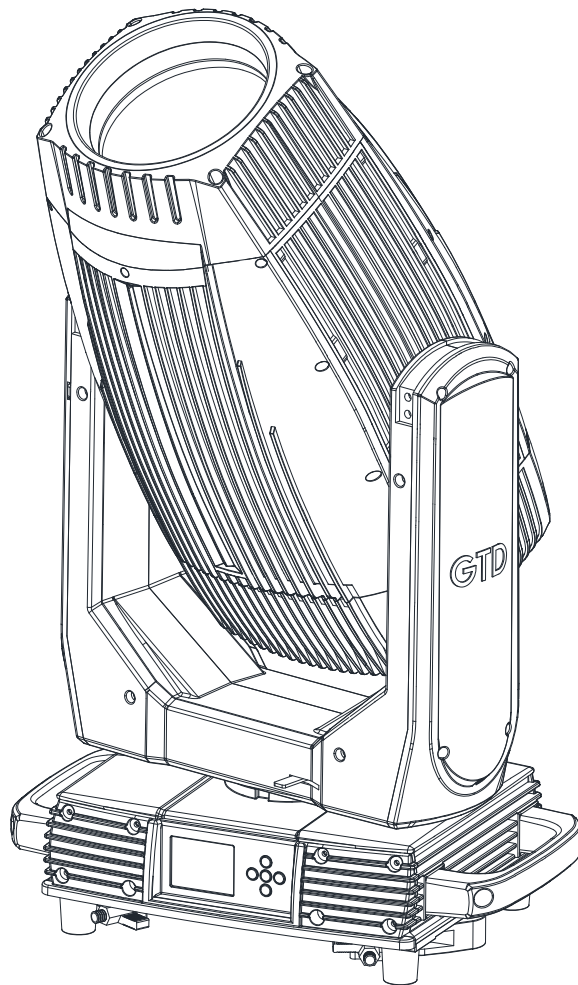


GTD

GTD-F15 II BSWP PRO



User Manual

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Contents

1. Safety instructions	1
2. Product introductions.	3
2.1 Dimensions	3
2.2 Fixture overview	4
2.3 Accessories	4
3. Packing and shipping	5
3.1 Protection lock	5
3.2 Unpacking	5
3.3 Packing after use	5
4. Installation	6
4.2 Clamps installation	6
4.2 Device installation	6
5. Power / Control connection	7
5.1 Power connection	7
5.2 Control connection	7
5.3 Testing	7
6. Control panel	8
6.1 Panel instruction	8
7. Technical specification	8
8. Gobos and colors.	11
8.1 Gobo specification	11
8.2 Gobos	11
8.3 Colors	12
9. Menu structure	13
10. DMX protocol	16
11. System wiring diagram	36
12. Maintenance and Troubleshooting	37
12.1 Cleaning and maintenance	37
12.2 Troubleshooting	37

1. Safety instructions

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



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



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



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



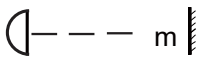
WARNING!
Burn hazard. Hot surface. Do not touch.



Only to direct mounting on non-combustible surfaces.



Replace all cracked glass shields.



Minimum distance to lighted objects.

$t_a \dots ^\circ\text{C}$ Maximum ambient temperature.

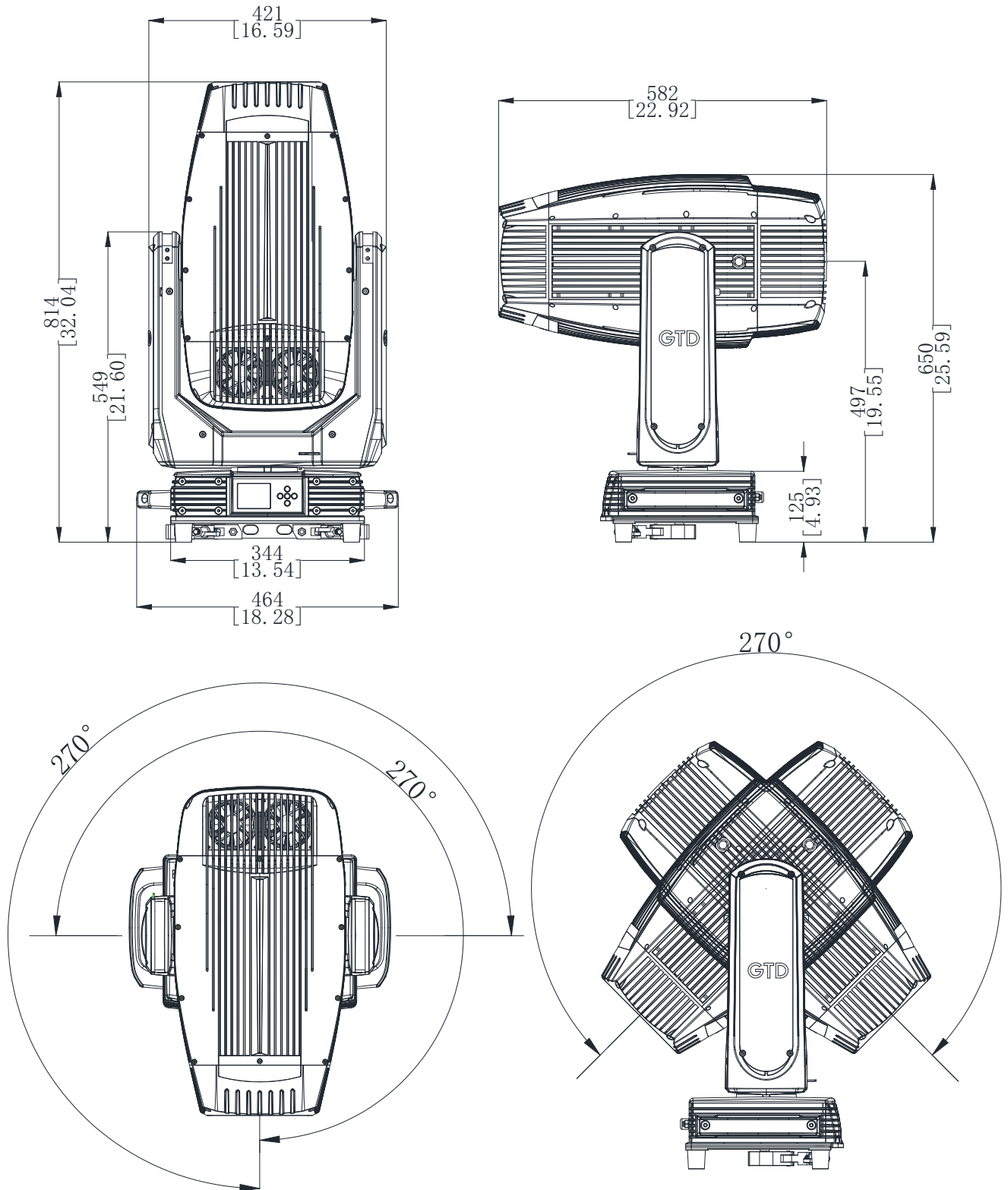
$t_c \dots ^\circ\text{C}$ Maximum temp of the external surface.

General guidelines

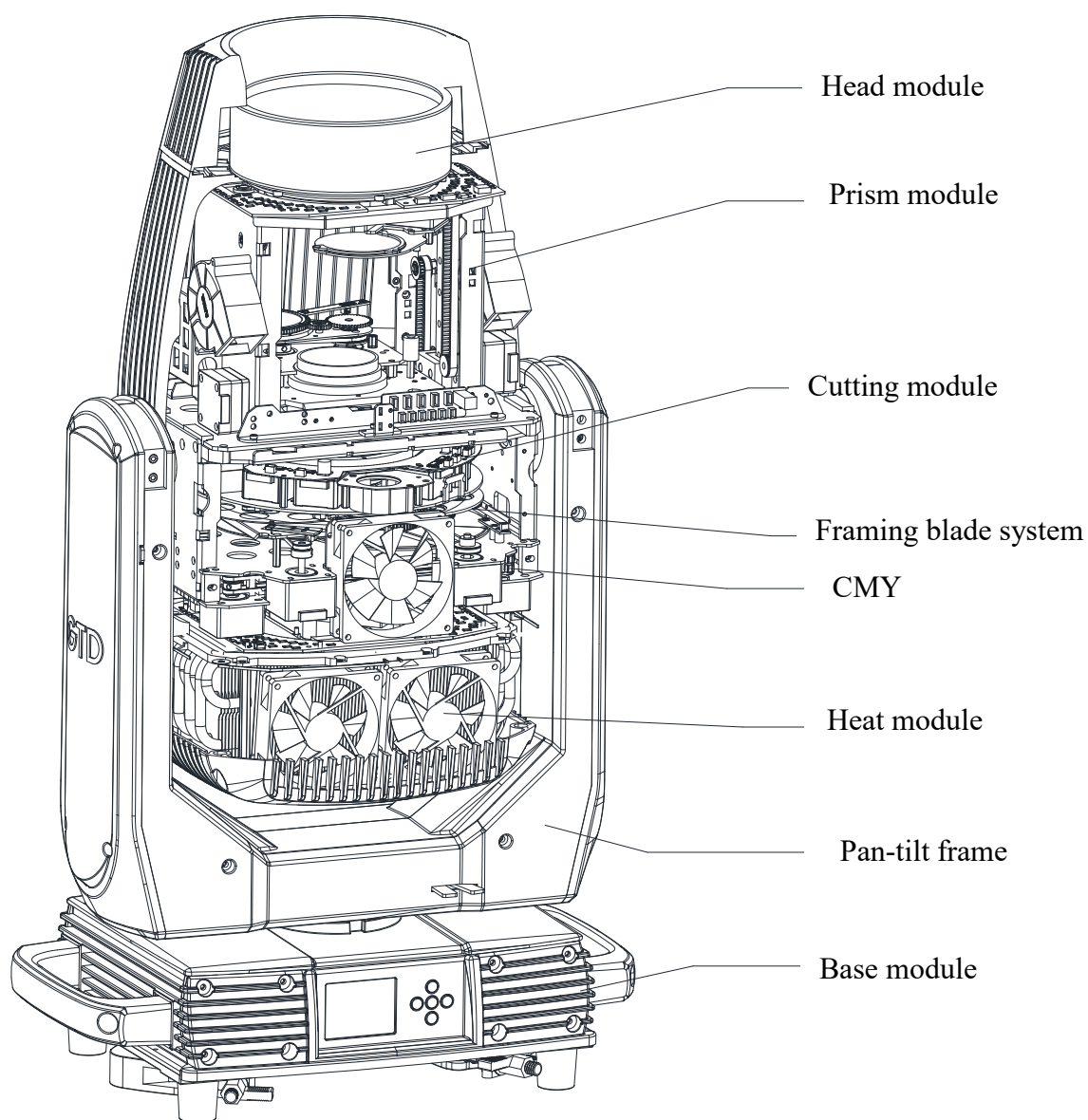
- This product has a protection rating of IP66.
- Never open this fixture while in use.
- The fixture should be kept clean. DO NOT operate the fixture in extreme heat or dusty environments. Avoid contact with chemical liquid.
- Minimum distance to lighted objects must be 16.4feet (5m).
- Maximum temp of the external surface 167°F (75°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 OLED 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.
- 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 Dimension



2.2 Fixture overview



2.3 Accessories

Item	Qty	Unit	Remark
User Manual	1	Pc	--
Safety cable	2	Pc	Φ5*60cm 7*19 pc with hook Material : Steel

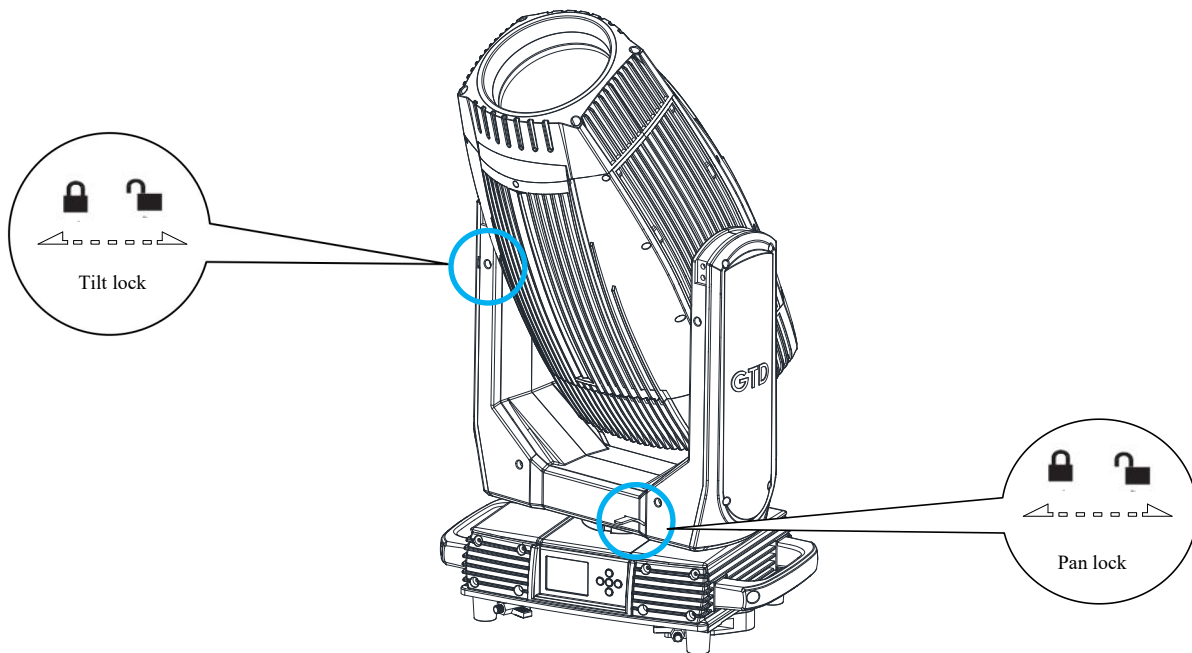
3. Packing and shipping

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: 7 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 : 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 : 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

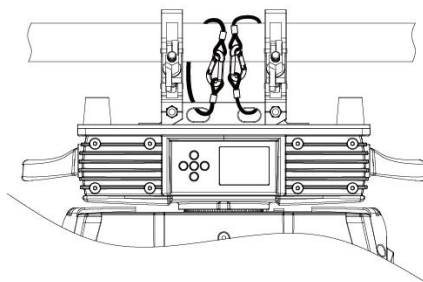
1. Switch off the fixture and wait for at least 5 minutes before disconnecting it from AC power. Cool down the fixture for at least 15 minutes before packing.

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. 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

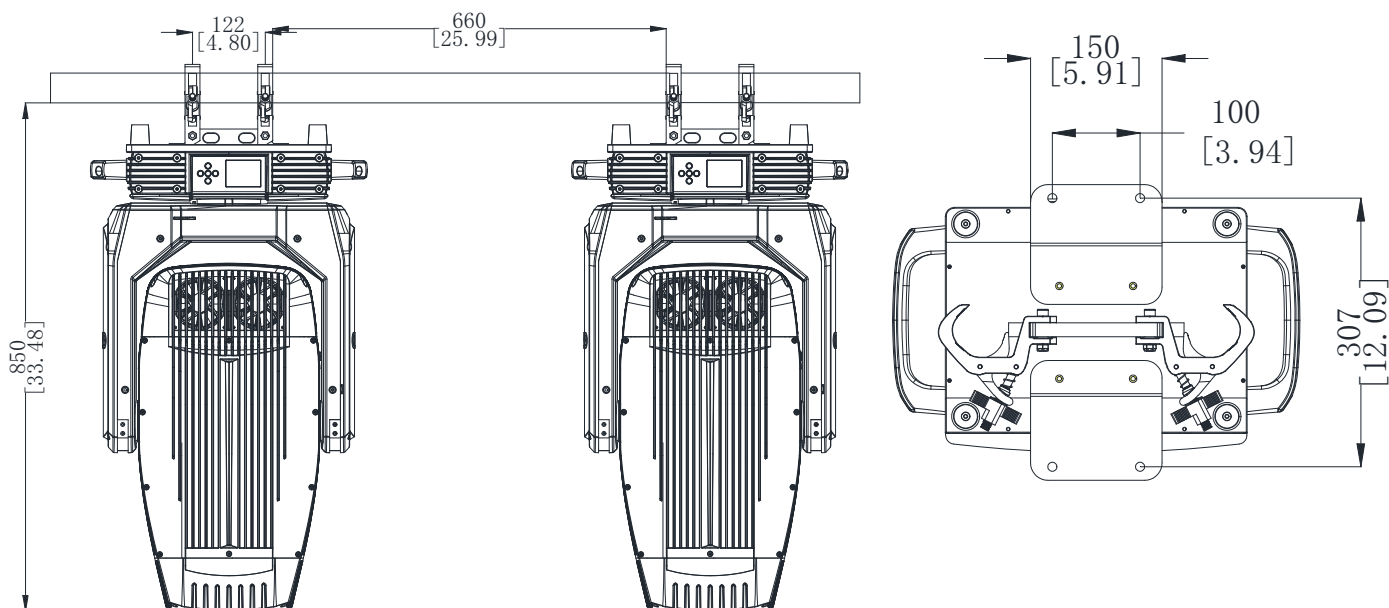
1. When placing the lamp on the stage, lay the lamp flat on the stage surface (the ground lock type lamp hook can be equipped with fixed installation).
2. When installing the lamp on a truss in any direction, simply raise the lamp hook upright.
3. Make sure there is no damage on the clamps or safety cables before installation.



4.2 Device installation

1. When installing the truss: (1) Insert the lamp hook into the truss rod and tighten the nut clockwise; (2) Secure the safety rope as shown in the diagram; (3) Unlock the horizontal lock.
2. Check if pan and tilt are unlocked before connecting the unit to AC power.
3. Do not hang the lamp sideways.

Note: Ensure the installation distance between multiple lamps.



5. Power/ Control connection

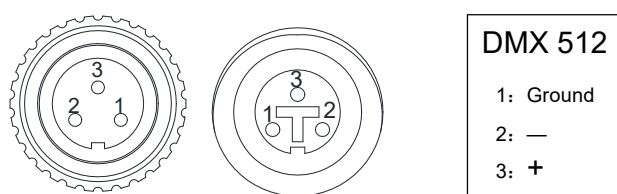
5.1 Power connection

Connection method:

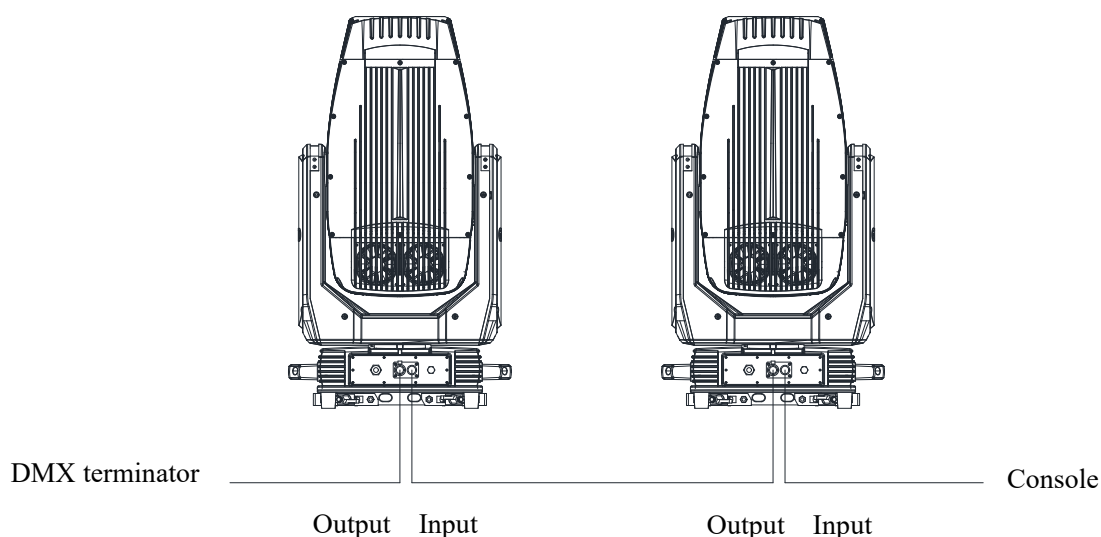
- L (Live) Brown wire
- E (Earth) Yellow / Green bi-color wire
- N (Neutral) Blue wire
- The voltage and frequency of the power source must be in compliance with the ones marked on the fixture. It is strongly recommended that each fixture are to be connected to the power source separately so that they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

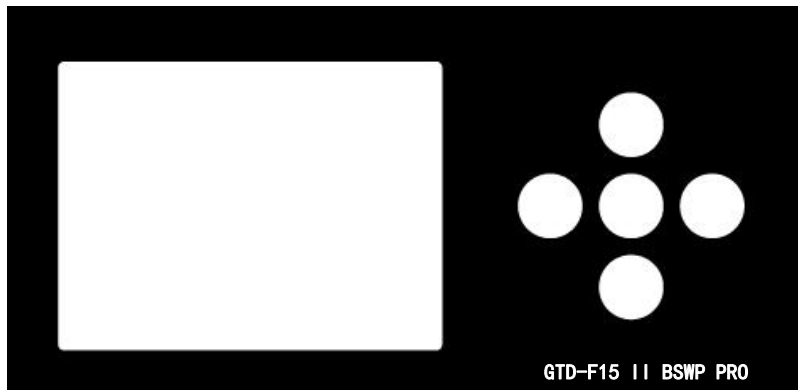


5.3 Testing

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 the left key to enter the menu, press again to exit the menu, press the up and down keys to select the menu setting item, and press the right key to confirm the setting item. Press the up and down keys to adjust the value of the setting item, then press the right key to confirm, and press the left key to exit the menu setting item successively until exiting the menu.
- Press up and down to set the address, left to exit, right to confirm.
- Middle key (reserved).

7. Technical specification

- **Optical**
 - Light source: LED 1400W
 - Expected average lifetime: 20000 h
 - Color temperature correction: 6000K-2300K
 - Color rendering index: $Ra \geq 95$
 - Zoom: $5^\circ - 50^\circ$
 - Focus: multi-point focus, focus from 5 meters to infinity tracking
 - Prism: 1 four-pointed prism , CW/CCW rotation, variable speed
 - Frost: 1-independent frost effect
- **Gobo**
 - Rotating gobo wheel: 6 interchangeable gobos, CW/CCW rotation, variable speed

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

Effect wheel: CW/CCW rotation, variable speed

- **Cutting system**

1 cutting wheel capable of rotating 110 °; 4 mobile cutting molding pieces; Various geometric figures of different sizes can be generated, and 4 cutting pieces can achieve the whole cutting effect.

- **Color**

C、M、Y: linear infinity color mixing

Color wheel: 5 colors + open, split color, CW/CCW rotation, “Rainbow effect” in both directions

- **Electrical**

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

Max. Power consumption: 1550W, max current:7.5A, PF: ≥ 0.98

Power input: NEUTRIK socket (input/output)/ Power socket

DMX data input/output: Chassis 3-pin XLR waterproof socket

- **Control and programming**

Control channels (DMX): 37/35/54

Protocol: DMX-512 RDM

Display: LCD

- **Physical / Installation**

Weight: 42Kg

IP rating: IP66

Material: Aluminum, steel, plastic, iron, copper

Mounting points: Two 1/2 rotary folding lamp hooks + 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**

Startup range: -13°F to 113°F (-25°C to 45°C)

Storage range: -40°F to 185°F (-40°C to 85°C)

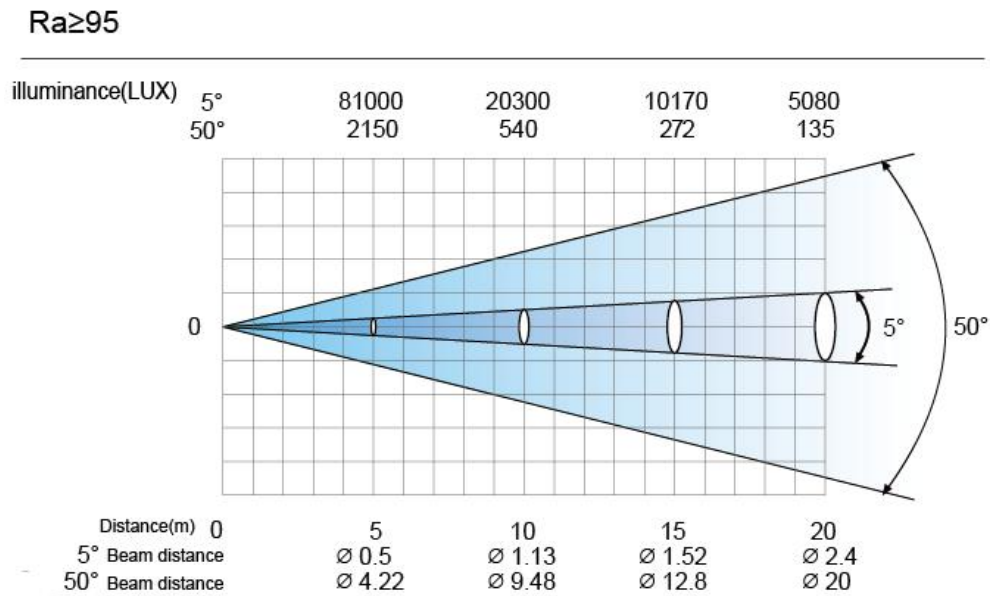
Cooling: Active fan

- **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**

- 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.
- Communication: DMX wired transmission, RDM two way control technology, upgrade software easily with DMX cable.
- Dissipate heat: With wind direction drainage and temperature intelligent monitoring technology, it can automatically adjust the heat dissipation system and effectively control the bulb temperature according to the start, use, close and other states of the lamp, and the temperature of different positions of the lamp.

8. Gobos and colors

8.1 Gobo specification

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

The customized size is as below:

Gobo material	Outer dimension	Effective dimension	Thickness
Glass gobo	Φ27mm	Φ18mm	1.1mm/2.2mm/3.5mm
Gobo material: Glass			

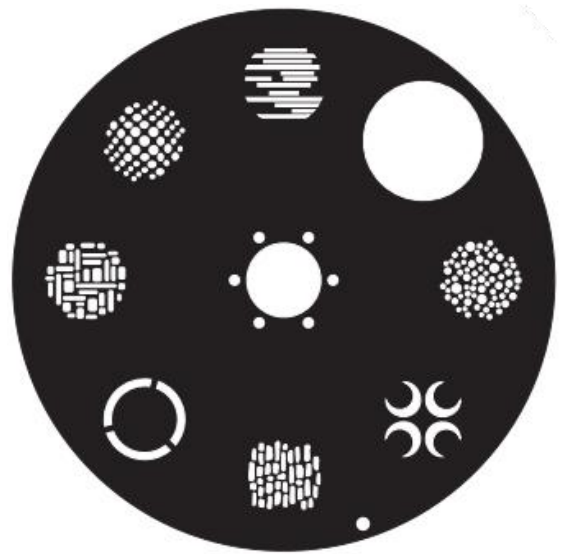
8.2 Gobos

One rotating gobo wheel: 6 interchangeable gobos + open, indexing, CW/CCW rotation, variable speed

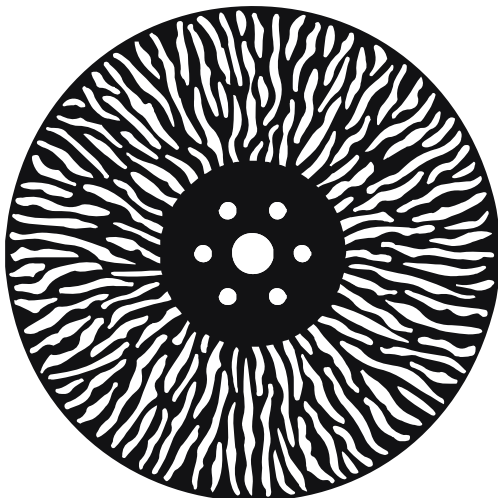
One fixed gobo wheel: 7 gobos + open, CW/CCW rotation, variable speed



Fixed gobo wheel



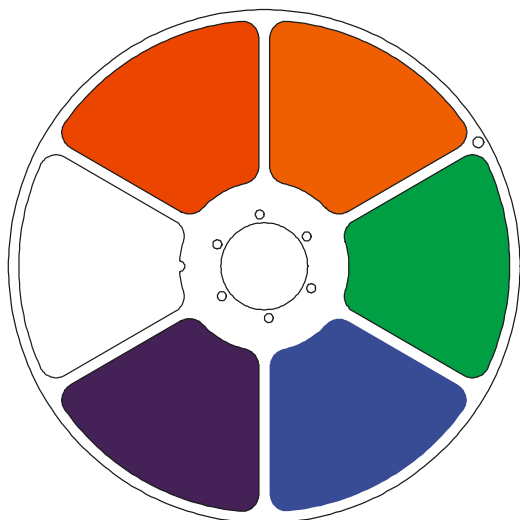
Rotating gobo wheel



Effect wheel

8.3 Colors

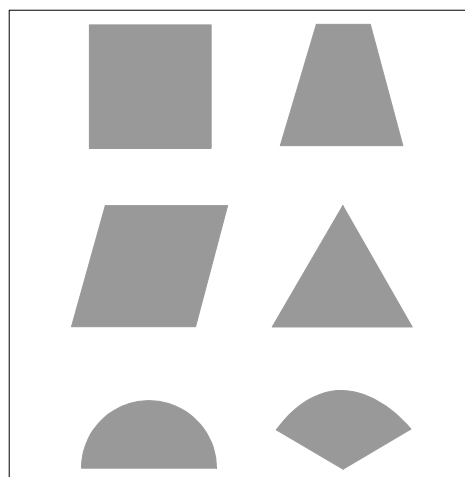
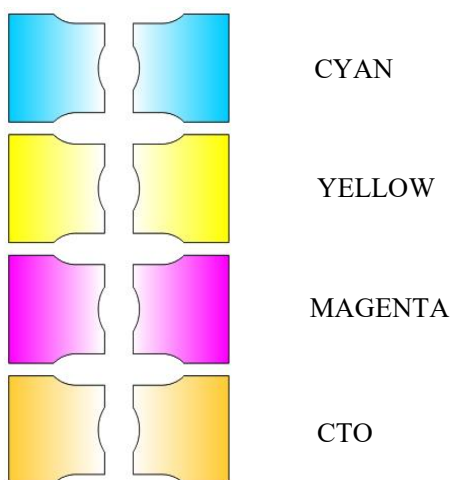
One color wheel: 5 colors + open, split color, CW/CCW rotation, "Rainbow effect" in both directions



Ra_≥95

- 0: Open
- 1: Red
- 2: Orange
- 3: Green
- 4: Blue
- 5: UV

Cutting effect




9.Menu structure

Level 1	Level 2	Level 3	Level 4	Info
Run setting	Address Setting Value Display Auto-Program	Address: 001~ XXX Pan, All, Off Master /Slave		Setting the DMX address Display the channel value Run auto program in master or slave
Device Info	Time Info	Since power on Total Time Last Time Lamp On Time Lamp Off Time Last Time Code Clear Last Time Lamp Time Code Clear Lamp Time	XXXXXX Hour XXXXXX Hour XXXXXX Hour XXXXXX Hour XXXXXX Minute Password: XXX(xxx) Yes/No Password: XXX(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
	Temperature	Temperature1/2/3	XXX °C/°F	Body temperature
	Fans' Err	Ok/Err/No		Show fans' status
	Err Inf	No/...		Show this device's status
	Software Version	xxxxxxx RDM Co 0951-xxxxxx Software Vx.x Date&Time Now Date&Time Software Build		Device name RDM code Software version Current time Software build time
System Setting	Status Setting	Console Set Addr No Signal Status Pan Reverse Tilt Reverse Pan Scan Degree Scan Feedback Standby Time	Enable/Disable Off/Hold/Auto/Music Enable/Disable Enable/Disable 360/540 Enable/Disable Disable/1~30~120 Min	Address can be changed by console The status while no signal Pan Reverse Tilt Reverse Pan Scan Degree Scan Feedback Standby time
	Fan Speed	Smart Control High Speed Silence Mode		Auto fans speed Fans high speed Fans Silence mode
	Display Setting	Backlight Time Key Lock	1~80 Min/Disable Enable/Disable	Backlight off time Press <menu> 3s to unlock

		Lightness Language Screen auto	15~100% 80% Chinese/English off/on/auto	Back lightness of screen Change the language Screen change Setting
	Temperature Unit	Celsius Fahrenheit		Temperature unit
	Value Default	Pan.....	Pan =XXX	The default value
	Wireless Dev	Wireless Off Wireless On Wireless Trans. Wireless Reset		Wireless off Wireless on Wireless transfer DMX data to another Wireless reset
	Restore Default	Yes/No		Restore to default value
	Product Select	- Password-	GTD xxx xxx xxx	Product Name Select
	Dimmer Mode	Mode1/2/3		Dimmer curve mode select
Reset	System Reset ColorReset Gobo Reset Other Reset			System reset Color motor reset All gobo motor reset All other motor reset
Channel Adjust	Test Mode	Pan.....		Every channel test
	Manual Mode	Pan :	Pan =XXX :	Manual control
	Adjust Mode	Input Password Pan :	Password=XXX(xx) Pan=XXX :	The password of adjust mode Fixed all begin position
	Focus Mode	Input Password Pan :	Password=XXX(xx) Pan=XXX :	The password of adjust mode Fixed all begin position
	StaticGoboCalibration	Input Password StaticGobo1 :	Password=XXX(xx) StaticGobo1=XXX :	The password of adjust focus Fixed the focus of the static gobos
	RotateGoboCalibration	Input Password RotateGobo1 :	Password=XXX(xx) RotateGobo1=XXX :	The password of adjust focus Fixed the focus of the rotate gobos
Channel Setting	Channel Mode	Standard Mode Simplified Mode		Standard channel mode Simplified channel mode

		Extended Mode Custom Mode 1 Custom Mode 2 Custom Mode 3		Extended channel mode Custom channel mode 1 Custom channel mode 2 Custom channel mode 3
	Set Custom Mode1 Set Custom Mode2 Set Custom Mode3	Max Channel Pan : :	Channel = XX Pan = CH01 : :	Change the channel order
Program Edit	Select Prog.	Program Unit 1 Program Unit 2 Program Unit 3	Program 1 ~10 Program 1 ~ 10 Program 1 ~ 10	Choose build-in program for slave 1 Choose build-in program for slave 2 Choose build-in program for slave 3
	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
	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
	Record Scene	Scene XX->XX		Record scene form console

 Note : Settings hightlighted in light grey are default values.

10. DMX Protocol

Standard

Standard (37ch)	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	Cyan	0	255	0.0%	100.0%	White → Full cyan	0(0%)
9	Magenta	0	255	0.0%	100.0%	White → Full magenta	0(0%)
10	Yellow	0	255	0.0%	100.0%	White → Full yellow	0(0%)
11	CMY color macro	0	15	0.0%	5.9%	CMY color macro off	0(0%)
		16	135	6.3%	52.9%	CMY synchronous color from slow to fast	
		136	255	53.3%	100.0%	CMY random color from slow to fast	
12	CTO	0	255	0.0%	100.0%	Warm → Cold	0(0%)
13	Color wheel	0	7	0.0%	2.7%	Open	0(0%)
		8	31	3.1%	12.2%	Color 1	
		32	55	12.5%	21.6%	Color 2	

		56	79	22.0%	31.0%	Color 3	
		80	103	31.4%	40.4%	Color 4	
		104	127	40.8%	49.8%	Color 5	
		128	187	50.2%	73.3%	Color continous rotation CW from slow to fast	
		188	195	73.7%	76.5%	Stop	
		196	255	76.9%	100.0%	Color continous rotation CCW from slow to fast	
14	Gobo wheel (static)	0	15	0.0%	5.9%	Open	0(0%)
		16	22	6.3%	8.6%	Gobo 1	
		23	29	9.0%	11.4%	Gobo 2	
		30	36	11.8%	14.1%	Gobo 3	
		37	43	14.5%	16.9%	Gobo 4	
		44	50	17.3%	19.6%	Gobo 5	
		51	57	20.0%	22.4%	Gobo 6	
		58	64	22.7%	25.1%	Gobo 7	
		65	73	25.5%	28.6%	Gobo 1 shake	
		74	82	29.0%	32.2%	Gobo 2 shake	
		83	91	32.5%	35.7%	Gobo 3 shake	
		92	100	36.1%	39.2%	Gobo 4 shake	
		101	109	39.6%	42.7%	Gobo 5 shake	
		110	118	43.1%	46.3%	Gobo 6 shake	
		119	127	46.7%	49.8%	Gobo 7 shake	
		128	187	50.2%	73.3%	Gobo wheel continous rotation CW from slow to fast	
		188	195	73.7%	76.5%	Stop	
		196	255	76.9%	100.0%	Gobo wheel continous rotation CCW from slow to fast	
15	Rotating gobo wheel	0	19	0.0%	7.5%	Open	0(0%)
		20	28	7.8%	11.0%	Gobo 1	
		29	37	11.4%	14.5%	Gobo 2	

		38	46	14.9%	18.0%	Gobo 3	
		47	55	18.4%	21.6%	Gobo 4	
		56	64	22.0%	25.1%	Gobo 5	
		65	73	25.5%	28.6%	Gobo 6	
		74	82	29.0%	32.2%	Gobo 1 shake	
		83	91	32.5%	35.7%	Gobo 2 shake	
		98	107	38.4%	42.0%	Gobo 3 shake	
		108	117	42.4%	45.9%	Gobo 4 shake	
		118	127	46.3%	49.8%	Gobo 5 shake	
		128	137	50.2%	53.7%	Gobo 6 shake	
		128	187	50.2%	73.3%	Gobo wheel continous rotation CW from slow to fast	
		188	195	73.7%	76.5%	Stop	
		196	255	76.9%	100.0%	Gobo wheel continous rotation CCW from slow to fast	
16	Gobo rotating/ positioni ng gobo wheel	0	127	0.0%	49.8%	Gobo rotation/positioning	0(0%)
		128	187	50.2%	73.3%	Gobo continous rotation CCW from slow to fast	
		188	195	73.7%	76.5%	Stop	
		196	255	76.9%	100.0%	Gobo continous rotation CW from slow to fast	
17	Effect Wheel	0	31	0.0%	12.2%	Off	0(0%)
		31	255	12.2%	100.0%	On	
18	Effect Wheel rotation	0	127	0.0%	49.8%	Effect Wheel indexed	0(0%)
		128	187	50.2%	73.3%	Effect Wheel continous rotation CW from slow to fast	
		188	195	73.7%	76.5%	Stop	
		196	255	76.9%	100.0%	Effect Wheel continous rotation CCW from slow to fast	
19	Blade1 Position	0	255	0.0%	100.0%	Blade1 position from outside to inside	0(0%)
20	Blade1 Degree	0	255	0.0%	100.0%	Blade1 degree from positive to negative	0(0%)

21	Blade2 Positi.	0	255	0.0%	100.0%	Blade2 position from outside to inside	0(0%)
22	Blade2 Degree	0	255	0.0%	100.0%	Blade2 degree from positive to negative	0(0%)
23	Blade3 Positi.	0	255	0.0%	100.0%	Blade3 position from outside to inside	0(0%)
24	Blade3 Degree	0	255	0.0%	100.0%	Blade3 degree from positive to negative	0(0%)
25	Blade4 Positi.	0	255	0.0%	100.0%	Blade4 position from outside to inside	0(0%)
26	Blade4 Degree	0	255	0.0%	100.0%	Blade4 degree from positive to negative	0(0%)
27	Framing Rotation	0	255	0.0%	100.0%	Framing Rotation	0(0%)
28	Framing Rotation speed	0	255	0.0%	100.0%	Framing Rotation speed from fast to slow	0(0%)
29	Blade macro	0	15	0.0%	5.9%	Blade macro Off	0(0%)
		16	21	6.3%	8.2%	Built-in blade macro 0	
		22	27	8.6%	10.6%	Built-in blade macro 1	
		28	33	11.0%	12.9%	Built-in blade macro 2	
		34	39	13.3%	15.3%	Built-in blade macro 3	
		40	45	15.7%	17.6%	Built-in blade macro 4	
		46	51	18.0%	20.0%	Built-in blade macro 5	
		52	57	20.4%	22.4%	Built-in blade macro 6	
		58	63	22.7%	24.7%	Built-in blade macro 7	
		64	69	25.1%	27.1%	Built-in blade macro 8	
		70	75	27.5%	29.4%	Built-in blade macro 9	
		76	81	29.8%	31.8%	Built-in blade macro 10	
		82	87	32.2%	34.1%	Built-in blade macro 11	
		88	93	34.5%	36.5%	Built-in blade macro 12	
		94	99	36.9%	38.8%	Built-in blade macro 13	
100	105	39.2%	41.2%	Built-in blade macro 14			

		106	111	41.6%	43.5%	Built-in blade macro 15	
		112	117	43.9%	45.9%	Built-in blade macro 16	
		118	123	46.3%	48.2%	Built-in blade macro 17	
		124	129	48.6%	50.6%	Built-in blade macro 18	
		130	135	51.0%	52.9%	Built-in blade macro 19	
		136	141	53.3%	55.3%	Built-in blade macro 20	
		142	147	55.7%	57.6%	Built-in blade macro 21	
		148	153	58.0%	60.0%	Built-in blade macro 22	
		154	159	60.4%	62.4%	Built-in blade macro 23	
		160	165	62.7%	64.7%	Built-in blade macro 24	
		166	255	65.1%	100.0%	Blade macro random from slow to fast	
30	Iris	0	255	0.0%	100.0%	Open → Close	0(0%)
31	Iris macro	0	31	0.0%	12.2%	Off / Open iris	0(0%)
		32	63	12.5%	24.7%	Effect - Synchronous open from slow to fast	
		64	95	25.1%	37.3%	Effect - Synchronous off	
		96	127	37.6%	49.8%	Effect - Random open from slow to fast	
		128	159	50.2%	62.4%	Effect - Random off	
		160	191	62.7%	74.9%	Strobe follow	
		192	255	75.3%	100.0%	Closed iris	
32	Focus1	0	255	0.0%	100.0%	Continuous adjustment from near to far	0(0%)
33	Zoom	0	255	0.0%	100.0%	Zoom adjustment from small to big	0(0%)
24	Prism	0	31	0.0%	12.2%	Off	0(0%)
35	Prism rotation	0	127	0.0%	49.8%	Prism indexed	0(0%)
		128	187	50.2%	73.3%	Prism continuous rotation CW from slow to fast	
		188	195	73.7%	76.5%	Stop	
		196	255	76.9%	100.0%	Prism continuous rotation CCW	

						from slow to fast	
36	Frost	0	127	0.0%	49.8%	Off	0(0%)
		128	255	50.2%	100.0%	Frost zoom from smallest to biggest	
37	Special controls	0	9	0.0%	3.5%	No function	0(0%)
		10	19	3.9%	7.5%	No function	
		20	29	7.8%	11.4%	No function	
		30	39	11.8%	15.3%	Color wheel half color switch	
		40	49	15.7%	19.2%	Color wheel random positioning	
		50	59	19.6%	23.1%	Reserved	
		60	69	23.5%	27.1%	Reset all motor after 5 seconds	
		70	79	27.5%	31.0%	All color motor reset after 5 seconds	
		80	89	31.4%	34.9%	All gobo motor reset after 5 seconds	
		90	99	35.3%	38.8%	Blade motor reset after 5 seconds	
		100	109	39.2%	42.7%	Other motor reset after 5 seconds	
		110	119	43.1%	46.7%	Reserved	
		120	121	47.1%	47.5%	Reserved	
		122	123	47.8%	48.2%	short distance(10m) auto focus	
		124	129	48.6%	50.6%	Reserved	
		130	139	51.0%	54.5%	Built-in program 1	
		140	149	54.9%	58.4%	Built-in program 2	
		150	159	58.8%	62.4%	Built-in program 3	
		160	169	62.7%	66.3%	Built-in program 4	
		170	179	66.7%	70.2%	Built-in program 5	
		180	189	70.6%	74.1%	Built-in program 6	
		190	199	74.5%	78.0%	Built-in program 7	
200	209	78.4%	82.0%	Built-in program 8			
210	219	82.4%	85.9%	Built-in program 9			
220	229	86.3%	89.8%	Built-in program 10			

		230	231	90.2%	90.6%	4kHz - dimmer frequency	
		232	233	91.0%	91.4%	12kHz - dimmer frequency	
		234	235	91.8%	92.2%	20kHz - dimmer frequency	
		236	239	92.5%	93.7%	Reserved	
		240	241	94.1%	94.5%	Linear - dimmer curve	
		242	243	94.9%	95.3%	Exponent - dimmer curve	
		244	245	95.7%	96.1%	Parabola - dimmer curve	
		246	247	96.5%	96.9%	Fan smart mode	
		248	249	97.3%	97.6%	Fan high speed mode	
		250	251	98.0%	98.4%	Fan silence mode	
		252	255	98.8%	100.0%	Reserved	

Basic

Basic (35ch)	Name	DMX value		DMX percentage		Function	Default DMX Value
		0	255	0.0%	100.0%		
1	Pan	0	255	0.0%	100.0%	Pan	0(0%)
2	Tilt	0	255	0.0%	100.0%	Tilt	46 (18.0%)
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	Cyan	0	255	0.0%	100.0%	White → Full cyan	0(0%)
7	Magenta	0	255	0.0%	100.0%	White → Full magenta	0(0%)

8	Yellow	0	255	0.0%	100.0%	White → Full yellow	0(0%)
9	CMY color macro	0	15	0.0%	5.9%	CMY color macro off	0(0%)
		16	135	6.3%	52.9%	CMY synchronous color from slow to fast	
		136	255	53.3%	100.0%	CMY random color from slow to fast	
10	CTO	0	255	0.0%	100.0%	Warm → Cold	0(0%)
11	Color wheel	0	7	0.0%	2.7%	Open	0(0%)
		8	31	3.1%	12.2%	Color 1	
		32	55	12.5%	21.6%	Color 2	
		56	79	22.0%	31.0%	Color 3	
		80	103	31.4%	40.4%	Color 4	
		104	127	40.8%	49.8%	Color 5	
		128	187	50.2%	73.3%	Color continuous rotation CW from slow to fast	
		188	195	73.7%	76.5%	Stop	
		196	255	76.9%	100.0%	Color continuous rotation CCW from slow to fast	
12	Gobo wheel (static)	0	15	0.0%	5.9%	Open	0(0%)
		16	22	6.3%	8.6%	Gobo 1	
		23	29	9.0%	11.4%	Gobo 2	
		30	36	11.8%	14.1%	Gobo 3	
		37	43	14.5%	16.9%	Gobo 4	
		44	50	17.3%	19.6%	Gobo 5	
		51	57	20.0%	22.4%	Gobo 6	
		58	64	22.7%	25.1%	Gobo 7	
		65	73	25.5%	28.6%	Gobo 1 shake	
		74	82	29.0%	32.2%	Gobo 2 shake	
		83	91	32.5%	35.7%	Gobo 3 shake	
		92	100	36.1%	39.2%	Gobo 4 shake	
		101	109	39.6%	42.7%	Gobo 5 shake	

		110	118	43.1%	46.3%	Gobo 6 shake	
		119	127	46.7%	49.8%	Gobo 7 shake	
		128	187	50.2%	73.3%	Gobo wheel continous rotation CW from slow to fast	
		188	195	73.7%	76.5%	Stop	
		196	255	76.9%	100.0%	Gobo wheel continous rotation CCW from slow to fast	
13	Rotating gobo wheel	0	19	0.0%	7.5%	Open	0(0%)
		20	28	7.8%	11.0%	Gobo 1	
		29	37	11.4%	14.5%	Gobo 2	
		38	46	14.9%	18.0%	Gobo 3	
		47	55	18.4%	21.6%	Gobo 4	
		56	64	22.0%	25.1%	Gobo 5	
		65	73	25.5%	28.6%	Gobo 6	
		74	82	29.0%	32.2%	Gobo 1 shake	
		83	91	32.5%	35.7%	Gobo 2 shake	
		98	107	38.4%	42.0%	Gobo 3 shake	
		108	117	42.4%	45.9%	Gobo 4 shake	
		118	127	46.3%	49.8%	Gobo 5 shake	
		128	137	50.2%	53.7%	Gobo 6 shake	
		128	187	50.2%	73.3%	Gobo wheel continous rotation CW from slow to fast	
		188	195	73.7%	76.5%	Stop	
		196	255	76.9%	100.0%	Gobo wheel continous rotation CCW from slow to fast	
14	Gobo rotating/posi tioning gobo wheel	0	127	0.0%	49.8%	Gobo rotation/positioning	0(0%)
		128	187	50.2%	73.3%	Gobo continous rotation CCW from slow to fast	
		188	195	73.7%	76.5%	Stop	
		196	255	76.9%	100.0%	Gobo continous rotation CW from slow to fast	
15	Effect	0	31	0.0%	12.2%	Off	0(0%)

	Wheel	31	255	12.2%	100.0%	On	
16	Effect Wheel rotation	0	127	0.0%	49.8%	Effect Wheel indexed	0(0%)
		128	187	50.2%	73.3%	Effect Wheel continuous rotation CW from slow to fast	
		188	195	73.7%	76.5%	Stop	
		196	255	76.9%	100.0%	Effect Wheel continuous rotation CCW from slow to fast	
17	Blade1 Positi.	0	255	0.0%	100.0%	Blade1 position from outside to inside	0(0%)
18	Blade1 Degree	0	255	0.0%	100.0%	Blade1 degree from positive to negative	0(0%)
19	Blade2 Positi.	0	255	0.0%	100.0%	Blade2 position from outside to inside	0(0%)
20	Blade2 Degree	0	255	0.0%	100.0%	Blade2 degree from positive to negative	0(0%)
21	Blade3 Positi.	0	255	0.0%	100.0%	Blade3 position from outside to inside	0(0%)
22	Blade3 Degree	0	255	0.0%	100.0%	Blade3 degree from positive to negative	0(0%)
23	Blade4 Positi.	0	255	0.0%	100.0%	Blade4 position from outside to inside	0(0%)
24	Blade4 Degree	0	255	0.0%	100.0%	Blade4 degree from positive to negative	0(0%)
25	Framing Rotation	0	255	0.0%	100.0%	Framing Rotation	0(0%)
26	Framing Rotation speed	0	255	0.0%	100.0%	Framing Rotation speed from fast to slow	0(0%)
27	Blade macro	0	15	0.0%	5.9%	Blade macro Off	0(0%)
		16	21	6.3%	8.2%	Built-in blade macro 0	
		22	27	8.6%	10.6%	Built-in blade macro 1	
		28	33	11.0%	12.9%	Built-in blade macro 2	
		34	39	13.3%	15.3%	Built-in blade macro 3	
		40	45	15.7%	17.6%	Built-in blade macro 4	

		46	51	18.0%	20.0%	Built-in blade macro 5	
		52	57	20.4%	22.4%	Built-in blade macro 6	
		58	63	22.7%	24.7%	Built-in blade macro 7	
		64	69	25.1%	27.1%	Built-in blade macro 8	
		70	75	27.5%	29.4%	Built-in blade macro 9	
		76	81	29.8%	31.8%	Built-in blade macro 10	
		82	87	32.2%	34.1%	Built-in blade macro 11	
		88	93	34.5%	36.5%	Built-in blade macro 12	
		94	99	36.9%	38.8%	Built-in blade macro 13	
		100	105	39.2%	41.2%	Built-in blade macro 14	
		106	111	41.6%	43.5%	Built-in blade macro 15	
		112	117	43.9%	45.9%	Built-in blade macro 16	
		118	123	46.3%	48.2%	Built-in blade macro 17	
		124	129	48.6%	50.6%	Built-in blade macro 18	
		130	135	51.0%	52.9%	Built-in blade macro 19	
		136	141	53.3%	55.3%	Built-in blade macro 20	
		142	147	55.7%	57.6%	Built-in blade macro 21	
		148	153	58.0%	60.0%	Built-in blade macro 22	
		154	159	60.4%	62.4%	Built-in blade macro 23	
		160	165	62.7%	64.7%	Built-in blade macro 24	
		166	255	65.1%	100.0%	Blade macro random from slow to fast	
28	Iris	0	255	0.0%	100.0%	Open → Close	0(0%)
29	Iris macro	0	31	0.0%	12.2%	Off/ Open iris	0(0%)
		32	63	12.5%	24.7%	Effect - Synchronous open from slow to fast	
		64	95	25.1%	37.3%	Effect - Synchronous off	
		96	127	37.6%	49.8%	Effect - Random open from slow to fast	
		128	159	50.2%	62.4%	Effect - Random off	
		160	191	62.7%	74.9%	Strobe follow	

		192	255	75.3%	100.0%	Closed iris	
30	Focus1	0	255	0.0%	100.0%	Continuous adjustment from near to far	0(0%)
31	Zoom	0	255	0.0%	100.0%	Zoom adjustment from small to big	0(0%)
32	Prism	0	31	0.0%	12.2%	Off	0(0%)
33	Prism rotation	0	127	0.0%	49.8%	Prism indexed	0(0%)
		128	187	50.2%	73.3%	Prism continuous rotation CW from slow to fast	
		188	195	73.7%	76.5%	Stop	
		196	255	76.9%	100.0%	Prism continuous rotation CCW from slow to fast	
34	Frost	0	127	0.0%	49.8%	Off	0(0%)
		128	255	50.2%	100.0%	Frost zoom from smallest to biggest	
35	Special controls	0	9	0.0%	3.5%	No function	0(0%)
		10	19	3.9%	7.5%	No function	
		20	29	7.8%	11.4%	No function	
		30	39	11.8%	15.3%	Color wheel half color switch	
		40	49	15.7%	19.2%	Color wheel random positioning	
		50	59	19.6%	23.1%	Reserved	
		60	69	23.5%	27.1%	Reset all motor after 5 seconds	
		70	79	27.5%	31.0%	All color motor reset after 5 seconds	
		80	89	31.4%	34.9%	All gobo motor reset after 5 seconds	
		90	99	35.3%	38.8%	Blade motor reset after 5 seconds	
		100	109	39.2%	42.7%	Other motor reset after 5 seconds	
		110	119	43.1%	46.7%	Reserved	
		120	121	47.1%	47.5%	Reserved	
		122	123	47.8%	48.2%	short distance(10m) auto focus	
124	129	48.6%	50.6%	Reserved			

		130	139	51.0%	54.5%	Built-in program 1	
		140	149	54.9%	58.4%	Built-in program 2	
		150	159	58.8%	62.4%	Built-in program 3	
		160	169	62.7%	66.3%	Built-in program 4	
		170	179	66.7%	70.2%	Built-in program 5	
		180	189	70.6%	74.1%	Built-in program 6	
		190	199	74.5%	78.0%	Built-in program 7	
		200	209	78.4%	82.0%	Built-in program 8	
		210	219	82.4%	85.9%	Built-in program 9	
		220	229	86.3%	89.8%	Built-in program 10	
		230	231	90.2%	90.6%	4kHz - dimmer frequency	
		232	233	91.0%	91.4%	12kHz - dimmer frequency	
		234	235	91.8%	92.2%	20kHz - dimmer frequency	
		236	239	92.5%	93.7%	Reserved	
		240	241	94.1%	94.5%	Linear - dimmer curve	
		242	243	94.9%	95.3%	Exponent - dimmer curve	
		244	245	95.7%	96.1%	Parabola - dimmer curve	
		246	247	96.5%	96.9%	Fan smart mode	
		248	249	97.3%	97.6%	Fan high speed mode	
		250	251	98.0%	98.4%	Fan silence mode	
		252	255	98.8%	100.0%	Reserved	

Extended

Extended (54ch)	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	Cyan	0	255	0.0%	100.0%	White → Full cyan	0(0%)
10		0	65535	0.0%	100.0%	Cyan fade, fine (LSB)	
11	Magenta	0	255	0.0%	100.0%	White → Full magenta	0(0%)
12		0	65535	0.0%	100.0%	Magenta fade, fine (LSB)	
13	Yellow	0	255	0.0%	100.0%	White → Full yellow	0(0%)
14		0	65535	0.0%	100.0%	Yellow fade, fine (LSB)	
15	CMY color macro	0	15	0.0%	5.9%	CMY color macro off	0(0%)
		16	135	6.3%	52.9%	CMY synchronous color from slow to fast	
		136	255	53.3%	100.0%	CMY random color from slow to fast	
16	CTO	0	255	0.0%	100.0%	Warm → Cold	0(0%)
17		0	65535	0.0%	100.0%	CTO fade, fine (LSB)	
18	Color wheel	0	7	0.0%	2.7%	Open	0(0%)
		8	31	3.1%	12.2%	Color 1	
		32	55	12.5%	21.6%	Color 2	
		56	79	22.0%	31.0%	Color 3	
		80	103	31.4%	40.4%	Color 4	
		104	127	40.8%	49.8%	Color 5	
		128	187	50.2%	73.3%	Color continuous rotation CW from slow to fast	

		188	195	73.7%	76.5%	Stop	
		196	255	76.9%	100.0%	Color continous rotation CCW from slow to fast	
19	Gobo wheel (static)	0	15	0.0%	5.9%	Open	0(0%)
		16	22	6.3%	8.6%	Gobo 1	
		23	29	9.0%	11.4%	Gobo 2	
		30	36	11.8%	14.1%	Gobo 3	
		37	43	14.5%	16.9%	Gobo 4	
		44	50	17.3%	19.6%	Gobo 5	
		51	57	20.0%	22.4%	Gobo 6	
		58	64	22.7%	25.1%	Gobo 7	
		65	73	25.5%	28.6%	Gobo 1 shake	
		74	82	29.0%	32.2%	Gobo 2 shake	
		83	91	32.5%	35.7%	Gobo 3 shake	
		92	100	36.1%	39.2%	Gobo 4 shake	
		101	109	39.6%	42.7%	Gobo 5 shake	
		110	118	43.1%	46.3%	Gobo 6 shake	
		119	127	46.7%	49.8%	Gobo 7 shake	
		128	187	50.2%	73.3%	Gobo wheel continous rotation CW from slow to fast	
		188	195	73.7%	76.5%	Stop	
196	255	76.9%	100.0%	Gobo wheel continous rotation CCW from slow to fast			
20	Rotating gobo wheel	0	19	0.0%	7.5%	Open	0(0%)
		20	28	7.8%	11.0%	Gobo 1	
		29	37	11.4%	14.5%	Gobo 2	
		38	46	14.9%	18.0%	Gobo 3	
		47	55	18.4%	21.6%	Gobo 4	
		56	64	22.0%	25.1%	Gobo 5	
		65	73	25.5%	28.6%	Gobo 6	
		74	82	29.0%	32.2%	Gobo 1 shake	

		83	91	32.5%	35.7%	Gobo 2 shake	
		98	107	38.4%	42.0%	Gobo 3 shake	
		108	117	42.4%	45.9%	Gobo 4 shake	
		118	127	46.3%	49.8%	Gobo 5 shake	
		128	137	50.2%	53.7%	Gobo 6 shake	
		128	187	50.2%	73.3%	Gobo wheel continous rotation CW from slow to fast	
		188	195	73.7%	76.5%	Stop	
		196	255	76.9%	100.0%	Gobo wheel continous rotation CCW from slow to fast	
21	Gobo rotating/p ositioning gobo wheel	0	127	0.0%	49.8%	Gobo rotation/positioning	0(0%)
		128	187	50.2%	73.3%	Gobo continous rotation CCW from slow to fast	
		188	195	73.7%	76.5%	Stop	
		196	255	76.9%	100.0%	Gobo continous rotation CW from slow to fast	
22		0	65535	0.0%	100.0%	Gobo rotation/positioning, fine (LSB)	
23	Effect Wheel	0	31	0.0%	12.2%	Off	0(0%)
		31	255	12.2%	100.0%	On	
24	Effect Wheel rotation	0	127	0.0%	49.8%	Effect Wheel indexed	0(0%)
		128	187	50.2%	73.3%	Effect Wheel continous rotation CW from slow to fast	
		188	195	73.7%	76.5%	Stop	
		196	255	76.9%	100.0%	Effect Wheel continous rotation CCW from slow to fast	
25	Blade1 Positi.	0	255	0.0%	100.0%	Blade1 position from outside to inside	0(0%)
26		0	65535	0.0%	100.0%	Blade1 position, fine (LSB)	
27	Blade1 Degree	0	255	0.0%	100.0%	Blade1 degree from positive to negative	0(0%)
28		0	65535	0.0%	100.0%	Blade1 degree, fine (LSB)	
29	Blade2	0	255	0.0%	100.0%	Blade2 position from outside to	0(0%)

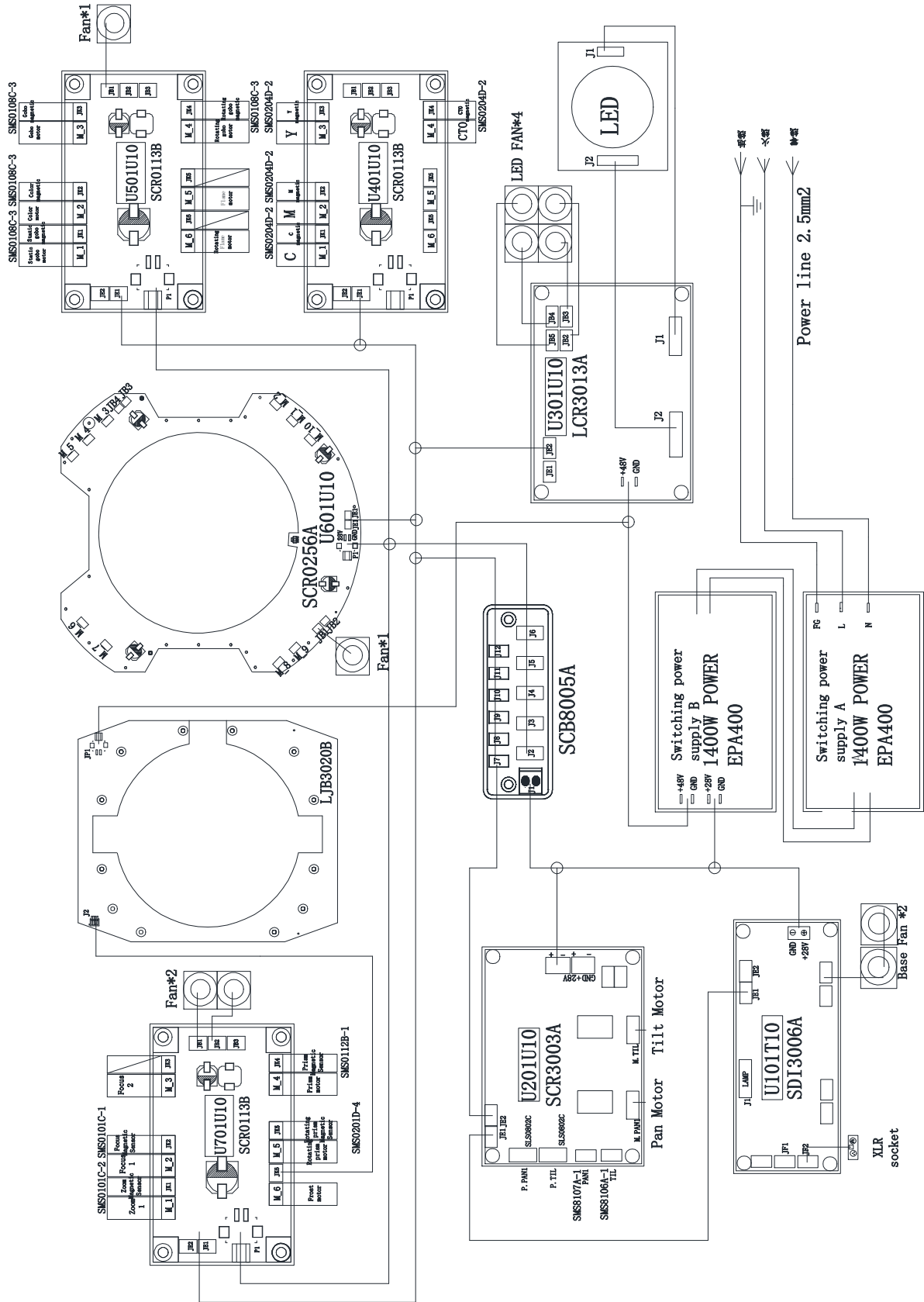
	Positi.					inside	
30		0	65535	0.0%	100.0%	Blade2 position, fine (LSB)	
31	Blade2 Degree	0	255	0.0%	100.0%	Blade2 degree from positive to negative	0(0%)
32		0	65535	0.0%	100.0%	Blade2 degree, fine (LSB)	
33	Blade3 Positi.	0	255	0.0%	100.0%	Blade3 position from outside to inside	0(0%)
34		0	65535	0.0%	100.0%	Blade3 position, fine (LSB)	
35	Blade3 Degree	0	255	0.0%	100.0%	Blade3 degree from positive to negative	0(0%)
36		0	65535	0.0%	100.0%	Blade3 degree, fine (LSB)	
37	Blade4 Positi.	0	255	0.0%	100.0%	Blade4 position from outside to inside	0(0%)
38		0	65535	0.0%	100.0%	Blade4 position, fine (LSB)	
39	Blade4 Degree	0	255	0.0%	100.0%	Blade4 degree from positive to negative	0(0%)
40		0	65535	0.0%	100.0%	Blade4 degree, fine (LSB)	
41	Framing Rotation	0	255	0.0%	100.0%	Framing Rotation	0(0%)
42		0	65535	0.0%	100.0%	Framing Rotation fine (LSB)	
43	Framing Rotation speed	0	255	0.0%	100.0%	Framing Rotation speed from fast to slow	0(0%)
44	Blade macro	0	15	0.0%	5.9%	Off	0(0%)
		16	21	6.3%	8.2%	Built-in blade macro 0	
		22	27	8.6%	10.6%	Built-in blade macro 1	
		28	33	11.0%	12.9%	Built-in blade macro 2	
		34	39	13.3%	15.3%	Built-in blade macro 3	
		40	45	15.7%	17.6%	Built-in blade macro 4	
		46	51	18.0%	20.0%	Built-in blade macro 5	
		52	57	20.4%	22.4%	Built-in blade macro 6	
		58	63	22.7%	24.7%	Built-in blade macro 7	
		64	69	25.1%	27.1%	Built-in blade macro 8	
70	75	27.5%	29.4%	Built-in blade macro 9			

		76	81	29.8%	31.8%	Built-in blade macro 10	
		82	87	32.2%	34.1%	Built-in blade macro 11	
		88	93	34.5%	36.5%	Built-in blade macro 12	
		94	99	36.9%	38.8%	Built-in blade macro 13	
		100	105	39.2%	41.2%	Built-in blade macro 14	
		106	111	41.6%	43.5%	Built-in blade macro 15	
		112	117	43.9%	45.9%	Built-in blade macro 16	
		118	123	46.3%	48.2%	Built-in blade macro 17	
		124	129	48.6%	50.6%	Built-in blade macro 18	
		130	135	51.0%	52.9%	Built-in blade macro 19	
		136	141	53.3%	55.3%	Built-in blade macro 20	
		142	147	55.7%	57.6%	Built-in blade macro 21	
		148	153	58.0%	60.0%	Built-in blade macro 22	
		154	159	60.4%	62.4%	Built-in blade macro 23	
		160	165	62.7%	64.7%	Built-in blade macro 24	
		166	255	65.1%	100.0%	Blade macro random from slow to fast	
45	Iris	0	255	0.0%	100.0%	Open → Close	0(0%)
46	Iris macro	0	31	0.0%	12.2%	Off / Open iris	0(0%)
		32	63	12.5%	24.7%	Effect - Synchronous open from slow to fast	
		64	95	25.1%	37.3%	Effect - Synchronous off	
		96	127	37.6%	49.8%	Effect - Random open from slow to fast	
		128	159	50.2%	62.4%	Effect - Random off	
		160	191	62.7%	74.9%	Strobe follow	
		192	255	75.3%	100.0%	Closed iris	
47	Focus1	0	255	0.0%	100.0%	Continuous adjustment from near to far	0(0%)
48		0	65535	0.0%	100.0%	Focus1, fine (LSB)	
49	Zoom	0	255	0.0%	100.0%	Zoom adjustment from small to big	0(0%)

50		0	65535	0.0%	100.0%	Zoom, fine (LSB)	
51	Prism	0	31	0.0%	12.2%	Off	0(0%)
		32	255	12.5%	100.0%	On	
52	Prism rotation	0	127	0.0%	49.8%	Prism indexed	0(0%)
		128	187	50.2%	73.3%	Prism continuous rotation CW from slow to fast	
		188	195	73.7%	76.5%	Stop	
		196	255	76.9%	100.0%	Prism continuous rotation CCW from slow to fast	
53	Frost	0	127	0.0%	49.8%	Off	0(0%)
		128	255	50.2%	100.0%	Frost zoom from smallest to biggest	
54	Special controls	0	9	0.0%	3.5%	No function	0(0%)
		10	19	3.9%	7.5%	No function	
		20	29	7.8%	11.4%	No function	
		30	39	11.8%	15.3%	Color wheel half color switch	
		40	49	15.7%	19.2%	Color wheel random positioning	
		50	59	19.6%	23.1%	Reserved	
		60	69	23.5%	27.1%	Reset all motor after 5 seconds	
		70	79	27.5%	31.0%	All color motor reset after 5 seconds	
		80	89	31.4%	34.9%	All gobo motor reset after 5 seconds	
		90	99	35.3%	38.8%	Blade motor reset after 5 seconds	
		100	109	39.2%	42.7%	Other motor reset after 5 seconds	
		110	119	43.1%	46.7%	Reserved	
		120	121	47.1%	47.5%	Reserved	
		122	123	47.8%	48.2%	short distance(10m) auto focus	
		124	129	48.6%	50.6%	Reserved	
		130	139	51.0%	54.5%	Built-in program 1	
140	149	54.9%	58.4%	Built-in program 2			
150	159	58.8%	62.4%	Built-in program 3			

		160	169	62.7%	66.3%	Built-in program 4	
		170	179	66.7%	70.2%	Built-in program 5	
		180	189	70.6%	74.1%	Built-in program 6	
		190	199	74.5%	78.0%	Built-in program 7	
		200	209	78.4%	82.0%	Built-in program 8	
		210	219	82.4%	85.9%	Built-in program 9	
		220	229	86.3%	89.8%	Built-in program 10	
		230	231	90.2%	90.6%	4kHz - dimmer frequency	
		232	233	91.0%	91.4%	12kHz - dimmer frequency	
		234	235	91.8%	92.2%	20kHz - dimmer frequency	
		236	239	92.5%	93.7%	Reserved	
		240	241	94.1%	94.5%	Linear - dimmer curve	
		242	243	94.9%	95.3%	Exponent - dimmer curve	
		244	245	95.7%	96.1%	Parabola - dimmer curve	
		246	247	96.5%	96.9%	Fan smart mode	
		248	249	97.3%	97.6%	Fan high speed mode	
		250	251	98.0%	98.4%	Fan silence mode	
		252	255	98.8%	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 are placement 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	DMX cables disconnected from fixture's DATA IN connector.	Connect DMX cable to the fixture's DATA IN connector.

Problem	Possible Cause	Suggested Correction
wrong response to the commands of the control system	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.
	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,

Problem	Possible Cause	Suggested Correction
		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.
	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

Problem	Possible Cause	Suggested Correction
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 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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