



AQUA 480 BEAM

PR-2469

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

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

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ACCESSORIES

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

Name	Quantity	Unit	Remark
G clamp	2	Pcs	
XLR connectors	1	Set	Malednd female
Safety cord	1	Pc	
User manual	1	Pc	
Ω clamps	2	Pcs	Optional

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 in the user manual won't be with any 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	Warning 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 IP65.
- The projector can be used in damp, over-heat and very dusty 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.
- No repairable parts in the projector and do not open covers for maintenance by yourself.



- Don't look straightly into the light sources especially for epileptics, otherwise eyes will be burned.
- Do not connect this device to any type of dimmer pack.
- After lamp switched on, the minimum distance between the projector and illuminated surface is 18m.
- If the lamp, lens and cover for the screen have obvious damage,i.e., the damage to the extent that makes the projector fail like crackings and deformation, please stop running it and replace them with the original parts, otherwise its normal operation will be compromised.



- 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 30minutes, the temperature of the housing of the projector is 45°C.After stable operation , its temperature is90°C.
- While in use, don't touch the its covers with bare hands(the covers are very hot!)



- 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 18m.
- A projector should be installed with good ventilation and the minimum distance between the projector and walls is 50cm. At the same time, please ensure the fans and air inlets and outlets are workable.

2. INSTRUCTIONS

•CLEANING AND MAINTENANCE

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

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

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

Special note:

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



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



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

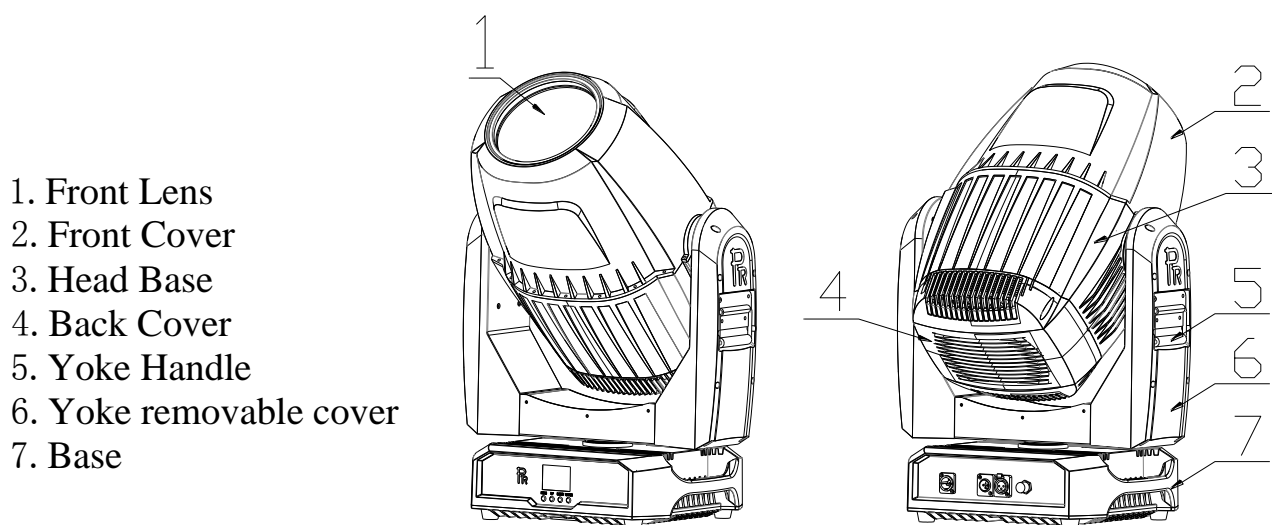
•LUBRICATION

To ensure smooth movement of gobos and zoom and focus lens, it's advised rotators' bearings and 4 slide rails for zoom and focus lens be lubricated every 2 months. High quality and high temperature lubricant/grease is advised.

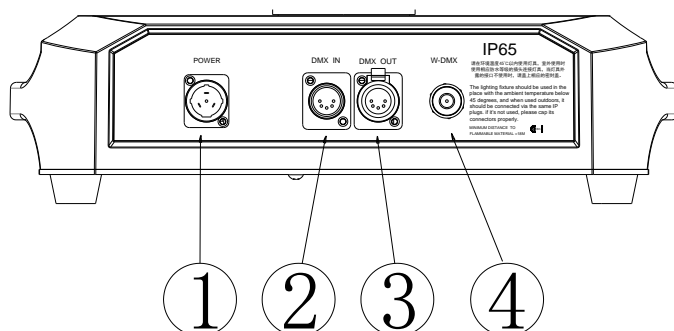
.TROUBLESHOOTING

PROBLEM	ACTION
The projector doesn't switch on	<ul style="list-style-type: none"> ➤ Check the fuse on the power socket. ➤ Check the lamp.
The lamp is on but the projector doesn't respond to the controller	<ul style="list-style-type: none"> ➤ Make sure that the fixture's start address is right ➤ Replace or repair the XLR signal cable.
The projector functions intermittently	➤ Make sure the fan is working well or fans and their shields are not blocked
Beam appears dim, Low in brightness	<ul style="list-style-type: none"> ➤ Make sure the lamp is within its lifespan. ➤ Remove dust or grease from the lenses.
The project image appears to have a halo	➤ Carefully clean the lamp, optical lenses and other components.
Heavily Defective Beam	<ul style="list-style-type: none"> ➤ Check if lens are in good condition(not cracked). ➤ Clean dust or grease on the lens.

3. APPEARANCE



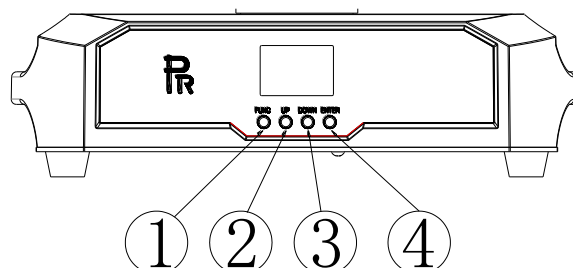
Rear Panel of the Base



1. Waterproof Power Socket
2. 5-Pin XLR Waterproof Socket(Male)
3. 5-Pin XLR Waterproof Socket(Female)
4. Waterproof Wireless Receiver

Front Panel of the Base

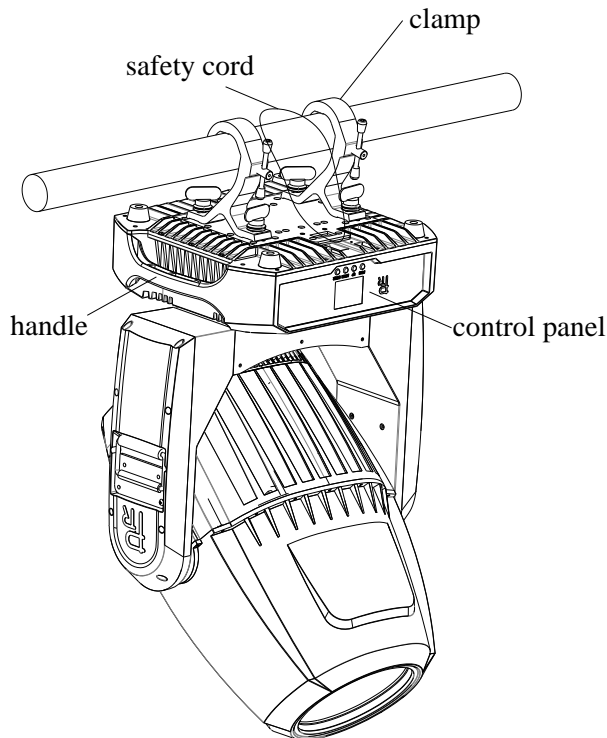
1. Key Func
2. Key UP
3. Key Down
4. Key Enter



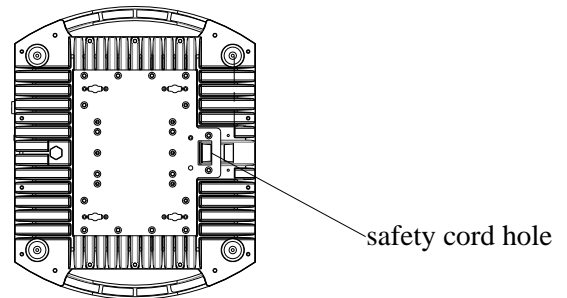
4. INSTALLATION

•RIGGING

The projector doesn't have Pan and Tilt locks. Hold it well while moving it to avoid the head rotating.



Warning
Please run the safety cord through the safety cord hole for safety



Take 2 clamps and the safety cord out from the package and mount 2 clamps on the underside of fixture with 2 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) **To pass the SAFETY CORD through the HOLES for safety!** 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 to is secure and strong enough to support the weight of a XR 1000 Framing.



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.

• POWER CONNECTION

Connect the power cord as follows:

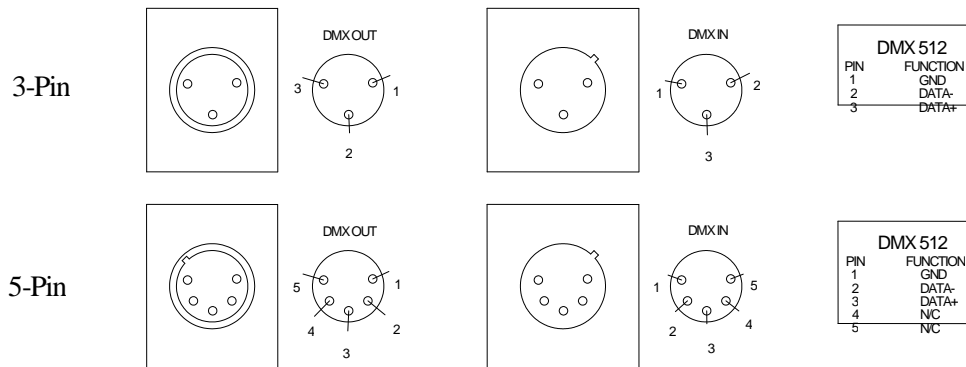
L (live) =brown
E (earth) =yellow/green
N (neutral) =blue

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.

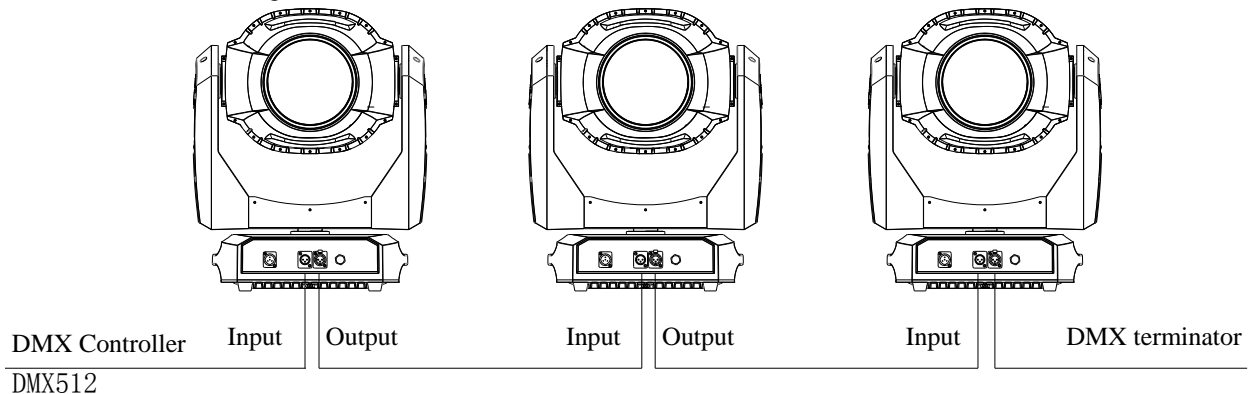
DMX CONTROL CONNECTION:



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 XR 480 Aqua Beam accepts digital control signals in protocol DMX512 (1990).

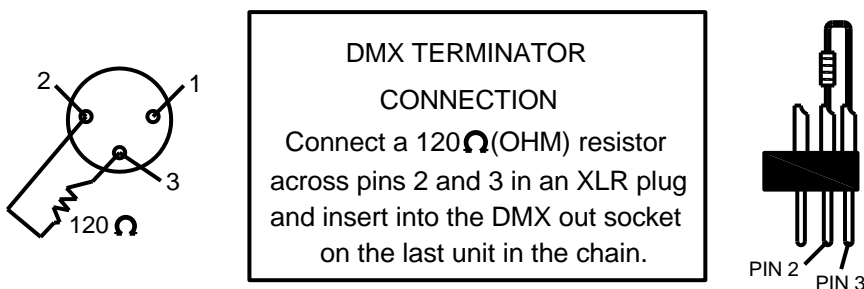
Connect the controller's DMX output to the first fixture's DMX input, and connect the first fixture's DMX output to the second fixture's DMX input and connect the rest fixtures in the same way. Eventually connect the last fixture's DMX output to a DMX terminator as shown in the figure below.



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.



•ALIGNMENT/INSTALLATION/REPLACEMENT OF A LAMP

Hold the projector well before fitting/replacing/adjusting the lamp. Just as Shown by Figure 1, open the cover at the rear of the projector's head and remove the cooling module

To remove/install the lamp as per Figure 2.

Adjust the lamp as per the figure 3.

Before removing the lamp, unplug its power wires. After the lamp in, plug its power wires.



•Don't touch the internal surface of the reflector and the burner of the lamp with bare hands so as not to impair the beam output. While lamp's installation, do not damage the metal wire around the burner. While removing the lamp, please hold the reflector with some force, but do not apply force to the ceramic stand, otherwise it will be loose.

•Please read "Instructions " enclosed with the lamp.

•While adjusting the lamp, it is forbidden to use the projector's functions not related to lamp adjustment.

Figure1:Remove the rear cover by loosening its 4 screws and remove the cooling module and rear fan by loosening the former's screws

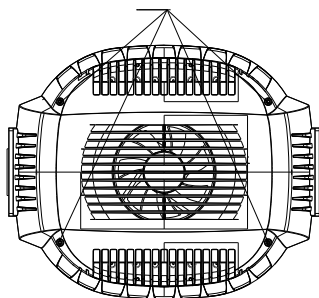


Figure2: unplug the lamp wires, push the upper pressing plate towards the spring with force and push the lamp in the opposite direction. After the lamp is off the upper pressing plate,take it out obliquely. Lamp installation is same.

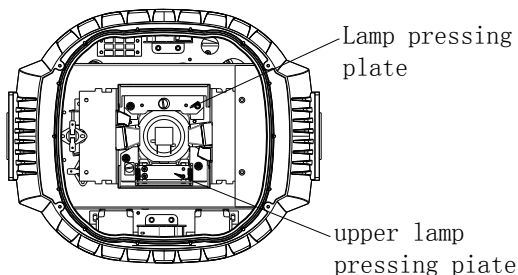
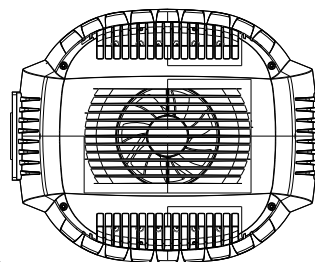


Figure3: After lamp replacement,first ensure if the lamp is held well,then plug the lamp wires and turn on the lamp.Align the lamp to the middle point, then install the heat sink, fan and the back cover.



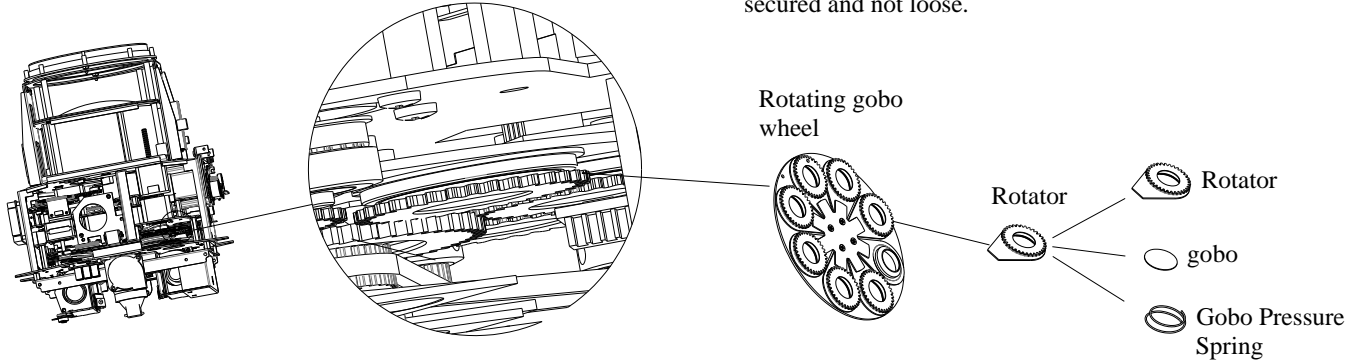
The steps for lamp replacement/adjustment:

1. Power off the projector after turning off the following function after the projector is powered on: Service-Factory Test-Head Fan Sensor;
2. Unfasten the 4 screws of the back cover and remove the cover;
3. Unfasten 4 screws for the fan fixing plate,remove the fan at the bottom and clump weight, unfasten 10 screws for the heat sink,at last remove the heat sink
4. Push the upper lamp pressing plate in the direction of the spring contracting, and at the same time push the lamp in the opposite direction. Take the lamp out obliquely while it is off the upper pressing plate;
5. Lamp installation is same as its removal;
6. Align the lamp while it is on after the lamp wires are plugged well;
7. After the lamp alignment is completed, turn projector off after the following function is turned on: Service-Factory Test-Head Fan Sensor;
8. Check if the seals are damaged or not. If true, replace them with new ones. If not, install the heat sink and fan and tighten back cover in the opposite sequences against the dismantlement.
9. After installation, power on the projector. The projector will have total reset automatically. Then the projector can run normally.

•GOBO REPLACEMENT

Rotating gobo replacement:

Open the head's front and back cover and take the head out. Then push the rotator of which its gobo needs to be replaced, out of the rotating gobo wheel. After the rotator is sliding out of the wheel, pull it gently. After the gobo replaced, insert the rotator into the wheel and ensure it is secured and not loose.

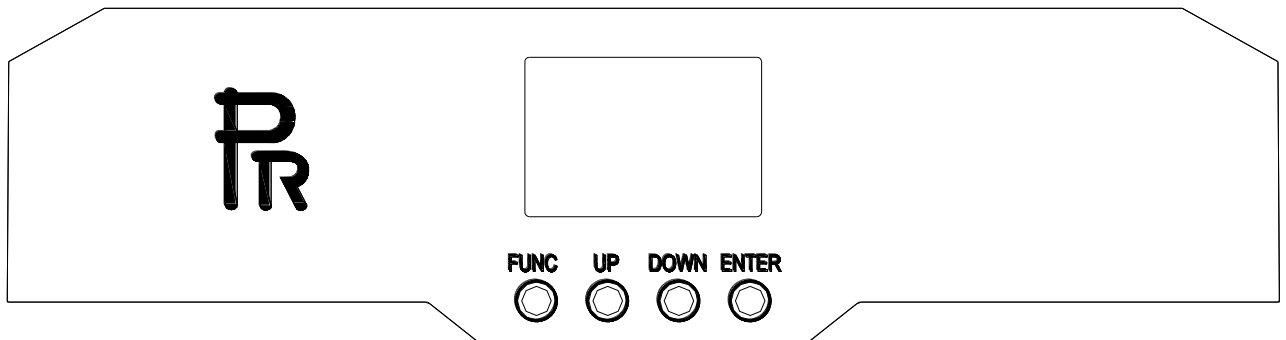


DANGER!

Before replacement of gobos, the projector must be off the power completely.

5. SETUP AND CONFIGURATION

•FRONT PANEL OPERATION



To browse through or modify the projector's settings, press ENTER key about 3 seconds to unlock the screen and while the projector is on power, press ENTER key to let the display on. After the screen is unlocked, press UP and DOWN keys to enter into some menus accordingly. Each main menu has its sub menus and each one stands for the projector's special function. For the details, please refer to Item 6 "Operation Menu".

1. In the page to set the projector's functional menus, press UP and DOWN key to select some function accordingly.
2. For the control panel, FUNC is to escape the current menu; and ENTER key is to confirm any setting. Press ENTER key to save what has been set up or enter into sub menu. Press UP or DOWN to change values(Plus or Minus)

Press FUNC to go back to the upper level menu. If it is not pressed, the system will go back to initial 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 3DMX modes. There are standard mode ,short mode and extended mode. For example standard mode has 26 channels, so set the No. 1 projector's address 001, No. 2 projector's address 027, No. 3 projector's address 053, No. 4 projector's address 079, and so on.

Turn on the projector and press ENTER key about 3 seconds to unlock the control panel. After the control panel is unlocked, press UP or DOWN key to enter into any operation menu accordingly.

Select “DMX setting” logo and press ENTER key or tap the screen directly. Select DMX Address at the 2nd level menu, press UP or DOWN key to set the value desired. Press ENTER key to confirm.

Press FUNC key to go back to the upper level 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. Press ENTER key for more than 3s to unlock the control panel, then press UP or DOWN key to enter into the operation menu and select “Config Settings”.
2. Select “Wireless First” or “Wireless Only” from the menu of “Signal Select”.

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 Un-link Wireless under the upper level menu of Config Settings, then the fixture is unlinked with the wireless transmitter.

•STAND-ALONE MODE

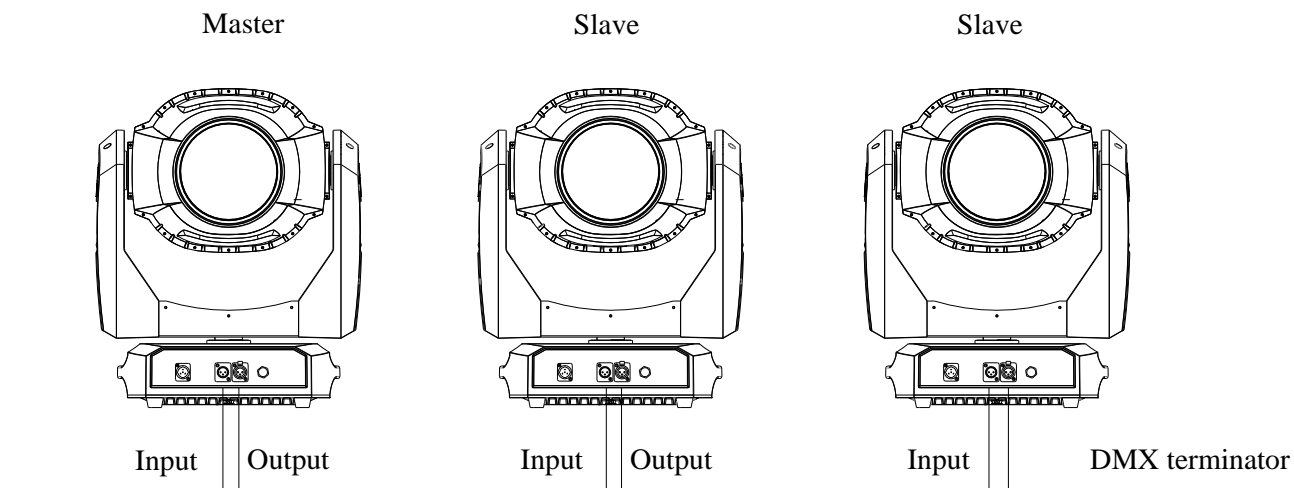
Operate the projector without connecting with a controller, enable the master mode through the operation panel, the projector will run in Stand-Alone mode automatically.

•MASTER/SLAVE MODE


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

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

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



6. OPERATION MENU

1st LEVEL	2nd LEVEL	3rd LEVEL	4th LEVEL	5th LEVEL
Address 	DMX Address	1-512		
Reset 	Total Reset	Really Reset? Confirm or Cancel		
	Pan&Tilt Reset	Really Reset? Confirm or Cancel		
	Colour System Reset	Really Reset? Confirm or Cancel		
	Gobo Reset	Really Reset? Confirm or Cancel		
	Dimmer/Shutter reset	Really Reset? Confirm or Cancel		
	Fo. Fr. Pr. Reset	Really Reset? Confirm or Cancel		
Config Settings 		Short Mode		
		Standard Mode		
		Extended Mode		
		View Selected Mode	Ch.01 Strobe Ch.02 Dimmer Ch.03 CYM Macro Ch.04 Cyan Ch.05 Yellow Ch.06 Magenta Ch.07 Color Wheel Ch.08 Fixed Gobo Wheel Ch.09 Rot. Gobo Wheel1 Ch.10 Rot. Gobo1 Rotation Ch.11 Prism1 Ch.12 Prism1 Rotation Ch.13 Prism2 Ch.14 Prism2 Rotation	
	DMX Channel Mode			



			Ch.15 Frost Ch.16 Focus Ch.17 Pan Ch.18 Tilt Ch.19 Control Function	
	Lamp Control	Lamp Control	OFF/ ON	
		On By Power On	OFF/ ON	
		Control By DMX	OFF/ ON	
		Lamp Half Power	OFF/ ON	
	Signal Select	XLR Only		
		XLR First		
		Wireless Only		
		Wireless First		
		Wireless 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	
		Touch Calibration		
	Temperature Unit	Celsius Degree		
		Fahrenheit Degree		
	Un-Link Wireless	Really Un-Link? Confirm or Cancel		
	Defaults	Restore Defaults? Confirm or 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	Note: "Speed Mode" means Pan and Tilt will move from Point A to Point B at their respective maximum speeds."Time Mode" means both Pan and Tilt will arrive at designated point at the same time. It's advised Time Mode be used if the projector runs circles or in oblique lines.
	Invert Settings	Dimmer Invert	OFF/ ON	
		Focus Invert	OFF/ ON	
		CYM Invert	OFF/ ON	
	Defaults	Restore Defaults? Confirm or Cancel		
	View DMX Values	Channel Value Strobe XXX Dimmer XXX CYM Macro XXX Cyan XXX Yellow XXX Magenta XXX Color Wheel XXX Fixed Gobo Wheel XXX Rot. Gobo Wheel1 XXX Rot. Gobo1 Rotation XXX Prism1 XXX Prism1 Rotation XXX Prism2 XXX Prism2 Rotation XXX Frost XXX Focus XXX Pan XXX Tilt XXX Control Function XXX		
		Lamp Hours	XXX H Reset Lamp Hours	
		Total Hours	xxxH	
		Temperature	Display Board=xxx°C Pan & Tilt board=xxx°C Driver Board1=xxx°C Driver Board 2=xxx°C Head Sensor=xxx°C	
		Software Version	PCB Sys Boot Display Board xxx xxx Pan & Tilt board xxx xxx Driver Board1 xxx xxx Driver Board 2 xxx xxx	
		Electronic SN	XXXXXX	
		RDM Device Label	ANSI E1.20 RDM	

Information



	Fan Status	Fan Speed Status Lamp Fan xxx on/off Lamp Fan2 xxx on/off Ceramic Fan xxx on/off CYM Fan xxx on/off Head Fan xxx on/off Head Fan2 xxx on/off Basic Fan xxx on/off		
	Acceleration Sensor	X Axis: XXX Y Axis: XXX Z Axis: XXX		
Service 	Manual Effect Control	Strobe XXX		
		Dimmer XXX		
		Dimmer Fine XXX		
		CYM Macro XXX		
		Cyan XXX		
		Cyan Fine XXX		
		Yellow XXX		
		Yellow Fine XXX		
		Magenta XXX		
		Magenta Fine XXX		
		Color Wheel XXX		
		Color Wheel Fine XXX		
		Fixed Gobo Wheel XXX		
		Rot. Gobo Wheel 1 XXX		
		Rot. Gobo 1 Rotation XXX		
		Rot. Gobo 1 Rotation F. XXX		
		Prism 1 XXX		
		Prism 1 Rotation XXX		
		Prism 2 XXX		
		Prism 2 Rotation XXX		
		Frost XXX		
		Focus XXX		
		Focus Fine XXX		
		Pan XXX		
		Pan Fine XXX		
		Tilt XXX		
		Tilt Fine XXX		
		Pan & Tilt Speed & Time XXX		
	Factory Test	Head Fan Sensor	Off/On	Its remarks are at the end of this table.
	Position Calibrations	XXX		
			...	
Operation Mode 	DMX Mode	Change Operation Mode? Confirm or Cancel		
	Master Mode	Preset Memory	Change Operation Mode? Confirm or Cancel	
		User Memory 1	Change Operation Mode? Confirm or Cancel	
		User Memory 2	Change Operation Mode? Confirm or Cancel	
	Stand-Alone Mode	Preset Memory	Change Operation Mode? Confirm or Cancel	
		User Memory 1	Change Operation Mode? Confirm or Cancel	

		User Memory 2	Change Operation Mode? Confirm or Cancel	
	Static Scene	Change Operation Mode? Confirm or Cancel		
<div>User Memories</div> <div></div>	Edit User Memory	Edit User Memory 1 / Edit User Memory 2	(1~200Scenes) Scene XX (1~200 Scenes)	Strobe XXX
				Dimmer XXX
				Dimmer Fine XXX
				CYM Macro XXX
				Cyan XXX
				Cyan Fine XXX
				Yellow XXX
				Yellow Fine XXX
				Magenta XXX
				Magenta Fine XXX
				Color Wheel XXX
				Color Wheel Fine XXX
				Fixed Gobo Wheel XXX
				Rot. Gobo Wheel 1 XXX
				Rot. Gobo1Rotation XXX
				Rot. Gobo1Rotation F. XXX
				Prism 1 XXX
				Prism 1 Rotation XXX
				Prism 2XXX
				Prism 2 Rotation XXX
				Frost XXX
				Focus XXX
				Focus Fine XXX
				Pan XXX
				Pan Fine XXX
				Tile XXX
				Tilt Fine XXX
				Pan & Tilt Speed &Time XXX
				Delay Time XXX
				Delay time unit msec/s/m
				Link to Step XXX
	Edit Static Scene	Strobe XXX		
		Dimmer XXX		
		Dimmer Fine XXX		
		CYM Macro XXX		
		Cyan XXX		
		Cyan Fine XXX		
		Yellow XXX		
		Yellow Fine XXX		
		Magenta XXX		
		Magenta Fine XXX		
		Color Wheel XXX		
		Color Wheel Fine XXX		
		Fixed Gobo Wheel XXX		
		Rot. Gobo Wheel 1 XXX		
		Rot. Gobo1Rotation XXX		
		Rot. Gobo1Rotation F. XXX		
Prism 1 XXX				
Prism 1 Rotation XXX				
Prism 2XXX				
Prism 2 Rotation XXX				
Frost XXX				
Focus XXX				
Focus Fine XXX				
Pan XXX				
Pan Fine XXX				
Tile XXX				

			Tilt Fine XXX	
			Pan & Tilt Speed & Time XXX	
	Init User Memory	Reset User Memory 1	Reset User Memory? Confirm or Cancel	
		Reset User Memory 2	Reset User Memory? Confirm or Cancel	
		Reset Static Scene	Reset Static Scene? Confirm or Cancel	

Remarks: The lamp sensor is only used for lamp adjustment.

ON: The lamp is affected by the cooling fan at the bottom of the head. If the fan fails, the lamp can't be turned on.

Off: The lamp is not affected by the cooling fan at bottom of the head, even if the fan is not installed, the lamp can be turned on and Pan and Tilt off power.

OFF status is only used for emergency . If the cooling fan doesn't run for long term, it will cause harm to the lamp.

After the lamp test, turn on the head fan sensor and activate total reset.

7. DMX PROTOCOL

Short mode	Standard mode	Extended Mode	FUNCTION	DMX	DESCRIPTION
1	1	1	Strobe	000-010	Close
				011-025	Open
				026-225	Strobe speed from slow to fast
				226-246	Random strobe from slow to fast
				247-255	Open
2	2	2	Dimmer	000-035	Close
				036-255	Linear dimming (0-100%)
	3	3	Dimmer Fine	000-255	Dimmer in 16 bit
3	4	4	CYM Macro	000-016	White
				017-035	Yellow+ Magenta=Red
				036-054	Yellow
				055-073	Yellow +Cyan=Green
				074-092	Cyan
				093-111	Cyan + Magenta= Violet
				112-128	Magenta
				129-255	CYM color mixing from slow to fast
4	5	5	Cyan	000-255	Cyan (linear 0~100%)
		6	Cyan Fine	000-255	Cyan in 16 Bit
5	6	7	Yellow	000-255	Yellow (linear 0~100%)
		8	Yellow Fine	000-255	Yellow in 16 Bit
6	7	9	Magenta	000-255	Magenta (linear 0~100%)

		10	Magenta Fine	000-255	Magenta in 16 Bit
7	8	11	Color Wheel	000-063	Indexing(0-360degrees)
				064-068	Color1(Red)
				069-073	Color2(Light Green)
				074-078	Color3(Blue)
				079-083	Color4(Cyan)
				084-088	Color5(Yellow)
				089-093	Color6(Magenta)
				094-098	Color7 (Orange)
				099-103	Color8(Green)
				104-108	Color9(Dark Blue)
				109-113	Color10(UV)
				114-118	Color11(Light Yellow)
				119-123	Color12(CTO)
				124-127	White
				128-191	Rotation ,Clockwise from slow to fast
				192-255	Rotation ,Anti-Clockwise from fast to slow
	9	12	Color wheel Fine	0-255	Color Wheel in 16 Bit
8	10	13	Fixed Gobo Wheel	000-019	White
				020-025	Gobo1
				026-031	Gobo2
				032-037	Gobo3
				038-043	Gobo4
				044-049	Gobo5
				050-055	Gobo6
				056-061	Gobo7
				0620-67	Gobo8
				068-073	Gobo9
				074-079	Gobo10
				080-085	Gobo11
				086-091	Gobo12
				092-097	Gobo13
				098-103	Gobo14
				104-109	Gobo15
				110-115	Gobo16
				116-121	Gobo17
				122-127	Gobo18
				128-155	Clockwise rotation from slow to fast
				156-183	Anti Clockwise rotation from slow to fast
				184-187	Shake effect 1 from slow to fast
				188-191	Shake effect 2 from slow to fast
				192-195	Shake effect 3 from slow to fast
				196-199	Shake effect 4 from slow to fast
				200-203	Shake effect 5 from slow to fast

				204-207	Shake effect 6 from slow to fast
				208-211	Shake effect 7 from slow to fast
				212-215	Shake effect 8 from slow to fast
				216-219	Shake effect 9 from slow to fast
				220-223	Shake effect 10 from slow to fast
				224-227	Shake effect 11 from slow to fast
				228-231	Shake effect 12 from slow to fast
				232-235	Shake effect 13 from slow to fast
				236-239	Shake effect 14 from slow to fast
				240-243	Shake effect 15 from slow to fast
				244-247	Shake effect 16 from slow to fast
				248-251	Shake effect 17 from slow to fast
				252-255	Shake effect 18 from slow to fast
9	11	14	Rotating Gobo Wheel 1	000-015	White
				016-031	Gobo 1
				032-047	Gobo 2
				048-063	Gobo 3
				064-079	Gobo 4
				080-095	Gobo 5
				096-111	Gobo 6
				112-127	Gobo 7
				128-156	Rotation (clockwise From slow to Fast)
				157-185	Reverse Rotation (anti-clockwise From slow to Fast)
				186-195	Shake of Gobo 1 from slow to fast
				196-205	Shake of Gobo 2 from slow to fast
				206-215	Shake of Gobo 3 from slow to fast
				216-225	Shake of Gobo 4 from slow to fast
				226-235	Shake of Gobo 5 from slow to fast
				236-245	Shake of Gobo 6 from slow to fast
				246-255	Shake of Gobo 7 from slow to fast
10	12	15	Gobo Rotation	000-128	Gobo Indexing(0~360degrees)
				129-188	Rotation (Clockwise From slow to Fast)
				189-195	Stop
				196-255	Rotation (Anti-Clockwise From slow to Fast)
	13	16	Gobo Rotation Fine	000-255	Gobo Rotation in 16 Bit
11	14	17	Prism 1	000-016	Open
				017-255	Prism
12	15	18	Prism1 Rotation	000-127	Prism Indexing
				128	Stop
				129-191	Rotation(Clockwise from slow to fast)
				192	Stop
				193-255	Rotation(Anti- Clockwise from slow to fast)
13	16	19	Prism 2	000-016	White

				017-255	Prism
14	17	20	Prism2 Rotation	000-128	Prism Indexing via rotation
				128	Stop
				129-191	Rotation(Clockwise from slow to fast)
				192	Stop
				193-255	Rotation(Anti- Clockwise from slow to fast)
15	18	21	Frost	000-255	Linear frost
16	19	22	Focus	000-255	Linear Focus
	20	23	Focus Fine	000-255	Focus in 16 bit precision
17	21	24	Pan	000-255	Pan(0 °~540 °)
	22	25	Pan Fine	000-255	Pan in 16 bit precision
18	23	26	Tilt	000-255	Tilt(0 °~270 °)
	24	27	Tilt Fine	000-255	Tilt in 16 bit precision
	25	28	Pan & Tilt Speeds	000-255	Pan & Tilt Speed from Fast to Slow
19	26	29	Control	000-019	Reserved
				The following functions will be activated after the DMX value has been held for more than 5s. And the following settings are void if the lamp is off.	
				020-024	Display On
				025-029	Display Off
				030-034	Reserved
				035-039	Lamp Half Power
				040-044	Lamp Full Power
				045-089	Reserved
				090-094	Pan & Tilt Speed Mode
				095-099	Pan & Tilt Time Mode
				100-129	Reserved
				130-139	Lamp On
				140-149	Pan & Tilt Reset
				150-159	Color System Reset
				160-169	Gobo Wheels Reset
				170-179	Dimmer/Shutter Reset
				180-189	Frost/Focus/Prism Reset
				190-199	Reserved
				200-209	Total Reset
				210-229	Reserved
				230-239	Lamp Off
				240-255	Reserved

1. The projector can't be turned on within 1 minute after the lamp-off.

2. Fan error can cause lamp-off.

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

8. ERROR MESSAGES

The system can detect some errors during the reset, if  displayed, touch the ENTER 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
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 1	Timeout	Check if wiring, positioning parts and motors are normal
Rot. Gobo1Rotation	Timeout	Check if wiring, positioning parts and motors are normal
Dimmer	Timeout	Check if wiring, positioning parts and motors are normal
Prism 1	Timeout	Check if wiring, positioning parts and motors are normal
Prism 1 Rotation	Timeout	Check if wiring, positioning parts and motors are normal
Prism 2	Timeout	Check if wiring, positioning parts and motors are normal
Prism 2 Rotation	Timeout	Check if wiring, positioning parts and motors are normal
Frost	Timeout	Check if wiring, positioning parts and motors are normal
Focus	Timeout	Check if wiring, positioning parts and motors are normal
Ceramic Fan 1	Error	Check if fan and its wiring are normal
Ceramic Fan 2	Error	Check if fan and its wiring are normal
CMY Fan	Error	Check if fan and its wiring are normal
Lamp Fan 1	Error	Check if fan and its wiring are normal
Lamp Fan 2	Error	Check if fan and its wiring are normal
Head Fan	Error	Check if fan and its wiring are normal
Pan and Tilt Board	Error	Check signal wire
Driver Board 1	Error	Check signal wire
Driver Board2	Error	Check signal wire
Acceleration Sensor	Error	Check signal wire
Lamp on	Timeout	Check if he lamp is damaged
Lamp Life	Timeout Warning	
Lamp Off[Fan Error]	Error	Check if all fans are normal
Lapsed Time	Timeout	
Time IC	Error	
Lapsed time	X days	
Use hours Setting	successfully	

9. TECHNICAL DATA

The parameters about input/output of the power switch:

Input:100V~240V AC, 7.2A, 50/60Hz
Output:380V DC/1.3A, 24V DC/8A, 48V DC/3A
Power factor: 0.95

RATED POWER

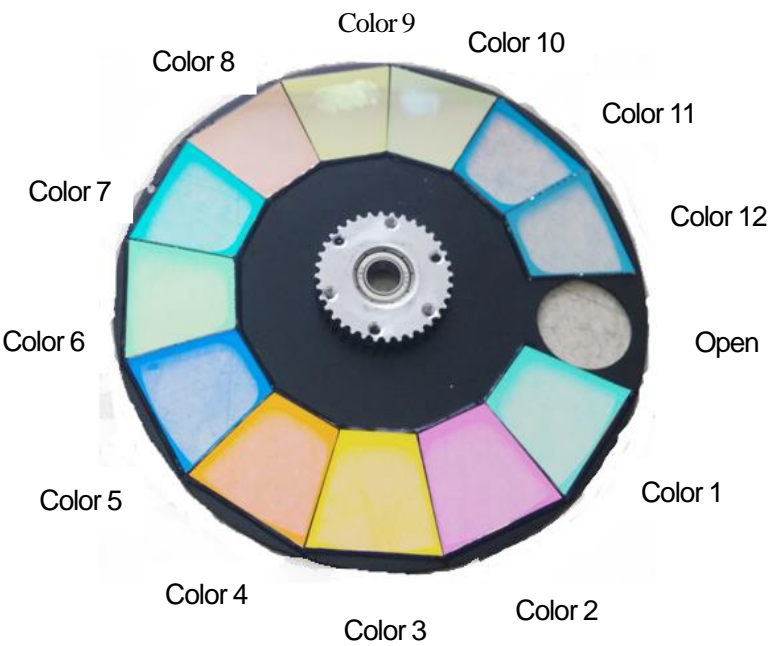
650W@220V

LAMP SPECIFICATIONS

Lamp	USHIO PR480
Color Temperature	7000±300K
Manufacturers Rated Lamp Life	1500hours

COLORS

CMY linear color mixing with macros
1 color wheel: 11colors+1CTO+ Open
Rainbow effect with bi-directional and variable speeds
Stepping/linear color changing



No.	Code No.	Color
1	092550001A	Red
2	092550002A	Light Green
3	092550003A	Blue
4	092550004A	Cyan
5	092550005A	Yellow
6	092550006A	Magenta
7	092550007A	Orange
8	092550008A	Green

9	092550009A	Dark blue
10	092550010A	UV
11	092550011A	Light Yellow
12	090071258	CTO

FIXED GOBO WHEEL

1 fixed gobo wheel: 18 gobos +open

bi-directionally rotatable, and shakable at variable speeds

Dot (φ1.2mm)	Dot2 (φ2.0mm)	Dot3 (φ3.5mm)	Dot4 (φ4.5mm)	Dot5 (φ6.0mm)	Dot6 (φ8mm)	Ping
Fan	8 Bars	Flower	Rectangles	Stars	Five Dots	Eight
Quadrangles	Steering Wheel	4 paralleled Bars	Concave Triangle			



ROTATING GOBO WHEEL

1 Rotating gobo wheel: 7 interchangeable gobos+1 white

Bi-directionally rotatable, and shakable at variable speeds.

Gobo Replaceable, Gobo outer diameter: Φ22.5mm ,Gobo image diameter: Φ9mm

P/N: 090071031 Symmetric	P/N: 090071032 3 black circles	P/N: 090071033 3 Triangles	P/N: 090071034 Spun Dots	P/N: 090071035 Linear
Gobo1	Gobo2	Gobo3	Gobo4	Gobo5
P/N: 090071036 4 Dots in a line	P/N: 090071037 Double T			

				
Gobo6	Gobo7			

PRISM

2Pcs of independent prisms (STD setup: 8-facet and 16-facet Prisms);bi-directional rotation with variable speeds(options: 3-facet, 16-facet circular/ liner/gradient prisms)

FROST

1pc frost filter

FOCUS

DMX linear Focus

DIMMER/STROBE

0-100% linearly adjustable/ Double shutter blades, 0.3~25 F.P.S

HEAD MOVEMENT

Pan 540 °;Tilt 270 °with auto position correction

BEAM ANGLE

Beam angle: 3.1 °

CONTROL

International DMX512 Signal, 3 pin and 5 pin interfaces

19channels in short mode, 26channels in standard mode and 29channels in extended mode

Self-test mode

OTHER FUNCTIONS:

Adjustable Pan & Tilt speed

Lamp's and fixture's hours displayed

Modular Structure for easy maintenance

DMX512 wireless reciever

Optional DMX512 Wireless Transmitter

HOUSING

High temperature/UV resistant ABS, IP65

WEIGHT

Net weight: 45Kg

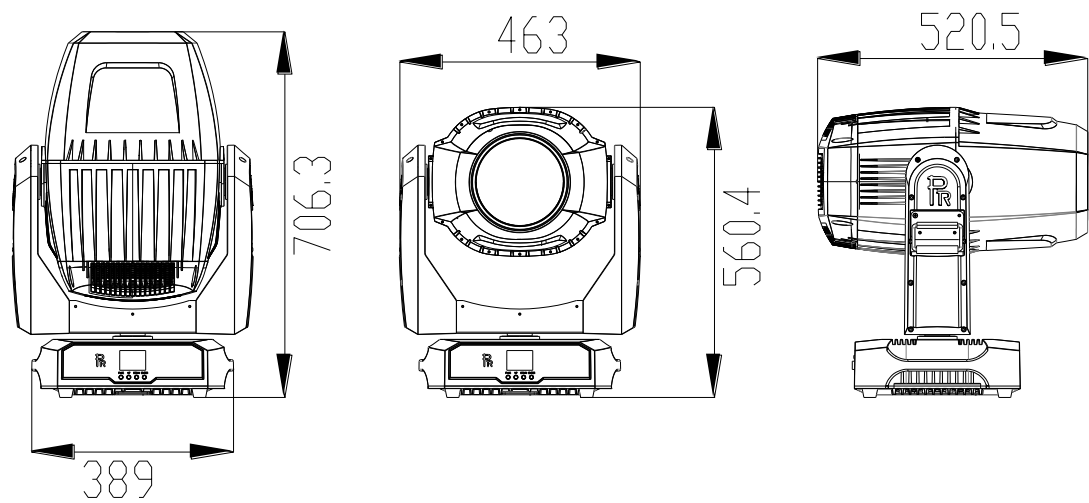
Gross weight: 76Kg in flight case(1pc/case) and accessories

60Kg in carton(1pc/ctn) and accessories

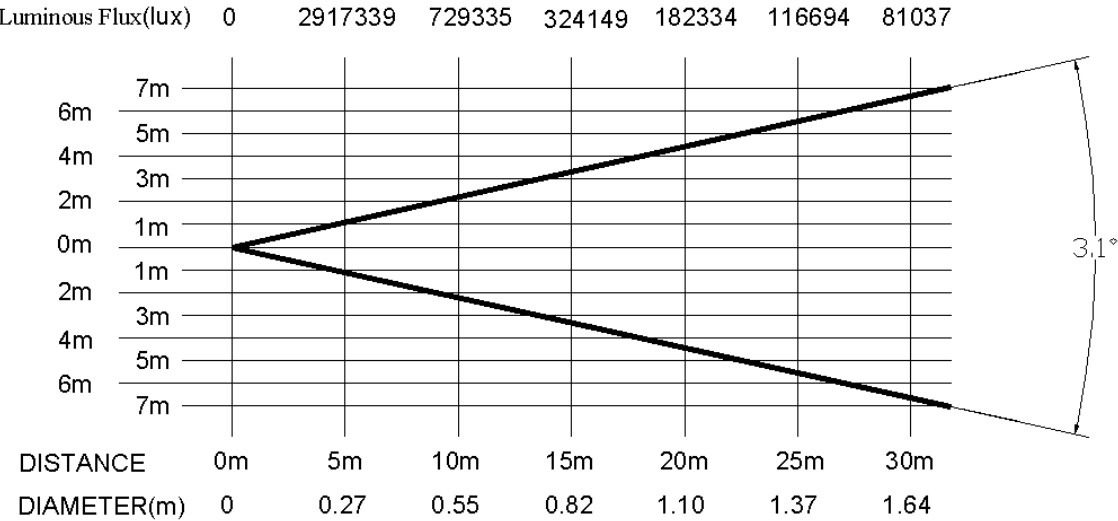
WORKING TEMPERATURE

Maximum Ambient Temperature: 42 °C

SIZES

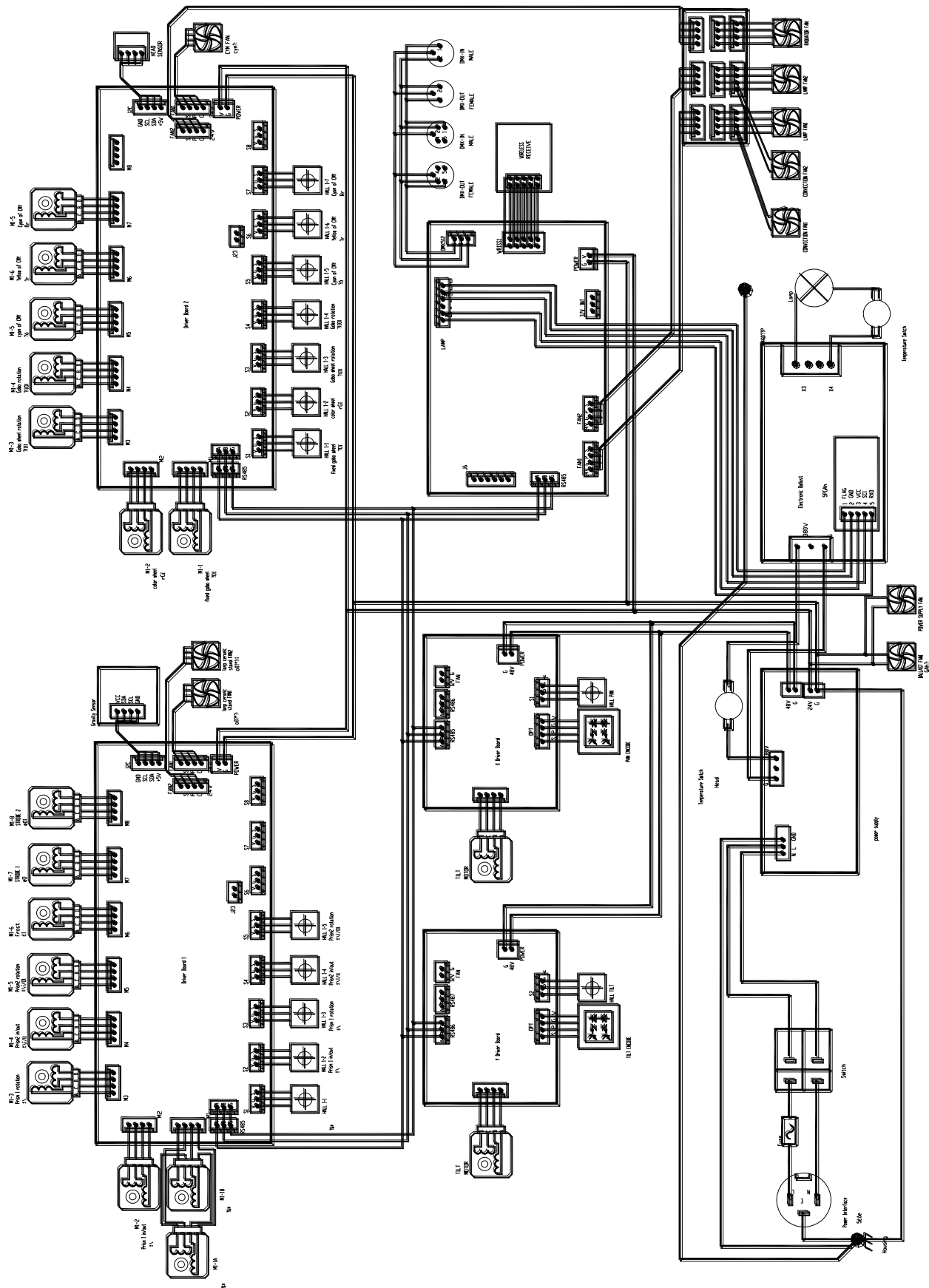


LIGHT OUTPUT



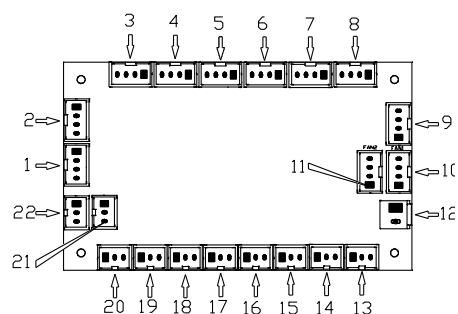
10. CIRCUIT DIAGRAM AND PCB CONNECTIONS

.CIRCUIT DIAGRAM



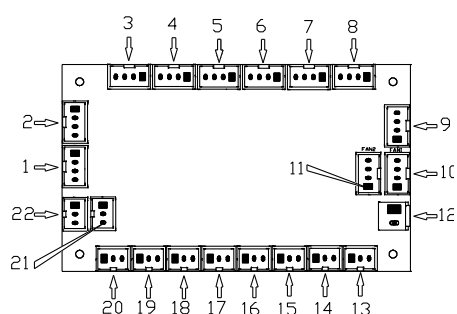
PCB CONNECTIONS

1.8-Channel SLAVE1: P/N230060735



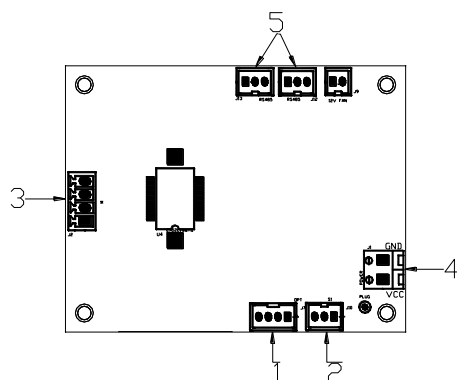
8-Channel Slave1			
1	M1-1 Motor	12	24V Power Input
2	M1-2 Motor	13	
3	M1-3 Motor	14	
4	M1-4 Motor	15	HALL1-6 Magnet Sensor
5	M1-5 Motor	16	HALL1-5 Magnet Sensor
6	M1-6 Motor	17	HALL1-4 Magnet Sensor
7	M1-7 Motor	18	HALL1-3 Magnet Sensor
8	M1-8 Motor	19	HALL1-2 Magnet Sensor
9	Thermal Switch #2	20	HALL1-1 Magnet Sensor
10	MEMS Sensor Board	21	Signal output
11	Fan for Power Supply and ballast	22	Signal input

2.8-Channle SLAVE2: P/N230060736



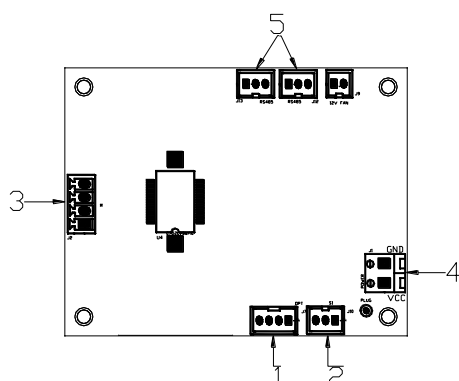
8-Channel Slave1			
1	M1-1 Motor	12	24V Power Input
2	M1-2 Motor	13	
3	M1-3 Motor	14	HALL2-7 Magnet Sensor
4	M1-4 Motor	15	HALL2-6 Magnet Sensor
5	M1-5 Motor	16	HALL2-5 Magnet Sensor
6	M1-6 Motor	17	HALL2-4 Magnet Sensor
7	M1-7 Motor	18	HALL2-3 Magnet Sensor
8		19	HALL2-2 Magnet Sensor
9	Thermal sensor	20	HALL2-1 Magnet Sensor
10	Cym FAN	21	Signal output
11	Head Fan	22	Signal input

3. X driver board: P/N230060722



X driver board	
1	Optical sensor
2	SX magnet sensor
3	Pan motor
4	48V power input
5	Signal

4. Y driver board : P/N 230060729



Y driver board	
1	Tilt Motor magnet sensor
2	SY magnet sensor
3	Tilt motor
4	48V power input
5	Signal

11. COMPONENT ORDER CODES

NAME	PART NO.	QTY	REMARK
STEPPING MOTOR	030040073C	2	
STEPPING MOTOR	030040221C	1	
STEPPING MOTOR	030040224D	1	
STEPPING MOTOR	030040241A	4	
STEPPING MOTOR	030040242A	3	
STEPPING MOTOR WITH THREAD BAR(NUT SUPPLIED)	030040243A	2	
STEPPING MOTOR	030040244A	3	
STEPPING MOTOR	030040246A	2	
TURO FAN	030060072	2	
PWM SPEED ADJUSTABLE FAN	030060098	2	
FAN	030060102	3	
4 WIRE WATERPROOF FAN	030060111	1	
FAN	030069005	2	
LAMP BALLAST	040070127	1	
LAMP	100070045	1	
ROTATINGGOBOWHEEL ACCESSORY	120110739	1	
COLOR WHEEL ACCESSORY	120110736	1	
FIXEDGOBO WHEEL ACCESSORY	120110757	1	
POWER SWITCH	192010193	1	
TOUCH SCREEN MASTER BOARD	230060753	1	
8 CHANNEL DRIVER BOARD1	230060735	1	
8 CHANNEL DRIVER BOARD2	230060736	1	
GRAVITY SENSOR BOARD	230060492A	1	
X DRIVER BOARD	230060722	1	
Y DRIVER BOARD	230060729	1	
FUSE	270041079	1	
BELT	290151354	2	
BELT	290151416	1	
BELT	290151417	4	
BELT	290151440	2	
BELT	290151441	1	
BELT	290151442	1	

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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: 320020545
Version: 20171212