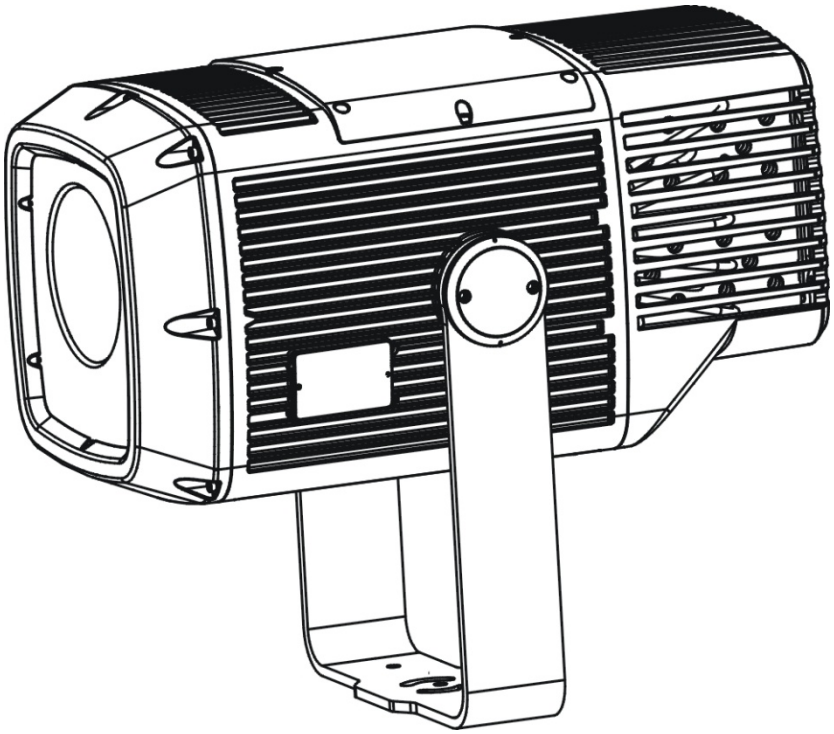
# Exterior Projection 1000

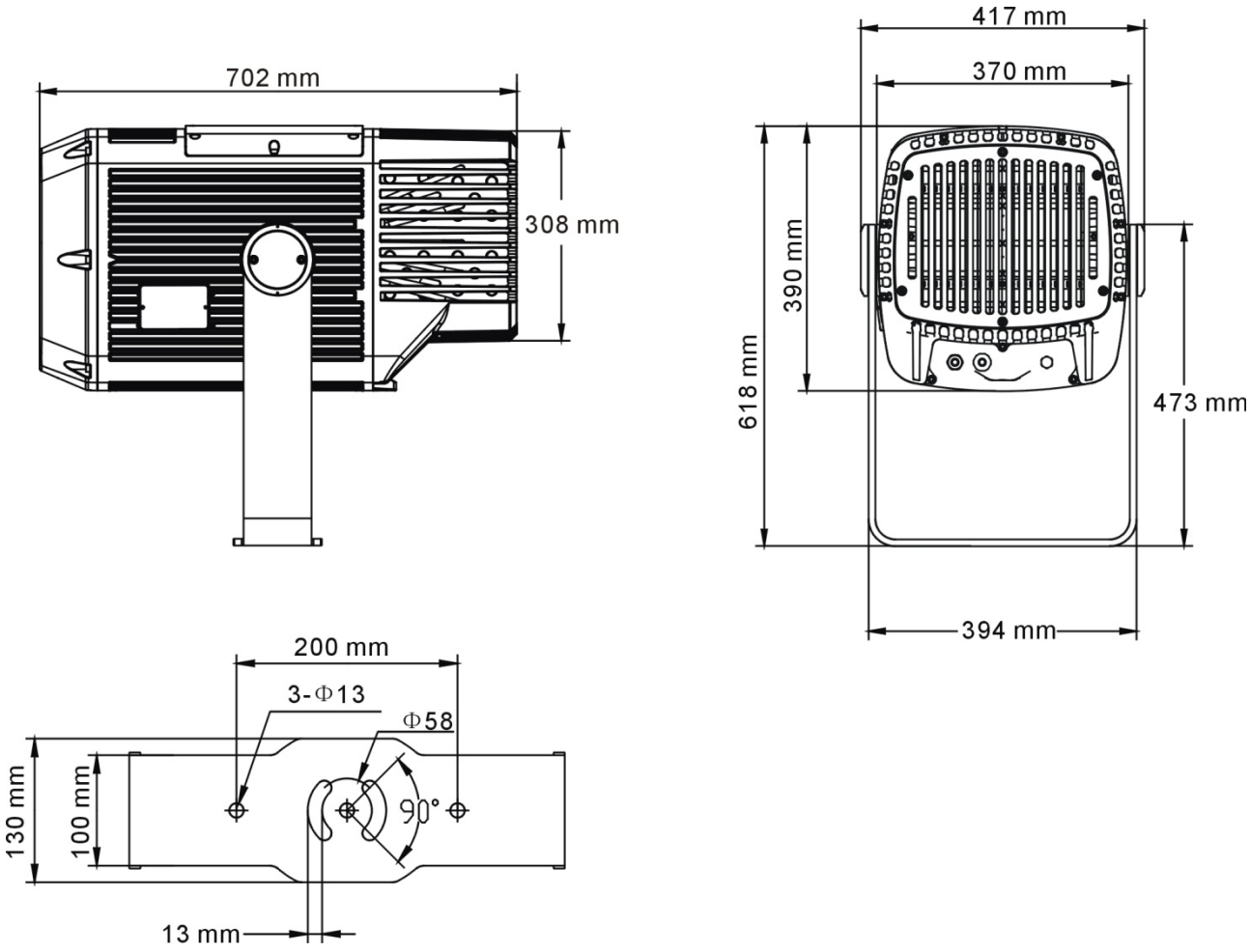


**IMPORTANT! The Exterior Projection 1000 is supplied with two cable ties fastened around internal moving parts to protect components from damage during transport. Before using the fixture, you must open the top cover and remove the cable ties. See page 7 of this user manual.**

## User Manual

Martin by HARMAN

# Dimensions




All dimensions are in millimeters

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**Exterior Projection 1000 User Manual P/N 5088624-00 Revision A**

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# Safety information

**WARNING!**

**Read the safety precautions in this manual before installing, operating or servicing this product.**

The following symbols are used to identify important safety information on the product and in this manual:

Warning!

Safety hazard. Risk of severe injury or death.

Warning!

Powerful light emission. Risk of eye injury.

Warning!

See user manual for important safety information.

Warning!

Hazardous voltage. Risk of lethal or severe electric shock.

Warning!

Hot surfaces.

Warning!

Fire hazard.

Warning! Risk Group 2 product according to EN 62471. Do not look directly into the beam. Do not view the light output with optical instruments or any device that may concentrate the beam.

This lighting fixture is for professional use only and must be installed by a qualified technician. It is not for household use. It presents risks of severe injury or death due to fire hazards, electric shock and falls. It produces a powerful, concentrated beam of light that can create a fire hazard or a risk of eye injury if the safety precautions below are not followed.

If you have any questions about how to install, operate or service the fixture safely, please contact your Martin™ distributor (see www.martin.com/distributors for details) or call the Martin™ 24-hour service hotline on +45 8740 0000, or in the USA on 1-888-tech-180.

Respect all locally applicable laws, codes and regulations when installing, operating or servicing the fixture.

The light source contained in this luminaire shall only be replaced by the manufacturer or his service agent or a similar qualified person.

Terminal block not included. Installation may require advice from a qualified person.

Install, operate and service Martin™ products only as directed in their user manuals or you may create a safety hazard or cause damage that is not covered by product warranties.

Before installing, using or servicing this fixture, check that you have the latest user documentation for this product on the fixture's 'Tech Docs' product support page on the Martin™ website at http://www.martin.com. Martin™ user manual versions are identified by the Revision letter given at the bottom of page 2.

Refer any operation not described in this user manual to Martin™ Global Service or an authorized Martin™ service agent.

Follow the safety precautions listed below and observe all warnings in this manual and printed on the fixture. Keep this user manual for future use.

**Protection from electric shock**

This fixture is IP66 rated. Suitable for wet locations. Do not immerse in water.

Disconnect the fixture from AC power before carrying out any installation or maintenance work and when the fixture is not in use.

Ensure that the fixture is electrically connected to ground (earth).

Use only a source of AC power that complies with local building and electrical codes and has both overload and ground-fault (earth-fault) protection.

The circuit used to supply the fixture with AC power must include a power switch that is easily accessible so that the fixture can easily be disconnected from power.

Isolate the fixture from power immediately if any seal, cover, cable, connector or other component is damaged, defective, deformed, wet or showing signs of overheating. Contact Martin™ for any service operation not described in this user manual. Do not reapply power until repairs have been completed

Before using the fixture, check that all power distribution equipment and cables are in perfect condition and rated for the electrical requirements of all connected devices.

If the external flexible cable or cord of this luminaire is damaged, it shall be exclusively replaced by the manufacturer or his service agent or a similar qualified person in order to avoid a hazard.

**Protection from burns and fire**

Do not operate the fixture if the ambient temperature ($T_a$) exceeds 45° C (113° F).

The surface of the fixture casing can reach up to 85° C (185° F) during operation. Avoid contact by persons and materials. Allow the fixture to cool for at least 10 minutes before handling.

Keep flammable materials well away from the fixture. Keep combustible materials (e.g. fabric, wood, paper) at least 0.1 m (4 ins.) away from the fixture housing.

Ensure that there is free and unobstructed airflow around the fixture.

Do not illuminate surfaces within 1.5 m (4.9 ft.) of the front glass.

Do not stick filters, masks or other materials onto any optical component.

The fixture's optical components can focus the sun's rays, creating a risk of fire and damage. Do not expose the front of the fixture to sunlight or any other intense light source.

**Protection from eye injury**

Do not stare directly into the light output. Ensure that persons are not looking directly into the lamp when the fixture lights up suddenly. This can happen when power is applied, when the fixture receives a DMX signal, or when certain control menu items are selected.

Do not look at the light output with magnifiers, telescopes, binoculars or similar optical instruments that may concentrate the light output.

Wear protective glasses and other PPE (personal protective equipment) when working on or near the fixture.

Position the fixture so that prolonged staring into the fixture at less than 10 m is not expected.

**Protection from injury**

Fasten the fixture securely to a fixed surface or structure when in use. The fixture is not portable when installed.

Ensure that any supporting structure and/or hardware used can hold at least 10 times the weight of all the devices they support.

Check that all external covers and installation hardware are securely fastened.

Do not operate the fixture with missing or damaged covers, shields or any optical component.

Block access below the work area and work from a stable platform whenever installing, servicing or moving the fixture.

In the event of an operating problem, stop using the fixture immediately and disconnect it from power. Do not attempt to use a fixture that is obviously damaged.

Do not modify the fixture or install other than genuine Martin™ parts.

# Introduction

The Exterior Projection 1000 from Martin™ is an image projection fixture that combines a powerful 440 W LED engine, advanced dynamic effects and rugged weatherproofing. It has a zoom range from 10° - 43.5° and is ideally suited to the projection of images and/or text such as logos.

The fixture features a rotating gobo wheel with seven interchangeable rotating gobos and a gobo animation effect that can fill a rotating gobo projection with movement. The fixture has full CMY color mixing and additional color wheel with 7 dichroic color filters. It also features one radial 3-facet and one linear 4-facet rotating prism as well as a variable frost effect. Besides these, it has smooth electronic dimming, remote zoom and focusing and strobe effects.

The Exterior Projection 1000 can be controlled using any controller that is compatible with the industry-standard DMX512 lighting control protocol. It also responds to RDM (Remote Device Management) communication if you use an RDM-compliant controller. RDM lets you set up fixtures (with DMX addresses, for example) and retrieve status information from fixtures over the DMX data link. Martin™ can provide suitable high-quality DMX/RDM controllers with an intuitive user interface that make it easy to set up impressive lighting effects. See www.martin.com for details.

The Exterior Projection 1000 can also function without DMX control as a standalone projector and display one of twenty dynamic lighting effects that you can pre-program.

# Before using for the first time

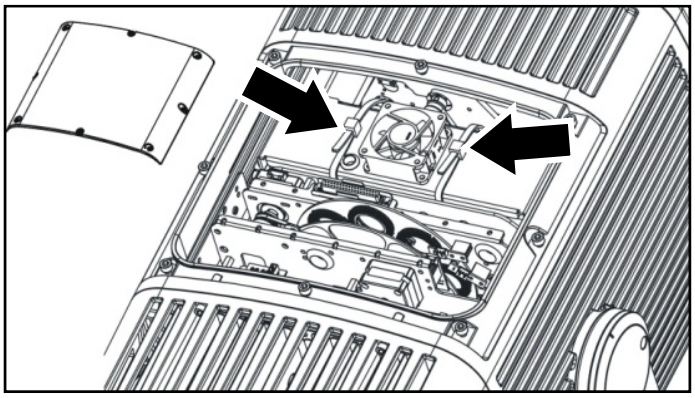
***IMPORTANT! The Exterior Projection 1000 is supplied with two cable ties fastened around internal moving parts to protect components from damage during transport. Before using the fixture, you must open the top cover and remove the cable ties!***

**Open the fixture in dry weather conditions only.**

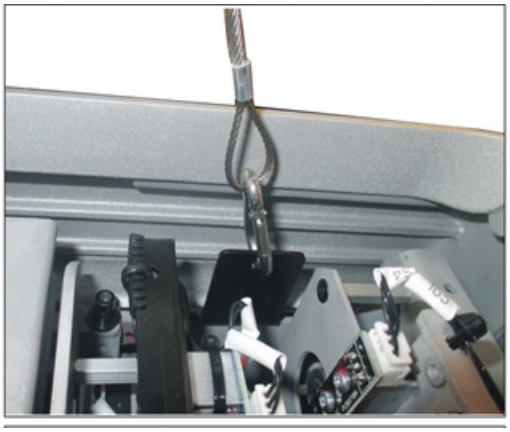
Before you use the Exterior Projection 1000 for the first time:

1. Unpack and ensure that there is no transportation damage before using the fixture. Do not attempt to operate a damaged fixture.
2. Check the fixture's Tech Docs / Product Support page on the Martin Professional™ website at www.martin.com and make sure that you have read the latest user documentation and technical information about the fixture. Martin™ user manual revisions are identified by the revision letter at the bottom of the inside cover.
3. Read 'Safety information' on page 3 of this user manual.
4. Ensure that the voltage and frequency of the power supply match the power requirements of the fixture.
5. See illustration on right. Use a 6 mm Allen key (hex wrench) to remove the eight top cover screws (arrowed). Lift the top cover off the fixture. For ease of access – and if it is safe to do so – you can unclip the safety cable and remove the cover completely from the fixture.

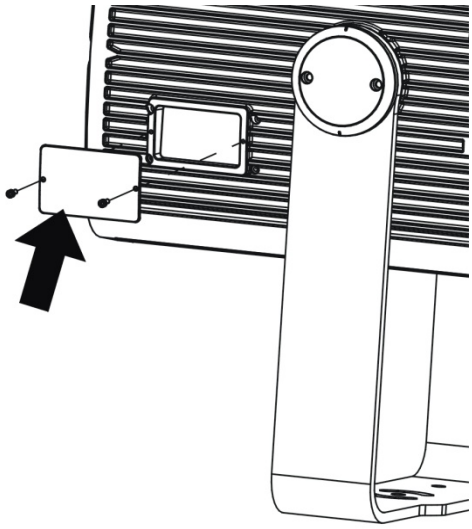
6. See illustration on right. Avoid dropping cable ties into the fixture. Using scissors or cutting pliers, cut and remove the two cable ties (arrowed).



7. See illustration on right. If you unclipped the top cover safety cable, reattach it so that it will catch the top cover and prevent it from falling.
   - If the fixture will not be opened again before it is used, follow the correct procedure for reducing humidity when closing it: see 'Removing and reinstalling the top cover' on page 30).
   - If the fixture will be opened again before it is used, there is no need to follow the procedure for reducing humidity and you can simply go the next step below.

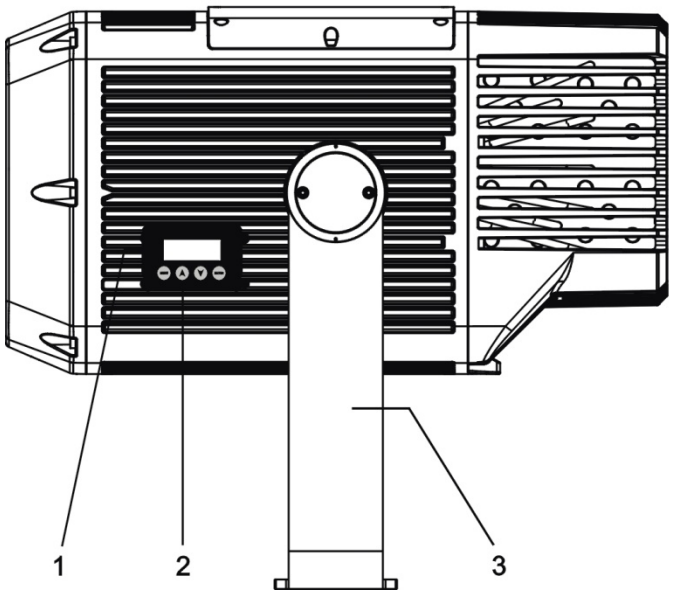


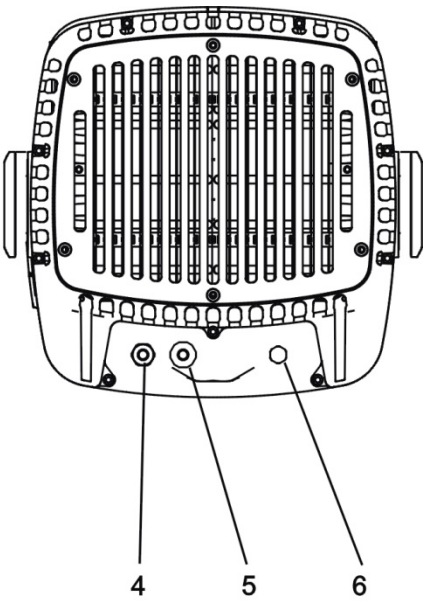
8. Place the top cover back on the fixture and reinstall the eight top cover screws by first inserting them finger-tight. Then use a torque driver and cross-tighten the screws in a diagonal pattern, increasing torque gradually in stages until you reach a torque of 1.9 – 3.5 Nm.
9. See illustration on right. Remove the cover (arrowed) from the control panel and display on the side of the fixture so that you can set up the fixture using the control panel.

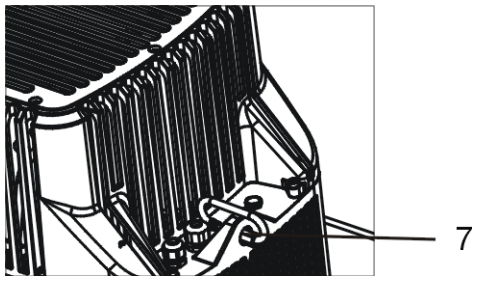


10. Apply power to the fixture. If the fixture's temperature is below 0° C (32° F), the fixture will go into warm-up mode and activate internal heating elements. It will start up when it reaches a safe temperature. The warm-up mode protects mechanical parts and motors. When the fixture starts up, it will reset all effects and functions to their home positions and will then be ready for DMX control or standalone operation.

# Fixture overview




1. Control panel display (shown with cover removed)
2. Control buttons:

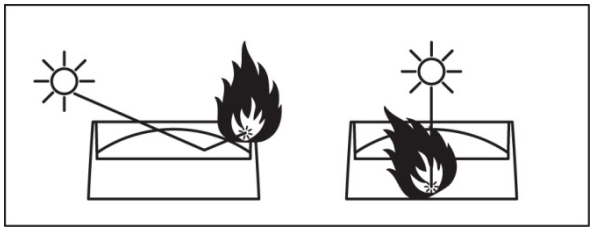
| | |
|---|---|
| MENU | Activate the menu mode functions, or<br>Return to the previous level of the menu structure, or<br>Press and hold to exit the menus |
| DOWN (▼) | Go down a menu branch |
| UP (▲) | Go up a menu branch |
| ENTER | Confirm the selected function |

3. Adjustable mounting yoke
4. DMX data combined in/out cable
5. AC mains power cable
6. Pressure relief valve
7. Safety cable attachment point

# Physical installation

**Read ‘Safety information’ on page 4 before installing the fixture.**

## Protection from the sun

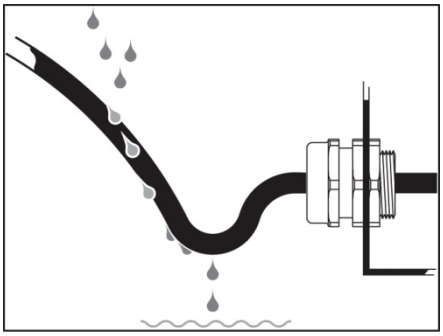


**Important!** The fixture’s optical system can focus rays from the sun inside the fixture, causing internal damage and presenting a fire hazard. Make sure that the sun will not shine into the front of the fixture at any time.

The Glare Shield available from Martin™ can help protect the front of the fixture from the sun.

If the control panel will be exposed to sunlight, install its cover to protect the panel and display from heat and UV radiation.

## Protection from moisture

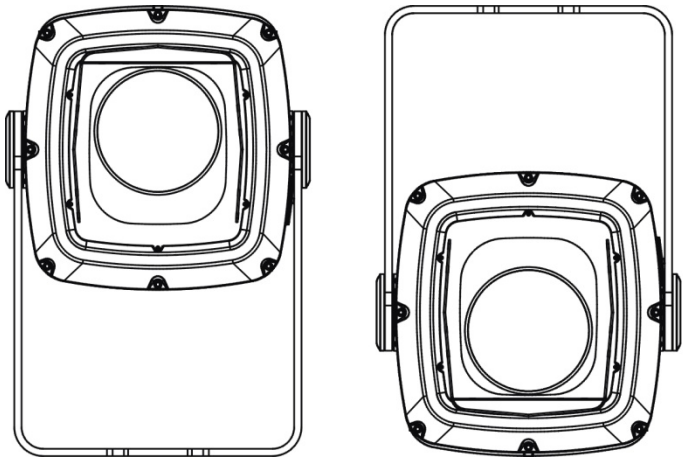


If there is a break or cut at any point in a cable (for example at a connection point), and if this is exposed to water, moisture can be drawn up the inside of the cable due to the vacuum effect of temperature fluctuations during operation. Ensure that the fixture is protected from the entry of water via cables by using IP66-rated connectors or junction boxes, or by protecting connectors with weatherproof housings. Make sure that all cables open into dry areas.

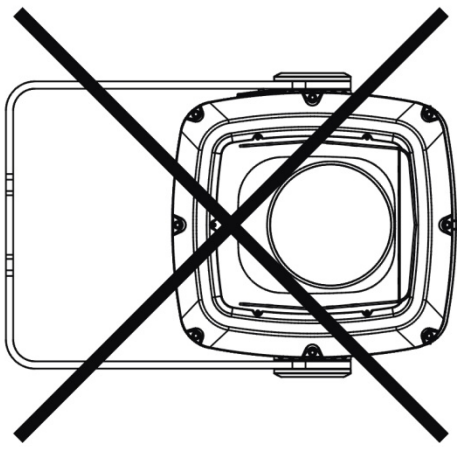
See illustration on right. Create a drip loop before cable glands to reduce any tendency for glands to be constantly immersed in water.

## Mounting the fixture

The fixture can be mounted at any angle and the yoke can be fastened to a vertical, horizontal or angled surface, but the sides of the fixture must be vertical when installed (see examples below), or the fixture’s cooling airflow will be affected, leading to excessively high fixture temperature and reduced light output.



Sides of fixture vertical: OK



Sides of fixture not vertical: Not OK

Do not stand the fixture freely on a surface or leave it where it can be moved or fall over. Ensure that the installation surface or structure and all fasteners used can safely bear at least 10 times the weight of all the fixtures and equipment they will support.

## Avoiding galvanic corrosion

The fixture and mounting bracket are manufactured in corrosion-resistant anodized aluminum. Avoid mounting the fixture in direct contact with other types of metal, as this can cause galvanic corrosion. When fastening to a metal that is not aluminum:

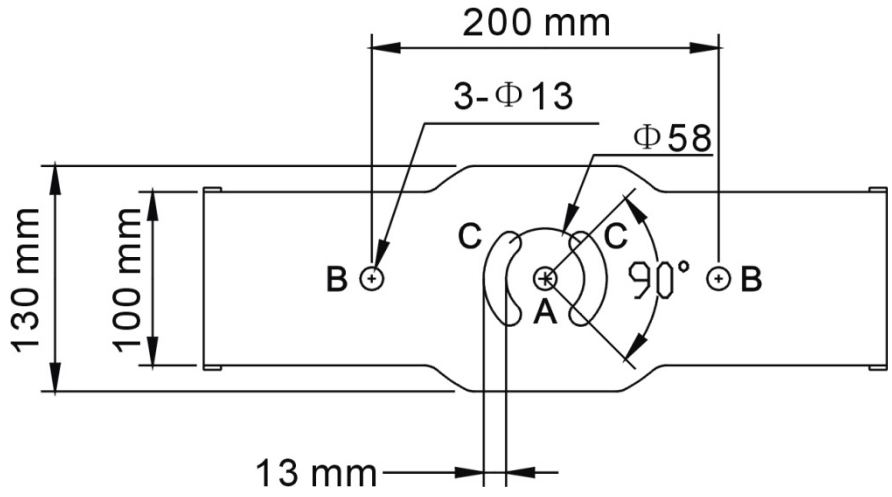
- Use an electrically insulating material (such as rubber or plastic) or coating between the mounting bracket and the other metal.
- Use a non-conductive coating such as Delta Seal on fasteners (screws, bolts, washers, etc.) where they come into contact with the mounting bracket.

## Anchoring to a surface or structure

The fixture's mounting yoke base must be securely anchored to a flat surface on a wall, pedestal, structural beam or other suitable support. The yoke allows the fixture to be manually panned and tilted for beam aiming adjustment.

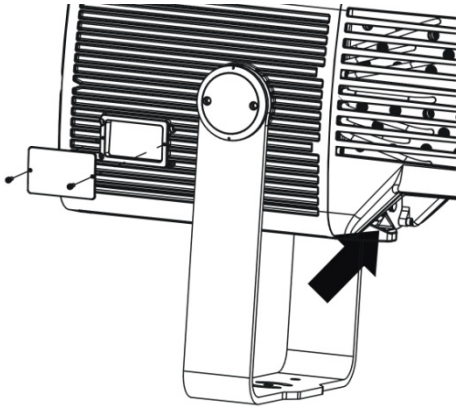
To anchor the fixture to a surface:

1. See illustration below. Fasten a 12 mm (1/2 inch) shaft diameter bolt to the surface through the center hole **A** in the mounting yoke.
2. Fasten two bolts with 8 mm (5/16 inch) shaft diameter to the surface with one bolt passing through each of the curved slots **C** to anchor the fixture. This will give approximately 90° of pan adjustment.
3. Adjust the fixture's pan angle (side-to-side beam aiming) as described later in this chapter. Adjusting pan is best carried out with power applied to the fixture so that the projection is visible. Once pan is correct, fasten two 12 mm (1/2 inch) shaft diameter bolts to the surface with one bolt passing through each of the holes **B**. Once bolts have been installed in holes **B**, pan adjustment is no longer possible.




**Mounting yoke base**

## Secondary attachment

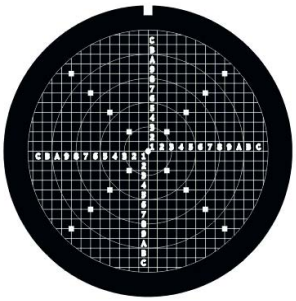


If a secondary attachment is required for reasons of safety (in entertainment venues, onboard ships or in temporary installations, for example), see drawing on right. Loop a safety cable that is approved for the weight of the fixture through the secondary attachment point (arrowed) in the fixture and attach the safety cable to a secure anchoring point so that the cable will catch the fixture if the primary method of attachment fails. Remove any slack from the safety cable: if the primary method of attachment fails, it must be impossible for the fixture to drop any significant distance before the safety cable catches it.

## Adjusting aiming (pan and tilt)

**Warning! The fixture can become hot. Wear heat-resistant gloves if you adjust the aim of the fixture when it is (or has recently been) powered on.**

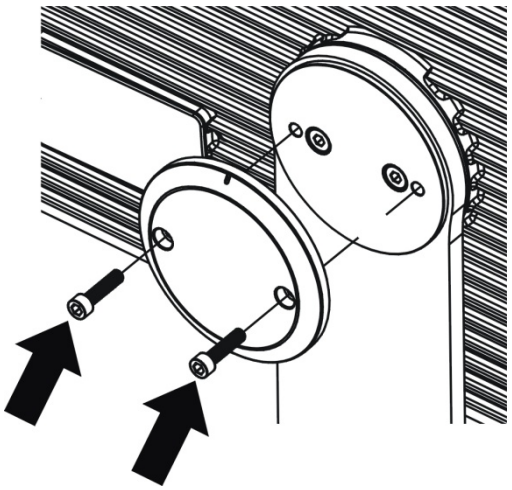
Fixture aim adjustment is best carried out after the fixture has been connected to power and in weak light conditions so that the projection from the fixture is clearly visible.



**See illustration on right. If you require very precise aiming and setup, we recommend that you order the projection setup gobo available from Martin™ for the Exterior Projection 1000 (see 'Accessories, on page 45) and install it in the gobo wheel while you adjust fixture aim, focus, etc.**

To adjust the aim of the fixture:

1. Set the fixture to project a setup gobo or another gobo with a sharply defined pattern. You can select the image remotely either via DMX or by using the MANUAL TEST menu in the fixture's control panel.
2. Put on heat-resistant gloves.
3. See illustration on right. Loosen the tilt lock Allen (hex) screws (arrowed) on both sides of the yoke slightly, just until you can tilt the fixture in the yoke.
4. See 'Anchoring to a surface or structure' on page 11. In the base of the mounting yoke, loosen the bolts in the center hole **A** and curved slots **C** slightly, just until you can rotate the yoke.
5. Pan and tilt the fixture until it is aimed correctly.
6. Using a torque driver, tighten the four tilt adjustment screws to a torque of 1.8 – 3.5 Nm.
7. In the base of the mounting yoke, tighten the bolts in the center hole **A** and curved slots **C** and install bolts in holes **B**. Check that the fixture will be held securely in all wind and weather conditions.



# AC power

**Read 'Safety information' on page 4 before connecting the fixture to AC mains power.**

Electrical installation must be carried out by qualified professionals only.

Lock out power to the entire installation before working on cables and connections.

For protection from dangerous electric shock, the fixture must be grounded (earthed). The AC power distribution system must be fitted with current overload and ground-fault (earth-fault) circuit breakers as well as a means to isolate fixtures from power and lock out power during service.

The Exterior Projection 1000 is supplied in EU and US models. Both models accept AC power at 100-240 V nominal or 277 V nominal at 50 or 60 Hz. Do not connect to power at any other voltage or frequency.

You can connect the Exterior Projection 1000 to either of the following mains power distribution systems:

- Single-phase (live, neutral, ground/earth) system.
- Grounded/earthed three-phase four-wire (three phases, neutral, ground/earth) system.

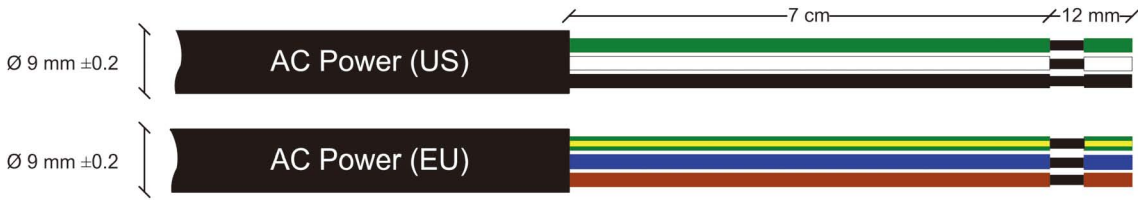
Do not try to connect to a three-phase three-wire (three phases, ground/earth) system.

There is no power on/off switch. Power is applied to an Exterior Projection 1000 fixture as soon as it is connected to power. Provide a means to disconnect or shut down power to fixtures that is easily accessible and is located close to the fixtures.

Do not use an external dimming system to supply power to the fixture, as this may cause damage to the fixture that is not covered by the product warranty.

## Connecting to AC mains power

The fixture is supplied with a power cable installed ready for connection. See illustration below:




***AC power cable***

To connect to a single-phase system or to one phase of a three-phase four-wire system:

1. Lock out power to the installation.
2. Connect the conductors in the power cable to the distribution circuit as follows: a) Connect the green wire (US models) or yellow/green wire (EU models) to ground (earth). b) Connect the white wire (US models) or blue wire (EU models) to neutral. c) Connect the black wire (US models) or brown wire (EU models) to live (one phase of a three-phase system).
3. Check that all installation work is completed and carry out appropriate tests and safety checks before applying power.

### *Using a power plug*

It is possible to install a power plug (cord cap) on the power cable for temporary use only. If you need to do this, install a grounding type (earthed) plug with integral cable grip that is rated minimum 277 V, 6 A. Follow the plug manufacturer's instructions and connect the wires in the power cable as shown in the table below:

| | Live or **L** | Neutral or **N** | Earth, Ground or ⏚ |
|---|---|---|---|
| US system | Black | White | Green |
| EU system | Brown | Blue | Yellow/green |

# Control data link

A DMX512 data link is required in order to control the fixture via DMX (and manage fixtures via RDM, if used). Your Martin™ supplier will be happy to help if you need advice or assistance in planning the link.

Follow these guidelines when creating a DMX data link:

- Use RS-485 data cable designed for exterior use. RS-485 cable has low capacitance and a characteristic impedance of 85 to 150 Ohms. It is electrically shielded and has at least one twisted pair of conductors. The minimum recommended wire size is 0.25 mm2 (24 AWG) for runs up to 300 meters (1000 ft.) and 0.32 mm2 (22 AWG) for runs up 500 meters (1640 ft.). A cable run of more than 500 meters requires the use of a splitter-amplifier to boost the DMX signal.
- If independent control of a fixture is required, that fixture must have its own DMX channels. Any fixtures that will always be required to behave identically can have the same DMX address, which means that they will use the same DMX channels.
- 512 DMX channels are available in a single DMX universe. Each time the number of DMX channels required by the fixtures on a data link reaches 512 and you want to add more fixtures, create a new DMX universe on a new data link and connect the additional fixtures to the new link.
- You can connect up to 32 fixtures in a single daisy chain on a DMX data link. Connecting in a daisy chain means that you must connect the DMX data OUT from one fixture to the DMX data IN of the next fixture, creating a single line of fixtures. Do not split the link into branches by creating a **Y** shape in the cable or at connectors.
- However, you can split a DMX data link into two or more branches if you use an optically isolated DMX splitter-amplifier. To preserve RDM functionality, use an RDM-compatible splitter such as the Martin™ RDM 5.5 Splitter. Each branch can contain up to 32 fixtures.
- If you reach the limit of 32 fixtures on a DMX data link, you can connect up to 32 additional fixtures if you add a splitter-amplifier such as the Martin™ RDM 5.5 Splitter to the link in order to boost the data signal. Adding a splitter-amplifier also lets you extend a data link beyond 500 meters (1640 ft.).
- The data link (and each branch of the link if you have created branches with a splitter-amplifier) must be terminated at the end by placing a 120 ohm resistor (available from Martin, P/N 04150308) across the data output hot (+) and data output cold (-) conductors of the last fixture on the link.
- Do not create long parallel runs of AC power and data cables, as these may cause interference on the data link. Even if not required by law, use separate conduits for power and data cables.
- The Exterior Projection 1000's combined data input/output cable does not support the optional second data wire pair that is provided for in the DMX512-A standard. Do not place devices that use the second data pair on the same DMX data link as Exterior Projection 1000 fixtures.

## Connecting the data link

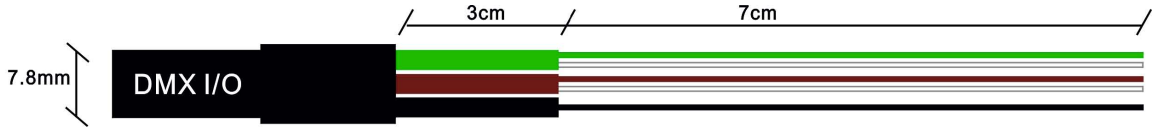
**Important!** All connections must be completely protected from moisture (inside IP66-rated junction boxes, for example).

**Important!** Connect the data output from one fixture to the data input of ***one fixture only.***

If you connect one data output to more than one data input, you will split the DMX data link into branches which will probably cause data signal integrity problems.

The Exterior Projection 1000 is supplied with a hard-wired 1.8 m (5.9 ft.) shielded cable with 2 pairs of wires for connection to a DMX data link.

The pair of wires with a green sleeve is for data input from the control device or previous device in the daisy chain. The pair of wires with a brown sleeve is for data output (throughput) to the next device in the daisy chain.




***Exterior Projection 1000 DMX data cable***

Connect the data cable as shown in the table below. Do not connect the shield conductor to ground (earth) or allow it to come into contact with a connector shell, as this may cause interference.

| | Input wires (green sleeve) | | Output wires (brown sleeve) | | Shield |
|---|---|---|---|---|---|
| Wire color | white | green | white | brown | black |
| Signal | DMX in + | DMX in - | DMX out + | DMX out - | common |
| Male XLR pinout | pin 3 | pin 2 | - | - | pin 1 |
| Female XLR pinout | - | - | pin 3 | pin 2 | pin 1 |

***Data connection pinouts***

# Fixture setup

**Read ’Safety information’ on page 4 before operating the fixture.**

## Using the control menus

This section explains the fixture settings and utilities that are available using the control panel and display that are located on the side of the fixture.

You can find a full map of the control menus in ’Control menus’ on page 31. Some settings and functions are also available via RDM.

Control menu settings are retained when the fixture is powered off.

### *Navigating in the control menus*

To access the control menus, press the MENU button and hold for three seconds.

- To select a menu option or to confirm a selection, press the ENTER button.
- To scroll up and down the items in a menu, use the DOWN ARROW (▼) and UP ARROW (▲) buttons.
- To return to a higher level in the menu structure, press the MENU button.
- To exit all active control menus and return directly to the top level, press and hold the MENU button.

### *Passwords*

The Exterior Projection 1000 onboard control panel is password-protected to discourage tampering. There are two passwords:

- A user password that is set to 111 by default, but can be changed to any number from 0 to 999. This password is required to enter the control menus.
- A service password that is factory-set to 123 and cannot be changed. This password is required to reset the ’Lamp Hours’ counter, set the fixture to Evaporation Mode before closing the top cover, and enter the fixture offset menus. Note that users may only make changes to the fixture offsets with guidance from Martin Service.

To enter or set a password, use the DOWN ARROW and UP ARROW buttons to scroll to the required number. When the number is displayed, press ENTER to confirm.

## Setting a DMX address

The Exterior Projection 1000 uses twenty DMX channels to receive instructions from a DMX controller. The fixture’s DMX address, also known as the start channel, is the first of these channels. If a fixture that requires 4 DMX channels has its DMX address set to 1, for example, then it uses channels 1, 2, 3 and 4. The next fixture can have its DMX address set to 5, the next to 9 and so on until all the 512 channels in one DMX universe are allocated.

If you want independent control of a group of fixtures, give each fixture its own DMX address so that each fixture has its own control channels. If you want a group of fixtures of the same type to always behave identically, give all the fixtures the same DMX address so that they all use the same DMX control channels.

You can set a fixture’s DMX address using the fixture’s control panel or by sending commands from an RDM-compliant DMX controller.

To set the fixture’s DMX address from the control panel:

1. Press and hold the MENU button to access the control menu.
2. Use UP and DOWN to select DMX ADDRESS from the menu. Press ENTER.

3. The fixture's current DMX address is displayed. Press UP or DOWN to scroll to the DMX address that you want to give to the fixture.
4. Press ENTER to store the DMX address in the fixture.
5. Press MENU to exit.

## Programming a standalone show

You can program a standalone show – a sequence of 'scenes' that run in a loop – in the Exterior Projection 1000. A scene consists of a combination of effects such as gobo selection, gobo movement, color, intensity, etc. You can set the standalone show to run if you are not using a DMX controller or if a signal from a DMX controller is lost. The show can have up to 20 scenes that display for up to 10 minutes each. You can program 'fades' (changes from one scene to the next) so that scenes change immediately or change gradually over a period of up to 120 seconds' duration.

Note: To enable standalone operation, the OFFLINE MODE setting in the FIXTURE CONFIG menu must be set to RUN SHOW. See Offline mode – behavior without DMX' on page 21. A fixture will only run a standalone show when it is not receiving a DMX signal.

To program a stand-alone show:

1. Access the control menu and use UP and DOWN to scroll to PROGRAM SHOW. Press ENTER to select.
2. Set the total number of scenes:
   a. Select SET SCENE TOTAL and press ENTER.
   b. Use UP and DOWN to select from 1 to 20 scenes.
   c. Press ENTER.
3. Modify the appearance of scenes:
   a. Select EDIT SCENE and press ENTER.
   b. Select the scene that you want to modify and press ENTER.
   c. Select the effect that you want to adjust (Strobe, Dimmer, Cyan, Magenta, Yellow, Color Selection, Gobo Selection, Gobo Ind/Rot, Animation Index, Animation Rotation, Frost, Prism, Prism Rotation, Zoom, Focus) and press ENTER.
   d. Press UP or DOWN to scroll to a value. When satisfied, press ENTER to confirm your selection.
   e. Repeat steps c) and d) for each effect.
   f. Press MENU to go back up one level in the menus and select another scene to modify.
   g. When done editing scenes, press MENU again to return to the PROGRAM SHOW menu.
4. Set the length of time each scene is displayed before fading to the next scene and set the length of time one scene fades to the next scene:
   a. Select SET SHOW TIMES and press ENTER.
   b. Select SET HOLD TIME and press ENTER. Press UP or DOWN to scroll to scene duration from 0 to 99.9 seconds. Press ENTER to confirm your selection.
   c. Select SET FADE TIME and press ENTER. Press UP or DOWN to scroll to a scene change fade duration from 0 to 99.9 seconds. Press ENTER to confirm your selection.
5. Press MENU to exit.

## Manual control mode

The fixture can be tested, reset and returned to default factory settings manually from the control panel. To enter manual mode:

1. Access the control menu and select MANUAL MODE.
2. Press ENTER.

### *Manual test / manual single scene display*

The manual test commands let you display a single scene (i.e. a single combination of effects) manually, either for test purposes or to control the fixture without a DMX controller. To set up the scene:

1. Select MANUAL TEST and press ENTER.
2. Use UP and DOWN to scroll through the fixture's effect controls (Strobe, Dimmer, Cyan, Magenta, Yellow, Color Selection, Gobo Selection, Gobo Ind /Rot, Animation Index, Animation Rotation, Frost, Prism, Prism Rotation, Zoom, Focus).
3. Press ENTER to select an effect to adjust.
4. Use UP and DOWN to select a value for the effect, and press ENTER to confirm your selection.
5. Repeat for each effect you want to control.
6. Press MENU to exit.

Any scene that you set in the MANUAL TEST menu is retained in memory when fixture power is cycled off and on. The MANUAL TEST menu therefore lets you set up a permanent single-scene display without DMX control.

### *Resetting effects*

To reset an effect, returning it to its default setting:

1. Select RESET FUNCTIONS and press ENTER.
2. Select ALL or one of the effects.
3. Press ENTER to reset.
4. Press MENU to exit.

### *Returning to factory defaults*

To return the fixture to its factory default settings, erasing any settings, standalone scenes, etc. stored in the fixture's memory:

1. Select FACTORY DEFAULT and press ENTER.
2. Select YES to return to factory defaults or NO to exit.
3. Press ENTER to confirm.
4. Give the fixture time to return to the factory default settings.

## Display setting

The DISPLAY SETTING menu provides options to invert, dim, and turn off the control panel display.

### *Display inverse*

For easier reading when the fixture is mounted upside down, flip the display as follows:

1. Select DISPLAY INVERSE and press ENTER.
2. Select YES to invert the display or NO for normal reading.
3. Press ENTER to confirm.

### *Display auto turn off*

The display can be set to stay on or to turn off 1 minute after the last key press. To set display behavior:

1. Select DISPLAY AUTO OFF and press ENTER.
2. Select NO to keep the display illuminated, or YES to have the display turn off automatically after 1 minute.
3. Press ENTER to confirm.

### *Display intensity*

To adjust the brightness of the control panel display:

1. Select INTENSITY and press ENTER.
2. Scroll to a value from 0 to 100%.
3. Press ENTER to confirm.

## Fixture status

You can view the following fixture status information in the FIXTURE STATUS menu:

- Current temperature of LED engine.
- Total number of hours the fixture has been in use.
- Total number of hours the LEDs have been powered on.
- Software version currently installed in the fixture.

You can also call up fixture status information from an RDM-compatible controller.

## Fixture configuration (including master/slave operation)

The FIXTURE CONFIG menu contains additional settings for customizing behavior.

### *Master/slave operation – important guidelines*

Fixtures operating in standalone mode can be synchronized in master/slave operation if they are all connected to each other on a DMX data link.

In master/slave operation, one fixture running a standalone show – the 'master' fixture –sends 'fade' and 'wait' signals to the other fixtures running standalone shows – the 'slave' fixtures – so that scene change times in slave fixtures are synchronized with the scene change times in the master. Every time the master changes to its next pre-programmed scene, the slave fixtures change to their next pre-programmed scene at the same time.

Note the following:

- Although scene changes in master and slave fixtures all occur at the same time, scenes do not have to be identical. You can program different effects in the standalone scenes of different fixtures.
- Each fixture displays its own pre-programmed standalone show until it reaches its last scene, then it starts the show sequence again and continues in a loop. If all fixtures have the same number of scenes in their shows, they will all start shows in synch. If the standalone shows in different fixtures have different numbers of scenes, the fixtures will restart their shows at different times relative to each other.
- If no controller is connected to the first fixture on the link, you can improve the quality of the data signal sent to slave fixtures by connecting a DMX termination plug (a plug with a 120 Ohm resistor across data hot and data cold) to the data input of the first fixture.
- DMX and RDM signals will override standalone operation in both the master and the slave fixtures. This means that standalone operation is only possible if no DMX signal is present.
- You must set only the first fixture on the link to be the master fixture. Set all the other fixtures as slaves. If you set more than one fixture to act as master, you may cause damage that is not covered by the product warranty.

### *Setting up master/slave operation*

Set up master/slave operation as follows:

1. Program a standalone show in each fixture as described under 'Programming a standalone show' on page 18.
2. On each fixture, access the control menu and select FIXTURE CONFIG. Press ENTER.
3. Check that all fixtures are set to SLAVE. On the first fixture on the link – and ***only*** on this fixture – select MASTER and press ENTER. Press MENU to return to the FIXTURE CONFIG menu.

4. ON each fixture, scroll to OFFLINE MODE and press ENTER. Then select RUN SHOW and press ENTER. Finally, press and hold MENU to exit the control menus.
5. Fixtures will now run standalone shows synchronized with the master fixture's standalone shows whenever the fixtures are powered on and not receiving a DMX control signal.

### *Offline mode – behavior without DMX*

There are three options for setting how a fixture behaves when it is not receiving a DMX signal (including when it is receiving a DMX signal but the signal is suddenly lost):

- RUN SHOW: Fixture executes pre-programmed scenes in a standalone show.
- DMX LAST STATE: Fixture holds and displays the last received DMX command.
- BLACK OUT (default): Fixture blacks out.

To set the desired behavior:

1. Access the control menu and select FIXTURE CONFIG. Press ENTER.
2. Press UP or DOWN to select one of the above three options. Press ENTER to confirm.

Note that for standalone and master/slave operation, OFFLINE MODE must be set to RUN SHOW.

## Setting effect offsets

You can adjust the home position of each effect by setting an offset in the FIXTURE OFFSET menu. Adjustments are held in memory when the fixture is powered off and on.

Offsets can be used to match multiple fixtures after they have been installed, for example, if precise alignment is required.

To reduce the risk of unauthorized tampering with the fixture, you must enter the user password (factory default = 111) before you can access the FIXTURE OFFSET menu.

## Setup via RDM

The Exterior Projection 1000 is compatible with RDM (Remote Device Management). Using an RDM-compliant DMX controller, you can communicate with all the fixtures on a data link without needing to access the fixture's control panels or connect to each fixture individually. RDM lets you set the DMX addresses of all the fixtures on the link, carry out basic fixture configuration and retrieve basic fixture data.

Before you can communicate with fixtures, you will need to send a scan command ('Disc Unique Branch') from the RDM controller to detect the devices on the data link. You can then send a 'Get Supported Parameters' RDM command to retrieve a list of the Parameter IDs (RDM messages) supported by the fixture.

# Effects

## Strobe / shutter

The strobe / shutter effect provides instant open and blackout as well as variable speed regular and random strobe effects.

## Electronic dimming

Overall intensity can be adjusted 0-100%. 16-bit dimming resolution is available using two DMX channels.

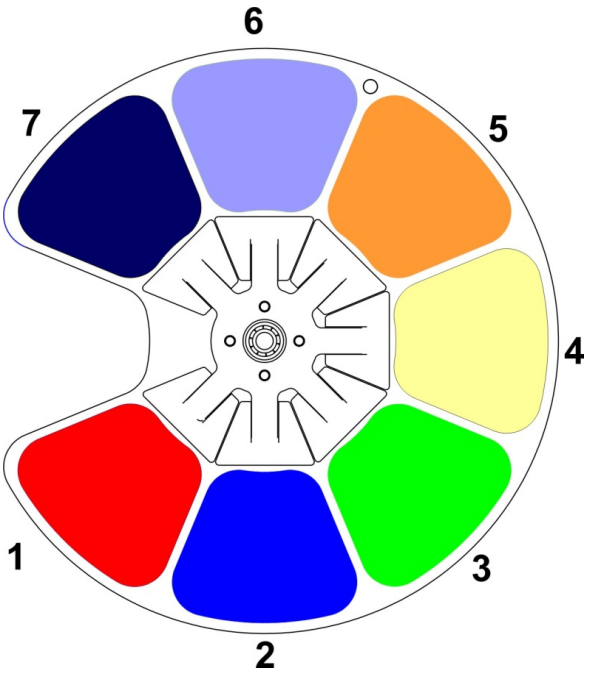
## CMY color mixing

CMY color mixing available on three DMX channels allows fine color adjustment.

## Color wheel

The color wheel contains the 7 dichroic color filters listed below plus an open (white) position.

Colors can be selected in full position steps or continuously scrolled for split colors. The color wheel can be rotated with variable speed and direction. It can also be set to display random colors at slow, medium and fast speeds. The color wheel is shown below viewed from the LED side (rear of the fixture):



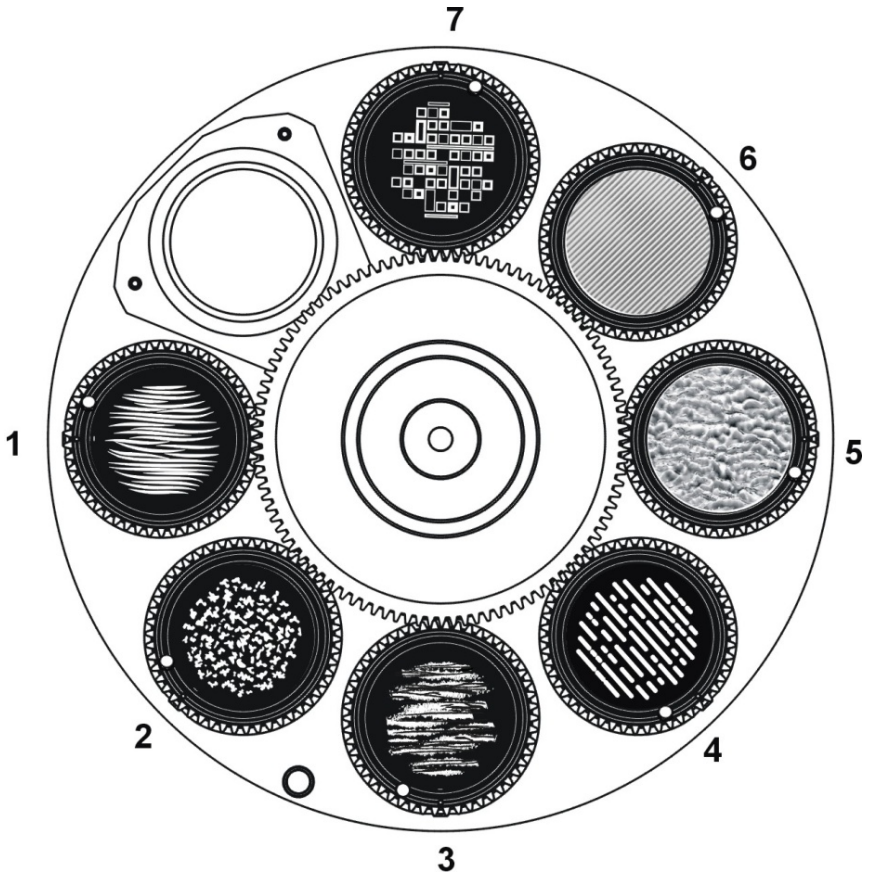

***Color wheel***

Slot 1: Deep Red
Slot 2: Light Blue
Slot 3: Primary Green
Slot 4: CTO
Slot 5: Orange
Slot 6: CTB
Slot 7: Violet

As an alternative to the above colors, Martin™ can supply custom color filters made to special order. Please consult your Martin™ supplier for details.

## Gobos

The fixture contains a rotating gobo wheel with the seven rotating glass gobos shown below, viewed from the front glass side (front of the fixture):




***Rotating gobo wheel***

Gobo 1: Grass Lines

Gobo 2: Organic Delight

Gobo 3: Brush It

Gobo 4: Light Lines

Gobo 5: Ripple Texture Glass

Gobo 6: Lined Effect Glass

Gobo 7: Sequence It

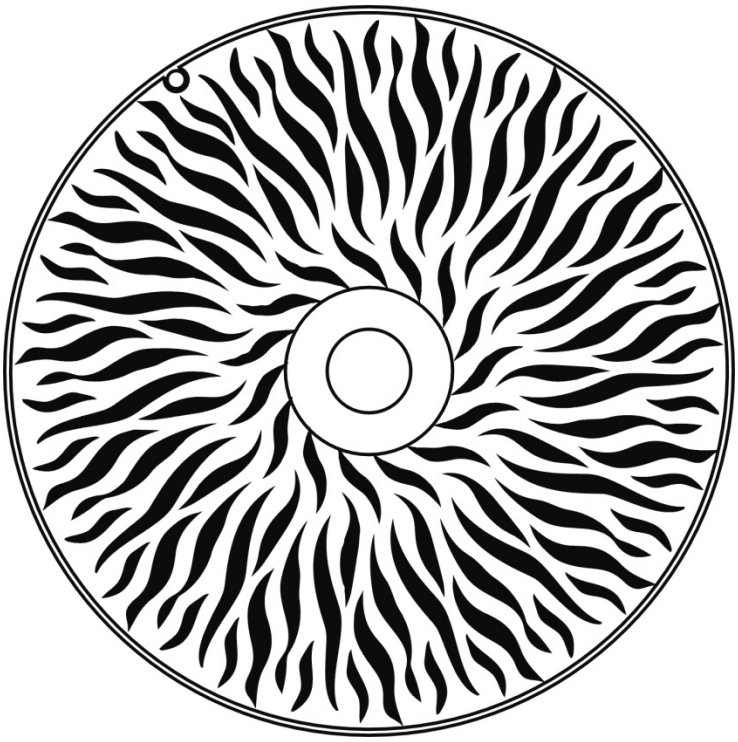
The gobos can be set to indexed positions and rotated continuously with variable speed and direction.

To project a gobo, select the gobo and action type (indexed angle or rotation) on channel 8, then adjust the indexed angle or direction and speed of rotation on channels 9 and 10 until you obtain the projection you want. Using two channels for adjustment gives 16-bit control.

Gobos are user-replaceable. You can replace them with custom gobos made to your own design provided that the gobos meet the quality and specifications of the Martin™ gobos supplied with the fixture (see ‘Gobos’ on page 44).

## Animation effect

The gobo animation effect is designed to be used in combination with a rotating gobo and color filter to create a moving image of flames, grass blowing in the wind, water, etc.



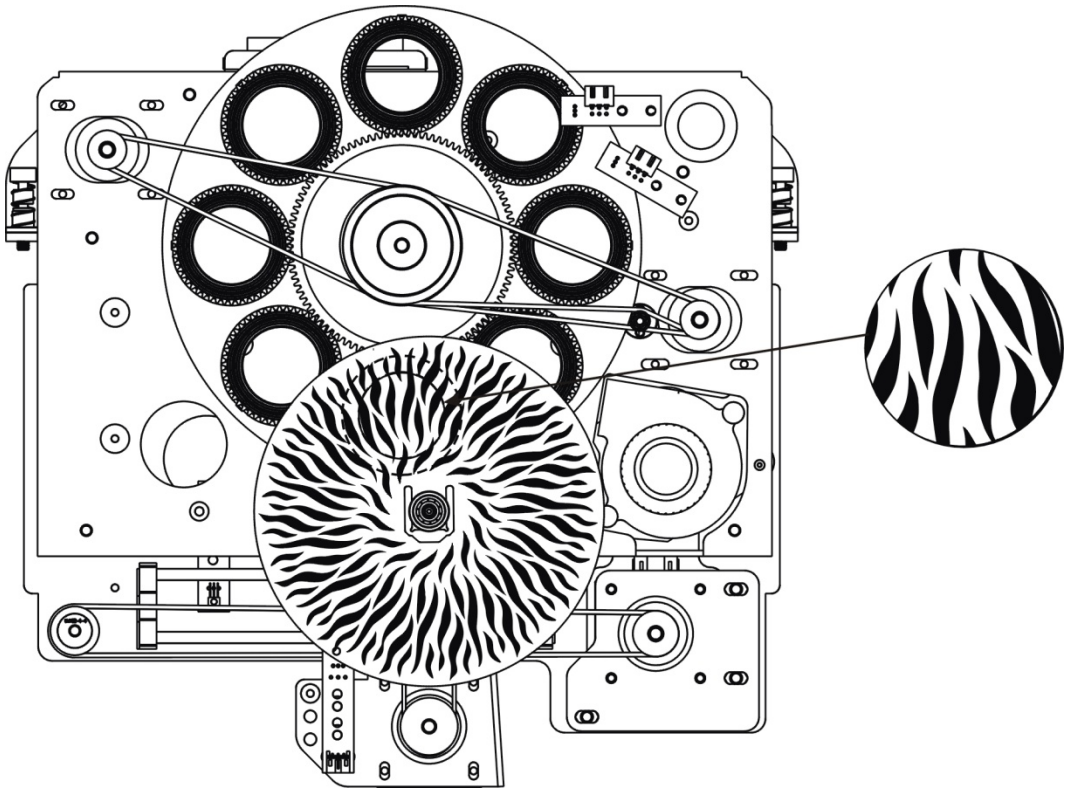
***Animation effect***

Adjust the speed and direction of the gobo rotation, the speed and direction of the animation effect and fixture focus to give the most realistic animation.

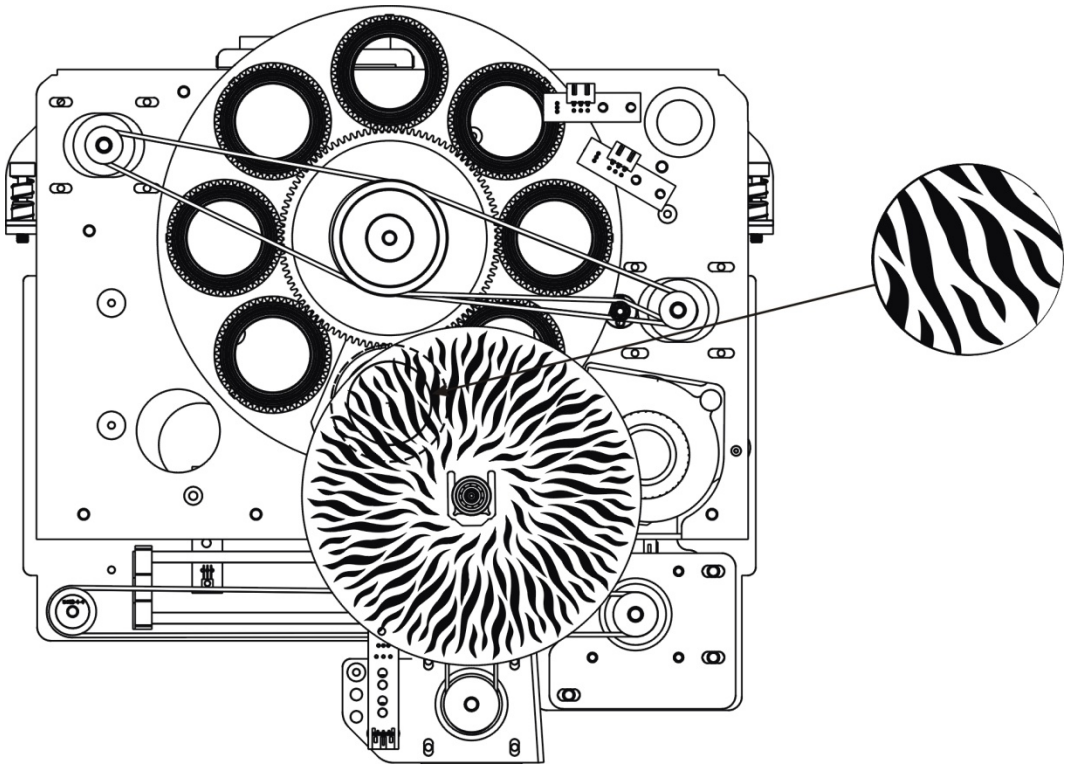
You can adjust the position of the animation wheel on a separate DMX channel. This lets you modify the angle of the animation effect.

In projections where animation and prism effects are combined with CMY color mixing, color fringing will be visible around sharp edges, especially on less saturated colors. The fringing is unavoidable with this combination of effects, but it is not unattractive and it gives depth to gobos.

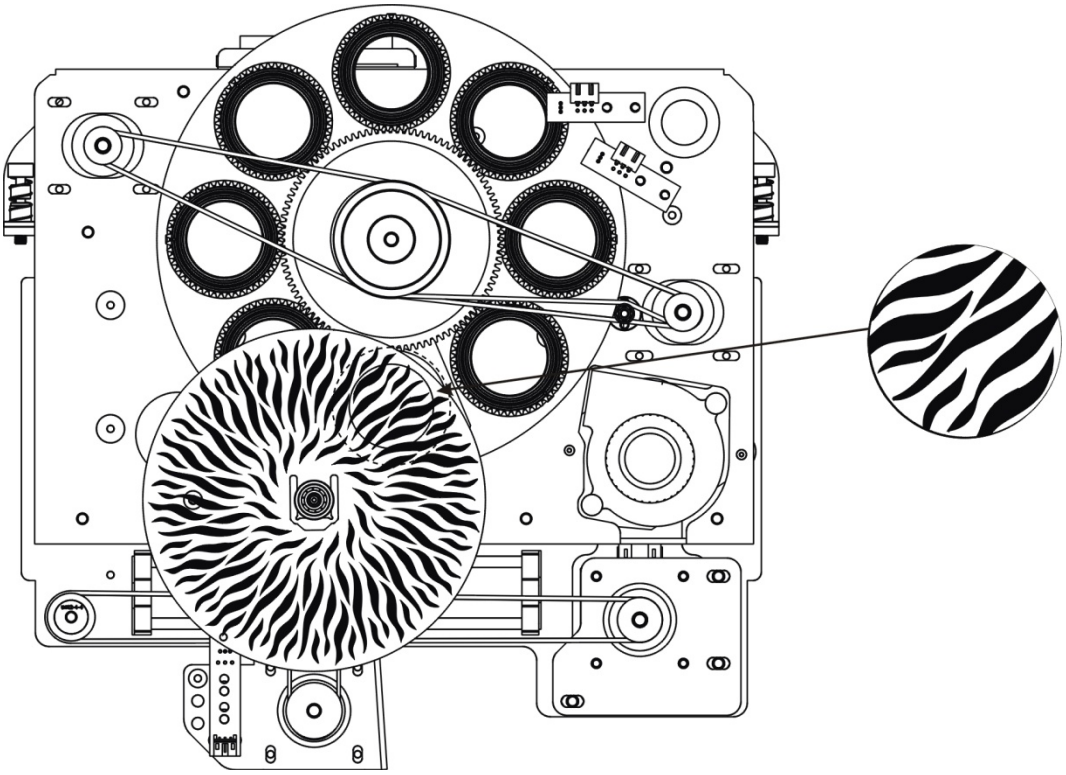
Animation Horizontal 90°



Animation 62.5° (left)



Animation Vertical (156.2°)



## Prism

The fixture has one 4-facet linear rotating and one 3-facet radial rotating prism. Either prism can be deployed to obtain rotating split beam effects. Each prism can be set to an indexed position or rotated with variable speed and direction.

## Frost

The frost filter softens the light output, giving a diffuse beam. You can adjust the level of diffuser applied.

## Focus

The motorized focus lets you adjust the sharpness of projections from the controller. Gobo animation effects, for example, can be most effective if they are slightly out of focus.

## Zoom

The motorized zoom let you adjust the beam angle from $10^{o}$ - $43.5^{o}$.

# Operation

The Exterior Projection 1000 is designed to operate at ambient temperatures between -30° C (-22° F) and 45° C (113° F). For instant wake-up with no warm-up mode, we recommend that you keep power applied constantly in ambient temperatures below 0° C (32° F).

If the fixture's temperature rises above its normal operating range, its light output is regulated. As the ambient temperature nears 45° C and if the fixture is exposed to strong sunlight, for example, output intensity will be reduced in order to protect the fixture.

## Projection image sizes

When projecting a gobo with an image of maximum size, you can obtain up to the following image sizes in the projection with the various beam angle options available in the Exterior Projection 1000:

| **Distance from fixture** | | **5 m (16.5 ft.)** | **10 m (32.8 ft.)** | **15 m (49 ft.)** | **20 m (65.6 ft.)** |
|---|---|---|---|---|---|
| Narrow zoom | 10° | 0.76 m (2.49 ft.) | 1.52 m (4.99 ft.) | 2.27 m (7.45 ft.) | 3.03 m (9.94 ft.) |
| Medium Zoom | 16° | 1.22 m (4.00 ft.) | 2.44 m (8.01 ft.) | 3.65 m (11.98 ft.) | 4.87 m (15.98 ft.) |
| Wide zoom | 43.5° | 3.46 m (11.35 ft.) | 6.92 m (22.70 ft.) | 10.37 m (34.02 ft.) | 13.83 m (45.37 ft.) |

***Maximum image diameter at example distances***

# Maintenance

**Read ‘Safety information’ on page 4 before servicing the fixture.**

**Important! Opening the fixture can allow moisture to enter and cause condensation on the front glass. Read ‘Managing humidity’ below and follow the guidelines in this user manual carefully.**

Refer any service or repair operation not described in this manual to an authorized Martin™ service technician. Do not try to carry out such an operation yourself, as doing so may present a health or safety risk. It may also cause damage or malfunction, and it may void your product warranty.

Installation, on-site service and maintenance can be provided worldwide by the Martin™ Global Service organization and its approved agents, giving owners access to Martin’s expertise and product knowledge in a partnership that will ensure the highest level of performance throughout the product’s lifetime. Please contact your Martin™ supplier for details.

Optical components have fragile coatings and are exposed to very high temperatures. Handle and store components with care. Wear cotton gloves while handling them. Keep them perfectly clean and free of oil and grease to reduce the risk of heat damage.

## Cleaning

Regular cleaning is essential for fixture life and performance. Buildup of dust and dirt degrades the fixture’s light output and cooling ability.

Cleaning schedules will vary greatly depending on the operating environment. It is therefore impossible to specify precise cleaning intervals for the Exterior Projection 1000. Inspect fixtures within their first few weeks 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. If in doubt, consult your Martin dealer about a suitable maintenance schedule.

Do not use products that contain solvents, abrasives or caustic agents for cleaning, as they can cause surface damage to the fixture. The aluminum housing and front glass can be cleaned with mild detergents such as those for washing cars.

To clean the housing and front glass:

1. Isolate the fixture from AC power and allow the fixture to cool for 20 minutes.
2. Visually check that the silicone seals and the power and data cables are in good condition. If any seal or cable shows signs of damage, cracking or loss of water resistance, stop cleaning the fixture and contact a Martin authorized service technician for replacement.
3. If seals are in good condition, rinse off loose dirt with a hose or low-pressure water spray.
4. Wash the aluminum housing and front glass using warm water with a little mild detergent and a soft brush or sponge. Do not use abrasive cleaners.
5. Rinse with clean water and wipe dry.

## Managing humidity

Martin™ Exterior fixtures are IP66-rated and are designed to resist water and moisture in environments with widely varying climate, temperature and humidity conditions. But if fixtures are not managed correctly during installation and service, water and moisture can enter, leading to humidity and condensation inside the fixtures. Maximize the performance and service life of your product by following the precautions in this section.

## General

- Carry out service during low-humidly weather conditions (or indoors if possible). Check that fixtures are dry and free of moist air before closing them.
- Tighten cover screws exactly as directed in this manual and using a torque driver.

- Make sure that all threads are clean and dry. Do not apply lubricant to threads before assembly. While lubricant may make disassembly easier during future service, it means that tightening screws to the specified torque will compress seals too much.
- Air and water can be sucked along cables and into fixtures. A cracked or porous cable jacket can allow water into the cable. Replace any cable that is not in perfect condition. Make sure that cables from fixtures open into dry areas (e.g. junction boxes in dry locations).
- Do not clean fixtures with high-pressure water jets or immerse them.

## Seals and sealing surfaces

The fixture must be sealed effectively. Covers have silicone seals that will withstand rain and water splashing but will not withstand immersion or high-pressure water jets. Reinstall covers and seals carefully if you have removed them.

- Make sure that seals and sealing surfaces are perfectly clean, dry and in perfect condition before installing a cover. If you need to clean seals, use water and a soft cloth only. Replace any seal that shows signs of aging, damage, cracking, stretching or deformation. Replacement seals are available from Martin™.
- Reinstall seals in exactly their original position.
- Install seals so that they closely follow the profile of the metal parts they are installed on. When you run your finger around the sealing surface after you have installed a cover, you should not be able to feel any places where the seal sticks out or sinks into the gap between the sealing surfaces.
- Do not use liquid gasket or any other type of sealant on sealing surfaces or seals.

## Pressure relief valves

A valve with a Gore-Tex membrane on the back of the fixture (see ‘Fixture overview’ on page 6) equalizes pressure by allowing air to pass through it when the fixture heats up and cools down, but at the same time it acts as a barrier to water in liquid form. The expulsion of warm air (with a slightly higher water vapor content) and intake of cool air (with a slightly lower water vapor content) prevents humidity buildup over time, provided that the valve works correctly and the fixture is correctly sealed.

Valves become blocked over time as the micropores in the membrane fill with particles. If a valve becomes blocked by dirt or water, excess pressure can damage seals or cause air and even water to be sucked into the fixture along cables. Valves cannot be cleaned and must be replaced if they show any signs of contamination or if they are not in perfect condition.

To obtain the maximum service life from your fixture, follow these guidelines:

- Do not allow water to collect on or near valves. Do not install a fixture with the valve membrane horizontal so that water can pool on it.
- Replace a valve with a new item if it shows any signs of contamination or is not in perfect condition.
- Replace valves after an extended period of use. Intervals for valve replacement depend on the installation environment.
- Consult your Martin™ dealer about a suitable valve replacement schedule. Contact Martin™ Service for valve replacement.

## Removing and reinstalling the top cover

**Important!** Open the fixture in dry weather conditions only. Use the fixture's Evaporation Mode and a new silica gel desiccant bag when you close the fixture to reduce humidity inside the fixture.

Access to optical components is made easy by a cover on the top of the fixture.

### *Removing the top cover*

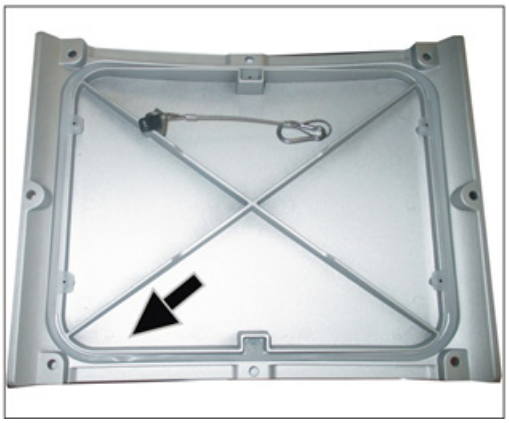
To remove the top cover:

1. Disconnect the fixture from power and allow it to cool for at least 60 minutes.
2. See illustration on right. Use a 6 mm Allen key (hex wrench) to remove the eight top cover screws (arrowed). Lift the top cover off the fixture. For ease of access – and if it is safe to do so – you can unclip the safety cable and remove the cover completely from the fixture.

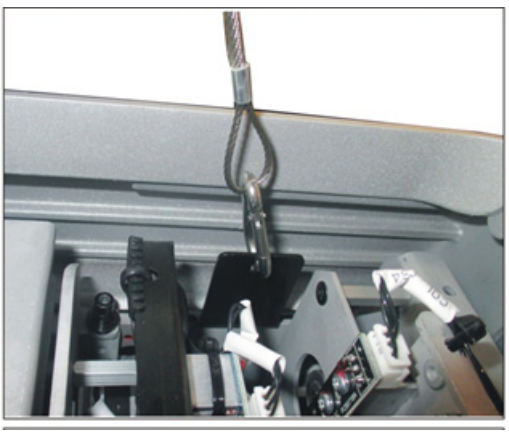
### *Reinstalling the top cover*

To reinstall the top cover:

1. See illustration on right. Check the silicone seal in the top cover. If it is not in perfect condition, replace it with a new item from Martin™.



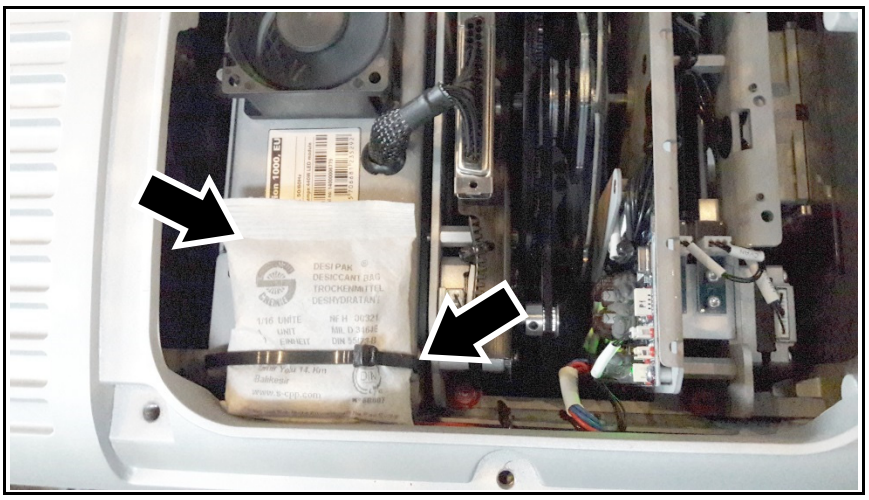
2. See illustration on right. If you unclipped the top cover safety cable, reattach it so that it will catch the top cover and prevent it from falling.



3. Place the top cover loosely over the top of the fixture so that air can enter and leave the fixture.

4. See illustration on right. Obtain a silica gel desiccant bag (P/N 37220000) from Martin™ and a cable tie 250 – 300 mm in length. Do not remove the silica gel bag from its sealed aluminum foil bag until you are ready to install it as described below.

5. Open the Service → Evaporation Mode control menu and select PASSWORD. Scroll to the service password (123) and press ENTER.
6. Select COVER OPEN and press ENTER.
7. Select EVAPORATION ON to set the fixture to Evaporation Mode. This allows warm, humid air to leave the fixture and dry air to enter the fixture. WAIT will appear in the display.
8. After approx. 15 minutes the display will stop showing WAIT and start showing CLOSE COVER. Press ENTER.
9. Remove the silica gel bag from its aluminum foil bag. See illustration below. Loop the cable tie around the driver board cover and around the bag as shown, then tighten the cable tie.



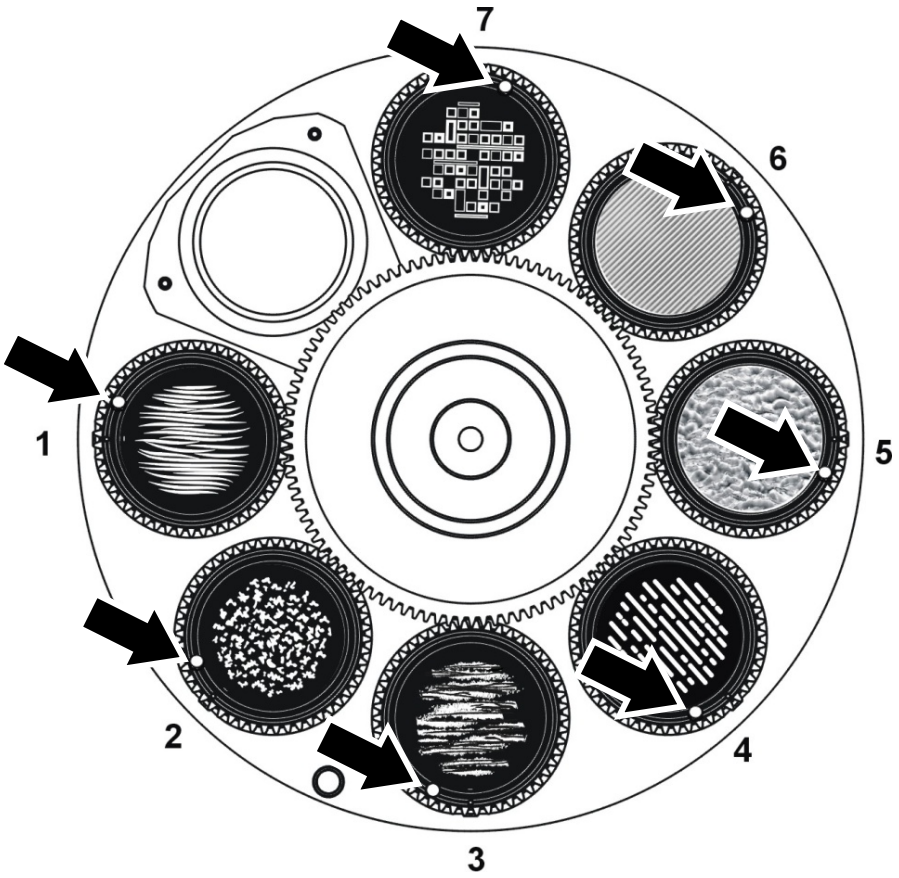
10. Check that the top cover safety cable is correctly installed.
11. Reinstall the eight top cover screws by first inserting them finger-tight. Then use a torque driver and cross-tighten the screws in a diagonal pattern, increasing torque gradually in stages until you reach a torque of 1.9 – 3.5 Nm.

## Replacing a rotating gobo

Gobos are user-replaceable, and you can replace them with custom gobos made to your own design.

Gobos 1 – 4 and gobo 7 are printed/coated glass and share the same specifications, but gobos 5 and 6 are textured glass and have different specifications to the others. See ‘Gobos’ on page35. When replacing the textured glass gobos in goboholder 5 and 6 with standard glass gobos, you must use the long spring.

See illustration below. The goboholders have magnets (arrowed) that the fixture uses to recognize the position of the gobo wheel and gobos. If you replace gobos, make sure that you always install gobos and goboholders in their original orientation, using the magnet as reference.



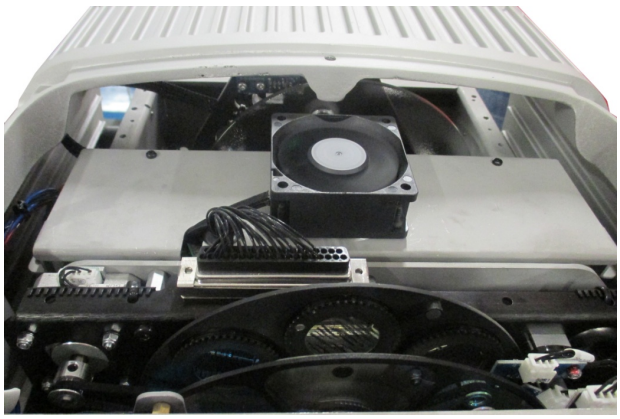

The rotating gobos in the Exterior Projection 1000 are installed in gobo holders that clip into the rotating gobo wheel.

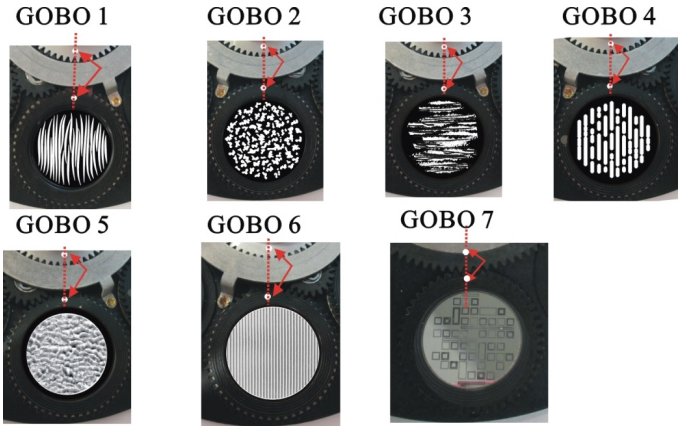
Keep gobos perfectly clean and free of oil and grease from your fingers. Put on clean, lint-free gloves while handling gobos.

To replace a gobo:

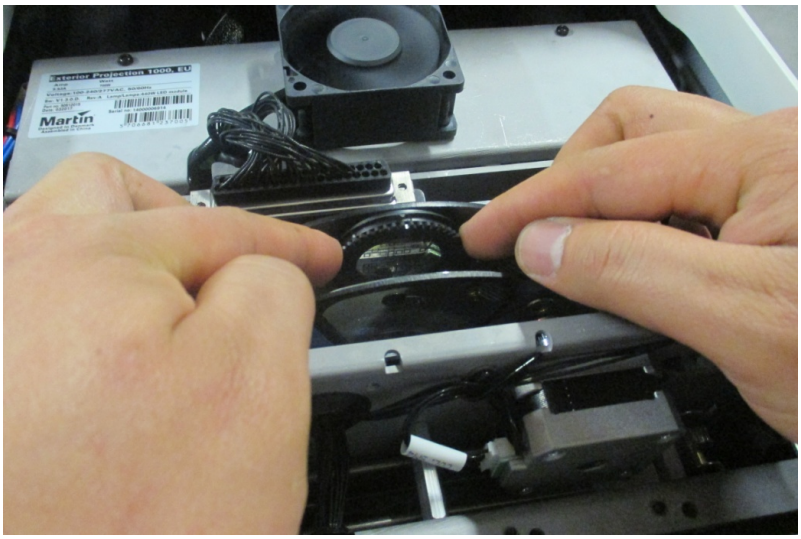
1. Remove the top cover as described under ‘Removing and reinstalling the top cover’ earlier in this chapter.

2. See illustration below. Position the alignment mark (arrowed) in the gobo holder at a reference point such as the midpoint between the end of the motor mounting plate and multi-connector shown below. Always remove and reinstall gobo holders with alignment marks in the same position so that you keep gobos in the same orientation.



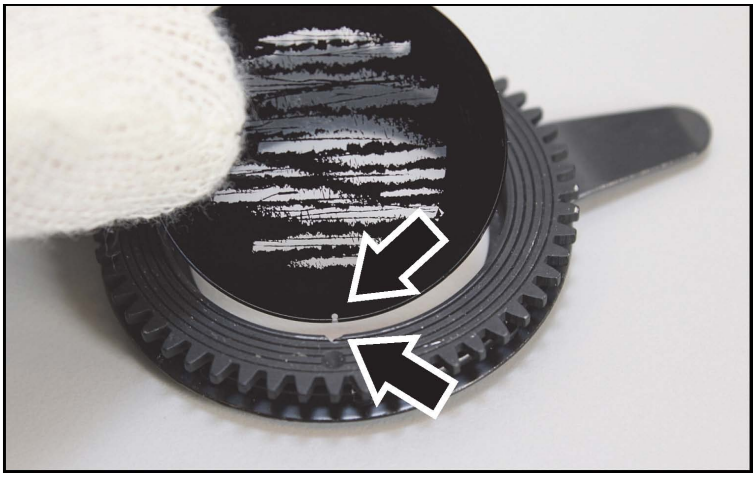



3. See illustration below. Pull the goboholder forwards, away from the wheel, then lift it up out of the wheel.



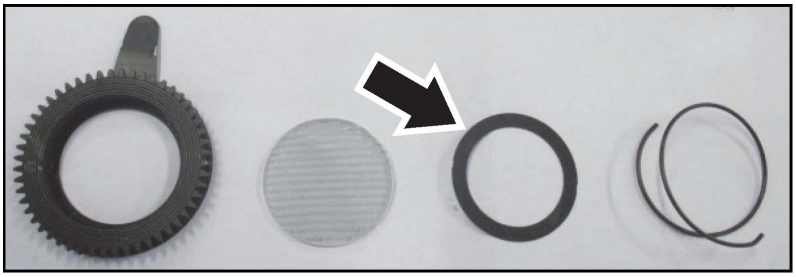

4. See illustration below. Place the goboholder on a clean, flat work surface with the teeth facing upwards. The gobo is held in place in the goboholder by a spring. Taking care to avoid scratching or applying pressure to the gobo, lever the end of the spring out, remove the spring and then lift the gobo out of the goboholder.

5. See illustration below. Hold the gobo with the dark side facing upwards towards the teeth in the goboholder. Match up the alignment marks (arrowed) in the gobo and goboholder. Lay the new gobo flat in the goboholder.

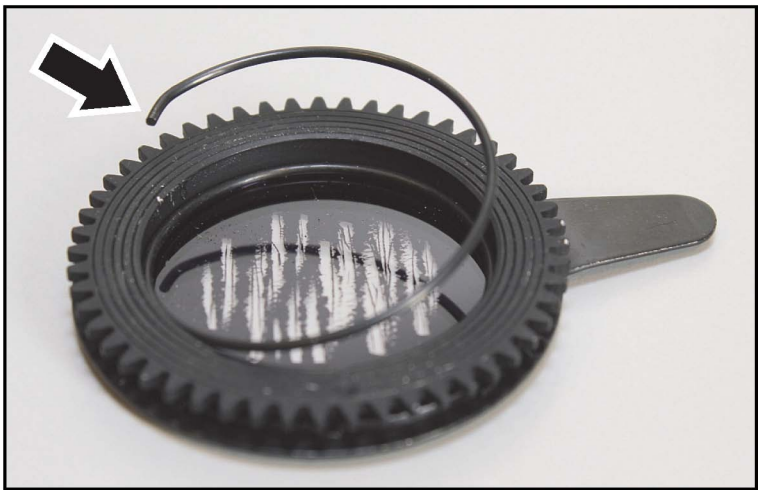


### *Gobos 5 and 6 only*

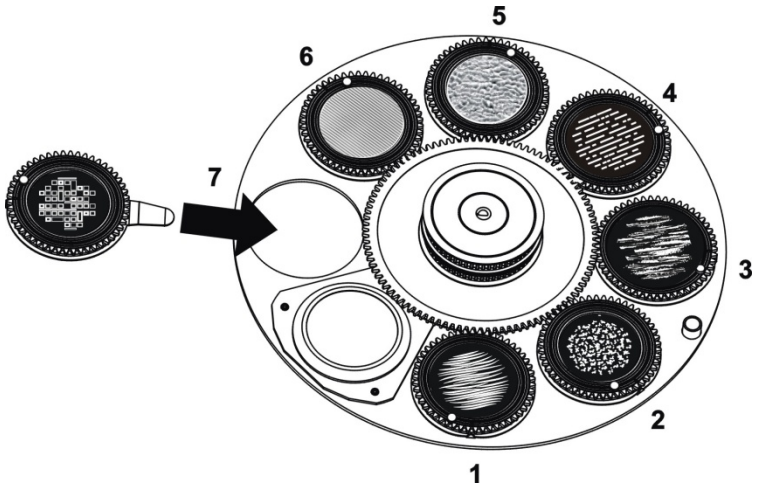
Gobos 5 and 6 are textured glass and require a thrust washer. See illustration below. Place the black thrust washer (arrowed) over the gobo before you go on to the next step.

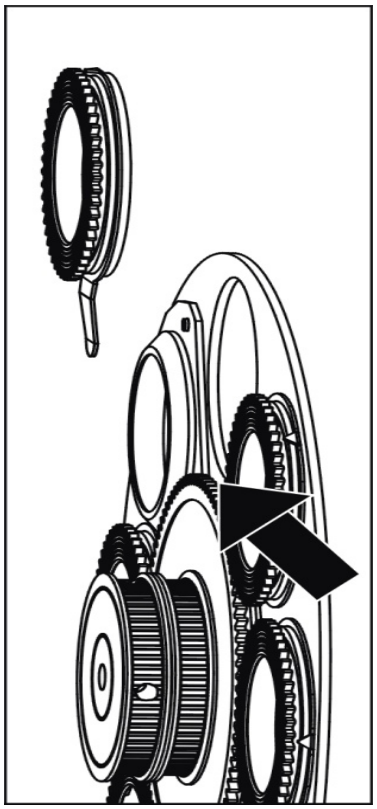


1. See illustration below. Note the end of the gobo retaining spring with the bend (arrowed) that is used for levering the spring out of the goboholder. Making sure that the bend in the spring is at the top (as shown below), press the spring down into the goboholder until the spring clips into its recess in the goboholder. Check that the spring is secure and that the gobo is still sitting flat in the goboholder.



2. Hold the goboholder up to the rotating gobo wheel in its original position. Rotate it until the alignment mark in the goboholder lines up with the reference point as shown in Step 3.
3. See illustrations below and right. Push the goboholder into position, sliding the tongue that sticks out from the goboholder into position (arrowed) behind the gobo activation cog, pressing against the gobowheel.



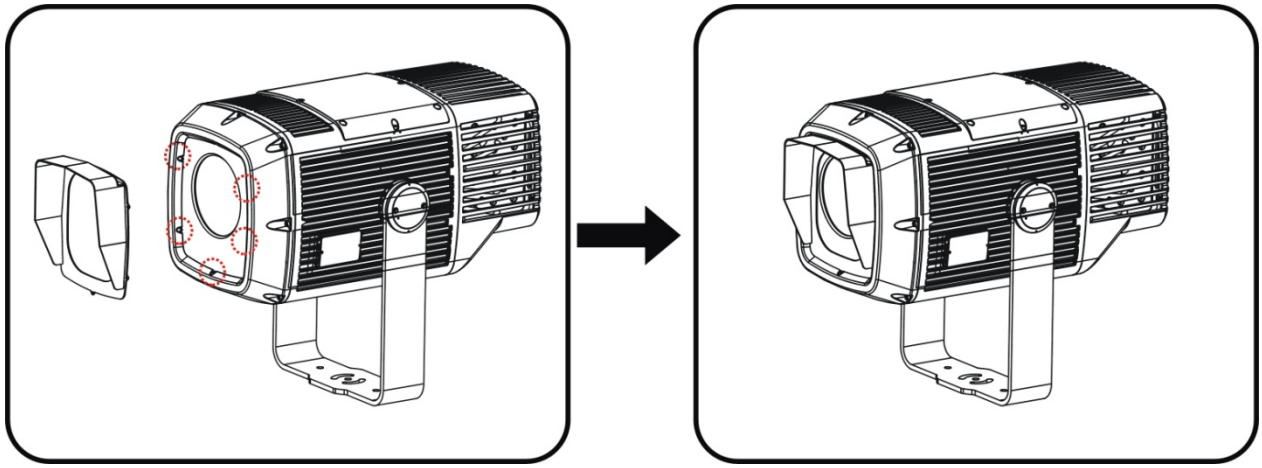
4. Check that the goboholder is held securely. Rotate the whole gobowheel with your finger and check that the goboholder rotates in the wheel while you rotate the gobowheel. If the goboholder does not rotate, it is not correctly installed and its teeth are probably not engaged correctly in the teeth in the gobowheel. Lift the goboholder out of the gobowheel and reinstall it correctly.
5. Reinstall the top cover as described earlier in this chapter.

## Installing a glare shield accessory

A glare shield is available as an optional accessory for the Exterior Projection 1000. The shield protects from stray light and can help protect the fixture from damage caused by the sun shining on the front of the fixture. The glare shield can be installed in seconds.

To install a glare shield:

1. See illustration below. Use a 3 mm Allen key (hex wrench) to remove the five screws (arrowed) from the front of the fixture.



2. Fasten the glare shield securely to the fixture using the five screws as shown in the illustration. Use a torque driver and tighten to a torque of 0.7 – 1.1 Nm.

# DMX protocol

| Channel | Value | Function | Fade Status | Default Value |
|---|---|---|---|---|
| **1** | 0 - 19<br>20 - 49<br>50 - 200<br>201 - 210<br>211 - 255 | **Strobe**<br>Shutter closed<br>Shutter open<br>Strobe (slow → fast)<br>Shutter open<br>Random strobe (slow → fast) | Snap | 30 |
| **2** | 0 - 65335 | **Dimmer**<br>Closed → open | Fade | 0 |
| **3** | | | | |
| **4** | 0 - 255 | **Cyan**<br>0 → 100% | Fade | 0 |
| **5** | 0 - 255 | **Magenta**<br>0 → 100% | Fade | 0 |
| **6** | 0 - 255 | **Yellow**<br>0 → 100% | Fade | 0 |
| **7** | 0<br>12<br>24<br>36<br>48<br>60<br>72<br>84<br>96<br>108<br>120<br>132<br>144<br>156<br>168<br>180<br>192-200<br><br>*Stepped*<br>201-203<br>204-206<br>207-209<br>210-212<br>213-215<br>216-218<br>219-221<br>222-255 | **Color selection**<br>*Continuous*<br>Open<br>Split open/Color 1<br>Color 1<br>Split Color 1/Color 2<br>Color 2<br>Split Color 2/Color 3<br>Color 3<br>Split Color 3/Color 4<br>Color 4<br>Split Color 4/Color 5<br>Color 5<br>Split Color 5/Color 6<br>Color 6<br>Split Color 6/Color 7<br>Color 7<br>Split Color 7/Open<br>Open<br><br>Slot 1<br>Slot 2<br>Slot 3<br>Slot 4<br>Slot 5<br>Slot 6<br>Slot 7<br>Open | Snap | 0 |

| | | | | |
|---|---|---|---|---|
| **8** | 0 – 4<br>5 – 9<br>10 – 14<br>15 – 19<br>20 – 24<br>25 – 29<br>30 – 34<br>35 – 39<br><br>40 – 44<br>45 – 49<br>50 – 54<br>55 – 59<br>60 – 64<br>65 – 69<br>70 – 74<br>75 – 255 | **Gobo selection**<br>*Indexing*<br>Open gobo<br>Gobo 1 indexing<br>Gobo 2 indexing<br>Gobo 3 indexing<br>Gobo 4 indexing<br>Gobo 5 indexing<br>Gobo 6 indexing<br>Gobo 7 indexing<br><br>*Rotation*<br>Gobo 1 rotation<br>Gobo 2 rotation<br>Gobo 3 rotation<br>Gobo 4 rotation<br>Gobo 5 rotation<br>Gobo 6 rotation<br>Gobo 7 rotation<br>Open gobo | Snap | 0 |
| **9** | 0 – 65535 | **Gobo indexed position**<br>*If indexing is selected on channel 8*<br>Indexed position, 0° Index at 32768 | Fade | 32768 |
| **10** | 0 – 600 (2,88)<br>601 – 32130 (125,130)<br>32131 – 32895 (128,127)<br>32896 – 64425 (251,169)<br>64426 – 65535 (255,255) | **Gobo rotation direction and speed**<br>*If rotation is selected on channel 8*<br>No rotation (gobo indexed at 0°)<br>Rotation CW fast → CW slow<br><br>No rotation (gobo stops at current position)<br>Rotation CCW slow → CCW fast<br><br>No rotation (gobo indexed at 90°) | | |
| **11** | 0 – 255<br>106<br>166<br>220<br>255 | **Animation indexing**<br>Indexed position<br>45°<br>90°<br>135°<br>156.2° | Fade | 0 |
| **12** | 0 - 2<br>3 - 126<br>127 - 129<br>130 - 253<br>254 - 255 | **Animation rotation**<br>Stop<br>CW fast → slow<br>Stop (wheel stops at current position)<br>CCW slow → fast<br>Stop | Fade | 0 |
| **13** | 0 -255 | **Frost**<br>No diffuser → full diffuser | Fade | 0 |
| **14** | 0 - 5<br>6 - 10<br>11 - 15<br>16 - 20<br>21 - 25<br>26 - 255 | **Prism**<br>Open<br>3-facet prism indexing<br>Linear prism indexing<br>3-facet prism rotation<br>Linear prism rotation<br>No function | Snap | 0 |

| | | | | |
|---|---|---|---|---|
| **15** | 0 – 255<br><br><br><br>0 – 2<br>3 – 126<br>127 – 129<br><br>130 – 253<br>254 – 255 | **Prism indexed position**<br>*If channel 14 set to DMX value 6-15*<br>Indexed position (0° index at 128)<br><br>**Prism rotation**<br>*If channel 14 set to DMX value 16-25*<br>No rotation (prism indexed at 0°)<br>Rotating CW Fast → CW Slow<br>No rotation (prism stops at current position)<br>Rotating CCW Slow to CCW Fast<br>No rotation (prism indexed at 45°) | Fade | 128 |
| **16**<br>**17** | 0 – 65535 | **Zoom**<br>Wide → narrow | Fade | 32768 |
| **18**<br>**19** | 0 – 65535 | **Focus**<br>Far → near | Fade | 32768 |
| **20** | 0-9<br>10-14<br>15-39<br>40-44<br>45-49<br>50-54<br>55-59<br>60-64<br>65-69<br>70-255 | **Fixture control/settings**<br>No function<br>Reset fixture<br>No function<br>Parameter shortcuts = ON (default)<br>Parameter shortcuts = OFF<br>Auto-blackout = ON<br>Auto-blackout = OFF (default)<br>Illuminate display on fixture<br>Turn off display on fixture<br>No function | Snap | 0 |

# Control menus

To access the control menus, press the MENU button and hold for three seconds. Use the UP ▲ and DOWN ▼ buttons to navigate the menus. Select menu options using the ENTER button. Exit menus using the MENU button.

| | | | | |
|---|---|---|---|---|
| DMX Address | 1~XXX | | Set fixture's DMX address | |
| Program show | Set scene total | 1-**20** | Set total number of scenes in standalone show (default = **20**) | |
| | Edit scene | Scene 1~20 | Strobe | Set value or percentage for each effect in scene |
| | | | Dimmer | |
| | | | Cyan | |
| | | | … | |
| | Set show times | Set fade time | 0~99.9s | Default 0.0s |
| | | Set hold time | 0~99.9s | Default 4.0s |
| Manual mode | Manual test | Strobe | 0-255 | Manually control all fixture's effects |
| | | Dimmer | 0-100% | |
| | | Cyan | 0-255 | |
| | | … | … | |
| | Reset functions | All | No | Reset all effects |
| | | | Yes | |
| | | Color/CMY | No | Reset color wheel and CMY |
| | | | Yes | |
| | | Gobo | No | Reset gobo wheel |
| | | | Yes | |
| | | PrismFrostFocusZoom | No | Reset prism, frost, focus and zoom |
| | | | Yes | |
| | | Animation | No | Reset gobo animation wheel |
| | | | Yes | |
| | Factory default | Yes/**No** | Return fixture to factory default settings | |
| Display setting | Inverse | On/**Off** | Flip readout in display panel through 180° | |
| | Display auto off | No/**Yes**(1 minute) | Display panel sleeps after 1 minute | |
| | Intensity | 0%-100% | Adjust display panel intensity | |
| | Lock display | On | Hold Menu key pressed for 3 seconds, then enter user password (default = 111) to unlock display | |
| | | Off | | |
| | Set password | 0…999 | Set user password (default = 111) | |
| Fixture Config | Master/Slave | Master/**Slave** | Fixture acts as master or slave in master/slave operation<br>*Set only one fixture to be master!* | |
| | Offline mode | Run show | When no DMX signal is present, fixture runs standalone show | |
| | | DMX last state | When no DMX signal is present, fixture displays the last effect it was displaying before the DMX signal stopped | |
| | | Black out | When no DMX signal is present, fixture blacks out | |

| | | | | | |
|---|---|---|---|---|---|
| Service | Fixture status | LED Temperature | | Temperature of LED engine in °C | |
| | | Power-on Hours | | Number of hours fixture has been powered on since manufacture | |
| | | Lamp Hours | | Number of hours light output has been activated since manufacture (or since counter last reset). Press Enter, then use service password (123) to access option to reset lamp hours to zero | |
| | | Software Version | | V x.x.x | Currently installed software (firmware) version |
| | Fixture offset | Cyan | | -128~127 | ***Note: For use by Martin Service!*** Enter service password (123) for access to effect offsets. Then set an offset in each effect's home position. |
| | | Magenta | | -128~127 | |
| | | Yellow | | -128~127 | |
| | | Color Selection | | -128~127 | |
| | | … | | … | |
| | Evaporation mode | Password | 0 … 999 | Enter service password (123) for access to Evaporation Mode. To clear humidity, open top cover slightly, then press Enter. When message to close cover appears in display, close top cover, then press Enter. | |

# Troubleshooting

This section provides some suggestions for solving possible problems:

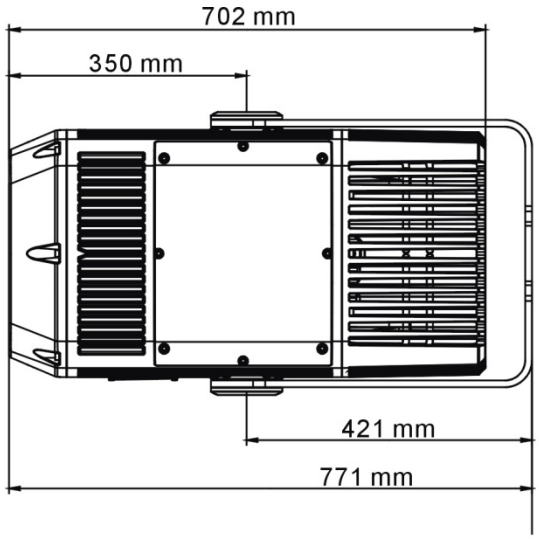
| Symptom | Potential cause | Remedies |
|---|---|---|
| No light from fixture | Power supply issue such as faulty connector or damaged cable. | Ensure that mains supply is connected and supplying power to the fixture.<br>Check all power connections and cables. |
| Fixture does not respond correctly to DMX control | Incorrect DMX setup.<br>Fault in the DMX network due to connector or cable damage or potential interference from proximity to a high voltage installation.<br><br><br><br>Internal fault. | Check DMX addressing.<br>Check all DMX cables and connections.<br>Ensure that DMX link is terminated.<br>Attempt to control fixture with another DMX control device.<br>Move or shield DMX link if it is close to an unshielded high-voltage installation.<br>Contact your Martin authorized distributor or service center for assistance. |

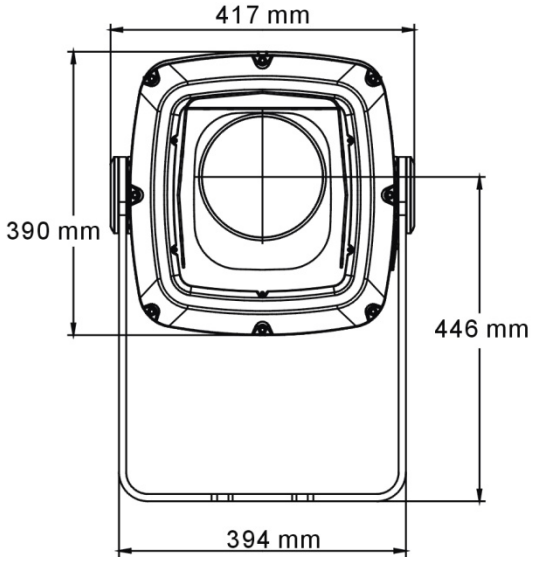
# Specifications

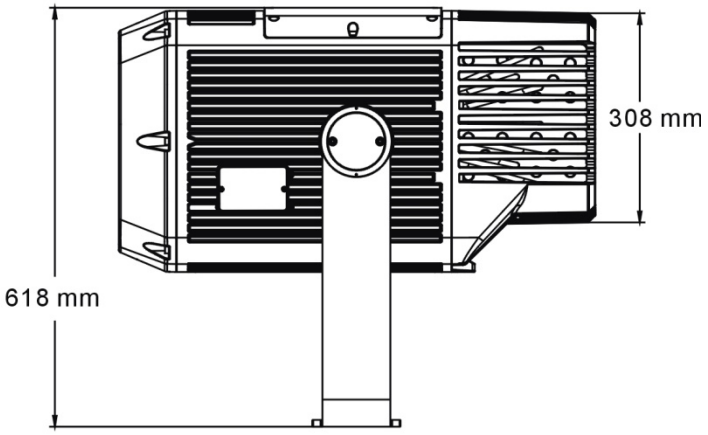
**Physical**

Dimensions (LxWxH) ……..... 417 x 390 x 771 mm (16.5 x 15.4 x 30.4 in.)
Weight ..... 50.1 kg (110.4 lbs.)

*All figures include mounting yoke*




**Dynamic Effects**

Color mixing..... CMY 0-100% continuous
Color wheel..... 7 colors plus open
Rotating gobos ..... 7 rotating gobos plus open, indexing, variable rotation
Prisms..... Prism wheel with 4-facet linear and 3-facet radial rotating prisms
Frost (wash effect)..... Motorized variable
Animation ..... Continuous effect, speed and direction, adjustable from vertical to horizontal (45°-156°)
Zoom..... Motorized, 16-bit fine and coarse control
Shutter ..... Strobe and pulse effects, instant open and blackout
Dimming..... 0-100% constantly variable, 16-bit control

**Control and Programming**

DMX channels ..... 20
Interface ..... Control panel with backlit OLED display
Control resolution ..... 8-bit DMX control of each color
DMX compliance ..... USITT DMX512-A
RDM compliance ..... ANSI/ESTA E1.20

**Optics**

Light source ..... 440 W white light LED engine
CRI (Color Rendering Index) ..... >70
Color temperature ..... 6200 K (±250 K)
LED manufacturer ..... Appotronics
LED lifetime ..... 20 000 hours (to >70% luminous output)*

**Figure obtained under manufacturer's test conditions*

**Photometric Data**

Luminous output ..... Up to 16800 lumens

*For full photometric data see www.martin.com*

**Construction**

Housing ..... Cast aluminum
Color ..... Hard-anodized, metallic grey lacquered
Front glass ..... 5 mm (0.2 in.) anti-reflection coated tempered glass
Ingress protection ..... IP 66
Impact resistance ..... IK08 (with control panel / display cover plate installed)
EPA (Effective Projected Area ..... 0.28$m^2$
RoHS compliant

**Gobos**

Suitable material ..... Borosilicate glass, coatings heat-resistant to 450° C (842° F)
Maximum image diameter ..... 23 mm (0.91 in.)
Minimum thickness ..... 1.1 mm ±0.1 mm (0.045 ±0.004 in.)
Maximum thickness ..... 3.0 mm ±0.3 mm (0.12in. ±0.012 in.)*

**Gobos thicker than 2.5 mm require a shorter spring in the goboholder*

**Color filters**

Suitable material ..... Borosilicate glass, coatings heat-resistant to 450° C (842° F)
Minimum thickness ..... 1.1 mm ±0.1 mm (0.045 ±0.004 in.)
Maximum thickness ..... 3.0 mm ±0.3 mm (0.12in. ±0.012 in.)

**Installation**

Orientation ..... Any (sides must be kept vertical)
Mounting ..... Adjustable yoke
Minimum distance from housing to combustible materials ..... 0.1 m (4 ins.)
Minimum distance from front glass to illuminated surfaces ..... 1.5 m (4.9 ft.)
Suitable for wet locations. Do not immerse in water.

**Electrical**

AC power ..... 100-240/277 V nominal, 50/60 Hz
Power supply ..... Auto-ranging electronic switch-mode
Typical half-cycle RMS inrush current ..... TBA
Idle power (zero intensity, no effects applied) ..... TBA

**Typical Power and Current**

120 V, 60 Hz ..... 645 W, 5.5 A, PF 0.98
230 V, 50 Hz ..... 635 W, 2.9 A, PF 0.95
277 V, 60 Hz ..... 635 W, 2.6 A, PF 0.90

*Figures are typical, not maximum. Measurements made at nominal voltage with all LEDs at full intensity. Allow for a deviation of +/- 10%. PF = Power Factor.*

**Thermal**

Cooling ..... Convection, internal forced air circulation
Maximum ambient temperature (Ta max.) ..... 45° C (113° F)
Minimum ambient temperature (Ta min) ..... -30° C (-22° F)*
Maximum total heat dissipation (calculated) ..... 2350 BTU/hr.

**For instant wake-up with no warm.-up mode, leave power applied constantly in ambient temperatures below 0° C (32° F).*

**Approvals**

EU safety: ..... EN 60598-2-1, EN 60598-2-5 (EN 60598-1), EN 62471, EN 62493
EU EMC ..... EN 55015, EN 55032, EN 55103-2, EN 61000-3-2, EN 61000-3-3, EN 61000-4-2, EN 61000-4-3, EN 61000-4-4, EN 61547
US safety (pending) ..... ANSI/UL 1598
US EMC ..... CFR 47 Part 15 Class A
Canadian safety ..... CSA C22.2 No 250.0
Australia/NZ (pending) ..... RCM

**Included Items**

Silica gel desiccant bag ..... P/N 37220000
Two gobo retaining springs, extra length, for use with non-textured gobos

**Accessories**

Exterior Projection 1000 Glare Shield ..... P/N 91611767
Exterior Projection 1000 Projection Setup Gobo ..... P/N 91616068

**Ordering Information**

**EU models**

Exterior Projection 1000, EU, Aluminum ..... P/N 90512000
Exterior Projection 1000, EU, White ..... P/N 90512015

**US models**

Exterior Projection 1000, US, Aluminum ..... P/N 90512005
Exterior Projection 1000, US, White ..... P/N 90512010

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