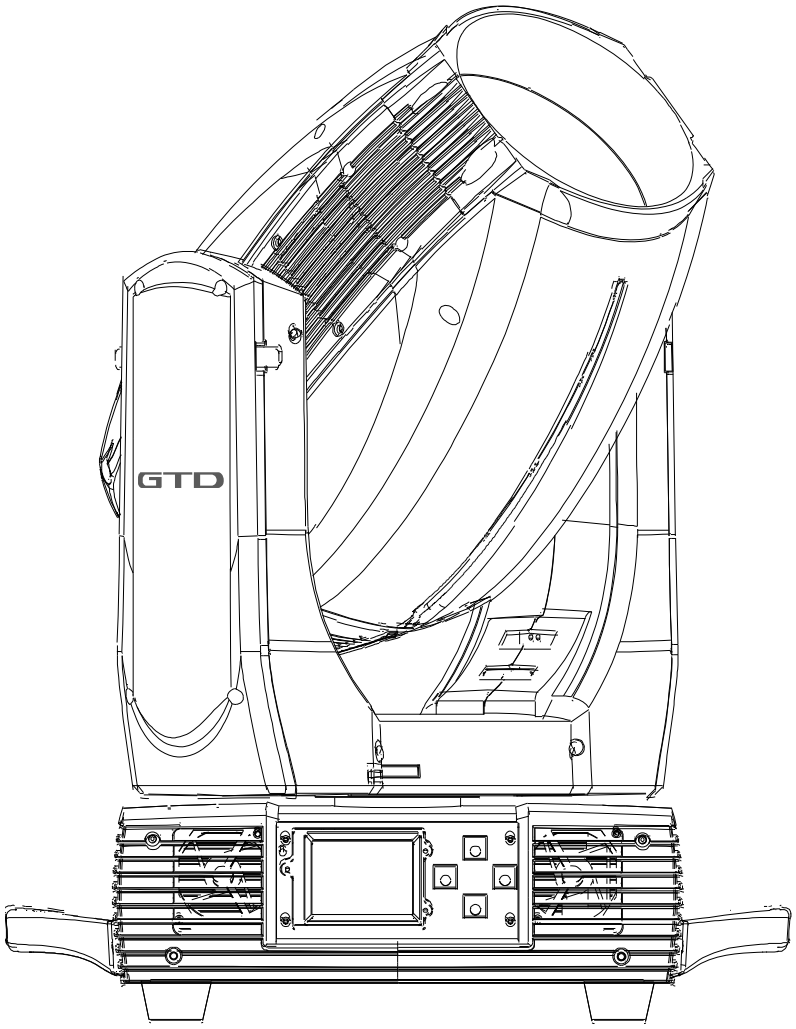
GTD



GTD–LM380 II BEAM

Moving Head

User Manual

GTD and all affiliated companies hereby disclaim any and all liabilities for property, equipment, building, and electrical damages, injuries to any persons, and direct or indirect economic loss associated with the use or reliance of any information contained within this document, and/or as a result of the improper, unsafe, insufficient and negligent assembly, installation, rigging, and operation of this product.

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!

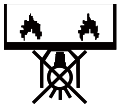
Hazardous voltage. Risk of lethal or severe electric shock

WARNING!

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

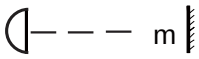
WARNING!

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.

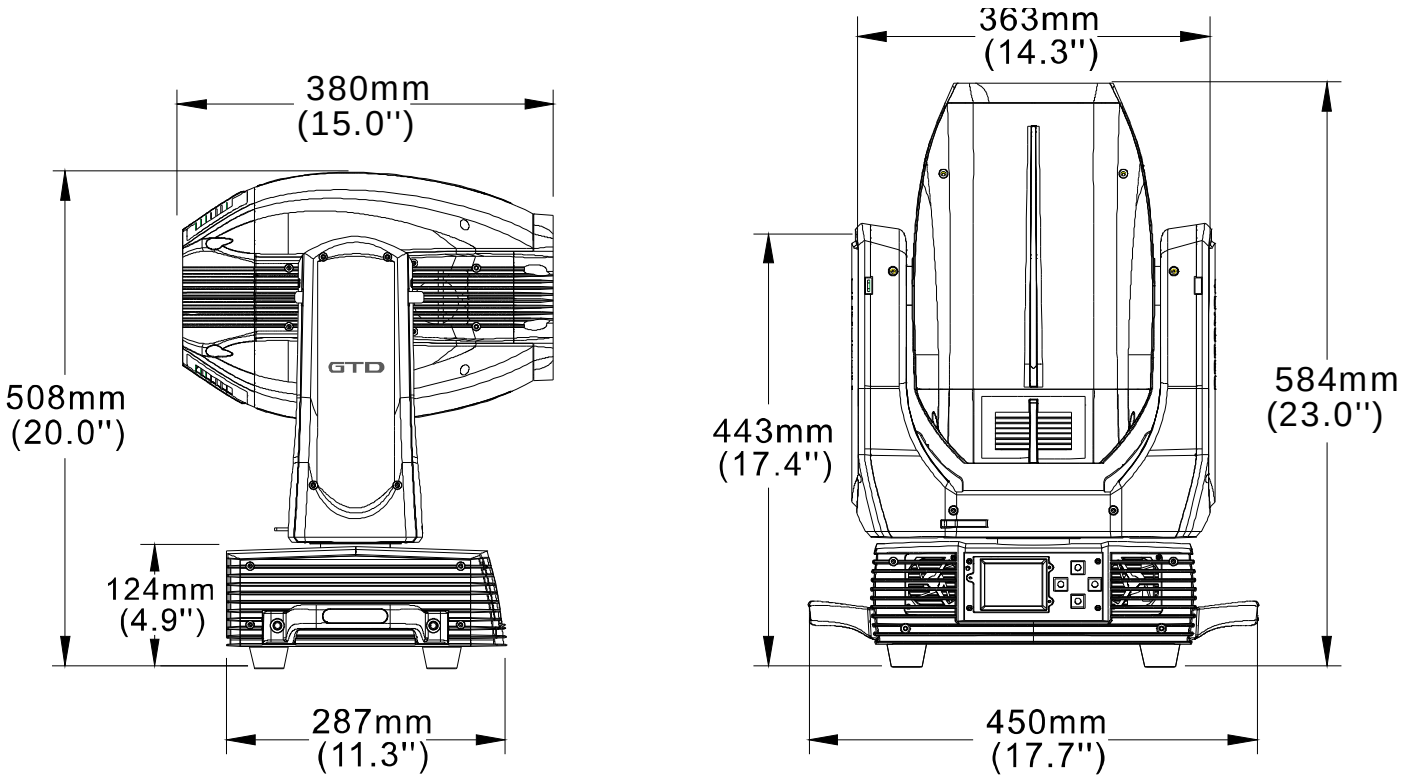
tc. . . °C Maximum temp of the external surface.

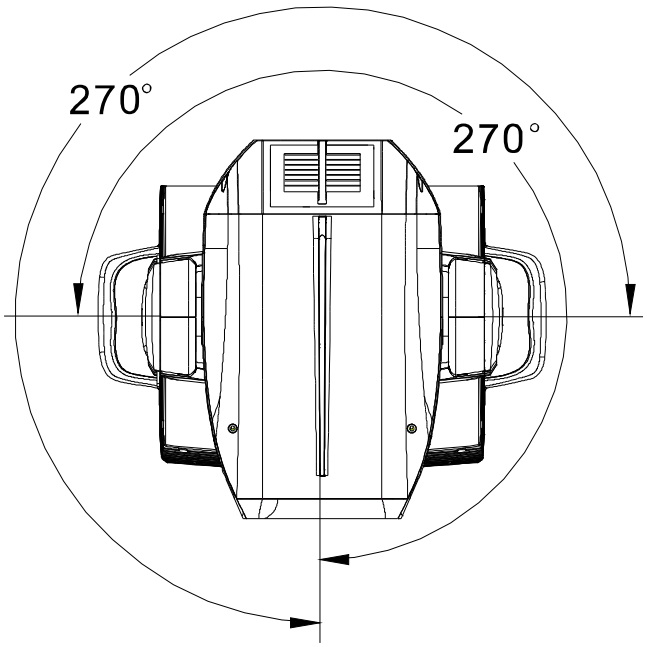
⚠ General guidelines

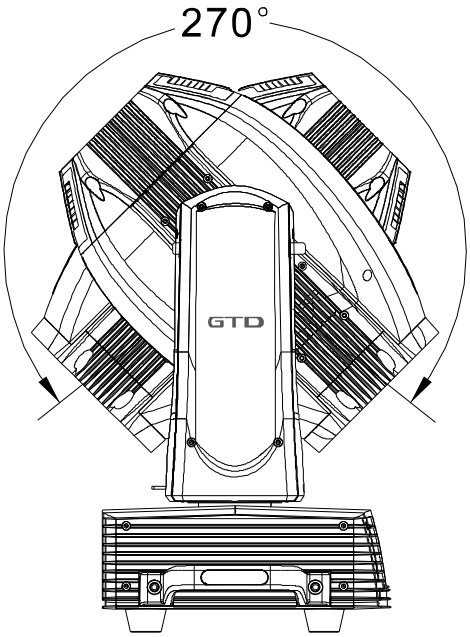
- The protection rating of this product IP20.
- Never open this fixture while it is in use.
- The fixture should be kept clean. DO NOT operate the fixture in extreme heat or dusty environments. Avoid contact with chemical liquid.
- Minimum distance to lighted objects must be 16.4 feet (5m).
- Maximum temp of the external surface 302˚F (150˚C).
- Maximum ambient temperature 113˚F (45˚C).
- Minimum distance of inflammable materials from the surface 1.6 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.
- 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

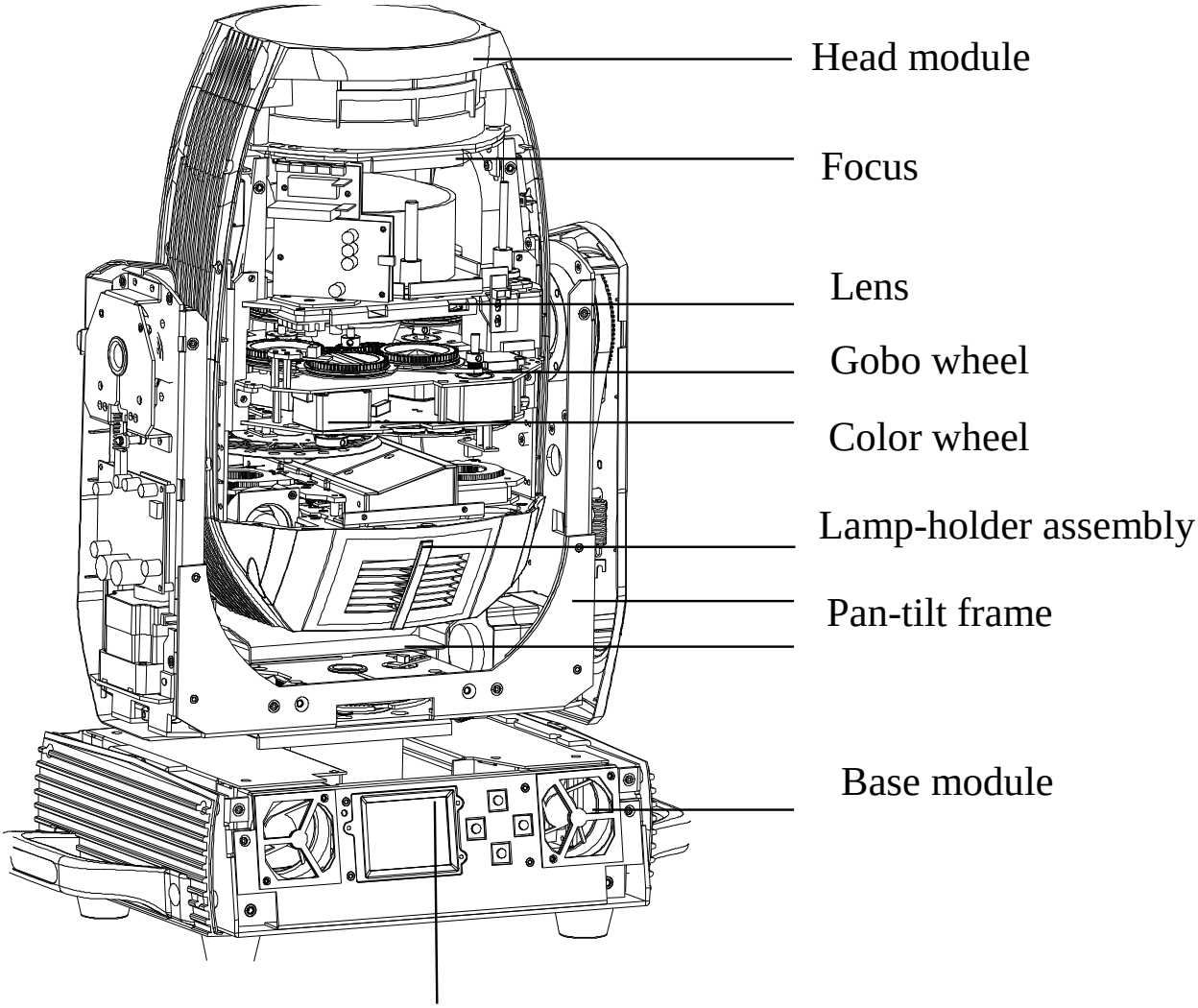
2.1 Dimensions







2.2 Fixture overview



2.3 Accessories

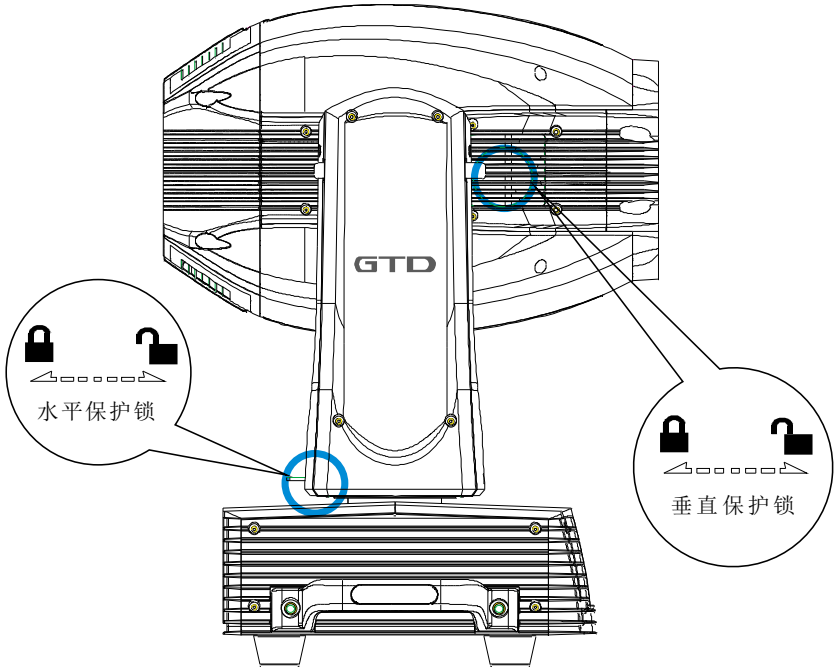
Item	Qty	Unit	Remark
User Manual	1	Pc	--
Clamps	2	Set	154*135*25mm ¢ 50*30KG
Safety cable	1	Pc	Φ4*60cm 7*19 pc with hook Material：Steel
3-pins signal line	1	Set	5 m

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.

Flight–Case： Uncover the flight–case and remove the plastic packing bags. Hold the handles of the fixture firmly and take it out carefully.

Cardboard box： 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

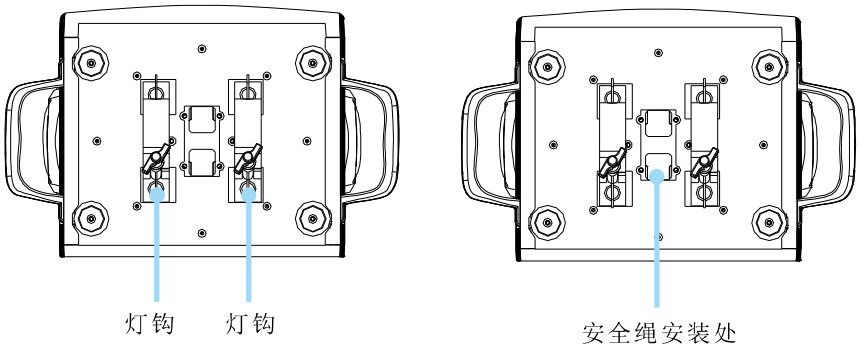
4.1 Clamps installation

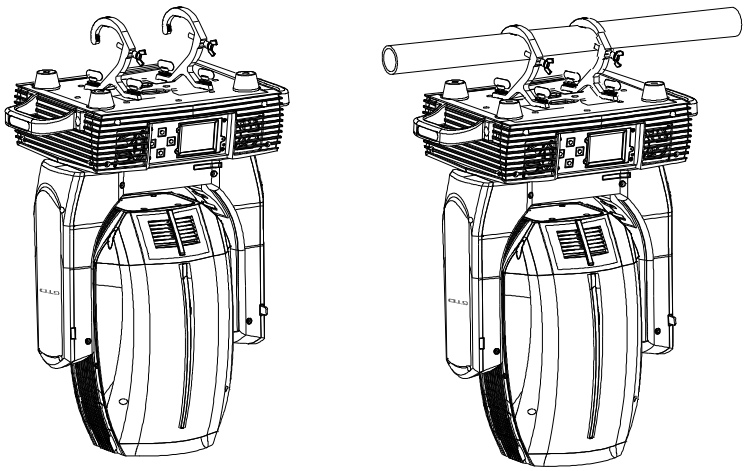
The fixture can be placed on the stage or mounted on the truss which faces any direction. Attach the clamps to the mounting position on the base of the fixture.

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.





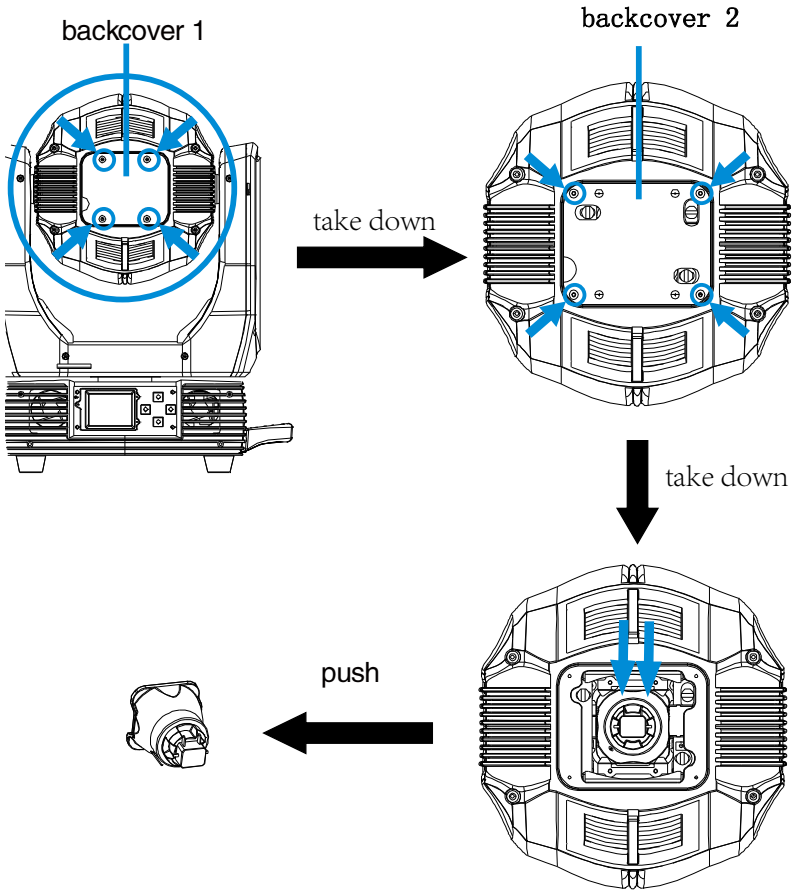
4.3 Lamp installation

1. Switch the power off and lock the tilt–lock at vertical position, after waiting the fixture for cooling.

2.Strip down the lamp：Remove 4 screws which are in the back–cover 1, tear down the lamp and impact cover1, tear down cover2 with the same way. Pull up the connecting line of the lamp, and push the upper, then you can take the lamp.

3. Lamp installation: Push one side of lamp to bottom and plug connecting line, mounting the back–cover 1 and back–cover 2 at last.

4. To check whether lamp is put at the accurate position.



⚠**Attention:**

1. The fixture is equipped with OSRAM TI_SIRIUS HRI 371W S new lamp, with low power but high-effect, supplying for 7000K color temperature correction, and its expected average lifetime is 1500 hours.
2. You'd better not install non-original lamp for the fixture will be damaged. Please read "the user manual" carefully before replacing the lamp.
3. Don't touch the lamp without wearing clear gloves. You can use tissue which is put in the lamp to clean it.

5. Power/ Control connection

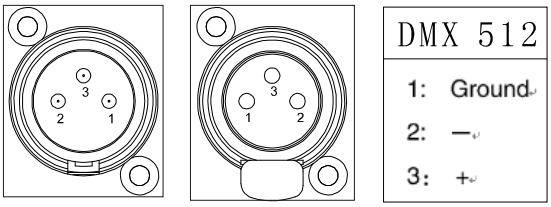
5.1 Power connection

Connection method:

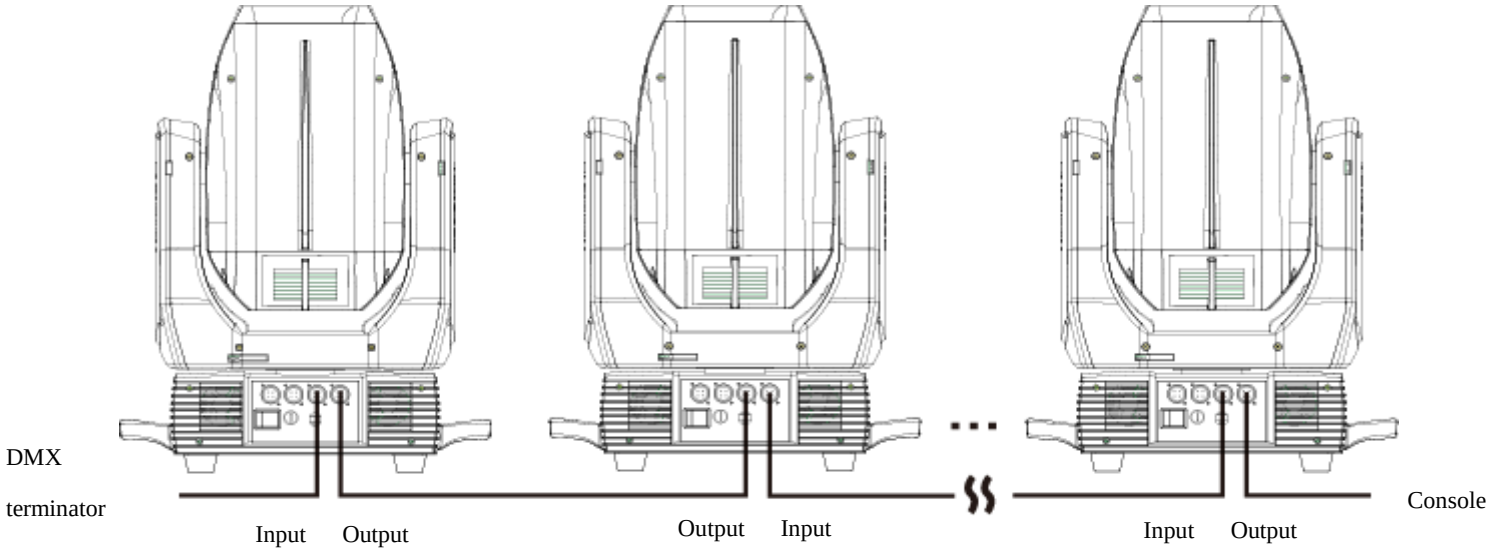
- L (Live) Brown wire
- E (Earth) Yellow / Green bi–color wire
- N (Neutral) Blue wire
- The voltage and frequency of the power source must be in compliance with the ones marked on the fixture. It is strongly recommended that each fixture are to be connected to the power source separately so that they 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 1/4W and 120Ω resistor between the pin 2 and pin 3) as shown below:

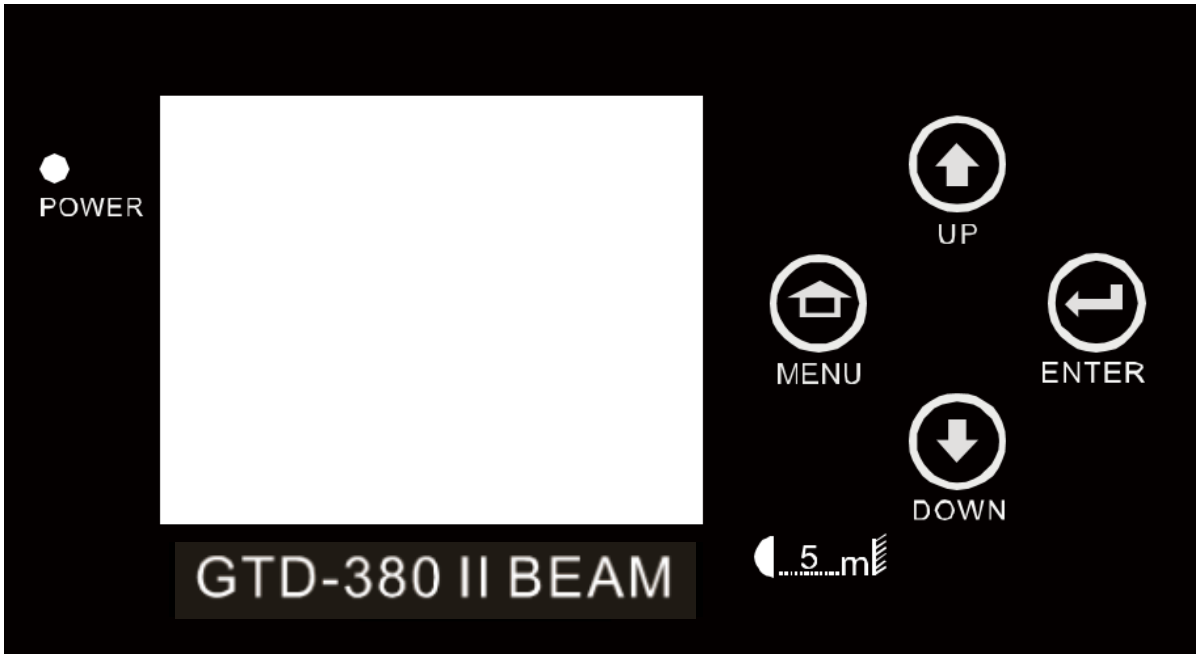


5.3 Testing

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 CNTER to choose a function and enter into corresponding submenu. Each menu represents a specific function of the fixture.
- Press RIGHT to select the specific function and save the changes or enter into the submenu, then press UP or DOWN to change the value of the selected function (increase or decrease).
- Press RIGHT to return to the previous menu or exit.

7. Technical specification

- **Optical**

  Light source: OSRAM TI_SIRIUS HRI 371W S

  Expected average lifetime: 1500 H

  Color temperature correction: 7000K

  Lumens: 16000lm

  Zoom range：0°-2.5°

  Focus: regulate by DMX512

  Frost: 1-independent frost effect

  Luminous: 14029lms

- **Gobo**

  Rotating gobo Wheel: 12optional gobo +open

  Fixed gobo Wheel: 8gobos + 2 effect gobos + open, CW/CCW rotation, watery effect, variable speed.

  Gobo outside diameter: 11.9mm

  Max. Image diameter: 6mm

  Max Thickness: 0.5mm

  Gobo material: Metal

- **Color**

  Color Wheel: 14 color gobos and open gobo, linear adjustment function, “Rainbow effect” in both directions

- **Electrical**

  Power input, nominal: AC 200-240V 50/60Hz

  Max. Power consumption: 523W

  Max current: 5.1A, PF: 0.998

  Power supply unit: narrow range electronic SMPS

  Main fuse: 6.3A

  DMX data input/output: Chassis 3/5-pin XLR

- **Control and programming**

  Control channels (DMX): 18/15/20

  Protocol: DMX-512 RDM

  Display: LCD

- **Physical / Installation**

  Weight: 24kg (53 lbs.)

  IP rating: IP20

  Material: Aluminum, copper, steel, plastic

  Mounting points: 4 fastening point + attachment points for safety wire

- **Dynamic effects**

  Pan/Tilt movement: 540˚/270˚， 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

- **Thermal**

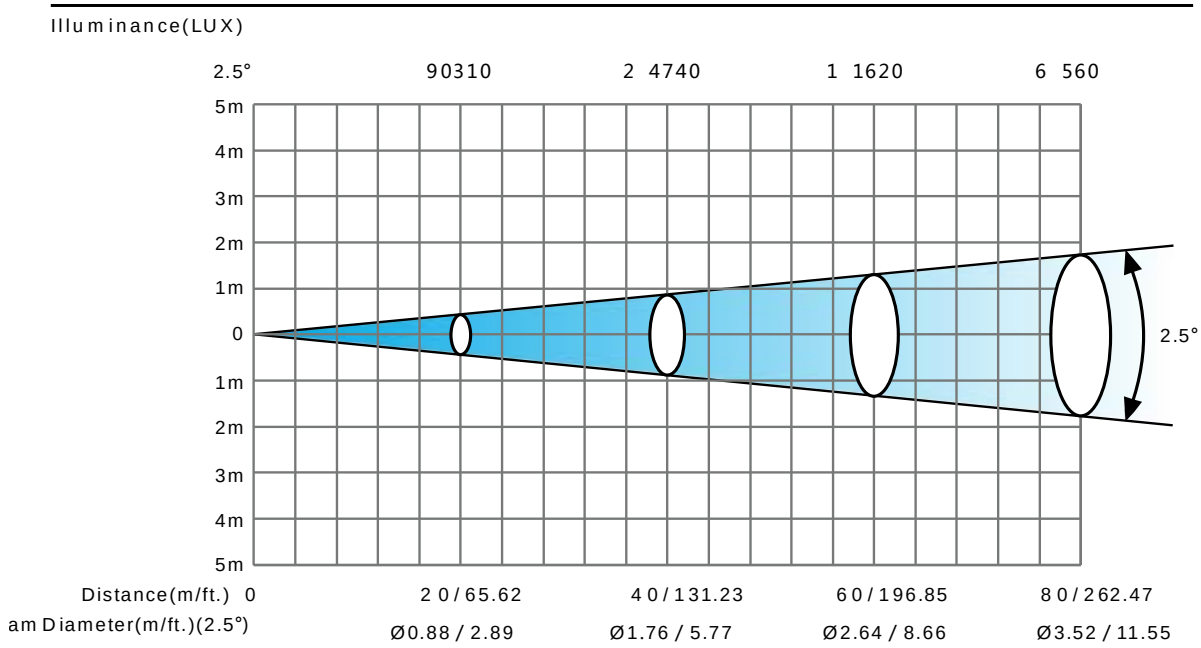
  - Operating range: 5˚F - 113˚F (-15˚C - 45˚C)
  - Startup range: -13˚F - 113˚F(-25˚C - 45˚C)
  - Storage range: -40˚F - 140˚F(-40˚C - 60˚C)
  - Cooling: Active fan
  - Humidity: ≤85%

- **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 7000.217-200811

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

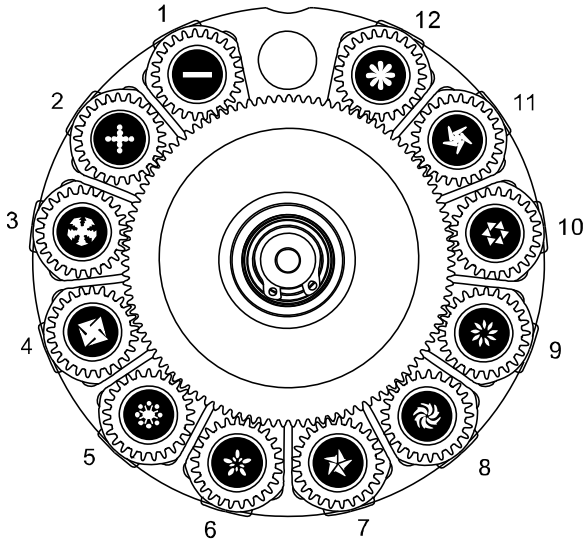
The customized size is as below:

Gobo material	Outer dimension	Effective dimension	Thickness
Glass gobo	Φ23.8mm	Φ16.5mm	1.1mm
Gobo material: Glass			

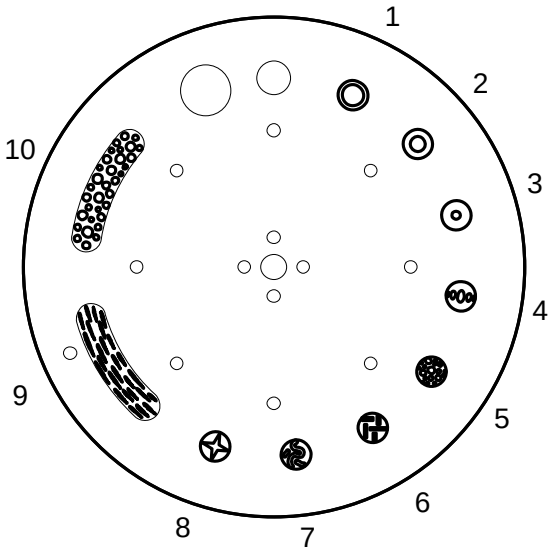
8.2 Gobos

One rotating gobo　Wheel: 12 interchangeable gobos + open, indexing, CW/CCW rotation, variable speed

One fixed gobo　Wheel: 8gobos + 2 effect gobos + open, CW/CCW rotation, watery effect, variable speed.



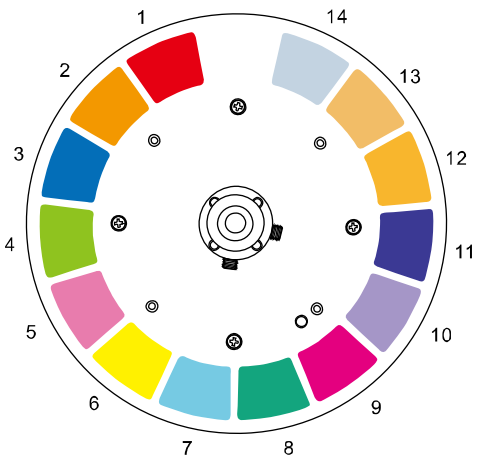
Rotating gobo wheel



Fixed gobo wheel

8.3 Colors

Color　Wheel: 9 colors + open, linear color conversion and "Half rainbow effect" in both direction.



1: Red

2: Orange

3: Blue

4: Green

5: pink

6: Yellow

7: Cyan

8: Green

9: Fuchsine

10: CTB 1

11: UV purple

12: CTO 1

13: CTO 2

14: CTB 2

9. Menu structure

Run Setting	Address Setting	Address= 001~ XXX	
	Value Display	Pan ……， All， No	
	Auto-Program	Master /Alone	
	IP Setting	192.168.xxx.xxx	
	Mask Setting	255.255.255.xxx	
	SysID Setting	xxx	
Device Info.	Time Info.	This Time	H: XXX M:XX
		Total Time	H: XXX M:XX
		Last Time	H: XXX M:XX
		Lamp On Time	H: XXX M:XX
		Lamp Off Time	H: XXX M:XX
		Last Time Code	Password: XXX
		Clear Last Time	Yes/No
		Lamp Time Code	Password: XXX
		Clear Lamp Time	Yes/No
	Temperature	Body Temperature	XXX℃/ºF
	Fans Info	NO/...	
	Err Info	No Err/...	
	Software Version	V1.0 RDM Code 0032-xxxxxx	
System Setting	Status Setting	Console Set Addr	Enable/Disable
		No Signal Status	Close/Hold/Auto
		Pan Reverse	Enable/Disable
		Tilt Reverse	Enable/Disable
		Pan Scan Degree	360/540
		Scan Feedback	Enable/Disable
		Standby Time	Disable/1~120 Min，30
	Fan Speed	Smart Control	
		High Speed	
		Low Speed	
	Display Setting	Backlight Time	1~80Min/Disable
		Keyboard Lock	Enable/Disable
		Brightness Set	15%~100% 80%
		Language Select	中文/English
		Auto Screen Set	on/off/Auto

	Temperature Unit	Celsius Fahrenheit	
	Value Default	Pan……	Pan =XXX
	Wireless Dev.	Wireless Off Wireless On Wireless Trans. Wireless Reset	
	Restore Default	YES/NO	
Moto Reset	System Reset Scan Reset Color Reset Gobo Reset Strobe Reset Other Reset		
Channel Adjust	Test Mode	Pan……	
	Manual Mode	Pan :	Pan =XXX :
	Adjust Mode	Input Password Pan :	Password=XXX Pan=XXX :
Channel Setting	Channel Mode	Standard Mode Basic Mode Extended Mode User Mode A User Mode B User Mode C	
	Custom Mode1 Custom Mode2 Custom Mode3	Max Channel Pan :	Channel = XX Pan = CH01 :
Program Edit	Select Group	Program Unit 1 Program Unit 2 Program Unit 3	Auto-Program 1 ~10 Auto-Program 1 ~ 10 Auto-Program 1 ~ 10
	Program Edit	Auto-Program1 : Auto-Program10	Program Test Step 1=Scene xxx Step 64=Scene xxx
	Scene Edit	Scene Edit:001－250	Pan,……（Pan=xxx）

			Scene T:（=xxx） Rec. Outside
	Record Scene	Scene XX->XX	

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

10. DMX Protocol

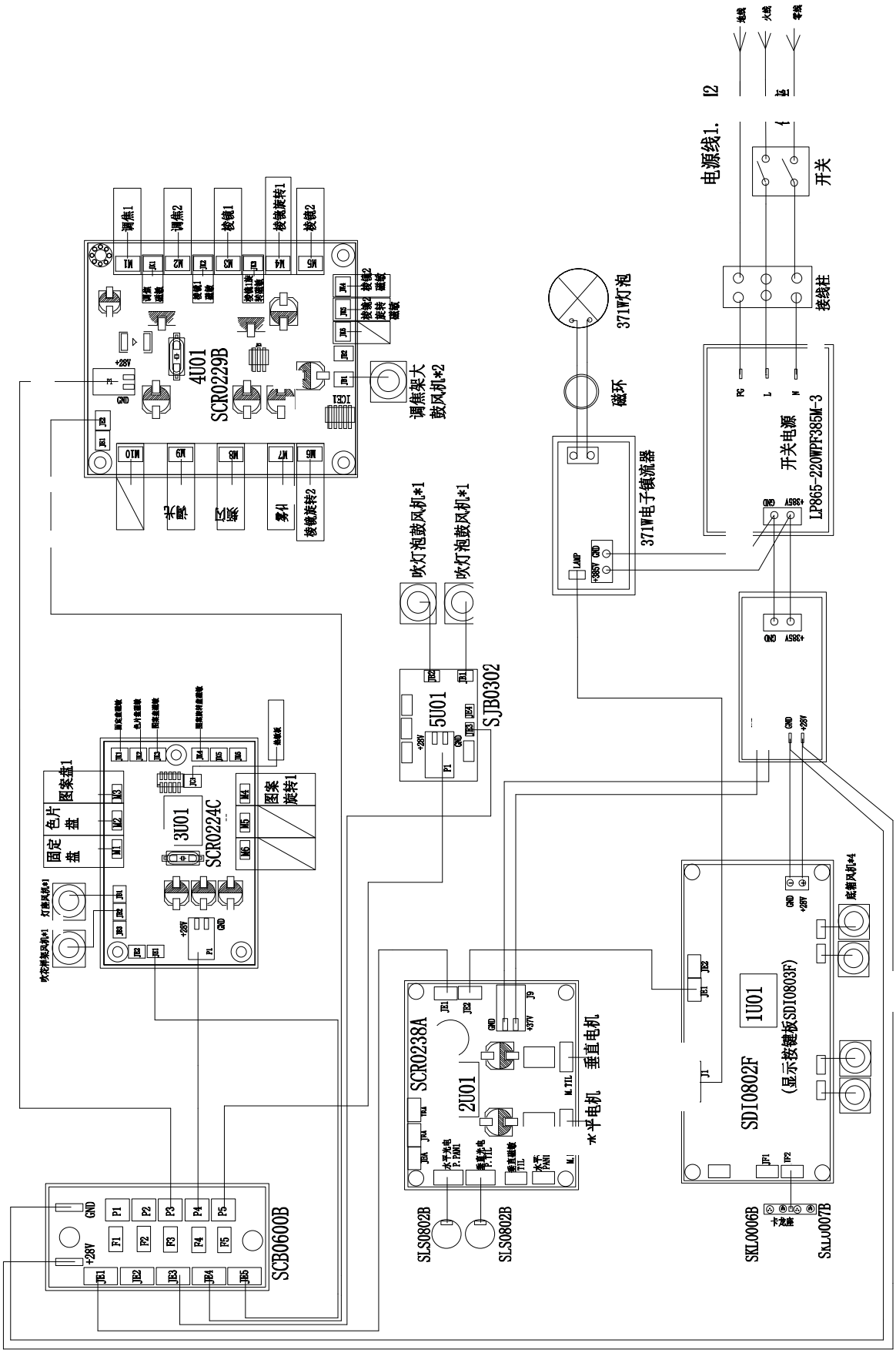
Mode/Channel			Value	Function
Standard	Base	Extended		
1	1	1	__	Strobe
			0-31	Close
			32-63	Open
			64-127	Synchronous strobe from slow to fast
			128-159	Open
			160-223	Random strobe from slow to fast
			224-255	Open
2	2	2	__	Intensity
			0-255	0 to 100%
3		3		Intensity**16Bit**
			0-255	Intensity fade, fine
4	3	4		Color gobos
			0-7	Open
			8-15	color1
			16-23	color2
			24-31	color3
			32-39	color4
			40-47	color5
			48-55	color6
			56-63	color7
			64-71	color8
			72-79	color9
			80-87	color10
			88-95	color11
			96-103	color12
			104-111	color13
			112-127	color14
			128-187	Color continous rotation CW from slow to fast
			188-195	Stop
			196-255	Color continous rotation CCW from slow to fast
5	4	5		Fixed gobos
			0-17	Open
			18-20	Fixed gobos1
			21-23	Fixed gobos2
			24-26	Fixed gobos3
			27-29	Fixed gobos4
			30-32	Fixed gobos5

Mode/Channel			Value	Function
			33-35	Fixed gobos6
			36-38	Fixed gobos7
			39-41	Fixed gobos8
			42-44	Fixed gobos9
			45-47	Fixed gobos10
			48-50	Fixed gobos11
			51-57	Open
			58-63	Fixed gobos1 shake
			64-69	Fixed gobos2 shake
			70-75	Fixed gobos3 shake
			76-81	Fixed gobos4 shake
			82-87	Fixed gobos5 shake
			88-93	Fixed gobos6 shake
			94-99	Fixed gobos7 shake
			100-105	Fixed gobos8 shake
			106-111	Fixed gobos9 shake
			112-117	Fixed gobos10 shake
			118-123	Fixed gobos11 shake
			124-127	Open
			128-187	Gobo Wheel continous rotation CW from slow to fast
			188-195	Stop
			196-255	Gobo Wheel continous rotation CCW from slow to fast
6	5	6		Rotation Gobo Wheel
			0-7	Open
			8-12	Gobo1
			13-17	Gobo2
			18-22	Gobo3
			23-27	Gobo4
			28-32	Gobo5
			33-37	Gobo6
			38-42	Gobo7
			43-47	Gobo8
			48-52	Gobo9
			53-57	Gobo10
			58-62	Gobo11
			63-67	Gobo12
			68-72	Gobo1 shake
			73-77	Gobo2 shake
			78-82	Gobo3 shake
			83-87	Gobo4 shake
			88-92	Gobo5 shake

Mode/Channel			Value	Function
			93-97	Gobo6 shake
			98-102	Gobo7 shake
			103-107	Gobo8 shake
			108-112	Gobo9 shake
			113-117	Gobo10 shake
			118-122	Gobo11 shake
			123-127	Gobo12 shake
			128-187	Gobo Wheel continous rotation CCW from slow to fast
			188-195	Stop
			196-255	Gobo Wheel continous rotation CCW from slow to fast
7	6	7		Gobo rotation/positioning
			0-127	Gobo rotation/positioning
			128-187	Gobo continous rotation CW from slow to fast
			188-195	Gobo Stop
			196-255	Gobo continous rotation CCW from slow to fast
		8		Gobo rotation/positioning **16Bit**
			0-255	Gobo rotation/positioning fade
8	7	9		Focus
			0-255	Near to Far
		10		Focus **16Bit**
			0-255	Near to Far fade
9	8	11		Lens Wheel
			0-31	Open
			32-63	Lens1
			64-95	Lens2
			96-255	Lens3
10	9	12		Lens Wheel 1 rotation
			0-127	Lens rotation positioning
			128-187	Gobo continous rotation CW from slow to fast
			188-195	Stop
			196-255	Gobo continous rotation CW from slow to fast
11	10	13		Lens Wheel 2
			0-31	Open
			32-63	Lens1
			64-95	Lens2
			96-255	Lens3
12	11	14		Lens Wheel 2 rotation
			0-127	Lens Wheel continous rotation CW from slow to fast
			128-187	Lens Wheel continous rotation CW from slow to fast
			188-195	Stop
			196-255	Lens Wheel continous rotation CCW from slow to fast

Mode/Channel			Value	Function
13	12	15		Frost
			0-31	Open
			32-255	frost cut-in
14	13	16		Pan
			0-255	Pan scan
15		17		Pan 16Bit
			0-255	Pan scan fade, fine
16	14	18		Tilt
			0-255	Tile scan
17		19		Tilt 16Bit
			0-255	Tilt scan fade, fine
18	15	20		Special controls
			0-9	No function
			10-19	after 5 seconds on
			20-29	after 5 seconds off
			30-39	color Wheel half-color switch over
			40-49	color Wheel position
			50-59	Reserved
			60-69	all motors reset after 5 seconds
			70-79	scan motors reset after 5 seconds
			80-89	color motor reset after 5 seconds all
			90-99	Gobo motor reset after 5 seconds
			100-109	all strobe motor reset after 5 seconds
			110-119	other motor reset after 5 seconds
			120-129	Built-in program1
			130-139	Built-in program2
			140-149	Built-in program3
			150-159	Built-in program4
			160-169	Built-in program5
			170-179	Built-in program6
			180-189	Built-in program7
			190-199	Built-in program8
			200-209	Built-in program9
			210-219	Built-in program10
			220-255	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 gobo 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.

Problem	Possible Cause	Suggested Correction
	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.

13. Spare parts list

Name	P/N	Qty	Notes
Power Supply	1412050074A	1	ETS650-3853728P AC:200～240V,DC:385V，37V，28V
Light source	1306030012A	1	Spec SIRIUS HRI 371W S
display panel	5809010332A	1	101J10 display panel 0802F-1/ 0803F-1
Scanning plate	5809010333A	1	201O10 SCR0606C / Scanning plate 0606C-1
Motor drive board 3	5809010334A	1	GTD-LM300 II BSW-401P10 SCR0112B
Motor drive board 4	5809010335A	1	401M10 SCR0229B / motor drive board 0229B-3
Motor drive board 5	5809010336A	1	501M10 SJB0302A / motor drive board 0302A-1
Caron 7	5802910005B	1	SKL0007B
Caron 6B-1	5802910008A	1	SKL0006B 15

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