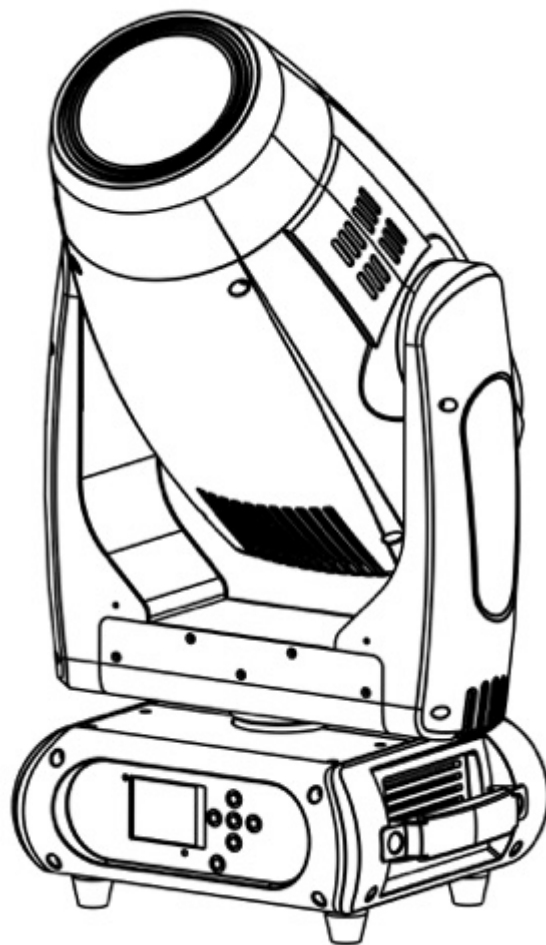# *BSL HELIOS*
USERS GUIDE

C E

1. Product Introduction:

1.1 Before unpack the fixture, pls make sure that the packing is in good condition, following items will be found in the box:

-The fixture

-This users guide

-3m DMX cable

-1.5m power cable with powercon

-Omega bracket for hanging installation

-Safety chain

1.2 Specification

Source

- Light source: Advanced 300w white led
- Led life: 60.000 hours
- Luminous Flux: 16000lumen, 89700lux@2.5m
- Control: Remote on/off via DMX
- Ballast: switching mode power supply

Optical System

- Beam angle: 6° to 48 °

X/Y

- Pan: 630° (3.58 sec) or 540°(4.0 sec), Tilt: 265° (2.8 sec)
- 16-bit resolution
- Auto repositioning

Colors

- Linear CMY + CTO
- 8+open, interchangeable, indexable and bidirectional rainbow effect
- Color bounce

Gobos

- Outside ∅27mm, inside ∅22mm
- 7+ open custom interchangeable position for rotating gobo wheel
- 7+ open fixed gobos
- Real indexable and gobo shaking
- Distinctive gobo animation effect

Features

- DMX channels: 26/29/19/21
- Linear CMY + CTO
- Color wheel: 8+1 colors
- Fixed gobo wheel: 7+1 gobos
- Rotating gobo wheel: 7+1 gobos
- Motorized auto focus
- Full range 0-100% dimmer
- Various strobe
- Rotating 3 facets prism
- Frost
- Fast speed iris
- Zoom from 6° to 48 °

- RDM function to change DMX address, flip display, reverse X/Y
- Software upgrade via DMX
- Hibernation when lost DMX for preset time
- Indicate temperature info of base, arm and lamp
- Fan speed auto change according to temperature

Display
- 2.4inch LCD display with English/ Chinese/French/Spanish menu
- Auto lock
- Flip
- Back-up communicating IC

1.3 Description of the Device

1. Project lens
2. Head
3. Arm
4. Base
5. Display
6. Foot stand
7. Operation button
8. Handle
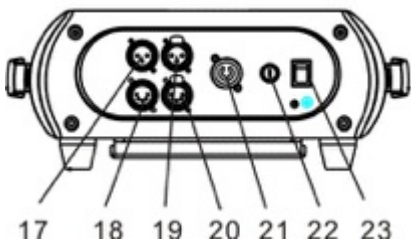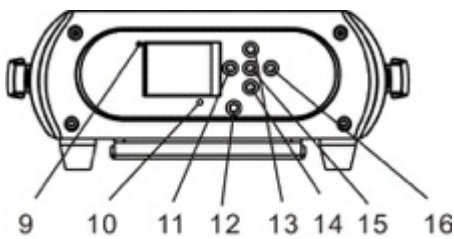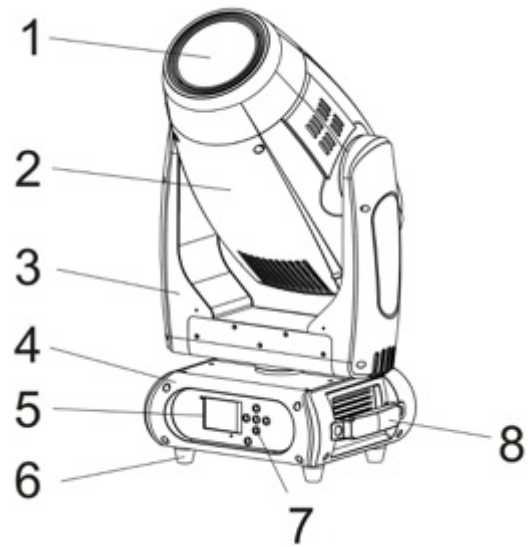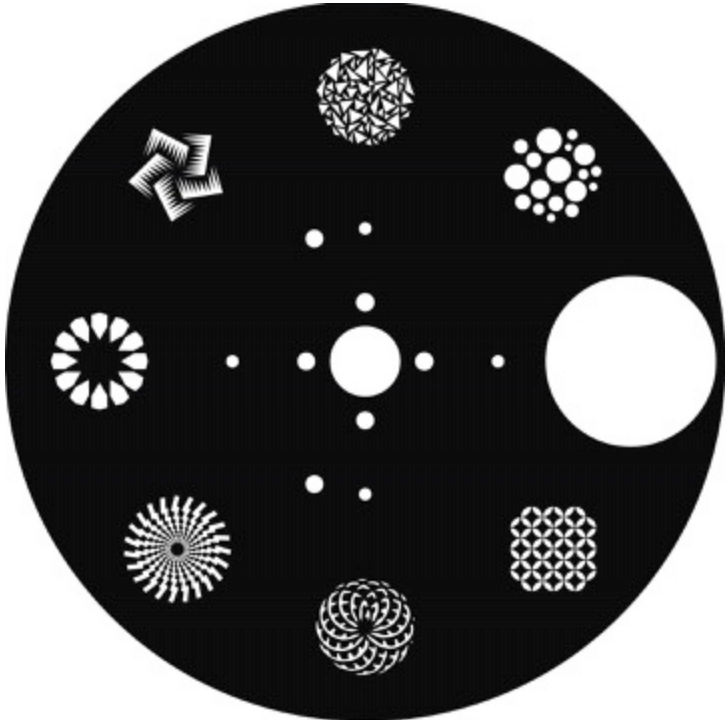
9. Wireless indicator
10. Mic
11. Left button
12. Battery indicator
13. Up button
14. Down button
15. Enter button
16. Right button
17. 3-pin DMX in
18. 5-pin DMX in
19. 3-pin DMX out
20. 5-pin DMX out
21. Powercon in
22. Fuse
23. Power switch

1.4 Colors and Gobos

1	Open	
2		Megenta
3		Orange
4		Sky blue
5		Pink
6		Yellow
7		Green
8		Blue
9		Red

Static gobo wheel	Rotating gobo wheel (slot-in-out gobos)

2. Safety and maintenance Information

2.1 Safety Info

⚠	Before operate this unit, please carefully read this users guide and keep if needed in future. It's necessary to respect following rules.
⌧	The disposal of the device after lifecycle could damage the environment, need to take it to special company for recycling or return to authorized dealer.
CE	The products referred to in this manual conform to the European Community Directives and are therefore marked with CE logo.
⚠	Keep this device away from children and unauthorized users, the manufacturer will not take responsibility for the damage due to any disregard of the information provided in this manual and wrong operation.
⚠	Before operate the device, pls make sure the fixture is in good housing, ensure pan and tilt can rotate in its complete range.
◖--0.5m	Pls make sure minimal 0.5m distance need to kept between the fixture to any flammable material.
	The device can only run with 100-240v voltage, 50/60Hz power, don't connect to any other wrong power. Disconnect the device from main power before open the shield or maintenance.
⌂	The device is designed only for indoor usage, pls keep it away from moisture. Do not expose the device under the sun or directly to any other lighting source.
☀	Never look directly into the projecting lens when the fixture is power on, the light may trigger epileptic seizures in photosensitive persons or persons with epilepsy. Especially at beam effect, extreme caution and observance of these safety instructions is mandatory.
⚠	Don't put or install the device on a surface that subject to vibration or bumps.
Ta=45℃	The device is supposed to work in the temperate range -15° C and +45° C, do not use the device when the temperate exceed this range.
	The lens, shield need to be replaced when obviously broken, never use the device when the shield is not completed closed.
⏚	Safety I class device, need to be earth connected.
	When the fixture is hanged overhead, the safety rope must be fixed to the bottom of the device to the appropriate fixing point.
⚠	Always carry the device by the handles, do not take the head or arm directly for transportation.

2.2 Maintenance

2.2.1 Operation only allowed to qualified person, damages due to unprofessional operation or remove of any parts inside will not be considered in warranty service. There are no serviceable parts inside the device or package, service only leaves to authorized dealers.

2.2.3 Never allow the optical components contact with oil, fat or any other liquid.

2.2.4 A regular clearance of the device is needed for long-term usage, this is very helpful to maintain the lifetime and brightness need to use a soft and lint-free cloth to clean the optical system, fan and air flowing tunnel.

2.2.5. Trouble Shooting

Problems	Possible reasons	Checking or solutions
Device not power up	Powercon or power cable damaged	Change a good power cable to try
	Faulty power supply	Replace new power supply
Pan/Tilt error or vibrate	Faulty Pan/Tilt PCB	Replace PT001 PCB
	Faulty opto sensor	Replace opto sensor OP001
	Cable loosen	Check the cable connect to OP001
LED off	Temperature protection	Check the temperature from menu
	Fan not working	Check the fan speed info from menu
	Faulty LED	Replace new LED
	Dimmer and strobe set at 0	Set dimmer and strobe channel at 255
	Faulty power supply	Replace new power supply
Device not response to DMX	Faulty communication IC	Replace the IC with back-up one in the display PCB
	Faulty display PCB	Replace new display PCB
	Wrong DMX addressing	Check the address and setting
	Faulty DMX cable	Change to a good DMX cable

2.2.6 Replacement of the fuse

Need to replace with same type and rating, which originally installed in the device.

Step One: Unplug power cable from main power.

Step Two: Unscrew the fuse holder out of the housing with a screwdriver.

Step Three: Remove the broken fuse and replace with an exact same type of new fuse.

Step Four: Insert the fuse holder back to the housing and screw tight and reconnect power.

3. Installation
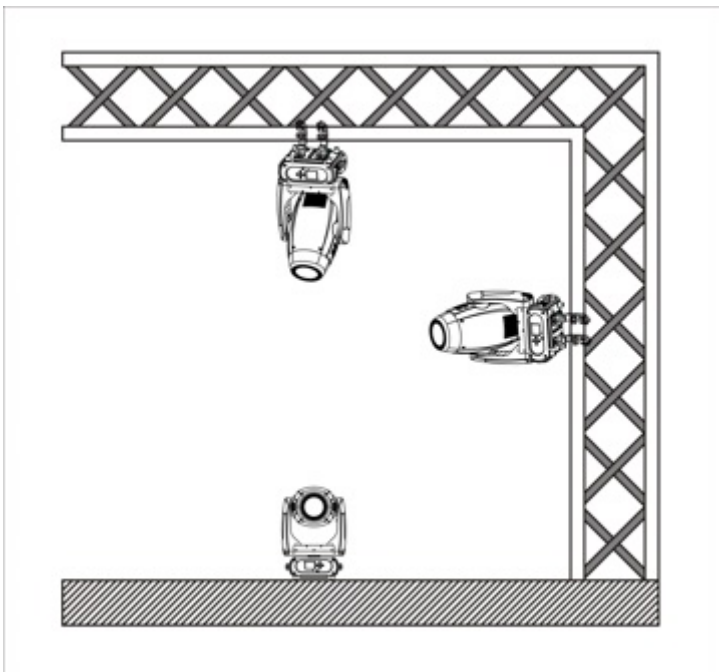
3.1 The device could be either put on a solid and even surface, or mounted upside down or sideways like left picture.

3.2 The mounting place must be sufficient stable and be able to support a weight of 10 times of the unit's weight. When the fixture is hanged, always additionally secure the device with the safety chain, fasten the safety rope at a suitable position so that the maximum fall of the projector will be 20 cm

3.3 How to do mounting installation.
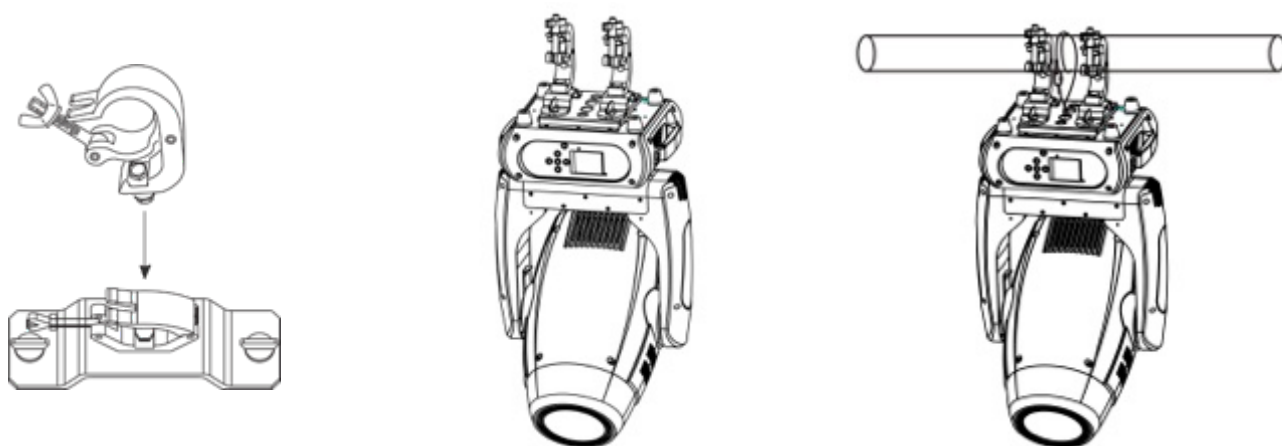
Step one: Installation the clamp onto the omega bracket;

Step two: Install the clamp and bracket on the bottom of panel, fasten the quick-locks;

Step three: Install the whole device onto appropriate truss and fasten the clamps, tight the safety rope with the truss or other fixing point at a suitable position that drop down distance not exceed 20 cm.

4. Control menu

4.1 Meaning of the icon in menu

Connect	DMX Address①	XXX	DMX address setting
	Wireless①		Wireless Enabled
Light	Max Temperature①	80~139℃ 80℃ /176~282℉ 176℉	Lamp off if temperature continuously over for 5 minutes
	Lamp Adjust①	PAN……	Adjust value of channel
Information	Time Info.	Current XXXX(Hours) Fixture Life XXXX(Hours)	Fixture boot time Fixture total run time
	Temperature	Near Lamp Temp (depends on fixture)	Temperature Sensors
	Fans Speed	Near Lamp Fan (depends on fixture)	Fan speed Sensors
	Channel Value	PAN……	Display value of channel
	Error Message	Pan,Tilt……	Error channels
	Fixture Model	xxxxxxxxxxxx	Display model brand and model
	Software Ver	1U01 V1.0.00………	Version of each IC
Set	Reset	All Pan&Tilt Colors Gobos Others	Reset all Reset Pan&Tilt Reset Colors Reset Gobos Reset Others

	Movment	Pan Reverse①	ON/OFF		Pan Reverse
		Tilt Reverse①	ON/OFF		Tilt Reverse
		Pan Degree①	630/540		Choose Pan Degree
		Encoders①	ON/OFF		Encoder wheel on/off
		Pan/Tilt Mode①	Stand/Smooth		Choose pan/tilt mode
	UI Set	Mic Sens. ③	0~99%,60%		Sensitivity of Mic
		No Signal①	Close/Hold/Auto/Music		Mode when no signal
		Temperature. C/F①	Fahrenheit /Celsius		Temperature at ℃/℉
		Fans Mode①	Auto Speed /High Speed		Fans mode
		Hibernation①	OFF, 01M~99M， 15M		Sleeping mode
		Backlight①	02~60m 02m		Show backlight time
		Flip Display①	ON/OFF		Display 180° reverse
		Display Bright③	00~31 10		Display Brightness
		Brand Show①	ON/OFF		Show brand or not
		Key Lock①	ON/OFF		Key lock on/off
		Language③	En/简/繁/Fr/Sp		Language Select
	Users	User Mode①	Standard		Standard mode
			Extended		Extended mode
			Basic-8bit		Basic-8bit mode
			Basic-16bit		Basic-16bit mode
			User		User program mode
		Edit User③	Max Channel = XX		Edit users mode
			PAN = CH01		
			:		
	Calibration③	-Password-	=XXX		Password: 050
		Color	=XXX		Calibrate channel value
		:	:		
	Fixture ID③	Name			Name
		-Password-			Password: 050
		PID Code			Set PID of RDM
	Wireless Set①	DMX On Cable	ON/OFF		DMX Send Out
		Reset Connect	ON/OFF		Reset Connect
	Reload Default	Basic Reload(①)	ON/OFF		Basic Reload
		Program Reload(②)	ON/OFF		Program Reload
		---Password---	XXX		Password: 050
		Private Reload(③)	ON/OFF		Private Reload
		All Reload	ON/OFF		All Reload
Program	Play①	DMX Receive			DMX Receive
		Slave Receive	Slave Receive 1,2,3		Choose slave position
		Sequence	Master / Alone		Run Sequence
		Music	Master / Alone		Music mode
	Select Chase②	Chase Part 1	Chase 1 ~ 8 Chase 1		Select and run auto
		Chase Part 2	Chase 1 ~ 8 Chase 2		program
		Chase Part 3	Chase 1 ~ 8 Chase 3		
	Edit Chase②	Chase 1	Chase Test		Test
		:	Step 01	=SCxxx	Beginning scene
		Chase 8	Step 64	=SCxxx	Ending scene
	Edit Scenes②	Edit Scene 001	Pan,Tilt,……	=xxx	Input manual scene
		~ Edit Scene	--Fade Time--	=xxx	Modify manually fading

		250	--Secne Time--	=xxx	time
			DMX Input		Modify manually scene time
					Input scene from exterior controller
	Scenes Record	ScXX=>ScXX			Auto Input scenes

5. DMX connection and DMX protocol

5.1 DMX addressing:

5.1.1 The device is controlled by universal DMX 512 protocol, DMX address is the start channel used to receive instructions from the external controller. For independent control, each fixture must be assigned its unique address control channels. For example, this device has four channel modes: 25/28/17/19, if we set the mode at standard 25 channels mode, and there are several models need to be independently controlled, we just simply address first fixture at 1, and second fixture at 26, third one at51, etc.

If the devices have the same address, they will behave synchronically.

DMX addressing is limited, don't set the address so high that without enough control channels for the fixtures.

Display is flashing when no DMX signal is received.

5.1.2 This device is equipped with 3-pins and 5-pins DMX in and out sockets only.

Pin 1=GND
Pin 2=SIG(-)
Pin 3=SIG(+)

Pin 1 =GND   Pin 4 =N.A.
Pin 2 =SIG(-)   Pin 5 =N.A.
Pin 3 =SIG(+)

5.1.3 The termination is prepared by soldering a 120Ω resistor between pins 2 and 3.

120Ω

5.1.4 Connection: us DMX cable with 3+5-pin XLR-plugs to connect the controller with the fixture or one fixture with another.
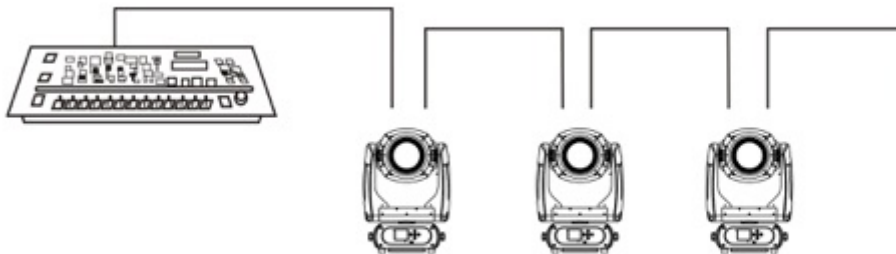
5.2 DMX chart

Channel				name	function	Min DMX	Max DMX
St	Ex	Ba1	Ba2				

1	1	1	1	Pan	Pan Coarse		0	255
	2		2	Pan fine	Pan Fine		0	255
2	3	2	3	Tilt	Tilt Coarse		0	255
	4		4	Tilt fine	Tilt Fine		0	255
3	5	3	5	Movment Speed	fastest to Slowest		0	255
	6			Movment Function	Normal		0	15
					Movement With Blackout		16	31
					TBD		32	255
4	7			Shutter Function	Normal Shutter Functions		0	15
					Pulse-effect Forward		16	31
					Pulse-effect Reverse		32	47
					Random Strobe		48	63
					TBD		64	255
5	8			Shutter	Normal Shutter Functions			
					Close		0	31
					Strobe Rate (slow to fast)		32	223
					Open		224	255
					Pulse-effect Forward			
					Close		0	31
					Strobe Rate (slow to fast)		32	223
					Open		224	255
					Pulse-effect Reverse			
					Close		0	31
					Strobe Rate (slow to fast)		32	223
					Open		224	255
					Random Strobe			
					Close		0	31
					Strobe Rate (slow to fast)		32	223
					Open		224	255
		4	6	Shutter	Shutter closed		0	31
					No function (shutter open)		32	63
					Strobe effect slow to fast		64	95
					No function (shutter open)		96	127
					Pulse-effect in sequences		128	159
					No function (shutter open)		160	191
					Random strobe effect slow to fast		192	223
					No function (shutter open)		224	255
6	9	5	7	Dimmer	Dimmer(Close to Open)		0	255
7	10			Color Function	Indexed		0	15
					Indexed With Blackout		16	31
					Forward Spin		32	47
					Reverse Spin		48	63
					Continuous		64	79
					Color Bounce		80	111
					TBD		112	255

9

				Function		Min	Max
				Color	Indexed & Indexed With Blackout&Color Bounce		
					Position 1 (Open)	0	13
					Position 2 ~ Position 18	14	255
					Forward Spin		
8	11				Stop to fastest	0	255
					Reverse Spin		
					Stop to fastest	0	255
					Continuous		
					Positioning from 0-360 degrees	0	255
				Color	Indexed		
					Position 1 (Open)	0	2
					Position 2 ~ Position 18	3	53
					Indexed With Blackout		
					Position 1 (Open)	54	56
					Position 2 ~ Position 18	57	106
		6	8		Indexed With Bounce		
					Position 1	107	119
					Position 2 ~ Position 9	120	223
					Forward Wheel Spin		
					Stop to fastest	224	239
					Reverse Wheel Spin		
					Stop to fastest	240	255
9	12	7	9	Cyan	Cyan 0->100%	0	255
10	13	8	10	Magenta	Magenta 0->100%	0	255
11	14	9	11	Yellow	Yellow 0->100%	0	255
12	15	10	12	CTO	CTO 0->100%	0	255
				Rot Gobo Function	Indexed	0	15
					Indexed With Blackout	16	31
					Forward Spin	32	47
13	16				Reverse Spin	48	63
					Continuous	64	79
					Shake	80	95
					TBD	96	255
				Rot Gobo	Indexed & Indexed With Blackout&Shake		
					Position 1 (Open)	0	31
					Position 2 ~ Position 8	32	255
					Forward Wheel Spin		
14	17				Stop to fastest	0	255
					Reverse Wheel Spin		
					Stop to fastest	0	255
					Continuous		
					Positioning from 0-360 degrees	0	255
				Rot Gobo	Indexed		
		11	13		Position 1 (Open)	0	5
					Position 2 ~ Position 8	6	47
					Indexed With Blackout		

						Min	Max
					Position 1 (Open)	48	53
					Position 2 ~ Position 8	54	97
					Indexed With Shake		
					Position 2	98	115
					Position 3 ~ Position 8	116	223
					Forward Wheel Spin		
					Stop to fastest	224	239
					Reverse Wheel Spin		
					Stop to fastest	240	255
15	18			Gobo Rot Function	Continuous	0	15
					Forward Spin	16	31
					Reverse Spin	32	47
					Forward Animate Rotate	48	63
					Forward Animate Rotate With Blackout	64	79
					Reverse Animate Rotate	80	95
					Reverse Animate Rotate With Blackout	96	111
					TBD	112	255
16	19			Gobo Rot	Continuous		
					Positioning from 0-360 degrees	0	255
					Forward Spin		
					Stop to fastest	0	255
					Reverse Spin		
					Stop to fastest	0	255
					Forward Animate Rotate & Forward Animate Rotate With Blackout		
					Stop to fastest	0	255
					Reverse Animate Rotate & Reverse Animate Rotate With Blackout		
					Stop to fastest	0	255
	12	14		Gobo Rot	Continuous		
					Positioning from 0-360 degrees	0	191
					Forward Animate Rotate		
					Stop to fastest	192	207
					Reverse Animate Rotate		
					Stop to fastest	208	223
					Forward Spin		
					Stop to fastest	224	239
					Reverse Spin		
					Stop to fastest	240	255
17	20			Gobo Function	Indexed	0	15
					Indexed With Blackout	16	31
					Forward Spin	32	47
					Reverse Spin	48	63
					Continuous	64	79
					Shake	80	95
					TBD	96	255

				Fixed Gobo	Indexed & Indexed With Blackout&Shake		
					Position 1 (Open)	0	31
					Position 2 ~ Position 8	32	255
18	21				Forward Wheel Spin		
					Stop to fastest	0	255
					Reverse Wheel Spin		
					Stop to fastest	0	255
					Continuous		
					Positioning from 0-360 degrees	0	255
		13	15	Fixed Gobo	Indexed		
					Position 1 (Open)	0	5
					Position 2 ~ Position 8	6	47
					Indexed With Blackout		
					Position 1 (Open)	48	53
					Position 2 ~ Position 8	54	97
					Indexed With Shake		
					Position 2	98	115
					Position 3 ~ Position 8	116	223
					Forward Wheel Spin		
					Stop to fastest	224	239
					Reverse Wheel Spin		
					Stop to fastest	240	255
19	22	14	16	Prism	Indexed & Indexed With Blackout		
					Position 1 (Open)	0	84
					Position 2	85	169
					Position 3	170	255
20	23	15	17	Prism Rot	Forward Spin		
					Stop to fastest	0	127
					Reverse Spin		
					Stop to fastest	128	255
21	24			Focus Function	Continuous	0	15
					5m Auto Focus	16	31
					7.5m Auto Focus	32	47
					10m Auto Focus	48	63
					15m Auto Focus	64	79
					>20m Auto Focus	80	95
					TBD	96	255
22	25	16	18	Focus	Continuous		
					Focus In to Focus Out	0	255
					Auto Focus		
					Focus In to Focus Out Fine	0	255
23	26	17	19	Zoom	Continuous		
					Zoom Small to Big	0	255
24	27			Iris Function	Indexed	0	15
					Pulse opening With Forward Blackout	16	31
					Pulse opening With Reverse Blackout	32	47

					Pulse closing With Forward Blackout	48	63
					Pulse closing With Reverse Blackout	64	79
					TBD	80	255
25	28			Iris	Indexed		
					Max. diameter to Min.diameter	0	255
					Pulse opening & Pulse closing		
					Pulse Slow to Fast	0	255
		18	20	Iris	Indexed	0	191
					Pulse opening With Forward Blackout	192	207
					Pulse opening With Reverse Blackout	208	223
					Pulse closing With Forward Blackout	224	239
					Pulse closing With Reverse Blackout	240	255
26	29	19	21	Control	Normal	0	7
					Reset All	8	15
					Pan&Tilt Reset	16	23
					Color Reset	24	31
					Gobo Reset	32	39
					TBD	40	47
					Other Reset	48	55
					Display Off	56	63
					Display On	64	71
					TBD	72	79
					TBD	80	87
					Hibernation	88	95
					TBD	96	255

6. Unique Features

6.1 RDM, stand for "Remote Device Management", with this function, users can realize remote control of the device, such as remotely changing DMX address, reverse pan/tilt setting, check a lot of useful information such as temperature, power consumption, fan speed. Etc. Every single device has a unique RDM code before left factory to distinguish from each other, usually not suggest users change this code freely.

6.2 Software upgrade function via DMX cable, if there is any new firmware for this device come out, it can be upgraded simply via a software upgrade box, no need to change any mechanical parts. The upgrade box is not included in the package, if need any further assistance pls just contact authorized dealers.

6.3 Hibernation, the device will enter sleeping mode if activated after a period of disconnecting DMX signal to save the power consumption, and will return immediately as soon as the DMX signal is sent again.

6.4 Display battery, this function is prepaid in the display PCB, users just need to install a normal 10440 600mAh 3.7V rechargeable lithium battery, then users could power on the display and do setting without connect to main power.

6.5 Display back-up communication IC, there is a back-up communication IC installed in the display PCB, so users could

replace at once if the working one is broken, no need to wait long time from service.

6.6 Display flip, by press up and down button for more than 3 seconds, the display will flip automatically, this function is useful to read menu conveniently when device is hanged.

8. Dimensions Drawing
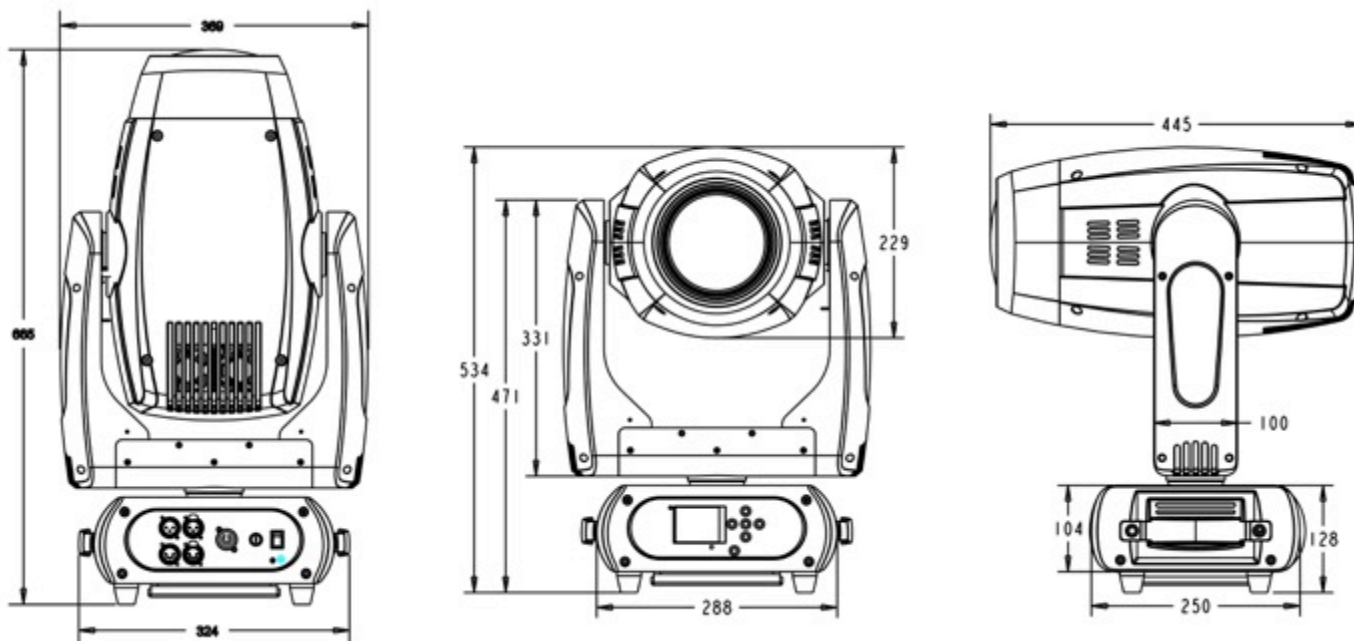
9. Technical specification

Power supply	100-240 V AC, 50/60 Hz ~
Power consumption	400W
LED	Advanced 300w white led
DMX channels	19/21/26/29 modes
Beam angle	6° to 48°
Luminous flux	16000lumen, 89700lux@2.5m
Fuse	T 5 A, 250 V
Device dimensions	369x250x658mm
Net Weight	18KG