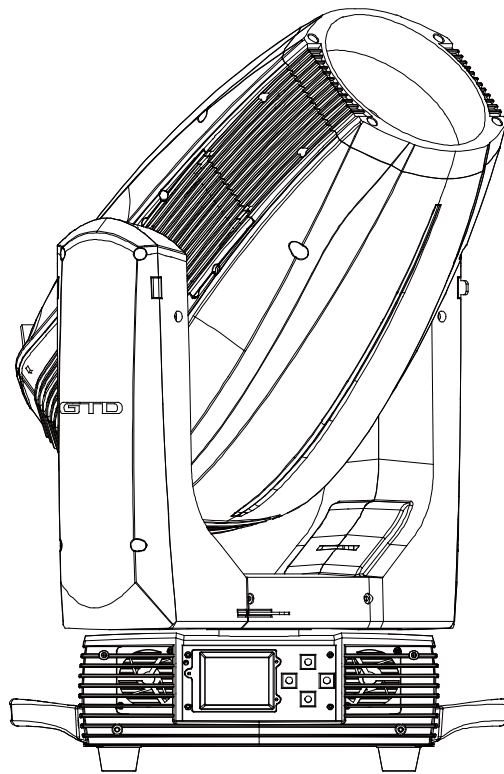# GTD

GTD-470 N BSW

BEAM-SPOT-WASH

Moving Head

User Manual

Thank you for choosing GTD-470 N BSW product. The product integrates beam, spot and wash effect in one body, with compact size and light weight. Modular structure design, simple disassembly, easy maintenance, new turbo cooling system ensure the light source works in a good environment. With OSRAM SIRIUS HRI 470W XL discharge lamp, combined with unique optical design, 14 times optical zoom and diffuser film, the beam effect is sharper, fuller and more penetrating. Also, it comes with linear adjustment of the brightness and the wash effect is soft and natural. With industry-leading 32-bit control system, combined with high-performance motor group, the fixture can run fast and accurately; RDM technology can realize remote setting of address code and other functions.The product is suitable for large and medium-size performance activities such as celebrations, press conferences and so on, providing best solutions for production companies!

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Table of 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.
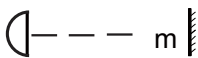
Only to direct mounting on non-combustible surfaces.

INDOORS USE ONLY!

Replace all cracked glass shields.

m Minimum distance to lighted objects.

ta...°C Maximum ambient temperature.

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

General guidelines⚠

- Never open this fixture while in use.

- The fixture should be kept clean. DO NOT operate the fixture in extreme heat or dusty environments. Avoid contact with chemical liquid.

- This fixture is a professional light effect designed for INDOOR / DRY LOCATIONS ONLY on stage, in nightclubs, theatres, etc.

- Minimum distance to lighted objects must be 49.21feet (15m).

- Maximum temp of the external surface 248°F (120°C).

- Maximum ambient temperature 113°F (45°C).

- Minimum distance of inflammable materials from the surface 1.6 feet (0.5m).

- Lamp should be changed 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. Check 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. To avoid reducing the lamp's life, wait at least 15 minutes after powering off to allow the unit to cool down before handling.

- Broken or damaged cables and light source can only be fixed or changed by certified technicians, certified local distributors or the manufacturer to ensure operational safety.

- 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 +8620 61808296.

2. Production instructions

2.1 Diamension

427.5
[16.8inch]

701.3
[27.6inch]

575.7
[22.7inch]

450.3
[17.7inch]

492.9
[19.4inch]

583.1
[23inch]

453.0
[17.8inch]

286.8
[11.3inch]

270°

270°

270°

270°

2.2   Fixture overview

Head module

Color & gobo & CMY

wheels module

CMY module

Light module

Pan&tilt scan

Base module
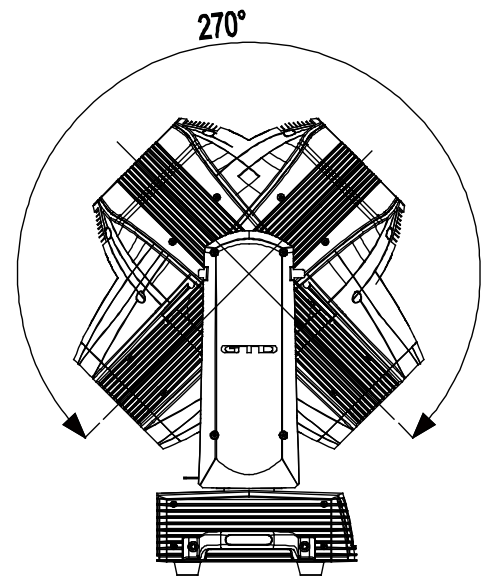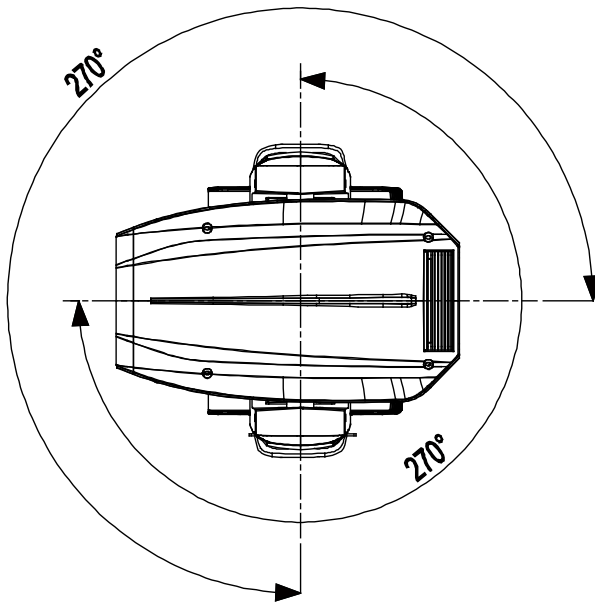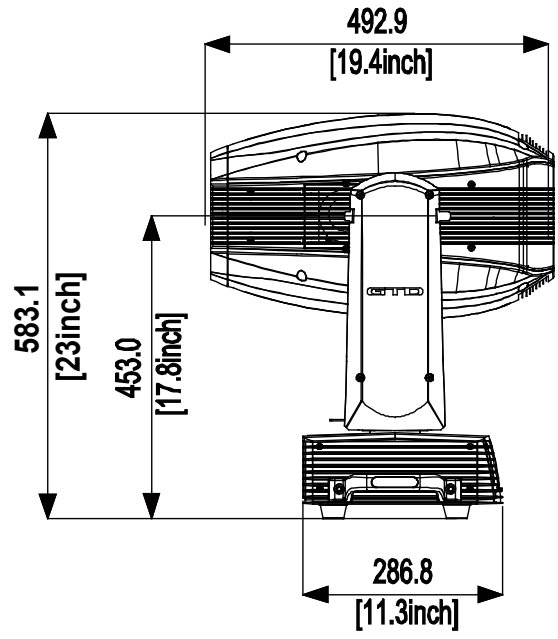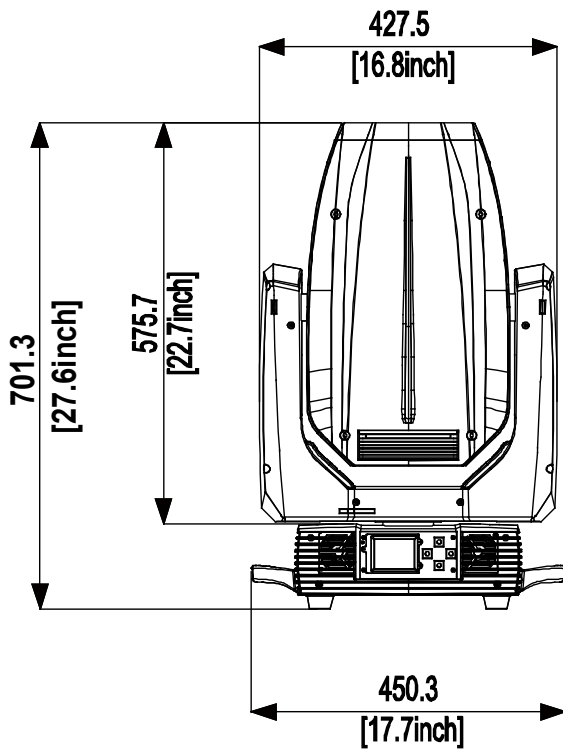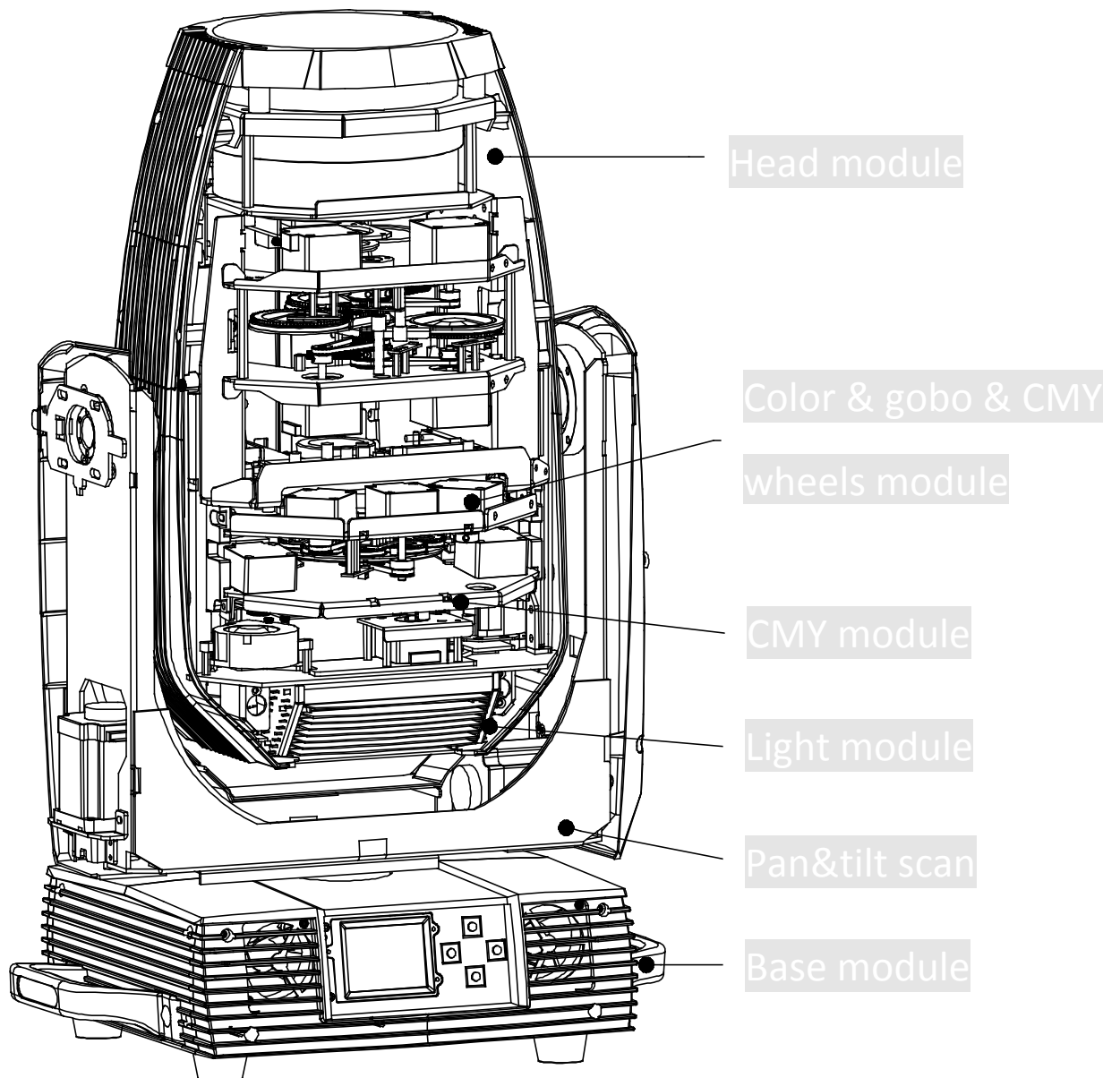
2.3 Accessories

Item	Qty	Unit	Remark
User Manual	1	Pc	-
Safety cable	1	Set	φ5*60cm 7*19pc with hook Material：Steel
3-pins signal line	1	Set	-

3. Packing and shipping

3.1 Protection lock

Pan and tilt locks are equipped to ensure safe transportation.

PAN: 4 lock positions are located evenly on the Pan.

TILT: 5 lock positions are located on left and right side of the Tilt with the third one in the center
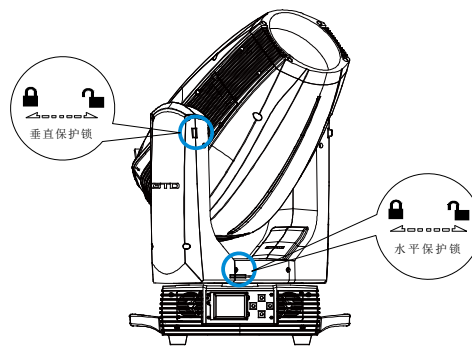
3.2 Unpacking

⚠ Notes

All products are quality controlled and checked for any faults before they are 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（Specifications：790*522*825mm，2Pc/Boxs）

Open the cover of the flight-case and remove the plastic packing bags. Hold the handles of the fixture

firmly and take it out carefully.

Cardboard box（Specifications：560*510*662mm，1Pc/Box）

Open the box and take out the whole set of packaging foam which contains 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 unlocked 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. Hold it by the handles, and then carefully place it inside the flight case along with all the accessories. Close the cover. Only 3 layers are allowed when piling up the flight cases. 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 carefully put it inside the cardboard box.

4. Installation

4.1 Clamps installation

The fixture can be placed on the stage or mounted on the truss facing 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 and tilt are unlocked before connecting the unit to AC power.

Clamp

106.0
[4.2inch]

105.0
[4.1inch]

Safety cable
mounting position

105.0
[4.1inch]

311.0
[12.2inch]

ø50.0
[2.0inch]

762.8
[30.0inch]
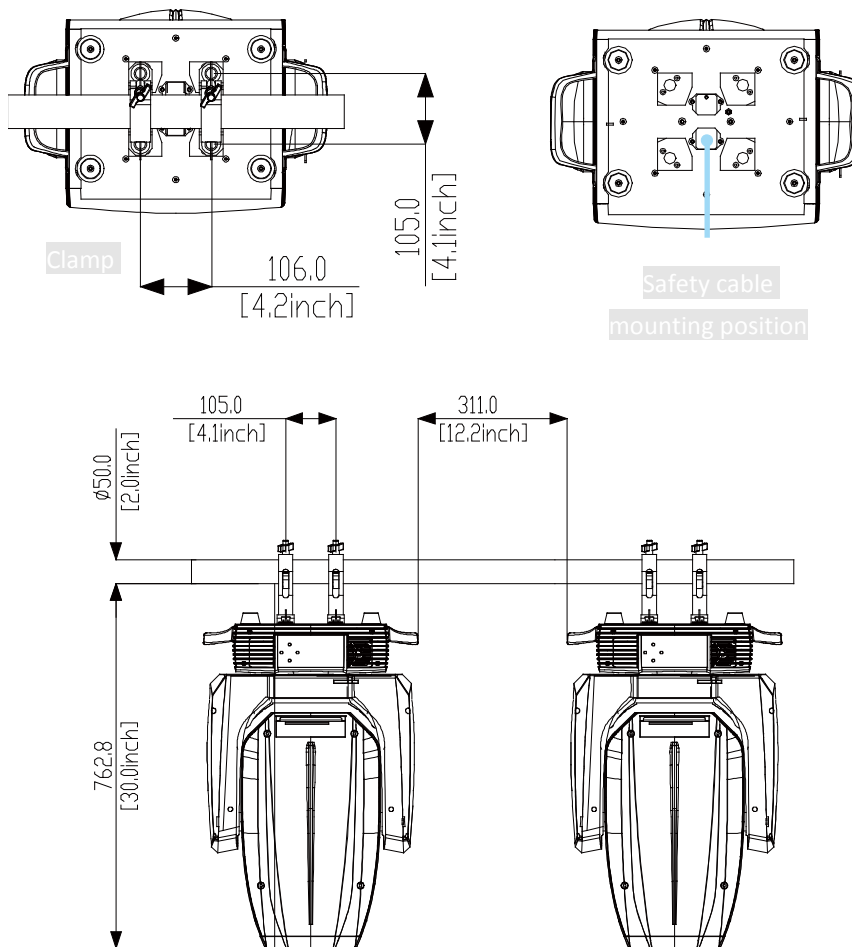
4.3   Lamp fitting and adjustment

1. Disconnect the fixture from AC power. Cool down the fixture. Set the Tilt lock in a horizontal position.

2. Remove the bulb: Use a screwdriver to loosen 4 screws in the back cover1 and remove the bulb plate1,

remove the back cover2 with the same method. Unplug the connected line in bulb, press the top of the

bulb down, so that can remove the bulb directly.

3. Install the bulb: Press the bulb into the elastic port, push the light bulb to the hole and plug in the bulb

cable, install the back cover1&2.

4. When the bulb is p   ng bracket, observe whether the bulb is placed correctly and the
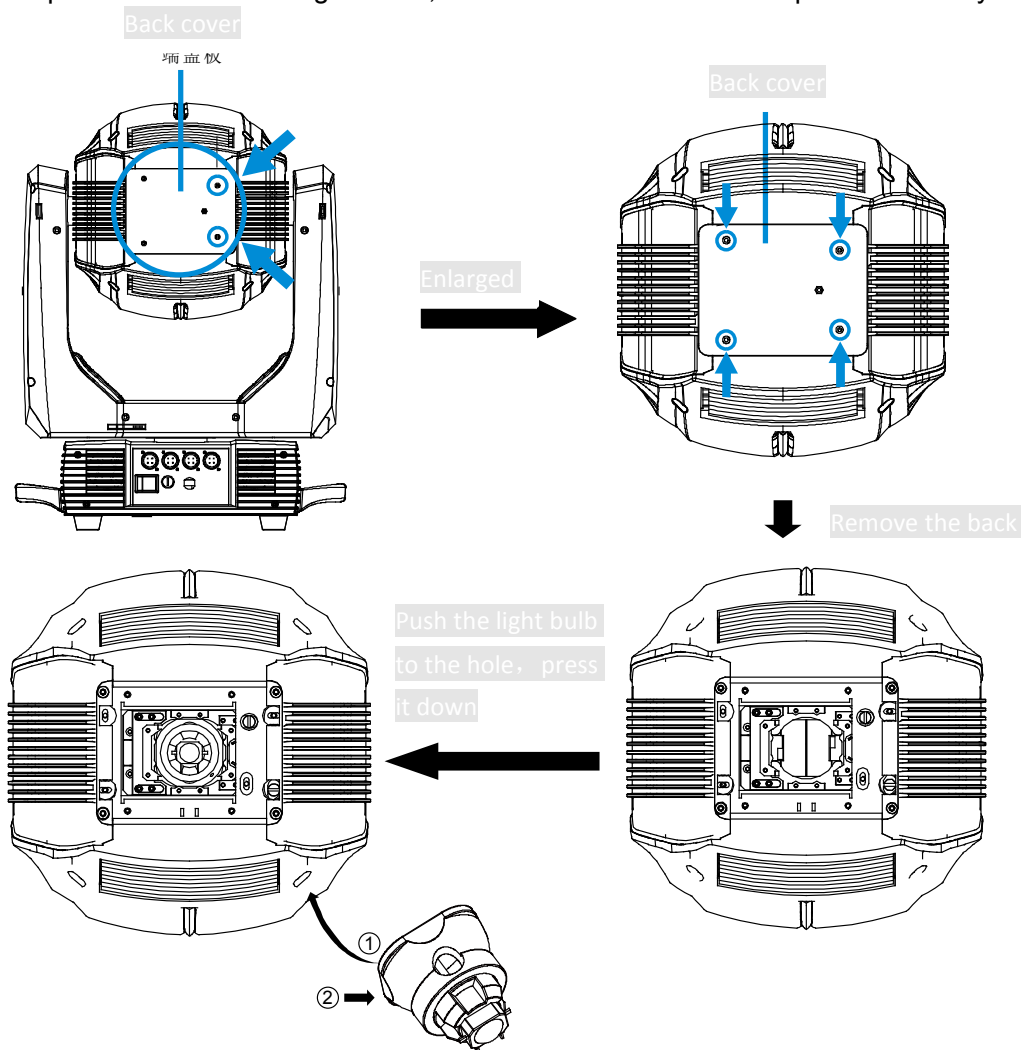
Note ⚠

The fixture is equipped with Spec SIRIUS HRI 470W XL, which is featured with high efficiency and short-arc

characteristic, such as a stable 7500K color-temperature and average lifespan of 1500hrs

Note

Fitting another type of lamp will cause potential damage to the fixture. Change the lamp before it reaches

its lifespan. Read the guidelines in the package carefully when fixing the lamp.

To avoid any impact on the beam, do not touch the bulb with your bare hands. The lamp must be kept

clean with the use of the clean paper contained in its package

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 & 5-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。
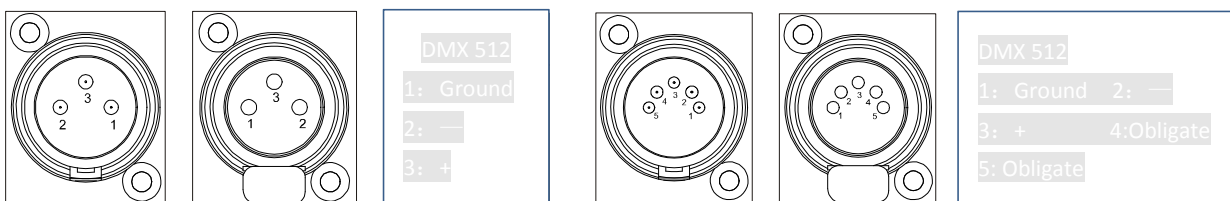
Connect the Console's DMX OUTPUT to the first fixture's DMX INPUT, then the first fixture's DMX

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 & 5-pin XLR connector with a ¼ W and 120Ω resistor between the pin 2 and pin 3) as shown below:
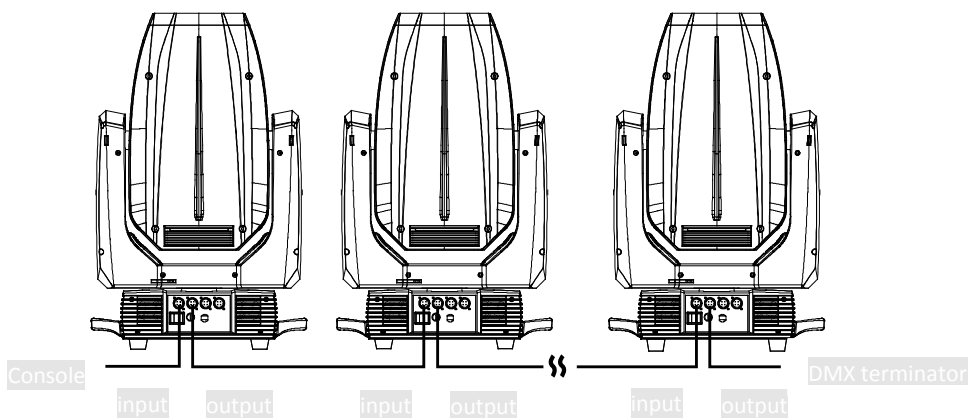
5.3 Testing

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 Using the control panel
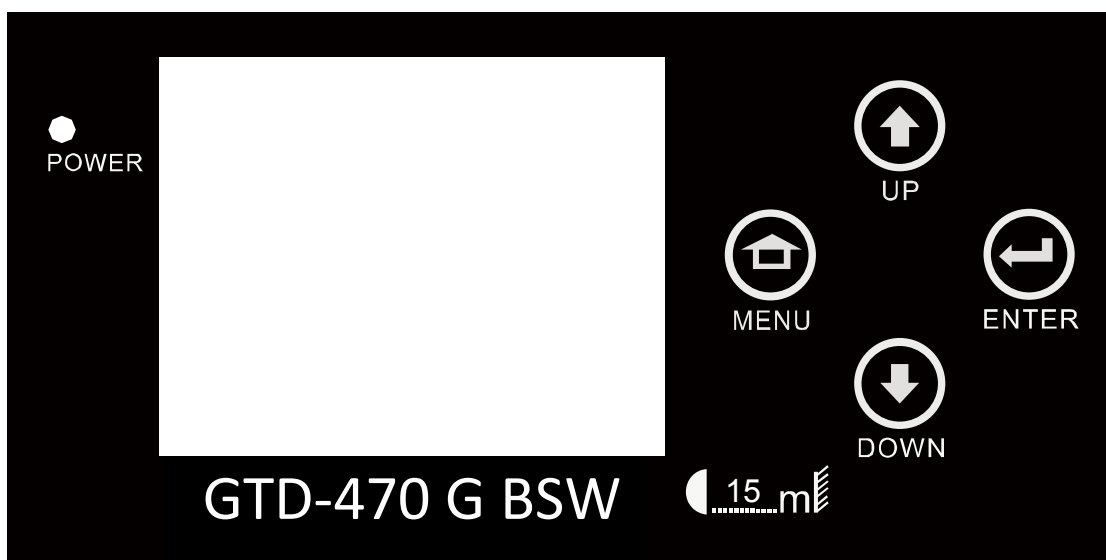
- The control panel features touch-sensitive buttons and LCD digital display for quick and easy setup of address code and functions menu.

- 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 submenu, 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.

- LED indicators: Power on: RED power LED indicator on

7. Technical specification

- ## Optical

Light source: SIRIUS HRI 470W XL

Expected average lifetime: 1500 h

Color temperature correction: 7500K

Zoom: BEAM 0° -2.5° / SPOT 3° -40° / WASH 5° -45°

CRI : Ra≥85

Focus: High-precision glass lenses, electronic linear HD focus

Prism: 1 pc tip 16-facet prism，1 pc Symmetry facet prism, control the effect independently, make double concentric effect when combine two prism

Softening effect: 1 pc Softening Mirror，After softening, the light spot is soft and natural

- ## Gobo

Rotating gobo wheel: 8 interchangeable gobos + open, indexing, CW/CCW rotation, variable speed

Fixed gobo wheel: 7 gobos + open，CW/CCW rotation, variable speed

Gobo outside diameter: 14.4 mm

Max. Image diameter: 9mm

Max. Thickness: 1.1mm

Gobo material: Glass

- ## Color

Color wheel: 12 colors + open, split color, CW/C CW rotation, "Rainbow effect" in both directions

- ## Electrical

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

Max. Power consumption: 646W, max current: 6.878A, PF: 0.997

Power supply unit: Auto-ranging electronic SMPS

Main fuse: 10A

Ballast: Electronic

Power input: Self-contained power cord

DMX data input/output: Chassis 3-pin & 5-pin (in/out)

- ## Control and programming

Control channels (DMX): 27/24/34

Protocol: DMX-512 RDM

Display: Graphic LCD backlit

● **Physical / Installation**

Weight: 30Kg (66lbs.)

IP rating: IP20

Material: Aluminum, steel, plastic

Mounting points: Four quarter-turn locking points + attachment points for safety wire

● **Dynamic effects**

Pan/Tilt movement: 540˚/270˚

Iris: Motorized adjustable iris, wide range of variable pulse effects

Strobe: 1-25Hz, synchronized, pulse effects

Dimmer: 0-100%, mechanical dimming

● **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: 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 :

GTD-470 N BSW(BEAM)

Illuminance(LUX)

2.5°	96400	26200	9800	3160

Distance(m/ft.)	0	20/65.62	40/131.23	60/196.85	80/262.46
Beam Diameter(m/ft.)(2.5°)		Ø0.95/3.12	Ø1.9/6.23	Ø2.85/9.35	Ø3.8/12.47

GTD-470 N BSW(SPOT)

Illuminance(LUX)

3°	736000	276300	164000	96000
40°	5370	1530	840	350

Distance(m/ft.)	0	5/16.4	10/32.81	15/49.21	20/65.62
Beam Diameter(m/ft.)(3°)		Ø0.26/0.85	Ø0.38/1.25	Ø0.54/1.77	Ø0.69/2.26
Beam Diameter(m/ft.)(40°)		Ø3.85/12.63	Ø7.68/25.20	Ø11.5/37.73	Ø15.3/50.2

GTD-470 N BSW(WASH)

Illuminance(LUX)

5°	94000	28500	14900	8530
45°	1970	497	305	109

Distance(m/ft.)	0	5/16.4	10/32.81	15/49.21	20/65.62
50%Beam Diameter(m/ft.)(5°)		Ø0.14/0.95	Ø0.28/1.84	Ø0.42/2.72	Ø0.56/3.67
10%Beam Diameter(m/ft.)(5°)		Ø0.29/13.81	Ø0.56/27.62	Ø0.83/41.34	Ø1.12/55.12
50%Beam Diameter(m/ft.)(45°)		Ø2.21/0.95	Ø4.23/1.84	Ø6.62/2.72	Ø8.46/3.67
10%Beam Diameter(m/ft.)(45°)		Ø4.21/13.81	Ø8.42/27.62	Ø12.6/41.34	Ø16.8/55.12

● **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 remotely activate sleep mode. 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

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	Φ14.4mm	Φ9	1.1mm
Gobo material：Glass			

8.2 Gobos

One rotating gobo wheel: 8 interchangeable gobos + open, indexing, CW/CCW rotation, variable speed

One fixed gobo wheel: 7 gobos + open, CW/CCW rotation, variable speed
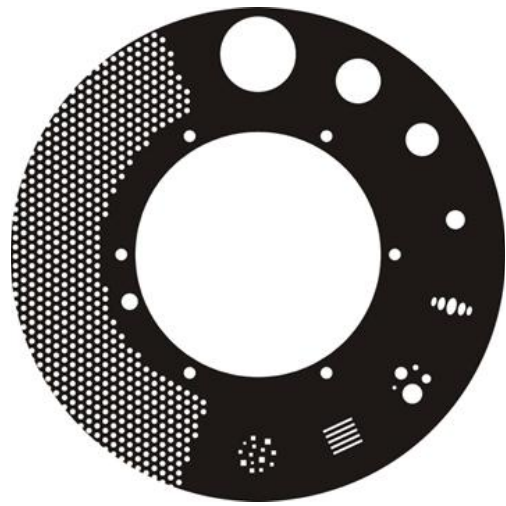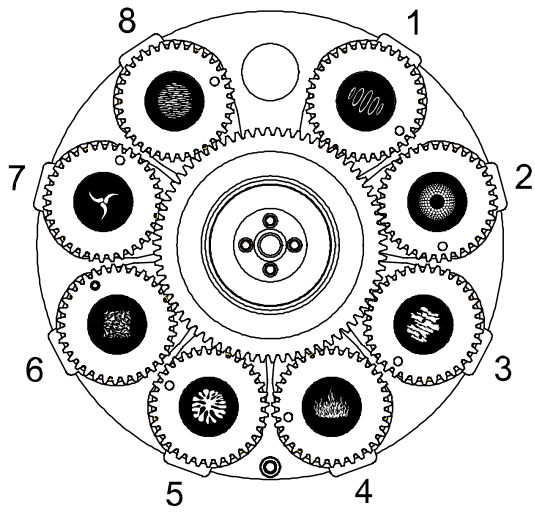
8.3 Colors

One color wheel: 12 colors + open, split color, CW/CCW rotation,"Rainbow effect"in both directions
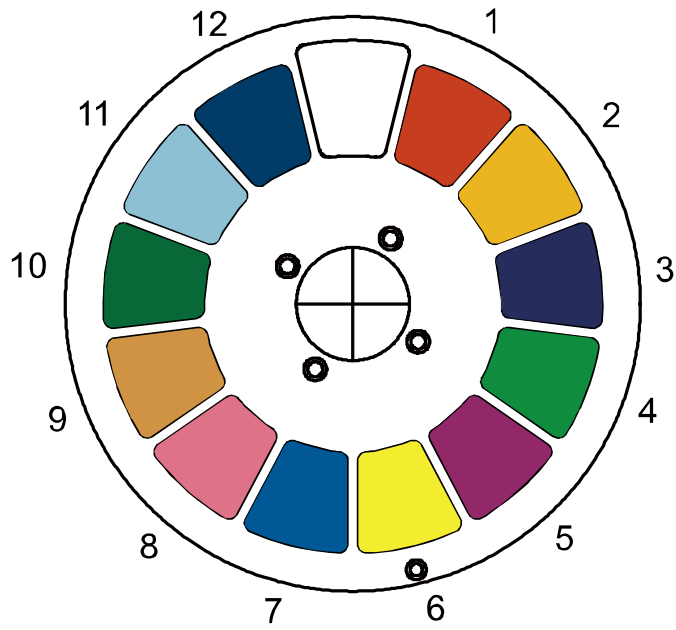
1: Red   2: Orange   3: Blue   4: Green   5: Magenta   6: Yellow

7: Cyan   8: Pink   9: Golden Yellow   10: Dark Green   11: CTB   12 : UV

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9. Menu structure

Level 1	Level 2	Level 3	Level 4	Info
1.Run setting	1.Address Setting 2.Value Display 3.Auto-Program 4.IP Setting 5.Mask Setting 6.SysID Setting	Address: 001~ XXX Pan ……，All，Off Master /Slave 192.168.xxx.xxx 255.255.255.xx xxx		Setting the DMX address Display the channel value Run auto program in master or slave Setting the Artnet IP Address Setting the Network Mask Setting the system id
2.Device Info	1.Time Info	1.This Time 2.Total Time 3.Last Run Hours 4.Lamp On Hours 5.Lamp Off Hours 6.Time Password 7.Clear Last Run 8.Lamp Time Password 9.Clear Lamp Time	XXXXXX Hour XXXXXX Hour XXXXXX Hour XXXXXX Hour XXXXXX Minute Password: XXX Yes/No Password: XXX Yes/No	Since power on time Product total run time Last product run time Lamp on time Lamp close time Clear last time password Clear last time Clear lamp time password Clear lamp time
	2.Temperature	Temperature1	XXX 'C/'F	Body temperature
	3.Fans Info.	Normal xxx/Fault/NO...		Show fans' status
	4.Err Inf	No/...		Show this device's status
	5.Software Version	Software V1.0 RDM Co 0951-xxxxxx		The software version
3.Lamp	1.Lamp On or Off	On/Off		Open lamp

Control	2.Automatic La-On 3. Lamp On Via DMX 4. Lamp Off Via DMX 5.Lamp On Temp. 6.Lamp Off Temp.	Enable/Disable Enable/Disable Enable/Disable 20~79, 45'C /68~174 , 113'F 80~139, 130'C/176~282,266'F		Power on open lamp Console open lamp Console close lamp Open lamp below temperature Close lamp above temperature
4.System Setting	1.Status Setting	1.Console Set Addr 2.No Signal Status 3.Pan Reverse 4.Tilt Reverse 5.Pan Scan Degree 6.Scan Feedback 7.Standby Time	Enable/Disable Off/Hold/Auto/Music Enable/Disable Enable/Disable 360/540 Enable/Disable Disable/1~20~99 Min	Address can be changed by console The status while no signal Pan Reverse Tilt Reverse Pan Scan Degree Scan Feedback Standby time
	2.Fan Speed	1.Smart Control 2.High Speed 3.Low Speed		Auto fans speed Fans high speed Fans low speed
	3.Display Setting	1.Backlight Time 2.Keyboard Lock 3.Brightness Set 4.Language Select 5.Auto Screen Set	1~80 Min/Disable Enable/Disable 15~100% 80% Chinese/English Off/On/Auto	Backlight off time Press <menu> 3s to unlock Back lightness of screen Change the language Screen change Setting
	4.Temperature Unit	Celsius Fahrenheit		Temperature unit
	5.Value Default	Pan……	Pan =XXX	The default value after power on
	6.Wireless Dev	Wireless Off Wireless On Wireless Trans. Wireless Reset		Wireless off Wireless on Wireless transfer DMX data to another Wireless reset
	7.Restore Default	Yes/No		Restore to default value
5.Reset	1.System Reset 2.Scan Reset 3.ColorReset			System reset Pan and tilt motor reset Color motor reset

	4.Gobo Reset			All gobo motor reset
	5.Strobe Reset			Strober motor reset
	6.Other Reset			All other motor reset
6.Channel Adjust	1.Test Mode	Pan……		Every channel test
	2.Manual Mode	Pan :	Pan =XXX :	Manual control
	3.Adjust Mode	Input Password Pan :	Password=XXX Pan=XXX :	The password of adjust mode Fixed all begin position
	4.Focus Mode	Input Password Static Gobo Rotate Gobo	Password=XXX Static Gobo=XXX Rotate Gobo=XXX	The password of adjust mode Fixed focus begin position when gobo cut in
7.Channel Setting	1.Channel Mode	Standard Mode Basic Mode Extended Mode Custom Mode A Custom Mode B Custom Mode C		Standard channel mode Basic channel mode Extended channel mode Custom channel mode A Custom channel mode B Custom channel mode C
	2.Set Custom Mode1 3.Set Custom Mode2 4.Set Custom Mode3	Max Channel Pan :	Channel = XX Pan = CH01 :	Change the channel order
8.Program Edit	1.Select Prog.	1.Program Unit 1	Auto-Program 1 ~10	Choose build-in program for slave 1
		2.Program Unit 2	Auto-Program 1 ~ 10	Choose build-in program for slave 2
		3.Program Unit 3	Auto-Program 1 ~ 10	Choose build-in program for slave 3
	2.Program Edit	Auto-Program1 : Auto-Program10	Run Step 1=Scene xxx Step 8=Scene xxx	Choose the scene for program 1 : Choose the scene for program 10
	3.Scene Edit	Scene Edit:001-250	Pan,……Pan=xxx Scene Time=xxx Input By Console	Edit the channel DMX Edit the scene time Get scene DMX form console
	4.Record Scene	Start Scene: XX	Start Scene: XX	Record scene form console

			End Scene: XX	

*Settings hightlighted in light grey are default values

10. DMX Protocol

Mode/channel		DMX value	Function		Type of control
Standard (39)	Basic (34)				
1	1		**Pan**		
		0-255	Pan movement by 540° or 360° (540°=default angle)		proportional
2	2		**Pan fine**		
		0-255	Fine control of pan movement (0=default)		proportional
3	3		**Tilt**		
		0-255	Tilt movement		proportional
4	4		**Tilt fine**		
		0-255	Fine control of tilt movement (0=default)		proportional
5	5		**Pan/Tilt speed**		
		0-255	Scan speed from fast to slow (0=default)		proportional
6	6		**Special controls**		
		0-9	No function (0=default)		step
		10-19	Open light after 5 seconds		step
		20-29	Close light after 5 seconds		step
		30-39	Color wheel half color switch		step

Mode/channel		DMX value	Function	Type of control
Standard (39)	Basic (34)			
8	8		**Magenta**	
		0-255	Magenta from min.saturation-->full magenta (0=default)	proportional
9	9		**Yellow**	
		0-255	Yellow from min.saturation-->full yellow (0=default)	proportional
10	10		**Color wheel**	
		0-7	Open (0=default)	step
		8-17	Color 1	step
		18-27	Color 2	step
		28-37	Color 3	step
		38-47	Color 4	step
		48-57	Color 5	step
		58-67	Color 6	step
		68-77	Color 7	step
		78-87	Color 8	step
		40-49	Color wheel random positioning	step
		50-59	No function	step
		60-69	Reset all motor after 5 seconds	step
		70-79	Scan motor reset after 5 seconds	step
		80-89	All color motor reset after 5 seconds	step
		90-99	All gobo motor reset after 5 seconds	step
		100-109	All strobe motor reset after 5 seconds	step
		110-119	Other motor reset after 5 seconds	step
		120-129	Built-in program 1	step
		130-139	Built-in program 2	step
		140-149	Built-in program 3	step
		150-159	Built-in program 4	step
		160-169	Built-in program 5	step
		170-179	Built-in program 6	step
		180-189	Built-in program 7	step
		190-199	Built-in program 8	step
		200-209	Built-in program 9	step
		210-219	Built-in program 10	step
		220-255	Reserved	step
7	7		**Cyan**	
		0-255	Cyan from min.saturation-->full cyan (0=default)	proportional

Mode/channel		DMX value	Function	Type of control
		88-97	Color 9	step
		98-107	Color 10	step
		108-117	Color 11	step
		118-127	Color 12	step
		128-187	Forwards color wheel rotation from slow to fast	proportional
		188-195	Stop	step
		196-255	Backwards color wheel rotation from slow to fast	proportional
11	*		**Color wheel - fine positioning**	
		0-255	Fine positioning (0=default)	proportional
12	11		**CMY color macro**	
		0-15	CMY color macro off (0=default)	step
		16-135	CMY synchronous color from slow to fast	proportional
		136-255	CMY random color from slow to fast	proportional
13	12		**CTO**	
		0-255	CTO from min.saturation-->full CTO (0=default)	
14	13		**High color index**	
		0-127	Open (0=default)	step
		128-255	High color index	step
17	16		**Effect wheel rotation (Fire)**	
		0-31	No function (0=default)	step
		32-127	Effect wheel indexing	proportional
		128-255	Effect wheel rotation from slow to fast	proportional

Mode/channel		DMX value	Function	Type of control
Standard (39)	**Basic (34)**			
19	18		**Static gobo wheel**	
		0-17	Open (0=default)	step
		18-23	Gobo 1	step
		24-29	Gobo 2	step
		30-35	Gobo 3	step
		36-41	Gobo 4	step
		42-47	Gobo 5	step
		48-53	Gobo 6	step
		54-66	Open	step
		67-74	Gobo 1 shake	proportional
		75-82	Gobo 2 shake	proportional
		83-90	Gobo 3 shake	proportional
		91-98	Gobo 4 shake	proportional
		99-106	Gobo 5 shake	proportional

Mode/channel		DMX value	Function	Type of control
		107-114	Gobo 6 shake	proportional
		115-127	Open	step
		128-187	Forwards gobo wheel rotation from slow to fast	proportional
		188-195	Stop	step
		196-255	Backwards gobo wheel rotation from slow to fast	proportional
20	19		**Rotating gobo wheel**	
		0-7	Open (0=default)	step
		8-12	Gobo 1	step
		13-17	Gobo 2	step
		18-22	Gobo 3	step
		23-27	Gobo 4	step
		28-32	Gobo 5	step
		33-37	Gobo 6	step
		38-42	Gobo 7	step
		43-47	Gobo 8	step
		48-57	Gobo 1 shake	proportional
		58-67	Gobo 2 shake	proportional
		68-77	Gobo 3 shake	proportional
		78-87	Gobo 4 shake	proportional
		88-97	Gobo 5 shake	proportional
		98-107	Gobo 6 shake	proportional
		108-117	Gobo 7 shake	proportional
		118-127	Gobo 8 shake	proportional
		128-187	Forwards gobo wheel rotation from slow to fast	proportional
		188-195	Stop	step
		196-255	Backwards gobo wheel rotation from slow to fast	proportional

Mode/channel		DMX value	Function	Type of control
Standard (39)	Basic (34)			
20	19		**Rotating gobo wheel**	
		0-7	Open (0=default)	step
		8-12	Gobo 1	step
		13-17	Gobo 2	step
		18-22	Gobo 3	step
		23-27	Gobo 4	step
		28-32	Gobo 5	step
		33-37	Gobo 6	step
		38-42	Gobo 7	step
		43-47	Gobo 8	step
		48-57	Gobo 1 shake	proportional
		58-67	Gobo 2 shake	proportional

Mode/channel		DMX value	Function	Type of control
		68-77	Gobo 3 shake	proportional
		78-87	Gobo 4 shake	proportional
		88-97	Gobo 5 shake	proportional
		98-107	Gobo 6 shake	proportional
		108-117	Gobo 7 shake	proportional
		118-127	Gobo 8 shake	proportional
		128-187	Forwards gobo wheel rotation from slow to fast	proportional
		188-195	Stop	step
		196-255	Backwards gobo wheel rotation from slow to fast	proportional
21	20		**Rot.gobo indexing and rotation**	
		0-127	Gobo indexing (0=default)	proportional
		128-187	Forwards gobo wheel rotation from slow to fast	proportional
		188-195	Stop	step
		196-255	Backwards gobo wheel rotation from slow to fast	proportional
22	*		**Rot.gobo indexing - fine**	
		0-255	Fine indexing (0=default)	proportional
23	21		**Prism wheel 1**	
		0-31	Off (0=default)	step
		32-255	On	step
24	22		**Prism wheel 1 indexing/rotation**	
		0-127	Prism 1 indexing (0=default)	proportional
		128-187	Forwards prism rotation from slow to fast	proportional
		188-195	Stop	step
		196-255	Backwards prism rotation from slow to fast	proportional
25	23		**Prism wheel 2**	
		0-31	Off (0=default)	step
		32-255	On	step

Mode/channel		DMX value	Function	Type of control
Standard (39)	Basic (34)			
26	24		**Prism wheel 2 indexing/rotation**	
		0-127	Prism 2 indexing (0=default)	proportional
		128-187	Forwards prism rotation from slow to fast	proportional
		188-195	Stop	step
		196-255	Backwards prism rotation from slow to fast	proportional
31	29		**Frost**	
		0-255	Frost shallow to deep (0=default)	proportional
32	30		**Zoom**	
		0-255	Zoom from max. to min. beam angle (0=default)	proportional
33	*	0	**Zoom fine**	
		0-255	Fine zooming (0=default)	proportional

34	31		**Focus**	
		0-255	Continuous adjustment from near to far (0=default)	proportional
35	*		**Focus fine**	
		0-255	Fine focusing (0=default)	proportional
37	33		**Shutter/ strobe**	
		0-31	Shutter closed (0=default)	step
		32-63	Shutter open	step
		64-127	Synchronous strobe-effect from slow to fast	proportional
		128-159	Shutter open	step
		160-223	Random strobe-effect from slow to fast	proportional
		224-255	Shutter open	step
38	34		**Dimmer intensity**	
		0-255	Dimmer intensity form 0% to 100% (0=default)	proportional
39	*		**Dimmer intensity - fine**	
		0-255	Fine dimming (0=default)	proportional

*Settings hightlighted in light grey are default values

11. System wiring diagram

Focus&Zoom module

Prism2 magnetic
Rotating prism 1 magnetic

Prism2
Rotating prism 1
Rotating prism 1
Prism1
Prism1 magnetic
Zoom
Zoom magnetic
Focus magnetic
Focus 1

5U01
SCR0229D-5

Rotating Prism 2
Frost

Color&Gobo wheels module

Fixed gobo wheel
Dimmer magnetic
Rotating gobo magnetic
Fixed gobo wheel magnetic
Gobo wheel magnetic
Rotating gobo
Gobo wheel

4U01
SCR0232C-1

Dimmer
Strobe1
Strobe2

CMY module

Color wheel magnetic
M magnetic
C magnetic
Y magnetic

3U01
SCR0232C-1

Y
M
C

Color wheel

Fan*2

SCB0600B

Lamp holder Four-wire Fan*1
Lamp holder Four-wire Fan*1
Lamp holder Two-wire Fan*1
Lamp head Fan*1
Lamp head Fan*1

SJB0220C-1
6U01

Heat sensitive board
SJC0002B

Magnetic ring
470W Lmap

470W electronic ballast
LAMP
+385V GND

Switch power
LP730-220WPF385M-3
FG L N
+385V GND
GND +37V GND +28V

SCR0248A-1
2U01

Pan motor
Tilt motor

SLS0802B
SLS0802B

SDI0108A-1
1U01
(Display button board SDI0803F)

Base fan*4

SKL0006B
Context of socket
SKL0007B

power cable1.5MM2
G L N

fuse

Switch

Terminal

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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

Problem	Possible Cause	Suggested Correction
		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

Problem	Possible Cause	Suggested Correction
		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

Problem	Possible Cause	Suggested Correction
		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 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.

Problem	Possible Cause	Suggested Correction
	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).

Problem	Possible Cause	Suggested Correction
	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
Non-clear shape	Excessive dusts or smudges on the rotating gobo wheel or color whee	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

Problem	Possible Cause	Suggested Correction
		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
Switch power	1412050059A	1	LP730-220WPF380M-3/730W-3803728
Electronic ballast	1412020024A	1	OSRAM SIRIUS HRI 470W XL
Lamp	1306030023A	1	OSRAM SIRIUS HRI 470W XL
Display	5809010504A	1	470 G BSW-101J10 Display 0108A-1/ button 0803F-1
Scan board	5809010505A	1	470 G BSW-201O10 SCR0248A
Motor drive board3	5809010506A	1	470 G BSW-301O10 SCR0232C
Motor drive board4	5809010507A	1	470 G BSW-401O10 SCR0232C
Motor drive board5	5809010508A	1	470 G BSW-501O10 SCR0229D

Fan drive board	5809010509A	1	470 G BSW-601M10 SJB0220C

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