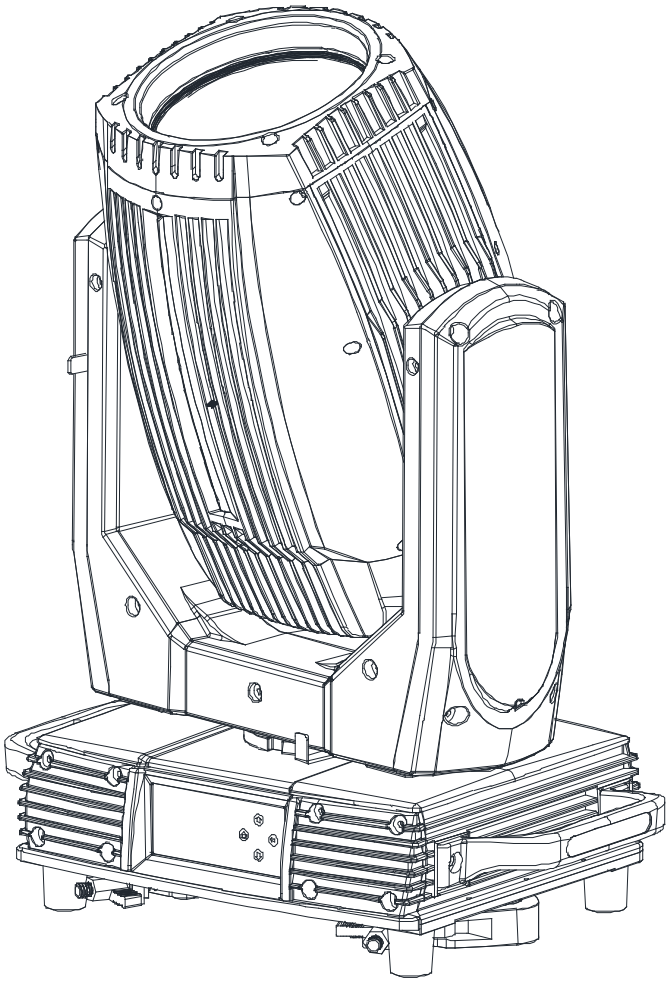
GTD

GTD-F300 II BEAM



User Manual

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Facebook

Contents

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!

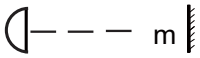
Wear protective eyewear. Never look directly into the light source.

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.

ta. . . °C Maximum ambient temperature.

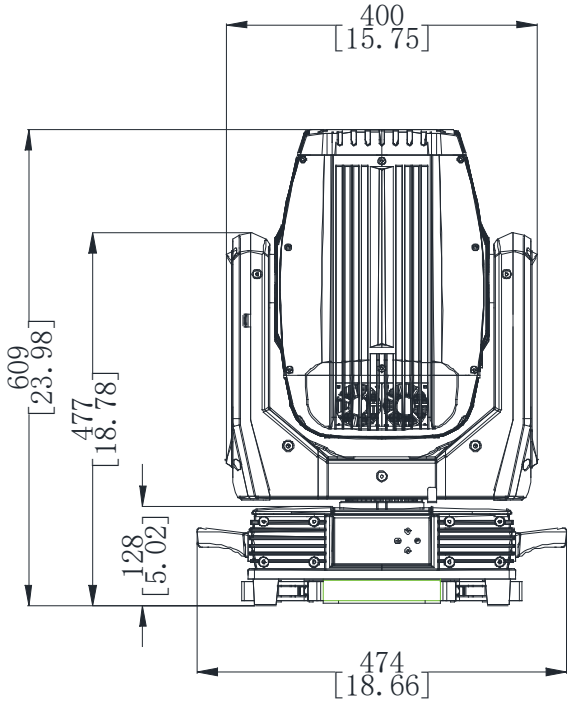
tc. . . °C Maximum temp of the external surface.

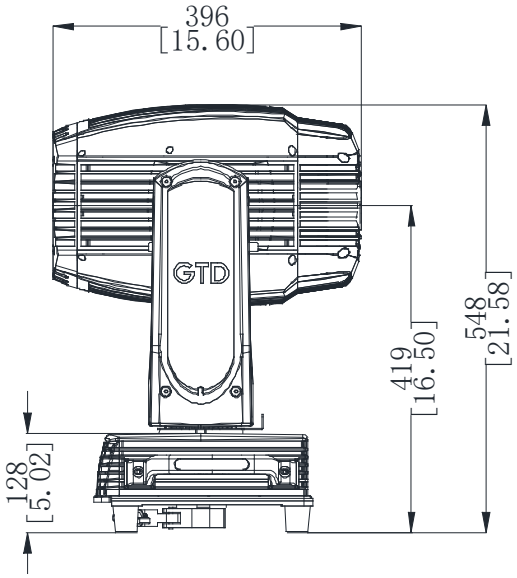
⚠ General guidelines

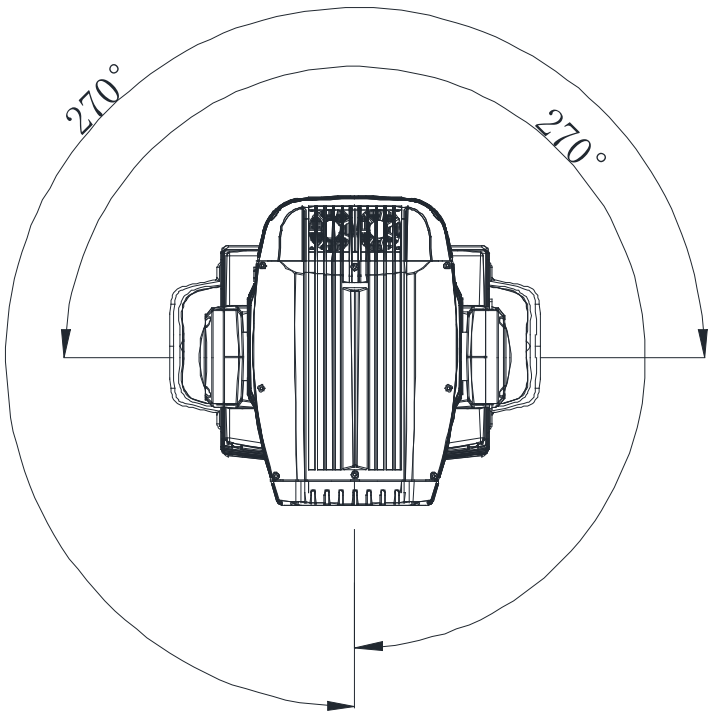
- The protection rating of this product IP66.
- Never open this fixture while it is in use.
- The fixture should be kept clean. DO NOT operate the fixture in extreme heat or dusty environments. Avoid contact with chemical liquid.
- Minimum distance to lighted objects must be 9.84 feet (3m).
- Maximum temp of the external surface 158˚F (70˚C).
- Maximum ambient temperature 113˚F (45˚C).
- Minimum distance of inflammable materials from the surface 1.64 feet (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.
- 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.

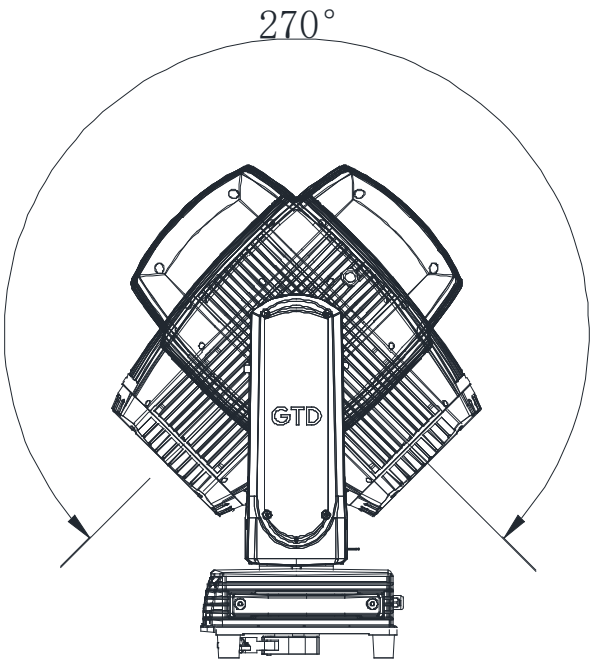
2. Production instructions

2.1 Dimensions

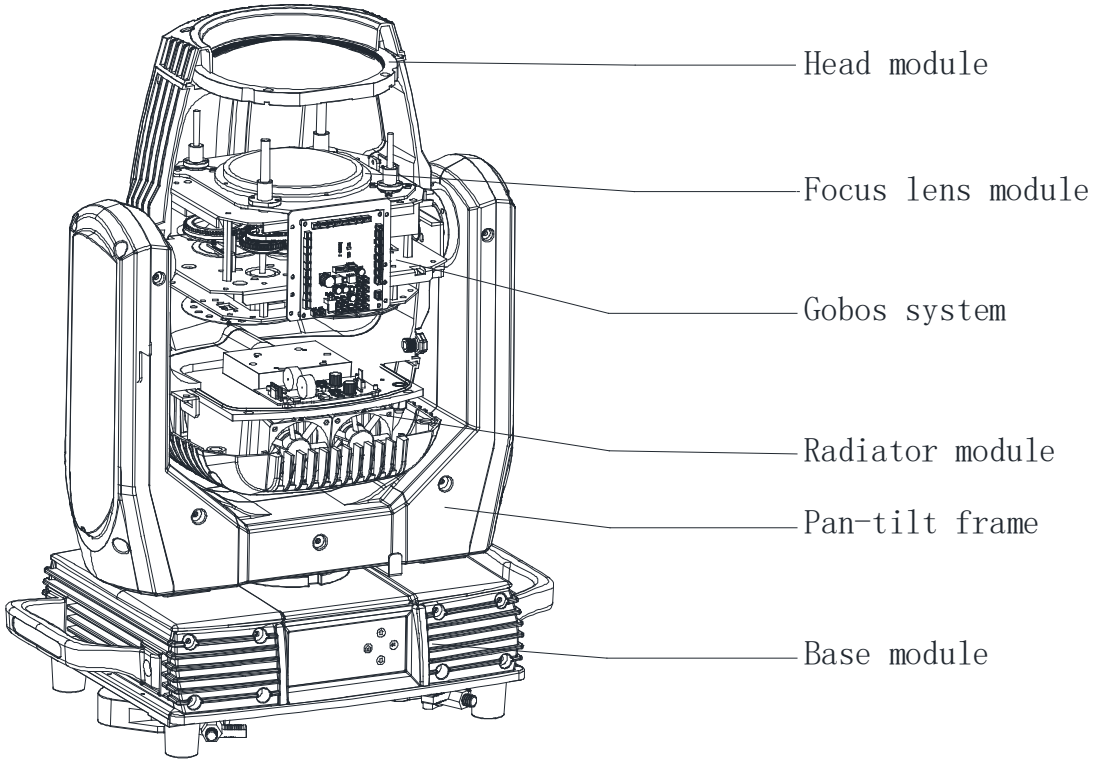








2.2 Fixture overview



2.3 Accessories

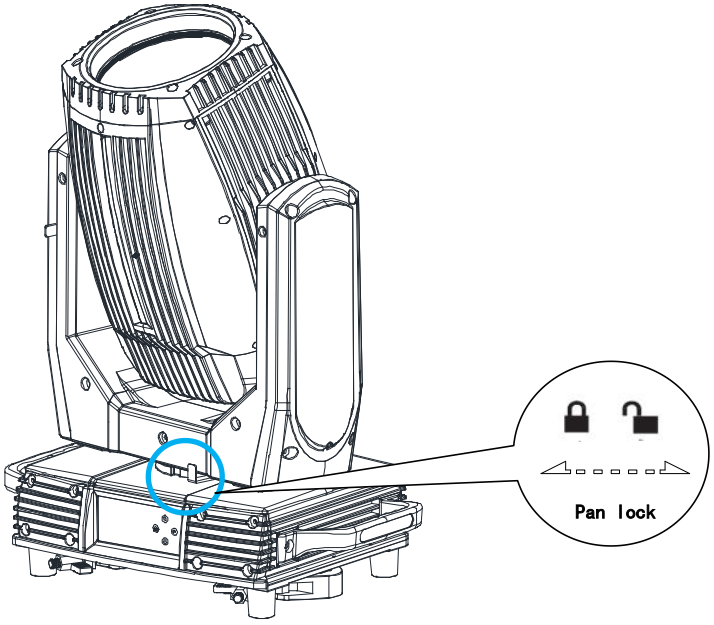
Item	Qty	Unit	Remark
User Manual	1	Pc	--
Safety cable	1	Pc	Φ4*60cm 7*19 pc with hook Material: Steel
3-pins signal line	1	Pc	5m
Power line	1	Pc	2.5m

3. Packing and shipping

3.1 Protection lock

Pan and tilt locks are equipped to ensure safe transportation.

The pan axis has 4 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.

Flight-Case(specification: 1148*650*555mm)： Uncover the flight-case and remove the plastic packing bags. Hold the handles of the fixture firmly and take it out carefully.

Cardboard box(specification：590*510*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

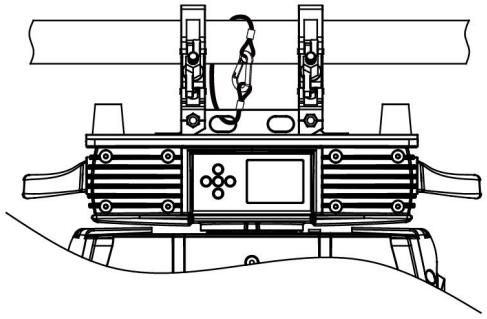
4.1 Clamps installation

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. 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.

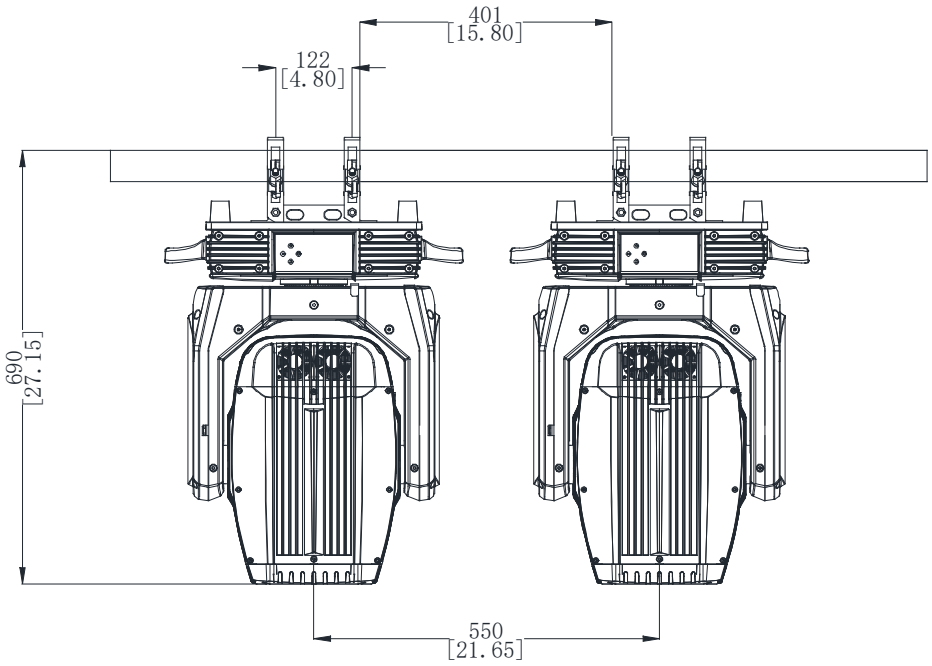
4.2 Device installation

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

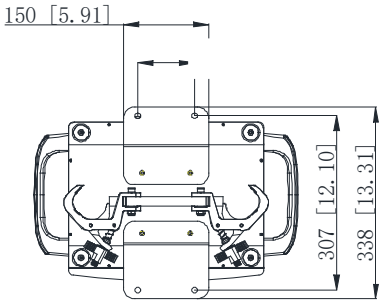


2. The clamp is mounted on the base of the fixture. Open and hang it on the truss.

3. Check if pan is locked before connecting the unit to AC power.



Sketch Map



5. Power/ Control connection

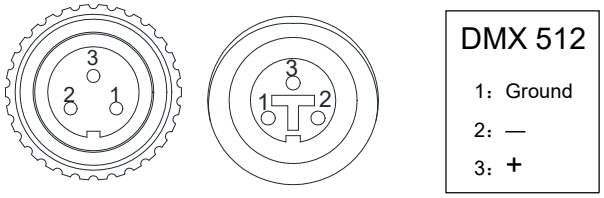
5.1 Power connection

Connection method:

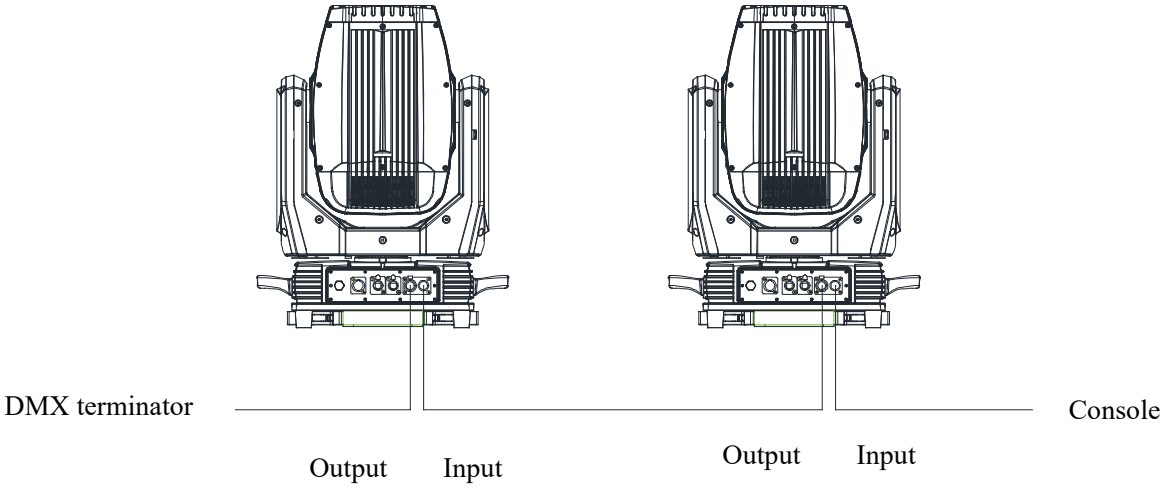
- L (Live) Brown wire
- E (Earth) Yellow / Green bi-color wire
- N (Neutral) Blue wire
- The voltage and frequency of the power source must be in compliance with the ones marked on the fixture. Please apply series connection when many sets of fixtures are connected to the power source to avoid heavy load to the power source. When the voltage is 220V, maximum 3 sets of fixtures could be allowed in each series connection. Another series connection should be set up for extra fixtures.

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:

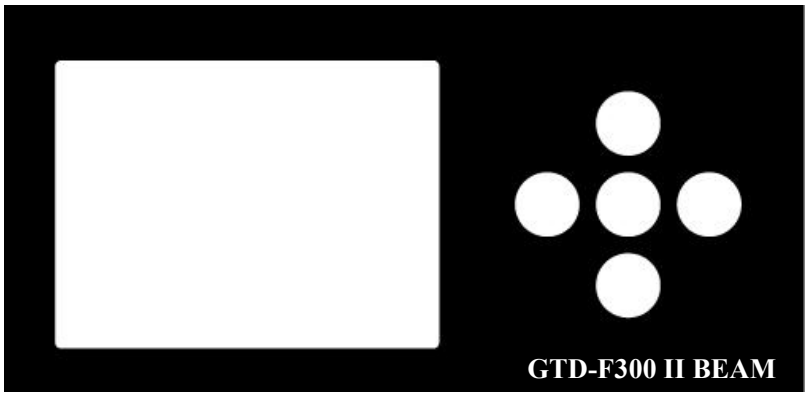


5.3 Testing

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



- The control panel features touch-sensitive buttons and LCD digital display for quick and easy setup of address code and functions menu.
- Press UP or DOWN to view or select the function menu.
- Press ENTER to choose a function and enter into corresponding sub-menu. Each menu represents a specific function of the fixture.
- Press ENTER to select the specific function and save the changes or enter into the sub-menu, then press UP or DOWN to change the value of the selected function (increase or decrease).
- Press MENU to return to the previous menu or exit.

7. Technical specification

- **Optical**

  Light source: LED 230W

  Expected average lifetime: 20000 h

  Zoom range：0° ~ 2°

  CRI：Ra≥70

  Focus: with precision HD Glass lens, electronic linear focus clearly

  Prism: 2 independent prism wheels

  Frost: 1-independent frost effect

- **Gobo**

  Fixed gobo wheel: 10 gobos + 2 effect gobos + open, CW/CCW rotation, variable speed

- **Color**

  Color wheel: 14 colors and open gobo, linear adjustment function, “Rainbow effect” in both directions

- **Electrical**

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

  Max. Power consumption: 350W Max current: 3.5A, PF: ≥0.97

  Power supply unit: wide range electronic SMPS

  DMX data input/output: Chassis 3-pin

- **Control and programming**

  Control channels (DMX): 16/13/17

  Protocol: DMX-512 RDM

  Display: LCD

- **Physical / Installation**

  Weight: 24Kg (52.9lbs.)

  IP rating: IP66

  Material: Aluminum, iron, plastic

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

- **Dynamic effects**

  Pan/Tilt movement: 540˚/270˚，adopting a function which resets 16bit accurately and automatically

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

  Dimmer: 0-100%, electronic linear dimming

- **Thermal**

  - Operating range: 14˚F - 113˚F (-15˚C - 45˚C)
  - Storage range: -40˚F - 140˚F(-40˚C - 60˚C)

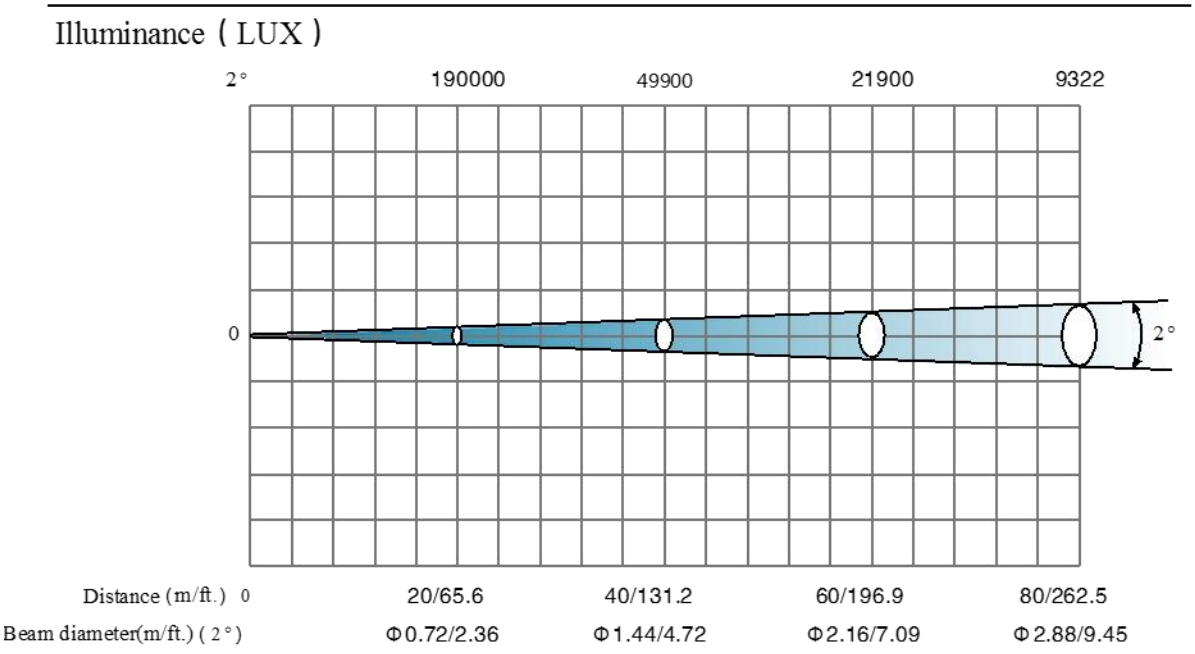
- Cooling: Active fan
- Humidity: ≤85%

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.
- 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.

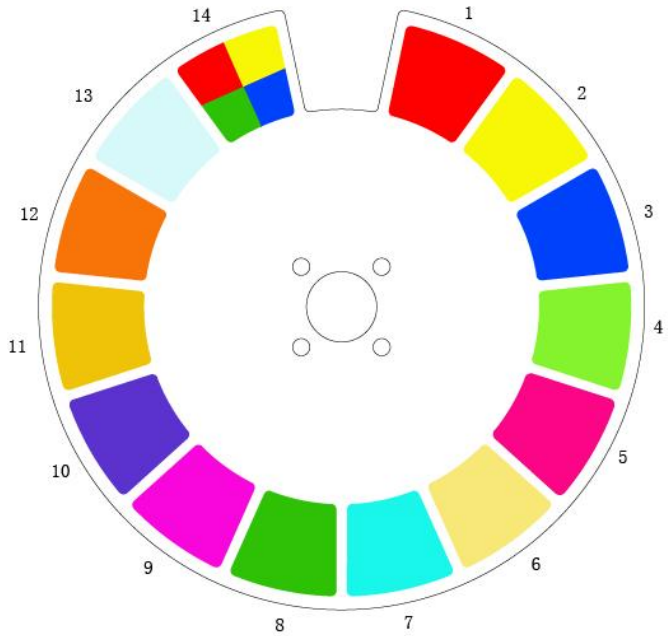
8. Gobos and colors

8.1 Gobos

One fixed gobo wheel: 10 gobos + 2 effect gobos + open, CW/CCW rotation, watery effect, variable speed

8.2 Colors

Color wheel: 14 colors + open, linear color conversion and “Half rainbow effect” in both direction.



1、Red
2、Deep yellow
3、Blue
4、Light green
5、Magenta
6、Light yellow
7、Light blue
8、Green
9、Rose red
10、Lavender
11、Brown yellow
12、Brown
13、Cool color
14、four in one

9. Menu structure

Menu structure				
Function	Set DMX Address	001-512		Set the starting DMX Address
	Channel Mode	**Standard (16ch)**		Standard mode
		Basic (13ch)		Basic mode
		Extended (17ch)		Extended mode
	Display Value	**Display All** Display None Auto program … Frost		Display individual, all, or no current DMX values on the home screen.
	Artnet Setting	IP:2,xxx,xxx,xxx Net:xxx SubNet:xxx Univ:xxx		Set Artnet Function command
	Mask Address	**255.0.0.0**		
	Sacn Setting	Priority:**100** Universe: **00001**		Set Sacn Function command
	Net ConnectOpt	Sacn/**Artnet**		Select Net Protocol
Information	Running Hours	Current Time	XXXXX (hours)	Current power ON time
		Total Run Time	XXXXX (hours)	Total fixture run time
		Last Run Time	XXXXX (hours)	Fixture previous run time
		LED On Time		Total lamp on time
	Temperature	LED Temperature	C°/F°	LED temperature
		Base Temperature	C°/F°	Base temperature
		Head Temperature	C°/F°	Head temperature
	Fan Information	Fan 1		Fan 1 status (normal…) and XXXX RPM
		Fan 2		Fan 2 status (normal…) and XXXX RPM

		Fan 3		Fan 3 status (normal…) and XXXX RPM
	Error Info.	No/…		Show any recorded error records
	Software Version	"*Product name*"		Name of product
		RDM 0104-xxxxxx		RDM manufacturer ID = **0104**
		Software Vx.x		Software version
		Date & Time		Current time
		Software Build Date		Software build time
System Setting	User Preferences	Console Set Addr	**Enable**/Disable	Address can be changed by console
		Lost DMX	Blackout/**Hold**	Default function if DMX signal is lost
		Pan Reverse	Enable/**Disable**	Pan reverse
		Tilt Reverse	Enable/**Disable**	Tilt reverse
		Pan Degree	360/**540**	Pan angle
		Feedback	**Enable**/Disable	Movement feedback
		Hibernation	Disable/1-120 (**30**)Min	Standby mode
	Fan Control	**Auto**		Auto fan speed
		High		Fans high speed
		Low		Fans low speed
	Display Settings	Shutoff Time	**1**-80 Min/Disable	Display backlight off timer
		Key Lock	Enable/**Disable**	LCD control panel key lock. Hold <Middle> Key 3s to unlock.
		Display Reverse	**Off**/On/Auto	Rotates the display 180 degrees
		Brightness	15-100% (**80%**)	Screen brightness (80% = default)
	Temperature C/F	Celsius/**Fahrenheit**		Temperature unit (Fahrenheit default)
	Restore Defaults	Yes/**No**		Restore default values
	Dimming	**Linear**		Linear dimming curve

	Modes			
		Exponential		Exponential dimming curve
		Parabolic		Parabolic dimming curve
	Calibration	Input Password	Pan = XXX … …	Used to calibrate and adjust each available value/position. **(provide Blizzard this password)**
Reset	Reset All	**No**/Yes		Reset all motors
	Reset Colors	**No**/Yes		Reset color wheel
	Reset Gobos	**No**/Yes		Reset gobo wheels
	Reset Zoom	**No**/Yes		Reset zoom.
	Other Reset	**No**/Yes		Reset all other motors. (Blade and Blade Rotate reset)
Channel Adjust	Test Mode	Test All	**No**/Yes	Run test sequence of all functions. Press MENU button to exit test.
		Test Channel	Pan = XXX … …	Run individual selected test function. Press MENU button to exit test.
	Manual Mode		Pan = XXX … …	Manual control of each available value

10. DMX Protocol

Standard

Standard (16ch)	Name	DMX value		DMX percentage		Function	Default DMX Value
1	Pan	0	255	0.0%	100.0%	Pan	0(0%)
2		0	65535	0.0%	100.0%	Pan, fine (LSB)	
3	Tilt	0	255	0.0%	100.0%	Tilt	46 (18.0%)
4		0	65535	0.0%	100.0%	Tilt, fine (LSB)	
5	Scan speed	0	255	0.0%	100.0%	Reserved	0(0%)
6	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	
7	Intensity	0	255	0.0%	100.0%	No light ➔ Full light	0(0%)
8	Color wheel	0	7	0.0%	2.7%	Open	0(0%)
		8	15	3.1%	5.9%	Color 1	
		16	23	6.3%	9.0%	Color 2	
		24	31	9.4%	12.2%	Color 3	
		32	39	12.5%	15.3%	Color 4	
		40	47	15.7%	18.4%	Color 5	
		48	55	18.8%	21.6%	Color 6	
		56	63	22.0%	24.7%	Color 7	
		64	71	25.1%	27.8%	Color 8	
		72	79	28.2%	31.0%	Color 9	
		80	87	31.4%	34.1%	Color 10	

		88	95	34.5%	37.3%	Color 11	
		96	103	37.6%	40.4%	Color 12	
		104	111	40.8%	43.5%	Color 13	
		112	127	43.9%	49.8%	Color 14	
		128	187	50.2%	73.3%	Color1 continous rotation CW from slow to fast	
		188	195	73.7%	76.5%	Stop	
		196	255	76.9%	100.0%	Color1 continous rotation CCW from slow to fast	
9	Gobo wheel (static)	0	15	0.0%	5.9%	Open gobo	0(0%)
		16	18	6.3%	7.1%	Gobo 1	
		19	21	7.5%	8.2%	Gobo 2	
		22	24	8.6%	9.4%	Gobo 3	
		25	27	9.8%	10.6%	Gobo 4	
		28	30	11.0%	11.8%	Gobo 5	
		31	33	12.2%	12.9%	Gobo 6	
		34	36	13.3%	14.1%	Gobo 7	
		37	39	14.5%	15.3%	Gobo 8	
		40	42	15.7%	16.5%	Gobo 9	
		43	45	16.9%	17.6%	Gobo 10	
		46	48	18.0%	18.8%	Gobo 11	
		49	51	19.2%	20.0%	Gobo 12	
		52	53	20.4%	20.8%	Open gobo	
		54	59	21.2%	23.1%	Gobo 1 shake	
		60	65	23.5%	25.5%	Gobo 2 shake	
		66	71	25.9%	27.8%	Gobo 3 shake	
		72	77	28.2%	30.2%	Gobo 4 shake	
		78	83	30.6%	32.5%	Gobo 5 shake	
		84	89	32.9%	34.9%	Gobo 6 shake	
		90	95	35.3%	37.3%	Gobo 7 shake	

		96	101	37.6%	39.6%	Gobo 8 shake	
		102	107	40.0%	42.0%	Gobo 9 shake	
		108	113	42.4%	44.3%	Gobo 10 shake	
		114	119	44.7%	46.7%	Gobo 11 shake	
		120	125	47.1%	49.0%	Gobo 12 shake	
		126	127	49.4%	49.8%	Open gobo	
		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	Focus	0	255	0.0%	100.0%	Near Far	
11		0	65535	0.0%	100.0%	Focus, fine (LSB)	
12	Prism1	0	31	0.0%	12.2%	Off	0(0%)
		32	255	12.5%	100.0%	Prism On	
13	Prism2	0	31	0.0%	12.2%	Off	0(0%)
		32	255	12.5%	100.0%	Prism On	
14	Prism rotation	0	127	0.0%	49.8%	Prism indexed	0(0%)
		128	187	50.2%	73.3%	Prism continous rotation CW from slow to fast	
		188	195	73.7%	76.5%	Stop	
		196	255	76.9%	100.0%	Prism continous rotation CCW from slow to fast	
15	Frost	0	255	0.0%	100.0%	Frost zoom from smallest to biggest	0(0%)
16	Special controls	0	9	0.00%	3.53%	No function	0(0%)
		10	19	3.92%	7.45%	No function	
		20	29	7.84%	11.37%	No function	
		30	39	11.76%	15.29%	Color wheel half color switch	
		40	49	15.69%	19.22%	Color wheel random positioning	
		50	59	19.61%	23.14%	Reserved	
		60	69	23.53%	27.06%	Reset all motor after 5 seconds	

		70	79	27.45%	30.98%	Pan/Tilt motor reset after 5 seconds	
		80	89	31.37%	34.90%	All color motor reset after 5 seconds	
		90	99	35.29%	38.82%	All gobo motor reset after 5 seconds	
		100	109	39.22%	42.75%	Other motor reset after 5 seconds	
		110	119	43.14%	46.67%	Reserved	
		120	129	47.06%	50.59%	Built-in program 1	
		130	139	50.98%	54.51%	Built-in program 2	
		140	149	54.90%	58.43%	Built-in program 3	
		150	159	58.82%	62.35%	Built-in program 4	
		160	169	62.75%	66.27%	Built-in program 5	
		170	179	66.67%	70.20%	Built-in program 6	
		180	189	70.59%	74.12%	Built-in program 7	
		190	199	74.51%	78.04%	Built-in program 8	
		200	209	78.43%	81.96%	Built-in program 9	
		210	219	82.35%	85.88%	Built-in program 10	
		220	255	86.3%	100.0%	Reserved	

Basic

Basic (13ch)	Name	DMX value		DMX percentage		Function	Default DMX Value
1	Pan	0	255	0.0%	100.0%	Pan	0(0%)
		0	65535	0.0%	100.0%	Pan, fine (LSB)	
2	Tilt	0	255	0.0%	100.0%	Tilt	46 (18.0%)
		0	65535	0.0%	100.0%	Tilt, fine (LSB)	
3	Scan speed	0	255	0.0%	100.0%	Reserved	0(0%)
4	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	
5	Intensity	0	255	0.0%	100.0%	No light ➔ Full light	0(0%)
6	Color wheel	0	7	0.0%	2.7%	Open	0(0%)
		8	15	3.1%	5.9%	Color 1	
		16	23	6.3%	9.0%	Color 2	
		24	31	9.4%	12.2%	Color 3	
		32	39	12.5%	15.3%	Color 4	
		40	47	15.7%	18.4%	Color 5	
		48	55	18.8%	21.6%	Color 6	
		56	63	22.0%	24.7%	Color 7	
		64	71	25.1%	27.8%	Color 8	
		72	79	28.2%	31.0%	Color 9	
		80	87	31.4%	34.1%	Color 10	
		88	95	34.5%	37.3%	Color 11	
		96	103	37.6%	40.4%	Color 12	
		104	111	40.8%	43.5%	Color 13	
		112	127	43.9%	49.8%	Color 14	
		128	187	50.2%	73.3%	Color1 continous rotation CW from slow to fast	
		188	195	73.7%	76.5%	Stop	
		196	255	76.9%	100.0%	Color1 continous rotation CCW from slow to fast	
7	Gobo wheel (static)	0	15	0.0%	5.9%	Open gobo	0(0%)
		16	18	6.3%	7.1%	Gobo 1	
		19	21	7.5%	8.2%	Gobo 2	
		22	24	8.6%	9.4%	Gobo 3	
		25	27	9.8%	10.6%	Gobo 4	
		28	30	11.0%	11.8%	Gobo 5	

		31	33	12.2%	12.9%	Gobo 6	
		34	36	13.3%	14.1%	Gobo 7	
		37	39	14.5%	15.3%	Gobo 8	
		40	42	15.7%	16.5%	Gobo 9	
		43	45	16.9%	17.6%	Gobo 10	
		46	48	18.0%	18.8%	Gobo 11	
		49	51	19.2%	20.0%	Gobo 12	
		52	53	20.4%	20.8%	Open gobo	
		54	59	21.2%	23.1%	Gobo 1 shake	
		60	65	23.5%	25.5%	Gobo 2 shake	
		66	71	25.9%	27.8%	Gobo 3 shake	
		72	77	28.2%	30.2%	Gobo 4 shake	
		78	83	30.6%	32.5%	Gobo 5 shake	
		84	89	32.9%	34.9%	Gobo 6 shake	
		90	95	35.3%	37.3%	Gobo 7 shake	
		96	101	37.6%	39.6%	Gobo 8 shake	
		102	107	40.0%	42.0%	Gobo 9 shake	
		108	113	42.4%	44.3%	Gobo 10 shake	
		114	119	44.7%	46.7%	Gobo 11 shake	
		120	125	47.1%	49.0%	Gobo 12 shake	
		126	127	49.4%	49.8%	Open gobo	
		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	
8	Focus	0	255	0.0%	100.0%	Near Far	0(0%)
		0	65535	0.0%	100.0%	Focus, fine (LSB)	
9	Prism1	0	31	0.0%	12.2%	Off	0(0%)
		32	255	12.5%	100.0%	Prism On	

10	Prism2	0	31	0.0%	12.2%	Off	0(0%)
		32	255	12.5%	100.0%	Prism On	
11	Prism rotation	0	127	0.0%	49.8%	Prism indexed	0(0%)
		128	187	50.2%	73.3%	Prism continous rotation CW from slow to fast	
		188	195	73.7%	76.5%	Stop	
		196	255	76.9%	100.0%	Prism continous rotation CCW from slow to fast	
12	Frost	0	255	0.0%	100.0%	Frost zoom from smallest to biggest	0(0%)
13	Special controls	0	9	0.00%	3.53%	No function	0(0%)
		10	19	3.92%	7.45%	No function	
		20	29	7.84%	11.37%	No function	
		30	39	11.76%	15.29%	Color wheel half color switch	
		40	49	15.69%	19.22%	Color wheel random positioning	
		50	59	19.61%	23.14%	Reserved	
		60	69	23.53%	27.06%	Reset all motor after 5 seconds	
		70	79	27.45%	30.98%	Pan/Tilt motor reset after 5 seconds	
		80	89	31.37%	34.90%	All color motor reset after 5 seconds	
		90	99	35.29%	38.82%	All gobo motor reset after 5 seconds	
		100	109	39.22%	42.75%	Other motor reset after 5 seconds	
		110	119	43.14%	46.67%	Reserved	
		120	129	47.06%	50.59%	Built-in program 1	
		130	139	50.98%	54.51%	Built-in program 2	
		140	149	54.90%	58.43%	Built-in program 3	
		150	159	58.82%	62.35%	Built-in program 4	
		160	169	62.75%	66.27%	Built-in program 5	
		170	179	66.67%	70.20%	Built-in program 6	
		180	189	70.59%	74.12%	Built-in program 7	
		190	199	74.51%	78.04%	Built-in program 8	
		200	209	78.43%	81.96%	Built-in program 9	

		210	219	82.35%	85.88%	Built-in program 10	
		220	255	86.3%	100.0%	Reserved	

Extended

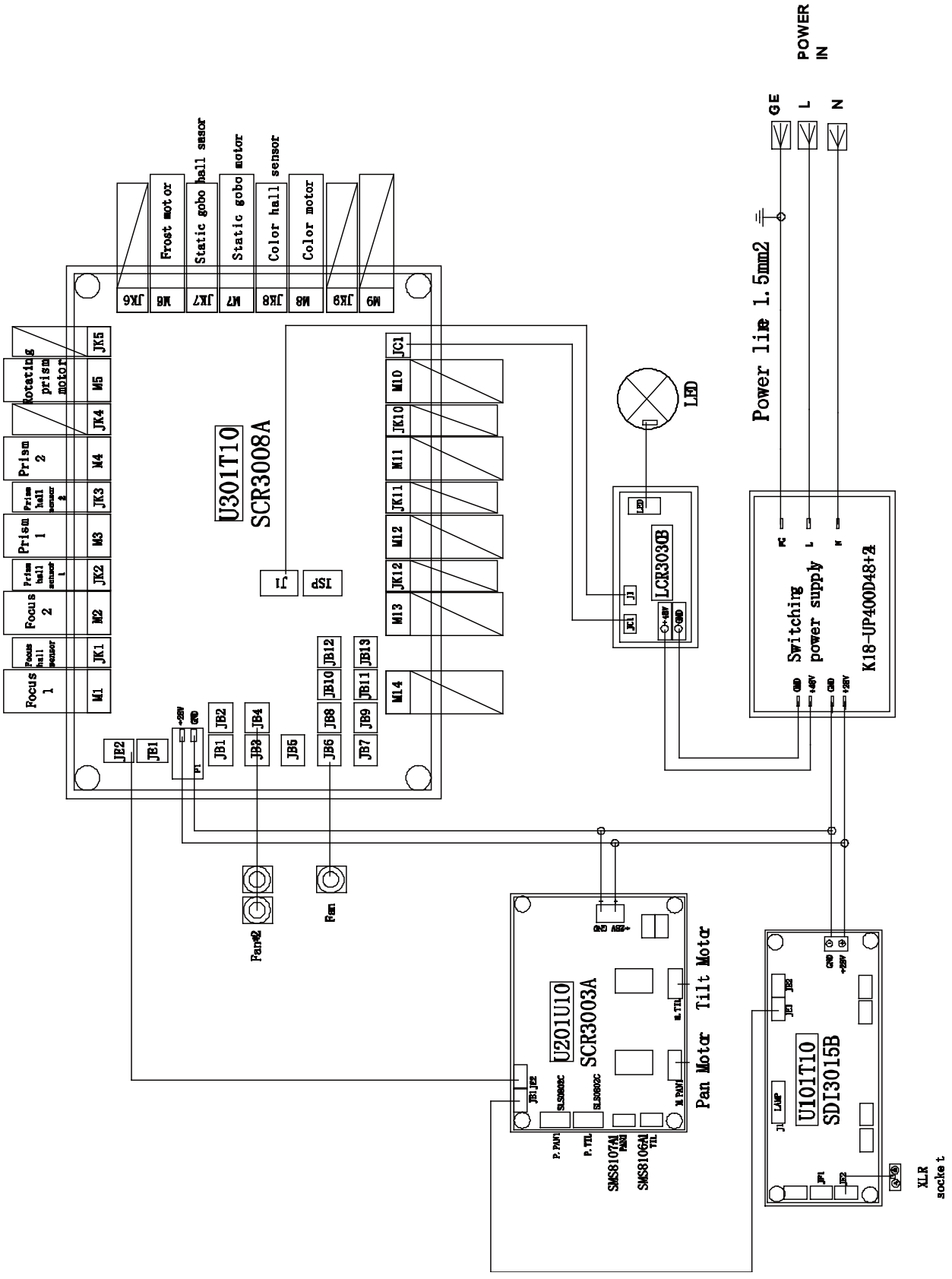
Extended (17ch)	Name	DMX value		DMX percentage		Function	Default DMX Value
1	Pan	0	255	0.0%	100.0%	Pan	0(0%)
2		0	65535	0.0%	100.0%	Pan, fine (LSB)	
3	Tilt	0	255	0.0%	100.0%	Tilt	46(18.0%)
4		0	65535	0.0%	100.0%	Tilt, fine (LSB)	
5	Scan speed	0	255	0.0%	100.0%	Reserved	0(0%)
6	Strobe/ Shutter	0	31	0.0%	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	
7	Intensity	0	255	0.0%	100.0%	No light ➔ Full light	0(0%)
8		0	65535	0.0%	100.0%	Intensity fade, fine (LSB)	
9	Color wheel	0	7	0.0%	2.7%	Open	0(0%)
		8	15	3.1%	5.9%	Color 1	
		16	23	6.3%	9.0%	Color 2	
		24	31	9.4%	12.2%	Color 3	
		32	39	12.5%	15.3%	Color 4	
		40	47	15.7%	18.4%	Color 5	
		48	55	18.8%	21.6%	Color 6	
		56	63	22.0%	24.7%	Color 7	
		64	71	25.1%	27.8%	Color 8	

		72	79	28.2%	31.0%	Color 9	
		80	87	31.4%	34.1%	Color 10	
		88	95	34.5%	37.3%	Color 11	
		96	103	37.6%	40.4%	Color 12	
		104	111	40.8%	43.5%	Color 13	
		112	127	43.9%	49.8%	Color 14	
		128	187	50.2%	73.3%	Color1 continous rotation CW from slow to fast	
		188	195	73.7%	76.5%	Stop	
		196	255	76.9%	100.0%	Color1 continous rotation CCW from slow to fast	
10	Gobo wheel (static)	0	15	0.0%	5.9%	Open gobo	0(0%)
		16	18	6.3%	7.1%	Gobo 1	
		19	21	7.5%	8.2%	Gobo 2	
		22	24	8.6%	9.4%	Gobo 3	
		25	27	9.8%	10.6%	Gobo 4	
		28	30	11.0%	11.8%	Gobo 5	
		31	33	12.2%	12.9%	Gobo 6	
		34	36	13.3%	14.1%	Gobo 7	
		37	39	14.5%	15.3%	Gobo 8	
		40	42	15.7%	16.5%	Gobo 9	
		43	45	16.9%	17.6%	Gobo 10	
		46	48	18.0%	18.8%	Gobo 11	
		49	51	19.2%	20.0%	Gobo 12	
		52	53	20.4%	20.8%	Open gobo	
		54	59	21.2%	23.1%	Gobo 1 shake	
		60	65	23.5%	25.5%	Gobo 2 shake	
		66	71	25.9%	27.8%	Gobo 3 shake	
		72	77	28.2%	30.2%	Gobo 4 shake	
		78	83	30.6%	32.5%	Gobo 5 shake	

		84	89	32.9%	34.9%	Gobo 6 shake	
		90	95	35.3%	37.3%	Gobo 7 shake	
		96	101	37.6%	39.6%	Gobo 8 shake	
		102	107	40.0%	42.0%	Gobo 9 shake	
		108	113	42.4%	44.3%	Gobo 10 shake	
		114	119	44.7%	46.7%	Gobo 11 shake	
		120	125	47.1%	49.0%	Gobo 12 shake	
		126	127	49.4%	49.8%	Open gobo	
		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	Focus	0	255	0.0%	100.0%	Near Far	0(0%)
12		0	65535	0.0%	100.0%	Focus, fine (LSB)	
13	Prism1	0	31	0.0%	12.2%	Off	0(0%)
		32	255	12.5%	100.0%	Prism On	
14	Prism2	0	31	0.0%	12.2%	Off	0(0%)
		32	255	12.5%	100.0%	Prism On	
15	Prism rotation	0	127	0.0%	49.8%	Prism indexed	0(0%)
		128	187	50.2%	73.3%	Prism continous rotation CW from slow to fast	
		188	195	73.7%	76.5%	Stop	
		196	255	76.9%	100.0%	Prism continous rotation CCW from slow to fast	
16	Frost	0	255	0.0%	100.0%	Frost zoom from smallest to biggest	0(0%)
17	Special controls	0	9	0.00%	3.53%	No function	0(0%)
		10	19	3.92%	7.45%	No function	
		20	29	7.84%	11.37%	No function	
		30	39	11.76%	15.29%	Color wheel half color switch	
		40	49	15.69%	19.22%	Color wheel random positioning	

		50	59	19.61%	23.14%	Reserved	
		60	69	23.53%	27.06%	Reset all motor after 5 seconds	
		70	79	27.45%	30.98%	Pan/Tilt motor reset after 5 seconds	
		80	89	31.37%	34.90%	All color motor reset after 5 seconds	
		90	99	35.29%	38.82%	All gobo motor reset after 5 seconds	
		100	109	39.22%	42.75%	Other motor reset after 5 seconds	
		110	119	43.14%	46.67%	Reserved	
		120	129	47.06%	50.59%	Built-in program 1	
		130	139	50.98%	54.51%	Built-in program 2	
		140	149	54.90%	58.43%	Built-in program 3	
		150	159	58.82%	62.35%	Built-in program 4	
		160	169	62.75%	66.27%	Built-in program 5	
		170	179	66.67%	70.20%	Built-in program 6	
		180	189	70.59%	74.12%	Built-in program 7	
		190	199	74.51%	78.04%	Built-in program 8	
		200	209	78.43%	81.96%	Built-in program 9	
		210	219	82.35%	85.88%	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.

Problem	Possible Cause	Suggested Correction
	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.
	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	The ballast incorporate internal

Problem	Possible Cause	Suggested Correction
	or damaged ballast.	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 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

Problem	Possible Cause	Suggested Correction
		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
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.

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