



Description

The Crestron® GLS-OIR-CSM-EX-BATT is a powerful, cost-saving solution for reducing energy usage and enhancing system functionality. As part of a complete Crestron system, it can be used to enable automation of lighting, shading, HVAC, and AV equipment based on room occupancy or vacancy. The GLS-OIR-CSM-EX-BATT can also be used to expand the capabilities of a room scheduling, asset management, or energy monitoring solution through integration with the Crestron Fusion® Enterprise Management service.

The GLS-OIR-CSM-EX-BATT is a battery-powered, passive infrared occupancy sensor designed for ceiling mount installation in small areas up to 500 square feet or 46.5 square meters. It communicates wirelessly with a Crestron control system via the infiNET EX® wireless network, allowing for quick installation without running any wires.

NOTE: For indoor use only.

NOTE: Any infiNET EX device that provides expander functionality effectively extends the range of the wireless network beyond the initial range of the gateway. Battery-powered infiNET EX devices, including the GLS-OIR-CSM-EX-BATT, do not provide expander functionality. Wireless networks composed predominantly of battery-powered devices may need additional infiNET EX expanders, such as the CLW-EXPEX or GLA-EXPEX (both not included), or other non-battery powered infiNET EX devices to ensure proper functionality of the network and battery life for the devices. Refer to the Best Practices for Installation and Setup of Crestron RF Products (Doc. 6689) at www.crestron.com/manuals for complete system design guidelines, or contact Crestron True Blue Support for further assistance.

SPECIFICATION	DETAILS
Sensing	
Sensor Technology	Passive Infrared
Coverage Area	500 square feet (46.5 square meters)
Coverage Pattern	360 degrees (half mask and perforated mask included)
Major Motion Area	150 to 500 square feet (13.9 to 46.4 square meters)
Minor Motion Area	0 to 150 square feet (0 to 13.9 square meters)
Power	
Battery	(1) Ultralife U9VL-J-P 9 Volt 1200 mAh lithium disposable battery (included)
Battery Life	10 years under normal operating conditions
Environmental	
Temperature	32° to 104° F (0° to 40° C)
Humidity	0% to 95% RH (non-condensing)
Dimensions	
Height	1.19 in (31 mm)
Diameter	4.38 in (112 mm)
Weight	
Without Battery	3.5 oz (98 g)
With Battery	4.8 oz (135 g)

Additional Resources

Visit the product page on the Crestron website (www.crestron.com) for additional information and the latest firmware updates. Use a QR reader application on your mobile device to scan the QR image.



Important Notes

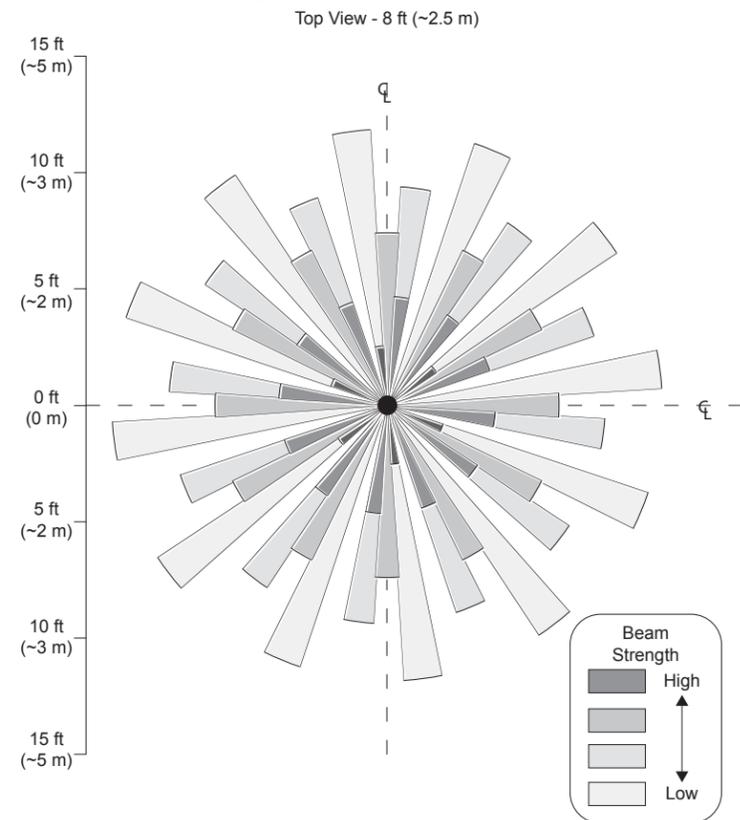
NOTE: Observe the following points.

- Replace the battery with an Ultralife 9 volt lithium battery only.
- The low battery detection is intended to make the user aware that it may be time to change the battery. Actual battery life depends on device usage.
- The sensor may be painted to accommodate ceiling color. However, do not paint over the dome as this significantly hinders sensing capabilities.
- Programming can accommodate rooms that need to be occupied while lights are off by utilizing scenes or sensor-disabling buttons.
- To be installed and used in accordance with appropriate electrical codes and regulations.
- This product should be installed by a qualified electrician.
- Mount sensors on a vibration free surface.
- Mount sensors at least 6 ft (1.8 m) away from air vents.
- Mount sensors more than 10 ft (3 m) from each other.
- Do not touch the inner surface of the lens. Clean the outer surface with a damp cloth only.

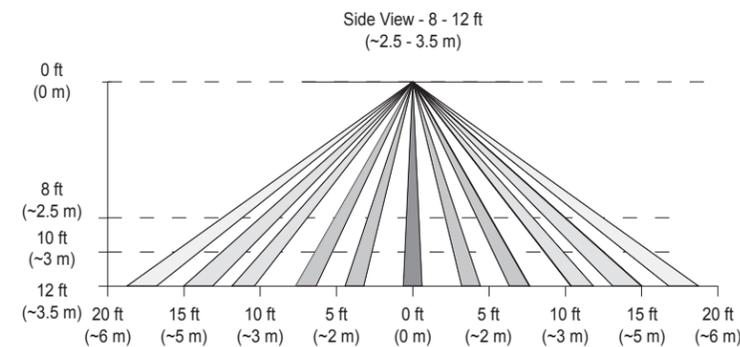
Coverage

The following illustrations provide the coverage areas of the GLS-OIR-CSM-EX-BATT.

GLS-OIR-CSM-EX-BATT Coverage Areas (Top View)



GLS-OIR-CSM-EX-BATT Coverage Areas (Side View)



Installation

NOTE: The GLS-OIR-CSM-EX-BATT must have a clear view of the entire room. The device should not be blocked by furniture or fixtures.

NOTE: Avoid false triggering of the sensor by mounting it away from air vents, fans, windows, and other devices that create air movement in the room.

The following items are included with the GLS-OIR-CSM-EX-BATT for installation:

- (2) Plastic wall anchors
- (2) Phillips head screws
- (1) PIR 1/2 mask
- (1) PIR 360 degree 12 section perforated mask
- (1) Ultralife 9 volt lithium battery

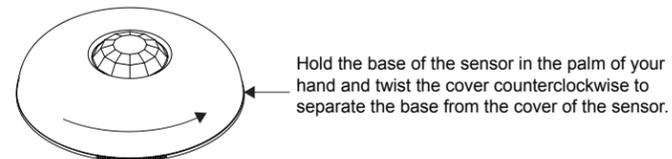
The following tools are required for installation:

- Phillips head screwdriver
- Pencil

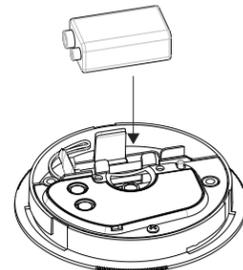
Mount the sensor to the ceiling.

1. Select the mounting location of the sensor and proper masking for the application. Refer to the "Operation," "Coverage," and "Test Mode" sections to select the appropriate mounting location.

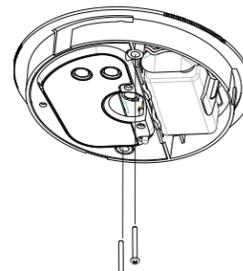
2. Make two marks on the mounting surface, 3 inches (76 millimeters) apart, for the plastic wall anchors.
3. For surfaces other than drywall and drop ceiling tiles, pre-drill the mounting location for the plastic wall anchors.
4. Install the plastic wall anchors.
5. Twist the sensor counterclockwise and separate the base from the cover of the sensor.



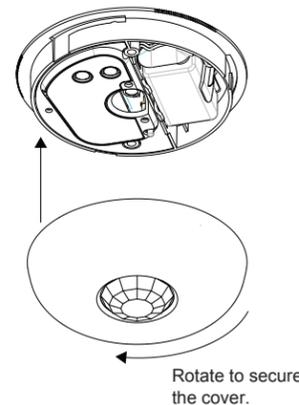
6. Connect the battery to the two terminals in the sensor and secure the battery into the housing.



7. Using the Phillips head screws and screwdriver, mount the base of the sensor to the plastic wall anchors.



8. Place the cover on the sensor on the installed base and then rotate the cover of the sensor clockwise until it is secured in place. The assembly clicks when secured.



Operation

The sensor is designed to process information based on the status of the room and take that information to drive an action. Whether it is to turn on lights or a TV, the sensor completes this action based on motion detection. If the sensor no longer detects motion, the timeout triggers. The length of the timeout is set using the **TIMEOUT** knob under the cover.

NOTE: The sensor requires a complete cycle of occupancy, vacancy, and the vacancy timeout for proper operation. If occupancy is detected and the sensor turns on the lights, and then the occupant quickly exits the room and turns the lights off using a local switch, the sensor will not turn the lights on again until it can complete the vacancy timeout. To avoid this, set the timeout on the sensor to 30s and program the control system to determine the timeout for the sensor.

NOTE: The red LED flashes to indicate that the battery needs to be replaced. Refer to the "Replace the Battery" section for details.

TEST Button

The **TEST** button allows for setup and configuration of the device (as described in the "Test Mode" section on the following page). It also provides a visual indication of battery health. Tap the **TEST** button and the green or red LED illuminates. Green indicates that the battery health is good. Red indicates that the battery health is bad and should be changed.

Timeout Settings

The time that the sensor takes to declare the room vacant after motion is no longer detected is determined by the setting for the **TIMEOUT** knob inside of the sensor. The **TIMEOUT** knob does not scale linearly; it ranges from 30 seconds to 30 minutes with the midpoint of the knob corresponding to 5 minutes. Markings of 30s, 2m, 5m, 15m, and 30m are on the label to identify the settings. Timeout settings can be changed by the control system based on the time of day or occupancy status. The timeout settings revert back to the settings on the GLS-OIR-CSM-EX-BATT when no control system overrides exist.

Sensitivity Settings

The sensitivity of the sensor can be adjusted so that small, medium, or large motion is required to trigger an action within a 500 square foot detection area. The sensitivity scales linearly. The top of the knob (High) represents high sensitivity (small motions such as finger and head movement are needed to trip the device), the mid-point (Med) represents medium sensitivity (medium motions such as moving arms and legs are needed to trip the device), and the bottom of the knob (Low) represents low sensitivity (large motions such as entering or exiting a room are needed to trip the device).

Suggested Settings

The tables below show recommended settings for commercial and residential applications.

NOTE: The GLS-OIR-CSM-EX-BATT can also be used as a vacancy sensor. When used in this manner, the sensor turns lights off upon vacancy but does not turn lights on upon occupancy.

Commercial Applications

ENVIRONMENT	MOUNTING LOCATION	SENSITIVITY	TIMEOUT
Open Office	Above Work Space	High	15 Minutes
Conference Room	Center of Ceiling	High	15 Minutes
Hallway	Center of Ceiling	Medium	5 Minutes
Large Lobby	Center of Ceiling	High	30 Minutes
Closet	Corner Parallel to Door	Low	30 Seconds
Cafeteria	Center of Ceiling	Medium	15 Minutes
Bathroom	Center of Ceiling	High	15 Minutes

Residential Applications

ENVIRONMENT	MOUNTING LOCATION	SENSITIVITY	TIMEOUT
Dining Room	Center of Ceiling	High	30 Minutes
Hallway	Center of Ceiling	Medium	2 Minutes
Closet	Corner Parallel to Door	Low	30 Seconds
Garage	Center of Ceiling	Medium	5 Minutes
Kitchen	Center of Ceiling	High	30 Minutes
Bathroom	Center of Ceiling	High	5 Minutes
Bedroom	Corner Parallel to Door	Low	15 Minutes
Living Room	Center of Ceiling	High	30 Minutes

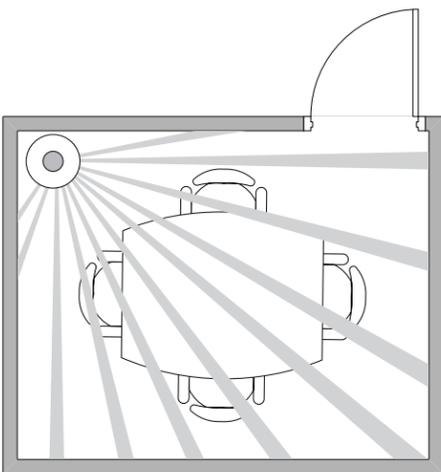
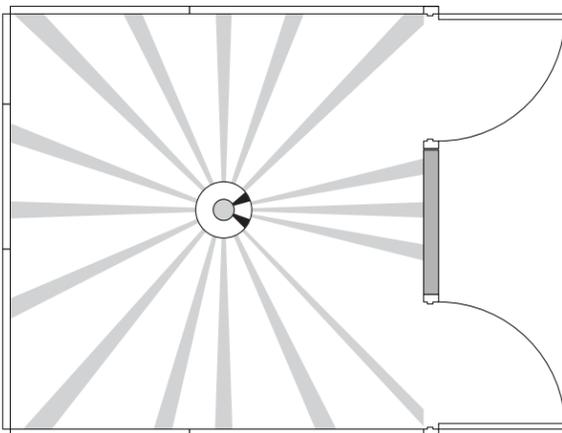
Mounting and Masking Locations

Two masks (a half mask and perforated mask) are included with the sensor and are used to prevent unwanted motion detection. The half mask blocks motion from being detected from half of the motion detector. The perforated mask has twelve 30-degree removable segments to allow custom masking. The selected mask is installed under the cover of the sensor to conceal the lens.

NOTE: The half mask comes pre-installed. If a different mask is to be used, it should be installed in the same manner as the half mask.

Refer to the following illustrations for typical mounting applications.

Typical Mounting and Masking Locations



Test Mode

Test mode allows the GLS-OIR-CSM-EX-BATT to be tested to ensure that the sensor is triggered by the proper amount of motion. It also allows for the RF ID and firmware to be updated more efficiently.

To enter Test mode, hold the **TEST** button for 4 seconds. The green LED flashes to indicate the device is powered and has entered Test mode.

When the device is in Test mode, the green LED flashes once to indicate that initial motion has been detected. The red LED lights when motion is detected and stays lit if continuous motion is sensed. Timeout settings do not take effect and no information is sent to the control system during Test mode. After final vacancy is detected, the green LED flashes once.

The sensor exits Test mode once the **TEST** button is pressed or after 5 minutes. When exiting Test mode, the sensor's green LED flashes. When the sensor exits Test mode, it enters Light Sleep mode. When in Light Sleep mode, the sensor checks for updates from the control system (such as new firmware or RF ID changes) every 30 seconds.

NOTE: When the GLS-OIR-CSM-EX-BATT is in Test mode all the functionality of Light Sleep mode is available.

Set the RF ID

It is recommended to have direct access to the GLS-OIR-CSM-EX-BATT and to use Crestron Toolbox™ to set the RF ID of the device. Set the RF ID for the GLS-OIR-CSM-EX-BATT by doing the following.

1. Wake the device by pressing the **TEST** button on the GLS-OIR-CSM-EX-BATT.
2. Set the RF ID of the device using Crestron Toolbox. The RF ID must match the RF ID specified in the Crestron Studio™ or SIMPL Windows program.
3. Press the **TEST** button on the GLS-OIR-CSM-EX-BATT to ensure that the device is still awake and the RF ID is transferred to the device.

The RF ID can also be set by placing the device into Setup mode.

1. Press the **TEST** button for more than 4 seconds. The LED flashes.
2. Set the RF ID using Crestron Toolbox. Setup mode is exited after 5 minutes.

Firmware Upgrade

NOTE: Before using the GLS-OIR-CSM-EX-BATT, ensure the device is using the latest firmware. Check for the latest firmware for the GLS-OIR-CSM-EX-BATT at www.crestron.com/firmware. Load the firmware onto the device using Crestron Toolbox™ software.

To upgrade the firmware on the GLS-OIR-CSM-EX-BATT, follow the procedure below using Crestron Toolbox (v. 2.36.216 or later):

1. Select **Tools > Network Device Tree View**.
2. Right-click the gateway in the Network Device Tree View window.
3. Select **Functions > Firmware Upload (Deep Sleep)**.
4. Click the **Load Firmware File** button in the Firmware Upload (Deep Sleep) window and browse for the firmware in the Open window.
5. Once the firmware is selected, click **Open** to add the firmware to Firmware Images.
6. In the Assignments section, click the device (CTRL + click or SHIFT + click for multiple devices) that the firmware should be assigned to. The row turns light gray.

NOTE: If a device is not located in the Assignments section, click Show all Available IDs.

NOTE: If a deep sleep device has not been acquired by the gateway, assign the firmware to an ID if the future ID number of the device is known.

7. In the Firmware Images section, click the firmware that should be assigned to the device(s). The row turns light gray.
8. Once the device(s) and firmware are selected, click **Assign Selected Image to Selected Target(s)** to assign the firmware to the device(s). The firmware is stored on the gateway and assigned to the device(s).
9. Select a method to initiate the firmware upgrade on the GLS-OIR-CSM-EX-BATT:
 - Allow the GLS-OIR-CSM-EX-BATT to automatically initiate the firmware upgrade, which occurs every 24 hours.
 - To manually initiate the firmware upgrade, enter or exit the room—the occupancy sensor initiates the firmware upgrade once it detects occupancy or vacancy.

Replace the Battery

Use the following procedure to replace the battery in the GLS-OIR-CSM-EX-BATT:

CAUTION: The battery used in this device may present a risk of fire or chemical burn if mistreated. Do not recharge, disassemble, heat above 212 °F (100 °C), or incinerate. Replace the battery with an Ultralife 9 volt lithium battery only. Use of another battery may present a risk of fire or explosion.

1. Rotate the cover of the sensor counterclockwise to remove the cover.
2. Remove the battery from the sensor.
3. Disconnect the battery from the two terminals in the sensor.
4. Connect the new battery to the two terminals in the sensor and secure the battery into the housing.
5. Rotate the cover of the sensor clockwise onto the installed base until it is secured in place. The assembly clicks when secured.

NOTE: Dispose of a used battery promptly. Keep away from children. Do not disassemble and do not dispose of in fire.

Wireless Communications

The device connects to the Crestron network via the infiNET EX communications protocol. Use the procedures outlined below to join or leave an infiNET EX network and to verify communications between the device and the control system.

Joining an infiNET EX Network

Before a device can be used in a lighting system, it must first join an infiNET EX network by being acquired by an infiNET EX gateway:

NOTE: A device can be acquired by only one gateway.

1. Put the infiNET EX gateway into Acquire mode from the unit itself or from Crestron Toolbox, as described in the gateway's manual at www.crestron.com/manuals.

NOTE: In an environment where multiple gateways are installed, only one gateway should be in Acquire mode at any time.

2. Place the device into Acquire mode by doing the following:

- a. Tap the **TEST** button three times then press and hold it down (tap-tap-tap-press+hold) until the green LED on the device flashes once (this can take up to 10 seconds).
- b. Release the button to start the acquire process. The green LED flashes slowly to show that the device is actively scanning the infiNET EX network.
 - The device is acquired when the green LED lights for 5 seconds.
 - The red LED flashes 10 times to indicate that the device was not successfully acquired to the infiNET EX network. Ensure the gateway is in Acquire mode and within range before attempting the acquire process again.

3. Take the infiNET EX gateway out of Acquire mode from the unit itself or from Crestron Toolbox, as described in the latest version of its manual.

Leaving an infiNET EX Network

To leave an infiNET EX network, put the device into Acquire mode, as described in “Joining an infiNET EX Network” above, when no gateway is in Acquire mode.

Verifying Communications Status

To check the communication status of the device, tap the **TEST** button three times then press and hold it down (tap-tap-tap-press+hold) for less than 2 seconds. The green LED indicates the communications status. Refer to the following table for details.

LED	COMMUNICATIONS STATUS
Turns on for 5 seconds	The device is communicating with the control system.
Flashes three times	The device is not communicating with the gateway, but the gateway is not communicating with the control system.
Flashes twice	The device was previously joined to the network but is not communicating with the gateway.
Flashes once	The device is not joined to the network.

Troubleshooting

The following table provides corrective action for possible trouble situations. If further assistance is required, please contact a Crestron customer service representative.

GLS-OIR-CSM-EX-BATT Troubleshooting

TROUBLE	POSSIBLE CAUSE	CORRECTIVE ACTION
The controlled devices do not turn on.	The circuit breaker or fuse has tripped.	Reset the circuit breaker or replace the fuse.
	There is incorrect programming in the control system.	Check the control system logic or contact Crestron for assistance.
	The device's sensitivity is set too low.	Increase the sensitivity slowly via the knob under the cover.
	The device is not mounted in the correct location.	Move the sensor into an area that can see the occupant or point of motion.
The controlled devices do not turn off.	Constant motion is being detected by the device.	Slowly reduce the sensitivity and remove the motion source. Change the mounting location if there is no change.
	The sensor can detect motion in the hallway or another adjacent space.	Put the sensor in Test mode and walk through the adjacent spaces. If the red LED flashes, move the sensor or use masks.
	The device's sensitivity is set too high.	Slowly reduce the sensitivity and TIMEOUT knob under the cover.
	There is incorrect programming in the control system.	Check the control system logic or contact Crestron for assistance.
Controlled devices remain on too long.	The timeout setting is too high.	Reduce the timeout setting to the next lower setting.

This product is Listed to applicable UL® Standards and requirements tested by Underwriters Laboratories Inc.

Ce produit est homologué selon les normes et les exigences UL applicables par Underwriters Laboratories Inc.



As of the date of manufacture, the product has been tested and found to comply with specifications for CE marking.



Federal Communications Commission (FCC) Compliance Statement

This device complies with part 15 of the FCC Rules. Operation is subject to the following conditions: (1) This device may not cause harmful interference, and (2) this device must accept any interference received, including interference that may cause undesired operation.

CAUTION: Changes or modifications not expressly approved by the manufacturer responsible for compliance could void the user's authority to operate the equipment.

NOTE: This equipment has been tested and found to comply with the limits for a Class B digital device, pursuant to part 15 of the FCC Rules. These limits are designed to provide reasonable protection against harmful interference in a residential installation. This equipment generates, uses and can radiate radio frequency energy and, if not installed and used in accordance with the instructions, may cause harmful interference to radio communications. However, there is no guarantee that interference will not occur in a particular installation. If this equipment does cause harmful interference to radio or television reception, which can be determined by turning the equipment off and on, the user is encouraged to try to correct the interference by one or more of the following measures:

- Reorient or relocate the receiving antenna.
- Increase the separation between the equipment and receiver.
- Connect the equipment into an outlet on a circuit different from that to which the receiver is connected.
- Consult the dealer or an experienced radio/TV technician for help.

Industry Canada (IC) Compliance Statement

CAN ICES-3 (B)/NMB-3(B)

To satisfy RF exposure requirements, this device and its antenna must operate with a separation distance of at least 20 centimeters from all persons and must not be collocated or operating in conjunction with any other antenna or transmitter.

The product warranty can be found at www.crestron.com/warranty.

The specific patents that cover Crestron products are listed at www.crestron.com/legal/patents. Certain Crestron products contain open source software. For specific information, please visit www.crestron.com/opensource.

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Specifications subject to change without notice.