DLW

Product Manual

DLW 420B IP

Guangzhou DLW Lighting Equipment Co.,Ltd.

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Safety Information

Note: Please check the complete package after received , and please unpack and check if the fixture is damaged during shipping.
If the fixture is damaged during shipping, please do not use it and contact the manufacturer/local technicians as soon as possible.

The following identifications are used to identify the product and identify the important safety information in the user manual.


Warning!


Warning! See user documentation.


Warning! Hazardous voltage.Risk of lethal or severe electric shock.


Properly grounded


Warning! Intense light emission.


Warning! High surface temperature Don't touch!


Warning! Must wear gloves!


Warning! Fire hazard.


Do not stare at the operating light source

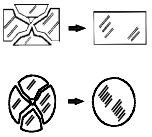

Do not interfere with the track of the operating fixture

Minimum distance of illuminated objects(m)



Rated maximum ambient temperature!


Don't install the fixture on the surfact of combustible materials!


Replace any cracked protective shields

Notes：

- The fixture is used professionally only, please don't used it for any other purposes.
- Please refer to the latest user manual before using the fixture.The fixture is out of warranty if problems are caused by any incorrect use or negligence of the user manual.
- The protection level rate is IP66.
- In order to avoid damage the fixture, it is required more than 1 person when moving the fixture. When hanging the fixture, the hanging device must be tested. The hanging device should be able to bear more than 6 times of weight of the fixture.
  Please make sure the housing and G-clamp are fixed and do not have damage after installed.
  Please use the safety chain to keep the fixture fixed on the truss safely.
- The fixture should be installed in a well-ventilated place. Keep the distance of the fixture and the obstacles more than 0.6 meter,and please check the fans and ventilation hole sare not blocked.

- Please don't install the fixture on the surfaces of the inflammable goods directly.
- Please check the voltage before the professional technicians install the fixture.
  The voltage must be the same with the voltage which marked on the fixture.
  Overloading protection or leakage protection are also required.
- When replacing the fuse of a fixture, please check whether the fuse meets the specified technical requirements. Do not replace or short-circuit it without allowed. Please confirm whether the input voltage meets the specified technical requirements and is correctly grounded before powering on.
- Please cut off the power supply when replacing the fuse.()
- Rated maximum ambient temperature when the fixture is working: ta = 40℃.
- The safe/shortest distance to the illuminate object:18m.
- When the fixture working stably, the maximum surface temperature: tc =100°C.
- The shortest safety distance to combustible material:0.7m.
- Please don't touch the fixture when it is working stably.It's highest surface temperature can reach 100°C.
- The fixture must be positioned in such a way that it is not subjected to prolonged observation from a distance of less than 15 meters.
- Please pay attention to severe or hazard damage caused by the shock from fire or heat, the UV violation, lamp explored or falling down.
- Please don’t look at the lighting fixture without any eye protection.
- Please don’t power off the lamp or cut off the power supply when it is working in 5mins, becauseof the special necessary of Metal halide discharge bubbles. Please reset it ormove it or open itafter power off for 15mins or cooling completely.
- Please change the lamp when it is damaged or thermal deformation.
- Please replace the protective cover and lens if any visible damage happened or the damage has reached the malfunction level.()
- The fixture must be installed, operated, and maintained by professionals strictly according to the user manual.
- All the information of the user manual is for your reference only. All fixtures should be subject to the actual product, which is subject to change without prior notice.

Package & Transportation

Fixture package

- Please cut off the power supply and cool it down for over 15minutes before packing the fixture.
- Lock the protection lock for tilt well.
- Please place the fixture in the plastic bag,and then carefully put it into the flight case vertically, the accessories are placed at special area inflight case,then close the lid and lock the flight case.Please don't put it upside down.

Transport protection lock

- Protective locks for tilt movement are installed in the fixture for safe transportation.

Unpacking

- Open the packing box, and then open the inner packing bag.
- Grasp the handle of the fixture, take it out from the case carefully.
- Unlock the protective lock before power on the fixture.

Notice: Please check the complete packge after received the fixture, please check whether the fixture is damaged or not during shipping after opened the packing. If the fixture is damaged during shipping, please don't use it first, and contact the manufacture/local technicians as soon as possible.

Accessories with fixture

Accessories	Qty
User Manual	1
Warranty Card	1
Safety Chain	1
Signal Cable	1
Power Cable	1

Product Technical Specifications

Electrical parameters

AC 200 - 240V 50 / 60 Hz

Rated Input Power:550W rated electrical current:2.75A,PF≥0.98

Light Source parameters

- Light source:PHILIPS MSD Platinum19 R LL
- Expected lifespan:5000Hrs

Optics parameters

- Lens:High-definition lens with anti-reflective film.
- Beam range: 1.8°

Effect configuration

- One frost filter with linear zoom and focused.
- 0-100% electronic dimming control.
- Fast strobe, multiple strobr options,pulse,asynchronism,synchronism,random slow, medium,fast speed.
- 2 prism(8-facet+24-facet circular)can be overlaying with multi-layer of beam effect, rotating in both directions.

Fixture movement

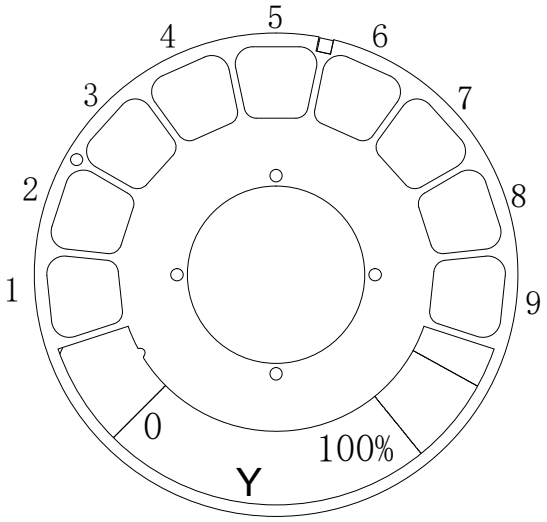
- PAN=540°, 16bit.
- TILT=255°, 16 bit.

Electronic Control

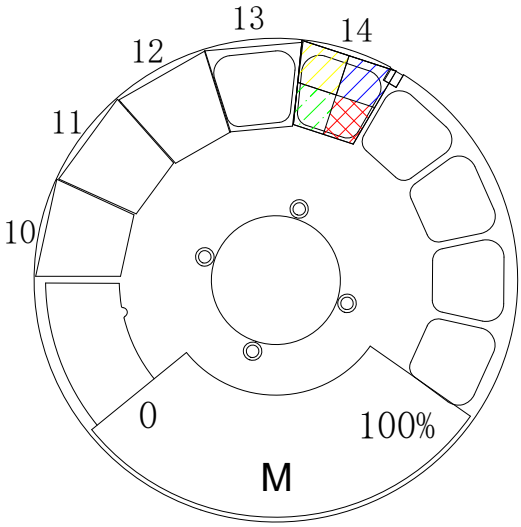
- Channel:20CH/23CH/29CH.
- Control Protocols:DMX512,RDM,Art-Net,sACN,wireless function(optional).
- Control Portals: XLR-3+ XLR-5; RJ45 (optional).
- Menu display: 1.77'' LCD screen; choice of Chinese and English language, menu available to be displayed 180° reversely.
- Electronic sensors testing, fan intelligent detect and controllable.
- Eco mode(sleep mode when standby)
- Non-touching magenetic encoder positionable system for pan/tilt.

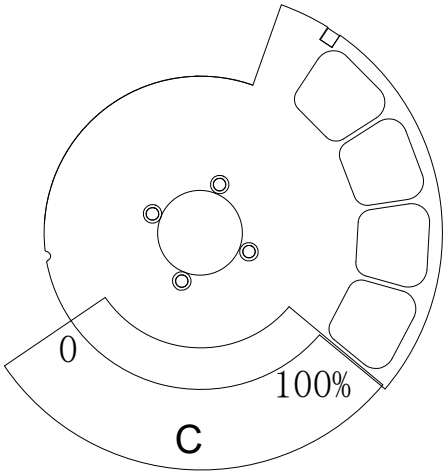
Color System

- CMY induction color mixing.
- 14 color filters plus open, can be indexed and rotated in both directions at different speeds, rainbow effect,stepping, sliding gradient color mode.



1.Red
2.Deep yellow
3.Blue-green
4.Purple-red
5.Green
6.Yellow-green
7.shallow yellow
8.Pink
9.Blue
10.Brown
11.Brown-yellow
12.Cooling
13.Light orchid purple
14.Tetrachromatic





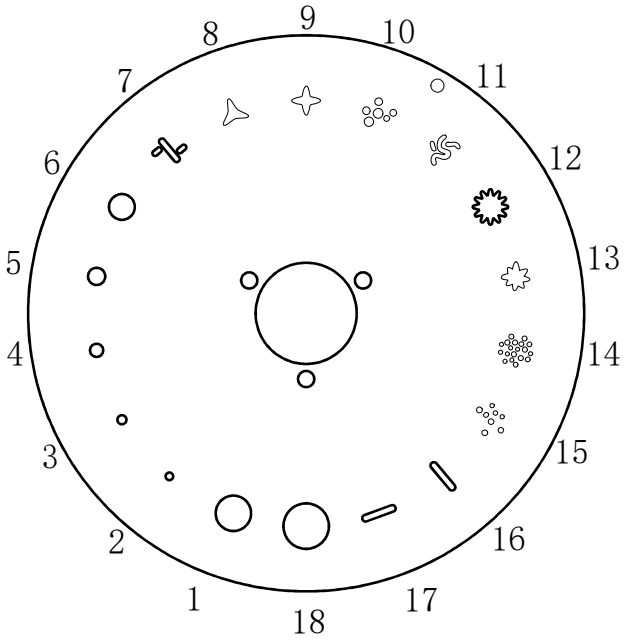
Pic1

Gobo System

Fixed Gobo Wheel

● One static gobo wheel with 18 gobos （7 round open),can create scrolling,shaking effects.

(Pic 2).

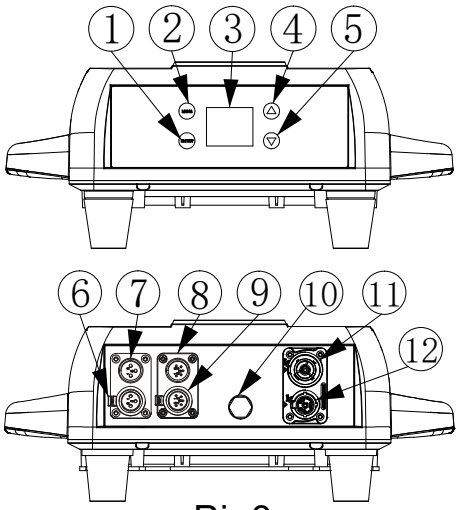


Pic2

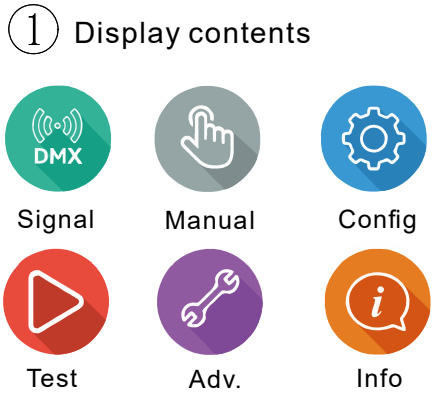
Fixture Size& Weight:

- Fixture size:362X362X608mm
- Net weight:24Kg
- Minimum and maximum ambient temperature:-20℃～40℃
- IP Grade:IP66

Operation Panel



Pic3



Pic4

As shown in pic 3:

1.Enter	4.Up	7.3-XLR DMX Input	10.Air valve
2.Menu(Return)	5.Down	8.5-XLR DMX Input	11.Power Output
3.LCD display	6.3-XLR DMX Output	9.5-XLR DMX Output	12.Power Input

Operation Panel Instructions

- Up Direction key:Select Sub-menu cyclically(upward).Circulate downward to adjust data value.
- Down Direction key: Select Sub-menu cyclically (downward). Circulate downward to adjust data value.
- Left Direction key(Back):Back to menu.
- Right Direction key(Confirm):Confirm the selected data value reselect cyclical data window。
- Unlock code for black screen:Menu-Up-Enter-Down.

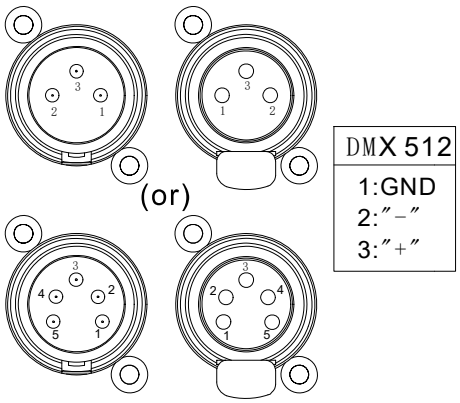
Detailed Operation Table of Display panel

Signal 	Dmx Address	001-512	
	Ch.Mode		XXCH,XXCH, XXCH
	No Signal St.		DataHold,BlackOut
Manual 	Ch. Ctrl		
		.....	.....
		.....	.....
		.....	.....
	Lamp Ctrl		Close/Open
	Fix.Rst		Off/Run
Config 	Pan Reverse		Close/Open
	Tilt Reverse		Close/Open
	Lost Correct		Open/Close
	PT Speed		Fast/Normal
	Disp Off		60s/Always
	Disp Flip		Close/Open
	Disp Lang.		ENG
	Sleep Mode		Close/Open
	Key Baklight		000-015
	key Lock		Open/Close
Test 	Fixture Demo		
			Stop
			SingleRun
			CycleRun
Adv. 	MAINT Password		000-255
	Bright Time Rst		Off/Run
	Load Facto		Off/Run
	Calibration		
		.....	.....
	Restore Opt		
		Clear All Offset	Off/Run
		ToT Time Rst	Off/Run
		Panel Inqur.	xxxxxxxx
		XY Drv Comm.	xxxxxxxx

		MotDrv Comm.	xxxxxxxx
		PAN T.	xxxxxxxx
		XY T.	xxxxxxxx
		MT T.	xxxxxxxx
Info 	Time Info		
		PowOn Time	xxxxH
		Bright Time	xxxxH
		Total Time	xxxxH
	Soft Ver.		
		Panel	xxxxxxxxxxxx
		XY Drv	xxxxxxxxxxxx
		MotDrv	xxxxxxxxxxxx
		GsenDRV	xxxxxxxxxxxx
	Temperature		
		Panel	xxx℃
		XY Drv	xxx℃
		MotDrv	xxx℃
	Fan Speed		
		Left fan	xxxx
		Right fan	xxxx
	Error Info		No Error Message
	Gsens Deg	xxx°	
	Manufacture ID		XXXXX
	RDM UID		xxxxxxh

Signal connection

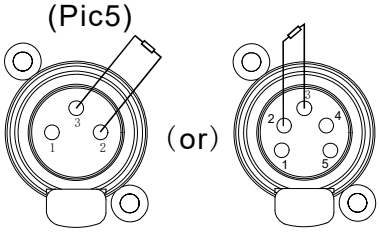
The fixture adopts 3pin/5pin socket to control DMX input and output,Pin1 is connected to grounded, Pin2 is connected to"-", Pin3 is connected to"+"(Pic5).



(Pic5)

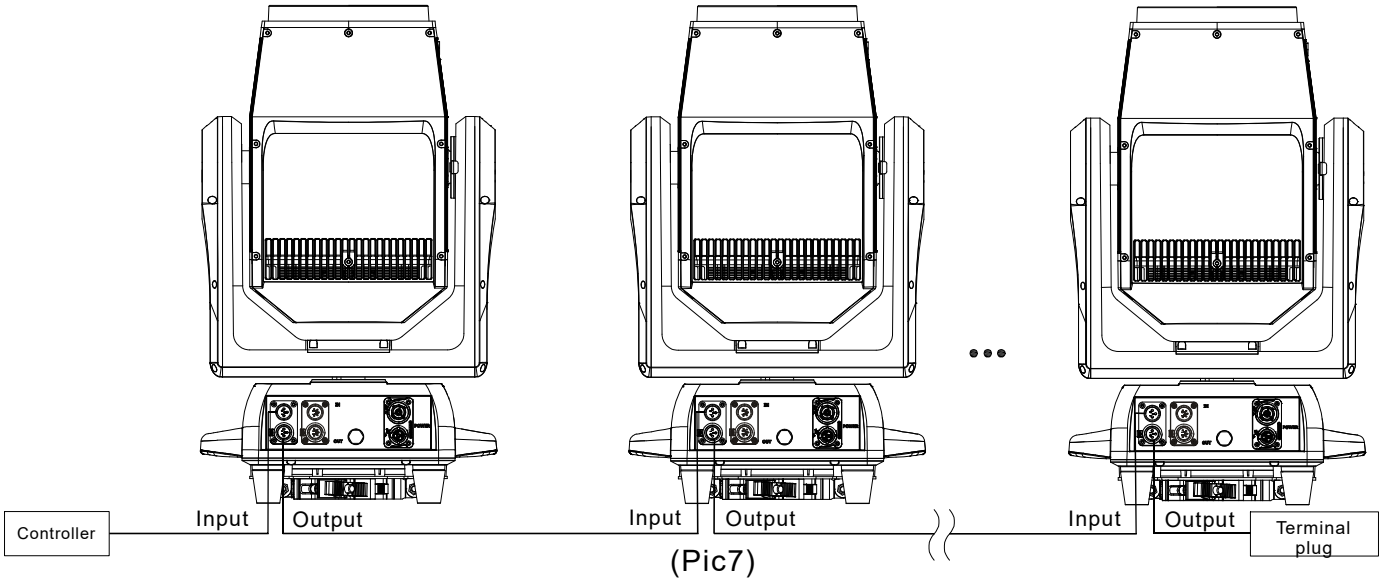
Please adopt professional DMX512 STP signal cable, usually its effective range is within 150m. When long distance signal transmission is required, please add DMX 512 signal amplifier.

To avoid the signal reflection during the transmission, please add a terminal which is 120Ω 1/4W resistance between DMX output pin2 and pin 3 of the last fixture. Plug the pin to the DMX output connector of the last fixture. (Pic6)



Terminal plug(Pic6)

Connect the fixture from the DMX output of controller to DMX input of the first fixture, and then connect the first fixture's DMX output to the second fixture's DMX input and so on, until all fixtures are being connected. Then please install a terminal plug in DMX output of the last fixture. (Pic 6) The method of connection as show bellow. (Pic 7)



(Pic7)

Notice:
- Don't use multi- output connecter for connecting separately, It must connect the branch with DMX512 signal amplifier to separate them if it is required.
- Standard amplifier cable is not reliable for long-distance date transmission; Please adopt professional DMX 512 STP signal cable.
- The signal of the fixture only has one input and one output. Two input/output for each fixture are not available.

Power connection

Input voltage and frequency must be identical to the voltage and frequency marked on the fixture. When many fixtures are working at the same time, it is strongly recommended to control each fixture on/off individually.

Connection type

	Live or L	Neutral or N	Earth, Ground or ⏚
US system	Black	White	Green
EU system	Brown	Blue	Yellow/green

Notice:

- When connect power supply, please make sure the E line (yellow &green.) is properly connected. And it is corresponded with the relative electrical installation standards.
- Insulation class between LV power supply and controlling conductor: Ⅰ
- Please confirm the voltage of the power supply is corresponded to the voltage on the fixture's identifications before professionals install it. Please also make sure it has overload or leakage protection.
- If the external cable is damaged, don't change it by yourself, please contact the manufacture/local as soon as possible.
- AC220V:Lighting fixture connection not surpass 4 units(2.5mm²).

Installation instruction& requirement

The user need to arrange regular safety inspection for the fixtures and parts that areconnected to the fixture.Please have professionals to operate if operating conditions and professional instructions are insufficient.Incorrect installation by non-professionals may leading to property loss or life danger.

Make sure there is no damage to rigging and clamps and they can bear at least 6 times weight of the fixture.Check if the truss or pipe construction can bear at least 6 times total weight of all equipment,like clamps,cables and other accessories.

G-clamp Installation

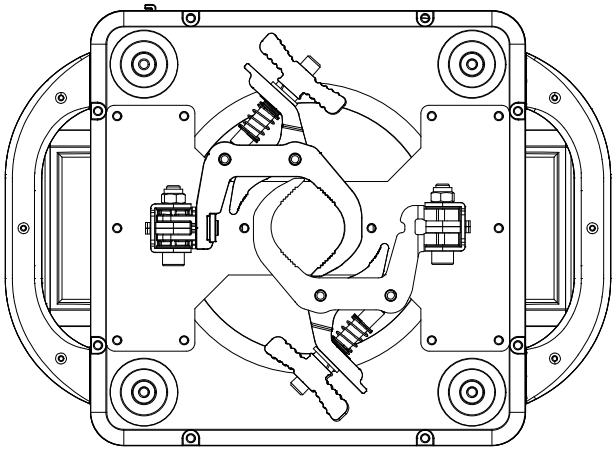
The G-clamp is integrated with the fixture.（Pic8）

Fixture Installation

Fixture is installed on the stage or truss, and the G-clamp can be locked on the truss tightly and quickly. (Pic 9)

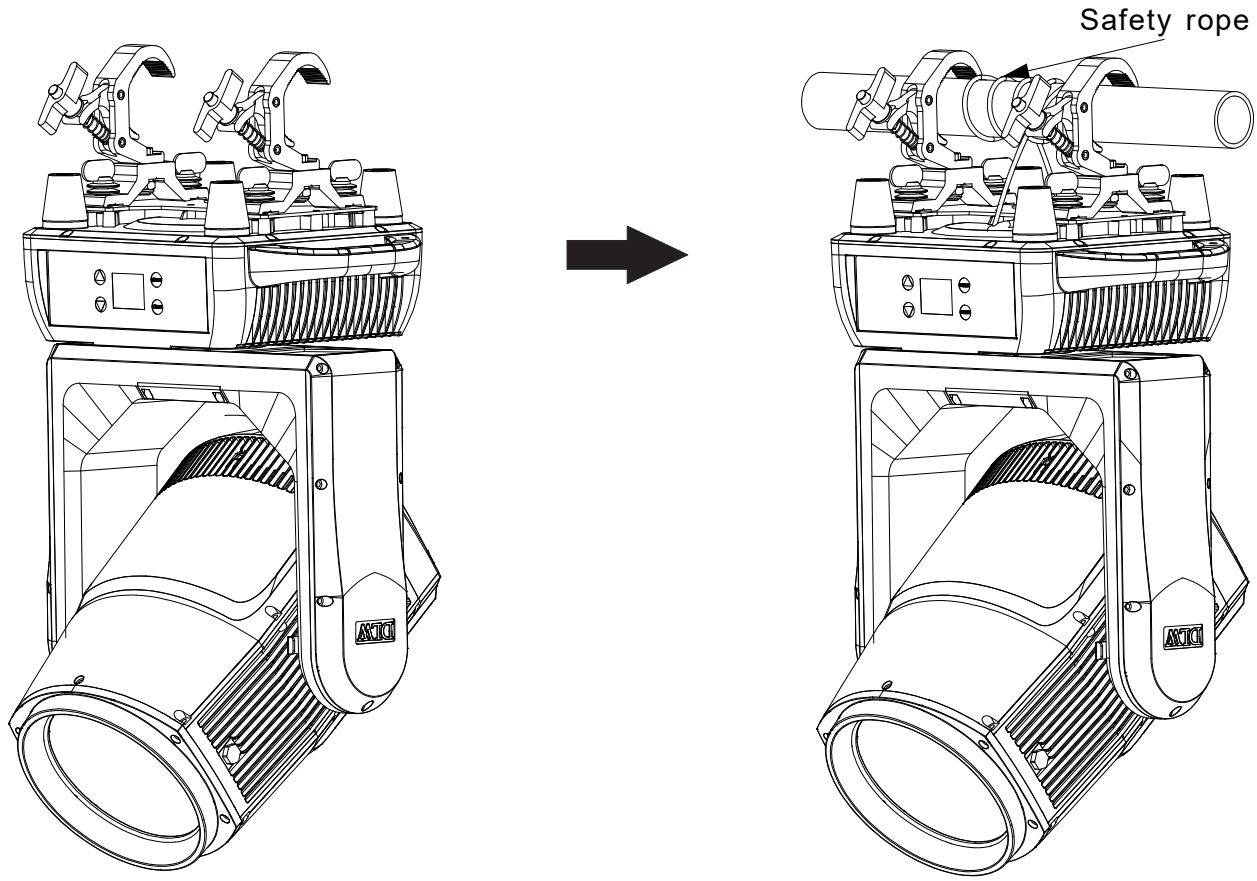
Notice:

- User must check if the G-clamp and safety chain are damaged or not.
- The fixture must be fixed by 2 G-clamps, clockwise turning them to fast-lock tightly, and adding a safety chain to connect the hole in the base, don't connect it to the handle.
- Please unlock the lock of tilt before power on.
- Side hanging for long time is not recommended.



Pan position

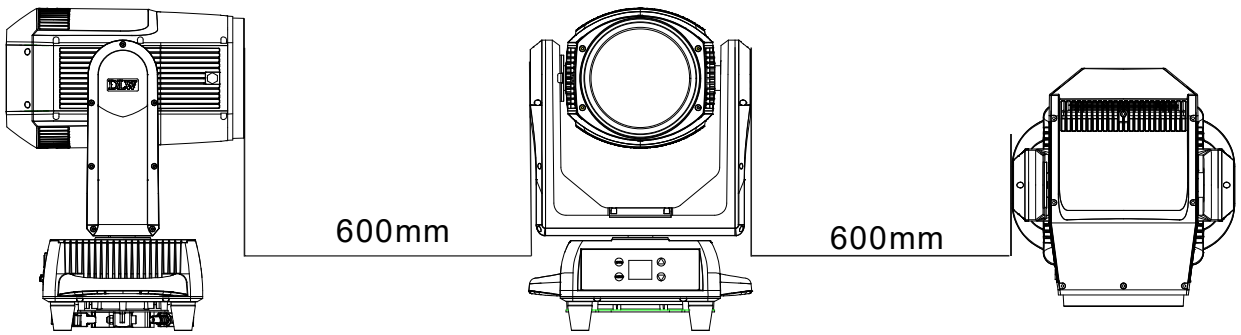
Pic8



Pic9

Fixture Placement

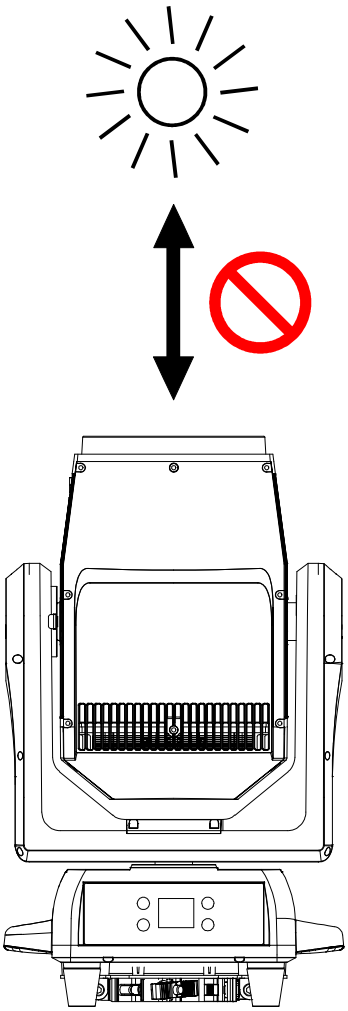
When place the fixture, please check there is no inflammable object or inflammable material around the fixture. Then place the fixture vertically upward. The shortest safety distance for adjacent fixtures is ≥0.6 m when they are working.Fixtures installation show as follow(pic 11).



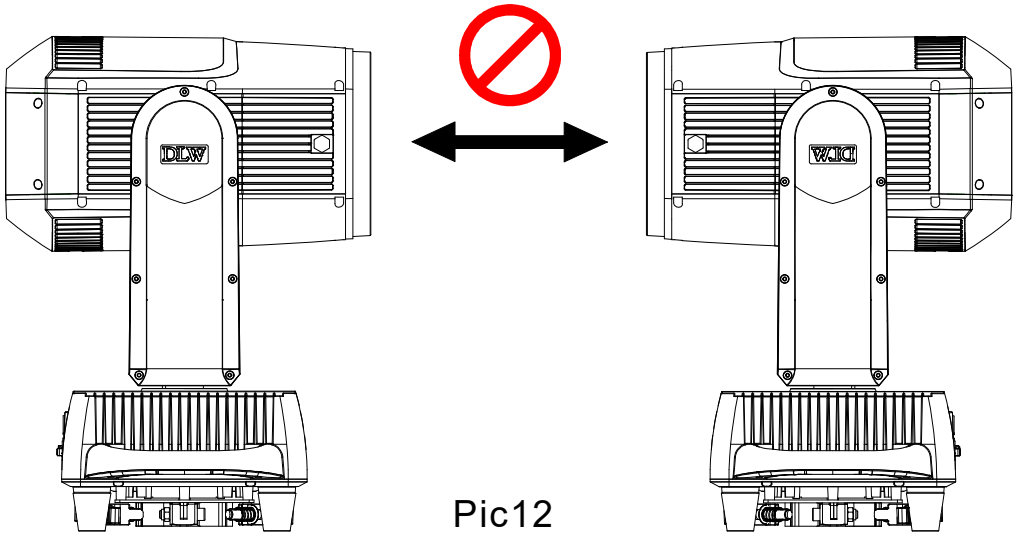
Pic10

Do not expose to strong light

- To prevent damage to the internal components of the light fixture, direct sunlight or other strong light should not be directed at the front lens of the light fixture.(Pic11)
- Direct beams from two light fixtures must be prevented from shining directly at each other. (Pic12)



Pic11



Pic12

Lamp Installation

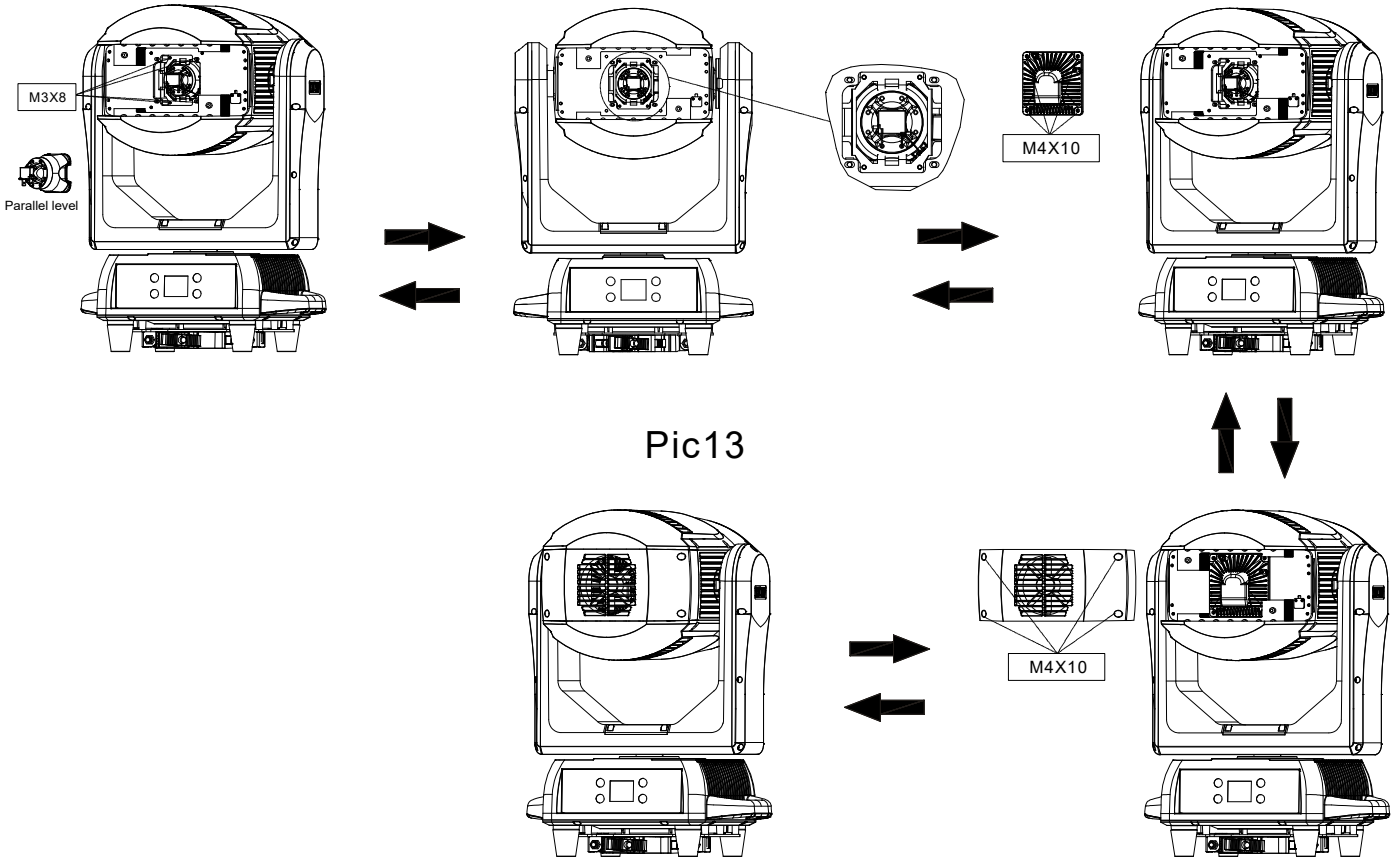
- Light source: PHILIPS MSD Platinum19 R LL

Replace the lamp

●When the lamp is on, please turn off the lamp, wait for the lamp is cooled sufficiently (usually 15 minutes) then cut off the electricity, and lock the tilt lock of the arm on pan position (Pic 13).

●When installing the lamp, please lock the fixture with tilt 90°, and avoid the internal wall of lamp touch the metal plate, gently place the lamp into the lamp slot holder with parallel level, hold the lamp tight, push it in and give some pressure on the elastic pad, check if the angles of lamp are locked well. The installation of lamp is completed if it is locked well, otherwise it is not. Lock the fixture with tilt 90° then install the housing (Pic 13).

- When dismantle the lamp, lock the fixture with tilt 90° then dismantle the housing first, and then take out the fan, unscrew the screws for fixing the lamp, hold the lamp tight and give some pressure on the elastic pad, and wait till the other two angles of lamp are out then take out the lamp with angle of parallel level. Please pay attention and avoid the clip touch the internal wall of lamp (Pic 13).



Pic13

DMX Channel Sheet (Brief)

Channel	20CH	23CH	29CH
1	Pan	Pan	Pan
2	Pan Fine	Pan Fine	Pan Fine
3	Tilt	Tilt	Tilt
4	Tilt Fine	Tilt Fine	Tilt Fine
5	Strobe	Reserved	Strobe
6	Dimmer	Reserved	Dimmer
7	Dimmer Fine	Strobe	Dimmer Fine
8	Focus	Dimmer	Focus
9	Cyan	Dimmer Fine	Focus Fine
10	Magenta	Focus	Cyan
11	Yellow	Cyan	Cyan Fine
12	Color Wheel	Magenta	Magenta
13	Fixed Gobo	Yellow	Magenta Fine
14	Prism1	Color Wheel	Yellow
15	Prism1 Rotate	Reserved	Yellow Fine
16	Prism2	Reserved	Color Wheel
17	Prism2 Rotate	Fixed Gobo	Fixed Gobo
18	Reserved	Prism1	Prism1
19	Frost	Prism1 Rotate	Prism1 Rotate
20	Fixture control	Prism2	Prism1 Rotate Fine
21	-	Prism2 Rotate	Prism2
22	-	Frost	Prism2 Rotate
23	-	Fixture control	Prism2 Rotate Fine
24	-	-	Frost
25	-	-	Fixture control
26	-	-	Pan/Tilt speed
27	-	-	Color speed
28	-	-	Focus/zoom speed
29	-	-	Gobo speed

DMX Specific Channel Sheet

20CH	23CH	29CH	Specifications	DMX Value	Function
1	1	1	Pan	0-255	0°->540°
2	2	2	Pan Fine		
3	3	3	Tilt	0-255	0°->255°
4	4	4	Tilt Fine		
-	5	-	Reserved	-	
-	6	-	Reserved	-	
5	7	5	Strobe	0-19	Closed
				20-49	Open
				50-200	Strobe from slow to fast
				201-210	Strobe from slow to fast
				211-255	Random strobe from slow to fast
6	8	6	Dimmer	0-255	Closed-open(0%-100%)
7	9	7	Dimmer Fine		
8	10	8	Focus	0-255	From far to near
-	-	9	Focus Fine		
9	11	10	Cyan	0-255	Cyan Linear movenent 0-100%
-	-	11	Cyan Fine		
10	12	12	Magenta	0-255	Magenta Linear movenent 0-100%
-	-	13	Magenta Fine		
11	13	14	Yellow	0-255	Yellow Linear movenent 0-100%
-	-	15	Yellow Fine		
12	14	16	Color Wheel	0-70	Color wheel linear movenen
				71-74	Open
				75-78	Color1
				79-82	Color2
				83-86	Color3
				87-90	Color4
				91-94	Color5
				95-98	Color6
				99-102	Color7
				103-106	Color8
				107-110	Color9
				111-114	Color10
				115-118	Color11
				119-122	Color12
				123-126	Color13

				127-130	Color14
				131-135	Open
				136-165	Clockwise rotation from fast to slow(Yellow Wheel)
				166-195	Anti-clockwise rotation from slow to fast (Yellow Wheel)
				196-225	Clockwise rotation from fast to slow(Magenta Wheel)
				226-255	Anti-clockwise rotation from slow to fast (Magenta Wheel)
18	15	-	Reserved	-	-
-	16	-	Reserved	-	-
13	17	17	Fixed Gobo	0-3	Open
				4-7	Gobo 1
				8-11	Gobo 2
				12-15	Gobo 3
				16-19	Gobo 4
				20-23	Gobo 5
				24-27	Gobo 6
				28-31	Gobo 7
				32-35	Gobo 8
				36-39	Gobo 9
				40-43	Gobo 10
				44-47	Gobo 11
				48-51	Gobo 12
				52-55	Gobo 13
				56-59	Gobo 14
				60-63	Gobo 15
				64-67	Gobo 16
				68-71	Gobo 17
				72-77	Gobo1 shake from slow to fast
				78-83	Gobo2 shake from slow to fast
				84-89	Gobo3 shake from slow to fast
				90-95	Gobo4 shake from slow to fast
				96-101	Gobo5 shake from slow to fast
				102-107	Gobo6 shake from slow to fast
				108-113	Gobo7 shake from slow to fast
				114-119	Gobo8 shake from slow to fast
				120-125	Gobo9 shake from slow to fast
				126-131	Gobo10 shake from slow to fast
				132-137	Gobo11 shake from slow to fast

				138-143	Gobo12 shake from slow to fast
				144-149	Gobo13 shake from slow to fast
				150-155	Gobo14 shake from slow to fast
				156-161	Gobo15 shake from slow to fast
				162-167	Gobo16 shake from slow to fast
				168-172	Gobo17 shake from slow to fast
				173-213	Anti-clockwise rotation from fast to slow
				214-255	Clockwise rotation from slow to fast
14	18	18	Prism1	0-127	Open
				128-255	Prism1 insert
15	19	19	Prism1 Rotate	0-127	Indexing(0-360Degree)
				128-190	Rotation from fast to slow
				191-192	Stop rotate
				193-255	Rotation fast back from slow to fast
-	-	20	Prism1 Rotate Fine		
16	20	21	Prism2	0-127	Open
				128-255	Prism2 insert
17	21	22	Prism2 Rotate	0-127	Indexing(0-360Degree)
				128-190	Rotation from fast to slow
				191-192	Stop rotate
				193-255	Rotation fast back from slow to fast
-	-	23	Prism2 Rotate Fine		
19	22	24	Frost	0-127	Null
				128-255	Frost insert
20	23	25	Fixture control	0-7	Null
				8	Test mode
				9	Null
				10-14	Fixture reset
				15-29	Specification reset
				30-34	Pan-tilt reset
				35-39	Reserved
				40-44	Lamp on
				45-49	Lamp off
				50-255	Reserved
-	-	26	Pan/Tilt speed	0-255	Stepping time from fast to slow
-	-	27	Color speed	0-255	Stepping time from fast to slow
-	-	28	Focus/zoom speed	0-255	Stepping time from fast to slow
-	-	29	Gobo speed	0-255	Stepping time from fast to slow

Maintenance & cleaning of the fixture

The fixture needs to be maintained and cleaned daily, because its lifespan depends on working environment and daily maintenance. Please contact our company engineer for any questions and feedback which are out of this user manual to our professional engineer.

Notes as bellow: 

- The power supply must be cut off before open the shell.
- Please open the shell after the fixture cooled completely
- Cleaning the optics components gently to avoid scratching the surface coating, To avoid damaging plastic and scratching the surface coating, Please don't use any harmful liquid or hard objects.
- Wiping the particulate Matter with tasteless tissue-paper or cotton cloth with clean, distilled water. Don't wipe the surface, but blow away floating things with pressure gas, any residues must be cleaned with distilled water from center to edge, and then dry it with soft cotton cloth.
- Please change the lens in time when it cracks or has other damages
- It is out of warranty any damage caused by fan with overmuch dust, smoke fluidity and abnormal using fixture.
- There is temperature protection device of the fixture, when the temperature is so high that the lamp is off automatically, when this happens, please check the fan is working well or not, checking he fan filter is blocked by dust. Only reset the fixture after the qualified professional technicians troubleshoot well.
- Weekly cleaning and maintenance for the fan filters and lens is recommended.Please do a complete maintenance half a year.

Troubleshooting

The following are some problems in process of operation, and there are some suggestions for troubleshooting:

Fixture doesn't response, when power on

- Check if power input is normal.
- Check if power switch is on.
- Check if fuse is burned.

Console losing control:

- Check if the display is flicker, if yes, check if DMX signal connector and signal cable are connected well.
- If the display is not flickering,but the fixture is still have no response to the control channel instructions,please check if IP address is correctly set.
- If DMX signal is not stable, please check XLR socket and signal cable are connected well.
- Change another console for testing.

channel failure:

- Step motor or motor leading wire Maybe damaged.
- Drive circuit of motor may be damaged.

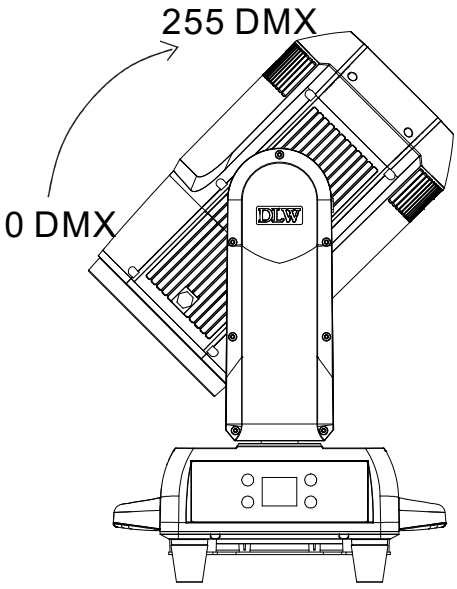
Lamp blinking:

- Check if the voltage is too high or too low, when the lamp is abnormal lighting.
- It is necessary to change the fan if the inner temperature is too high.

Attachment 1 : Angle range and the measurement figure of the fixture

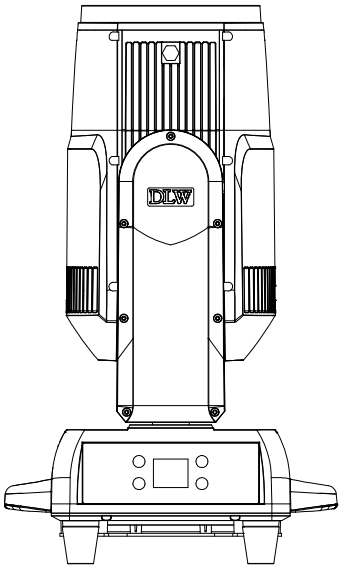
● **Angle range of the fixture**

Tilt= 0 DMX



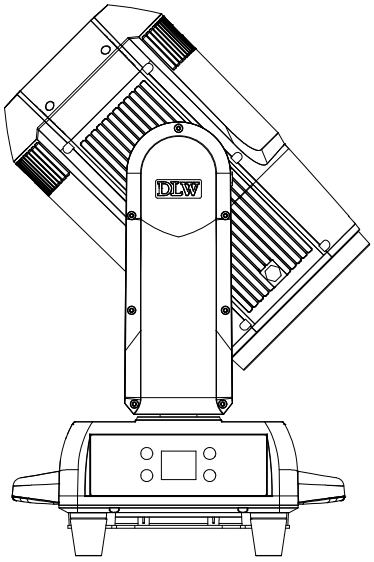
Dispaly
Pan= 0 DMX

Tilt= 128 DMX



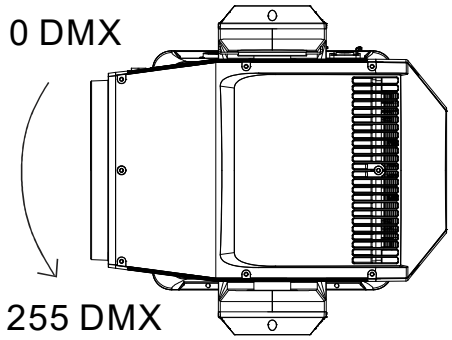
Dispaly
Pan= 0 DMX

Tilt= 255 DMX



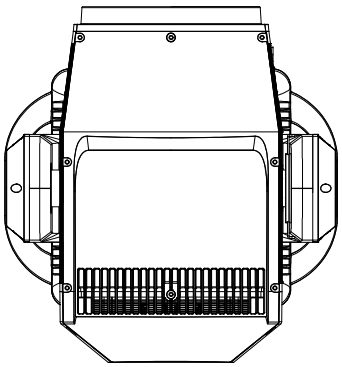
Dispaly
Pan= 0 DMX

Pan= 0 DMX
Power cord



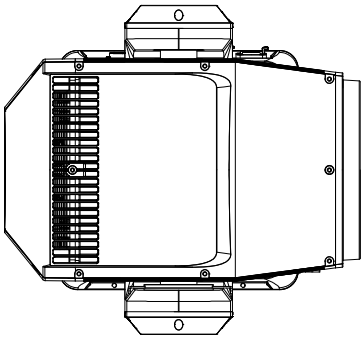
Dispaly
Tilt= 45 DMX

Pan= 128 DMX
Power cord

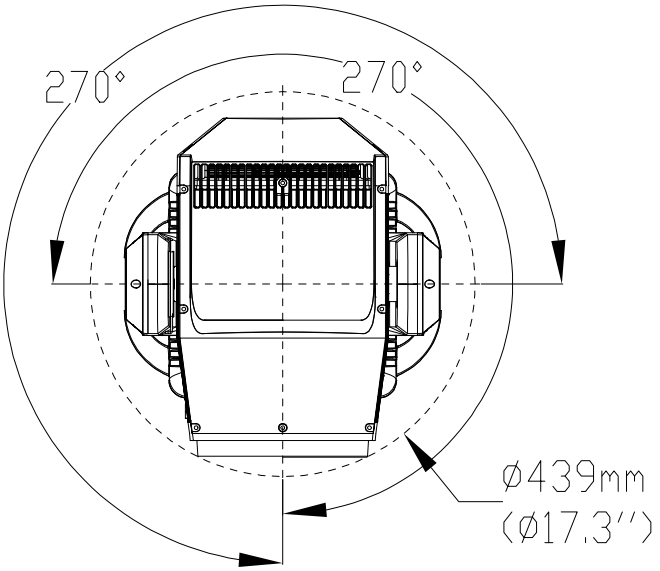


Dispaly
Tilt= 45 DMX

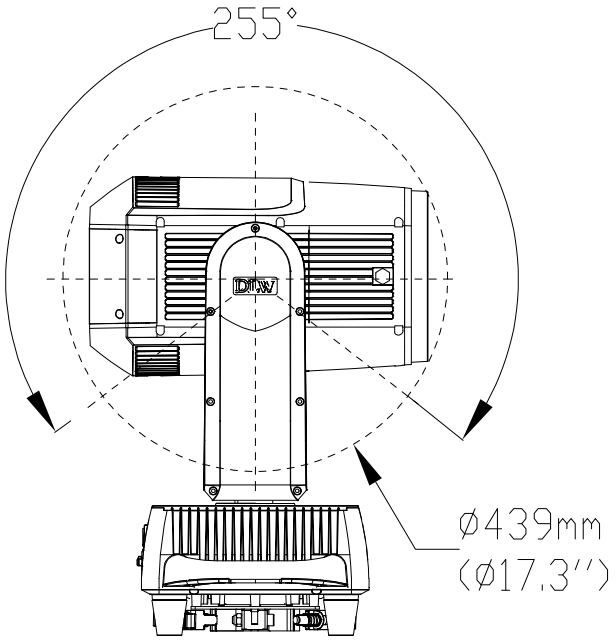
Pan= 255 DMX
Power cord



Dispaly
Tilt= 45 DMX

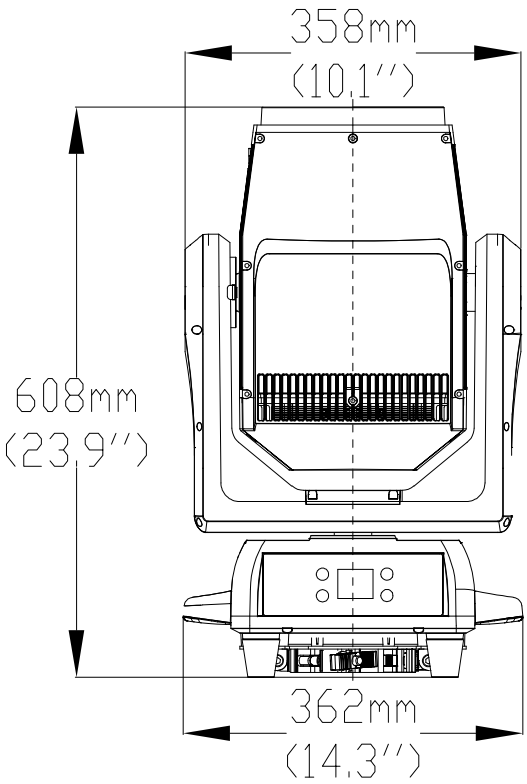


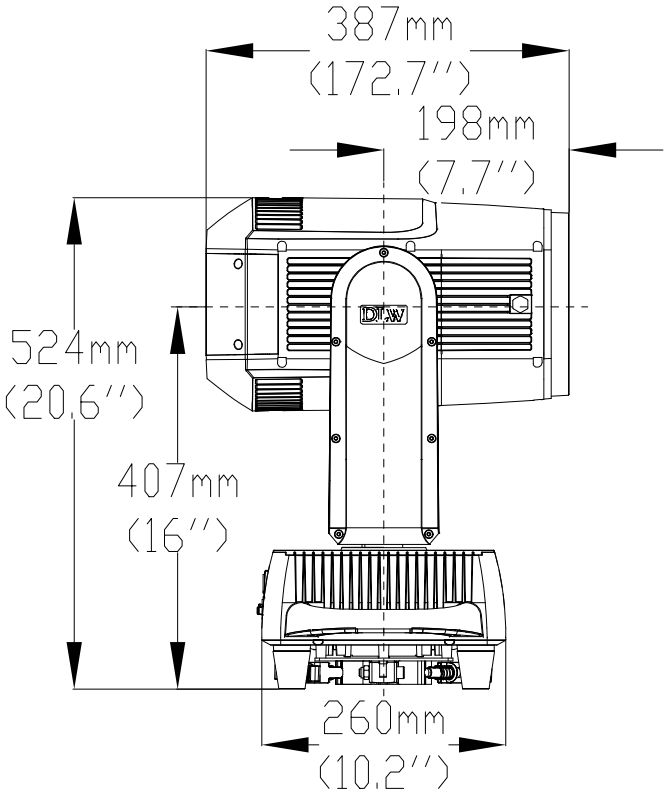
Pan position



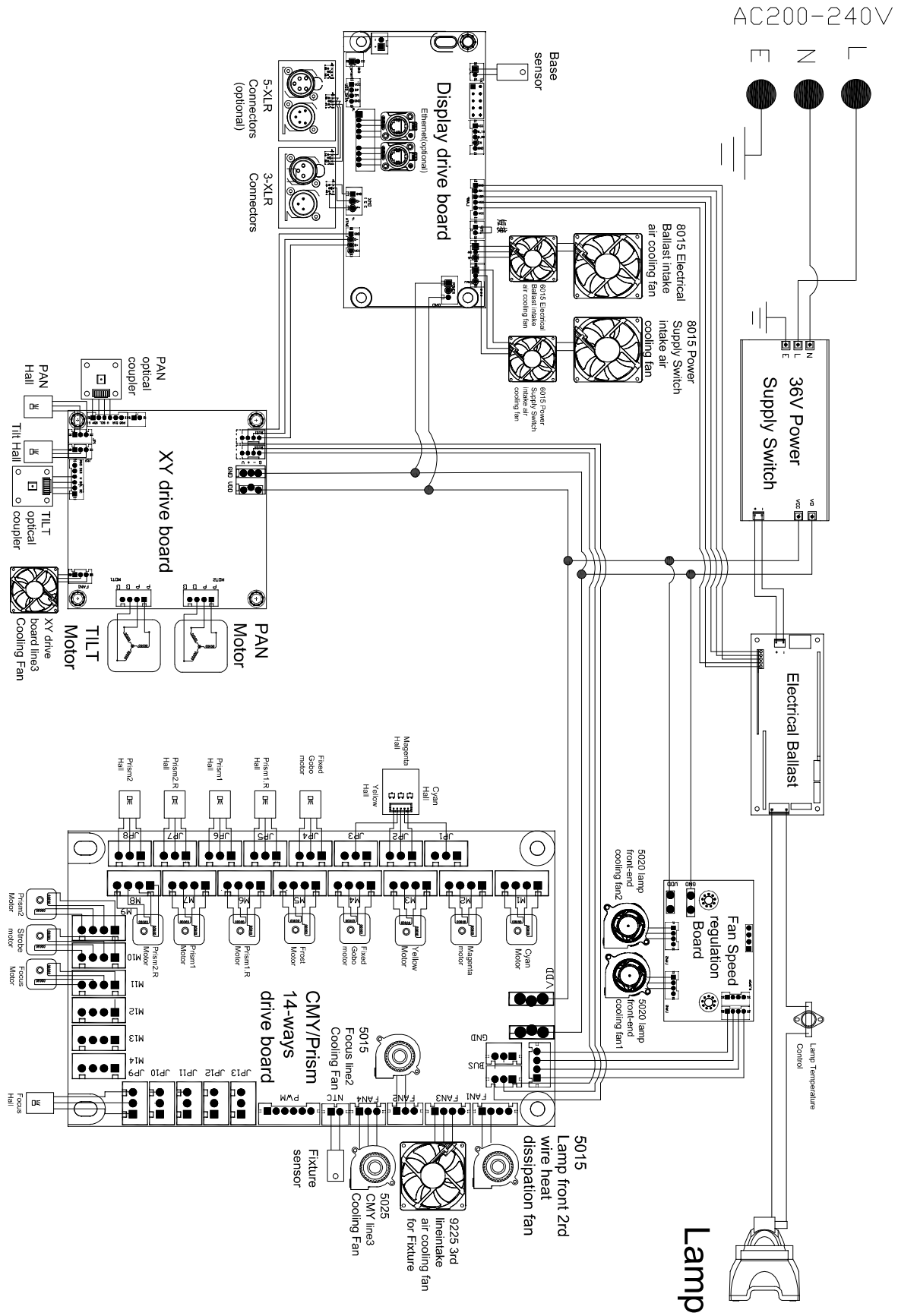
Tilt position

● **The measurement figure of the fixture**





Attachment 2 : Electrical Diagram



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