



# Axis 300

## 300W LED BSW Hybrid Moving Head

### User Manual



**RayGlimz Lighting**

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## Product Overview

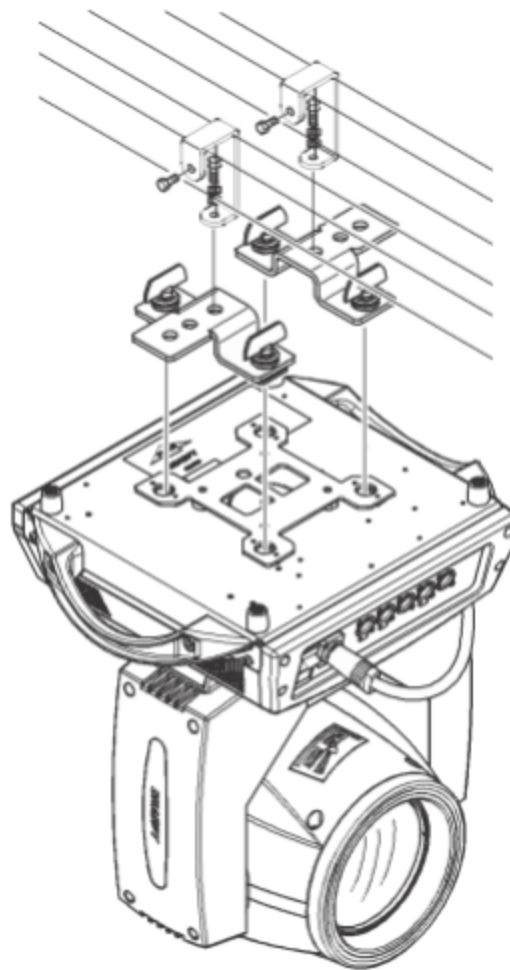
Axis 300 is part of the Axis series. This BSW Hybrid Moving Head manual is intended for qualified personnel installing, connecting, configuring, controlling, and maintaining the fixture.

## Important Safety Information

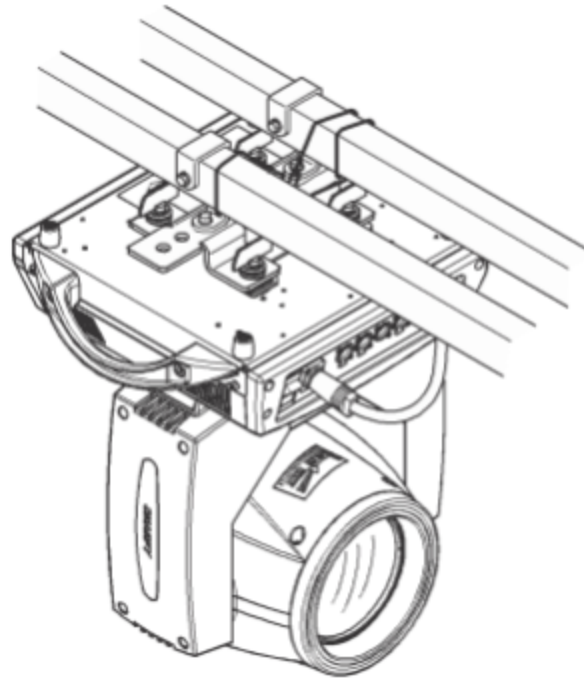
- This product is professional stage lighting equipment. Installation, wiring, operation, and maintenance must be carried out by qualified personnel.
- This fixture is intended for dry indoor use only. Do not expose it to rain, moisture, high humidity, or condensation.
- Disconnect the fixture from mains power before installation, maintenance, cleaning, or long periods of non-use.
- Do not connect the fixture to a dimmer pack or non-specified power equipment.
- Install the fixture in a safe, stable position with adequate ventilation.
- Do not look directly into the light source. The housing, lens, and optical components may become hot during operation.
- Stop using the fixture if the housing, lens, or cable is damaged, and have it inspected by qualified personnel.

## Installation and Rigging

- Use properly rated clamps and a secondary safety cable. Attach the safety cable only to the designated safety point.
- The installation area must be dry, ventilated, and away from flammable materials and strong heat sources.
- Complete mechanical installation before connecting power and control signals.
- After installation, check the fixture, clamps, safety attachments, and cables to confirm that nothing can loosen, slide, or fall during operation.



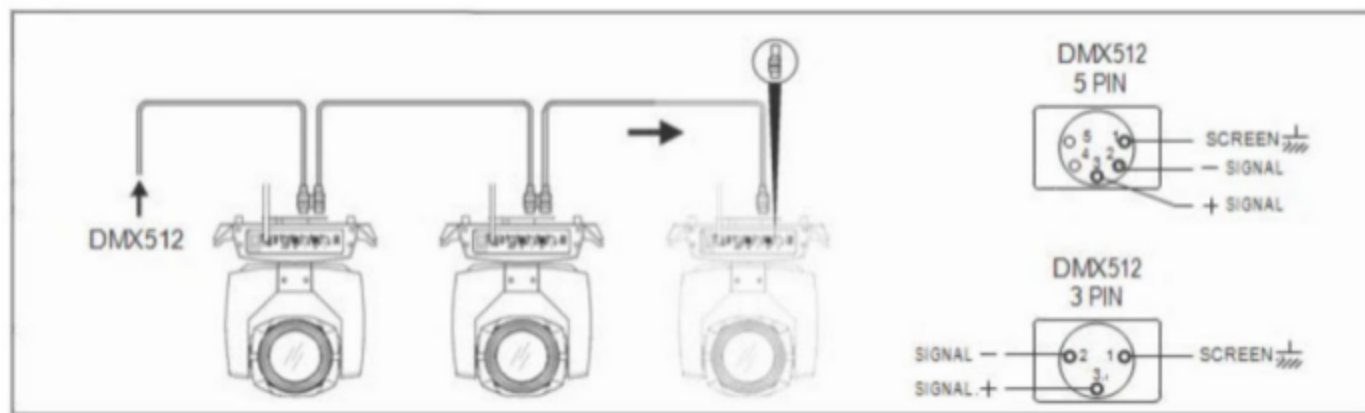
Safety cable installation



Clamp Installation

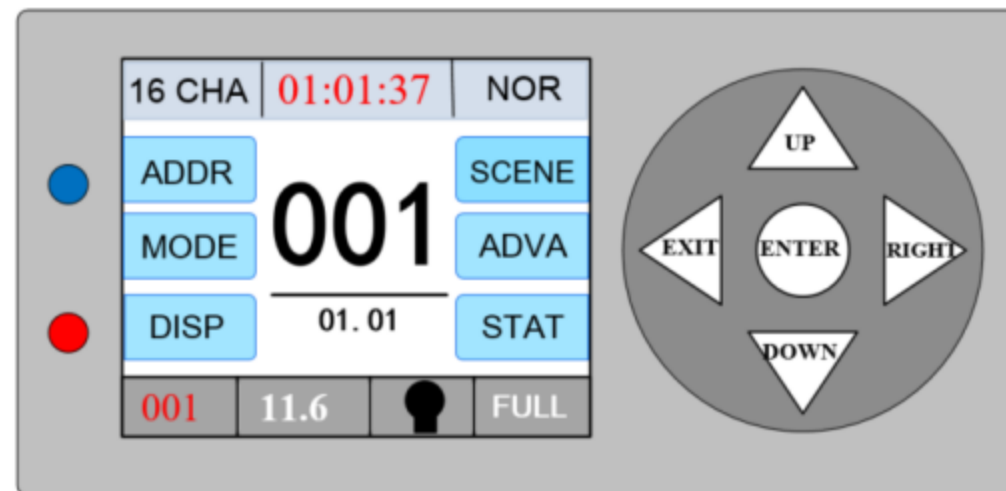
## Power and Signal Connection

Use DMX cable compliant with EIA RS-485. For long cable runs or complex signal environments, connect a 120 ohm terminator to the last fixture.

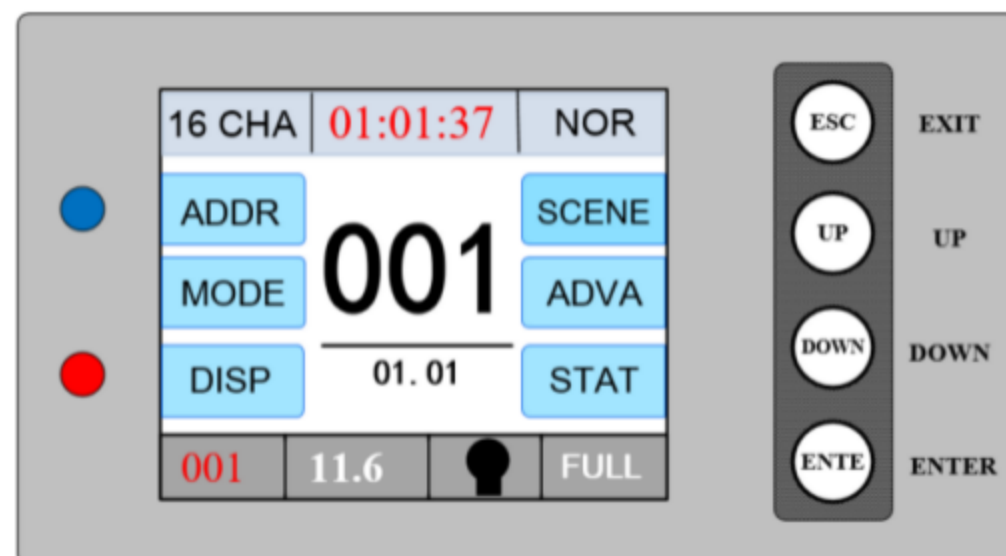


DMX cable connection diagram

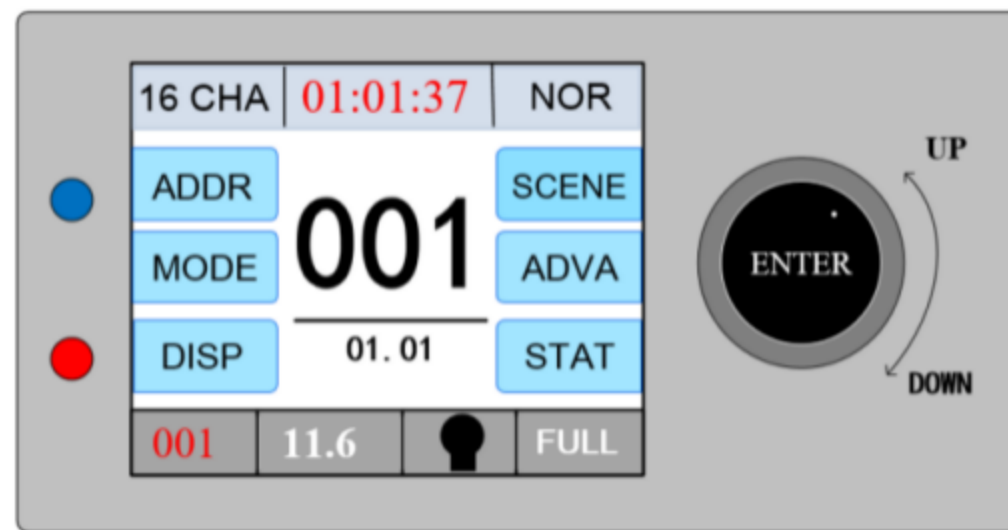
## Control Panel and Menu



Five-button display panel



Four-button display panel



Knob display panel

## Operating Mode

|               |                                                                                                                                                                       |                                                                                                                                                                       |
|---------------|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| DMX Ctrl      | DMX mode, receive DMX signal, RDM signal                                                                                                                              | DMX mode, receive DMX signal, RDM signal                                                                                                                              |
| Auto Run      | Fixture run automatically according to built-in programs                                                                                                              | Fixture run automatically according to built-in programs                                                                                                              |
| Sound Ctrl    | When the fixture detects a strong sound, the fixture automatically runs a scene according to the built-in program, otherwise it will stay the last scene              | When the fixture detects a strong sound, the fixture automatically runs a scene according to the built-in program, otherwise it will stay the last scene              |
| Scene Mode 01 | runs in a set scene, which supports most of the custom editing of 10 scenes.                                                                                          | runs in a set scene, which supports most of the custom editing of 10 scenes.                                                                                          |
| Scene Mode 01 | 1~10                                                                                                                                                                  | outputs the specified scene                                                                                                                                           |
| Scene Mode 01 | Auto                                                                                                                                                                  | Automatically loops the output scene in the set scene time (non-zero) order, and the scene with time 0 automatically ignore                                           |
| M/S Choose    | Master and slave selection, non-DMX mode takes effect, select the mode of data output, fixture detect DMX cable state automatic switch output, prevent data conflicts | Master and slave selection, non-DMX mode takes effect, select the mode of data output, fixture detect DMX cable state automatic switch output, prevent data conflicts |
| M/S Choose    | Master                                                                                                                                                                | fixture runs built-in program. If DMX has no signal, it outputs data (synchronization), otherwise it does not output data.                                            |
| M/S Choose    | Slave                                                                                                                                                                 | fixture runs built-in program and do not output data                                                                                                                  |
| M/S Choose    | Auto                                                                                                                                                                  | If DMX has no signal, the fixture will runs built-in program. Otherwise, the fixture will run in DMX Mode(follow DMX).                                                |
| Light switch  | (light source) pop-up confirmation dialog box, select "SURE" to confirm the current operation, turn on or off the lamp, switch time interval limited to 30 seconds    | (light source) pop-up confirmation dialog box, select "SURE" to confirm the current operation, turn on or off the lamp, switch time interval limited to 30 seconds    |
| Light switch  | Off                                                                                                                                                                   | the current lamp output is off                                                                                                                                        |
| Light switch  | On                                                                                                                                                                    | The current lamp output is turned on                                                                                                                                  |

## Display Settings

|              |                                                                                  |                                                                                                           |
|--------------|----------------------------------------------------------------------------------|-----------------------------------------------------------------------------------------------------------|
| Language     | display language settings                                                        | display language settings                                                                                 |
| Language     | English                                                                          | English display                                                                                           |
| Language     | Chinese                                                                          | Chinese display                                                                                           |
| Screen saver | Set screen 30 seconds without operation, the screen's display content or method. | Set screen 30 seconds without operation, the screen's display content or method.                          |
| Screen saver | OFF                                                                              | Keep the last operation page                                                                              |
| Screen saver | Mode1                                                                            | Black                                                                                                     |
| Screen saver | Mode2                                                                            | Black screen, showing the address code of the current fixture in the lower left corner.                   |
| Screen saver | Mode3                                                                            | Display trademark information, address code and operation mode.                                           |
| Screen saver | Mode4                                                                            | Display trademark information, address code and operation mode, which lasts for 30 seconds, black screen. |
| Screen Rot   | Set the display direction of the screen.                                         | Set the display direction of the screen.                                                                  |
| Screen Rot   | OFF                                                                              | No reverse display                                                                                        |
| Screen Rot   | ON                                                                               | Reverse display                                                                                           |

|              |                                                           |                                                           |
|--------------|-----------------------------------------------------------|-----------------------------------------------------------|
| DMX Indicate | Set the indication mode of DMX signal indicator.          | Set the indication mode of DMX signal indicator.          |
| DMX Indicate | Mode1                                                     | When signal is bright, no signal is off.                  |
| DMX Indicate | Mode2                                                     | When signal is off, no signal is bright.                  |
| DMX Indicate | Mode3                                                     | When signal is flash, no signal is off.                   |
| Screen Light | Set the screen backlight for 10 seconds without operation | Set the screen backlight for 10 seconds without operation |
| Screen Light | 1~10                                                      | 10                                                        |

## Scene Editing

|              |                                                                                                                                                   |                                                                                                                                                   |
|--------------|---------------------------------------------------------------------------------------------------------------------------------------------------|---------------------------------------------------------------------------------------------------------------------------------------------------|
| Scene Select | Select the current operation scenario.                                                                                                            | Select the current operation scenario.                                                                                                            |
| Scene Select | 1~10                                                                                                                                              | The 10 scenes sets the format                                                                                                                     |
| Scene Time   | Sets the retention time of the current scene when it is automatic,the final time is determined by the scene time multiplier, unit in 0.1 seconds. | Sets the retention time of the current scene when it is automatic,the final time is determined by the scene time multiplier, unit in 0.1 seconds. |
| Scene Time   | 0                                                                                                                                                 | The current scene is not output in automatic scene output.                                                                                        |
| Scene Time   | 1-255                                                                                                                                             | 0..1s-25.5s                                                                                                                                       |
| Control Mode | Choose whether to use the console to manipulate the settings data                                                                                 | Choose whether to use the console to manipulate the settings data                                                                                 |
| Control Mode | OFF                                                                                                                                               | It is not possible to control the console and set the data directly from the current interface                                                    |
| Control Mode | ON                                                                                                                                                | Using console control, the console data comes first when setting, and the setting is invalid in the current interface                             |
| 1. PAN       | 0-255                                                                                                                                             | Set up the data of each channel, and the contents and order of the display are one-to-one correspondence with the channel list of fixture.        |
| .....        | 0-255                                                                                                                                             | Set up the data of each channel, and the contents and order of the display are one-to-one correspondence with the channel list of fixture.        |
| .....        | 0-255                                                                                                                                             | Set up the data of each channel, and the contents and order of the display are one-to-one correspondence with the channel list of fixture.        |
| N. Function  | 0-255                                                                                                                                             | Set up the data of each channel, and the contents and order of the display are one-to-one correspondence with the channel list of fixture.        |

## Advanced Settings

|             |                                                                                   |                                                                                                    |
|-------------|-----------------------------------------------------------------------------------|----------------------------------------------------------------------------------------------------|
| Pan Invert  | Set the rotation direction of PAN                                                 | Set the rotation direction of PAN                                                                  |
| Pan Invert  | OFF                                                                               |                                                                                                    |
| Pan Invert  | ON                                                                                |                                                                                                    |
| Tilt Invert | Set the rotation direction of TILT                                                | Set the rotation direction of TILT                                                                 |
| Tilt Invert | OFF                                                                               |                                                                                                    |
| Tilt Invert | ON                                                                                |                                                                                                    |
| P/T Rectify | Setting up fixture to detect XY lost step and correct                             | Setting up fixture to detect XY lost step and correct                                              |
| P/T Rectify | OFF                                                                               | Uncorrected position after out of step                                                             |
| P/T Rectify | ON                                                                                | After losing step, the position is automatically corrected and the out of step fault is recorded.  |
| Pan Offset  | Setting the zero point of the PAN of the fixture                                  | Setting the zero point of the PAN of the fixture                                                   |
| Pan Offset  | 4-150                                                                             |                                                                                                    |
| Tilt Offset | Setting the zero point of the TILT of the fixture                                 | Setting the zero point of the TILT of the fixture                                                  |
| Tilt Offset | 4-48                                                                              |                                                                                                    |
| Data hold   | When the fixture is not equipped with DMX signal, the output state of the fixture | When the fixture is not equipped with DMX signal, the output state of the fixture                  |
| Data hold   | OFF                                                                               | No signal, so the motor and light source return to the position and state when reset is completed. |
| Data hold   | NO                                                                                | No signal, keep the last frame DMX data output.                                                    |

|                       |                                                                                                     |                                                                                                     |
|-----------------------|-----------------------------------------------------------------------------------------------------|-----------------------------------------------------------------------------------------------------|
| Scene Time (multiple) | Work with the scene time to determine the scene retention time                                      | Work with the scene time to determine the scene retention time                                      |
| Scene Time (multiple) | 1-255                                                                                               | Retention time = Scene time * multiple                                                              |
| Lamp mode             | (lamp light source) Set the way to first open the lamp after power up                               | (lamp light source) Set the way to first open the lamp after power up                               |
| Lamp mode             | Power on                                                                                            | Turn on the lamp at power up and reset the lamp after 30 seconds.                                   |
| Lamp mode             | After reset                                                                                         | Reset the fixture after 3 seconds when power-on, and turn on the lamp after reset.                  |
| Lamp mode             | Manual                                                                                              | After reset, manually turn on the lamp through the menu or console.                                 |
| Reset                 | Pop up the confirmation box, select "SURE", and reset the fixture.                                  | Pop up the confirmation box, select "SURE", and reset the fixture.                                  |
| Factory Setting       | Pop up the confirmation box, select "SURE", and return the lamp parameters to the factory settings. | Pop up the confirmation box, select "SURE", and return the lamp parameters to the factory settings. |

## Status Information

|                |                                                                                                                                                               |                                                                                                                                                                                      |
|----------------|---------------------------------------------------------------------------------------------------------------------------------------------------------------|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| Stepper info   | Display information status of all motors and signals in fixture.                                                                                              | Display information status of all motors and signals in fixture.                                                                                                                     |
| Stepper info   | Hall                                                                                                                                                          | No display, indicating that the motor has no Hall, 0 indicating that the motor leaves the correction position point, 1 indicating that the motor is in the correction position point |
| Stepper info   | Status                                                                                                                                                        | Display motor reset status                                                                                                                                                           |
| Stepper info   | PAN                                                                                                                                                           | Display real-time position value of PAN optocoupler feedback                                                                                                                         |
| Stepper info   | TILT                                                                                                                                                          | Display real-time position value of TILT optocoupler feedback                                                                                                                        |
| Stepper info   | PAN OP                                                                                                                                                        | Displays the PAN TILT optocoupler two signal level state, binary                                                                                                                     |
| Error Logging  | Show the latest 8 error records when the fixture is reset and running. The error records are not saved after power failure. The current power cycle is valid. | Show the latest 8 error records when the fixture is reset and running. The error records are not saved after power failure. The current power cycle is valid.                        |
| Error Logging  | Error Logging                                                                                                                                                 | Total number of failures detected after power on                                                                                                                                     |
| Error Logging  | 12: :03                                                                                                                                                       | The time of power failure when the fault occurs is in minutes.                                                                                                                       |
| Error Logging  | Hall error                                                                                                                                                    | The effective hall signal is not detected when the motor is reset                                                                                                                    |
| Error Logging  | Hall short                                                                                                                                                    | When the motor is reset, the hall signal of the motor is always effective                                                                                                            |
| Error Logging  | Opti error                                                                                                                                                    | No effective optocoupler signal is detected when the motor is reset.                                                                                                                 |
| Error Logging  | Lose stop                                                                                                                                                     | The corresponding motor is out of step during its operation.                                                                                                                         |
| Error Logging  | Hit                                                                                                                                                           | Striking the positioning rod when the motor is reset                                                                                                                                 |
| Error Logging  | Lamp error                                                                                                                                                    | Lamp explosion accident                                                                                                                                                              |
| Error Logging  | NTC error                                                                                                                                                     | The temperature sensor signal is abnormal                                                                                                                                            |
| Error Logging  | Fan error                                                                                                                                                     | The main fan is not working properly.                                                                                                                                                |
| Fixture status | Displays the critical state data of the current fixture for reference.                                                                                        | Displays the critical state data of the current fixture for reference.                                                                                                               |
| Fixture status | Communication prec                                                                                                                                            | 0~100%, Communication quality of internal data link of lamps and lanterns                                                                                                            |
| Fixture status | Error Cnt                                                                                                                                                     | The number of erroneous frames was detected after power on, and the total number of erroneous frames was detected.                                                                   |
| Fixture status | Light Temperature                                                                                                                                             | Show the temperature of the current light source, "—" means no detection.                                                                                                            |
| Fixture status | Panel Temperature                                                                                                                                             | Displays the temperature of the current display panel or the ambient temperature.                                                                                                    |
| Fixture status | Sensor1 Temperature                                                                                                                                           | Display the ambient temperature of the motherboard temperature or the motherboard installation position.                                                                             |
| Version        | Display the information and version of the current fixture, important reference for after sales maintenance.                                                  | Display the information and version of the current fixture, important reference for after sales maintenance.                                                                         |
| Version        | Device                                                                                                                                                        | The name of the fixture is the same as the equipment information of RDM.                                                                                                             |

|            |                                                                                                                                                           |                                                                                                                                                           |
|------------|-----------------------------------------------------------------------------------------------------------------------------------------------------------|-----------------------------------------------------------------------------------------------------------------------------------------------------------|
| Version    | Model                                                                                                                                                     | The type of fixture is the same as the model information of RDM.                                                                                          |
| Version    | Panel                                                                                                                                                     | Firmware version and serial number of display panel                                                                                                       |
| Version    | Main Board                                                                                                                                                | Firmware version and serial number of mother board 1                                                                                                      |
| Light time | Record the total cumulative time of light source opening, unit minute, user manual cleaning, as a reference for regular maintenance of light source time. | Record the total cumulative time of light source opening, unit minute, user manual cleaning, as a reference for regular maintenance of light source time. |
| Total time | The total accumulated time for recording the opening of fixture is not allowed to be removed.                                                             | The total accumulated time for recording the opening of fixture is not allowed to be removed.                                                             |

## DMX Channel Table

| Channel | Name      | DMX Value | Description                   |
|---------|-----------|-----------|-------------------------------|
| [ CH1 ] | Pan       | 0-255     | 0-540(degree)                 |
| [ CH2 ] | Pan Fine  | 0-255     | 0-2(degree)                   |
| [ CH3 ] | Tilt      | 0-255     | 0-270(degree)                 |
| [ CH4 ] | Tilt Fine | 0-255     | 0-1(degree)                   |
| [ CH5 ] | PT Spd    | 0-255     | Fast to slow                  |
| [ CH6 ] | Dimmer    | 0-255     | 0-100% dimmer                 |
| [ CH7 ] | Strobe    |           |                               |
|         |           | 0-3       | Dark                          |
|         |           | 4-103     | Pulse strobe slow to fast     |
|         |           | 104-107   | Open                          |
|         |           | 108-155   | FadeIn strobe slow to fast    |
|         |           | 156-207   | FadeOut strobe slow to fast   |
|         |           | 208-212   | Open                          |
|         |           | 213-251   | Random strobe slow to fast    |
|         |           | 252-255   | Open                          |
| [ CH8 ] | Color     |           |                               |
|         |           | 0-9       | White                         |
|         |           | 10-19     | White+color1                  |
|         |           | 20-29     | Color1                        |
|         |           | 30-39     | Color1+Color2                 |
|         |           | 40-49     | Color2                        |
|         |           | 50-59     | Color2+Color3                 |
|         |           | 60-69     | Color3                        |
|         |           | 70-79     | Color3+Color4                 |
|         |           | 80-89     | Color4                        |
|         |           | 90-99     | Color4+Color5                 |
|         |           | 100-109   | Color5                        |
|         |           | 110-119   | Color5+Color6                 |
|         |           | 120-129   | Color6                        |
|         |           | 130-139   | Color6+Color7                 |
|         |           | 140-202   | Rotate reverse (fast to slow) |
|         |           | 203-255   | Rotate forward (slow to fast) |

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| Channel | Name     | DMX Value | Description                   |
|---------|----------|-----------|-------------------------------|
| [ CH9]  | CTO      | 0-255     |                               |
| [ CH10] | Cyan     | 0-255     |                               |
| [ CH11] | Magenta  | 0-255     |                               |
| [ CH12] | Yellow   | 0-255     |                               |
| [ CH13] | Gobo     |           |                               |
|         |          | 0-9       | White                         |
|         |          | 10-19     | Gobo1                         |
|         |          | 20-29     | Gobo2                         |
|         |          | 30-39     | Gobo3                         |
|         |          | 40-49     | Gobo4                         |
|         |          | 50-59     | Gobo5                         |
|         |          | 60-69     | Gobo6                         |
|         |          | 70-79     | Gobo7                         |
|         |          | 80-89     | Gobo8                         |
|         |          | 90-99     | Gobo9                         |
|         |          | 100-109   | Shake slow to fast white      |
|         |          | 110-119   | Shake slow to fast Gobo1      |
|         |          | 120-129   | Shake slow to fast Gobo2      |
|         |          | 130-139   | Shake slow to fast Gobo3      |
|         |          | 140-149   | Shake slow to fast Gobo4      |
|         |          | 150-159   | Shake slow to fast Gobo5      |
|         |          | 160-169   | Shake slow to fast Gobo6      |
|         |          | 170-179   | Shake slow to fast Gobo7      |
|         |          | 180-189   | Shake slow to fast Gobo8      |
|         |          | 190-222   | Rotate reverse (fast to slow) |
|         |          | 223-255   | Rotate forward (slow to fast) |
| [ CH14] | Rot Gobo |           |                               |
|         |          | 0-9       | White                         |
|         |          | 10-19     | Gobo1                         |
|         |          | 20-29     | Gobo2                         |
|         |          | 30-39     | Gobo3                         |
|         |          | 40-49     | Gobo4                         |
|         |          | 50-59     | Gobo5                         |
|         |          | 60-69     | Gobo6                         |
|         |          | 70-79     | Gobo7                         |
|         |          | 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      |

| Channel | Name     | DMX Value | Description                      |
|---------|----------|-----------|----------------------------------|
|         |          | 130-139   | Shake slow to fast Gobo6         |
|         |          | 140-149   | Shake slow to fast Gobo7         |
|         |          | 150-200   | Rotate forward (fast to slow)    |
|         |          | 201-205   | Stop                             |
|         |          | 206-255   | Rotate reverse (slow to fast)    |
| [ CH15] | Gobo.Rot |           |                                  |
|         |          | 0-127     | 0-360(degree)                    |
|         |          | 128-190   | Rotate reverse (fast to slow)    |
|         |          | 191-192   | Stop                             |
|         |          | 193-255   | Rotate forward (slow to fast)    |
| [ CH16] | Prism1   |           |                                  |
|         |          | 0-127     | None                             |
|         |          | 128-255   | Insert Prism 1                   |
| [ CH17] | Prism1.R |           |                                  |
|         |          | 0-127     | 0-360(degree)                    |
|         |          | 128-187   | Rotate forward (fast to slow)    |
|         |          | 188-195   | Stop                             |
|         |          | 196-255   | Rotate reverse (slow to fast)    |
| [ CH18] | Frost    |           |                                  |
|         |          | 0-127     | None                             |
|         |          | 128-255   | Insert frost                     |
| [ CH19] | Zoom     | 0-255     | Large to small                   |
| [ CH20] | Focus    | 0-255     | Far to near                      |
| [ CH21] | Focus F  | 0-255     |                                  |
| [ CH22] | Reset    |           |                                  |
|         |          | 0-209     | None                             |
|         |          | 210-215   | Reset XY motor over 3 second     |
|         |          | 216-219   | None                             |
|         |          | 220-235   | Reset Effect motor over 3 second |
|         |          | 236-239   | None                             |
|         |          | 240-255   | Reset fixture over 3 second      |
|         |          |           |                                  |

## Maintenance and Cleaning

- Disconnect the fixture from mains power and allow it to cool completely before cleaning.
- Clean the fan, fan grille, and optical lens regularly to maintain cooling and optical output.
- Do not clean the housing with alcohol or other organic solvents.