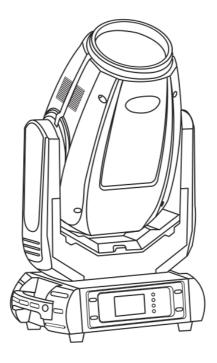
# 315W BSW Hybrid Moving Head



## **User Manual**

Please read this user manual before using this product.



### INDEX

<u>ST/</u>	ATEMENT	4
<u>AC</u>	CESSORIES	4
<u>SA</u>	FETY INSTRUCTION	4
<u>GE</u>	NERAL GUIDELINES	5
<u>INS</u>	STALLATION	7
<u>TE(</u>	CHNICAL SPECIFICATION	10
<u>PH</u>	OTOMETRIC DIAGRAMS	12
<u>co</u>	NTROL SYSTEM	17
PA	NEL OPERATION	17
1.	Brief	17
2.	OPERATION	18
1.	OPERATE LIGHT WITH TOUCH OR ENCODER BUTTON	18
2.	PARAMETER VALUE SETTING	18
3.	BOOLEAN PARAMETER SETTING	19
4.	SUB MENU (PARAMETER)	20
3.	<b>OPERATION AND PARAMETER INSTRUCTION</b>	20
1.	Set DMX Address	21
2.	Set Light work mode	21
3.	SET DISPLAY	22
4.	Test light	23
5.	SET LIGHT RUN PARAMETER	24
6.	VIEW STATUS	25

CHANNEL DESCRIPTION:	25
CLEANING AND MAINTENANCE	33

# STATEMENT

The product has well capability and intact packing when leave factory. All of the user should comply with warning item and manual, any misuse cause of the damages are not included in our guarantee, and also cannot be responsible for any malfunction & problem owing to ignore the manual.

## ACCESSORIES

Name	Quantity	Unit	Remark
USER MANUAL	1	PCS	
DMX CABLE	1	PCS	
OMEGA	2	PCS	
CLAMP	2	PCS	
SAFTY CABLE	1	PCS	

These items are packed together with the product:

# SAFETY INSTRUCTION

Please keep this User Guide for future consultation. If you sell the unit to another user, be sure that they also receive this instruction booklet.



This fixture is an extremely sophisticated piece of electronic equipment. To guarantee a smooth operation, it is important to follow the guidelines in this manual. The manufacturer of this device will not accept responsibility for damages resulting from the misuse of this fixture due to the disregard of the information printed in this manual.



This device falls under **PROTECTION CLASS 1**. It's essential this device be grounded properly. Only qualified personnel should perform all electrical connections.



INDOORSUSE ONLY! DONOT EXPOSE FIXTURE RAIN AND MOISTURE!



UNPLUG POWER BEFORE SERVICING FIXTURE! DO NOT PLUG FIXTURE INTO A DIMMER PACK! NEVER TOUCH FIXTURE DURING OPERATION, AS IT MAY BE HOT!



NEVER LOOK DIRECTLY INTO THE LIGHT SOURCE! SENSITIVE PERSONS MAY SUFFER AN EPILEPTIC SHOCK!

# **GENERAL GUIDELINES**

### NEVER OPEN THIS FIXTURE WHILE IN USE!

- During the initial operation of this fixture, a light smoke or smell may emit from the interior of the fixture. This is a normal process and is caused by excess paint in the interior of the casing burning off from the heat associated with the lamp and will decrease gradually over time.
- This fixture is a professional lighting effect designed for INDOOR / DRY

LOCATIONS ONLY on stage, in nightclubs, theatres, etc.

- Please make sure there are **NO FLAMMABLE MATERIALS** close to the fixture while operating, to prevent any fire hazard.
- The fixture must be installed in a location with adequate ventilation, at least 1.5 feet (.5m) from adjacent surfaces. Be sure no air ventilation slots are blocked.
- DO NOT attempt installation and/or operation without knowledge how to do so.
- DO NOT permit operation by persons who are not qualified to operate this type of fixture. Most damages are the result of operations by nonprofessionals. Consistent operational breaks may ensure the fixture will function properly for many years to come.
- DO NOT shake fixture, avoid brute force when installing and/or operating fixture.
- Always install the fixture with an appropriate safety cable. When installing the fixture in a suspended environment, always use mounting hardware that is no less than M10 x 25 mm, also be sure the hardware is insert in the pre-arranged screw holes in the bracket of the fixture.
- Use the original packaging and materials to transport the fixture in for service.
- DO NOT TOUCH the housing bare-hand during its operation. Turn OFF the power and allow approximately 15 minutes for the fixture to cool down before replacing or serving.

# INSTALLATION



#### FLAMMABLE MATERIAL WARNING

Keep fixture at least 5.0 ft (1.5m) away from any flammable materials, decorations, pyrotechnics, etc.



## ELECTRICAL CONNECTIONS

A qualified electrician should be used for all electrical connections and/or installations.

### CAUTIONS

- For added protection, mount the fixture in areas outside walking paths, seating areas, or in areas were unauthorized personnel might reach the fixture.
- Ambient operating temperature range for this fixture is 5° to 113°F. (-15° to 45°C) Do not use the fixture under or above this temperature.
- Before mounting the fixture to any surface, make sure the installation area can hold a minimum point load of 10 times the weight of the fixture.
- Fixture installation must always be secured with a secondary safety attachment, such as an appropriate safety cable.
- Never stand directly below the device when mounting, removing or servicing.

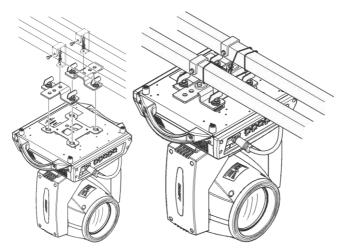
The unit should be mounted via its screw holes on the bracket. Always ensure that the unit is firmly fixed to avoid vibration and slipping while operating. And make sure that the structure to which you are attaching the unit is secure and is able to support a weight of 10 times of the unit's weight. Also always use a

safety cable that can hold 12 times of the weight of the unit when installing the fixture.

The equipment must be fixed by professionals. And it must be fixed at a place where is out of the touch of people.

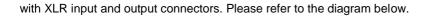
### **Clamp mounting**

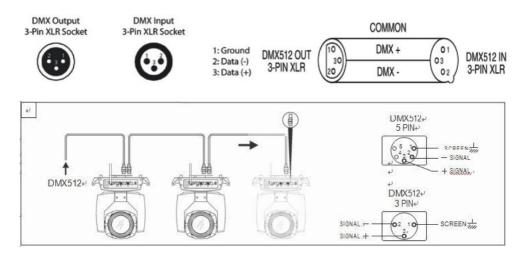
The moving head provides a unique mounting bracket assembly that integrates the bottom of the base, the included '**Omega Bracket**' and the **Safety Cable** rigging point in one unit (see the illustration below).When mounting this fixture to truss be sure to sere to secure an appropriately rated clamp to the included **Omega Bracket** using a M10 screw fitted through the center hole of the 'omega bracket'. As an added safety measure be sure to attached at least one properly rated **Safety Cable** to the fixture using one of the safety cable rigging point integrated in the base assembly.



### DMX-512 control connection:

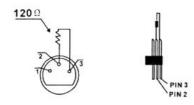
Connect the provided XLR cable to the female 3-pin XLR output of your controller and the other side to the male 3-pin XLR input of the moving head. You can chain multiple Moving head together through serial linking. The cable needed should be two core, screened cable





#### DMX-512 connection with DMX terminator:

For installations where the DMX cable has to run a long distance or is in an electrically noisy environment, such as in a discotheque, it is recommended to use a DMX terminator. This helps in preventing corruption of the digital control signal by electrical noise. The DMX terminator is simply an XLR plug with a 120 resistor connected between pins 2 and 3,which is then plugged into the output XLR socket of the last fixture in the chain. Please see illustrations below.



# **TECHNICAL SPECIFICATION**

#### Light Sources: 315W(S11)

Live Fsue:T5 A/250 Neutral Fuse: T6.3 A/250 Power Voltage: AC 100-240V, 50/60Hz Max Power Consumption: 470W at 230V(I=2.05A,Power factor 0.96) Typical Power Consumption : 230W at 230V(I=1.8A, Power factor 0.95) Allow for a deviation of +/-10%

#### Lamp:

Lamp : YODN 315W Base Fap2.5 Lamp life : 2000hrs (Stand mode) 3000hrs (Eco mode)

#### **Optical System:**

High luminous-efficiency glass reflector Beam angel :  $5^{\circ} - 20^{\circ}$  (spot application)  $2.5^{\circ} - 10^{\circ}$  (beam application)

#### **Color Wheel:**

one color wheel, 14 kinds of color chips in one color wheel

#### **Static Gob Wheel:**

10 metal gobos & 4 beam reducers

#### **Rotation Gob Wheel:**

9 Glass gobos can be indexed and rotated in both directions at different

speeds Gobo wheels continuous rotation Glass gobos: outside diameter=15.9mm, image diameter=12.5mm, thickness=1.1mm

#### Prisms:

Rotation 6-facet linear prism with continuous rotation in both directions Rotation 16-facet circular prism with continuous rotation in both directions

#### Frost filter :

Separate, variable frost filter

#### Zoom:

Linear motorized zoom

#### Strobe:

Strobe effect with variable speed (max.15 flashes/sec)

#### Control

Graphic touch screen for fixture setting and addressing Gravitation sensor for auto screen positioning Battery backup of the touch screen Readout fixture and lamp usage, receiving DMX values, temperatures. Etc Built-in analyzer for easy fault finding, error messages Remotely switching on/off the lamp Built-in demo sequences Black-out while head moving, color or gobo changing. Self-resettable thermos-fuse DMX Channel: 16/24 Channel Control Modes: DMX

#### Pan/Tilt

Pan/Tilt: 540°/ 270° Pan/Tilt Resolution: 16 bit, Electric correction Movement control: tracking and vector Pan/Tilt-lock mechanism

#### **Temperatures:**

Maximum ambient temperature : 45° Maximum surface temperature : 90°

#### **Minimum Distances:**

Min distance from flammable surface :1m Min distance to lit objects (Stand Mode-280W):10m Min distance to lit objects (Eco Mode-230W):7.5m

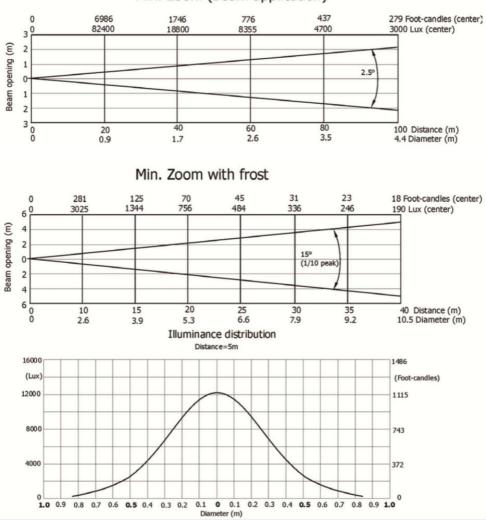
#### **Total Heat Dissipation:**

1600 BTU/h (calculated) 469 Wh (calculated)

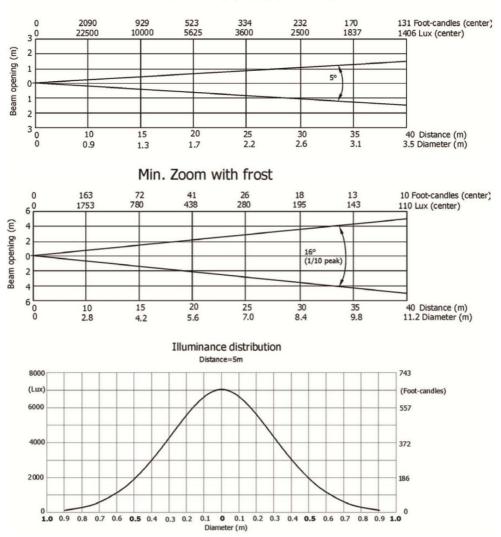
Please Note: Specifications and improvements in the design of this unit and this manual are subject to change without any prior written notice.

# **PHOTOMETRIC DIAGRAMS**

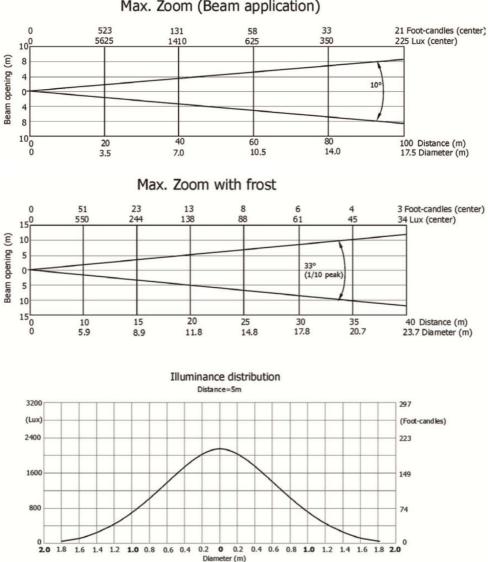
All diagrams are for full power of the lamp (Standard Mode)

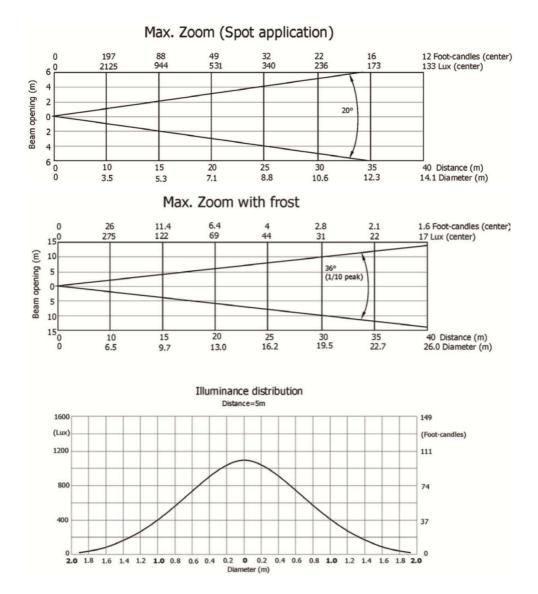


Min. Zoom (Beam application)



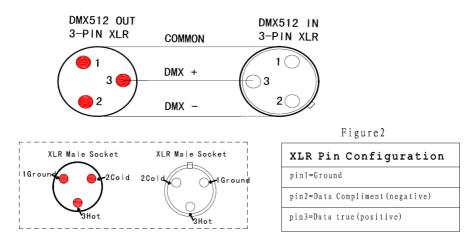
#### Min. Zoom (Spot application)





# **CONTROL SYSTEM**

The DMX512 is widely used in intelligent lighting control, with a DMX 512 controller. Connect several lights together dmx in and dmx out, 3 pin XLR connectors: Pin 1: GND, Pin 2: Negative signal (-), Pin 3: Positive signal (+)



# **Panel operation**

### 1. Brief

The light panel diagram show as Figure 1, Left area is TFT Displayer, support touch, and right area is encoder button, both of touch and coder button can operate light and setting.

Display & operation just like 'Android operation system', touch the item will set or modify setting.

Note: Prevent damage the touch or TFT displayer, Can not use sharp objects chick displayer.

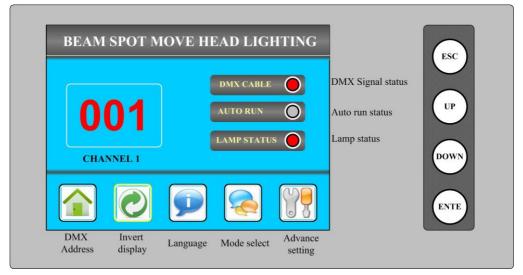


Figure 1 Panel diagram

### 2. Operation

#### 1. Operate light with touch or encoder button

- The left area is TFT Displayer and touch, chick item or value with finger will to complete operation of set light setting(parameters) or view light state.
- The area on the right hand side is rotary encoder with button, As auxiliary input interface, if disable touch function,, the encoder can been choose to set or view the item, and then press the encoder button to confirm the selection, rotary encoder again set the parameter value, finally, Press encoder button one again to save value or setting.

#### 2. Parameter value setting

When the selected item is value need to been modified, the dialog shown in

Figure 2 will popup.

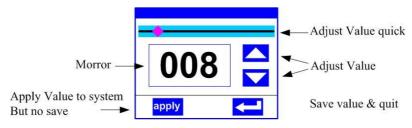


Figure 2 Dialog of value setting

- Modify value: Can quickly modify value via pull the slider to the desired position, or click the button of 'up' or 'down' whit finger on the right side to set the exact desired value, another way is roll encoder on the right hand side of panel.
- **Apply value:** When Value had been modified, Then press the bottom of 'apply' in the left corner to apply to the light, but hav't saved;
- **Save Value:** Any time, click on the lower right corner of the "OK" button, the setting will been saved into internal memory.

#### 3. Boolean parameter setting

- when the selected parameters is a Boolean value (such as ON or OFF), can directly modify setting by chick corresponding item, the setting will been saved right now.
- When the parameter is a key item, chick corresponding item, a dialog shown in Figure 3 will been popup ask for the confirm. Chick 'sure' to confirm.



Figure 3 Dialog of confirm

### 4. Sub Menu (Parameter)

Chick item of main menu, enter corresponding sub menu, shown in Figure 4, total 6 sub menu, includes class of parameter and status:

- ADDRESS: Set light DMX address.
- WORKMOD: Set light work mode, master or slave mode when in auto run mode.
- DISPLAY: Set display parameter, eg. select language.
- TEST: Used for test light, modify DMX channel data to test function, the corresponding function of reference channel function table.
- ADVANCE: Set light running parameter.
- STATUS: view light current status.

Address WorkMode Display Test Advance Status Escape	001	Address WorkMode Display Test Advance Status Escape	DMX Ctrl Auto Run Sound Ctrl M/S choose Lamp On Channel Mode	OFF OFF sample	Address WorkMode Display Test Advance Status Escape	Langudge Screen savr Screen rot. Touch Enab Touch adju	ation OFF le ON
Address	PAN 000	Address	PAN Insert	0FF	Address	Work Mode	DMX
WorkMode	TILT 000	WorkMode	TILT Inset	0FF	WrokMode	Address	001
Display	FOCUS 000	Display	Rectify Enable	ON	Display	Version	B5R. 1. 1 16n
Test	COLOR 000	Test	PAN Offset	008	Test	Elapse	000H 04M
	G0B0 000		TILT Offset	020		Tatol	00000H 04M
Advance	PRISM 000	Advance	Lamp on when	pwr on	Advance		
Status	FROST 000	Status	Factory Setting		Status	DMX Cir	SysRst
Escape	STROBE 000	Escape			Escape		

Figure 4 Parameter menu

### 3. Operation and parameter instruction

Via following operation, enter sub menu(parameter menu) shown in Figure 4

- In main menu, chick 1/6 function button into corresponding parameter menu.
- In sub menu(page), chick main item on the left side of displayer, can shift

to corresponding sub menu(page) quickly.

### 1. Set DMX Address

Click and select the "ADDR", can enter the page of DMX address setting, range from 1 to 512, the address code shouldn't is not greater than (512-channels quantity), otherwise the light will not been controlled. Following is the operation:

Enter the page of DMX address, as shown in Figure 5, click the blank area in right side of display will pop-up diglog as in Fig. 4, modify value, then click 'ENTER' to confirm and save DMX address code.

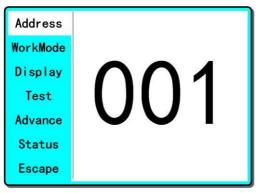


Figure 5 page of DMX Address

#### 2. Set Light work mode

Enter the page of 'WORK MOD' as shown in Figure 6 and modify setting. Can set light work mode, control lamp and DMX channel mode..

Light includes 3 work mode: DMX MODE, AUTO RUN and SOUND MODE, Parameter definition as following:

- **DMX Mode:** Under this mode, the light receive data from the DMX controller and move.
- **AUTO RUN:** Under this mode, light will run with inside code(data), ignore data from DMX controller.

- **SOUND Ctrl:** Under this mode, light ignore data from DMX controller., When there is a strong sound in stage, the light will run a scene, otherwise it will keep the last scene.
- M/S Choose: 'M/S Choose' is available when light just in 'AUTO RUN' or 'SOUND Ctrl' mode. If this item is set as 'OFF', the light don't send data to other light via DMX Cable. When 'ON', the data will send to other slave light immediately.
- Lamp control: Turn on lamp when this item is set 'ON', otherwise, turn off lamp. The gap between operation is limited to 30 second.
- Channel mode: Light support 2 DMX Channel mode: sample or extend.

Address	DMX Ctrl	$\checkmark$
WorkMode	Auto Run	
Display	Sound Ctrl	
Test	M/S choose	0FF
	Lamp On	0FF
Advance	Channel Mode	sample
Status		
Escape	6	

Figure 6 page of work mode

### 3. Set display

Light support 2 language, rotation display, Enter page as shown in Figure7 to set parameter following:

- Language: Select display as simplified Chinese or English.
- Screen Saver: when panel is idle(these is no operation in 10 second), displayer will enter saver status. When set as 'mode 1', saver status is close display, as 'mode 2' saver status will display DMX address code(DMX MODE) or display LOGO(AUTO RUN or SOUND CTRL). As 'OFF', keep light up displayer and show main menu.

- Screen Rotation: rotate displayer.
- **Touch enable:** Disable or enable touch function, when disable, use encoder to operate light and set parameter.
- Touch adjust: adjust touch function, normally, not enter this item.

Address	Langudge	中文
WorkMode	Screen saver	mode 1
Display	Screen rotation	OFF
Test	Touch Enable	ON
Advance	Touch adjust	
Status		
Escape		

Figure7 page of display

#### 4. Test light

Enter the page as shown in Figure 8, Light will into test mode, in this mode, the light does not receive the data for DMX controller.:

- PAN: range for 0 to 255;
- TILT: range for 0 to 255;
- FOCUS: range for 0 to 255;
- COLOR: range for 0 to 255;
- GOBO: range for 0 to 255;
- PRISM: range for 0 to 255;
- FROST: range for 0 to 255;;
- STROBE: range for 0 to 255; .

Address	PAN	000
WorkMode	TILT	000
Display	FOCUS	000
Test	COLOR	000
	GOBO	000
Advance	PRISM	000
Status	FROST	000
Escape	STROBE	000

Figure 8 page of Test

#### 5. Set light run parameter

Enter the page as shown in Figure 8, set the parameter of light:

- Pan Invert: Reverse PAN move.
- Tilt Invert: Reverse TILT mover.
- Rectify enable: set as 'OFF', PAN or TILT will disable position rectify function. As 'ON', when PAN or TILT lose steps, light will rectify auto.
- Pan Offset: Set PAN original position.
- Tilt Offset: Set TILT original position.
- Lamp up when: Select lamp on mode, includes 3 mode: power on, after reset done and manual;
- Factory setting: restore all parameter to factory setting.

Address	PAN Insert	OFF
WorkMode	TILT Inset	0FF
Display	Rectify Enable	ON
Test	PAN Offset	008
	TILT Offset	020
Advance	Lamp on when	pwr on
Status	Factory Setting	
Escape		

Figure 9 page of run parameter

#### 6. View status

Enter the page as shown in Figure 10:

- View light current status, version;
- DMXCIr: Click to clear all DMX data to '0'.
- SysRst: Click to reset light.



Figure 10 page of status

# **Channel description:**

Light support 2 DMX mode: 24ch (Standard) and16ch (sample), as shown in Table 1:

MODE/CHS		EUNICTION	VALUE	DESCRIPTION	
STAND	BASIC	FUNCTION	VALUE	DESCRIPTION	
1	1	Pan	0~255	Pan movement by 540	
2		Pan Fine	0~255	Fine control of pan movement	
3	2	Tilt	0~255	Tilt movement by 270	
4		Tilt Fine	0~255	Fine control of tilt movement	
5	3	P/T Speed	0~255	Fast to slow	

Table 1 Channel brief

			0~89	none
			00.00	Blackout when color wheel
			90~99	moving
			100 100	Blackout when gobos wheel
			100~109	moving
			110~119	Blackout when prisms moving
			100, 100	Blackout when color, gobos,
		Function	120~129	prisms moving
6	4	Reset	130~139	Lamp on (Over 3 seconds)
		Lamp	140~149	Reset Pan/Tilt (Over 3
			140~143	seconds)
			150~189	Reset Effect motor (Over 3
			100-100	seconds)
			200~209	Reset All (Over 3 seconds)
			210~229	none
			230~239	Lamp Off (Over 3 seconds)
			240~255	none
			Linear color s	elect
			0~1	White (100%~10%)
			2~9	Color 1 (100%~10%)
			10~19	Color 2 (100%~10%)
			20~28	Color 3 (100%~10%)
7	5	Color	29~37	Color 4 (100%~10%)
			38~47	Color 5 (100%~10%)
			48~55	Color 6 (100%~10%)
			56~65	Color 7 (100%~10%)
			66~74	Color 8 (100%~10%)
			75~83	Color 9 (100%~10%)

		04 00	Color 10 (100% 10%)
			Color 10 (100%~10%)
			Color 11 (100%~10%)
			Color 12 (100%~10%)
		110~119	Color 13 (110%~10%)
		119~129	White
		130~134	Color 1
		135~138	Color 2
		139~143	Color 3
		144~147	Color 4
		148~152	Color 5
		153~157	Color 6
		158~161	Color 7
		162~166	Color 8
		167~171	Color 9
		172~176	Color 10
		177~180	Color 11
		181~185	Color 12
		186~189	Color 13
		400.045	Forwards rainbow effect from
		190~215	fast to slow
		216~217	Stop, white
		040,040	Backwards rainbow effect from
		218~243	slow to fast
		044 055	Auto color selection from fast to
		244~255	slow
	Color Fine	0~255	Fine positioning
•	Effect	0.055	Speed of Rotating gobo, fast to
9 6	Speed	0~255	slow
7	Static	0~3	Beam(Hole)
		6 Effect Speed	130~134         135~138         139~143         144~147         148~152         153~157         158~161         162~166         167~171         172~176         177~180         181~185         186~189         190~215         216~217         218~243         244~255         6       Effect Speed

Gobo	4~9	Gobo 1
Wheel	10~15	Gobo 2
	16~21	Gobo 3
	22~27	Gobo 4
	28~33	Gobo 5
	34~39	Gobo 6
	40~45	Gobo 7
	46~51	Gobo 8
	52~57	Gobo 9
	58~63	Gobo 10
	64~69	Gobo 11
	70~75	Gobo 12
	76~81	Gobo 13
	82~87	Gobo 14
	88~95	Gobo 1 Shake (Slow to fast)
	96~103	Gobo 2 Shake (Slow to fast
	104~111	Gobo 3 Shake (Slow to fast
	112~119	Gobo 4 Shake (Slow to fast
	120~127	Gobo 5 Shake (Slow to fast
	128~135	Gobo 6 Shake (Slow to fast
	136~143	Gobo 7 Shake (Slow to fast
	144~151	Gobo 8 Shake (Slow to fast
	152~159	Gobo 9 Shake (Slow to fast
	160~167	Gobo 10 Shake (Slow to fast
	168~175	Gobo 11 Shake (Slow to fast
	176~183	Gobo 12 Shake (Slow to fast
	184~191	Gobo 13 Shake (Slow to fast
	192~199	Gobo 14 Shake (Slow to fast
	200~201	Beam/hole

			202~221	Forwards gobo rainbow from
				slow to fast
			222~223	stop
			224~243	Backwards gobo rainbow from
			224-240	fast to slow
			244~255	Auto gobo selection from fast to
			244~200	slow
			Rot.gobo Index	
			0~4	White
			5~7	Gobo 1
			8~10	Gobo 2
	8	Rotating Gobo Wheel	11~13	Gobo 3
			14~16	Gobo 4
			17~19	Gobo 5
			20~22	Gobo 6
			23~25	Gobo 7
			26~28	Gobo 8
			29~31	Gobo 9
11			Rot. Gobo rotation	
			32~34	Gobo 1
			35~37	Gobo 2
			38~40	Gobo 3
			41~43	Gobo 4
			44~46	Gobo 5
			47~49	Gobo 6
			50~52	Gobo 7
			53~55	Gobo 8
			56~59	Gobo 9
			Rot.gobo Inde	ex .

68-75         Gobo 2 Shake (slow to fast)           76-83         Gobo 3 Shake (slow to fast)           84-91         Gobo 4 Shake (slow to fast)           92-99         Gobo 5 Shake (slow to fast)           100-107         Gobo 6 Shake (slow to fast)           108-115         Gobo 7 Shake (slow to fast)           116-123         Gobo 8 Shake (slow to fast)           124-129         Gobo 9 Shake (slow to fast)           130-137         Gobo 1 Shake (slow to fast)           130-137         Gobo 2 Shake (slow to fast)           130-137         Gobo 3 Shake (slow to fast)           130-137         Gobo 2 Shake (slow to fast)           130-137         Gobo 3 Shake (slow to fast)           130-137         Gobo 3 Shake (slow to fast)           130-137         Gobo 4 Shake (slow to fast)           130-137         Gobo 5 Shake (slow to fast)           146-153         Gobo 3 Shake (slow to fast)           154-161         Gobo 5 Shake (slow to fast)           162-169         Gobo 5 Shake (slow to fast)           170-177         Gobo 6 Shake (slow to fast)           170-177         Gobo 9 Shake (slow to fast)           194-199         Gobo 9 Shake (slow to fast)           202-221         Forwards gobo rainbow from fast to slow				CO C7	Caba 4 Chaka (alaw ta faat)
76-83         Gobo 3 Shake (slow to fast)           84-91         Gobo 4 Shake (slow to fast)           92-99         Gobo 5 Shake (slow to fast)           100-107         Gobo 6 Shake (slow to fast)           100-107         Gobo 7 Shake (slow to fast)           108-115         Gobo 7 Shake (slow to fast)           108-115         Gobo 7 Shake (slow to fast)           108-112         Gobo 9 Shake (slow to fast)           116-123         Gobo 9 Shake (slow to fast)           124-129         Gobo 1 Shake (slow to fast)           130-137         Gobo 1 Shake (slow to fast)           138-145         Gobo 2 Shake (slow to fast)           138-145         Gobo 4 Shake (slow to fast)           146-153         Gobo 5 Shake (slow to fast)           154-161         Gobo 4 Shake (slow to fast)           162-169         Gobo 5 Shake (slow to fast)           170-177         Gobo 6 Shake (slow to fast)           170-177         Gobo 9 Shake (slow to fast)           186-193         Gobo 9 Shake (slow to fast)           200-201         White           202-221         Forwards gobo rainbow from fast to slow           224-243         Backwards gobo rainbow from fast to slow           244-255         Auto goo selection from fast to slow				60~67	Gobo 1 Shake (slow to fast)
84-91         Gobo 4 Shake (slow to fast)           92-99         Gobo 5 Shake (slow to fast)           100-107         Gobo 6 Shake (slow to fast)           108-115         Gobo 7 Shake (slow to fast)           108-115         Gobo 9 Shake (slow to fast)           116-123         Gobo 9 Shake (slow to fast)           124-129         Gobo 9 Shake (slow to fast)           130-137         Gobo 1 Shake (slow to fast)           138-145         Gobo 2 Shake (slow to fast)           146-153         Gobo 4 Shake (slow to fast)           154-161         Gobo 4 Shake (slow to fast)           162-169         Gobo 5 Shake (slow to fast)           162-169         Gobo 5 Shake (slow to fast)           170-177         Gobo 6 Shake (slow to fast)           178-185         Gobo 7 Shake (slow to fast)           186-193         Gobo 8 Shake (slow to fast)           194-199         Gobo 9 Shake (slow to fast)           200-201         White           202-221         Forwards gobo rainbow from fast           224-243         Backwards gobo rainbow from fast to slow           244-255         Auto goo selection from fast to slow					· · · · · · · · · · · · · · · · · · ·
92-99Gobo 5 Shake (slow to fast)100-107Gobo 6 Shake (slow to fast)108-115Gobo 7 Shake (slow to fast)116-123Gobo 8 Shake (slow to fast)124-129Gobo 9 Shake (slow to fast)124-129Gobo 1 Shake (slow to fast)130-137Gobo 1 Shake (slow to fast)130-137Gobo 2 Shake (slow to fast)138-145Gobo 2 Shake (slow to fast)146-153Gobo 3 Shake (slow to fast)154-161Gobo 5 Shake (slow to fast)162-169Gobo 5 Shake (slow to fast)162-169Gobo 6 Shake (slow to fast)170-177Gobo 6 Shake (slow to fast)186-193Gobo 8 Shake (slow to fast)194-199Gobo 9 Shake (slow to fast)202-221Forwards gobo rainbow from slow to fast202-223stop224-243Backwards gobo rainbow from fast to slow244-255Auto goo selection from fast to slow				76~83	Gobo 3 Shake (slow to fast)
$ \begin{array}{c ccccccccccccccccccccccccccccccccccc$				84~91	Gobo 4 Shake (slow to fast)
108-115         Gobo 7 Shake (slow to fast)           116-123         Gobo 8 Shake (slow to fast)           124-129         Gobo 9 Shake (slow to fast)           124-129         Gobo 1 Shake (slow to fast)           130-137         Gobo 1 Shake (slow to fast)           138-145         Gobo 2 Shake (slow to fast)           138-145         Gobo 3 Shake (slow to fast)           146-153         Gobo 4 Shake (slow to fast)           154-161         Gobo 5 Shake (slow to fast)           162-169         Gobo 7 Shake (slow to fast)           170-177         Gobo 6 Shake (slow to fast)           178-185         Gobo 7 Shake (slow to fast)           186-193         Gobo 8 Shake (slow to fast)           194-199         Gobo 9 Shake (slow to fast)           200-201         White           202-221         Forwards gobo rainbow from slow to fast           222-223         stop           224-243         Backwards gobo rainbow from fast to slow           244-255         Auto goo selection from fast to slow           244-255         Gobo index				92~99	Gobo 5 Shake (slow to fast)
116~123Gobo 8 Shake (slow to fast)124~129Gobo 9 Shake (slow to fast)Rot. Gobo rotation130~137Gobo 1 Shake (slow to fast)138~145Gobo 2 Shake (slow to fast)146~153Gobo 3 Shake (slow to fast)154~161Gobo 4 Shake (slow to fast)162~169Gobo 5 Shake (slow to fast)170~177Gobo 8 Shake (slow to fast)178~185Gobo 7 Shake (slow to fast)186~193Gobo 9 Shake (slow to fast)194~199Gobo 9 Shake (slow to fast)200~201White202~221Forwards gobo rainbow from slow to fast224~243Backwards gobo rainbow from fast to slow244~255Auto goo selection from fast to slow				100~107	Gobo 6 Shake (slow to fast)
124~129       Gobo 9 Shake (slow to fast)         Rot. Gobo rotation       130~137         130~137       Gobo 1 Shake (slow to fast)         138~145       Gobo 2 Shake (slow to fast)         146~153       Gobo 3 Shake (slow to fast)         154~161       Gobo 4 Shake (slow to fast)         162~169       Gobo 5 Shake (slow to fast)         170~177       Gobo 6 Shake (slow to fast)         178~185       Gobo 7 Shake (slow to fast)         186~193       Gobo 9 Shake (slow to fast)         194~199       Gobo 9 Shake (slow to fast)         202~221       Forwards gobo rainbow from slow to fast         202~223       stop         224~243       Backwards gobo rainbow from fast to slow         244~255       Auto goo selection from fast to slow				108~115	Gobo 7 Shake (slow to fast)
Rot. Gobo rotation130~137Gobo 1 Shake (slow to fast)138~145Gobo 2 Shake (slow to fast)146~153Gobo 3 Shake (slow to fast)154~161Gobo 4 Shake (slow to fast)162~169Gobo 5 Shake (slow to fast)170~177Gobo 6 Shake (slow to fast)178~185Gobo 7 Shake (slow to fast)186~193Gobo 9 Shake (slow to fast)194~199Gobo 9 Shake (slow to fast)200~201White202~221Forwards gobo rainbow from slow to fast222~223stop224~243Backwards gobo rainbow from fast to slow244~255Auto goo selection from fast to slow				116~123	Gobo 8 Shake (slow to fast)
130~137Gobo 1 Shake (slow to fast)138~145Gobo 2 Shake (slow to fast)146~153Gobo 3 Shake (slow to fast)154~161Gobo 4 Shake (slow to fast)162~169Gobo 5 Shake (slow to fast)170~177Gobo 6 Shake (slow to fast)178~185Gobo 7 Shake (slow to fast)186~193Gobo 9 Shake (slow to fast)194~199Gobo 9 Shake (slow to fast)202~221Forwards gobo rainbow from slow to fast202~223stop224~243Backwards gobo rainbow from fast to slow244~255Auto goo selection from fast to slow				124~129	Gobo 9 Shake (slow to fast)
138~145Gobo 2 Shake (slow to fast)146~153Gobo 3 Shake (slow to fast)154~161Gobo 4 Shake (slow to fast)162~169Gobo 5 Shake (slow to fast)170~177Gobo 6 Shake (slow to fast)178~185Gobo 7 Shake (slow to fast)186~193Gobo 9 Shake (slow to fast)194~199Gobo 9 Shake (slow to fast)202~221Forwards gobo rainbow from slow to fast202~221Forwards gobo rainbow from fast to slow224~243Backwards gobo rainbow from fast to slow244~255Auto goo selection from fast to slow				Rot. Gobo rota	ation
129Ret. GoboRet. Gobo3 Shake (slow to fast)146~153Gobo 3 Shake (slow to fast)154~161Gobo 4 Shake (slow to fast)162~169Gobo 5 Shake (slow to fast)170~177Gobo 6 Shake (slow to fast)178~185Gobo 7 Shake (slow to fast)186~193Gobo 8 Shake (slow to fast)194~199Gobo 9 Shake (slow to fast)202~221Forwards gobo rainbow from slow to fast222~223stop244~255Auto goo selection from fast to slow20Gobo index				130~137	Gobo 1 Shake (slow to fast)
129Ret. GoboRet. GoboShake (slow to fast)154~161Gobo 4 Shake (slow to fast)162~169Gobo 5 Shake (slow to fast)170~177Gobo 6 Shake (slow to fast)178~185Gobo 7 Shake (slow to fast)186~193Gobo 9 Shake (slow to fast)194~199Gobo 9 Shake (slow to fast)202~221Forwards gobo rainbow from slow to fast222~223stop244~255Auto goo selection from fast to slow				138~145	Gobo 2 Shake (slow to fast)
162~169Gobo 5 Shake (slow to fast)170~177Gobo 6 Shake (slow to fast)178~185Gobo 7 Shake (slow to fast)186~193Gobo 8 Shake (slow to fast)194~199Gobo 9 Shake (slow to fast)200~201White202~221Forwards gobo rainbow from slow to fast222~223stop224~243Backwards gobo rainbow from fast to slow244~255Auto goo selection from fast to slow				146~153	Gobo 3 Shake (slow to fast)
129Ret. Gebe129Ret. Gebe129Ret. Gebe				154~161	Gobo 4 Shake (slow to fast)
178~185Gobo 7 Shake (slow to fast)178~185Gobo 8 Shake (slow to fast)186~193Gobo 9 Shake (slow to fast)194~199Gobo 9 Shake (slow to fast)200~201White202~221Forwards gobo rainbow from slow to fast222~223stop224~243Backwards gobo rainbow from fast to slow244~255Auto goo selection from fast to slow129Ret. Gobo				162~169	Gobo 5 Shake (slow to fast)
12       9       Ret. Gobo       Ret. Gobo       Set.				170~177	Gobo 6 Shake (slow to fast)
12       9       Rot. Gobo       Sot. Gobo       Stake (slow to fast)         194~199       Gobo       Gobo       Shake (slow to fast)         200~201       White         202~221       Forwards       gobo       rainbow         202~221       Forwards       gobo       rainbow       from         202~221       Stop       Stop       222~223       Stop         224~243       Backwards       gobo       rainbow       from         12       9       Rot. Gobo       Gobo       index				178~185	Gobo 7 Shake (slow to fast)
12       9       Ret. Gobo       Gobo index         200~201       White         200~201       White         202~221       Forwards gobo rainbow from slow to fast         222~223       stop         224~243       Backwards gobo rainbow from fast to slow         244~255       Auto goo selection from fast to slow				186~193	Gobo 8 Shake (slow to fast)
202~221       Forwards gobo rainbow from slow to fast         202~223       stop         222~223       stop         224~243       Backwards gobo rainbow from fast to slow         244~255       Auto goo selection from fast to slow         12       9       Ret. Gobo				194~199	Gobo 9 Shake (slow to fast)
12     9     Ret. Gobo				200~201	White
12       9       Ret. Gobo       Gobo index       Slow to fast         12       9       Ret. Gobo       Gobo index       Slow to fast         12       9       Ret. Gobo       Gobo index				000.004	Forwards gobo rainbow from
12     9     Ret. Gobo     Gobo     Gobo     Gobo     Auto     Gobo     Gobo     Formula				202~221	slow to fast
12     9     Ret. Gobo     Gobo index				222~223	stop
12     9     Rot. Gobo     Gobo index				004 040	Backwards gobo rainbow from
12 9 Rot. Gobo index				224~243	fast to slow
12 9 Rot. Gobo index				044.055	Auto goo selection from fast to
12 9 Rot. Gobo				244~255	slow
12 9 Kot. Godo	10	0	Det Orbe	Gobo index	
0~255 0~200	12	12 9	9 Rot. Gobo	0~255	0~200

			Gobo rotation	
			0	No rotation
			1~127	Forwards gobo rotation from fast to slow
			128~129	No rotation
			130~255	Backwards gobo rotation from slow to fast
13				Rot.gobo indexing androtation-fine
13			0~255	Fine indexing (rotation)
		Prism	0~19	Open position (hole)
	10		20~49	6-facet linear rotating prism -indexing
			50~75	6-facet linear rotating prism- rotation
			76~105	8-facet circular rotating prism- Indexing
			106~127	8-facet circular rotating prism-rotation
			Prism/Gobo macro	
14			128~135	Macro 1
			136~143	Macro 2
			144~151	Macro 3
			152~159	Macro 4
			160~167	Macro 5
			168~175	Macro 6
			176~183	Macro 7
			184~191	Macro 8
			192~199	Macro 9
			200~207	Macro 10

		208~215	Macro 11	
		216~223	Macro 12	
		224~231	Macro 13	
		232~239	Macro 14	
		240~247	Macro 15	
		248~255	Macro 16	
		Rot.Prism Index		
		0~255	0~200 degree	
	Rot.Prism	Rot.Prism rota	Rot.Prism rotation	
		0	No rotation	
11			Forwards prism rotation from	
		1~127	fast to slow	
		128~129	No rotation	
		400.055	Backwards prism rotation from	
	Frost	130~255	slow to fast	
		0	Open	
12		1~179	Frost from 0% to 100%	
		189~189	100% frost	
		190~211	Pulse closing from slow to fast	
		212~233	Pulse opening from slow to fast	
10	7	234~255	Rambing from fast to slow	
		0.055	Zoom from max. to min.beam	
13	Zoom	0~255	angle	
	Zoom Fine	0~255	Fine Zoom	
14	Focus	0.255	Continuous adjustment from far	
14	10003	0~200	to near	
	Focus Fine	0~255	Fine Focus	
		0~255	Resered	
15	Strobe	0~31	Shutter closed (Lamp power	
	12 13 14	12Frost13Zoom13Zoom Fine14FocusFocus Fine	216~223         224~231           232~239         240~247           248~255         248~255           Rot.Prism Ind         0~255           Rot.Prism 104         0           11         Rot.Prism 104           0         1           128~129         130~255           130~255         130~255           130~255         130~255           13         Zoom           14         Focus           13         O~255           14         Focus Fine           14         Focus Fine           14         Focus Fine           0~255           14         Focus Fine           0~255	

				reduced to 230W)
			32~63	Shutter open, Full lamp power
			64~95	Strobe-effect from slow to fast
			96~127	Shutter open
			128~159	Opening pulse in sequences
			120~159	from slow to fast
			160~191	Shutter open
			192~223	Random strobe-effect from slow
			192~223	to fast
			224~255	Shutter open, full lamp power
23	3 16 Dimmer	Dimmer	0~255	Dimmer intensity from 0% to
23		0~200	100%	
24				Reserved

# **CLEANING AND MAINTENANCE**



Following are a few common problems that may occur during operation. Here are some suggestions for easy troubleshooting:

### CLEANING

Frequent cleaning is recommended to insure proper function, optimized light output, and an extended life. The frequency of cleaning depends on the

environment in which the fixture operates: damp, smoky or particularly dirty environments can cause greater accumulation of dirt on the fixture's optics.

- Clean the external lens surface at least every 20 days with a soft cloth to avoid dirt/debris accumulation.
- Never use alcohol, solvents, or ammonia based cleaners.

### MAINTENANCE

Regular inspections are recommended to insure proper function and extended life. There are no user serviceable parts inside this fixture, please refer all other service issues to an authorized service technician. Should you need any spare parts, please order genuine parts from your local dealer.

Please refer to the following points during routine inspections:

- A detailed electric check by an approved electrical engineer every three months, to make sure the circuit contacts are in good condition and prevent overheating.
- Be sure all screws and fasteners are securely tightened at all times. Lose screws may fall out during normal operation resulting in damage or injury as larger parts could fall.
- Check for any deformations on the housing, color lenses, rigging hardware and rigging points (ceiling, suspension, trussing).
   Deformations in the housing could allow for dust to enter into the fixture.
   Damaged rigging points or unsecured rigging could cause the fixture to fall and seriously injure a person(s).
- Electric power supply cables must not show any damage, material fatigue or sediments. Never remove the ground prong from the power cable.