED driver output
3	PWM dimmer input
4	48V power input +
5	48V power input -

PR-8178A LED 5-channel driver board



No	Name
1	LED driver output
2	LED driver output
3	LED driver output
4	PWM dimmer input
5	48V power input +
6	48V power input -

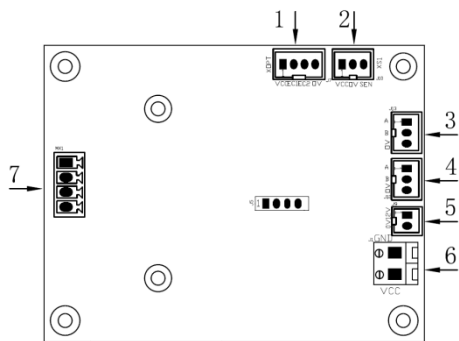
PR-8178A Fan board



No	Name
1	Fan input
2-8	Fan output

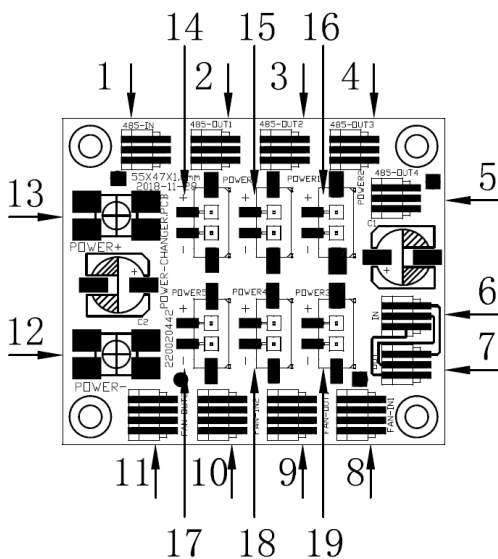


PR-8178A Pan and Tilt board



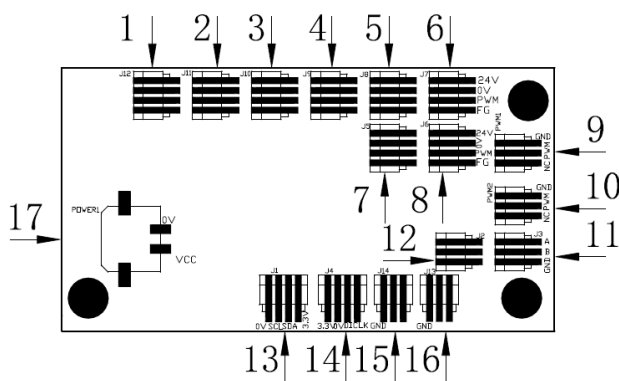
No	Name
1	Pan & Tilt encoders
2	Pan & Tilt magnet sensors
3-4	485 signal
5	Reserved
6	24V input
7	Pan & tilt motors

PR-8168 power adapting board



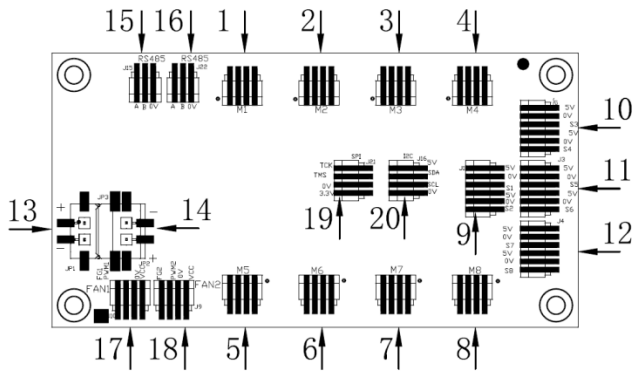
No	Name
1-5	485 signal
6-11	Reserved
12	+24V power input
13	-24V power input
14-19	24V power output

PR-8168 8-channel fan board



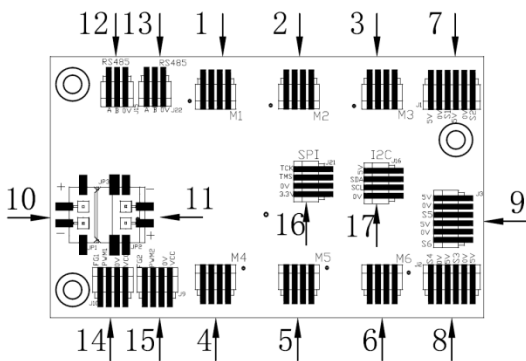
No	Name
1-8	Fan output with varying speeds
9	PWM output
10	PWM output
11-12	485 signal
13-15	Reserved
16	Thermal switch
17	Power input

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



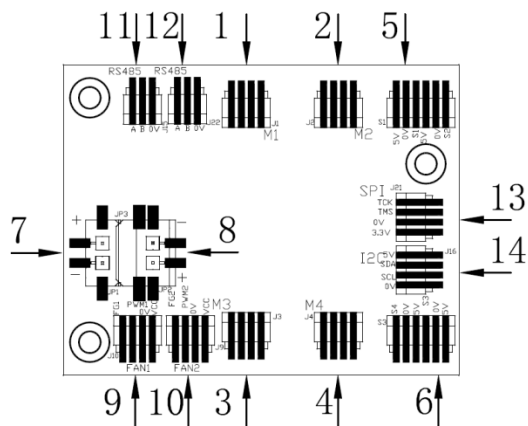
No	Name
1-2	Focus motor
3-4	Zoom motor
5	Prism in/out motor
6	Prism rotation motor
7	Frost motor
8	Reserved
9	Magnet sensor for focus
10	Magnet sensor for zoom
11	Prism in/out &Prism rotation magnet sensors
12	Reserved
13-14	Power input
15	485 signal input
16	485 signal output
17-20	Reserved

PR-8178A 5-channel driver board (CMY)



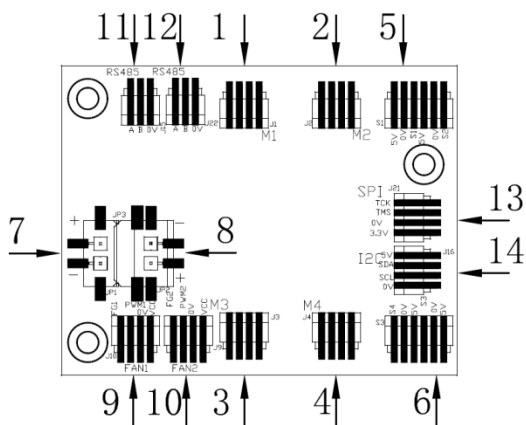
No	Name
1	CTO motor
2	Color wheel motor
3	Cyan motor
4	Yellow motor
5	Magenta motor
6	Reserved
7	Magnet sensors for CTO/Yellow
8	Magnet sensors for color wheel/Cyan
9	Magnet sensors for Magenta
10-11	Power input
12	485signal input
13	485 signal output
14-15	Fan
16-17	Reserved

PR-81678A 4-channel board (Gobo wheel)



No	Name
1	Gobo wheel rotation motor
2	Effect wheel in/out motor
3	Gobo rotation motor
4	Effect wheel rotation motor
5	Gobo wheel rotation magnet sensor
6	Gobo rotation magnet sensor
7-8	Power input
9-10	Fan
11	485 signal input
12	485 signal output
13-14	Reserved

PR-8178A 2-channel board (Gobo wheel 2)



No	Name
1	Gobo wheel2 rotation motor
2	Gobo rotation 2 motor
3	Iris motor
4	Reserved
5	Gobo wheel 2 rotation/gobo 2 rotation Magnet sensors
6	Reserved
7-8	Power input
9-10	Fan
11	485 signal input
12	485 signal output
13-14	Reserved

## 12.COMPONENT ORDER CODES

NAME	CODE NUMBER	QTY	REMARK
SWITCHING POWER SUPPLY	192010215	1	
SWITCHING POWER SUPPLY	192010224	1	
LED ENGINE MODULE	150020313	1	
LED ENGINE MODULE FAN	030060109	4	MGT9224MB-W32-IP68
COLOR WHEEL TURBO FAN	030060072	1	
BASE FAN	030060075	2	
LED DRIVER BOARD FAN	030060084	4	MGA6024YB-O10
LENS FAN	030060072	1	
PAN BELT	290151430	1	HTD-459-3M-12

TILT BELT		1	HTD-459-3M-12
FOCUS MOTOR	030040213B	2	
ZOOM MOTOR	030040154A	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		1	
TILT MOTOR	030040252	1	
CONTROL BOARD	230061154	1	
PAN BOARD	230061159A	1	
TILT BOARD	230061160A	1	
POWER ADAPTOR BOARD	230061240	1	
ART-NET BOARD	W006511	1	
1 LED ENGINE MODULE DRIVER BOARD	230061283	2	
2 LED ENGINE MODULE DRIVER BOARD	230061284		
7 CHANNEL MOTOR DRIVER BOARD	230061281	1	
8 CHANNEL MOTOR DRIVER BOARD	230061158	1	
5 CHANNEL MOTOR DRIVER BOARD	230061156	1	
4 CHANNEL MOTOR DRIVER BOARD	230061155	1	
BASE PLATE SEAL1	290190116	1	
FRONT COVER SEAL	290190117	1	
HEAT SINK SEAL	290190114	1	
CHAMBER COVER SEAL	290190115	2	
TILT BEARING STAND SEAL1	290190124	2	Φ2.65xΦ61.5
TILT BEARING STAND SEAL2	290190125	2	Φ1.8xΦ43.7
TILT BEARING SEAL	290190128	2	Φ1.8xΦ30
EFFECT WHEEL ROTATION BELT	290151452	1	HTD-192-3M-3
EFFECT WHEEL IN/OUT BELT	290151454	1	HTD-225-3M-3
ROTATING GOBO WHEEL 1 BELT	290151384	1	HTD-291-3M-3
GOBO 1 ROTATION BELT	290151453	1	HTD-360-3M-3
ROTATING GOBO WHEEL 2 BELT	290151459	1	246-3M-3
GOBO 2 ROTATION BELT	290151356A		276-3M-3
COLOR WHEEL BELT	290151451	1	HTD-366-3M-3
FIXED GOBO WHEEL BELT	290151443	1	HTD-270-3M-3
CMY BELT	290151422	4	B222-MXL-3
ZOOM BELT	290151324	2	120-MXL-5
FOCUS BELT	290151372	2	63-MXL-5
PRISM IN/OUT BELT	290151379	1	HTD-186-3M-5



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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: 320020923  
Old Version: 20200723  
New Version:20200804