

Crestron GLS-LOL  
(Watt Stopper P/N LS-290C)  
Crestron Green Light® Photocell, Open Loop  
Operations & Installation Guide



**Further Inquiries**

If you cannot locate specific information or have questions after reviewing this guide, please take advantage of Crestron's award winning customer service team by calling Crestron at 1-888-CRESTRON [1-888-273-7876]. For assistance in your region, please refer to the Crestron Web site ([www.crestron.com](http://www.crestron.com)) for a listing of Crestron worldwide offices.

You can also log onto the online help section of the Crestron Web site ([www.crestron.com/onlinehelp](http://www.crestron.com/onlinehelp)) to ask questions about Crestron products. First-time users will need to establish a user account to fully benefit from all available features.

**Future Updates**

As Crestron improves functions, adds new features and extends the capabilities of the GLS-LOL units, additional information may be made available as manual updates. These updates are solely electronic and serve as intermediary supplements prior to the release of a complete technical documentation revision.

Check the Crestron Web site periodically for manual update availability and its relevance. Updates are identified as an "Addendum" in the Download column.

**WARNING:** To avoid fire, shock, or death; turn off power at circuit breaker or fuse and test that power is off before wiring!

**CAUTION:** Insufficient power can lead to unpredictable results or damage to the equipment. Please use the Crestron Power Calculator to help calculate how much power is needed for the system ([www.crestron.com/calculators](http://www.crestron.com/calculators)).

**NOTES:** Observe the following:

- To be installed and/or used in accordance with appropriate electrical codes and regulations.
- If you are unsure about any part of these instructions, consult a qualified electrician.
- Sensors must be mounted on a vibration free surface, at least 6 feet (1.8 m) away from air vents.

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Specifications subject to change without notice.

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



**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.

**SETUP**

**Network Wiring**

When wiring the Cresnet® network, consider the following:

- Use Crestron Certified Wire.
- Use Crestron power supplies for Crestron equipment.
- Provide sufficient power to the system.

**Preparing and Connecting Wires**

Strip the ends of the wires approximately 1/2 inch (13 mm). Use care to avoid nicking the conductors. Twist together the ends of the wires that share a connection and tin the twisted connection. Apply solder only to the ends of the twisted wires. Avoid tinning too far up the wires or the end becomes brittle. The label on the rear of the dimmer contains a gauge for wire stripping.

**Light Level Testing**

Before installing the photocell, verify the daylight levels on a sunny day at the proposed location of the photocell. With the lights switched off, use a light meter to read the daylight level. Orient the light meter in the same direction the photocell will view. The light levels under sunny conditions must be at least 35 fc. If the light levels are less, you should select another location or reorient the photocell.

**DESCRIPTION**

The GLS-LOL is a low voltage photocell which senses light levels and sends this data to an interface device such as the GLS-SIM (sold separately) connected to the Crestron® control system.

**Specifications**

Specifications for the GLS-LOL are listed in the following table.

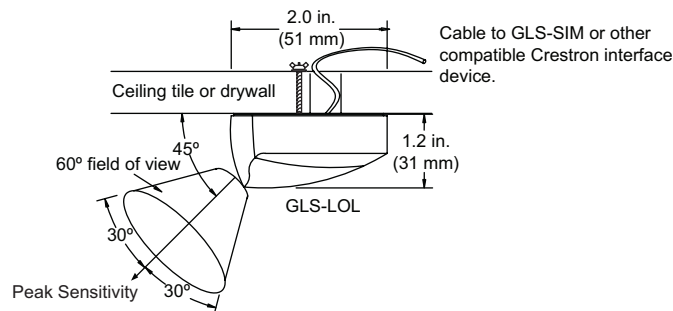
SPECIFICATION	DETAILS
UL and cUL Listed	Class 2
Power Requirements Current Consumption Cresnet Power Usage	4 mA @ 24 VDC 1 Watt*
Output Signal Range: Light Level Range:	0 - 10 VDC Selectable, 3 to 300 footcandles (fc), 30 to 3000 fc, 60 to 6000 fc
Recommended Mounting Location Field of View Coverage	Directly above work space 60° Cone

\* Cresnet communications require GLS-SIM Sensor Integration Module (sold separately). Power may be taken from Cresnet bus regardless of interface method.

**Photocell Placement**

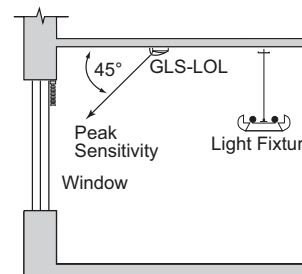
The photocell is designed for mounting in a dry location that is exposed to daylight. The photocell should not be exposed to direct illumination from an electric light source. The following illustration shows the GLS-LOL field of view.

**GLS-LOL Field of View and Mounting**



Where windows are the primary source of daylight, the photocell typically mounts on the ceiling between the window and the first row of fixtures. (Refer to the following illustration.) The photocell points toward the window.

**GLS-LOL Placement**



For skylight applications, the photocell mounts in the lightwell of the skylight and should be oriented toward the incoming daylight. Typically, the photocell is aimed toward the skylight. The light level range adjustment jumper may need to be changed to 60-6000 fc for skylight applications.

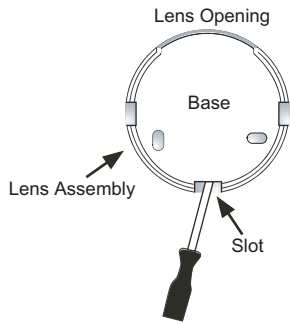
**INSTALLATION**

**Wiring and Testing**

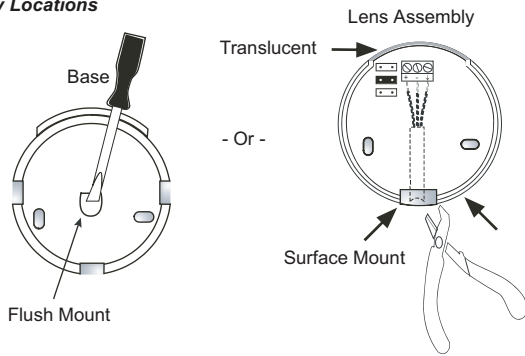
**NOTE:** Use CRESNET-P/-NP cables only. Maximum distance is 250 feet (76 m).

1. To access the GLS-LOL wiring terminals, insert a small, flat blade screwdriver into a slot on the housing and separate the base from the lens assembly.
2. Review the "Mounting" section on the next page to determine how the cable to the controller will enter the photocell housing. Modify either the lens housing or the base as instructed in step 2A or 2B.
3. Connect wiring to the control system as shown in the illustrations on the following page. (If flush mounting, feed the cable through the base before terminating.)
4. Make sure the footcandle range jumper is in the correct position for the expected light level. (Refer to "Range Adjustment" on the following page.)
5. Attach the base to the lens assembly.
  - A. Align the arrow and sun icon inside the base with the lens.
  - B. Use gentle pressure to snap the parts together.
6. Turn on the control system. Verify the photocell wiring by reading the control system display. As you cover and uncover the photocell, the reading should change. The control system reading shows the minimum value of the programmed range if the light level is below the range, or if the photocell is not properly connected.

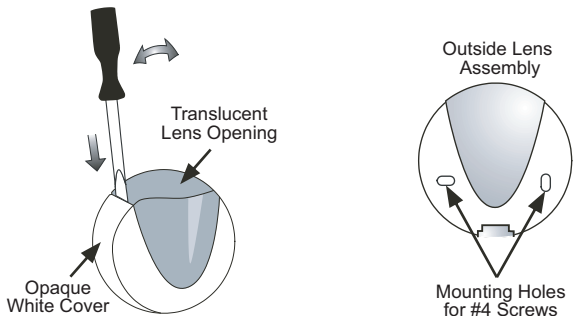
## Removing Base From Lens Assembly



## Wire Entry Locations



## Removing the Cover from the Photocell for Mounting



## Mounting

After selecting a location and wiring the photocell to the control system, test for the optimum lens orientation before permanently mounting the photocell. The GLS-LOL comes with a circular piece of double-sided foam adhesive tape. You can use this tape to temporarily mount the photocell during placement testing.

**CAUTION:** The tape may permanently adhere to some surfaces. The surface may be damaged if the tape is removed.

The GLS-LOL can be mounted so the cable enters through the photocell base and is not visible (flush mount) or so the cable exits the side of the lens assembly and runs along the exterior of the ceiling or wall (surface mount). Refer to the illustrations above as necessary during mounting procedures.

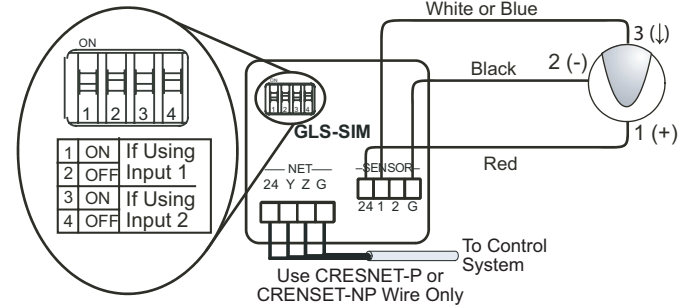
- Remove the base from the lens assembly.
- Open a wire entry location in either the base or the lens assembly.
  - Flush Mount** (wire entry through base). Use this mounting procedure when the wires will be concealed within the wall or ceiling.
    - Put the base on a sturdy, flat surface so the inside of the base is on the flat surface and the outside of the base is facing you. Locate the horseshoe shaped area in the center of the base.
    - Apply firm pressure to the center of the horseshoe with a punch tool and tap with a hammer to knockout the wire entry.
    - Thread the cable from the controller through the outside of the base toward the inside.
  - OR -**
  - Surface Mount** (wire entry through lens assembly). Use this procedure when the wires will run on the surface of the wall or ceiling.
    - Locate the wire entry location in the opaque white plastic cover at the opposite side from the translucent lens opening.
    - Use needle-nose pliers or wire cutters to break away the white plastic covering of the wire entry.
- Connect the wires to the terminals on the lens assembly as shown in the illustration in the next column.
- Attach the base to the lens assembly.
  - Align the arrow and sun icon inside the base with the lens opening.
  - Use gentle pressure to snap the parts together.

- Remove the opaque white cover from the photocell. Insert a thin screwdriver blade between the white cover and the lens opening, then pop off the white cover.
- Secure the photocell with screws (not provided). Use two #4 screws of the appropriate length. For ceiling tiles, use machine screws with appropriate washers and nuts. Use wood or masonry screws for solid surfaces. The "GLS-LOL Field of View and Mounting" illustration on the previous page shows flush mounting in a ceiling tile or drywall using machine screws, washers and wing nuts.
- Insert screws through the mounting holes as shown in the last illustration in the previous column. Make sure the placement and orientation is the same as it was during testing. Tighten the screws and fastening hardware.
- Snap the white cover in place over the lens assembly.

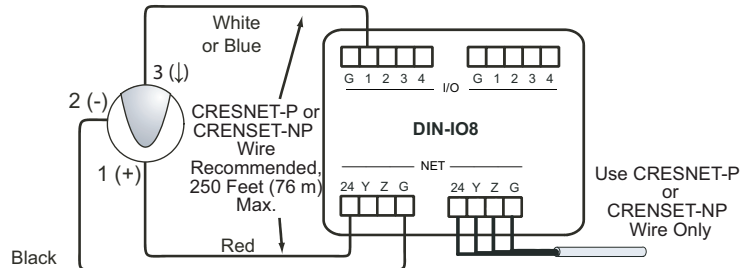
## Connecting Sensors to the GLS-SIM

**NOTE:** All wires from sensor to GLS-SIM must be 24 AWG minimum. (If GLS-SIM is not located adjacent to the sensor, use CRESNET-P or CRESNET-NP wire.)

### DIP Switch Settings



### Connecting Sensors to the DIN-IO8 or Equivalent\*



\* Other Crestron devices that can be wired to the sensors in the manner shown above:

- DIN-IO8
- PRO2
- MP2E
- Any Crestron product with Versiports
- DIN-AP2
- AV2
- CNXIO16
- PAC2
- CP2E

**NOTE:** The same Crestron power supply MUST be used to power both the sensors and the interface device (e.g., DIN-IO8). Otherwise, there is a risk of damage to the interface device.

## SPECIAL PROGRAMMING

### Output Adjustment

To ensure correct processing of the sensor's output from all interface devices (other than the GLS-SIM), the SIMPL program for the control processor must disable the pull-up resistor built in to the Versiport input connector. This is accomplished by setting the "pu-disable" digital input signal to a "1."

### Range Adjustment

The 2-pin jumpers next to the wiring terminals set the light level range for the GLS-LOL. In most applications, the default range of 30 to 3000 fc is appropriate. If the range needs to change (e.g., 3-300 fc for darker applications, 60-6000 fc for skylight applications) be sure the control system programming is adjusted accordingly.

## TROUBLESHOOTING

TROUBLE	POSSIBLE CAUSE(S)	CORRECTIVE ACTION
Lights do not respond to change in ambient light level.	Incorrect wiring between sensor and GLS-SIM (or other compatible interface).	Refer to the wiring diagrams in the right column.
	Improper sensor location.	Verify the sensor is located such that it can detect the desired workspace light levels.
	Improper control system programming.	Check control system logic setting or contact Crestron for assistance.
	GLS-SIM DIP switch settings not correct.	Refer to the wiring diagrams in the right column for appropriate settings.