



WILLOW 200 



User Manual

Please read the instruction carefully before use

CONTENTS

01/ Safety Information.....	2
02/ Technical Specifications	4
03/ Overview.....	6
04/ Connecting Power and Data	7
4.1 Connecting Power.....	7
4.2 Connecting Data.....	8
05/ Fixture Installation.....	9
06/ Effect Wheels.....	11
07/ Operation	14
7.1 Control Menu.....	14
7.2 Updating Software	27
7.3 Home Position Adjustment	31
08/ Configuring the Device for DMX Control.....	34
8.1 Address Setting.....	34
8.2 DMX Protocol.....	35
09/ Error Information	38
10/ Troubleshooting	45
11/ Fixture Cleaning.....	46
12/ Approvals and Certifications	47

01/ Safety Information



Please read the instruction carefully which includes important information about the installation, usage and maintenance.

WARNING

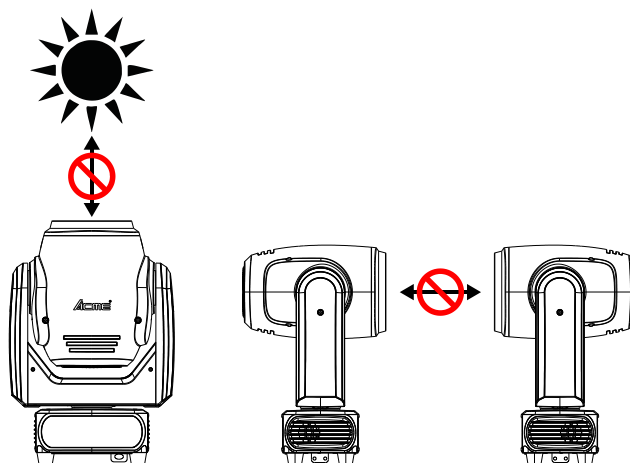
Please keep this User Manual for future consultation. If you sell the unit to another user, be sure that they also receive this instruction manual.

Important:

Damages caused by the disregard of this user manual are not subject to warranty. The dealer will not accept liability for any resulting defects or problems.

- Unpack and check carefully to ensure that there is no transportation damage before using the unit.
- This product is for indoor use only. Use only in a dry location.
- DO install and operate by qualified operator.
- DO NOT allow children to operate the fixture.
- Use safety chain when fixing the unit. Handle the unit by carrying its base instead of the head only.
- The unit must be installed in a location with adequate ventilation, at least 50cm from adjacent surfaces.
- Be sure that no ventilation holes are blocked, otherwise the unit could over heat.
- Before operation, ensure that you are connecting this product to the proper voltage in accordance with the specifications in this manual or on the product's specification label.
- It's important to ground the yellow/green conductor to earth in order to avoid electric shock.
- Minimum ambient temperature TA: 0°C. Maximum ambient temperature TA: 40°C. Do not operate this product at a lower or higher temperature.
- DO NOT connect the device to any dimmer pack.
- Keep flammable materials away from the fixture while operating to avoid fire hazard.
- Make sure the power cord is not crimped or damaged; replace it immediately if damaged.
- Unit's surface temperature may reach up to 60°C. DO NOT touch the housing bare-handed during its operation.

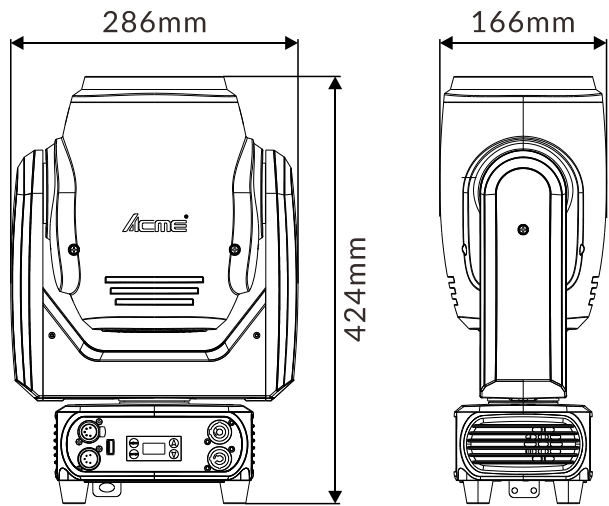
- Avoid any flammable liquids, water or metal from entering the unit. If it happens, cut off the mains power immediately.
- DO NOT operate in a dirty or dusty environment. DO clean the fixture regularly.
- DO NOT touch any wiring during operation as there might be a hazard of electric shock.
- Avoid entanglement of the power cord with other wires.
- The minimum distance to objects/surface must be more than 0.5 meters.
- In the event of an operating problem, stop using the unit immediately.
- Never turn the unit off and on repeatedly.
- The housing, the lenses, or the ultraviolet filter must be replaced if they are visibly damaged.
- DO NOT open the housing as there are no user serviceable parts inside.
- DO NOT attempt to operate this unit if it becomes damaged. DO NOT attempt any repairs yourself. Repairs carried out by unskilled people can lead to damage or malfunction. Please contact the nearest authorized technical assistance center if needed.
- Disconnect this product from its power source before servicing.
- DO use the original packaging or suitable road case if the device is to be transported.
- Avoid direct eye exposure to the light source while the product is on.
- DO NOT operate this product if you see damage on the housing, shields, or cables. Have the damaged parts replaced by an authorized technician at once.
- External sources of light beams from direct sunlight or any other strong light source, which penetrate the front lens of lighting fixtures, can cause severe internal damage. DO NOT expose the fixture front lens to light beams from direct sunlight or any other strong light source from any angle while unpacking, installation, use, and extended idle times outdoors. DO NOT focus a light beam from one lighting fixture directly towards another.



02/ Technical Specifications

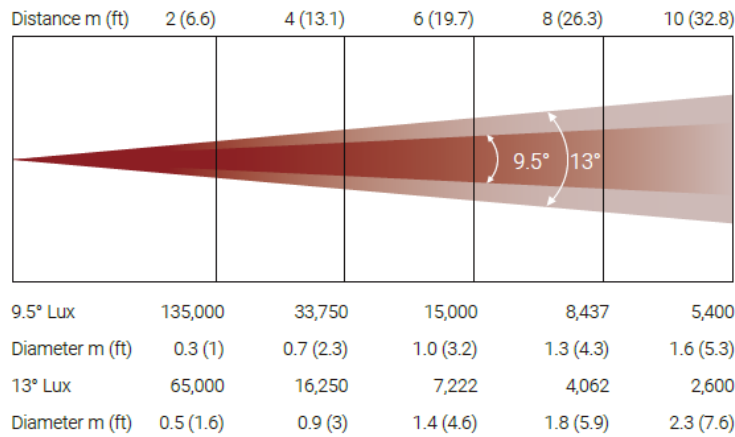
AC Power	100-240Vac; 50/60Hz	
Max. Power Consumption	220W	
Light Source	TO-300-V3-150F	
Color Temperature	11250K	
Beam Angle	9.5°/13° (Beam Mode)	
	17° (Wash Mode)	
Color Wheel	8 colors + open	
Gobo Wheel	Rotating Gobo Wheel	6 replaceable gobos + open
Movement	Pan	540°
	Tilt	270°
	16 bit movement resolution	
	Automatic pan/tilt repositioning	
Control and Programming	DMX Channels	17
	Protocols	DMX512
		RDM
	Operational Modes	DMX Control
		Sound Active
		Show Mode
	Firmware Update	via DMX or USB memory device
Construction	Display	LCD display
	DMX and RDM Data In/Out	5-pin XLR (optional with 3-pin XLR)
	Power In/Out	Power Connector in/out
	Protection Rating	IP20
Dynamic Effects	Color Rendering: Ra>70	
	0-100% continuous dimming and strobe effects	
	Choice of four dimming curves	
	Prism: one indexing/rotating 3-facet circular prism	
	One zoom lens + one frost filter	
	Motorized focus	
	Multiple built-in show modes	
	Intelligent sound control, lighting effect changes with the music rhythm	

Included Items	Power Cable	
	One bracket	
	User Manual (this document)	
Dimensions	286x166x424mm	11.3"x6.5"x16.7"
Weight	9 kg	19.8 lbs

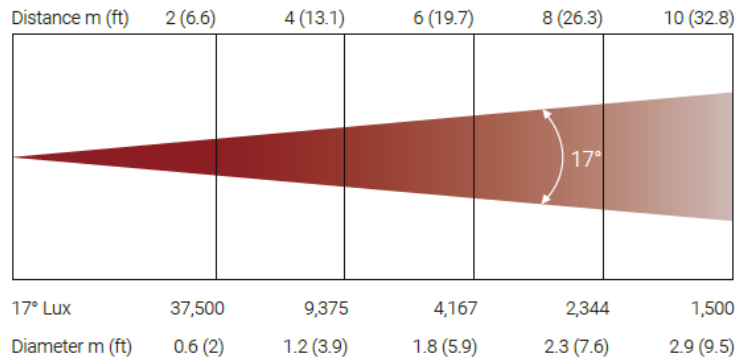


Photometric Diagram:

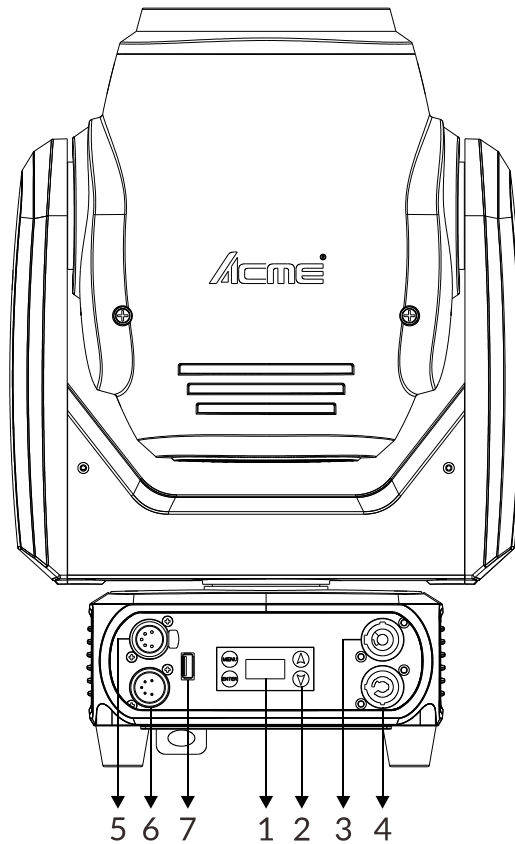
Beam Mdoe:



Wash Mdoe:



03/ Overview



1. Display	To show the various menus and the selected function	
2. Buttons	MENU	To enter into, move backward or leave the menu
	▲ UP	To go backward or move up in the menu
	▼ DOWN	To go forward or move down in the menu
	ENTER	To perform the desired functions
3. POWER OUT	To connect to the next fixture	
4. POWER IN	To connect to supply power	
5. DMX OUT	For DMX512 link, use 5-pin XLR cable to link the next units to output DMX signal (optional with 3-pin XLR)	
6. DMX IN	For DMX512 link, use 5-pin XLR cable to link the unit and DMX controller to input DMX signal (optional with 3-pin XLR)	
7. FIRMWARE UPGRADE	Used to upgrade fixture's firmware	

04/ Connecting Power and Data

4.1 Connecting Power

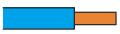
This fixture can operate on any 100-240Vac; 50/60Hz AC mains power supply.

The maximum power consumption is 220W.

The fixture must be grounded/earthed and able to be isolated from AC power. The AC power supply must incorporate a fuse or circuit breaker for fault protection.

Wiring and connection work must be carried out by a qualified electrician.

The power cable color coding is given in the figure below:

Wire	Color (US)	Wire	Color (EU)	Symbol	Conductor
	black		brown	L	live
	white		blue	N	neutral
	green		yellow/green	$\perp$ or $\oplus$	ground (earth)

CAUTION!

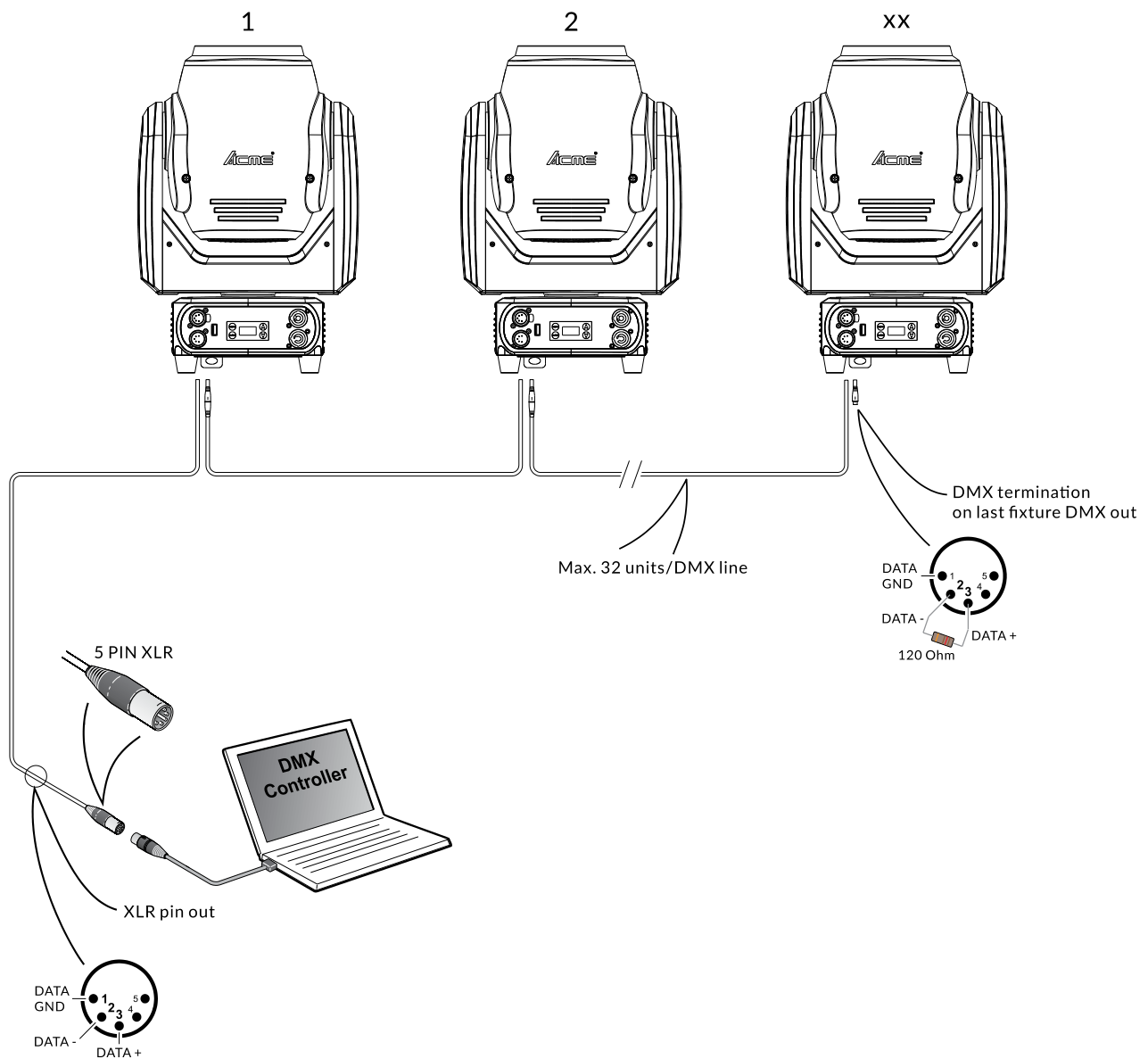
DO NOT CONNECT THE FIXTURE TO AN ELECTRICAL DIMMER SYSTEM AS DOING SO MAY CAUSE DAMAGE.

4.2 Connecting Data

The fixture is equipped with 5-pin (or 3-pin) XLR sockets for DMX input and output. Use a high-quality DMX cable designed for RS-485 and 5-pin (or 3-pin) XLR-plugs and connectors in order to connect the controller with the fixture or one fixture with another.

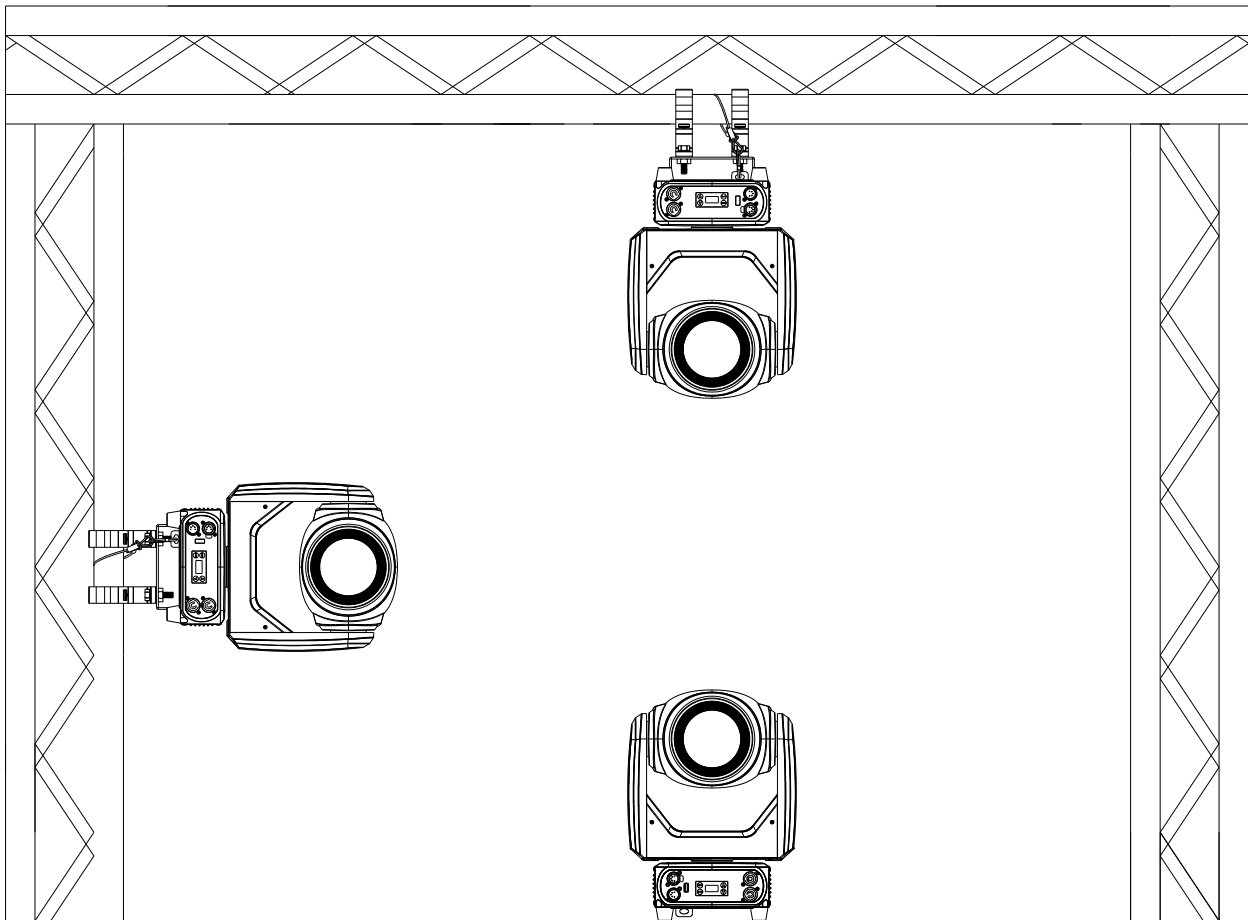
Building a serial DMX chain:

Connect the DMX data output from the controller to the fixture's data input socket. Connect the DMX output of the first fixture in the DMX chain with the DMX input of the next fixture. Always connect one output with the input of the next fixture until all fixtures are connected. Up to 32 fixtures can be connected to the same DMX link. Terminate the DMX out cable of the last fixture in the data link with a 120 ohm DMX terminator.

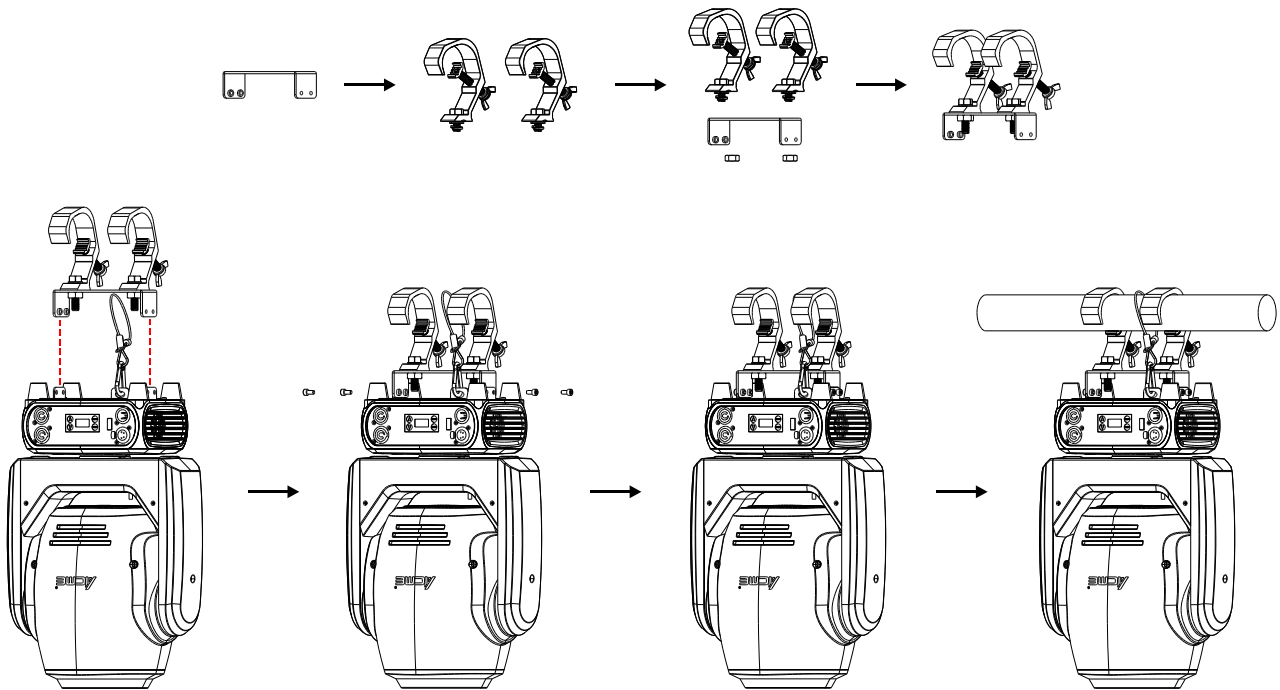


05/ Fixture Installation

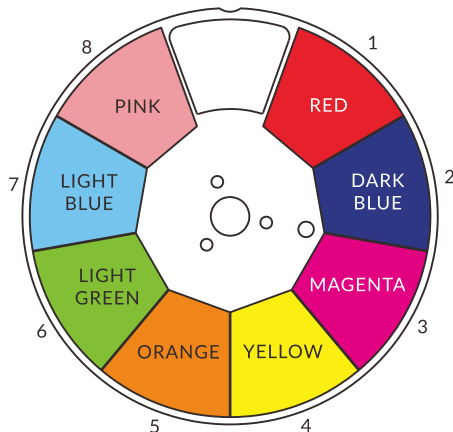
- ▶ DO install and operate by qualified operator. Fixture(s) should be installed in areas outside walking paths, seating areas, or away from areas where unauthorized personnel might reach the fixture by hand. NEVER stand directly below the fixture(s) when rigging, removing or servicing.
- ▶ Always ensure that the unit is firmly fixed to avoid vibration and slipping off during operation. Ensure that the trussing or area of installation must be able to hold 10 times the weight without any deformation. Always attach a safety cable that can hold at least 12 times the weight of the fixture whenever installing this fixture in a suspended environment to ensure that the fixture will not fall if the clamp fails.
- ▶ This fixture is fully operational in three different mounting positions: hanging upside-down, mounted sideways on truss, or base positioned on floor. Always use and install a safety cable as a safety measure to prevent accidental damage and/or injury in the event the clamp fails.



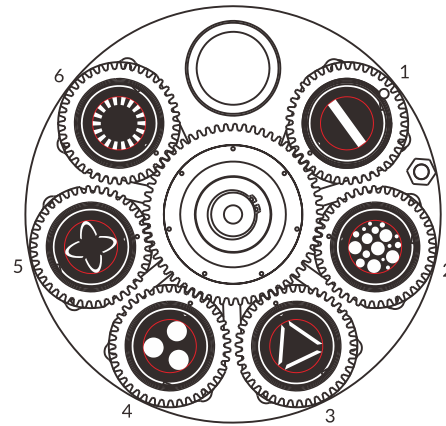
Hanging the fixture:



06/ Effect Wheels



Color Wheel



Rotating Gobo Wheel

DANGER!

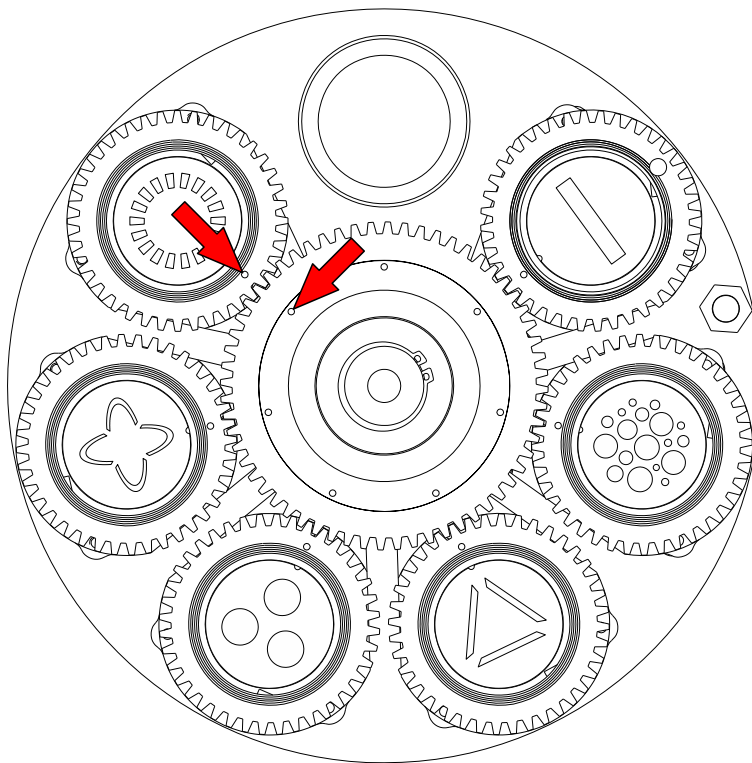
Replace the rotating gobos with the device switched off only.
Unplug from mains before replacing the rotating gobos!

Rotating Gobo Wheel		
Slot	Name	Part Number
Open	Empty	/
1	Bar	3011001559
2	Bubbles	3011001560
3	Triangle Rack	3011001561
4	Three Balls	3011001562
5	Quatrefoil	3011001563
6	Broken Circle	3011001558

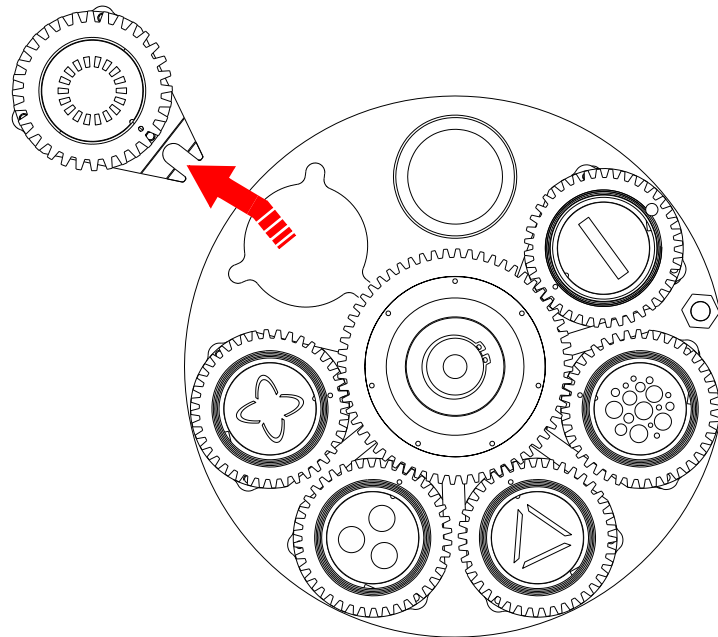
Size of Rotating Gobos				
Slot	Gobo Diameter	Image Area Diameter	Gobo Thickness	Material
1~6	21.3mm±0.05mm	16mm	0.2mm	Steel Alloy

Follow these precautions when using and handling rotating gobos:

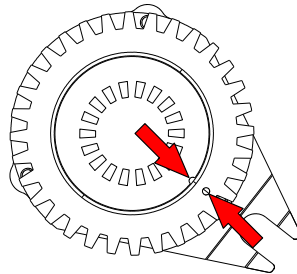
- ▶ Replacement gobos must match the dimensions, construction, materials and quality as the gobos supplied as standard. Using gobos that do not meet this requirement can cause damage that is not covered by the product warranty.
- ▶ Do not use gobos with dark coatings on either side, as these will absorb heat – either directly from the light source or reflected back from other optical components – and will not be durable.
- ▶ Wear clean nitrile cleanroom gloves when handling gobos.
- ▶ Avoid scratching gobos.
- ▶ Correct gobo orientation is critical. Note the position of the reference marks (arrowed) in the gobo drive wheel and gobo holder. Each time you remove a gobo holder from the wheel, turn the drive wheel (twice if necessary) until the marks exactly line up. We recommend that you only remove one gobo holder at a time. Avoid turning the drive wheel while a gobo holder is out of the gobo wheel. This will keep the gobos in their correct orientation, avoiding the need to reprogram cues or adjust gobo positions in the fixture because a gobo orientation has changed during service.



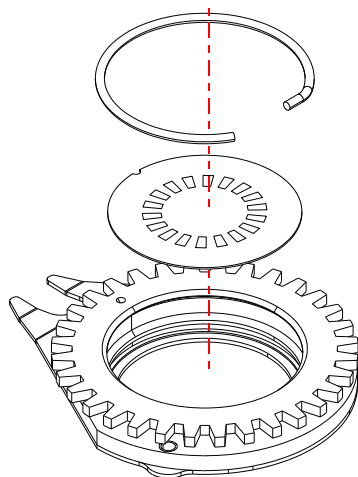
- ▶ Note how the gobo holder tongue engages in a recess in the gobo drive wheel when pulling the gobo holder out of the gobo wheel. You will need to reinstall the gobo holder with the tongue in the same position in the drive wheel.



- ▶ Note the position of the alignment marks (arrowed) on gobo holders and gobos. Install gobos with the alignment marks next to each other.



- ▶ With the teeth side of the gobo holder facing upwards, remove the gobo retaining spring carefully with an appropriate tool (e.g. plastic lever) and then remove the original gobo.



- ▶ Holding the new gobo by its edges, taking care to not leave fingerprints on the gobo, insert it into the gobo holder with the alignment marks on gobo and gobo holder oriented correctly. Check that the gobo is fully seated in the holder.
- ▶ Check that the retaining spring is pressed as flat as possible against the gobo and that the gobo is held securely in the gobo holder when reinstalling the retaining spring.
- ▶ Line up the reference marks in the gobo holder and gobo drive wheel and push the tongue correctly into its location in the gobo drive wheel when you install the gobo holder. Check that the gobo holder is held securely in the wheel after you have installed it.

07/ Operation

7.1 Control Menu

- ▶ To access the control menus, press the [MENU] button.
- ▶ Navigate the menu structure, using the [ENTER], [▲ UP] and [▼ DOWN] buttons.
- ▶ To select a menu option or to confirm a selection, press the [ENTER] button.
- ▶ To return to a higher level in the menu structure without making a change, press the [MENU] button, or wait 30 seconds.

The main functions are shown below:

MAIN MENU	SUBMENU	CHOICES/VALUES	
DMX Settings	DMX Address	1-496	(Default=1)
	DMX Channel Mode	17 CH	
	No DMX Status	Blackout	
		Hold	
		Manual	
		Show	
	View DMX Value		
Fixture Settings	Pan Invert	No	
		Yes	
	Tilt Invert	No	
		Yes	
	P/T Feedback	No	
		Yes	

MAIN MENU	SUBMENU	CHOICES/VALUES	
	Dimmer Curve	Linear	
		Square Law	
		Inv SQ Law	
		S Curve	
	Dimmer Speed	Fast	
		Smooth	
	Led Refresh Rate	900Hz	
		1000Hz	
		1100Hz	
		1200Hz	
		1300Hz	
		1400Hz	
		1500Hz	
		2500Hz	
		4000Hz	
		5000Hz	
		6000Hz	
		10000Hz	
		15000Hz	
		20000Hz	
		25000Hz	
	Pri./Sec. Mode	Primary	
		Secondary 1	
		Secondary 2	
	Show Mode	Show 1	
		Show 2	
		Show 3	
		Show 4	
	Sound State	Off	
		On	
	Sound Sense	0-100	(Default=90)
	Gobo Short Cut	Enable	
		Disable	
	Color Short Cut	Enable	
		Disable	
	Fan Mode	Standard	
		Quiet	

MAIN MENU	SUBMENU	CHOICES/VALUES		
Display Settings	Display Invert	No		
		Yes		
	Temperature Unit	°C		
		°F		
	Language	English		
		Chinese		
Fixture Test	Auto Test	Single		
		Cycle		
	Manual Test	Clear	No/Yes	
		Pan	0-255	
		Tilt	0-255	
		Color	0-255	
		Gobo	0-255	
		R-Gobo	0-255	
		Prism	0-255	
		R-Prism	0-255	
		Angle/Frost	0-255	
		Focus	0-255	
		Strobe	0-255	
		Dimmer	0-255	
		Information	Fixture Use Hour	
LED Use Hour	Total LED Hour			
	LED On Hour			
	LED Hours Reset		Password=050	
Temperature	Current			
	Max temp			
Fan State	Base Fan			
	Head Fan			
Firmware Version				
RDM UID				
Error Logs	Fixture Errors			
	Reset Error Log	No		
		Yes	Password=050	
Reset Functions	Pan/Tilt Reset	No		
		Yes		
	Effect Reset	No		
		Yes		
	All Reset	No		
		Yes		

MAIN MENU	SUBMENU	CHOICES/VALUES
Special Functions	USB Upgrade	No
		Yes
	Send Upgrade	No
		Yes
	Firmware Restore	No
		Yes
	Factory Settings	No
		Yes

DMX Settings

Enter the control menu and select **DMX Settings**, press ENTER. Use the UP/DOWN button to select **DMX Address**, **DMX Channel Mode**, **No DMX Status** or **View DMX Value**.

DMX Address

Select **DMX Address**, press ENTER.

Use UP/DOWN button to select an address, confirm your selection with ENTER.

CHANNEL MODE	DMX ADDRESS
17 CH	1-496

To exit the menu, press MENU, or wait 30 seconds.

DMX Channel Mode

Select **DMX Channel Mode**, press ENTER.

Use UP/DOWN button to select **17 CH**, confirm your selection with ENTER.

To exit the menu, press MENU, or wait 30 seconds.

No DMX Status

Select **No DMX Status**, press ENTER.

Use UP/DOWN button to select one of the following status:

Blackout (Fixture blacks out if DMX signal stops)

Hold (The device continues to operate in the current mode with the last active DMX values until the signal returns)

Manual (The device accepts the DMX value stored in the 'Manual Test' menu)

Show (Show mode)

Confirm your selection with ENTER.

To exit the menu, press MENU, or wait 30 seconds.

View DMX Value

Select **View DMX Value**, press ENTER.

Use UP/DOWN button to select the desired DMX channel, for which the value is to be displayed.

To exit the menu, press MENU, or wait 30 seconds.

Fixture Settings

Enter the control menu and select **Fixture Settings**, press ENTER. Use the UP/DOWN button to select **Pan Invert**, **Tilt Invert**, **P/T Feedback**, **Dimmer Curve**, **Dimmer Speed**, **Led Refresh Rate**, **Pri./Sec. Mode**, **Show Mode**, **Sound State**, **Sound Sense**, **Gobo Short Cut**, **Color Short Cut** or **Fan Mode**.

Pan Invert

Select **Pan Invert**, press ENTER.

Use UP/DOWN button to select **No** (pan invert deactivated) or **Yes** (pan invert activated), confirm your selection with ENTER.

To exit the menu, press MENU, or wait 30 seconds.

Tilt Invert

Select **Tilt Invert**, press ENTER.

Use UP/DOWN button to select **No** (tilt invert deactivated) or **Yes** (tilt invert activated), confirm your selection with ENTER.

To exit the menu, press MENU, or wait 30 seconds.

P/T Feedback

Select **P/T Feedback**, press ENTER.

Use UP/DOWN button to select **No** (pan/tilt feedback deactivated) or **Yes** (pan/tilt feedback activated), confirm your selection with ENTER.

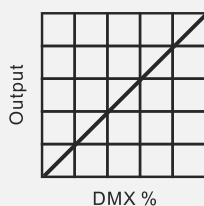
To exit the menu, press MENU, or wait 30 seconds.

Dimmer Curve

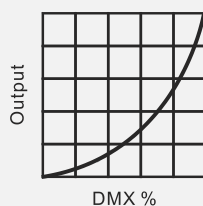
Select **Dimmer Curve**, press ENTER.

Use UP/DOWN button to select **Linear**, **Square Law**, **Inv SQ Law** or **S Curve**, confirm your selection with ENTER.

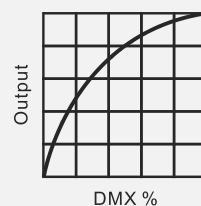
Dimmer Modes



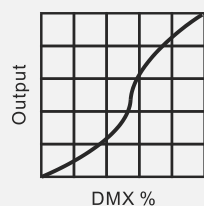
Optically Linear



Square Law



Inverse Square Law



S-curve

To exit the menu, press MENU, or wait 30 seconds.

Dimmer Speed

Select **Dimmer Speed**, press ENTER.

Use UP/DOWN button to select **Fast** or **Smooth**, confirm your selection with ENTER.

To exit the menu, press MENU, or wait 30 seconds.

Led Refresh Rate

Select **Led Refresh Rate**, press ENTER.

Use UP/DOWN button to select **900Hz, 1000Hz, 1100Hz, 1200Hz, 1300Hz, 1400Hz, 1500Hz, 2500Hz, 4000Hz, 5000Hz, 6000Hz, 10000Hz, 15000Hz, 20000Hz or 25000Hz**, confirm your selection with ENTER.

To exit the menu, press MENU, or wait 30 seconds.

Pri./Sec. Mode

Select **Pri./Sec. Mode**, press ENTER.

Use UP/DOWN button to select **Primary, Secondary 1 or Secondary 2**, confirm your selection with ENTER.

To exit the menu, press MENU, or wait 30 seconds.

Show Mode

Select **Show Mode**, press ENTER.

Use UP/DOWN button to select **Show 1, Show 2, Show 3 or Show 4**, confirm your selection with ENTER.

To exit the menu, press MENU, or wait 30 seconds.

Sound State

Select **Sound State**, press ENTER.

Use UP/DOWN button to select **Off or On**, confirm your selection with ENTER.

To exit the menu, press MENU, or wait 30 seconds.

Sound Sense

Select **Sound Sense**, press ENTER.

Use UP/DOWN button to select a value between **0 and 100**, confirm your selection with ENTER.

To exit the menu, press MENU, or wait 30 seconds.

Gobo Short Cut

Select **Gobo Short Cut**, press ENTER.

Use UP/DOWN button to select **Enable** or **Disable**, confirm your selection with ENTER.

To exit the menu, press MENU, or wait 30 seconds.

Color Short Cut

Select **Color Short Cut**, press ENTER.

Use UP/DOWN button to select **Enable** or **Disable**, confirm your selection with ENTER.

To exit the menu, press MENU, or wait 30 seconds.

Fan Mode

Select **Fan Mode**, press ENTER.

Use UP/DOWN button to select **Standard** or **Quiet**, confirm your selection with ENTER.

To exit the menu, press MENU, or wait 30 seconds.

Display Settings

Enter the control menu and select **Display Settings**, press ENTER. Use the UP/DOWN button to select **Display Invert**, **Temperature Unit** or **Language**.

Display Invert

Select **Display Invert**, press ENTER.

Use UP/DOWN button to select **No** (display normal) or **Yes** (display inverted), confirm your selection with ENTER.

To exit the menu, press MENU, or wait 30 seconds.

Temperature Unit

Select **Temperature Unit**, press ENTER.

Use UP/DOWN button to select **°C** or **°F**, confirm your selection with ENTER.

To exit the menu, press MENU, or wait 30 seconds.

Language

Select **Language**, press ENTER.

Use UP/DOWN button to select **English** or **Chinese**, confirm your selection with ENTER.

To exit the menu, press MENU, or wait 30 seconds.

Fixture Test

Enter the control menu and select **Fixture Test**, press ENTER. Use the UP/DOWN button to select **Auto Test** or **Manual Test**.

Auto Test

Select **Auto Test**, press ENTER.

Use UP/DOWN button to select **Single** (the device immediately performs a single automatic self-test) or **Cycle** (the device immediately performs a cyclic automatic self-test), confirm your selection with ENTER.

To exit the menu, press MENU.

Manual Test

Select **Manual Test**, press ENTER.

Use UP/DOWN button to select the channel for which the manual test is to be performed, confirm your selection with ENTER.

Use UP/DOWN button to select a value, confirm your selection with ENTER.

To exit the menu, press MENU.

(The device returns to its original DMX state after the manual test. The test values are saved automatically when the device is switched off.)

Information

Enter the control menu and select **Information**, press ENTER. Use the UP/DOWN button to select **Fixture Use Hour**, **LED Use Hour**, **Temperature**, **Fan State**, **Firmware Version**, **RDM UID** or **Error Logs**.

Fixture Use Hour

Select **Fixture Use Hour**, press ENTER.
The operating hours is displayed.
To exit the menu, press MENU, or wait 30 seconds.

LED Use Hour

Select **LED Use Hour**, press ENTER.
Use UP/DOWN button to select **Total LED Hour** (total time) or **LED On Hour** (current switch-on time), confirm your selection with ENTER.
The total time or current switch-on time is displayed.
Use UP/DOWN button to select **LED Hours Reset**, confirm your selection with ENTER.
Use UP/DOWN button to set the password 050, confirm your selection with ENTER. The LED operating hours is reset.
To exit the menu, press MENU, or wait 30 seconds.

Temperature

Select **Temperature**, press ENTER.
The device temperature is displayed.
To exit the menu, press MENU, or wait 30 seconds.

Fan State

Select **Fan State**, press ENTER.
The fan status is displayed.
To exit the menu, press MENU, or wait 30 seconds.

Firmware Version

Select **Firmware Version**, press ENTER.
The firmware version is displayed.
To exit the menu, press MENU, or wait 30 seconds.

RDM UID

Select **RDM UID**, press ENTER.
The RDM UID is displayed.
To exit the menu, press MENU, or wait 30 seconds.

Error Logs

Select **Error Logs**, press ENTER.
Use UP/DOWN button to select **Fixture Errors**, confirm your selection with ENTER.
The error list is displayed.
Use UP/DOWN button to select **Reset Error Log**, confirm your selection with ENTER.
If you wish to reset the relevant error logs, select **Yes**. If you do not wish to reset anything, select **No**. Confirm your selection with ENTER.
If you select **Yes**, use UP/DOWN button to set the password 050, confirm your selection with ENTER. The relevant error logs are reset.
To exit the menu, press MENU, or wait 30 seconds.

Reset Functions

Enter the control menu and select **Reset Functions**, press ENTER. Use the UP/DOWN button to select **P/T Reset**, **Effect Reset** or **All Reset**.

P/T Reset

Select **P/T Reset**, press ENTER.
Use UP/DOWN button to select **No** or **Yes** (the device will run built-in program to reset pan/tilt to their home positions), confirm your selection with ENTER.
To exit the menu, press MENU, or wait 30 seconds.

Effect Reset

Select **Effect Reset**, press ENTER.

Use UP/DOWN button to select **No** or **Yes** (the device will run built-in program to reset effect to their home positions), confirm your selection with ENTER.

To exit the menu, press MENU, or wait 30 seconds.

All Reset

Select **All Reset**, press ENTER.

Use UP/DOWN button to select **No** or **Yes** (the device will run built-in program to reset all to their home positions), confirm your selection with ENTER.

To exit the menu, press MENU, or wait 30 seconds.

Special Functions

Enter the control menu and select **Special Functions**, press ENTER. Use the UP/DOWN button to select **USB Upgrade**, **Send Upgrade**, **Firmware Restore** or **Factory Settings**.

USB Upgrade

Select **USB Upgrade**, press ENTER.

The upgrade files are displayed. (See the 'Updating Software' section for details.)

To exit the menu, press MENU, or wait 30 seconds.

Send Upgrade

Select **Send Upgrade**, press ENTER.

If you wish to send upgrade files from this fixture to other fixtures to upgrade their firmware, select **Yes**. Once Yes is selected, the display of this fixture will show “**CPU-xx, xx%**” while the display of other fixtures will show “**Upgrade, CPU-xx,**”. After the update is complete, fixtures will perform a reset (this can take some time).

If you do not wish to send anything, select **No**. Confirm your selection with ENTER.

To exit the menu, press MENU, or wait 30 seconds.

Firmware Restore (After replacing fixture's vice board(s), this function allows you to synchronize the main board's software to all vice board(s), as the software version of the replaced vice board(s) may not consistent with that of the main board.)

Select **Firmware Restore**, press ENTER.

If you wish to restore fixture's firmware, select **Yes**. Once Yes is selected, the display will show “**CPU-xx, Upgrade, xx%**”. After the update is complete, the fixture will perform a reset (this can take some time).

If you do not wish to restore anything, select **No**. Confirm your selection with ENTER.

To exit the menu, press MENU, or wait 30 seconds.

Factory Settings

Select **Factory Settings**, press ENTER.

If you wish to reset the device to the factory settings, select **Yes**. If you do not wish to reset anything, select **No**. Confirm your selection with ENTER.

To exit the menu, press MENU, or wait 30 seconds.

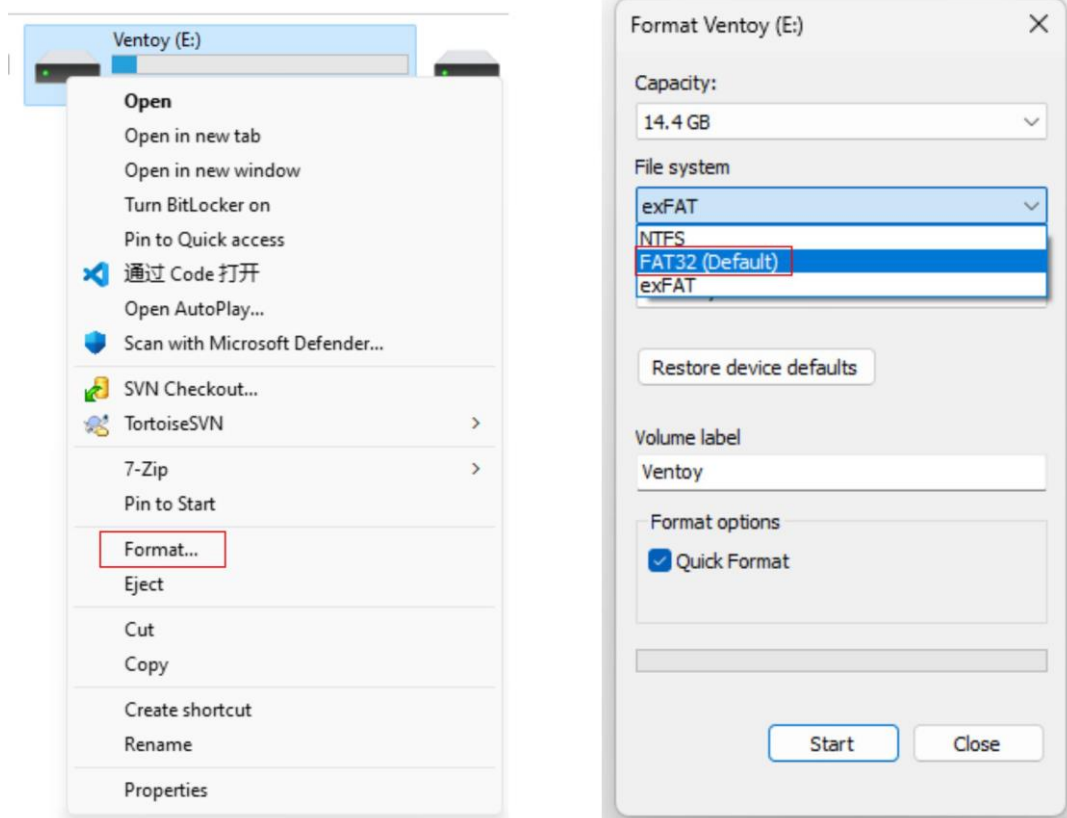
7.2 Updating Software

Only qualified technicians should perform this function! Note all menu settings before updating software! Please note, up to 32 fixtures can be connected together and updated at the same time.

Note: Before using the USB flash drive to update the software, please ensure that the USB flash drive is formatted with the FAT32 file system. Otherwise, you will need to reformat the USB flash drive to FAT32 before transferring the .yfu files, as the fixture will only recognize the files stored on a FAT32 formatted drive.

Format the USB flash drive:

- ▶ Connect the USB flash drive to the computer.
- ▶ Right-click on the USB flash drive disk.
- ▶ Click "Format".
- ▶ Select the "FAT32" file system and click "Start".



Updating Software:

1. Download the software update files from the ACME website.
2. Copy the software files to a compatible USB flash drive.

Note: To avoid the risk of uploading the wrong file to the fixture, make sure that there are no other files on your flash drive.

3. Disconnect DMX and Ethernet connections and power the fixture on.
4. Insert the USB flash drive into the **FIRMWARE UPGRADE** port located on the front panel of the fixture.
5. Locate **"Special Functions"** within the system menu and press ENTER. Scroll to the **"USB Upgrade"** submenu and press ENTER.
6. Two software files will be displayed as downloaded earlier. Highlight the first file (V00) and press ENTER. Select **"Yes"** to begin the first of two updating processes. Once Yes is selected, the display will show **"Copying Data, Please Wait... xx%"**. After copying is complete, the display will show **"CPU-xx, Upgrade, xx%"**.
7. After the first update is complete, the fixture will perform a reset (this can take some time).
8. Once the reset is complete, scroll to the **"Special Functions"** menu again and press ENTER. Scroll to the **"USB Upgrade"** submenu and press ENTER.
9. Highlight the second file (Vxx) this time and press ENTER. Select **"Yes"** to begin the second and final updating process. Once Yes is selected, the display will show **"Copying Data, Please Wait... xx%"** again. After copying is complete, the display will show **"CPU-xx, Upgrade, xx%"**.
10. After the second update is complete, the fixture will perform another reset (this can take some time as well).
11. Remove the USB flash drive.
12. After the reset process is complete, check the new software version to confirm it is updated to the most recent software.

RDM functions: Certain menus of the device and functions can be called up via the RDM protocol.

The parameter IDs are implemented as follows for different commands:

Standard RDM Parameter IDs

PID	Parameter IDs	Command 'Discovery'	Command 'Set'	Command 'Get'
0x0001	DISC_UNIQUE_BRANCH	✓		
0x0002	DISC_MUTE	✓		
0x0003	DISC_UN_MUTE	✓		
0x0050	SUPPORTED_PARAMETERS			✓
0x0051	PARAMETER_DESCRIPTION			✓
0x0060	DEVICE_INFO			✓
0x0080	DEVICE_MODEL_DESCRIPTION			✓
0x0081	MANUFACTURER_LABEL			✓
0x0082	DEVICE_LABEL		✓	✓
0x0090	FACTORY_DEFAULTS		✓	✓
0x00C0	SOFTWARE_VERSION_LABEL			✓
0x00C1	BOOT_SOFTWARE_VERSION_ID			✓
0x00C2	BOOT_SOFTWARE_VERSION_LABEL			✓
0x00E0	DMX_PERSONALITY		✓	✓
0x00E1	DMX_PERSONALITY_DESCRIPTION			✓
0x00F0	DMX_START_ADDRESS		✓	✓
0x0120	SLOT_INFO			✓
0x0121	SLOT_DESCRIPTION			✓
0x0200	SENSOR_DEFINITION			✓
0x0201	SENSOR_VALUE			✓
0x0343	CURVE		✓	✓
0x0344	CURVE_DESCRIPTION			✓
0x0400	DEVICE_HOURS			✓
0x0401	LAMP_HOURS			✓
0x0600	PAN_INVERT		✓	✓
0x0601	TILT_INVERT		✓	✓
0x1000	IDENTIFY_DEVICE		✓	✓
0x1001	RESET_DEVICE		✓	✓

✓ -Command implemented for the respective parameter ID

Manufacturer-specific RDM Parameter IDs

PID	Parameter IDs	Command 'Discovery'	Command 'Set'	Command 'Get'	Note
0xA002	SHOW_MODE		✓	✓	0:show1 1:show2 2:show3 3:show4
0xA003	PRIM_SEC		✓	✓	0:Primary 1:Secondary1 2:Secondary2
0xA004	DMX_STATUS		✓	✓	0:Blackout 1:Hold 2:Manual 3:Show
0xA008	DIMMER_SPEED		✓	✓	0:Fast 1:Smooth
0xA009	SOUND_MODE		✓	✓	0:Off 1:On
0xA00A	SOUND_SENSE		✓	✓	
0xA010	FAN_MODE		✓	✓	0:Standard 1:Quiet
0xA018	ERROR_LOG			✓	
0xA020	OFFSET		✓	✓	
0xA021	PAN_TILT_FEEDBACK		✓	✓	0:No 1:Yes
0xA025	DIMMER_CURVE		✓	✓	1:Linear 2:Square Law 3:Inv SQ Law 4:S Curve
0xA026	DIMMER_FREQUENCY		✓	✓	1:900Hz 2:1000Hz 3:1100Hz 4:1200Hz 5:1300Hz 6:1400Hz 7:1500Hz 8:2500Hz 9:4000Hz 10:5000Hz 11:6000Hz 12:10KHz 13:15KHz 14:20KHz 15:25KHz

✓ -Command implemented for the respective parameter ID

7.3 Home Position Adjustment

- ▶ To access the control menus, press the [MENU] button.
- ▶ To access the offset menus, long-press the [ENTER] button.
- ▶ Navigate the offset menus, using the [ENTER], [▲ UP] and [▼ DOWN] buttons.
- ▶ To select a menu option or to confirm a selection, press the [ENTER] button.
- ▶ To return to a higher level in the menu structure without making a change, press the [MENU] button, or wait 30 seconds.

OFFSET MENU	VALUES
Frequency	1072~1327
Dim Start	-128~127
Pan	-128~127
Tilt	-128~127
Color	-128~127
Gobo	-128~127
R-Gobo	-128~127
Prism	-128~127
Angle/Frost	-128~127
Focus	-128~127

Frequency(Hz)

Select **Frequency(Hz)**, press ENTER.

Use UP/DOWN button to select a value, confirm your selection with ENTER.

To exit the offset menu, press MENU, or wait 30 seconds.

Frequency	VALUES
900Hz	772~1027
1000Hz	872~1127
1100Hz	972~1227
1200Hz	1072~1327
1300Hz	1172~1427
1400Hz	1272~1527
1500Hz	1372~1627
2500Hz	2372~2627
4000Hz	3872~4127
5000Hz	4872~5127
6000Hz	5872~6127
10KHz	9872~10127
15KHz	14872~15127
20KHz	19872~20127
25KHz	24872~25127

Dim Start

Select **Dim Start**, press ENTER.

Use UP/DOWN button to select a value between -128 and 127, confirm your selection with ENTER.

To exit the offset menu, press MENU, or wait 30 seconds.

Pan

Select **Pan**, press ENTER.

Use UP/DOWN button to select a value between -128 and 127, confirm your selection with ENTER.

To exit the offset menu, press MENU, or wait 30 seconds.

Tilt

Select **Tilt**, press ENTER.

Use UP/DOWN button to select a value between -128 and 127, confirm your selection with ENTER.

To exit the offset menu, press MENU, or wait 30 seconds.

Color

Select **Color**, press ENTER.

Use UP/DOWN button to select a value between -128 and 127, confirm your selection with ENTER.

To exit the offset menu, press MENU, or wait 30 seconds.

Gobo

Select **Gobo**, press ENTER.

Use UP/DOWN button to select a value between -128 and 127, confirm your selection with ENTER.

To exit the offset menu, press MENU, or wait 30 seconds.

R-Gobo

Select **R-Gobo**, press ENTER.

Use UP/DOWN button to select a value between -128 and 127, confirm your selection with ENTER.

To exit the offset menu, press MENU, or wait 30 seconds.

Prism

Select **Prism**, press ENTER.

Use UP/DOWN button to select a value between -128 and 127, confirm your selection with ENTER.

To exit the offset menu, press MENU, or wait 30 seconds.

Angle/Frost

Select **Angle/Frost**, press ENTER.

Use UP/DOWN button to select a value between -128 and 127, confirm your selection with ENTER.

To exit the offset menu, press MENU, or wait 30 seconds.

Focus

Select **Focus**, press ENTER.

Use UP/DOWN button to select a value between -128 and 127, confirm your selection with ENTER.

To exit the offset menu, press MENU, or wait 30 seconds.

08/ Configuring the Device for DMX Control

8.1 Address Setting

All fixtures should be given a DMX starting address when operating with a DMX controller, in order to ensure that the correct fixture responds to the correct control signal. Incorrect settings will result in unpredictable responses from the lighting controller.

You can set the same starting address for all fixtures or a group of fixtures, or set different addresses for each individual fixture.

Setting all fixtures to the same DMX address will cause all fixtures to react in the same way. In this case, please note that changing the settings of one channel will affect all the fixtures simultaneously.

If you set each fixture to a different DMX address, each unit will “listen” starting at the channel number you have set, based on the quantity of DMX channels of each fixture. That means changing the settings of one channel will only affect the selected fixture.

For example, if the first fixture is set to 17 ch DMX mode with a start DMX address of 1, the following fixture in the DMX chain should then be set to a DMX address of 18. As the first fixture uses all the first 17 DMX channels, the next available channel is 18 ($17+1=18 >> 18$).

See the chart below for more details:

Channel Mode	Unit 1 Address	Unit 2 Address	Unit 3 Address	Unit 4 Address	Unit xxx Address
17 channels	1	18	35	52	

8.2 DMX Protocol

Valid from firmware version: V1.1

CHANNEL	VALUE	FUNCTION
17ch		
1	000-255	PAN 0°→540°
2	000-255	PAN FINE
3	000-255	TILT 0°→270°
4	000-255	TILT FINE
5	000-255	PAN/TILT SPEED Fast to Slow
6	000-007	COLOR WHEEL Open
	008-014	Color 1
	015-021	Color 2
	022-028	Color 3
	029-035	Color 4
	036-042	Color 5
	043-049	Color 6
	050-056	Color 7
	057-063	Color 8
	64	Open
	65	Open + Color 1
	66	Color 1
	67	Color 1 + Color 2
	68	Color 2
	69	Color 2 + Color 3
	70	Color 3
	71	Color 3 + Color 4
	72	Color 4
	73	Color 4 + Color 5
	74	Color 5
	75	Color 5 + Color 6
	76	Color 6
	77	Color 6 + Color 7
	78	Color 7
	79	Color 7 + Color 8
	80	Color 8
	81	Color 8 + Open
	82-127	Open
	128-189	Clockwise Rotation, Fast to Slow
	190-193	Stop

	194-255	Counter-Clockwise Rotation, Slow to Fast
7	000-007 008-016 017-025 026-034 035-043 044-052 053-063 064-073 074-083 084-093 094-103 104-113 114-127 128-189 190-193 194-255	GOBO WHEEL Open Gobo 1 Gobo 2 Gobo 3 Gobo 4 Gobo 5 Gobo 6 Gobo 1 Shaking, Slow to Fast Gobo 2 Shaking, Slow to Fast Gobo 3 Shaking, Slow to Fast Gobo 4 Shaking, Slow to Fast Gobo 5 Shaking, Slow to Fast Gobo 6 Shaking, Slow to Fast Clockwise Rotation, Fast to Slow Stop Counter-Clockwise Rotation, Slow to Fast
8	000-127 128-189 190-193 194-255	GOBO WHEEL ROTATION Index 0°→360° Clockwise Rotation, Fast to Slow Stop Counter-Clockwise Rotation, Slow to Fast
9	000-007 008-255	PRISM (3-facet circular prism) Close Open
10	000-127 128-189 190-193 194-255	R-PRISM Index 0°→360° Counter-Clockwise Rotation, Fast to Slow Stop Clockwise Rotation, Slow to Fast
11	000-007 008-128 129-255	ANGLE/FROST Null Angle Frost
12	000-255	FOCUS 0%→100%
13	000-255	FOCUS FINE
14	000-007 008-015 016-131 132-139 140-181 182-189 190-231	STROBE Close Open Strobe from Slow to Fast Open Fast Open Slow Close from Slow to Fast Open Slow Open Fast Close from Slow to Fast

	232-239 240-247 248-255	Sound-activated Strobe Random Strobe from Slow to Fast Open
15	000-255	DIMMER 0%→100%
16	000-255	DIMMER FINE
17	000-029 030-039 040-049 050-059 060-069 070-079 080-089 090-099 100-109 110-119 120-122 123 124 125 126 127 128 129 130 131 132 133 134 135 136 137 138-139 140-149 150-159 160-199 200-209 210-219 220-229 230-231 232-233 234-235 236-237 238-255	SPECIAL FUNCTION (To activate following functions, stop in DMX value for at least 3 seconds.) Null Dimmer Curve Linear Dimmer Curve Square Law Dimmer Curve Inv SQ Law Dimmer Curve S Fan Mode: Standard Fan Mode: Quiet Null LED Frequency Setting Enable LED Frequency Setting Disable Null 900Hz 1000Hz 1100Hz 1200Hz 1300Hz 1400Hz 1500Hz 2500Hz 4000Hz 5000Hz 6000Hz 10KHz 15KHz 20KHz 25KHz Null Pan/Tilt Reset Effect Reset Null Reset All Dimmer Speed Fast Dimmer Speed Smooth Gobo Short Cut: Enable Gobo Short Cut: Disable Color Short Cut: Enable Color Short Cut: Disable Null

09/ Error Information

Error codes are shown continuously in the display when the fixture fails and they will not disappear until the fixture is repaired.

CPU-B/C Error

Check whether the 485 (DATA) leads on the PCB board are installed in place or disconnected.

Check whether the related 485 (DATA) signal circuit on the PCB board is damaged.

Pan Reset Error

Check whether the position of the pan where the magnet is installed falls off or is damaged.

Check whether there are obstacles in the pan operating range.

Check whether the Hall element on the pan is damaged.

Check whether the lead connecting the Hall element on the pan and the PCB board is in poor contact or disconnected.

Check whether the motor on the pan is damaged.

Check whether the related circuit of the motor drive board on the pan is damaged.

Pan Encode Error

Check whether the encoder on the pan is damaged.

Check whether the lead connecting the encoder on the pan and the PCB board is in poor contact or disconnected.

Pan Encode Not Find

Check whether the lead connecting the encoder on the pan and the PCB board is in poor contact or disconnected.

Pan Encode Disable

Check whether the encoder on the pan is damaged.

Tilt Reset Error

Check whether the position of the tilt where the magnet is installed falls off or is damaged.

Check whether there are obstacles in the tilt operating range.

Check whether the Hall element on the tilt is damaged.

Check whether the lead connecting the Hall element on the tilt and the PCB board is in poor contact or disconnected.

Check whether the motor on the tilt is damaged.

Check whether the related circuit of the motor drive board on the tilt is damage.

Tilt Encode Error

Check whether the encoder on the tilt is damaged.

Check whether the lead connecting the encoder on the tilt and the PCB board is in poor contact or disconnected.

Tilt Encode Not Find

Check whether the lead connecting the encoder on the tilt and the PCB board is in poor contact or disconnected.

Tilt Encode Disable

Check whether the encoder on the tilt is damaged.

Color Reset Error

Check whether the position of the color wheel where the magnet is installed falls off or is damaged.

Check whether there are obstacles in the color wheel operating range.

Check whether the Hall element on the color wheel is damaged.

Check whether the lead connecting the Hall element on the color wheel and the PCB board is in poor contact or disconnected.

Check whether the motor on the color wheel is damaged.

Check whether the related circuit of the motor drive board on the color wheel is damage.

Gobo Reset Error

Check whether the position of the gobo wheel where the magnet is installed falls off or is damaged.

Check whether there are obstacles in the gobo wheel operating range.

Check whether the Hall element on the gobo wheel is damaged.

Check whether the lead connecting the Hall element on the gobo wheel and the PCB board is in poor contact or disconnected.

Check whether the motor on the gobo wheel is damaged.

Check whether the related circuit of the motor drive board on the gobo wheel is damage.

R-Gobo Reset Error

Check whether the position of the gobo wheel where the magnet is installed falls off or is damaged.

Check whether there are obstacles in the gobo wheel operating range.

Check whether the Hall element on the gobo wheel is damaged.

Check whether the lead connecting the Hall element on the gobo wheel and the PCB board is in poor contact or disconnected.

Check whether the motor on the gobo wheel is damaged.

Check whether the related circuit of the motor drive board on the gobo wheel is damage.

Prism Reset Error

Check whether the position of the prism where the magnet is installed falls off or is damaged.

Check whether there are obstacles in the prism operating range.

Check whether the Hall element on the prism is damaged.

Check whether the lead connecting the Hall element on the prism and the PCB board is in poor contact or disconnected.

Check whether the motor on the prism is damaged.

Check whether the related circuit of the motor drive board on the prism is damage.

R-Prism Reset Error

Check whether the position of the prism where the magnet is installed falls off or is damaged.

Check whether there are obstacles in the prism operating range.

Check whether the Hall element on the prism is damaged.

Check whether the lead connecting the Hall element on the prism and the PCB board is in poor contact or disconnected.

Check whether the motor on the prism is damaged.

Check whether the related circuit of the motor drive board on the prism is damage.

Focus Reset Error

Check whether the position of the focus where the magnet is installed falls off or is damaged.

Check whether there are obstacles in the focus operating range.

Check whether the Hall element on the focus is damaged.

Check whether the lead connecting the Hall element on the focus and the PCB board is in poor contact or disconnected.

Check whether the motor on the focus is damaged.

Check whether the related circuit of the motor drive board on the focus is damage.

Frost Reset Error

Check whether the position of the frost where the magnet is installed falls off or is damaged.

Check whether there are obstacles in the frost operating range.

Check whether the Hall element on the frost is damaged.

Check whether the lead connecting the Hall element on the frost and the PCB board is in poor contact or disconnected.

Check whether the motor on the frost is damaged.

Check whether the related circuit of the motor drive board on the frost is damage.

Base Fan 1 Start Err

Check whether the fan is not running.

Check whether the fan leads are installed in place or disconnected.

Check whether the fan is damaged.

Check whether there are obstacles in the fan operating range.

Head Fan 1 Start Err

Check whether the fan is not running.

Check whether the fan leads are installed in place or disconnected.

Check whether the fan is damaged.

Check whether there are obstacles in the fan operating range.

LED Temp. Error

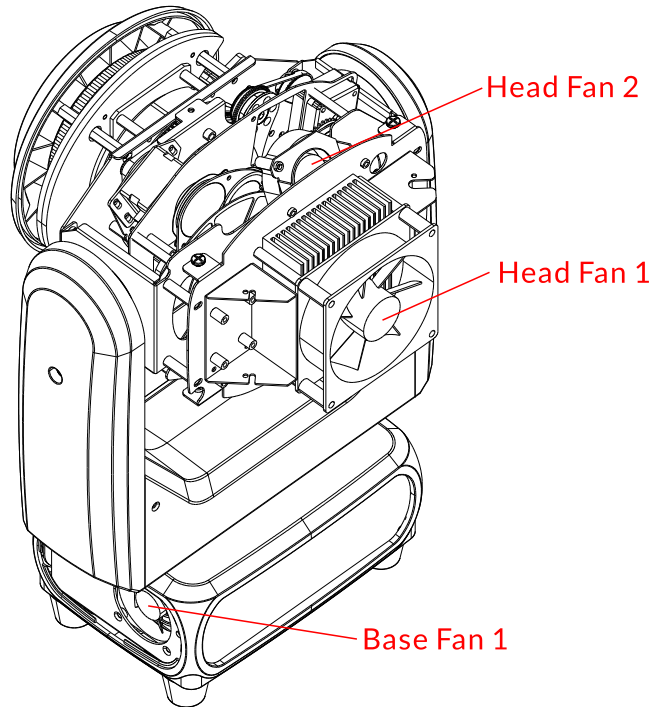
Check whether the temperature detecting board is normal.

Check whether the components of the temperature detecting board are damaged.

Check whether the lead on the temperature detecting board is installed in place or disconnected.

LED Timeout Use**LED Too Hot Off**

When the fixture temperature reaches 70°C, it will automatically turn off to protect the fixture.

Position of cooling fans:

Cooling Fans	Part Number	V	W	Position
Head Fan 1	3014001385	DC 24V	3.8W	Head - Power Adapter Board
Head Fan 2	3014001405	DC 24V	1.7W	Head - Power Adapter Board
Base Fan 1	3014001410	DC 24V	1.0W	Base - A

10/ Troubleshooting

Problem	Potential cause(s)	Remedies
Fixture does not respond or appears to be off.	No power to the fixture.	Confirm that the power is switched on and cables are plugged in.
	No output from PSU.	Replace the PSU.
Fixture suddenly turned off.	Power was turned off.	Check the power supply, switches and breakers.
Light output cuts out intermittently.	Fixture is too hot.	Check fixture's stored error messages for more information. Allow fixture to cool. Clean fixture. Reduce ambient temperature.
Fixture suddenly stopped responding.	DMX cables were disconnected.	Inspect DMX cables.
Fixture operates irregularly / abnormal.	Incorrect DMX address or DMX mode.	Inspect and enter the correct DMX address or mode.
	DMX link is not terminated.	Install a XLR 120ohm DMX termination at the end of the DMX link.
	Bad data link.	Replace or repair defective cables and/or connections.
	One of the fixtures is defective and is disturbing data transmission on the link.	Track and isolate the corrupted fixture. Have the fixture serviced by a qualified technician.
Pan / tilt is skipping / shuddering	Obstacles are within the required pan / tilt clearance.	Inspect and remove any obstacles constraining free operation of the pan / tilt.
	The Hall element is damaged.	Replace the Hall element.
	The magnetic steel fell out.	Replace the magnetic steel.

11/ Fixture Cleaning

Regular cleaning is very important for fixture life and performance. Buildup of dust, dirt, smoke particles, fog fluid residues, etc. degrades the fixture's light output and cooling ability. Cleaning schedules for lighting fixtures vary greatly depending on the operating environment. It is therefore impossible to specify precise cleaning intervals for the fixture. Environmental factors that may result in a need for frequent cleaning include:

- ▶ Use of smoke or fog machines.
- ▶ High airflow rates (near air conditioning vents, for example).
- ▶ Airborne dust (from stage effects, building structures and fittings or the natural environment at outdoor events, for example).

If one or more of these factors is present, inspect fixtures within their first few hours of operation to see whether cleaning is necessary. Check again at frequent intervals. This procedure will allow you to assess cleaning requirements in your particular situation.

Follow these precautions when cleaning the fixture:

- ▶ Work in a clean, dry, well-lit area.
- ▶ Use gentle pressure only. A soft lint-free cloth dampened with a solution of water and a mild detergent is recommended, under no circumstances should alcohol, solvents or abrasives be used! Use care when cleaning optical components: surfaces are fragile and easily scratched.

12/ Approvals and Certifications

This product has been tested and found to comply with the following standards:

- 2014/30/EU - Electromagnetic Compatibility (EMC)
- 2014/35/EU - Low Voltage Directive (LVD)
- UK SI 2016 No. 1091: Electromagnetic Compatibility Regulations 2016
- UK SI 2016 No. 1101: The Electric Equipment (Safety) Regulations 2016



The information in this document is subject to change without notice.

For the latest information, visit www.acmelighting.com.



www.acmelighting.com