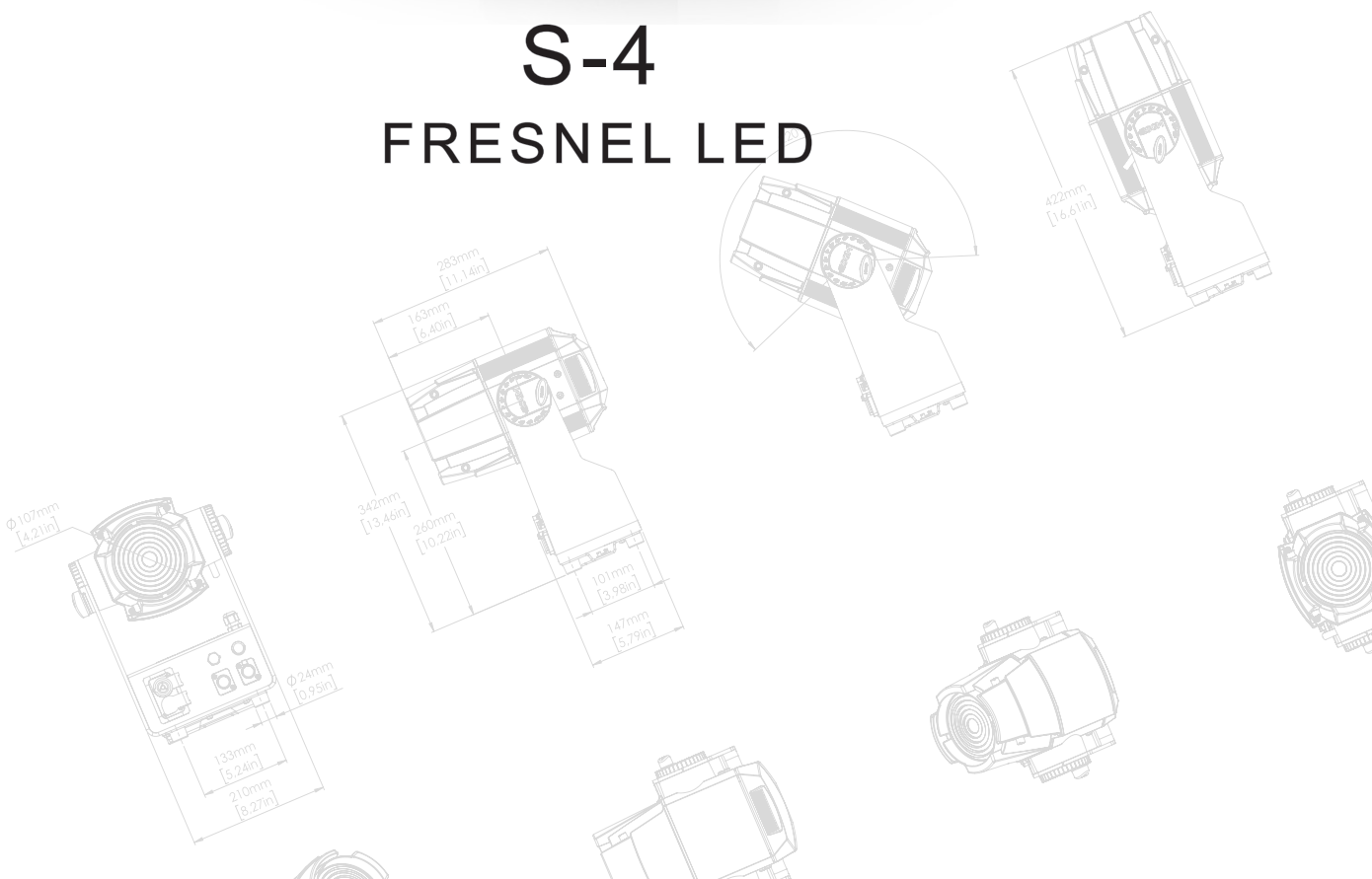


USER MANUAL

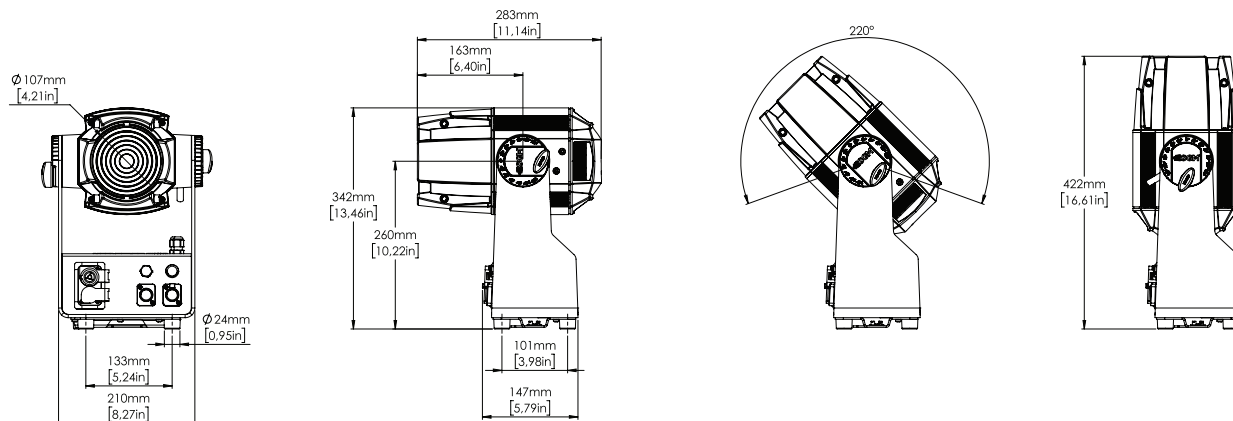


S-4 FRESNEL LED

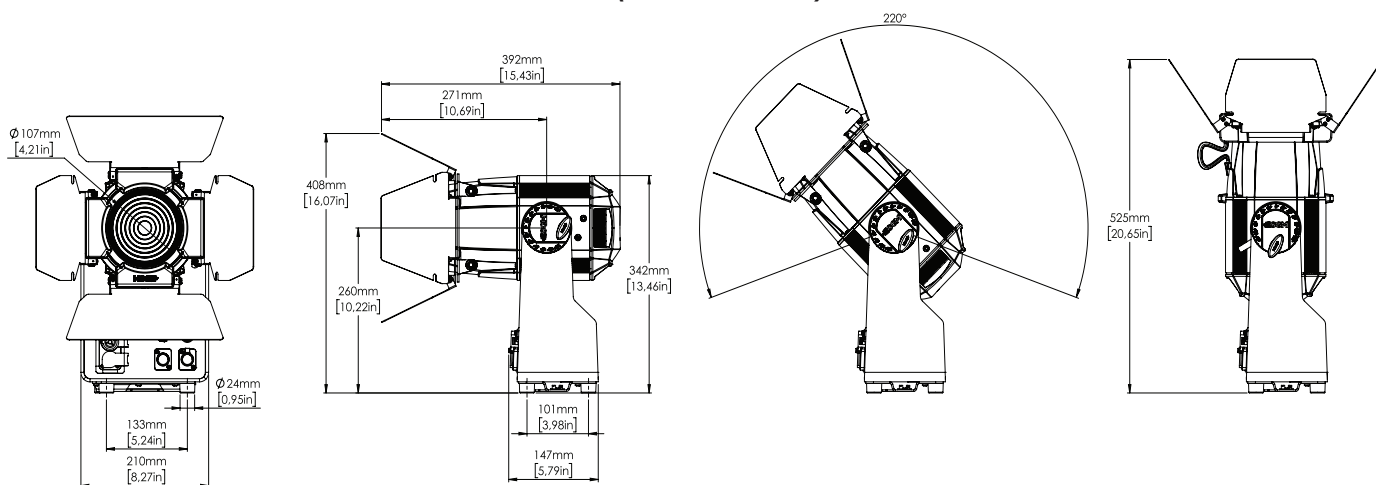


S-4 dimensions

S-4 Fresnel



S-4 Fresnel with motorized barndoors (not included)



All dimensions in millimeters and inches. Drawing not to scale.

This manual covers installation, use, and maintenance of the SGM S-4 Fresnel. A digital version is available at www.sgmlight.com, or upon request via support@sgmlight.com.

S-4 FRESNEL USER MANUAL REV. B

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This edition applies to firmware version 1.04 or later.

English edition

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Safety information



WARNING!

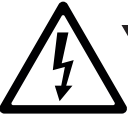
Read the safety precautions in this section before installing, powering, or operating this product.



SGM fixtures are intended for professional use only. They are not suitable for household use.

Les luminaires SGM sont impropres à l'usage domestique. Uniquement à usage professionnel.

Review the following safety precautions carefully before installing or operating the device.



DANGER! *Risk of electric shock. Do not open the device.*

- Do not open the device; there are no user-serviceable parts inside.
- Ensure that power is cut off when wiring the device to the AC mains supply.
- Ensure that the device is electrically connected to earth (ground).
- Do not apply power if the device or mains cable is in any way damaged.
- Do not immerse the fixture in water or liquid.



WARNING! *Take measures to prevent burns and fire.*

- Install in a location that prevents accidental contact with the device.
- Install only in a well-ventilated space.
- Install at least 0.3 m (12 in.) away from objects to be illuminated.
- Install only in accordance with applicable building codes.
- Ensure a minimum clearance of 0.3m (12 in.) around the cooling fans.
- Do not paint, cover, or modify the device, and do not filter or mask the light.
- Keep all flammable materials well away from the device.
- Allow the device to cool for 15 minutes after operation before touching it.

CAUTION: Exterior surface temperature after 5 min. operation = 45° C (113° F). Steady state = 68° C (154° F).



WARNING! *Take measures to prevent personal injury.*

- Do not look directly at the light source from close range.
- Take precautions to prevent injury due to falls when working at height.
- For Permanent Outdoor Installations (POI), ensure that the fixture is securely fastened to a load-bearing surface with suitable corrosion-resistant hardware.
- For temporary installations with clamps, ensure that the quarter-turn fasteners are turned fully, and secured with a suitable safety cable.
- For elevated installations, secure the fixture with suitable safety cables, and always comply with relevant load dimensioning, safety standards and requirements.
- The standard safety wire cable must be approved for a safe working load (SWL) of 10 times the weight of the fixture, and it must have a minimum gauge of 4 mm.

Before installing this product

Please visit the SGM official website at www.sgmlight.com for the latest version of this user manual/ safety information leaflet. Due to continuous improvements, the instructions may change without notice. SGM always recommends the latest available firmware version from www.sgmlight.com.



External cleaning and visual inspection of the fixture

All users of SGM fixtures should regularly clean those parts of the fixture directly exposed to the elements, such as the external housing and front lenses. Additionally, all owners of SGM fixtures must periodically check the external housing of the fixture for structural breaks, components in bad shape, cracked lenses, or loose screws. To ensure proper operation, but also to prevent the risk of potential accidents, do not use the fixture if the lens, housing, or power cables are damaged. If parts of the fixture appear to be missing, cease use immediately and contact SGM support.



Wiring and conduit/ containment

SGM fixtures supplied with power and data cable leads are not intended for installation in permanently installed conduit or containment. When installing fixtures in a permanent installation, ensure cable leads are installed as a service loop to an appropriately rated junction box using suitable cable strain reliefs/ glands. All installed fixtures must be securely mounted and service loop appropriately protected for installation location. All electrical wiring and connections should be completed by a qualified electrician.



Safety Precautions

When using electrical equipment, basic safety precautions should always be followed including the following:

1. Do not mount near gas or electric heaters.
2. Permanently installed equipment should be mounted in locations and at heights where it will not readily be subjected to tampering by unauthorized personnel.
3. The use of accessory equipment not recommended by the manufacturer may cause an unsafe condition.
4. Do not use this equipment for other than intended use.
5. Refer service to qualified personnel or authorized service centers.
6. Do not look directly into the beam for long periods of time, when the fixture is on.
7. The fixture shall, under no circumstance, be covered with insulating material of any kind.

READ AND FOLLOW ALL SAFETY INSTRUCTIONS.

Overview

The S-4 Fresnel:

- A high power RGBAM LED Fresnel weighing only 6.95kg/ 15.32lbs.
- Compact size and very low power consumption.
- IP65-rated enable operation in temperatures from -40° C to 50° C in all kinds of weather.
- Wireless DMX control; fully RDM compatible.
- Fully RDM implemented.
- Three different manual modes, adjustable through the 4 knobs.
- Interchangeable front lens.
- Compatible with easy-installable accessories, such as barndoors and top hat (neither included).

The light-source of the fixture is expected to run for about 50,000 hours LM-70/ TM-21.

S-4 Fresnel also features:

- A Color Filter Emulation feature to mimic 91 LEE colors + raw Amber + raw Mint.
- Fully adjustable CTC from 2,000K to 10,000K.
- Plus/ Minus green control.
- Double mounting option: standing with the optional 28 mm spigot for tripod, or hanging when using the 2 quarter-turn locking points for the included omega bracket.

Lens options:

S-4 Fresnel	9 - 76° Zoom	Standard lens kit
S-4 Fresnel w/top hat	-	Accessory for standard lens kit to minimize stray light
S-4 Wash Beam front lens	4.8 - 34° Zoom	Available as accessory lens kit
S-4 Wash motorized barndoors	9 - 76° Zoom	Available as accessory lens kit

Visit www.sgmilight.com for an accurate description of beam and field angles in the zoom range.

Parts identification and terminology

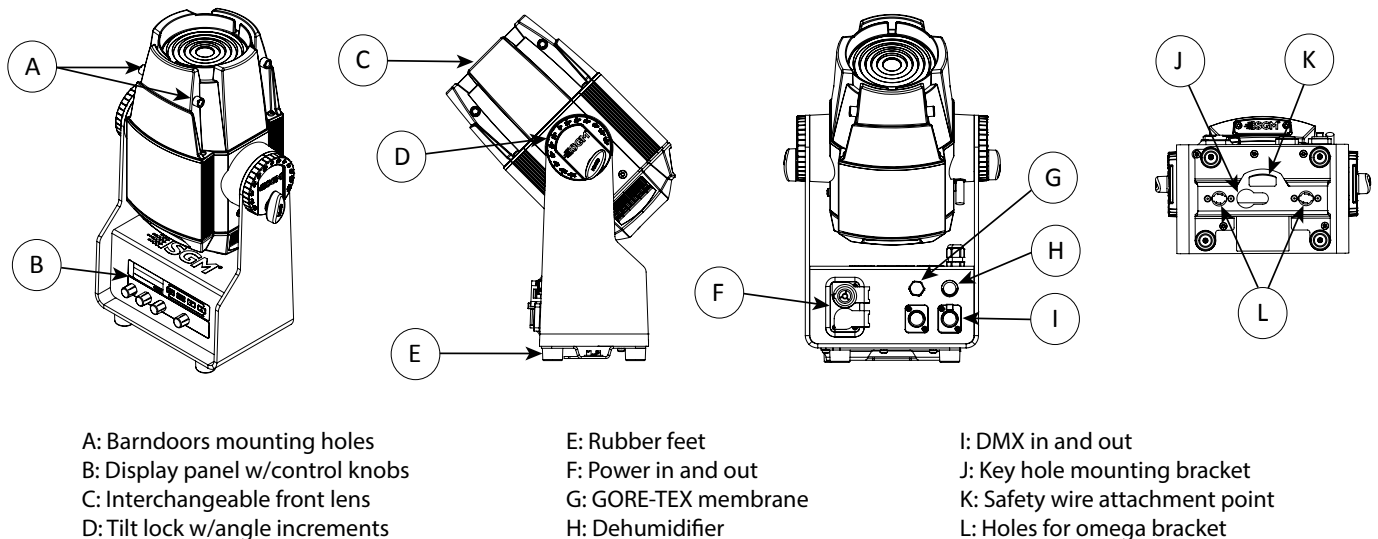


Figure 1: Parts identification and terminology

Preparing for installation

Unpacking

Unpack the S-4 Fresnel and inspect it to ensure that it has not been damaged during transport.

The S-4 Fresnel is shipped with:

- 1 x Power cable with IP connector, 2 m/ 78 in.
- 1 x Omega bracket with 1/4-turn fasteners.
- 1 x Safety instructions leaflet.

Location/ application

The S-4 Fresnel is IP65-rated and designed for use in outdoor events. This means that it is protected from:

- Dust, to the degree that dust cannot enter the device in sufficient quantities to interfere with its operation.
- Lower pressure water jets from any direction.

Please note when installing the motorized barndoors' front lens in the S-4 Fresnel: the fixture is IP65-rated whilst the motorized barndoors' module is IP20-rated. Therefore, the motorized barndoors are not protected from water and dust.

When selecting a location for the device, ensure that:

- It is situated away from public thoroughfares and protected from contact with people.
- It is not immersed in water or exposed to high-pressure water jets.
- It has adequate ventilation.

When using the fixture for outdoor events, ensure that:

- **For wireless DMX or standalone operation**, the protective caps are securely mounted in any unused DMX connectors.
- **For cabled DMX operation**, the DMX out of the last fixture is terminated with a 120 ohm resistor between pin 2 and 3 (according to the RS485 standard), and the DMX out is properly sealed (according to the IP65 requirements).
A maximum of 32 fixtures can be connected to the same DMX link.

Transportation

Always use the supplied packaging or a suitable flight case for transportation and storage of the device.

Never carry your S-4 Fresnel by connected cables, wires, barndoors, or motorized barndoors (when installed). Doing so may cause severe damage to the fixture. Always use the handles to carry the fixture.

Installing/ rigging the S-4 Fresnel

The S-4 Fresnel may be installed in any orientation by using the supplied omega bracket.

Always use the omega bracket to rig the fixture and lock the bracket with the 1/4-turn fasteners.

Please note:

The 1/4-turn fasteners are only locked when turned fully clockwise.

Rigging process

Start the rigging process by blocking the working area below the fixture. Make sure the work is performed from a stable platform.

1. Check that the clamp is undamaged and can bear at least 10 times the weight of the fixture. Check that the structure can bear at least 10 times the weight of all installed fixtures, lamps, cables, etc.
2. Bolt the clamp securely to the omega bracket with a M12/ ½ bolt (min. grade 8.8) and a lock nut.
3. Align the omega bracket with the two 1/4 turns in the base. Insert the fasteners into the base and turn both levers a full 1/4-turn clockwise to lock.
4. From a stable platform, hang the fixture on a truss or other structure. Tighten the clamp.
5. Install a safety wire that can bear at least 10 times the weight of the fixture.
6. Verify that there are no combustible materials, cables, or surfaces within the distance of 0.3 m. (12 in.) from the fixture.
7. Check that there is no risk of colliding between the head/ yoke and other fixtures or structures.

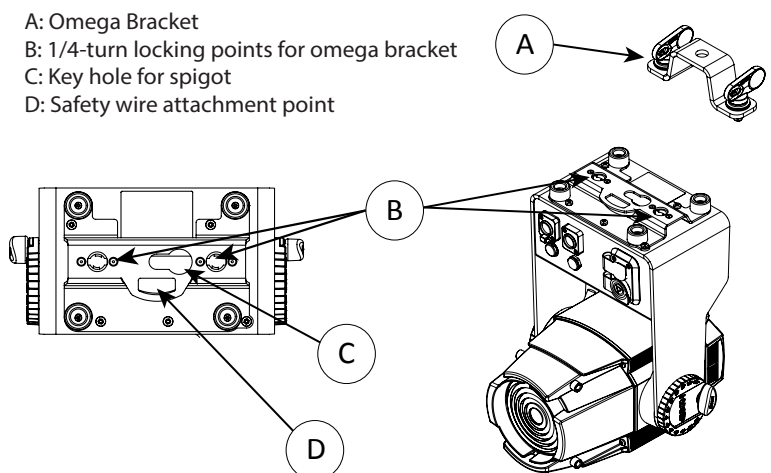


Figure 2: Installing the S-4

Spigot mounting

The S-4 Fresnel features a key slot for the standard M12 28 mm TV spigot (not supplied), specifically designed for use of tripods or other light stands. The M12 28mm TV spigot adapter can be easily fitted to the S-4 Fresnel, allowing the fixture to be quickly moved from one location to another. The spigot is mounted in the key hole slot located at the base, and the bolt is tightened through the gap at the safety wire attachment point.

Note: the spigot is neither included with the fixture. Please check ordering information at www.sgmlight.com to order a spigot from SGM.

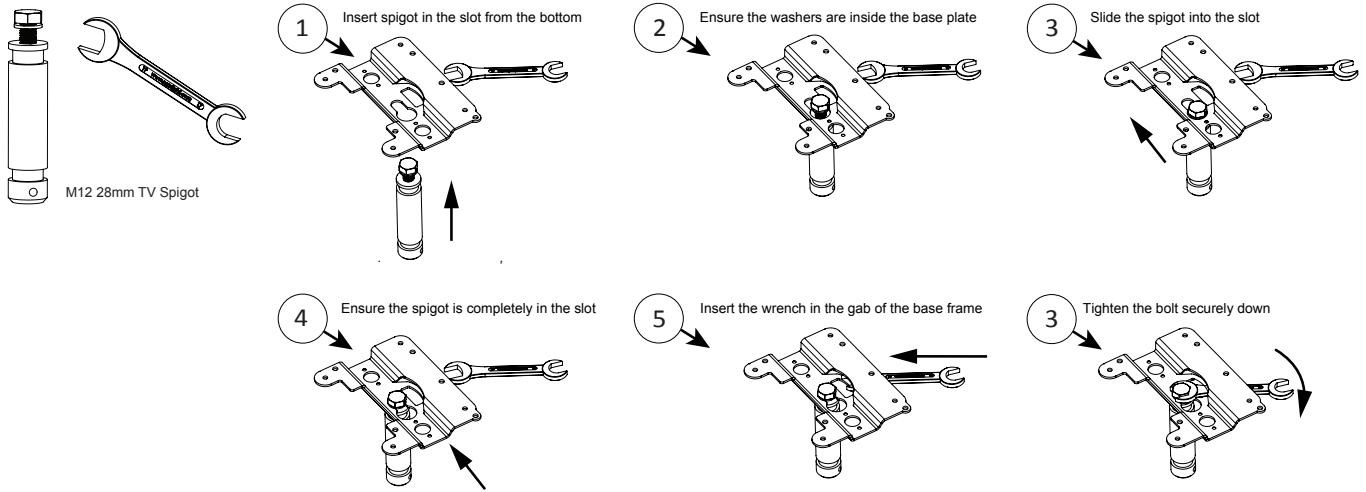


Figure 3: Spigot mounting



WARNING! Always secure an elevated S-4 Fresnel with a safety wire

Fasten a safety wire (not shown) between the load-bearing support structure and the safety wire attachment point on the device.

The safety cable (not included in the package) must be able to:

- Bear at least 10 times the weight of the device (SWL).
- Have a minimum gauge of 4 mm.
- Have a maximum length (free fall) = 30 cm (12 in.).

CAUTION!!

- Always use a safety wire.
- Make sure the slack of the safety wire is at a minimum.

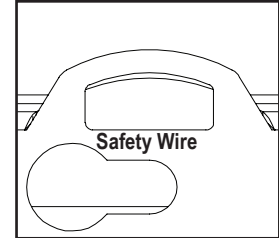


Figure 4: Safety wire attachment point

Tilt Lock

The S-4 Fresnel can be tilted from 0° - 190°. To adjust the tilt angle, loosen the tilt wheels one on each side, adjust the tilt to the required angle, and re-tighten the wheels. There is no need for any special tools to tighten the wheels. If you cannot feel resistance when tilting the fixture, you might not have loosened the wheels enough.

Scale function

The S-4 comes with a scale function which eases the adjustment to the desired tilt. The pitch indicator in the wheel shows the current angle of inclination.

CAUTION!!

If the fixture has been operating, always allow it to cool down for 15 minutes before handling. Exterior surface temperature after 5 min. operation = 45° C (113° F). Steady state = 68° C (154° F).

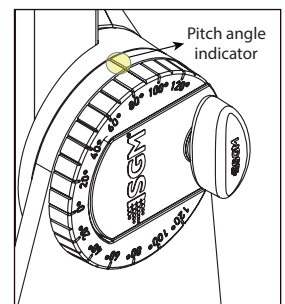





Figure 5: Tilt lock

Connecting AC power

The S-4 Fresnel can operate on any 100–240 V, 50/ 60 Hz AC mains power supply.

Connect the fixture to AC power using the supplied cable or similar with a maximum of 20 A to ensure the correct ingress protection (IP rating).

For temporary installations, the mains cable must be fitted with a grounded connector intended for exterior use. 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.

Wire	Color	Symbol	Conductor
	Black	L	live
	White	N	neutral
	green/yellow	\perp or \oplus	ground (earth)

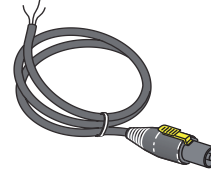


Figure 6: Connecting AC Power

For a permanent installation, have a qualified electrician to wire the mains cable directly to a suitable branch circuit. The junction's ingress protection (IP) rating must be suitable for the location.

PLEASE NOTE:

The S-4 Fresnel is not available in POI version, and therefore, it is not corrosion treated.

CAUTION!!

Do not open the fixture to replace the supplied power cable.

Do not connect the fixture to an electrical dimmer system, as doing so may cause damage.

For assistance with alternative configurations, contact your SGM representative.

After connecting the S-4 Fresnel to power, run the on-board test by going to ENTER → TEST → AUTOMATED TEST in the menu to ensure that the fixture and each LED are functioning correctly.

PLEASE NOTE:

The protective caps must be securely mounted on any unused connectors in order to maintain the IP65 rating.

Configuring the device

Set up the fixture by using the display panel at the bottom of the fixture.

The OLED display is the human interface of the fixture as it displays the current status of the fixture. The display panel can be used to configure individual fixture settings, checking the fixture’s wireless status, firmware version, and error messages. The complete list of the menu and all available commands is listed in “Control menu” on page 15.

Before turning on the S-4 Fresnel, make sure the power in the cable is properly connected. After powering on the S-4 Fresnel, the display shows the current operating mode. Navigate through the menus and options using the arrow buttons and select items by pressing the ENTER button.

Operational mode (A)

Displays the current operating mode.

Current DMX address (B)

Displays current DMX address. The DMX can be changed directly from this view by pressing UP or DOWN and then ENTER.

Data indicator (C)

External data indicator; if any DMX control is active, the indicator will flash.

Data protocol (D)

Internal data indicator. If any DMX control is active, the indicator will display DMX. If the DMX is not active, then the internal manual mode will be displayed, e.g. HSI mode.

Next fixture (E)

Shows the next available DMX address, depending on the fixture’s DMX footprint.

Using the control panel buttons (F)

- Press ENTER to access the menu or make a selection.
- Press the arrow buttons to scroll up and down in the menu.
- Press the ESC button to take a step back in the menu.
- Press UP + DOWN simultaneously to flip the display upside down.

Control knob 1 (G)

This control knob is intended to be used in manual mode:

Intensity	0-100%	(CCT mode)
Intensity	0-100%	(HSI mode)
Red	0-100%	(RGB mode)

Control knob 2 (H)

This control knob is used for manual mode:

CCT	2,000K - 10,000K	(CCT mode)
Hue	0-100%	(HSI mode)
Green	0-100%	(RGB mode)

Control knob 3 (I)

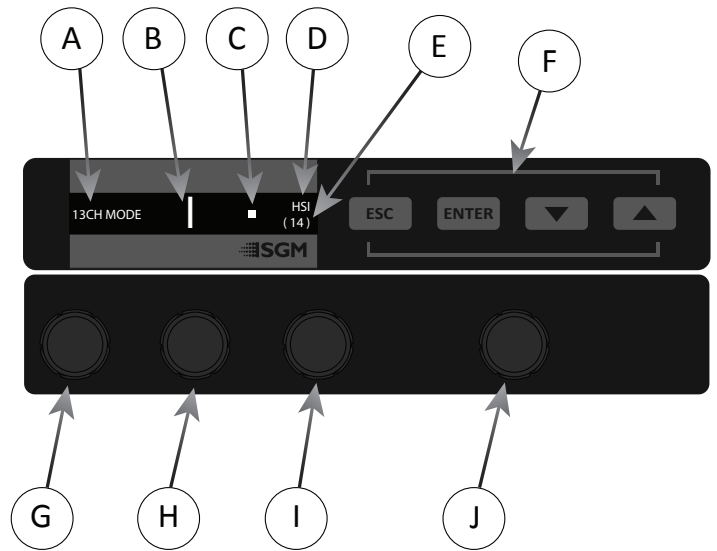
This control knob is used for manual mode:

Plus/Minus Green	0-100%	(CCT mode)
Saturation	0-100%	(HSI mode)
Green	0-100%	(RGB mode)

Control knob 4 (J)

This control knob is always used for manual zoom control regardless of the mode selected:

Zoom	0-100%	(CCT mode)
Zoom	0-100%	(HSI mode)
Zoom	0-100%	(RGB mode)



- | | |
|-------------------------|-------------------|
| A: Operational mode | F: Menu buttons |
| B: DMX address | G: Control knob 1 |
| C: Data indicator | H: Control knob 2 |
| D: Manual mode | I: Control knob 3 |
| E: Next fixture address | J: Control knob 4 |

Figure 6: OLED display and control panel

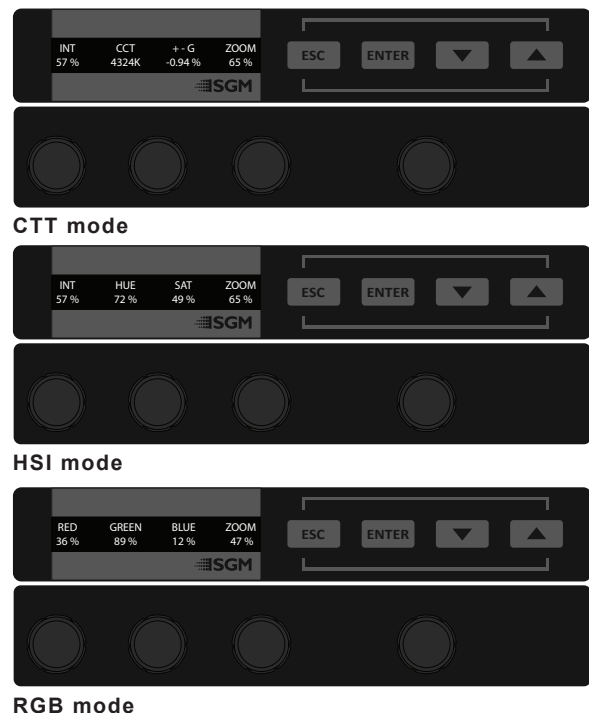


Figure 7: Control knobs

Connecting to a DMX control device

The S-4 Fresnel is controllable by a DMX control device, and it can be connected using either a DMX cable or via the optional fixture's built-in LumenRadio® CRMX wireless receiver system.

If using a cabled DMX system, plug in the DMX cable to the input connector (chassis mounted male 5-pin XLR connector) located at the base of the fixture. For outdoor installations, use only IP65-rated XLR connectors.

If using a wireless DMX system, ensure that the DMX Out and the DMX In are properly sealed. Connect or seal both, DMX In and DMX Out, in order to maintain the fixture's IP65 rating.

If using a cabled DMX system, connect the DMX In cable to the input connector, and the DMX Out cable to the output. Both connectors are on the rear of the fixture's base (chassis mounted male 5-pin XLR connectors).

For outdoor events, use only IP65-rated XLR connectors. If using a wireless DMX system, remember to use the protective caps in any unused DMX connector in order to maintain the fixture's IP65 rating.

Connecting a wireless transmitter

The S-4 Fresnel is designed to look for wireless transmitters in 'connect' state when this option is not yet enabled.

To connect the S-4 Fresnel to a wireless transmitter:

- Log off the currently paired wireless transmitter. See below "Disconnecting a wireless transmitter".
- Press the connect button on the wireless transmitter.
- Confirm that the fixture has paired with the wireless transmitter.

Disconnecting a wireless transmitter

To disconnect the fixture from the currently paired wireless transmitter, go to:

ENTER → SETTINGS → WIRELESS DMX → LOG OFF.

Signal priority

The S-4 Fresnel can be paired to an active wireless transmitter whilst simultaneously being connected to a cabled DMX. The device will prioritize cabled DMX over the wireless DMX.

The active input type is displayed under the wireless signal strength indicator. The signal strength can also be checked via RDM data by using an external RDM device (e.g. the SGM A-4).

Configuring the device for DMX control

About DMX

The S-4 Fresnel can be controlled using signals sent by a DMX controller on a number of DMX channels. DMX is the USITT DMX 512-A standard based on the RS-485 standard. The signal is sent to the fixtures as DMX data from a console or a controller via shielded twisted pair cable, designed for RS-485 devices.

The cables are daisy chained between the fixtures, and up to 32 fixtures can be connected to the same DMX link. Up to 300 meters (1000ft.) of cable is achievable with high quality DMX cables. All DMX links must be terminated in the last fixture by connecting a DMX termination plug to the last fixture's 5 pin DMX Out connector.

PLEASE NOTE:

Standard microphone cable is not suitable for transmitting DMX.

Up to 32 fixtures can be connected to the same DMX link. Additional fixtures will overload the link.

The last fixture must always be fitted with a DMX termination plug to the fixture's DMX Out.

Set/ edit DMX address

The DMX address is shown on the OLED display in the control panel. To change the address setting, press the up and down arrows. When the desired address is displayed, press ENTER to save the setting. For your convenience, the next available DMX address is displayed to the right.

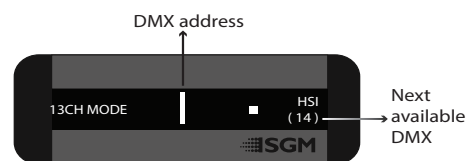


Figure 8: Set DMX address

The S-4 Fresnel also offers the option to set the DMX address through RDM. See "RDM" on page 16.

PLEASE NOTE: Turning any control knob without DMX received signal will set the fixture in manual mode.

DMX charts

The S-4 Fresnel operates in different DMX modes. All DMX charts are available at www.sgmlight.com under the respective product, or upon request via support@sgmlight.com.

DMX start address

As mentioned above, the S-4 Fresnel can be operated in different DMX modes. For any of the modes, the first channel used to receive data from a DMX control device is known as the DMX start address.

For independent control, each S-4 Fresnel must have its own DMX start address configured. For example, if the first S-4 Fresnel is set to a 13 ch DMX mode with a start DMX address of 1, the following S-4 Fresnel in the DMX chain should then be set to a DMX address of 14, as the first fixture uses the first 13 DMX channels, including the 13th. The next one would be the channel 27 (14+13 >> 27), and so on.

If two or more fixtures of the same type have the same DMX address, they will behave identically. Incorrect settings will result in unpredictable responses from the lighting controller. Address sharing can be useful for diagnostic purposes and symmetrical control.

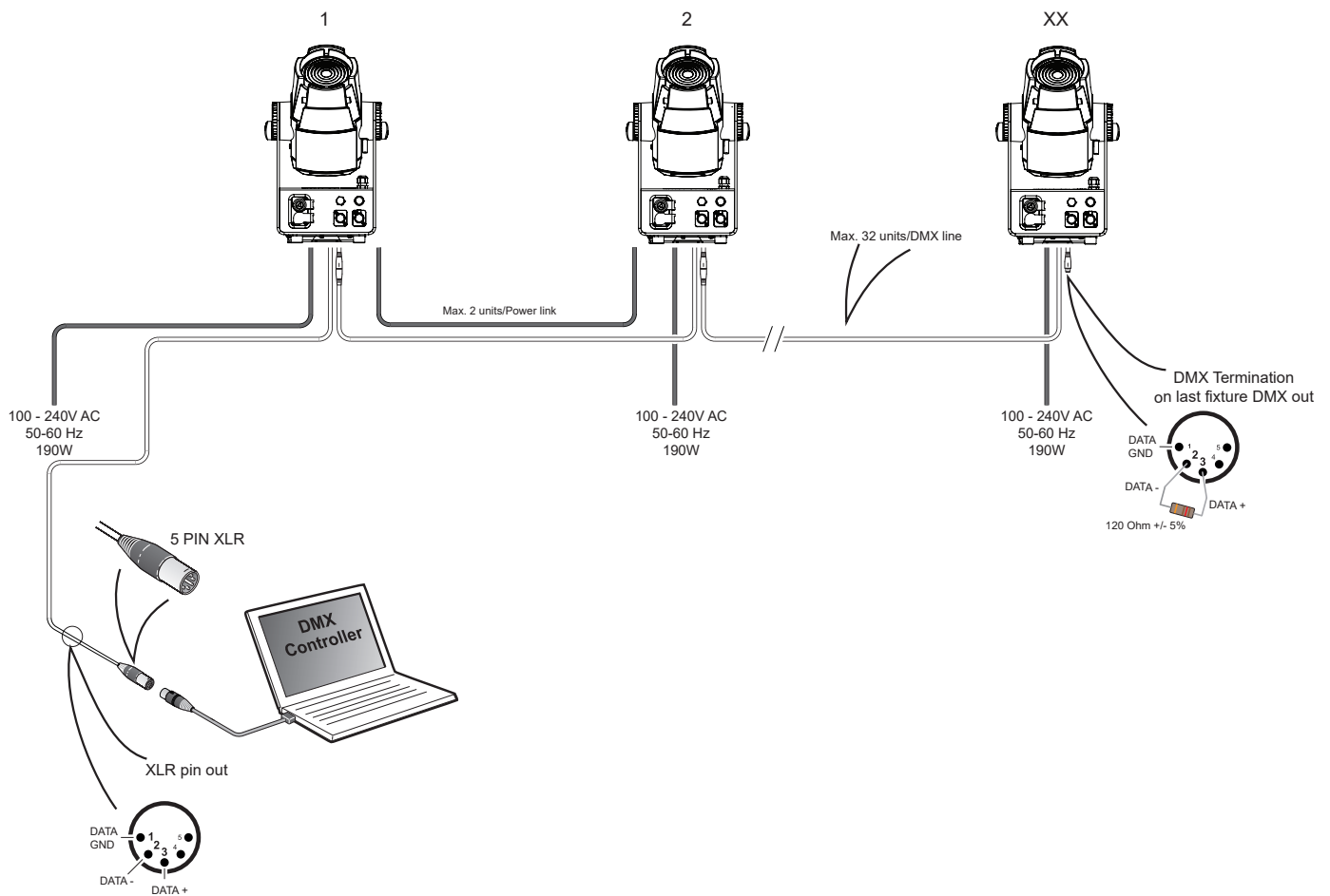


Figure 9: S-4 Fresnel connection diagram

Full Color Calibration and Color Temperature Correction

The Full Color Calibration (FCC) and Color Temperature Correction (CTC) enables the fixture to mimic different color temperatures.

In DMX mode, the CTC channel sets the white reference, of which any color will mix towards.

Example:

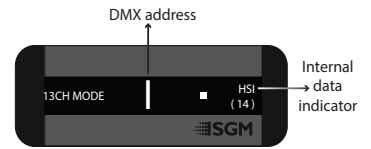
1. CTC is set to 228/ 89% = 6,500K.
2. Green + Blue at 100% = Full cyan.
3. Red is added/ faded to 100% = Cyan will fade to 6,500K white.

When enabling the CTC channel 11, the DMX values are:

- 0 = Default 5600K.
- 1-4 = No CTC Raw White.
- 5-255 = Seamless variation 2,000k to 10,000K. Please refer to the DMX Chart for specifications.

Using standalone operation

Standalone operation means that the fixture is controlled without being connected to a control device. When powering the fixture, it will appear to be in DMX mode (home screen). On the top right corner is the internal data indicator. If any DMX control is active, the indicator will display DMX; if no DMX is active, the internal manual mode will be displayed i.e. HSI mode - see picture 10.



To enable manual mode, go to ENTER → MANUAL, or manipulate one of the control knobs.

When in manual mode, press ENTER to toggle between the three available modes.

Then select one of the three modes:

- Mode 1: HSI (Intensity, Hue, Saturation, Zoom).
- Mode 2: CCT (Intensity, CCT, Plus/ Minus Green, Zoom).
- Mode 3: RGB (Red, Green, Blue, Zoom).

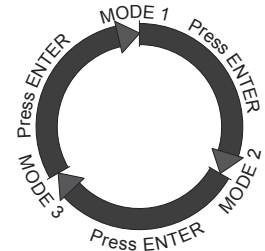


Figure 10: Toggle between modes

Please note:

The S-4 Fresnel prioritizes cabled DMX over any manual mode. If any DMX is detected, it will take control of the fixture.

Mode 1: HSI

- The first knob controls the intensity from 0-100%, and the corresponding data is the first value displayed from the left.
- The second knob controls the hue from 0-100%, and it corresponds to the second value displayed from the left.
- The third knob controls the saturation from 0-100%, corresponding to the third value displayed.
- The fourth knob controls the zoom function from 0-100% (narrow to wide).

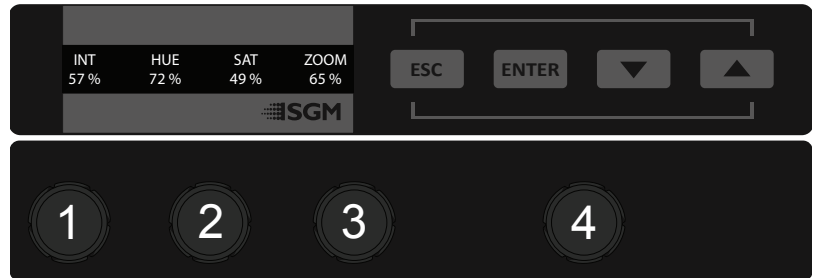


Figure 11: Mode 1 HSI

Mode 2: CCT

- The first knob controls the intensity from 0-100%, and the corresponding data is the first value displayed from the left.
- The second knob controls the CCT from 2,000K to 10,000K, and it corresponds to the second value displayed from the left.
- The third knob controls the +/- Green function in the range of -2.00 to 2.00, corresponding to the third value displayed.
- The fourth knob controls the Zoom function from 0-100% (narrow to wide).

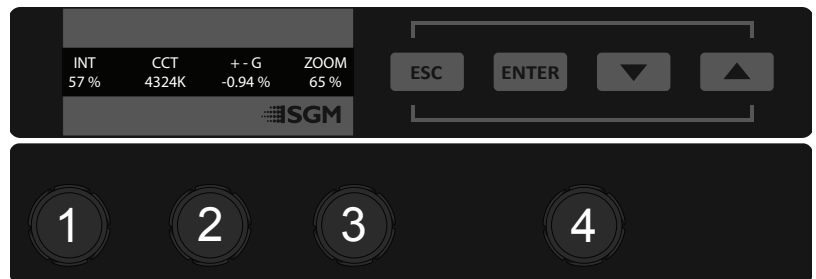


Figure 12: Mode 2 CTT

Mode 3: RGB

- The first knob controls the Red output from 0-100%, and the corresponding data is the first value displayed from the left.
- The second knob controls the Green output from 0-100%, correlating to the second data set in the display.
- The third knob controls the Blue output from 0-100%, correlating to the third data set in the display.
- The fourth knob controls the Zoom function from 0-100% (narrow to wide).

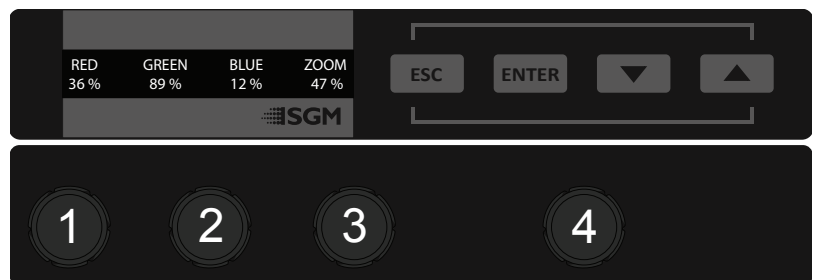


Figure 13: Mode 3 RGB

Fixture properties

Factory default

When restoring the device, the following parameters will be set to factory default:

- DMX address = 1.
- Startup mode = DMX.
- Display saver = Off.
- Flip screen = Off.
- RDM device label = Fixture type name.
- Internal program reset.

Effects

Colors

The S-4 features five high-power LEDs (Red, Green, Blue, Amber, and Mint). The fixture operates in RGB calibrated mode, which ensures that colors are compatible across the range of SGM fixtures. However, the S-4 Fresnel also offers the possibility of using the Amber and Mint LEDs only in color filter emulation mode with full control of each color.

Color macro

The S-4 Fresnel features a color macro, which is a very powerful tool that easily matches colors between different types of SGM fixtures. The color macro tool allows the S-4 Fresnel to adjust to the same color hue as, for instance, the G-1 Beam (fixed color wheel).

Color filter emulation

The S-4 Fresnel features a unique color filter emulation which is based on the LEE filters, ranging from LEE 004 to LEE 353. By the combination of the RGBAM LEDs and a physical internal filter, the S-4 Fresnel can mimic congo blue and deep saturated red.

Plus and Minus green control

The S-4 Fresnel features a plus/ minus green function, accessible from the color filter emulation channel.

The plus/ minus green feature allows the user to slightly change the amount of green used in different color temperatures.

The S-4 Fresnel can match different camera settings and also emulate other light sources.

In order to use this feature correctly, please see the latest DMX chart and color filter emulation chart available at www.sgmlight.com, or upon request via support@sgmlight.com.

Color temperature correction

The S-4 Fresnel offers seamless CTC (color temperature correction) control from 2,000° K - 10,000° K.

Ultra high-speed strobe effects

The ultra high-speed strobe effect introduces the possibility to generate random strobe and pulse effects with variable speed.

Control menu

Level 1	Level 2	Level 3	Function
MANUAL	-		
RESET	-		
TEST	Automated test	-	Initiates a self-test sequence. Press 'ESC' to stop self-test sequence.
	Display test	-	Service use only.
	LED Test	-	Scroll UP or DOWN to test all the LEDs.
SETTINGS	Display Flip	-	Press ENTER to enable/ disable display flip.
	Display Off	-	Press ENTER to enable/ disable display off.
	Factory Default	-	Resets the fixture to factory default. See "Factory default" on page 14.
	Service PIN	-	Service use only. Contact your SGM dealer or SGM support to request the service pin.
	Service Menu	-	Service use only.
INFO	Software Version	-	Displays installed firmware version and date of installation.
	Timers	Red	Displays total LED running days and hours in Red.
		Green	Displays total LED running days and hours in Green.
		Blue	Displays total LED running days and hours in Blue.
		Amber 1	Displays total LED running days and hours in Amber 1.
		Amber 2	Displays total LED running days and hours in Amber 2.
		Mint 1	Display total LED running days and hours in Mint 1.
		Mint 2	Display total LED running days and hours in Mint 2.
	Errors	-	Display the errors detected.
	Sensors	Main Board	Displays the sensors of the fixture.
		Head Board	
		LED	
		Wireless Signal (strength)	
		Wireless Paired	
		Mains (voltage)	
Humidity			
Light PWM			
DMX View	-	Displays received DMX levels. Press UP or DOWN to scroll through the 1 - 504 channels.	
Serial Number	-	Displays SGM serial # of the fixture.	

RDM

Supported RDM functions

The S-4 Fresnel features support for various RDM functions.

RDM (Remote Device Management) is a protocol enhancement to USITT DMX 512 that allows bi-directional communication between the fixtures and the controller over a standard DMX line. This protocol will allow configuration, status monitoring, and management.

You will need a RDM controller to get control over the supported parameters. See the tables below for supported RDM functions.

RDM functions

Please note: The RDM controller communicates with the fixtures only showing the available options for each RDM function.

PID	Actions allowed	Name
0x0082		Device Label
0x0081		Manufacturer Label
0x00E0		DMX Personality
0x00E1		DMX Personality Description
0x0200		Sensor Definition
0x0201		Sensor Value
0x0080		Device Model Description
0x1001		Reset Device

PID	Actions allowed	Name
0x0051		Parameter Description
0x0090		Factory Defaults
0x0501		Display Level
0x0500		Display Invert
0x0400		Device Hours
0x0401		Lamp Hours
0x0121		Slot Description
0x8626	SET	CRM Log Off

Sensors

RDM enables various sensor readouts for remote device monitoring. See the table below for sensors and sensor types.

Please note: The RDM controller communicates with the fixtures only showing the available sensors for this fixture. The table is subject to change without notice.

Name	Sensor Type
Main Board Temperature	Temperature
Head Board Temperature	Temperature
Light Source Temperature	Temperature
Wireless Signal Strength	Other

Name	Sensor Type
Wireless Paired	Other
Mains Voltage	Voltage
Humidity	Humidity
Light PWM	Other

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, confirm that the cables are plugged in.
	Main fuse is blown.	Contact SGM support or certified SGM service partner.
Fixture suddenly turned off.	Power was turned off.	Check the power supply, switches and breakers.
Fixture suddenly stopped responding.	The wireless transmitter or connectors were disconnected/ tampered with.	Inspect the wireless transmitter and connections.
	DMX cables was disconnected.	Inspect DMX cables.
Fixture operates irregularly/ abnormally.	DMX cable polarization is inverted (pin 2 + 3).	Install a phase-inverter or replace cables.
	DMX link is not terminated.	Install a XLR 120 ohm DMX terminator at the end of the DMX link.
	Corrupted DMX cable.	Replace or repair defective cables and/ or connectors.
	The fixture operates an internal program.	Go to MENU → MANUAL → STOP PROGRAM.
	A corrupted fixture generates noise/ disruptions on the DMX link.	Track and isolate the corrupted fixture.
Color is uneven	The SGM Calibration Data set has been lost.	Contact your local SGM dealer or support@sgmlight.com.

Accessories

The S-4 Series can be used with different types of accessories such as barndoors, top hat, or two different types of front lens kits: the S-4 Micro-Fresnel and the motorized barndoors.

To learn more about all the available S-4 accessories, visit www.sgmlight.com, or contact your local SGM dealer.

Apart from the front lens kits, there are no other user-serviceable components in the fixture. Do not open other parts in the S-4 Fresnel, as doing so may damage the ingress protection (IP rating). Contact your SGM dealer if the fixture operates abnormally, is defective, or needs any kind of service or repair.

Barndoors

4-way and 8-way barndoors

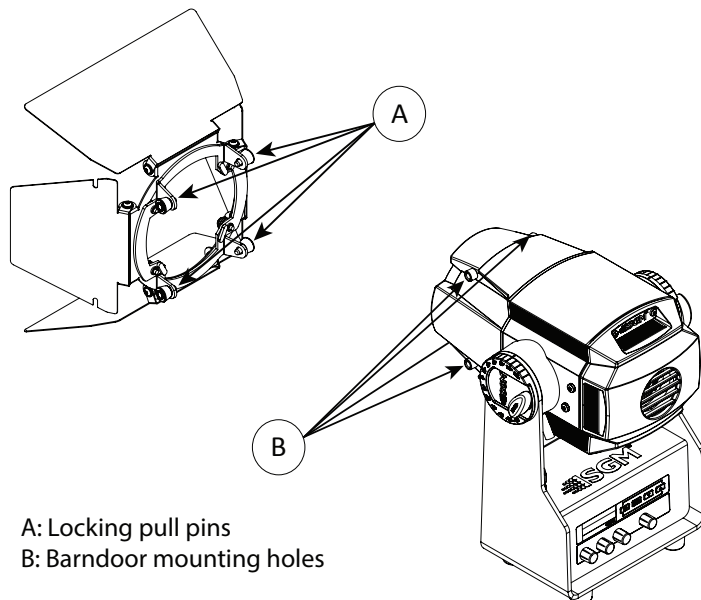
The S-4 Fresnel is extendible by using the 4-way or 8-way barndoors. The barndoors are designed and intended to be mounted on the fixture without the use of any tools.

Attaching the barndoors

Ensure that there is no dust or any other particles in the mounting holes where the barndoors' locking pins are going to be attached to.

1. Align the barndoors correctly to the front lens.
2. Pull out the 4 locking pins (one or two at a time), and release them properly into the attachment holes.

To remove the barndoors, simply detach the locking pins from the holes and carefully take the barndoors out of the fixture's front.



A: Locking pull pins
B: Barndoor mounting holes

Figure 14: Attaching a 4-way barndoor

Top Hat

The Top Hat's main function is to create discrete lighting designs by reducing flare coming from the direct light source.

The Top Hat can be easily mounted through magnetic fastening. When correctly aligned to the front lens, the Top Hat will snap into place due to the four powerful magnets.

- A: Top Hat (front view)
- B: Safety wire
- C: Magnets (back view)

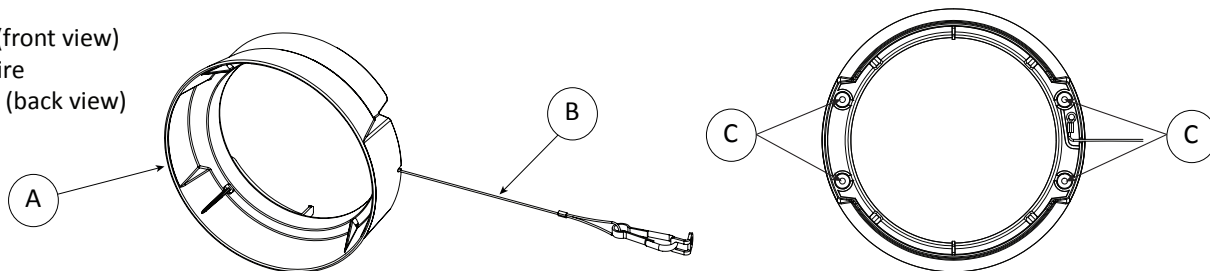


Figure 15: Top Hat overview

Attaching the Top Hat

1. Align the Top Hat correctly to the S-4 Fresnel front lens.
2. Allow the powerful magnets (2 on each side) to snap into place.

To detach the Top Hat, simply remove it in a straight upwards line with a firm grip. Ensure that there are no metal dust or any other particles where the magnets are located.

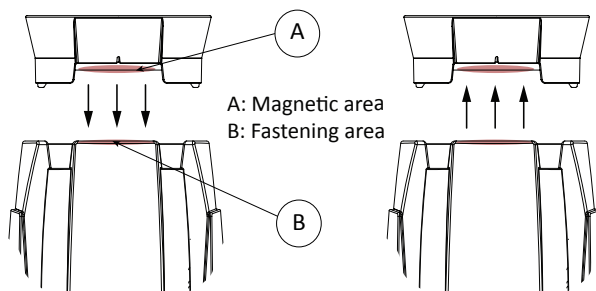


Figure 16: Attaching the Top Hat

Attaching the Top Hat safety wire

The Top Hat includes a safety wire that can be mounted on the front hood of the fixture, thus ensuring that the Top Hat never gets lost.

To mount the safety wire to the fixture:

1. Loosen one of the four screws of the S-4 Series front hood.
2. Place the safety wire securing plate in the chosen screw hole with the clipping point outwards (B). Make sure it is well aligned.
3. Insert the screw through the safety wire securing plate and the screw hole, and tighten firmly.
4. Fasten the snap hook in the safety wire clipping point if not already attached (A).

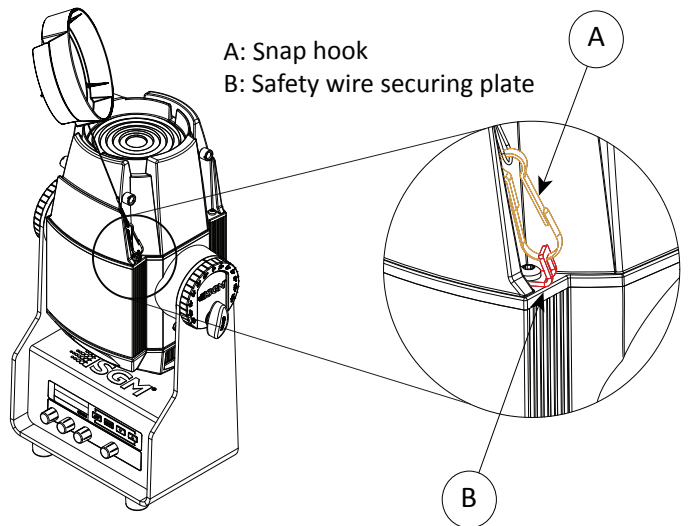


Figure 17: Attaching the Top Hat safety wire

Interchangeable front lens

The S-4 Fresnel offers the possibility to change the front lens, expanding the flexibility of the fixture even further. The S-4 Fresnel can quickly be converted into an S-4 Micro Fresnel or into an S-4 Fresnel with Motorized Barndoors.

Changing the S-4 Fresnel front lens

To replace the front lens:

1. Locate the four screws on the front head.
2. Remove the four screws with a Torx 20 screwdriver.
3. Detach the front lens with a firm grip.
4. Mount the new front lens. **Make sure the rubber sealing O-ring in the front lens (not shown) is located correctly, and it is not damaged.**
5. Tighten the 4 screws with 1 Nm.
6. Vacuum-test the S-4 Fresnel in order to maintain the IP65 rating - see more on "SGM Vacuum Test Kit" on page 20.

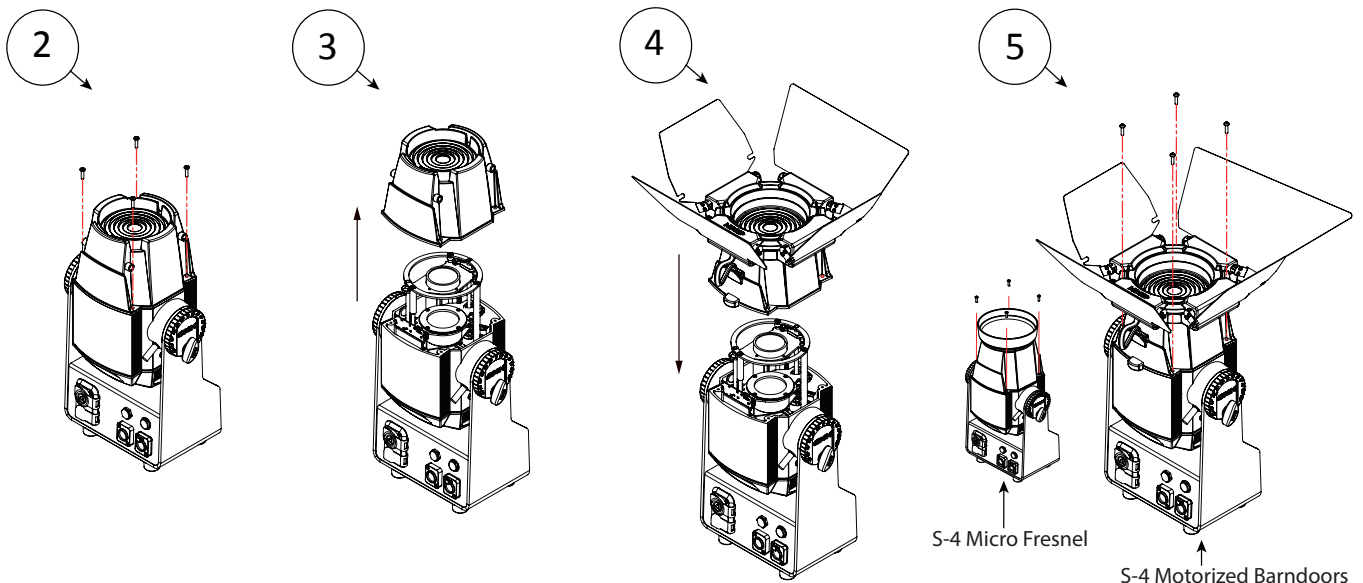
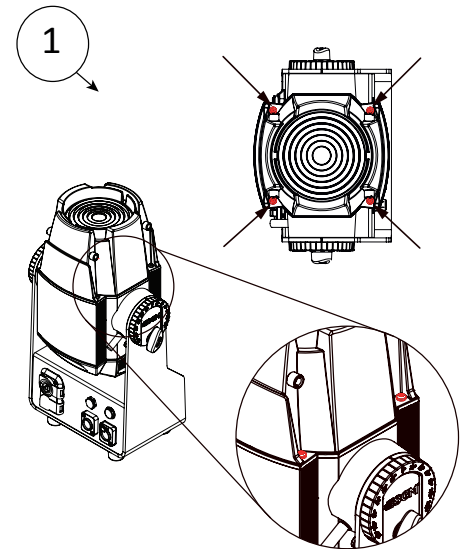


Figure 18: Changing the front lens

Motorized Barndoors

Overview

When acquired as an accessory, the Motorized Barndoors quickly transform the S-4 into a Fresnel-based *fixture* with no need for manual barndoors adjustment and the same projector performance.

The Motorized Barndoors are operated remotely via DMX. Each blade has individual -90° to $+40^{\circ}$ angle control, and the whole module rotates from -110° to $+110^{\circ}$. The barndoors maintain their position at any time and the automatized control prevents the blades from getting damaged.

Motorized Barndoors' front lens

- A: ISO Views
- B: Back view
- C: Side view
- D: Front view

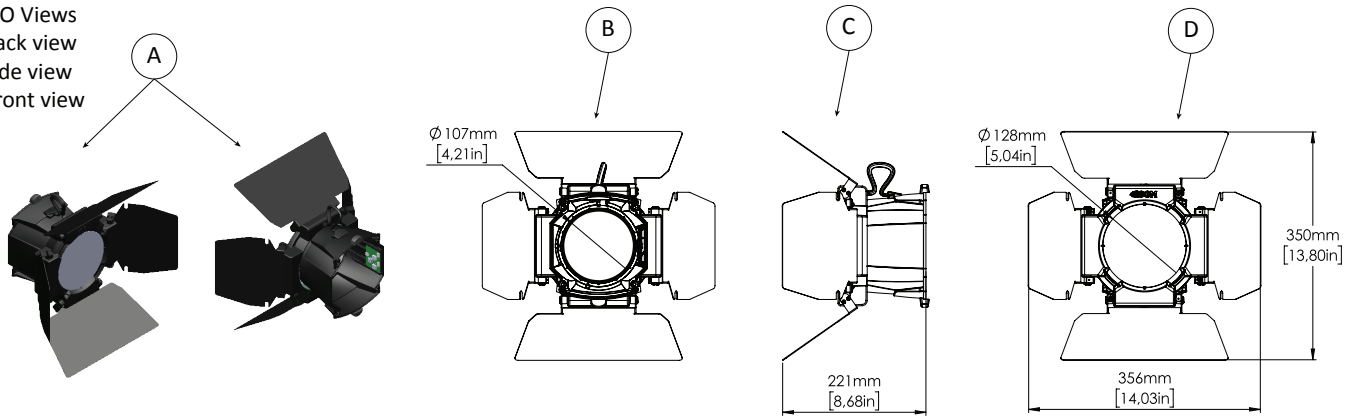


Figure 19: Motorized Barndoors' front lens

Attaching/ detaching the motorized barndoors

Swapping the front lens of the S-4 Fresnel for the motorized barndoors requires the replacement of both front lens and back cover.

The replacement of the front lens is done in the same way as explained previously in "Changing the S-4 Fresnel front lens" on page 18. The head back cover must be replaced with a heavier one in order to give proper counterbalance between the front and the back of the fixture.

When purchased as an accessory, the Motorized Barndoors include detailed instructions on how to replace the front and the back head cover. To get more information on how to install the Motorized Barndoors in a S-4 Fresnel fixture, please contact support@sgmlight.com.

- A: Motorized barndoors
- B: S-4 head back cover

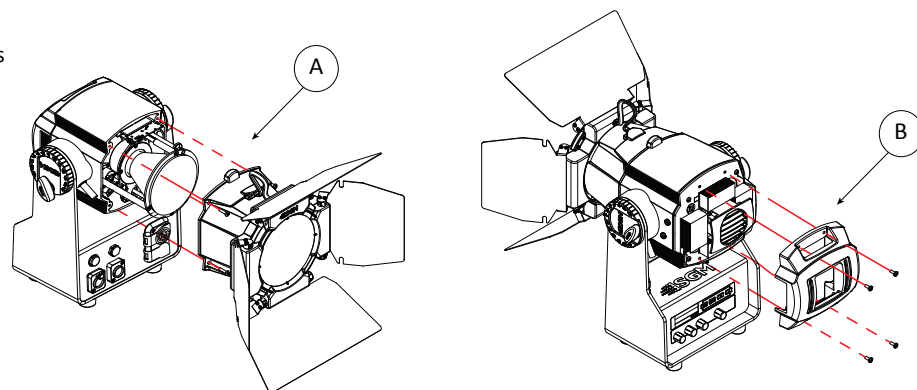


Figure 20: Attaching/ detaching the motorized barndoors

Motorized Barndoors' closure

When operating the S-4 with Motorized Barndoors through DMX, be aware that the blades do not close completely.

Therefore, keep in mind that a tiny gap will be left after the closure of the barndoors as shown in figure 21.



Figure 21: Motorized barndoors closure

Removable diffusion filter

The Motorized Barndoors include an external diffusion filter that is installed in a slot, located in the barndoors module, right after the front lens.

The filter can be used to improve the softness of the cut, generating a dreamy haze, and enhancing the skin tones whenever the fixture is used as a direct front lighting.

The included diffusion filter (or diffusion gel) can be easily removed from the slots (or mounted, if not attached).

The filter slots are a useful feature for other gel-based custom filters. To attach a custom filter in the motorized barndoors' module, simply cut the gel in a round shape with $\text{Ø}128$ mm and insert it into the filter grooves.

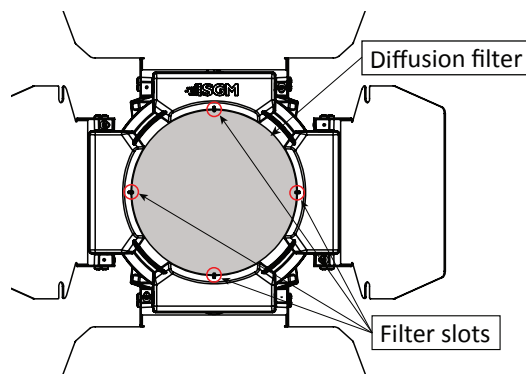


Figure 22: Diffusion filter and slots

SGM Uploader cable

The SGM USB to DMX cable is an accessory mainly used to update the fixture with the latest SGM firmware.

Please refer to "Upgrading the firmware" on page 21 to see how to update the fixture with the latest firmware.

The SGM Uploader cable is also used for controlling the DMX values channel by channel through the Firmware Uploader Tool software (available for download at www.sgmlight.com).



Figure 23: SGM Uploader cable

SGM Vacuum Test Kit

The Vacuum Test Kit is an accessory suitable for all SGM IP-rated fixtures, and is designed for testing the IP validity after having reassembled the fixture.

In order to ensure the IP rating of the S-4 Fresnel, it is highly recommended that the fixture is always vacuum-tested after installing or swapping any part that might compromise the IP rating e.g. swapping the front lens.

SGM disclaims liability for any damage occasioned by non-use or inability to use the vacuum test kit after reassembling the fixture.



Figure 24: SGM Vacuum Test Kit

Maintenance

Upgrading the firmware

The firmware installed in the fixture can be identified in two ways:

- When powering on the fixture, the display shows the current installed firmware version.
- By going to the MENU → INFO → SOFTWARE VERSION.

We recommend that the fixture's firmware is always up-to-date. The latest firmware version is available for download under the respective product at www.sgmlight.com.

To update your S-4 Fresnel with the latest firmware, use an SGM USB 5-Pin-XLR uploader cable (available from your nearest SGM dealer) and a Windows-based computer with the SGM Firmware Tool software installed (also available for download at www.sgmlight.com).

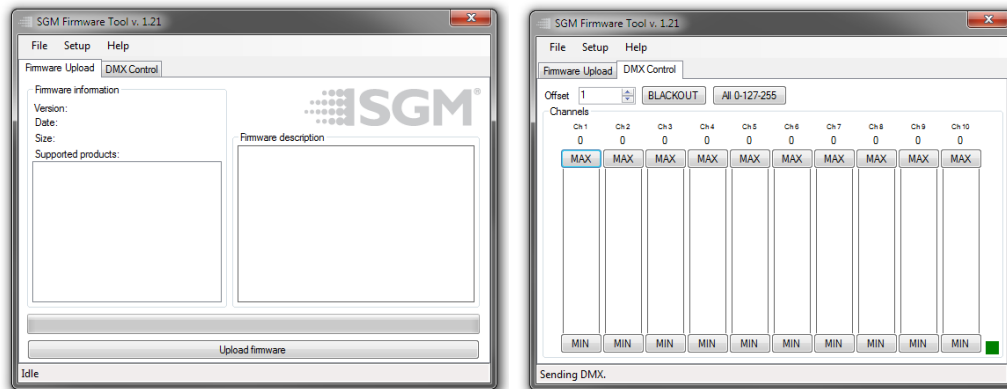


Figure 25: Firmware tool

Additionally, the Firmware Tool software offers a simple DMX controller, featuring 512 DMX channels for test purposes.

Cleaning

SGM fixtures with IP65 or IP66 rating do not need any cleaning procedures inside the fixture. However, cleaning the front lens may be needed to achieve the maximum light output after exposure to dust, sand, or dirt. Exterior housing can also be cleaned to obtain a better look. To maintain adequate cooling, fans must be cleaned periodically.

Whenever necessary, clean the S-4 Fresnel by using a soft cloth dampened in a solution of water and mild detergent. Do not use products that contain solvents, abrasives, or caustic agents for cleaning, as they can cause damage to both hardware, cables, and connectors.

The level of cleaning required will vary depending on the operating environment and installation. Therefore, it should be checked at frequent intervals within the first few weeks of operation.

Fixtures and accessories

Contact your local SGM dealer to get the latest pricing and news about the available accessories.

PLEASE NOTE: the list below is subject to change without notice.

Ordering information

S-4 Fresnel C, Std, BL w/ wireless P/N: 80111003

S-4 Series' accessories

Power cable with IP connector P/N: 07860040
1 x Omega bracket, BL/ WH P/N: 83060602/ 83061206
SGM USB uploader cable P/N: 83062011
S-4 Tophat, BL P/N: 83061150
Barndoor 4-way, S-4 Fresnel P/N: 83061153
Barndoor 8-way, S-4 Fresnel P/N: 83061154
G-4 Wash-Beam/ S-4 Micro-Fresnel Front Lens Kit, BL P/N: 83061410
Motorized Barndoors 4-way, G-4/ S-4 P/N: 83061166
28 mm spigot adapter for omega bracket P/N: 83060639
Lightbank, S-4 P/N: 83061095
SGM Vacuum test kit P/N: 83061136
Flightcase for 4 pcs G-4 Wash/ G-4 Wash-Beam P/N: 82051011

Support hotline

SGM offers 24/7 technical support hotline.

Worldwide: +45 3840 3840

US: +1 407-242-6217

support@sgmlight.com

Approvals and certifications

Conforms to
Conforms to
Conforms to

2014/35/EU: Low Voltage Directive
2014/30/EU: EMC Directive
2011/65/EU: RoHS2 Directive



The information in this document is subject to change without notice. For the latest information, visit www.sgmlight.com



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