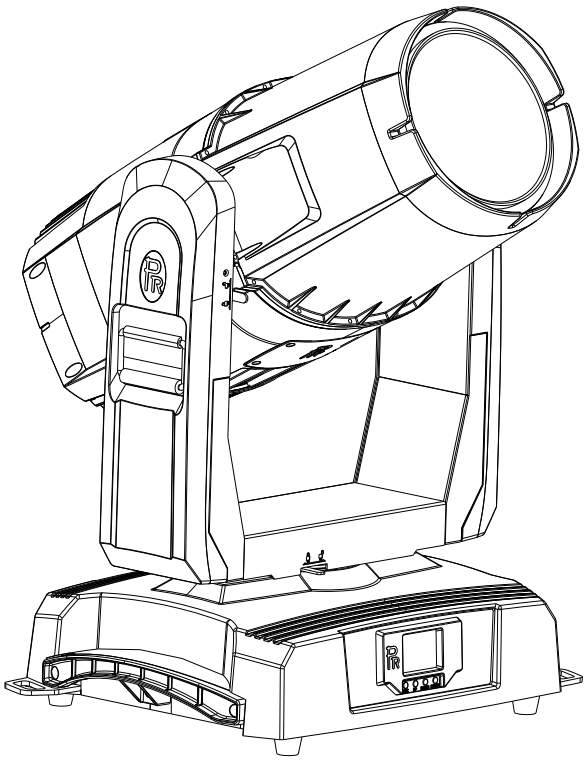


AQUA LED 4000-W FRAMING

PR-8159

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

INDEX

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	0	Pc	QR code
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 rated as IP66.

●The projector can be used over-dusty and damp places.

●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 the lamp, lens and screen protective cover of the a lighting fixture have obvious damage, i.e., to the extent that it hurts the performance like cracking or deformation. Please stop use it and replace them with the 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.

● f 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 stable operation under normal ambient temperature ,the temperature of the external surface of the housing of a projector(the surface of the heat sink) is 80℃ after the stable running.
● 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.

● While the projector running, don not touch the metallic housing to avoid being burned.

● 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.
● Do not let the front lens exposed to sunlight or other strong light sources at any angle, otherwise beam focused inside via the front lens can result in fire.

● The product meets The General Technical Requirements and Standards for Recycle and Use Of Expired Appliance and Electronic Products.
● When the product meets disposal standards and needs to be disposed, a client needs to dispose and recycle it.

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, heat sink and fans will compromise the light output. Cleaning a projector is very necessary to ensure a reliable use of it.

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. 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 sunlight or other light penetrating into the head via the front lens, resulting in high temperature internally causing damages to the projector. Before power-off, please use Tilt channel to move the head and make it facing downward.

● 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.

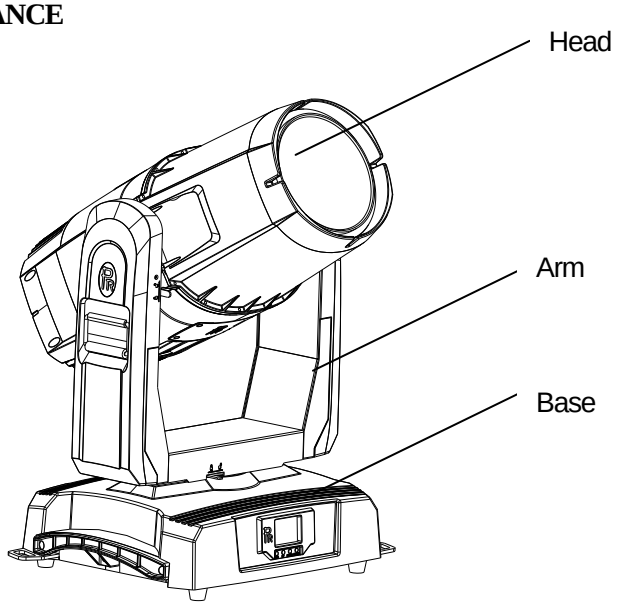
•LUBRICATION

To ensure smooth movement of gobos and zoom and focus lens, it's advised rotators' bearings and 2 sliding bars for zoom and 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.

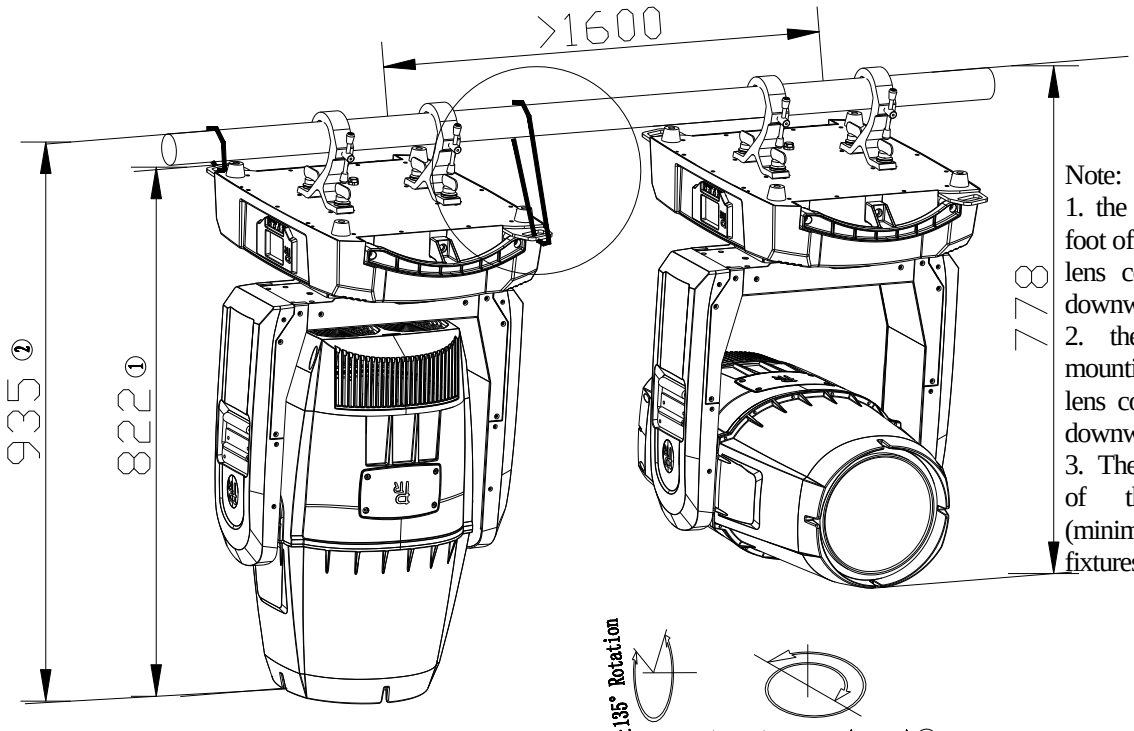
3.APPEARANCE



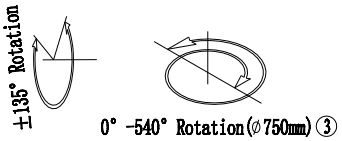
4. INSTALLATION

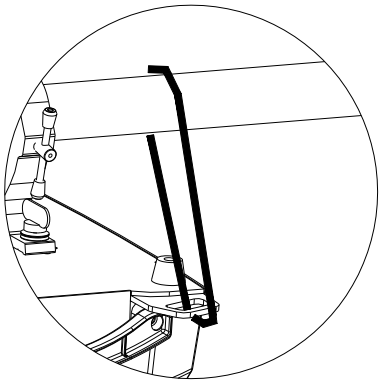
•RIGGING

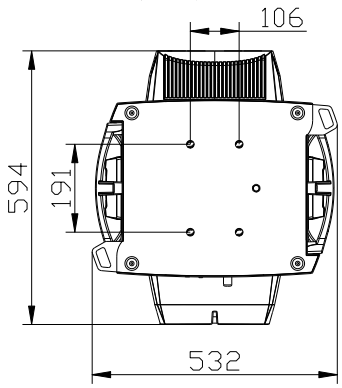
During transportation, please lock the projector well; Before the use of projector please unlock the head. It's forbidden to run the projector without unlock Pan and Tilt



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)







WARNING

Please run safety cord through the safety hole to ensure safety.

Take 2 clamps and 2 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.

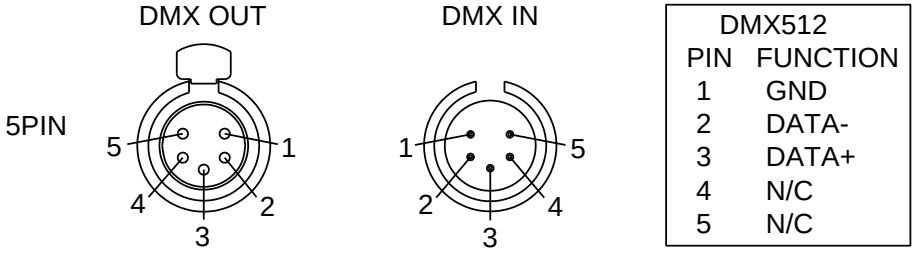
- **POWER CONNECTIONS**

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

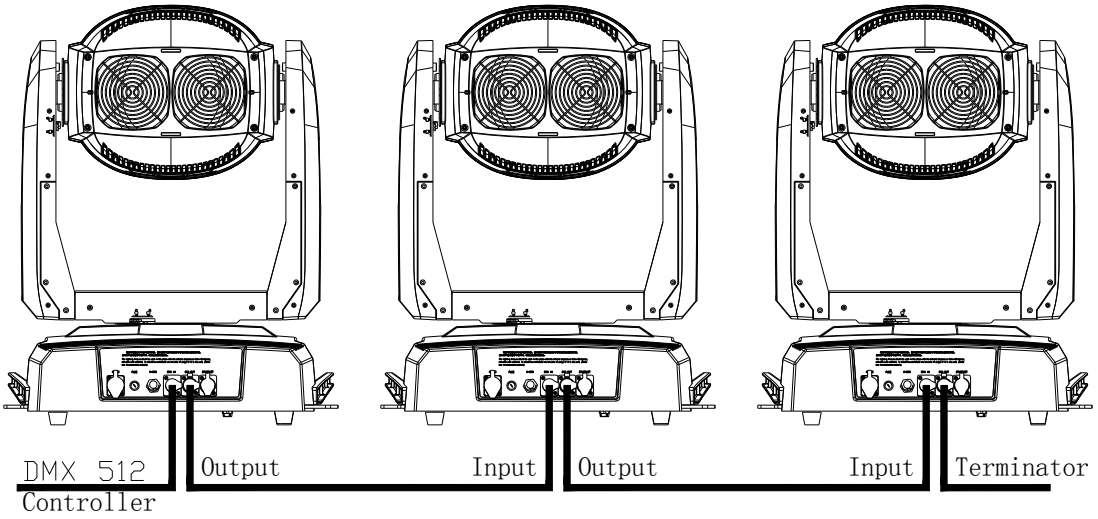


DMX512	
PIN	FUNCTION
1	GND
2	DATA-
3	DATA+
4	N/C
5	N/C

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).

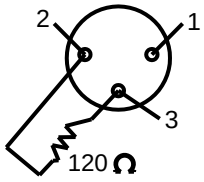
Connect the controller's DMX output to the first fixture's DMX input, and connect the first fixture's DMX output to the second fixture's DMX input and connect the rest fixtures in the same way. Eventually connect the last fixture's DMX output to a DMX terminator as shown in the figure below.



•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.

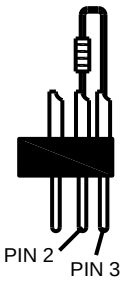
The DMX terminator is simply an XLR connector with a 120Ω (ohm) resistor connected across pins 2 and 3, which is then plugged into the output socket on the last projector in the chain. The connections are illustrated below



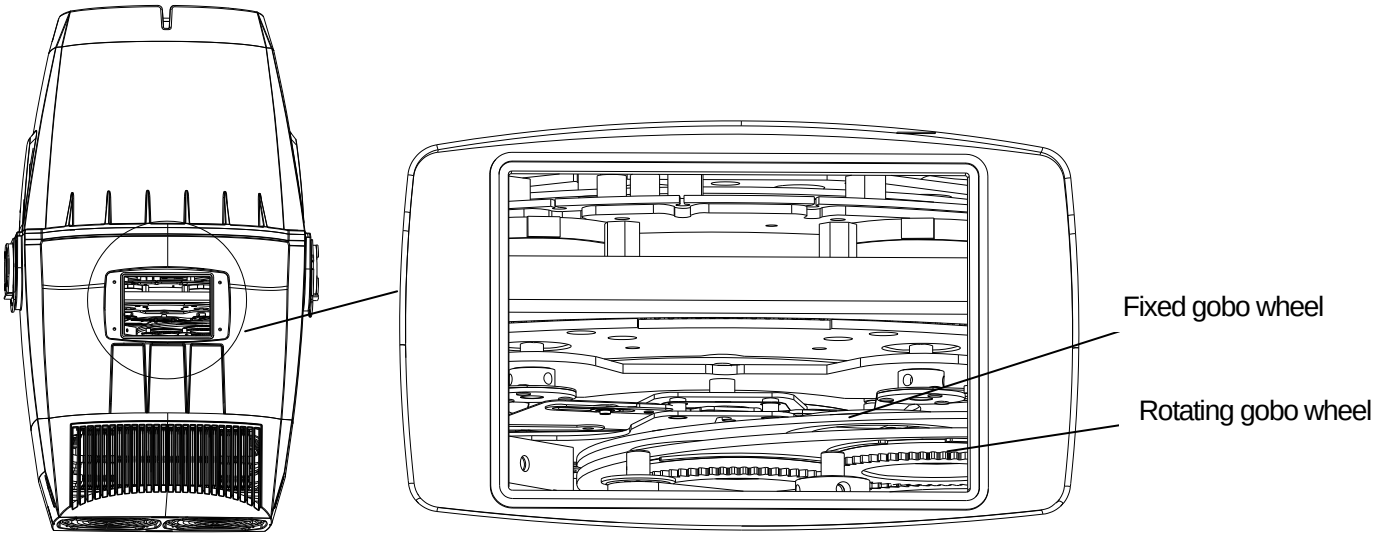
DMX TERMINATOR

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.

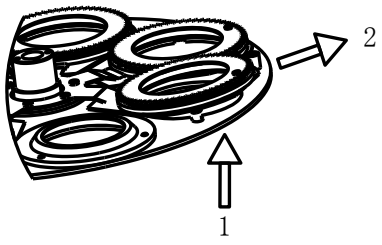


•REPLACEMENT OF GOBOS



Lock the tilt and loosen the 4 fast-fit screws on the upper cover ,After removing the cover, you will see the structures as the figure above.

To replace a gobo on the rotating gobo wheel: take the rotator from the wheel in the sequence of 1→2 , take the gobo out from the rotator by removing the tightening spring. Put the new gobo back to the rotator, then tighten it with the spring. Please ensure the spring is in the narrow location of the rotator, which is the internal ring of it and flatten it. At last, pull up the spring strip using proper tool and put the rotator back to the wheel with the assistance by another hand. Its installation is of the opposite sequence of removal(（2→1）



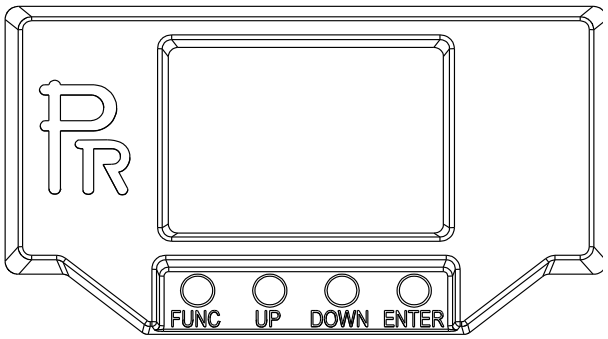
NOTE: Do not touch the glass gobo with bare hand. Place clean and soft paper or cloth between hand and glass gobos.
Tighten 4 hexagon screws after the cover is on. Unlock the tilt.

DANGER!

BEFORE REPLACEMENT OF GOBOS/COLOR FILTERS, A PROJECTOR MUST BE OFF THE 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 45 channels, so set the No. 1 projector's address 001, No. 2 projector's address 046, No. 3 projector's address 091, No. 4 projector's address136, 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 . temporarily

.

•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

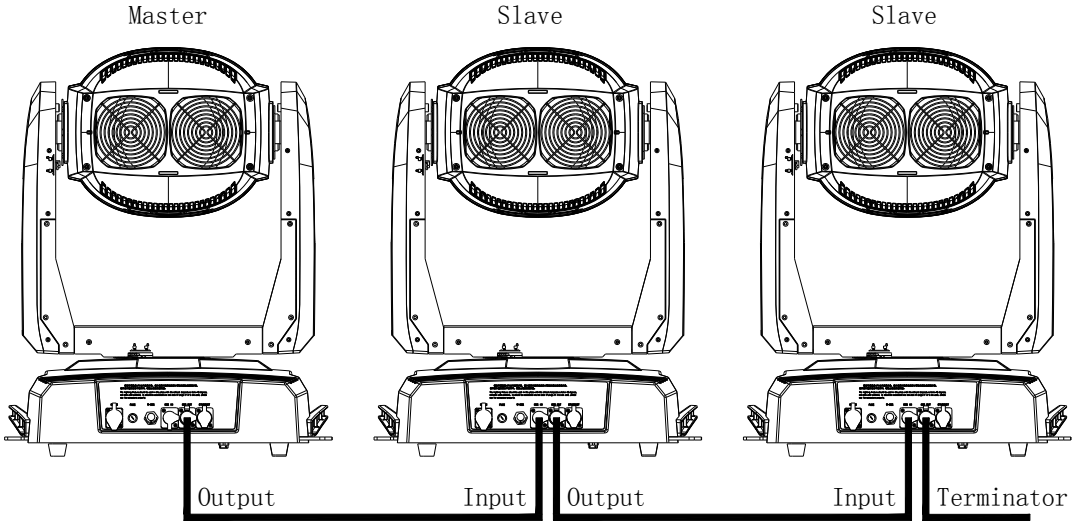
Operate the projector without connecting with a controller, enable the master mode through the operation panel, the projector will run in Stand-Alone mode automatically.
DMX address can be set at any number within 512.

•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



•TO SET UP COLOR TEMPERATURE AND COLOR MACRO

A projector has 7 color temperature macros and 89 standard color macros. Color temperatures are for respective 2700K,3000K,3500K,4000K,4500K,5000K and 5700K. Under the DMX channel of CMY macro, color macro and its color temperature macro can be selected.

•TO SET UP DIMMER CURVE AND LED REFRESH FREQUENCY

A projector has 5 dimmer curves: gamma 2.0, gamma 2.2, gamma 2.4 and gamma 2.6 and linear curve .
It has 8 LED refresh frequency: LED refresh frequency 1200Hz, LED refresh frequency 2400Hz, LED refresh frequency 4800Hz, LED refresh frequency 10000Hz, LED refresh frequency 12000Hz, LED refresh frequency 15000Hz, LED refresh frequency 20000Hz and LED refresh frequency 25000Hz.
It has fast, medium and slow dimmer speeds.
Its setups are as follows:

1. Hold the ENTER button for more than 3s to unlock the control panel and then push ▼ button to enter into the menus and select "Option Settings".
2. Select "Dimmer Settings" and select any mode of gamma curve /LED frequency /dimmer speed for adjustment.

•FAN SPEED MODES

It has standard and theater modes. Theater mode is quiet mode.

Its setups are as follows:

1. Hold the ENTER button for more than 3s to unlock the control panel and then push ▼ button to enter into the menus and select "Option Settings".

2. Select either of Standard and theater modes after the menu of Fan Settings.

•AUTO-FOCUS SETUP

A projector has auto-focus function for the distance ranges of 5m,10m,15m and 20m respectively. While any of Iris, Framing Blade, Fixed gobo wheel and Rotating Gobo Wheel is in use, Auto-Focus channel for specified distance can automatically focus the image. Then use Auto-Focus Calibration channel to fine tune the focused image. Priority sequence: Rotating gobo wheel>Fixed gobo wheel>Iris>Framing blades .

•BRIGHTNESS CALIBRATION

For brightness calibration function, a controller can be used on the projectors in a DMX chain or a projector be done individually. After running for some time, the projectors need to be recalibrated in brightness for conformity with the help of LED brightness calibration channel via controller. The function has the following characteristics:

1. LED brightness calibration channel has 50 levels for adjustment with each level meaning power consumption decreases by 1%.

2. Calibration can be done on projectors in a DMX chain or a single one. After calibration done on a lot of projectors in a DMX chain, it can be done individually also if needed.

3. To avoid erroneous operation, after the fader of a DMX controller is at proper place for LED BRIGHTNESS CALIBRATION channel, the fader for channel of LED BRIGHTNESS CALIBRATION CONFIRMATION channel should be at right DMX value range to save parameters. The calibration is completed after the desired parameters are stored into the projectors.

•CRI MODE

It has HIGH CRI MODE and select it via DMX controller to activate it. The mode ensures high CRI optical effect.

6. OPERATION MENU

1st LEVEL	2nd LEVEL	3rd LEVEL	4th LEVEL	5th LEVEL
Address	DMX Address	1-473（Short Mode） 1-468（Standard Mode） 1-454（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 Mode40CH		
		Standard Mode45CH		
		Extended Mode 59CH		
		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	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/ line	
		LED Refresh Rate	1200/2400/4800/10000/12000/15000/20000/25000Hz	
		Dimmer Speed	Fast/Medium/Slow Speed	
	Fan Settings	Standard/Theatre		
	Factory Defaults	Restore Defaults?	Confirm/ Cancel	
Information	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		
		Blade Board 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	
		Driver Board 1	System= XXX Boot =XXX	
		Driver Board 2	System= XXX Boot =XXX	

		Driver Board 3	System= XXX Boot =XXX	
		Blade Board	System= XXX Boot =XXX	
		Fan Board	System= XXX Boot =XXX	
		Tilt Board	System= XXX Boot =XXX	
	Electronic SN	Electronic SN= **********		
	RDM Device Label	RDM Device Label ANSI E1.20 RDM Version X.X		
	Fan status	Gobo fan Framing fan Inside Fan Head Fan1 Head Fan2		
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 CHART

Short mode	Standard mode	Extended mode	Function Description	Decimal Low	Decimal High
1	1	1	**Strobe**		
			Close	0	
			Pulse strobe speed from slow to fast	1	127
			Strobe speed slow to fast	128	255
2	2	2	**Dimmer**		
			Close	0	0
			Linear dimmer from dark to light (0-100%)	1	255

	3	3	**Dimmer Fine**		
			Dimmer in 16 bit	0	255
3	4	4	**CYM Macro**		
			The following functions will disable CMY ,CTO, and Color Wheel		
			No Function	0	7
			Color temperature 2700K	8	9
			Color temperature 3000K	10	11
			Color temperature 3500K	12	13
			Color temperature 4000K	14	15
			Color temperature 4500K	16	17
			Color temperature 5000K	18	19
			Color temperature 5700K	20	21
			Colour Macro 1	22	23
			Colour Macro 2	24	25
			Colour Macro 3	26	27
			Colour Macro 4	28	29
			Colour Macro 5	30	31
			Colour Macro 6	32	33
			Colour Macro 7	34	35
			Colour Macro 8	36	37
			Colour Macro 9	38	39
			Colour Macro 10	40	41
			Colour Macro 11	42	43
			Colour Macro 12	44	45
			Colour Macro 13	46	47
			Colour Macro 14	48	49
			Colour Macro 15	50	51
			Colour Macro 16	52	53
			Colour Macro 17	54	55
			Colour Macro 18	56	57
			Colour Macro 19	58	59
			Colour Macro 20	60	61
			Colour Macro 21	62	63
			Colour Macro 22	64	65
			Colour Macro 23	66	67
			Colour Macro 24	68	69
			Colour Macro 25	70	71
			Colour Macro 26	72	73
			Colour Macro 27	74	75
			Colour Macro 28	76	77
			Colour Macro 29	78	79
			Colour Macro 30	80	81

Colour Macro 31	82	83
Colour Macro 32	84	85
Colour Macro 33	86	87
Colour Macro 34	88	89
Colour Macro 35	90	91
Colour Macro 36	92	93
Colour Macro 37	94	95
Colour Macro 38	96	97
Colour Macro 39	98	99
Colour Macro 40	100	101
Colour Macro 41	102	103
Colour Macro 42	104	105
Colour Macro 43	106	107
Colour Macro 44	108	109
Colour Macro 45	110	111
Colour Macro 46	112	113
Colour Macro 47	114	115
Colour Macro 48	116	117
Colour Macro 49	118	119
Colour Macro 50	120	121
Colour Macro 51	122	123
Colour Macro 52	124	125
Colour Macro 53	126	127
Colour Macro 54	128	129
Colour Macro 55	130	131
Colour Macro 56	132	133
Colour Macro 57	134	135
Colour Macro 58	136	137
Colour Macro 59	138	139
Colour Macro 60	140	141
Colour Macro 61	142	143
Colour Macro 62	144	145
Colour Macro 63	146	147
Colour Macro 64	148	149
Colour Macro 65	150	151
Colour Macro 66	152	153
Colour Macro 67	154	155
Colour Macro 68	156	157
Colour Macro 69	158	159
Colour Macro 70	160	161
Colour Macro 71	162	163
Colour Macro 72	164	165
Colour Macro 73	166	167

			Colour Macro 74	168	169
			Colour Macro 75	170	171
			Colour Macro 76	172	173
			Colour Macro 77	174	175
			Colour Macro 78	176	177
			Colour Macro 79	178	179
			Colour Macro 80	180	181
			Colour Macro 81	182	183
			Colour Macro 82	184	185
			Colour Macro 83	186	187
			Colour Macro 84	188	189
			Colour Macro 85	190	191
			Colour Macro 86	192	193
			Colour Macro 87	194	195
			Colour Macro 88	196	197
			Colour Macro 89	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	68	71
			Color1	72	75
			Color1/Color 2	76	79
			Color 2	80	83
			Color 2/Color 3	84	87

			Color 3	88	91
			Color 3/ Color 4	92	95
			Color 4	96	99
			Color 4 /Color 5	100	103
			Color 5	104	107
			Color 5/Color 6	108	111
			Color 6	112	115
			Color6/ 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	**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	**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	24	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	**Prism1 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**		
			Clockwise rotation from slow to fast	0	127
			Anti-clockwise reverse rotation from slow to fast	128	255
27	30	44	**Frost1**		
			Light Frost from 0% to 100%	0	255
28	31	45	**Frost2**		
			Light Frost from 0% to 100%	0	255
29	32	46	**Focus**		

			Linearly focusing	0	255
	33	47	**Focus Fine**		
			Focus in 16 precision	0	255
30	34	48	**Zoom**		
			Linearly zooming	0	255
	35	49	**Zoom Fine**		
			Zoom in 16 Bit precision	0	255
31	36	50	**Autofocus**		
			While channels for Iris, Rotating Gobo Wheel and Rotating Gobo Wheel are in use, the projector has automatic focus function at some distance. Use "Autofocus Calibrations" channel (31/36/50) to focus the image. Priority: Rotating Gobo Wheel >Fixed Gobo Wheel > Iris>Framing module		
			The following functions will disable the focus channel (29/32/46) is disabled.		
			Autofocus Off	0	19
			Autofocus for 5M	20	39
			Autofocus for 10M	40	59
			Autofocus for 15M	60	79
			Autofocus for 20M	80	255
32	37	51	**Autofocus Calibrations**		
			focus calibrations up	0	127
			focus calibrations down	128	255
33	38	52	**Pan**		
			Pan movement	0	255
34	39	53	**Pan Fine**		
			Pan movement in 16 bit precision	0	255
35	40	54	**Tilt**		
			Tilt movement	0	255
36	41	55	**Tilt fine**		
			Tilt movement 16 bit precision	0	255
37	42	56	**Pan/Tilt speed**		
			Fast Speed Mode	0	1
			Pan &Tilt speed from fast to slow	2	255
38	43	57	**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
			Fan standard mode	30	46
			Fan theater mode	47	48
			Reserved	49	50

			Fast speed dimmer	51	52
			Mid speed dimmer	53	54
			Slow speed dimmer	55	56
			Gamma curve 2.0	57	58
			Gamma curve 2.2	59	60
			Gamma curve 2.4	61	62
			Gamma curve 2.6	63	64
			Linear curve	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	240	255
39	44	58	LED brightness calibration		
			No	0	127
			LED brightness 50%-100%, linear calibration	128	255
40	45	59	LED brightness calibration confirmation		
			Ready to store calibrated value	0	200
			Store calibrated value in the fixture(stay in the DMX range for more than 5s)	201	209
			No	210	255

Remark:

1. Fan error can shut off light source.

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.

3. LED brightness standard with adjusting range between 50% and 100%. After completion, the desired parameters will be stored into the fixtures without repeated operations.

Procedures:
Step1: DMX value range for Channel LED brightness calibration is between 50 and 100 with according brightness range between 50% and 100%.

Step2:DMX value range for Channel LED brightness calibration confirmation is between 0 and 200. If the fader is moved between 201 and 209 and stays there for more than 5s, the desired brightness value will be stored into fixtures.

Step 3:Move the faders for DMX channels LED brightness calibration and LED brightness calibration confirmation respectively to zero.

If 100% brightness needed, move the fader for channel LED brightness calibration between 100 and 255 for Step 1and repeat Step 2 and 3.

Under the menu, confirm Defaults/Restore default, LED brightness will go back to 100%.

8. SIGNS OF THE TOUCH SCREEN

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

9.ERROR MESSAGES

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
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. Gobo Rotation	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 Board 3	Error	Check signal wire
Framing board	Error	Check signal wire
Fan board	Error	Check signal wire
Iris Fan	Error	Check if the fan runs normally and its wiring is broken
Head Fan	Error	Check if the fan runs normally and its wiring is broken
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	Contact the manufacturer

10. TECHNICAL DATA

ELECTRICAL PARAMETERS

Input voltage: 200V-240V AC，50/60Hz

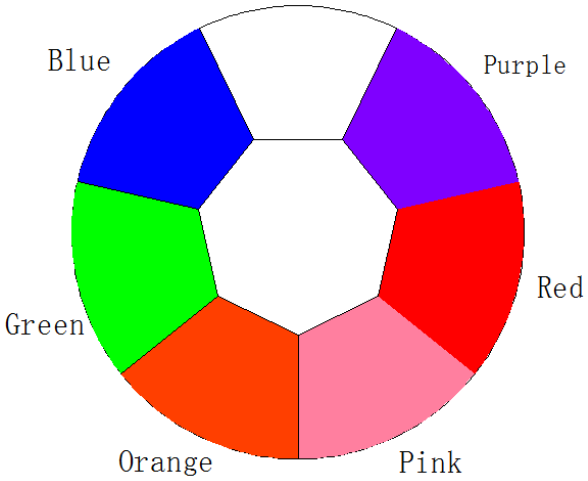
Input power: 2100W @ 220V

Maximum Current ： 9.5A @ 220V

Power factor: PF>0.95

SPECIFICATIONS OF LIGHT SOURCE

Lamp	1800W ,LED white
Colour Temperature	8000K
Manufacturers Rated Lamp Life	＞20000hrs
CRI	Ra ⩾70
Optional high CRI light source	Ra ⩾95, R9 ⩾95



COLOR S

CMY+CTO linear coloring mixing system with macros

1Color Wheel

6 exchangeable color s+ open

Half color effect, Stepping/linear colors

Bi-directional color rainbow effect with variable speeds

CTO

Linear CTO system(0-100%),（1800K-6500K）

FRAMING

Framing module:4 framing blades to make graphics with different sizes and shapes,each blade to make full curtain effect

Bi-directional continual rotation for the whole module

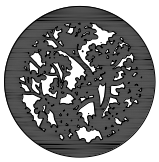
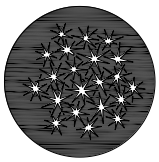
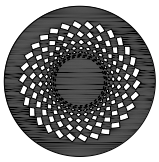
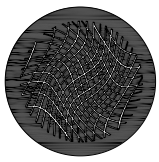
GOBOS

1 rotating gobo wheel: 6 exchangeable+ open, glass/metal gobos

Bi-directional rotation, indexing, shake with varied speeds

bi-directional scrolling with varied speeds

Rotating gob wheel:

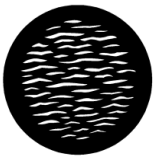
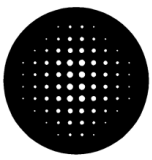
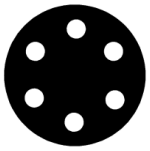
					
Gobo1	Gobo2	Gobo3	Gobo4	Gobo5	Gobo6

Gobo external size: 32mm, image size: 24mm

1 fixed gobo wheel

7 exchangeable gobos+ open

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

						
Gobo1	Gobo2	Gobo3	Gobo4	Gobo5	Gobo6	Gobo7

Fixed gobo wheel

Gobo external size: 32mm, image size: 25mm

EFFECT WHEEL

1 animation effect wheel, bi-directional rotation with varied speeds

IRIS

Linear iris 5-100% with macros

PRISM

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

FROST

2frost filter, 1 heavy frost+1 light frost ， (0-100% linear)

BEAM ANGLE

Linear zoom 5 °～ 56 °with 16 bit precision

FOCUS

DMX linear focus

DIMMER

Linear electronic dimmer 0-100% with 16 bit control

3 dimmer speeds

5 dimmer gamma curves

Dimmer frequency(1.2K-25K)

STROBE

Electronic strobe, 0.3~25 F.P.S with options for synchronous and asynchronous random strobes

HEAD MOVEMENT

Pan 540 °, Tilt 270 °with auto position correction and 16 bit control

ADVANCE MACROS

Color temperature macros ： 2700K、3000K、3500K、4000K、4500K、5000K、5700K

Color macros ： 89colors

FAN MODE

Standard mode and theatre mode. Theatre mode is quiet mode.

BRIGHTNESS CALIBRATION

Brightness calibration function to calibrate initial brightness of a fixture or some fixtures in a DMX chain and store the brightness value in the fixture/fixures.

CRI MODE

For high CRI version fixtures, activation of high CRI mode by control channel for high CRI beam while dimming

CONTROL

International standard DMX512 signal with 5-pin DMX512 interfaces,RDM protocol

ArtNet protocol(optional)

40channels in short mode, 45channels in standard mode,59channel in extended mode

Master/Salve synchronized control mode

Standalone mode

OTHER FUNCTIONS

Pan and Tilt speeds adjustable

Pan and Tilt swappable and invertible

Display of fixture and lamp hours, and software versions Smart fan cooling system

Error diagnostic system with sensors

Display of fixture hours and software versions

Modular construction for easy maintenance

Monitoring the voltages of DMX channels

Positioning by Highly precise magnet sensor, signal feedback, absolute position memory and auto position correction after power off or DMX offline.

Isolated input signals

ArtNet interfaces(optional)

DMX wireless receiver

DMX wireless transmitter(optional)

HOUSING AND INGRESSION PROTECTION

High tensile cast aluminum + high temperature ABS, IP66

WORKING TEMPERATURE

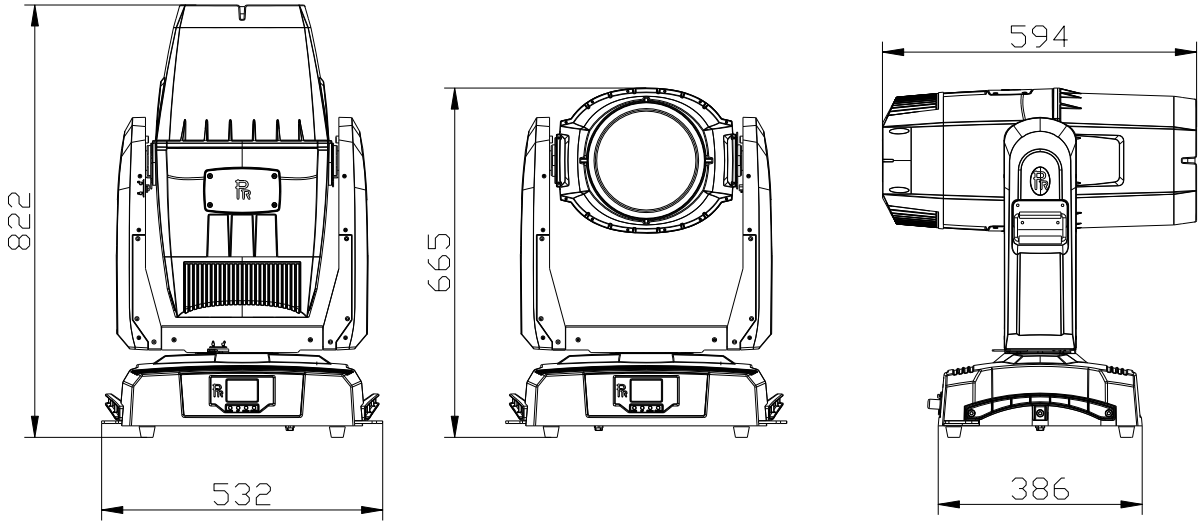
Working temperature 45℃ at maximum

Note: if the ambient temperature is below -20℃, reset it after preheating it more than 30 min

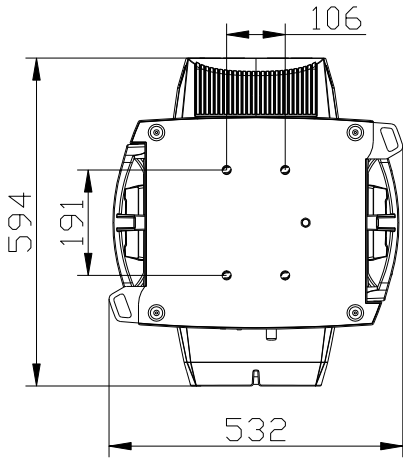
WEIGHT

Net weight 56.5Kg

SIZES



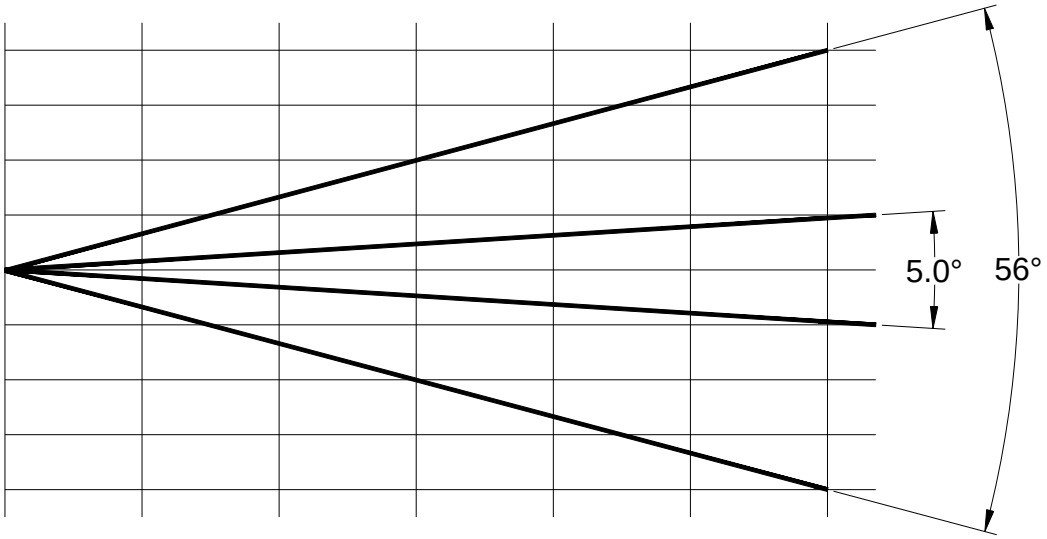
BASE MOUNTING DIAGRAM



PHOTOELECTRIC DIAGRAM

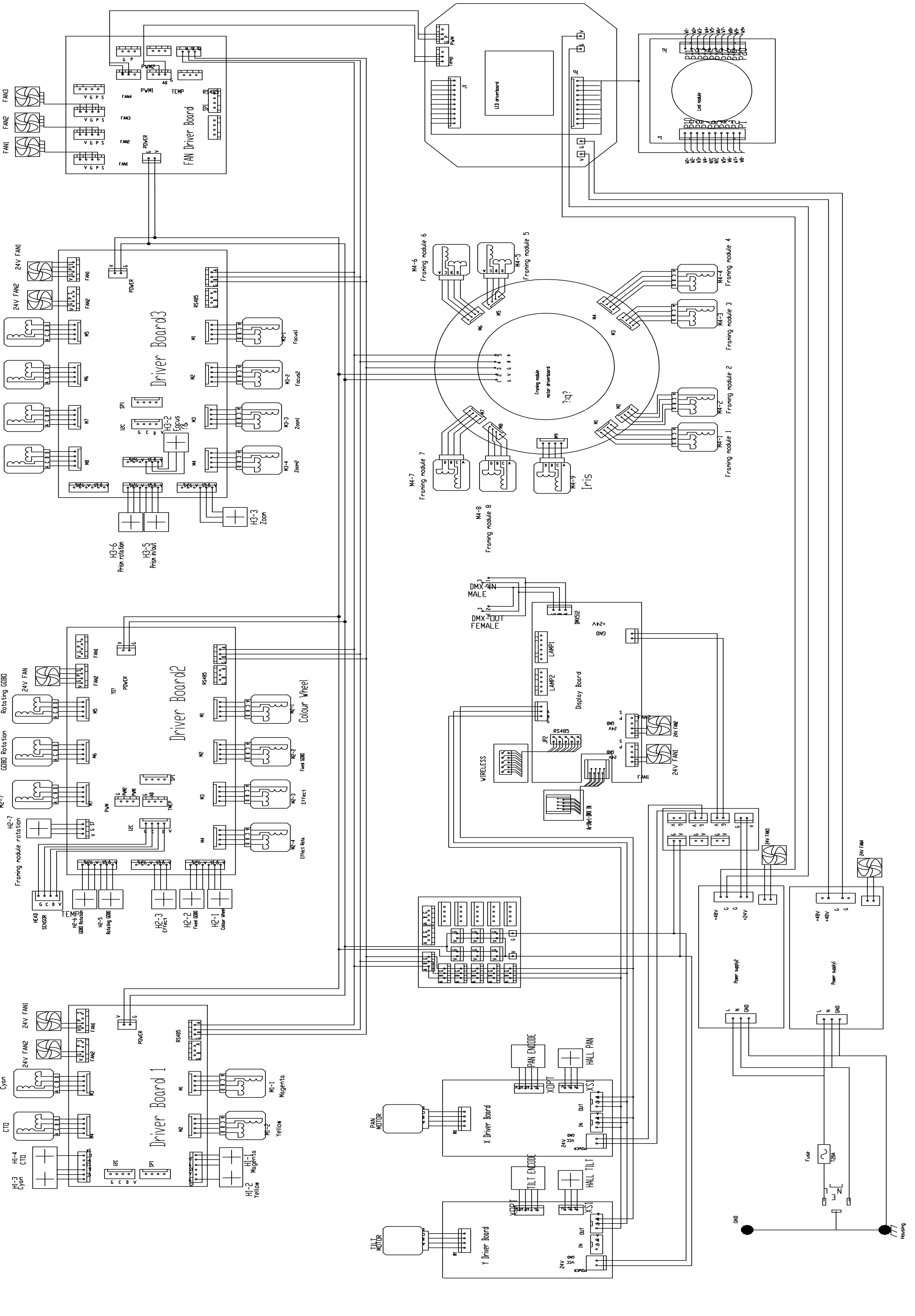
High out version(Ra=70)

56° Lux	4333	1083	481	271	173	120
5° Lux	186383	46596	20709	11649	7455	5177



Distance(m)	5m	10m	15m	20m	25m	30m
5° Diameter(m)	ϕ0.51	ϕ1.02	ϕ1.53	ϕ 2.04	ϕ2.55	ϕ3.06
56° Diameter(m)	ϕ4.99	ϕ9.97	ϕ14.96	ϕ 19.94	ϕ24.93	ϕ29.92

11. CIRCUIT DIAGRAM


FAN Driver Board
Driver Board3
Driver Board2
Driver Board 1
Colour Wheel
Iris
DMX-IN
MALE
DMX-OUT
FEMALE
Display Board
WIRELESS
RS485
PAN ENCODE
HALL PAN
X Driver Board
PAN MOTOR
TILT ENCODE
HALL TILT
Y Driver Board
TILT MOTOR

12. COMPONENT ORDER CODES

NAME	PART NO.	QUANTITY	REMARK
SWITCHING POWER SUPPLY	192010245	1	
SWITCHING POWER SUPPLY	192010246	1	
WATERPROOF FAN FOR HEAT SINK	030060116B	2	
FAN FOR CMY ACCESSORY	030060075	2	
FAN FOR GOBO ACCESSORY	030060117	1	
FAN FOR FAMING MODULE	030060132	1	
HEAD FAN	030060132	1	
FAN FOR LENS ACCESSORY	030060072A	1	
FAN FOR 5 CHANNEL DRIVER BOARD IN THE BASE	030060120	1	
FAN FOR 4 CHANNEL DRIVER BOARD IN THE BASE	030060119	1	

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