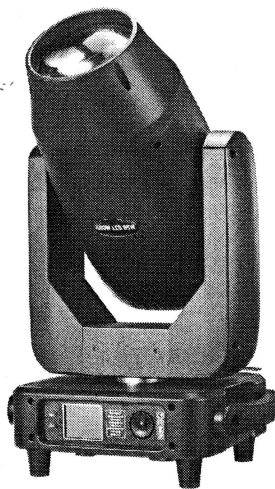# 400W LED BSW LIGHT

USER MANUAL

Please read this manual carefully before operate the light

CONTENTS

Chapter 1   Installation and attention

1.1   Maintenance

- To reduce the risk of electrical shock or fire, do not expose this unit to rain or moisture.
- Intermittently using will extend this item's service life.
- Please clear the fan ,fan net , and optical lens in order to keep good work state.
- Do not use the alcohol or any other organic solvent to wipe the shell.

1.2   Statement

The product has perfect performance and integrity packing. All users should be strictly complying with the warning and operating instructions as stated. Or we aren't in charge of any result by misusing. Any damage resulting by misuse is not within the Company's warranty. Any fault or problem caused by neglecting the manual is also not in the charge of dealers.

    Note: All information is subject to change without prior notice.

1.3   Safety Precaution

- In order to guarantee the product's life, please don't put it in the damp places or even the environment over 60degress.
- Always mount this unit in safe and stable matter.
- Install or dismantle should operate by professional engineer.
- Using light，the change rate of power voltage should be within±10%，If the voltage is too high，it will shorten the light's life; If it's not enough, will influence the effect.
- Please restart it 20 minutes later after turning off light , until full-cooling. Frequent switching will reduce the life span of lights and bulbs; intermittent using will improve the life of bulbs and lights.
- In order to make sure the product is used well, please read the Manual carefully.

1.4   Product Instruction

Input voltage: AC90V-240V/50Hz-60Hz
Light source specification: LED 400W module
LED lifetime: 20000 hours
Channel mode: 23 channels
Pan/Tilt movement: 540°/270°, 16bit precision scan, with automatic electronic error correction
Dimming system: 0-100% linear adjustment
Focusing system: linear adjustment from 4 meters to 50 meters
Frost system: 1 independent frost effect, soft and natural light spot
Zoom angle: 4-35 degrees
Strobe: 0-30 times/second, adjustable
Color: 8 colors + white light
Color mixing system: linear CMY+CTO color mixing system
Fixed gobo: 12 fixed gobos + white light
Rotating gobo: 7 glass gobos+white light, each glass gobo can be independently rotate forward and backward

Prism: standard 8 facet prisms + 6 facet prisms, each prism can be independently rotate forward and backward

Display: 2.8-inch touch screen+key operation, bilingual operating system, can reverse 180°display

Control signal: international standard DMX512, with RDM function, the software can be upgraded online and dial address codes

Cooling method: adopt axial fan to enhance cooling

Working environment: -20 degrees - 40 degrees

Protection level: IP20

Net weight: 22.9KG

Product size: 38*27*67CM

1.5 Cable connection（DMX）

Use a cable conforming to specifications EIA RS-485: 2-pole twisted, shielded, 120Ohm characteristic impedance, 22-24AWG,low capacity. Do not use microphone cable or other cable with characteristics differing from those specified. The end connections must be made using XLR type 3 or 5-pin male/female connectors. A terminating plug must be inserted into the last projector with a resistance of 120Ohm (minimum 1/4 W) between terminals 2 and 3.

IMPORTANT: The wires must not make contact with each other or with the metal casing of the connectors. The casing itself must be connected to the shield braid and to pin 1 of the connectors.
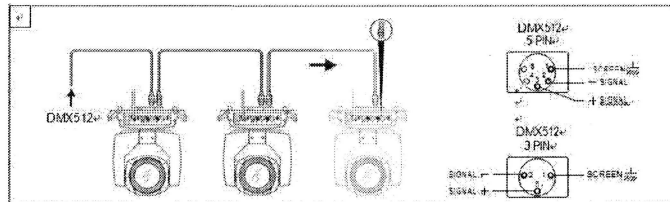

Figure 1   DMX Cable connection

1.6 Rigging (Optional)

This equipment can be positioned and fixed by clight in every direction of the stage. Locking system makes it easy to fasten to the bracket.

Attention! Two clights is needed to fix the equipment. Every clight is locked by fastener of 1/4 kind. Fastener can only be locked clockwise.

Attention! Fasten a safety string to the additional hole of side aluminum piece. The secondary accessory can not hang on the delivery handle. Nip the equipment on bracket.

- Check if rigging clight (not including the one inside) damaged or not? If stand ten times weight as the equipment. Make sure the architecture can stand ten times weight as all the equipments, clights, wirings and other additional fixtures.

- Screws for clighting must be fixed firmly. Take one M12 screw (Grade 8.8 or higher) to clight bracket, and then screw the nuts.

- Level the two hanging points at the bottom of clight. Insert fastener to the bottom, lock the two levers by 1/4 rotating clockwise; then install another clight.

- Install on safety string which stands at least ten times weight as equipment. Terminal of the accessory is designed for clights.

- Make sure pan/tilt lock unlocked or not. Keep the distance more than 1M from equipment to flammable material or lighting source.

Chapter 2   Panel operation

2.1 Brief

The light panel diagram show as Figure 3, Left area is TFT Displayer, support touch, and right area is KEY, both of touch and KEY 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.
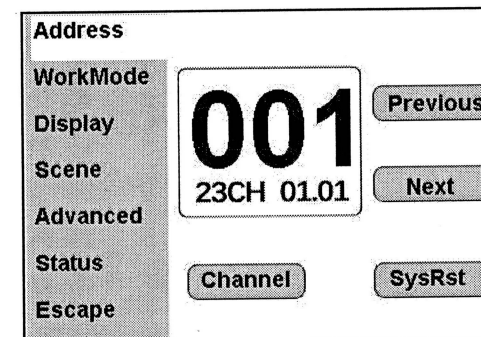

Figure 3   Panel diagram

2.2 Operation

2.2.1 Operate light with touch or KEY

- 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 4 KEY, As auxiliary input interface, if disable touch function,, the KEYr can been choose to set the parameter.

- **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.

2.2.3 Sub Menu（Parameter）

Chick item of main menu, enter corresponding sub menu, shown in Figure 6, 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			Address			Address		
WorkMode	**001**	Previous	WorkMode	DMX Ctrl		WorkMode	语言	English
Display			Display	Auto Run		Display	Screen saver	Mode 3
Scene	23CH 01.01	Next	Scene	Sound Ctrl		Scene	Screen Rot	Auto
Advanced			Advanced	Scene Mode	Auto	Advanced	DMX Indicate	Mode3
Status	Channel	SysRst	Status	M/S Choose	Auto	Status	Screen Light	010
Escape			Escape			Escape	Touch Enable	ON
							Touch Rectify	

Address	Scene Select	1	Address	Pan Invert	OFF	Address	Stepper Info	
WorkMode	Scene Time	0.0s	WorkMode	Tilt Invert	OFF	WorkMode	Error Logging	
Display	Control Mode	OFF	Display	P/T Rectify	ON	Display	Fixture Status	
Scene	01. Pan	000	Scene	Pan Offset	010	Scene	Version	H2.12
Advanced	02. Pan Fine	000	Advanced	Tilt Offset	010	Advanced	Light time	24:00
Status	03. Tilt	000	Status	Data hold	ON	Status	Total time	24:00
Escape	04. Tilt Fine	000	Escape	Factory Setting		Escape		

Figure 6　Parameter menu

2.3　Operation and parameter instruction

Via following operation, enter sub menu(parameter menu) shown in Figure 6
- 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.

2.3.1 ADDR--> Address: 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 7, 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 7　page of DMX Address

2.3.2 MODE--> WorkMode: Set Light work mode

Enter the page of 'WorkMode' as shown in Figure 8 and modify setting. Can set light work mode, control light and DMX channel mode.

Address	DMX Ctrl	
WorkMode	Auto Run	
Display	Sound Ctrl	
Scene	Scene Mode	Auto
Advanced	M/S Choose	Auto
Status		
Escape		

Figure 8　page of work mode

- **DMX Ctrl**: Choose to set DMX Mode,
- **Auto Run**: Choose to set Auto Mode,
- **Sound Ctrl**: Choose to set Sound Mode,
- **M/S Choose:** Available just in 'AUTO RUN' or 'SOUND Ctrl' mode.
  ON--> Master. (Data will be send to other slave light immediately.)
  OFF--> Slaver.(NOT send data to other light via DMX Cable).**(Default)**
- **Light Switch:**
  ON--> Turn on the light,
  OFF--> Turn off the light.
- **Channel Qty:** Light support 2 DMX Channel mode: sample or extend。
  Simple --> 16CH.**(Default)**
  Expand--> 20CH(or null).

2.3.3 DISP-->DISPLAY: Set display

Light support 2 language, rotation display，Enter page as shown in Figure9 to set parameter following:

Address	语言	English
WorkMode	Screen saver	Mode 3
Display	Screen Rot	Auto
Scene	DMX Indicate	Mode3
Advanced	Screen Light	010
Status	Touch Enable	ON
Escape	Touch Rectify	

Figure9   page of display

◆ **Language**: English / 中文.

◆ **Screen Saver**: when panel is idle(these is no operation in 10 second), displayer will enter saver status.

    OFF--> No screen saver.

    Mode1--> Power-saving mode, turn off the display.

    Mode2--> Displays the current address.

    Mode3--> Displays the icon and the current working mode.**(Default)**

◆ **Screen Rotion: To turning display.**

    ON--> Normal display.**(Default)**

    OFF--> 180° turning display.

◆ **Touch enable**：Disable or enable touch function,.

    ON--> Enable touch function.**(Default)**

    OFF--> Dosable touch function.

◆ **Touch adjust**：Adjust touch function. Normally, not enter this item.

2.3.4 TEST--> TestMode

Enter the page as shown in Figure 10, Light will into test mode, in this mode, the light does not receive the data for DMX controller.:

Address	Scene Select	1
WorkMode	Scene Time	0.0s
Display	Control Mode	OFF
Scene	01. Pan	000
Advanced	02. Pan Fine	000
Status	03. Tilt	000
Escape	04. Tilt Fine	000

Figure 10   page of Test

◆ **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;

2.3.5 ADVA-->Advanced: Set light run parameter

Enter the page as shown in Figure 10, set the parameter of light:

Address	Pan Invert	OFF
WorkMode	Tilt Invert	OFF
Display	P/T Rectify	ON
Scene	Pan Offset	010
Advanced	Tilt Offset	010
Status	Data hold	ON
Escape	Factory Setting	

Figure 11   page of run parameter

◆ **Pan Invert**：**Reverse PAN move**

    OFF--> Pan Normal move.**(Default)**

    ON--> Reverse PAN move.

◆ **Tilt Invert**：**Reverse TILT move**

    OFF--> Tilt Normal move.**(Default)**

    ON--> Reverse Tilt move.

◆ **P/T Rectify: Disable or enable position rectify function.**

    OFF--> Disable P/T rectify

    ON--> Enable P/T rectify-**(Default)**

◆ **Pan Offset:**   Set PAN original position. **Default: 10**

◆ **Tilt Offset:**   Set TILT original position. **Default: 10**

◆ **light when:**

    PowerON--> Turn on the light when power on.**(Default)**

    RstDone--> Turn on the light after reset.

    Manual--> Manually turn on the light.

◆ **Data hold:**

    OFF--> When no DMX signal,return to middle position.**(Default)**

    ON--> When no DMX signal,stop in the final position.

◆ **Factory Setting:**   Restore all parameter to factory setting.

2.3.6 STAT-->Status: View status

Enter the page as shown in Figure 12:

Address	Stepper info	
WorkMode	Error Logging	
Display	Fixture Status	
Scene	Version	H2.12
Advanced	Light time	24:00
Status	Total time	24:00
Escape		

Figure 12　page of status

◆ **Work Mode:**　Show the current working mode.
◆ **Address:**　　Show the current address.
◆ **Version:**　　　Show the version of the light.
◆ **Elapse:**　　Working hours after turn on.
◆ **Tatol:**　　Cumulative hours of operation

Chapter 3　Channel description

3.1　Channel table

23CH	FUNCTION	VALUE	DESCRIPTION
CH1	PAN	0-255	0-540 degrees
CH2	PAN FINE	0-255	0-2 degrees
CH3	TILT	0-255	0-270 degrees
CH4	TILT FINE	0-255	0-1 degree
CH5	P/T SPEED	0-255	From fast to slow
CH6	DIMMER	0-255	0-100% dimmer
CH7	STROBE	0-3	Close
		4-103	Pulse strobe from slow to fast
		104-107	Open
		108-207	Gradual strobe from slow to fast
		208-212	Open
		213-251	Random strobe from slow to fast
		252-255	Open
CH8	COLOR	0-9	White
		10-19	Red
		20-29	Green
		30-39	Blue
		40-49	Orange
		50-59	Rose Red
		60-69	Yellow
		70-79	Sky blue
		80-89	Purple-pink
		90-99	White+Red
		100-109	Red+Green
		110-119	Green+Blue
		120-129	Blue+Orange
		130-139	Orange+Rose Red
		140-149	Rose Red+Yellow
		150-159	Yellow+Sky blue
		160-169	Sky blue+Purple-pink
		170-179	Purple-pink+CTO
		180-215	Forward water effect from fast to slow
		216-220	Stop
		221-255	Reverse water effect from slow to fast
CH9	CTO	0-255	CTO

CH	Function	Value	Description
CH10	C	0-255	C
CH11	M	0-255	M
CH12	Y	0-255	Y
CH13	FIXED GOBO	0-9	White
		10-14	Gobo 1
		15-19	Gobo 2
		20-24	Gobo 3
		25-29	Gobo 4
		30-34	Gobo 5
		35-39	Gobo 6
		40-44	Gobo 7
		45-49	Gobo 8
		50-54	Gobo 9
		55-59	Gobo 10
		60-64	Gobo 11
		65-69	Shake slow to fast Gobo1
		70-74	Shake slow to fast Gobo2
		75-79	Shake slow to fast Gobo3
		80-84	Shake slow to fast Gobo4
		85-89	Shake slow to fast Gobo5
		90-94	Shake slow to fast Gobo6
		95-99	Shake slow to fast Gobo7
		100-104	Shake slow to fast Gobo8
		105-109	Shake slow to fast Gobo 9
		110-114	Shake slow to fast Gobo 10
		115-119	Shake slow to fast Gobo 11
		120-127	Gobo 12
		128-190	Forward water effect from fast to slow
		191-192	Stop
		193-255	Reverse water effect from slow to fast
CH14	ZOOM	0-255	From small to large
CH15	FOCUS	0-255	From far to near
CH16	ROT GOBO	0-9	White
		10-19	Gobo 1
		20-29	Gobo 2
		30-39	Gobo 3
		40-49	Gobo 4
		50-59	Gobo 5

CH	Function	Value	Description
		60-69	Gobo 6
		70-79	Gobo 7
		80-89	Shake slow to fast Gobo1
		90-99	Shake slow to fast Gobo2
		100-109	Shake slow to fast Gobo3
		110-119	Shake slow to fast Gobo4
		120-129	Shake slow to fast Gobo5
		130-139	Shake slow to fast Gobo6
		140-149	Shake slow to fast Gobo7
		150-200	Forward water effect from fast to slow
		201-205	Stop
		206-255	Reverse water effect from slow to fast
CH17	GOBO ROTATION	0-127	0-360 degrees
		128-190	Rotate forward from fast to slow
		191-192	Stop
		193-255	Rotate reverse from slow to fast
CH18	8 Facet Prism	0-127	None
		128-255	Insert 8 facet prism
CH19	8 Facet Prism Rotation	0-127	0-360 degrees
		128-187	Rotate forward fast to slow
		188-195	Stop
		196-255	Rotate reverse slow to fast
CH20	6 Facet Prism	0-127	None
		128-255	Insert 6 facet prism
CH21	6 Facet Prism ROT	0-127	0-360 degrees
		128-187	Rotate forward fast to slow
		188-195	Stop
		196-255	Rotate reverse slow to fast
CH22	FROST	0-127	None
		128-255	Insert frost
CH23	RESET	0-209	None
		210-215	Reset XY motor over 3 seconds
		220-235	Reset effect motor over 3 seconds
		240-255	Reset all over 3 seconds

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Common faults and use attention

1. Common fault handling

The light contains professional components such as microcomputer circuit board and high-voltage power supply. For your safety and product life, non-professionals should not disassemble the light and related accessories without authorization.

1. The bulb does not light up (except LED light source)

Possible cause: The bulb is not completely cooled, or the bulb has reached the end of its life, the treatment is as follows：

- Due to abnormal operation, the bulb is not completely cooled down, so let the light body cool down for more than 10 minutes to make the inside completely return to normal state, and then turn on the power again.；
- Check whether the bulb has reached the end of its life, and replace it with a new one；
- Check whether the bulb and the lighter circuit are leaking, falling off, or having poor contact；
- Replace with a new lighter.

2. The light beam appears dim

Possible cause: The bulb has been used for a long time or the light path is not clean, the treatment is as follows：

- Check whether the bulb has reached the end of its life, and replace it with a new one；
- Check whether the optical components or bulbs are clean, and whether there is dust on the bulbs and other optical components. Regular cleaning and maintenance of the bulbs and components in the lights are required.

3. Fuzzy pattern projection

- Check whether the electronic focus channel value is suitable for the current projection distance.

4. The lights work intermittently

Possible cause: The internal circuit enters the protection state, and the treatment is as follows：

- Check whether the fan is operating normally or whether it is dirty, causing the internal temperature of the light to rise；
- Check whether the internal temperature control switch is closed；
- Check whether the bulb has reached the end of its service life, and replace it with a new one.

5. After the light is reset normally, it does not accept the control of the console

Possible cause: signal line failure or abnormal light parameter setting, the treatment is as follows：

- Check the start address code and check the connection of the DMX signal line (whether the signal line cable is intact, and whether the connection of the head is loose)；
- Add signal amplifier, add 120 ohm terminal resistance；

6. The light can't start

Possible cause: bad power line, the treatment is as follows：

- Check whether the fuse on the power input socket is fused, replace the fuse；
- lights have poor line contact due to vibration during -distance transportation

- Check the input power, computer board and other pllongug-in devices.

2. Precautions for use

- Check whether the local power supply meets the requirements of the rated voltage of the product, and the leakage protector, overcurrent protector, etc. meet the requirements of the load；
- Do not use power cords with damaged insulation, and do not overlap power cords with other wires；
- The light adopts strong air cooling, which is easy to accumulate dust. It must be cleaned once a month, especially the heat dissipation vent, otherwise it will be blocked by the accumulation of dust, resulting in poor heat dissipation and abnormalities in the light.
- When installing the light, the fixing screws must be fastened, with safety cables, and regular inspections；
- When installing and positioning the luminaire, keep a minimum distance of 10 meters between any point on the surface of the luminaire and any flammable and explosive object, and the distance from the irradiated object is 2.5 meters. Please do not install the luminaire directly on the surface of combustible materials.；
- It is recommended that the continuous working time of the light should not exceed 10 hours, and the interval between continuous starting of the light should not be less than 10 minutes, otherwise it will not be triggered normally due to the light overheating protection；
- The closing time using the on-off valve should not exceed 5 minutes. If you need to close the light for a long time, you should use the console (lighting control channel) to turn off the light.；
- In order to ensure that multiple luminaires better comply with the scene effect, the luminaire should not be in the unfinished current scene all the time, that is, start the next scene action, it is best not to exceed 3 minutes in this state to ensure that multiple luminaires can run simultaneously；
- During use, if there is an abnormality in the light, stop using the light in time to prevent other malfunctions.

3. Precautions for using RDM

RDM is an extended version of the DMX512-A protocol. It is a remote device management protocol. The traditional DMX512 protocol communication is one-way communication. The protocol is based on the RS-485 bus. RS-485 is a time-sharing multi-point, half-duplex protocol. Only allowed at the same time One port is the output of the host, so, pay attention to the following points when using RDM：

- To use a console or host device that supports the RDM protocol host；
- To use a two-way signal amplifier, the traditional one-way signal amplifier is not suitable for the RDM protocol, because the RMD protocol requires feedback data, and the use of a one-way amplifier will block the returned data, resulting in the search for lights and lanterns；
- All lights must be set to DMX mode to ensure that there is only one host on the signal line；
- A 120ohm impedance matching resistor must be inserted between terminals 2 and 3 of the terminal plug. When the signal line is relatively long, the use of differential signals will be more stable when the signal line is relatively long, which is conducive to the quality of communication；

When it appears that the light accepts DMX control, but cannot search for the light by RDM, first check the signal amplifier, and then check whether there is a bad connection between the 2 and 3 lines of the signal line.