

GTD-F5 EP

User Manual

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www.gtd-lighting.com

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1. Safety instructions

Before using the fixture, read the latest version of the product user manual, paying particular attention to the safety instructions. Please check www.gtd-lighting.com for the latest revision/update of the user manual.



The manufacture of this fixture, are not responsible for damages, resulting from misuse of this fixture, due to the disregard of the information printed in this user manual.



DANGER!

Hazardous voltage. Risk of lethal or severe electric shock



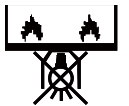
WARNING!

Wear protective eyewear. Never look directly into the light source.



WARNING!

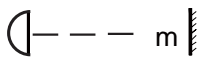
Burn hazard. Hot surface. Do not touch.



Only to direct mounting on non-combustible surfaces.



Replace all cracked glass shields.



Minimum distance to lighted objects.

$t_a \dots ^\circ\text{C}$

Maximum ambient temperature.

$t_c \dots ^\circ\text{C}$

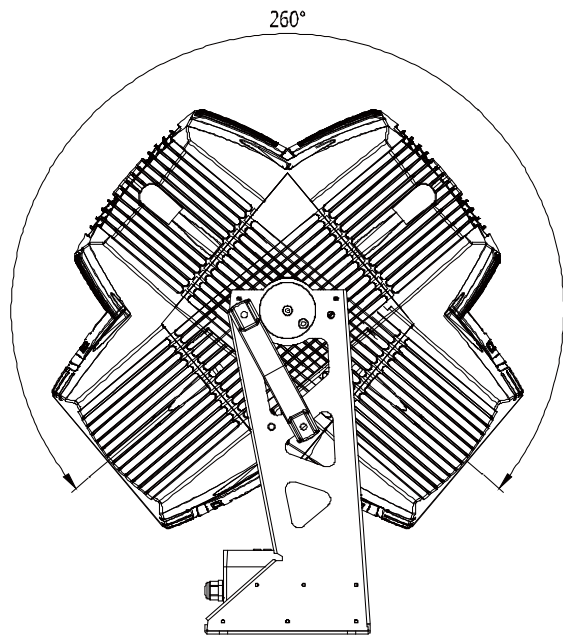
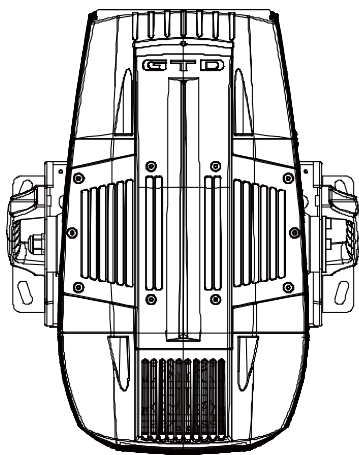
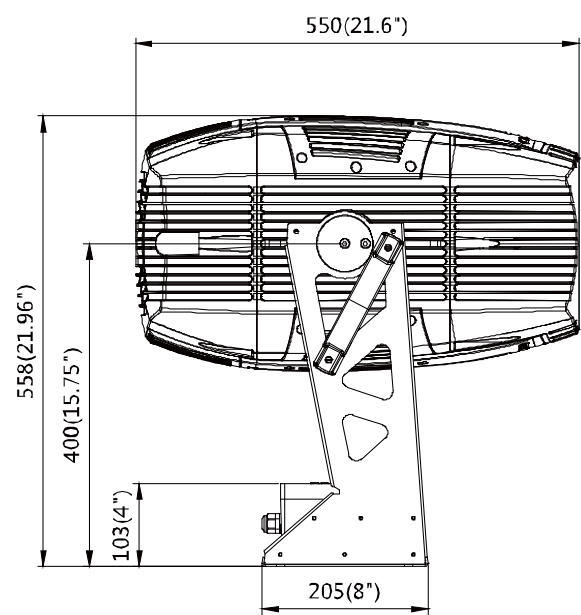
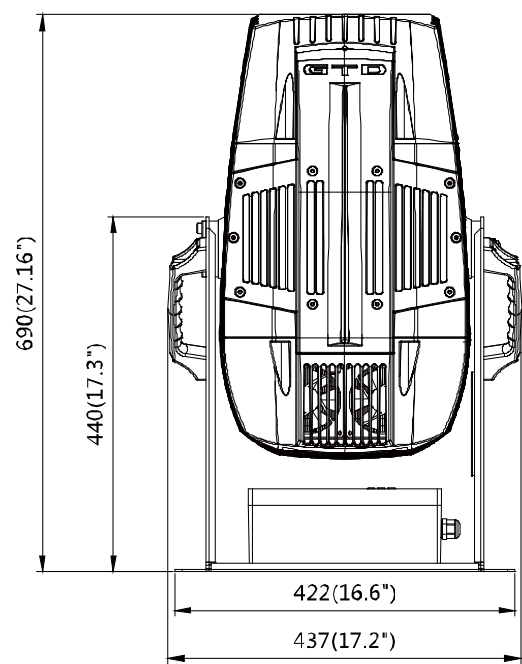
Maximum temp of the external surface.

General guidelines

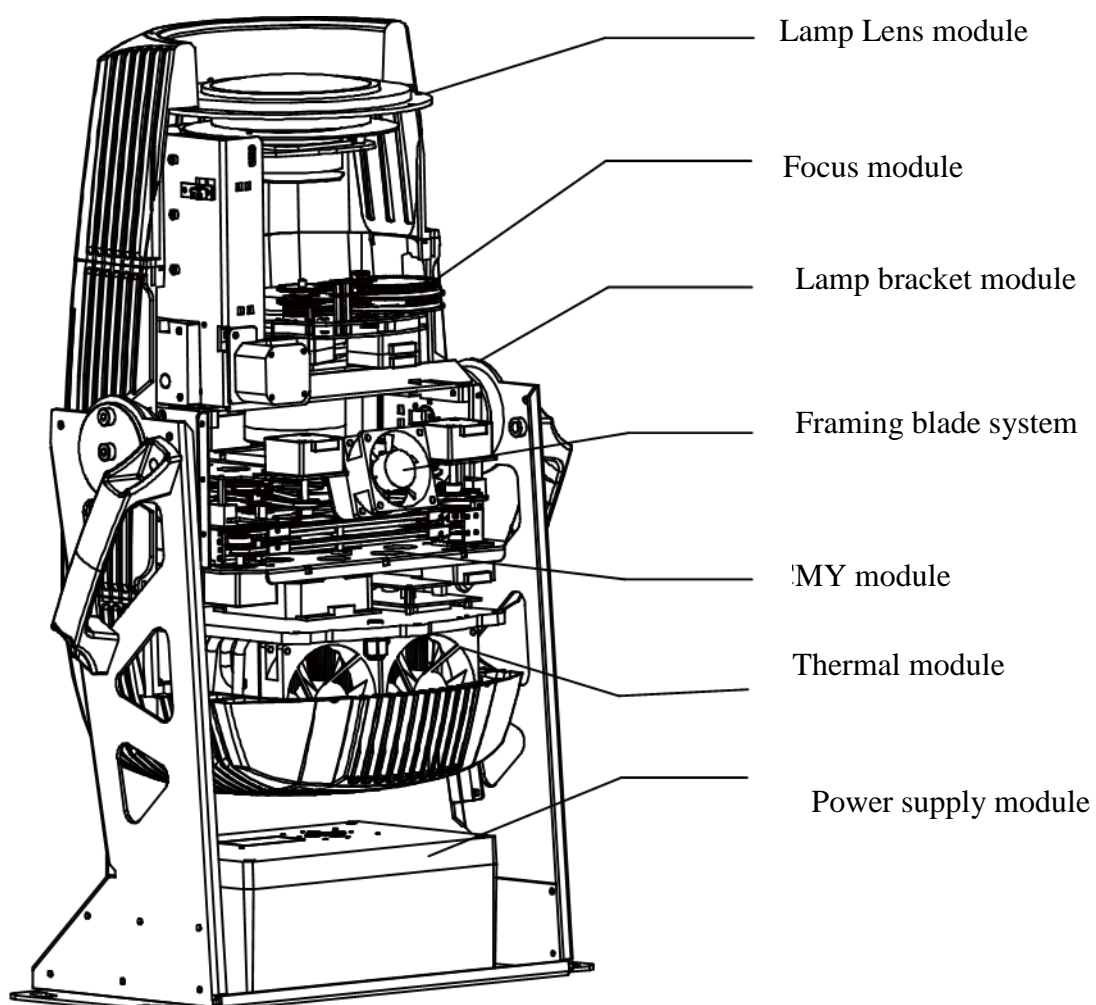
- The protection rating of this product IP66.
- Never open this fixture while it is in use.
- The fixture should be kept clean. DO NOT operate the fixture in extreme heat or dusty environments. Avoid contact with chemical liquid.
- Minimum distance to lighted objects must be 16.4 feet (5m).
- Maximum temp of the external surface 158°F (70°C).
- Maximum ambient temperature 194°F (90°C) .
- Minimum distance of inflammable materials from the surface 1.6 4feet (0.5m).
- Lamp should be replaced if damaged or distorted in shape due to extreme heat.
- Cover, prism or LCD Menu Function Display with visible damages such as cracks or scratches must be replaced to ensure performance of the fixture.
- Disconnect the fixture from power before changing any parts or accessories.
- Basic insulation should be maintained between the controllable device and the product power supply.
- Make sure that the installation area can hold a minimum point load of 10 times the weight of all installed fixtures, clamps, cables, auxiliary equipment, etc. Make sure that the cover, clamps and locks are undamaged. Certified safety cables must always be used when installing the fixture.
- The fixture is only intended for installation, operation and maintenance by qualified professional. Instructions stated in the manual must be complied.
- The fixture must be kept in a well-ventilated place at least 50 cm away from any wall surface. Check if the fans or ventilation openings are unblocked.
- This fixture uses discharge lamp. Avoiding reduce the lamp's life, wait at least 15 minutes after powering off to allow the unit to cool down before handling.
- To ensure operational safety, broken or damaged cables and light source can only be fixed or replaced by certified technicians, certified local distributors or the manufacturer.
- Do not stick filters or other materials onto the lens. Do not modify the fixture or install other than GTD manufactured parts.
- For questions regarding safety operation, please contact our technical personnel or call the service hotline +862061808296.

2. Production instructions

2.1 Dimensions



2.2 Fixture overview



2.3 Accessories

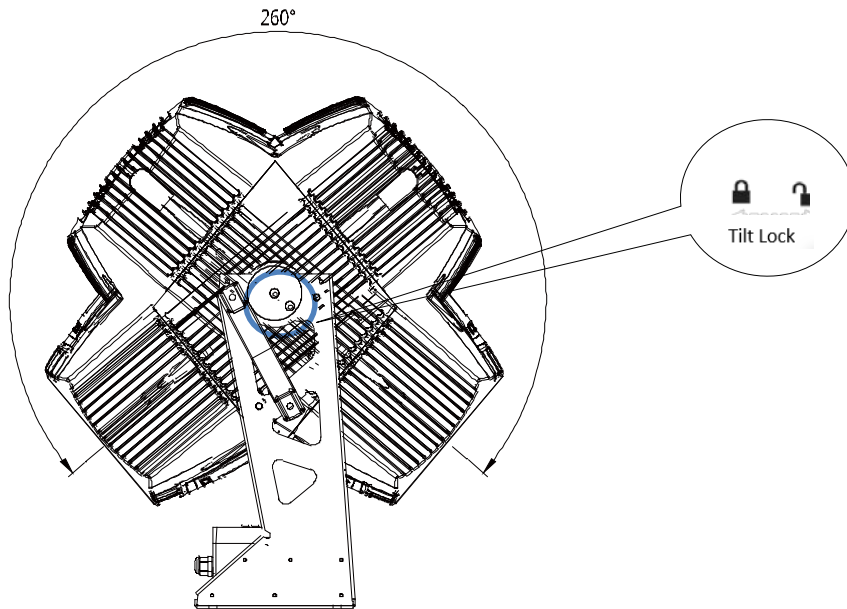
Item	Qty	Unit	Remark
User Manual	1	Pc	--
Safety cable	1	Pc	Φ5*60cm 7*19 pc with hook Material: Steel
3-pins signal line	1	Set	--
Clamps	2	Set	02A+21A 42-52mm weight-load 200KG

3. Packing and shipping

3.1 Protection lock

Pan and tilt locks are equipped to ensure safe transportation.

The horizontal axis has 4 locking points and the vertical axis has 5 locking points.



3.2 Unpacking

⚠ Notes

All products are quality controlled before they dispatched to customers. If the fixture is damaged during delivery, the customer must notify the shipper and manufacturer to file a damage insurance claim. Photographic evidence of the damage must be provided.

Cardboard box(specification: 635*545*635mm): Open the box and take out the whole set of packaging foam which are contained both the fixture and its accessories. Remove the foam from the top, put away the accessories, and then take out the fixture wrapped in the plastic bag.

⚠ Notes

Check if the pan and tilt are locked before connecting the fixture to power.

3.3 Packing after use

1. Switch off the fixture and wait for at least 5 minutes before disconnecting it from AC power. Cool down the fixture for at least 15 minutes before packing.
2. Lock pan and tilt.
3. Flight case: Wrap the fixture in plastic bags. Gripping the handle and then place it in the flight case along with all the accessories carefully. Close the cover lid. The wrap page are not allowed over 3 layers. Do not upside down.
4. Cardboard box: Wrap the fixture in plastic bags. Put it in the packaging foam along with all the accessories. Place the other set of packaging foam on top then put it carefully in the cardboard box.

4. Installation

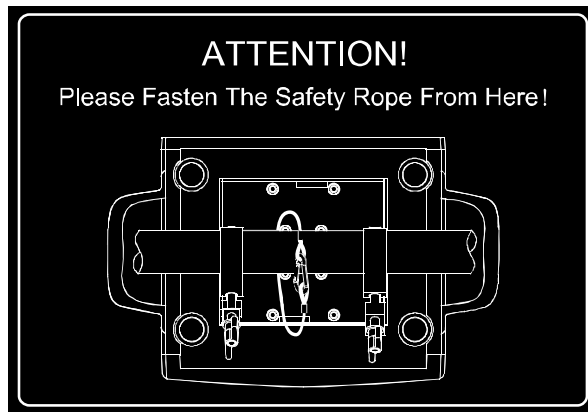
4.1 Clamps installation

The fixture can be placed on the stage or mounted on the truss which faces any direction. Attach the clamps to the mounting position on the base of the fixture.

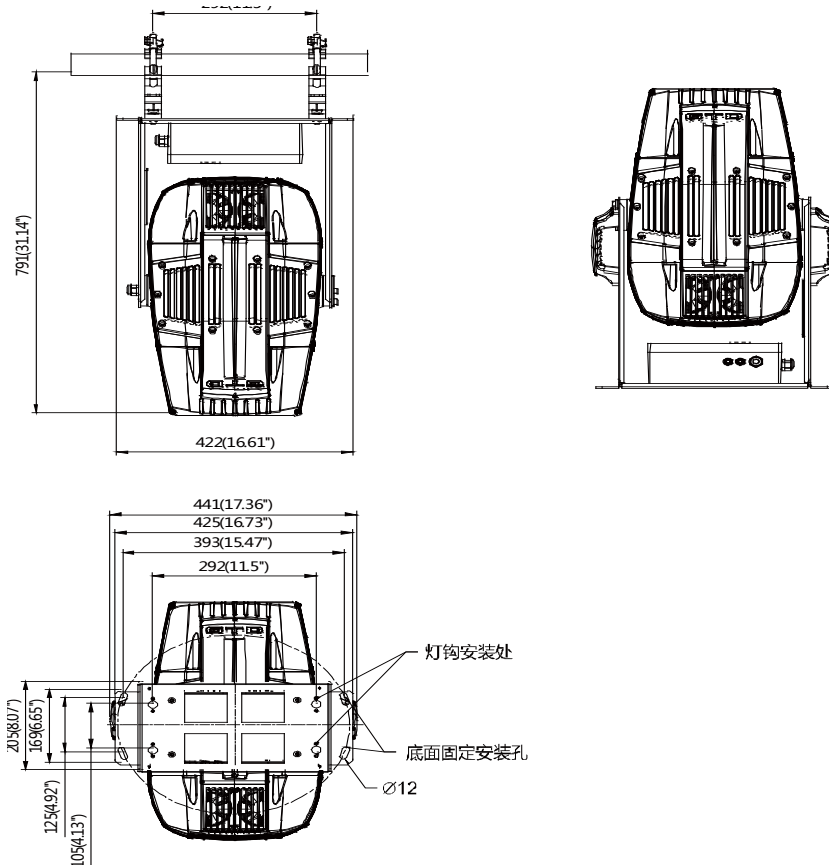
Warning: Use two clamps when mounting the fixture. Turn the screws attached to each clamp a 1/4 turn clockwise to lock. Always remember to use the safety cable which goes through the mounting hole on the base. Do not attach the safety cable on the handle.

4.2 Device installation

1. Make sure there is no damage on the clamps or safety cables before installation.



2. The clamp is mounted on the chassis of the fixture. Horizontally insert the clamp into the mounting holes of the chassis. Fasten the clamp tightly by a 1/4 turn clockwise. Fix another clamp in the same way.
3. Check if pan is locked before connecting the unit to AC power.



5. Power/ Control connection

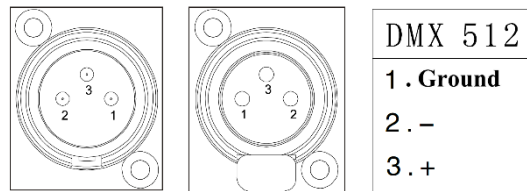
5.1 Power connection

Connection method:

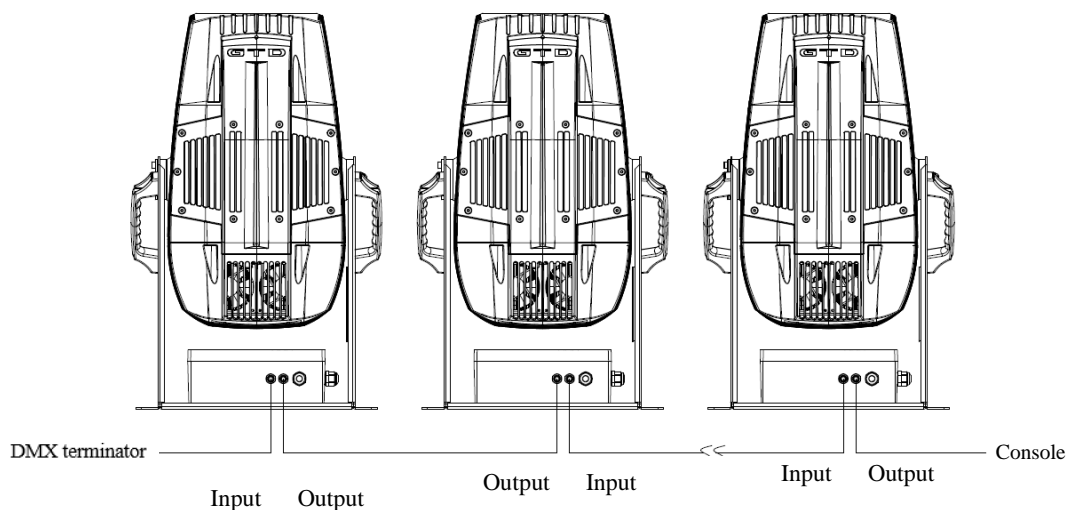
- L (Live) Brown wire
- E (Earth) Yellow / Green bi-color wire
- N (Neutral) Blue wire
- The voltage and frequency of the power source must be in compliance with the ones marked on the fixture. It is strongly recommended that each fixture are to be connected to the power source separately so that they can be switched on / off individually.

5.2 Control connection

The fixture has 3-pin XLR connectors for DMX data input and output as shown below. Connection between the console and fixture, and between fixtures must be made with 2 core screened DMX signal cable. Maximum connecting distance of signal cable is 150 meters. Additional DMX512 signal-amplifier is recommended for longer distance.



Connect the Console's DMX OUTPUT to the first fixture's DMX INPUT, then the first fixture's DMX OUTPUT to the second fixture's DMX INPUT and so on. It is recommended not to connect more than 32 units on a single DMX universe. On the last fixture's output connect a DMX terminator. (The terminator is a 3-pin XLR connector with a 1/2W and 120Ω resistor between the pin 2 and pin 3) as shown below:



5.3 Testing

Connect the fixture to AC power. Check if the lamp is on and the fixture is independently controllable before putting into operation.

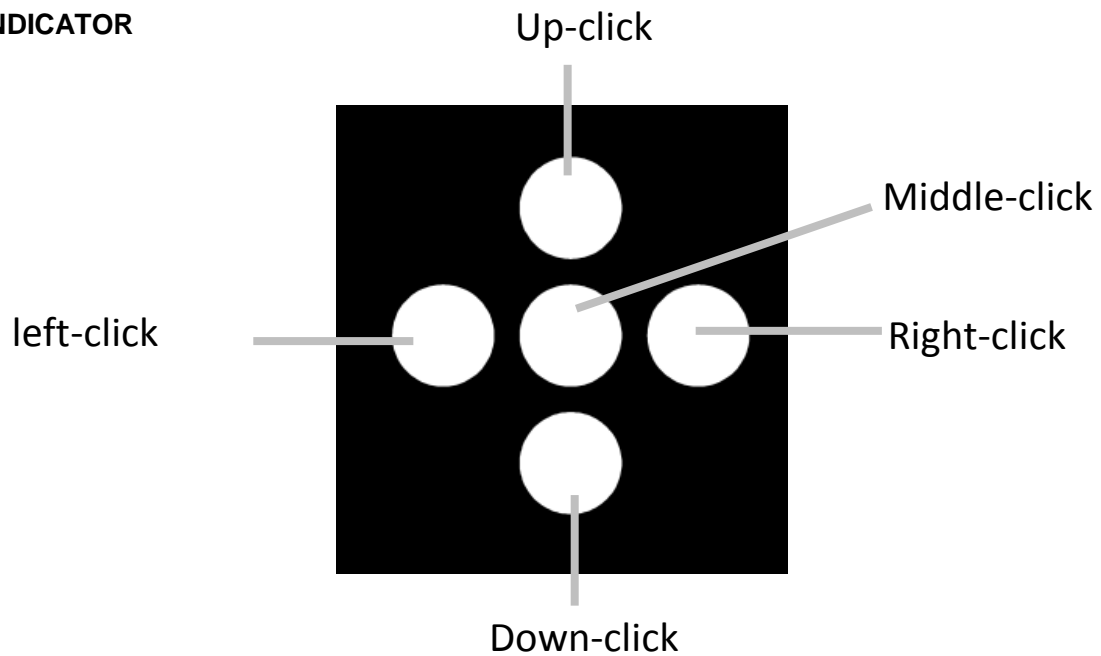
6. Control panel

6.1 Panel instruction



- Press **Left-click** to select the function menu, press it again exit.
- Press **Up** or **Down** to change the value of the selected function (increase or decrease).
- Press **Up/Down- click** selected menu function, and then confirm with **right click**.
- Press the **Left-click** to exit menu when you finish setting up
- **Middle-click** :reserved

PANEL INDICATOR



7. Technical specification

- **Optical**

Light source: LED 500W

Expected average lifetime: 20000 h

Color temperature correction: 7000K

Lumens: 24000lm

Zoom range: 10°~40°Linear high speed zoom, the spot is uniform and consistent in any range

CRI: $Ra \geq 73/90$

Focus: Any multi-point focus, 5 m to infinity tracking focus

Prism: 1 four-prism, CW/CCW rotation, variable speed.

- **Gobo**

Rotating gobo wheel: 1 interchangeable gobo rotator, 6 optional pattern pieces,

Fixed gobo wheel: 1 fixed gobos +7 pattern pieces +open, shake with variable speed.

Gobo outside diameter: 27mm

Max. Image diameter: 22mm

Max Thickness: 3.5mm

Gobo material: High-temperature coated glass

- **Color**

Color wheel: 6 color gel and open gobo, bidirectional flow effect

CMY: infinite color mixed

CTO: 7000k-2700k

- **Electrical**

Power input, nominal: AC 100-240V 50/60Hz

Max. Power consumption: 710W

Max current: 7.3A PF: ≥ 0.97

Power supply unit: wide range electronic

Main fuse: 250V / 15A

Power input: self-contain plug

DMX data input/output: Chassis 3-pin (waterproof)

- **Control and programming**

Control channels (DMX): 19/17/25

Protocol: DMX-512 RDM

Display: OLED

- **Physical / Installation**

Weight: 30 kg (66.14lbs.)

IP rating: IP66

Material: Aluminum, copper, steel, plastic, iron

Mounting points: 4 fixed folding lamp hook + attachment points for safety wire

- **Dynamic effects**

Tilt movement: 260°, adopting a function which resets 32bit accurately and automatically

Strobe: 1-25Hz, strobe randomly, pulse randomly, strobe synchronously and asynchronously

Dimmer: 0-100%, electronic linear dimming

Aperture: 0-100% linearity control, built-in a variety of aperture macro function

- **Thermal**

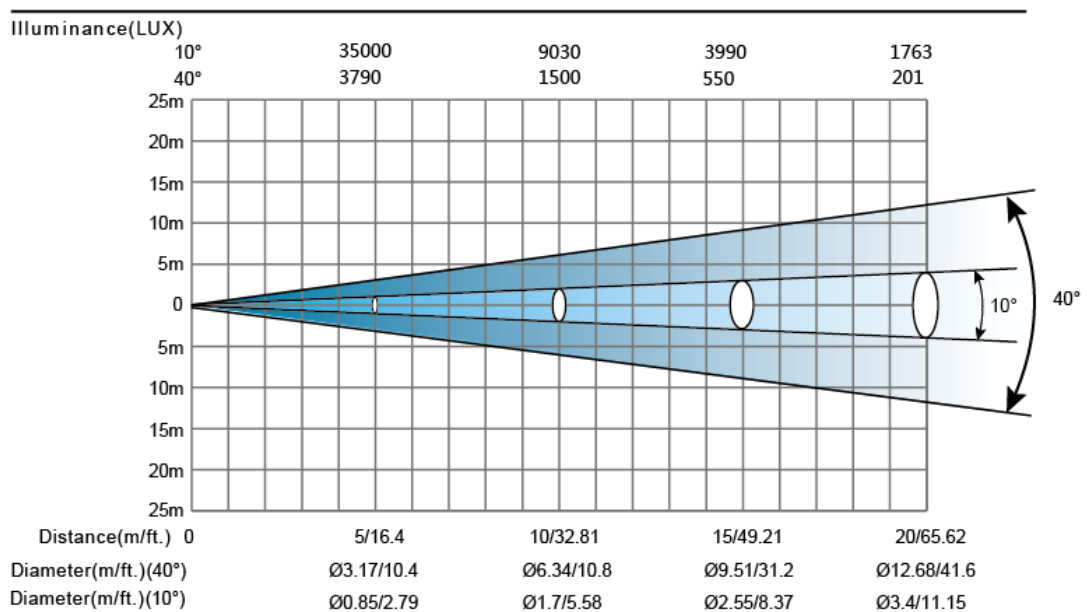
- Operating range: 5°F to 113°F (-15°C to 45°C)
- Startup range: -13°F to 113°F (-25°C to 45°C)
- Storage range: -40°F to 140°F (-40°C to 60°C)
- Cooling: Heat pipe radiator, Active fan
- Humidity: ≤85%

- **Certification and Safety**

EMC: EN 55103-1:2009, EN 55103-2:2009, EN 61000-3-2:2006+A2:2009, EN 61000-3-3:2013, GB/T 17743-2007, GB 17625.1-2012

Safety: EN 60598-2-17:1989/A2:1991, GB 7000.1-2015, GB 7000.217-2008

- **Photometric**



- **Other features**

- Enhanced stability of the fixture due to the wide input voltage AC/DC switching power supply which both reduces the impact of power and voltage fluctuations, and removes the restriction of voltage and frequency variations in different countries.
- Automatic energy saving: when the shutter or CMY is closed, power consumption will be reduced automatically with the photoelectric tracking induction technology.
- Sleep mode: uses the most advanced technology to activate sleep mode remotely. When the fixture is

disconnected from signal, the sleep mode is enabled automatically to make it more stable and safer. Sleep time can be customized.

- Power setting: built-in continuous rechargeable battery, allowing setting functional data via LCD interface without power connection.
- Communications Design: DMX wired/wireless transmission, bidirectional-control technology, upgrade the software quickly and conveniently by using DMX cable.
- Thermal design: The wind drainage and intelligent temperature monitoring technology can monitor lighting's state : on /off. It can adjust the thermal design by the position's temperature of lighting so that the temperature can be controlled.

8. Gobos and colors

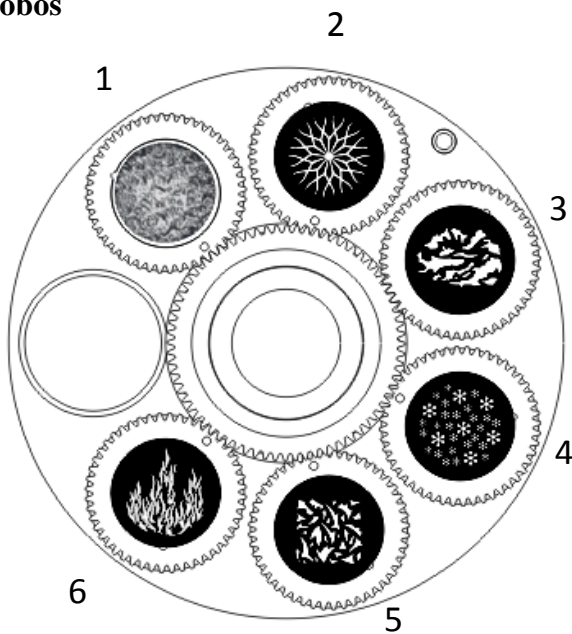
8.1 Gobo specification

All patterns are made onto the metal gobos, and can be customized according to user's requirement.

The customized size is as below:

Gobo material	Outer dimension	Effective dimension	Thickness
Glass gobo	Φ27mm	Φ22mm	1.1/3.5mm
Gobo material: Glass			

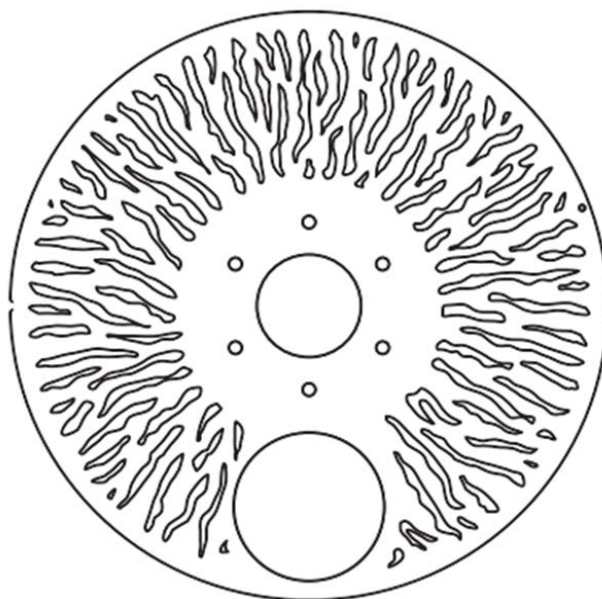
8.2 Gobos



Rotating gobo wheel



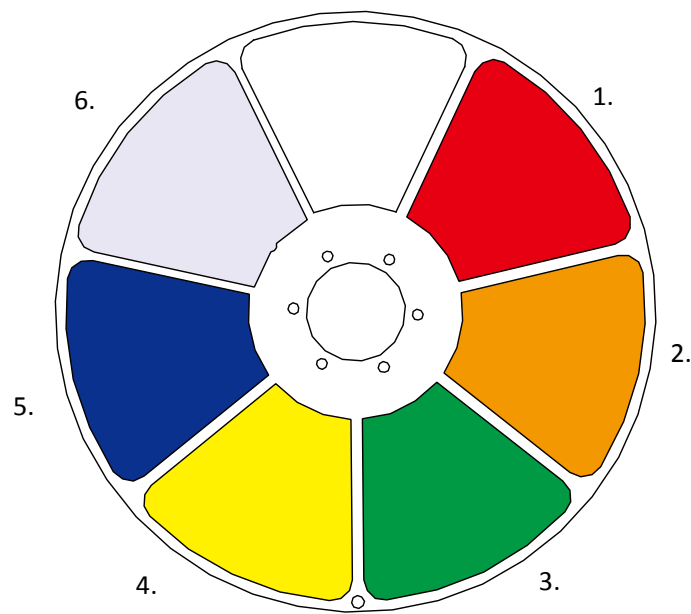
Fixed gobo wheel



Effect gobo wheel

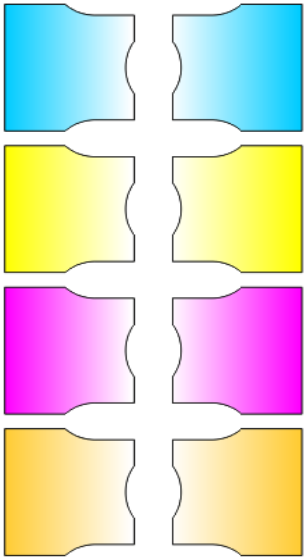
8.3 Colors

Color wheel



1. Red	2. Orange	3. Green
4. Yellow	5. Blue	6.CPI filter

CMY/CTO



9. Menu structure

Level 1	Level 2	Level 3	Level 4	Info
Run setting	Address Setting Value Display Auto-Program	Address: 001~ XXX Strobe,... Master /Slave		Setting the DMX address Display the channel value Run auto program in master or slave
Device Info	Time Info	Total Time Last Time Clear Last Time Lamp On Time Clear Lamp Time	XXXXXX Hour XX : XX Password: XXX(88) XXXXXX Hour Password: XXX(111)	Product total run time Last product run time Clear last time password Lamp on time Clear lamp time password
	Temperature	Temperature1	XXX 'C/'F	Body temperature
	Fan Info	HeadFan1 XXXX rpm HeadFan2 XXXX rpm HeadFan3 XXXX rpm HeadFan4 XXXX rpm		Show fans' status
	Err Info	No/...		Show Reset device's status
	Ver Info	Firmware VerVxx Software VerVxx Hardware VerVxx		The software version
System Setting	Status Setting	Console Set Addr No Signal Status	Enable/Disable Off/Hold/Auto	Address can be changed by console The status while no signal
	Fan Speed	Auto Fan High Fan Low Fan		Auto fans speed Fans high speed Fans low speed
	Display Setting	Backlight Time Key Lock Disp Reverse Language	1~59 Min(5) Enable/Disable Auto/Up/Down English/ 中文	Backlight off time Press <menu> 3s to unlock Display direction select Change the language
	Temperature Unit	Celsius Fahrenheit		Temperature unit
	Restore Default	Disable/Enable		Restore to default value
	Dimming Mode	Cure1/ Cure2		Dimming mode setting

Reset	System Reset Color Reset Gobo Reset Other Reset			System reset Color motor reset All gobo motor reset All other motor reset
Channel Adjust	Test Mode	Strobe, Dimmer.....	XXX	Every channel test
	Manual Mode	Strobe, Dimmer.....	XXX	Manual control
	Adjust Mode	Password Strobe Dimmer :	Password=XXX(99) XXX Dimmer :	The password of adjust mode Fixed all begin position
Channel Mode	Standard Mode Basic Mode Extended Mode			Standard channel mode Basic channel mode Extended channel mode

***Settings highlighted in light grey are default values**

10. DMX Protocol

Standard

DMX mode	Name	DMX value		DMX percentage		Function	Default DMX Value
Standard (19ch)							
1	Strobe/ Shutter	0	31	0.0%	12.2%	Closed	0(0%)
		32	63	12.5%	24.7%	Open	
		64	127	25.1%	49.8%	Synchronous strobe from slow to fast	
		128	159	50.2%	62.4%	Open	
		160	223	62.7%	87.5%	Random strobe from slow to fast	
		224	255	87.8%	100.0%	Open	
2	Intensity	0	255	0.0%	100.0%	No light→ Full light	0(0%)
3	Cyan	0	255	0.0%	100.0%	White→ Full cyan	0(0%)
4	Magenta	0	255	0.0%	100.0%	White→ Full magenta	0(0%)
5	Yellow	0	255	0.0%	100.0%	White→ Full yellow	0(0%)
6	CMY color macro	0	15	0.0%	5.9%	CMY color macro off	0(0%)
		16	135	6.3%	52.9%	CMY synchronous color from slow to fast	
		136	255	53.3%	100.0%	CMY random color from slow to fast	
7	CTO	0	255	0.0%	100.0%	White→ Full cyan	0(0%)
8	Color wheel	0	19	0.0%	7.5%	Open	0(0%)
		20	37	7.8%	14.5%	Color 1	
		38	55	14.9%	21.6%	Color 2	
		56	73	22.0%	28.6%	Color 3	
		74	91	29.0%	35.7%	Color 4	
		92	109	36.1%	42.7%	Color 5	
		110	127	43.1%	49.8%	Color 6	
		128	187	50.2%	73.3%	Color continous rotation CW from slow to fast	
		188	195	73.7%	76.5%	Stop	
		196	255	76.9%	100.0%	Color continous rotation CCW from slow to fast	
9	Gobo wheel (static)	0	15	0.0%	5.9%	Open	0(0%)
		16	23	6.3%	9.0%	Gobo 1	
		24	31	9.4%	12.2%	Gobo 2	
		32	36	12.5%	14.1%	Gobo 3	
		37	41	14.5%	16.1%	Gobo 4	
		42	46	16.5%	18.0%	Gobo 5	
		47	51	18.4%	20.0%	Gobo 6	
		52	56	20.4%	22.0%	Gobo 7	
		72	79	28.2%	31.0%	Gobo 1 shake	

DMX mode	Name	DMX value		DMX percentage		Function	Default DMX Value
Standard (19ch)							
9	Gobo wheel (static)	80	87	31.4%	34.1%	Gobo 2 shake	
		88	95	34.5%	37.3%	Gobo 3 shake	
		96	103	37.6%	40.4%	Gobo 4 shake	
		73	111	28.6%	43.5%	Gobo 5 shake	
		112	119	43.9%	46.7%	Gobo 6 shake	
		120	127	47.1%	49.8%	Gobo 7 shake	
		128	187	50.2%	73.3%	Gobo wheel continous rotation CW from slow to fast	
		188	195	73.7%	76.5%	Stop	
		196	255	76.9%	100.0%	Gobo wheel continous rotation CCW from slow to fast	
10	Rotating gobo wheel 1	0	7	0.0%	2.7%	Open gobo	0(0%)
		8	17	3.1%	6.7%	Gobo 1	
		18	27	7.1%	10.6%	Gobo 2	
		28	37	11.0%	14.5%	Gobo 3	
		38	47	14.9%	18.4%	Gobo 4	
		48	57	18.8%	22.4%	Gobo 5	
		58	67	22.7%	26.3%	Gobo 6	
		68	77	26.7%	30.2%	Gobo 1 shake	
		78	87	30.6%	34.1%	Gobo 2 shake	
		88	97	34.5%	38.0%	Gobo 3 shake	
		98	107	38.4%	42.0%	Gobo 4 shake	
		108	117	42.4%	45.9%	Gobo 5 shake	
		118	127	46.3%	49.8%	Gobo 6 shake	
		128	187	50.2%	73.3%	Gobo wheel continous rotation CW from slow to fast	
		188	195	73.7%	76.5%	Stop	
		196	255	76.9%	100.0%	Gobo wheel continous rotation CCW from slow to fast	
11	Gobo rotating/positioning gobo wheel 1	0	127	0.0%	49.8%	Gobo rotation/positioning	0(0%)
		128	187	50.2%	73.3%	Gobo continous rotation CCW from slow to fast	
		188	195	73.7%	76.5%	Stop	
		196	255	76.9%	100.0%	Gobo continous rotation CW from slow to fast	
12		0	65535	0.0%	100.0%	Gobo rotation/positioning, fine (LSB)	
13	Focus	0	255	0.0%	100.0%	Near→ Far	0(0%)
14		0	65535	0.0%	100.0%	Focus, fine (LSB)	
15	Zoom	0	255	0.0%	100.0%	Narrow→ Wide	0(0%)
16	Prism1	0	31	0.0%	12.2%	Off	0(0%)

DMX mode	Name	DMX value		DMX percentage		Function	Default DMX Value
Standard (19ch)							
16	Prism1	32	255	12.5%	100.0%	On	0(0%)
17	Prism1 rotation	0	127	0.0%	49.8%	Prism1 rotation/positioning	
		128	187	50.2%	73.3%	Prism1 continuous rotation CW from slow to fast	
		188	195	73.7%	76.5%	Stop	
		196	255	76.9%	100.0%	Prism1 continuous rotation CCW from slow to fast	
18	Fire wheel	0	127	0.0%	49.8%	Off	0(0%)
		128	255	50.2%	100.0%	Fire wheel continuous rotation CCW from slow to fast	
19	Special controls	0	9	0.0%	3.5%	No function	0(0%)
		10	19	3.9%	7.5%	No function	
		20	29	7.8%	11.4%	No function	
		30	39	11.8%	15.3%	Color wheel half color switch	
		40	49	15.7%	19.2%	Color wheel random positioning	
		50	59	19.6%	23.1%	No function	
		60	69	23.5%	27.1%	Reset all motor after 5 seconds	
		70	79	27.5%	31.0%	No function	
		80	89	31.4%	34.9%	All color motor reset after 5 seconds	
		90	99	35.3%	38.8%	All gobo motor reset after 5 seconds	
		100	109	39.2%	42.7%	No function	
		110	119	43.1%	46.7%	Other motor reset after 5 seconds	
		120	129	47.1%	50.6%	Built-in program 1	
		130	139	51.0%	54.5%	Built-in program 2	
		140	149	54.9%	58.4%	Built-in program 3	
		150	159	58.8%	62.4%	Built-in program 4	
		160	169	62.7%	66.3%	Built-in program 5	
		170	179	66.7%	70.2%	Built-in program 6	
		180	189	70.6%	74.1%	Built-in program 7	
		190	199	74.5%	78.0%	Built-in program 8	
		200	209	78.4%	82.0%	Built-in program 9	
		210	219	82.4%	85.9%	Built-in program 10	
		220	255	86.3%	100.0%	Reserved	

Basic

DMX mode	Name	DMX value		DMX percentage		Function	Default DMX Value
Basic (17ch)							
1	Strobe/Stutter	0	31	0.0%	12.2%	Closed	0(0%)
		32	63	12.5%	24.7%	Open	
		64	127	25.1%	49.8%	Synchronous strobe from slow to fast	
		128	159	50.2%	62.4%	Open	
		160	223	62.7%	87.5%	Random strobe from slow to fast	
		224	255	87.8%	100.0%	Open	
2	Intensity	0	255	0.0%	100.0%	No light→ Full light	0(0%)
3	Cyan	0	255	0.0%	100.0%	White→ Full cyan	0(0%)
4	Magenta	0	255	0.0%	100.0%	White→ Full magenta	0(0%)
5	Yellow	0	255	0.0%	100.0%	White→ Full yellow	0(0%)
6	CMY color macro	0	15	0.0%	5.9%	CMY color macro off	0(0%)
		16	135	6.3%	52.9%	CMY synchronous color from slow to fast	
		136	255	53.3%	100.0%	CMY random color from slow to fast	
7	CTO	0	255	0.0%	100.0%	White→ Full cyan	0(0%)
8	Color wheel	0	19	0.0%	7.5%	Open	0(0%)
		20	37	7.8%	14.5%	Color 1	
		38	55	14.9%	21.6%	Color 2	
		56	73	22.0%	28.6%	Color 3	
		74	91	29.0%	35.7%	Color 4	
		92	109	36.1%	42.7%	Color 5	
		110	127	43.1%	49.8%	Color 6	
		128	187	50.2%	73.3%	Color continuous rotation CW from slow to fast	
		188	195	73.7%	76.5%	Stop	
		196	255	76.9%	100.0%	Color continuous rotation CCW from slow to fast	
9	Gobo wheel (static)	0	15	0.0%	5.9%	Open	0(0%)
		16	23	6.3%	9.0%	Gobo 1	
		24	31	9.4%	12.2%	Gobo 2	
		32	36	12.5%	14.1%	Gobo 3	
		37	41	14.5%	16.1%	Gobo 4	
		42	46	16.5%	18.0%	Gobo 5	
		47	51	18.4%	20.0%	Gobo 6	
		52	56	20.4%	22.0%	Gobo 7	
		72	79	28.2%	31.0%	Gobo 1 shake	
		80	87	31.4%	34.1%	Gobo 2 shake	

DMX mode	Name	DMX value		DMX percentage		Function	Default DMX Value
Basic (17ch)							
9	Gobo wheel (static)	88	95	34.5%	37.3%	Gobo 3 shake	0(0%)
		96	103	37.6%	40.4%	Gobo 4 shake	
		73	111	28.6%	43.5%	Gobo 5 shake	
		112	119	43.9%	46.7%	Gobo 6 shake	
		120	127	47.1%	49.8%	Gobo 7 shake	
		128	187	50.2%	73.3%	Gobo wheel continous rotation CW from slow to fast	
		188	195	73.7%	76.5%	Stop	
		196	255	76.9%	100.0%	Gobo wheel continous rotation CCW from slow to fast	
10	Rotating gobo wheel 1	0	7	0.0%	2.7%	Open gobo	0(0%)
		8	17	3.1%	6.7%	Gobo 1	
		18	27	7.1%	10.6%	Gobo 2	
		28	37	11.0%	14.5%	Gobo 3	
		38	47	14.9%	18.4%	Gobo 4	
		48	57	18.8%	22.4%	Gobo 5	
		58	67	22.7%	26.3%	Gobo 6	
		68	77	26.7%	30.2%	Gobo 1 shake	
		78	87	30.6%	34.1%	Gobo 2 shake	
		88	97	34.5%	38.0%	Gobo 3 shake	
		98	107	38.4%	42.0%	Gobo 4 shake	
		108	117	42.4%	45.9%	Gobo 5 shake	
		118	127	46.3%	49.8%	Gobo 6 shake	
		128	187	50.2%	73.3%	Gobo wheel continous rotation CW from slow to fast	
		188	195	73.7%	76.5%	Stop	
		196	255	76.9%	100.0%	Gobo wheel continous rotation CCW from slow to fast	
11	Gobo rotating/positioning gobo wheel 1	0	127	0.0%	49.8%	Gobo rotation/positioning	0(0%)
		128	187	50.2%	73.3%	Gobo continous rotation CCW from slow to fast	
		188	195	73.7%	76.5%	Stop	
		196	255	76.9%	100.0%	Gobo continous rotation CW from slow to fast	
12	Focus	0	255	0.0%	100.0%	Near→ Far	0(0%)
13	Zoom	0	255	0.0%	100.0%	Narrow→ Wide	0(0%)
14	Prism1	0	31	0.0%	12.2%	Off	0(0%)
		32	255	12.5%	100.0%	On	
15		0	127	0.0%	49.8%	Prism1 rotation/positioning	0(0%)

DMX mode	Name	DMX value		DMX percentage		Function	Default DMX Value
Basic (17ch)							
15	Prism1 rotation	128	187	50.2%	73.3%	Prism1 continuous rotation CW from slow to fast	0(0%)
		188	195	73.7%	76.5%	Stop	
		196	255	76.9%	100.0%	Prism1 continuous rotation CCW from slow to fast	
16	Fire wheel	0	127	0.0%	49.8%	Off	0(0%)
		128	255	50.2%	100.0%	Fire wheel continuous rotation CCW from slow to fast	
17	Special controls	0	9	0.0%	3.5%	No function	0(0%)
		10	19	3.9%	7.5%	No function	
		20	29	7.8%	11.4%	No function	
		30	39	11.8%	15.3%	Color wheel half color switch	
		40	49	15.7%	19.2%	Color wheel random positioning	
		50	59	19.6%	23.1%	No function	
		60	69	23.5%	27.1%	Reset all motor after 5 seconds	
		70	79	27.5%	31.0%	No function	
		80	89	31.4%	34.9%	All color motor reset after 5 seconds	
		90	99	35.3%	38.8%	All gobo motor reset after 5 seconds	
		100	109	39.2%	42.7%	No function	
		110	119	43.1%	46.7%	Other motor reset after 5 seconds	
		120	129	47.1%	50.6%	Built-in program 1	
		130	139	51.0%	54.5%	Built-in program 2	
		140	149	54.9%	58.4%	Built-in program 3	
		150	159	58.8%	62.4%	Built-in program 4	
		160	169	62.7%	66.3%	Built-in program 5	
		170	179	66.7%	70.2%	Built-in program 6	
		180	189	70.6%	74.1%	Built-in program 7	
		190	199	74.5%	78.0%	Built-in program 8	
		200	209	78.4%	82.0%	Built-in program 9	
		210	219	82.4%	85.9%	Built-in program 1	
		220	255	86.3%	100.0%	Reserved	

Extended

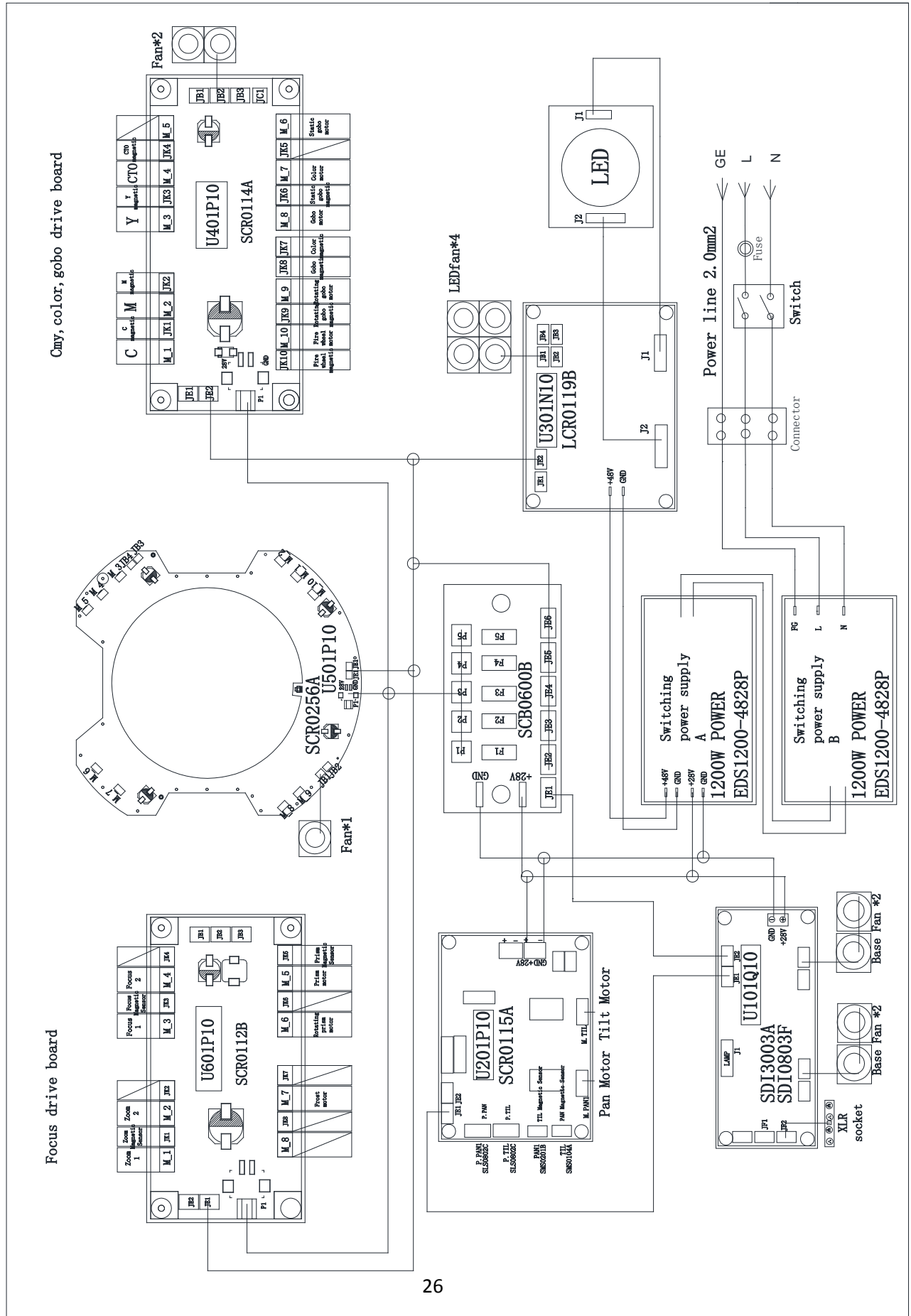
DMX mode	Name	DMX value		DMX percentage		Function	Default DMX Value
Extended (25ch)							
1	Strobe/ Shutter	0	31	0.0%	12.2%	Closed	0(0%)
		32	63	12.5%	24.7%	Open	
		64	127	25.1%	49.8%	Synchronous strobe from slow to fast	
		128	159	50.2%	62.4%	Open	
		160	223	62.7%	87.5%	Random strobe from slow to fast	
		224	255	87.8%	100.0%	Open	
2	Intensity	0	255	0.0%	100.0%	No light→ Full light	0(0%)
3		0	65535	0.0%	100.0%	Intensity fade, fine (LSB)	
4	Cyan	0	255	0.0%	100.0%	White→ Full cyan	0(0%)
5		0	65535	0.0%	100.0%	Cyan fade, fine (LSB)	
6	Magenta	0	255	0.0%	100.0%	White→ Full magenta	0(0%)
7		0	65535	0.0%	100.0%	Magenta fade, fine (LSB)	
8	Yellow	0	255	0.0%	100.0%	White→ Full yellow	0(0%)
9		0	65535	0.0%	100.0%	Yellow fade, fine (LSB)	
10	CMY color macro	0	15	0.0%	5.9%	CMY color macro off	0(0%)
		16	135	6.3%	52.9%	CMY synchronous color from slow to fast	
		136	255	53.3%	100.0%	CMY random color from slow to fast	
11	CTO	0	255	0.0%	100.0%	White→ Full cyan	0(0%)
12		0	65535	0.0%	100.0%	CTO fade, fine (LSB)	
13	Color wheel	0	19	0.0%	7.5%	Open	0(0%)
		20	37	7.8%	14.5%	Color 1	
		38	55	14.9%	21.6%	Color 2	
		56	73	22.0%	28.6%	Color 3	
		74	91	29.0%	35.7%	Color 4	
		92	109	36.1%	42.7%	Color 5	
		110	127	43.1%	49.8%	Color 6	
		128	187	50.2%	73.3%	Color continous rotation CW from slow to fast	
		188	195	73.7%	76.5%	Stop	
		196	255	76.9%	100.0%	Color continous rotation CCW from slow to fast	
14	Gobo wheel (static)	0	15	0.0%	5.9%	Open	0(0%)
		16	23	6.3%	9.0%	Gobo 1	
		24	31	9.4%	12.2%	Gobo 2	
		32	36	12.5%	14.1%	Gobo 3	
		37	41	14.5%	16.1%	Gobo 4	
		42	46	16.5%	18.0%	Gobo 5	

DMX mode	Name	DMX value		DMX percentage		Function	Default DMX Value
Extended (25ch)							
14	Gobo wheel (static)	47	51	18.4%	20.0%	Gobo 6	
		52	56	20.4%	22.0%	Gobo 7	
		72	79	28.2%	31.0%	Gobo 1 shake	
		80	87	31.4%	34.1%	Gobo 2 shake	
		88	95	34.5%	37.3%	Gobo 3 shake	
		96	103	37.6%	40.4%	Gobo 4 shake	
		73	111	28.6%	43.5%	Gobo 5 shake	
		112	119	43.9%	46.7%	Gobo 6 shake	
		120	127	47.1%	49.8%	Gobo 7 shake	
		128	187	50.2%	73.3%	Gobo wheel continous rotation CW from slow to fast	
		188	195	73.7%	76.5%	Stop	
		196	255	76.9%	100.0%	Gobo wheel continous rotation CCW from slow to fast	
15	Rotating gobo wheel 1	0	7	0.0%	2.7%	Open gobo	0(0%)
		8	17	3.1%	6.7%	Gobo 1	
		18	27	7.1%	10.6%	Gobo 2	
		28	37	11.0%	14.5%	Gobo 3	
		38	47	14.9%	18.4%	Gobo 4	
		48	57	18.8%	22.4%	Gobo 5	
		58	67	22.7%	26.3%	Gobo 6	
		68	77	26.7%	30.2%	Gobo 1 shake	
		78	87	30.6%	34.1%	Gobo 2 shake	
		88	97	34.5%	38.0%	Gobo 3 shake	
		98	107	38.4%	42.0%	Gobo 4 shake	
		108	117	42.4%	45.9%	Gobo 5 shake	
		118	127	46.3%	49.8%	Gobo 6 shake	
		128	187	50.2%	73.3%	Gobo wheel continous rotation CW from slow to fast	
		188	195	73.7%	76.5%	Stop	
		196	255	76.9%	100.0%	Gobo wheel continous rotation CCW from slow to fast	
		128	187	50.2%	73.3%	Gobo continous rotation CCW from slow to fast	
		188	195	73.7%	76.5%	Stop	
		196	255	76.9%	100.0%	Gobo continous rotation CW from slow to fast	
16		0	127	0.0%	49.8%	Gobo rotation/positioning	

DMX mode	Name	DMX value		DMX percentage		Function	Default DMX Value
Extended (25ch)							
16	Gobo rotating/positioning gobo wheel 1	128	187	50.2%	73.3%	Gobo continuous rotation CCW from slow to fast	
		188	195	73.7%	76.5%	Stop	
		196	255	76.9%	100.0%	Gobo continuous rotation CW from slow to fast	
		0	65535	0.0%	100.0%	Gobo rotation/positioning, fine (LSB)	
17							
18	Focus	0	255	0.0%	100.0%	Near→ Far	0(0%)
19		0	65535	0.0%	100.0%	Focus, fine (LSB)	
20	Zoom	0	255	0.0%	100.0%	Narrow→ Wide	0(0%)
21		0	65535	0.0%	100.0%	Zoom, fine (LSB)	
22	Prism1	0	31	0.0%	12.2%	Off	0(0%)
		32	255	12.5%	100.0%	On	
23	Prism1 rotation	0	127	0.0%	49.8%	Prism1 rotation/positioning	0(0%)
		128	187	50.2%	73.3%	Prism1 continuous rotation CW from slow to fast	
		188	195	73.7%	76.5%	Stop	
		196	255	76.9%	100.0%	Prism1 continuous rotation CCW from slow to fast	
24	Fire wheel	0	127	0.0%	49.8%	Off	0(0%)
		128	255	50.2%	100.0%	Fire wheel continuous rotation CCW from slow to fast	
25	Special controls	0	9	0.0%	3.5%	No function	0(0%)
		10	19	3.9%	7.5%	No function	
		20	29	7.8%	11.4%	No function	
		30	39	11.8%	15.3%	Color wheel half color switch	
		40	49	15.7%	19.2%	Color wheel random positioning	
		50	59	19.6%	23.1%	No function	
		60	69	23.5%	27.1%	Reset all motor after 5 seconds	
		70	79	27.5%	31.0%	No function	
		80	89	31.4%	34.9%	All color motor reset after 5 seconds	
		90	99	35.3%	38.8%	All gobo motor reset after 5 seconds	
		100	109	39.2%	42.7%	No function	
		110	119	43.1%	46.7%	Other motor reset after 5 seconds	
		120	129	47.1%	50.6%	Built-in program 1	
		130	139	51.0%	54.5%	Built-in program 2	
		140	149	54.9%	58.4%	Built-in program 3	
		150	159	58.8%	62.4%	Built-in program 4	
		160	169	62.7%	66.3%	Built-in program 5	
		170	179	66.7%	70.2%	Built-in program 6	

DMX mode	Name	DMX value		DMX percentage		Function	Default DMX Value
Extended (25ch)							
25	Special controls	180	189	70.6%	74.1%	Built-in program 7	0(0%)
		190	199	74.5%	78.0%	Built-in program 8	
		200	209	78.4%	82.0%	Built-in program 9	
		210	219	82.4%	85.9%	Built-in program 10	
		220	255	86.3%	100.0%	Reserved	


11. System wiring diagram




12. Maintenance and Troubleshooting

12.1 Cleaning and maintenance

It is required that the fixture should be kept clean and well maintained to ensure its reliability. Its lifespan mainly depends on the working environment and proper operation. Should you have any questions, please consult a technical engineer of GTD Lighting.

 Notes: Damage resulted from dust, smoke, oil or improper use is not covered by warranty.

 Notes: Disconnect the fixture from AC power, and let it cool down for at least 15 minutes before opening the housing. Make sure to use a soft cloth to clean the optical components, and be careful, as the coating is easily scratched. Do not use any organic solvent such as alcohol to clean the reflector mirror, dichroic color filters or housing of the fixture.

- If the lens is cracked or otherwise damaged, replace it immediately.
- If the lamp becomes damaged or deformed in any way it must be replaced.
- If the light from the lamp appears dim, this normally indicates that it is reaching the end of its life span and should be changed at once. Aged lamps run to the extremity of their life might explode.
- If fixture does not function, check the fuse on the power socket of the fixture. Replace the fuse of the same specification if it is blown.
- The fixture is equipped with thermal-protection device that will switch off the lamp in case of overheating. If this happens, please check that the fans are not blocked, and clean them if they are dirty. Check whether the fans are operational. If not, call a qualified technician.

12.2 Troubleshooting

Problem	Possible Cause	Suggested Correction
No response after connected to A/C power	Power switch not turned on.	Turn on power switch.
	Take out the fuse and check if it is blown.	Locate the blown fuse. Remove the broken fuse. Insert areplacement fuse of the correct amperage
	Abnormal A/C input (A/C power socket, power cables, luminaire power socket).	Replace AC power socket and power cables, and then adjust power socket for proper connection.
	No DC voltage from switching power supply.	Check if the switching power supply has DC voltage output. Replace the switching power supply.
No response or wrong response to the commands of the control system	DMX cables disconnected from fixture's DATA IN connector.	Connect DMX cable to the fixture's DATA IN connector.
	Open circuit or short circuit fault in the DMX cables.	Replace DMX cables as required.
	Wrong DMX address for the fixture in the control system.	Ensure the address in "Run setting > Address Setting >Address" of the fixture is consistent with the address in the control system.

Problem	Possible Cause	Suggested Correction
	Misuse in “Channel setting > Channel Mode of the fixture.	Choose the channel mode in “Channel setting > Channel Mode” of the fixture as required by the user
	Malfunctioning of DMX cannon input/output connectors. No input/output voltage to the main control board of the fixture.	Troubleshooting the DMX XLR signal plate of the fixture, replace the main control board of the fixture.
The lamp does not start when switch is turned on	Normal end of lamp life.	Test the lamp in an adjacent fixture which is known to be operating properly and then replace as necessary
	Whether the function of the relay board is intact, whether the signal is normal or not.	Repair or replace.
	Shorted leads between ballast and the lamp	Replace components as required.
	Incorrect ballast output.	Check ballast output to determine if it conforms to lamp requirements. If voltage and current do not stabilize in five to ten minutes warm-up time, ballast output is incorrect and adjustment should be made. Check capacitor wiring, if visibly available, to determine if capacitors are properly wired.
	Incorrect triggers output.	Replace triggers.
The lamp is off unexpected	The fixture is in sleep mode	Should the fixture is not in active use for “standby time”, the sleep mode is enabled automatically to make it more stable and safer, sleep time can be customized.
	Lamp has been operating: cool down time insufficient.	Environmental conditions such as extreme temperatures will have the fixture stop working, the lamps will require a period of time to cool and re-establish optimum starting conditions. Restart time varies with the degree of ventilation built into it, ambient temperature, and draft conditions.
	Overheat ballast resulting in premature failure or damaged ballast.	The ballast incorporate internal automatic-resetting thermal protection, which deactivates the ballast should it overheat. Normal operation resumes once the ballast has cooled sufficiently. Burned-out or failing lamps, or high temperatures in or around the fixture, can cause

Problem	Possible Cause	Suggested Correction
		the ballast to overheat, so we need solve the problem and replace components as required
	Thermostat damaged.	Replace.
Shaking, wrong position, and out of control gobo wheel	No function the connector between gobo wheel motor and drive, loose, damaged, or broken cables connecting the gobo wheel and drive.	Reconnect the gobo wheel motor to the drive, and replace cables as required.
	The gobo wheel motor's drive IC on the PCB might be out of condition.	Replace the drive having the same software version as required.
	Dislocated magnetic tube and positioning magnet, or damaged magnetic tube.	Calibrate the position of the magnetic tube to the positioning magnet, and replace magnetic tube as required
	Shaking motor, wrong rotation angle, losing step or damaged motor	Replace the motor as required.
Decreased brightness, uneven pattern projections	Normal end of lamp life.	Test the lamp in an adjacent fixture which is known to be operating properly and then replace as necessary
	The midline of the lamp is not aligned with the center point of the effect assembly (consisting of the rotating gobo wheel, static gobo wheel, color wheel, strobe, prism, and frost), focus module, and object lens.	Reinstall the lamp. Adjust the lamp position until the midline of the lamp is aligned with the center point of the effect assemblies (consisting of the rotating gobo wheel, static gobo wheel, color wheel, strobe, prism, frost, the focus adjusting module, and the object lens).
	Excessive dusts or smudges on the effect assembly, focus module and objective lens.	Follow the instructions stated in this user manual to clean the effect assembly, focus module and objective lens.
	Damaged or deformed effect assembly, focus module or objective lens.	Replace the damaged or deformed components
Wrong color	Normal end of lamp life	Test the lamp in an adjacent fixture which is known to be operating properly and then replace as necessary
	Excessive dusts or smudges on the rotating gobo wheel or color wheel.	Follow the instructions stated in this user manual to clean the rotating gobo wheel or color wheel.
	Rotating gobo wheel, color wheel with coating wearing off, damages or deformation	Replace the worn-off, damaged or deformed rotating gobo wheel and color wheel

Problem	Possible Cause	Suggested Correction
Non-clear shape	Excessive dusts or smudges on the rotating gobo wheel or color wheel	Follow the instructions stated in this user manual to clean the rotating gobo wheel or color wheel.
	Excessive dusts or smudges on the focus module or objective lens	Follow the instructions stated in this user manual to clean the focus module or objective lens
	Damaged or deformed focus module or objective lens.	Replace the damaged or deformed focus module or objective lens.

13. Spare parts list

Name	P/N	Qty	Notes
Power supply	1412050089A	1	LP770-220WPF48M-2 100-240VAC 48V/14A 28V/3.7A 169*98*45
LED drive board	5809210165A		F5-EP-501P10 LCR8003B
CMY motor drive board	5809210164A	1	F5-EP-401P10 SCR8010A
Focus zoom drive board	5809210162A	1	F5-EP-201P10 SCR8016B
LED drive board	5809210246A	1	301N10 LCR0119B/ 0119B-1



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