Infrared Ceiling Mount Sensor

The ULOS-CIR Series ceiling-mount passive infrared sensors can integrate into Lutron systems or function as stand-alone controls using a Lutron power pack. The sensor uses a small semiconductor heat detector that resides behind a multi-zone optical lens. The sensor’s detector is sensitive to the heat emitted by the human body. In order to trigger the sensor, the source of heat must move from one range of detection to another. Non-moving hot objects will not cause the lights to turn on.

Features
- Intelligent, continually adapting passive infrared (PIR) sensor
- Passive infrared sensing
- Reliable motion detection with high error immunity
- Snap-locks to ceiling-mounted cover plate
- Non-Volatile Memory: settings saved in protected memory are not lost during power outages
- 450 to 1500 sq ft (42 to 140 m²) coverage when mounted on an 8 - 12 ft (2.4 - 3.7 m) ceiling
- Affords choice of turning lights off or dimming to a preset level in the unoccupied state when integrated with a Lutron system.
- Assembled in the USA.

Models Available

<table>
<thead>
<tr>
<th>Cat. No.</th>
<th>Color</th>
<th>Coverage</th>
<th>Field of View</th>
</tr>
</thead>
<tbody>
<tr>
<td>ULOS-CIR-450-WH</td>
<td>White</td>
<td>450 sq ft (42 m²)</td>
<td>360°</td>
</tr>
<tr>
<td>ULOS-CIR-1500-WH</td>
<td>White</td>
<td>1500 sq ft (140 m²)</td>
<td>360°</td>
</tr>
</tbody>
</table>

Self-Adaptive Feature
The ULOS-CIR Series ceiling-mount occupant sensors provides reliable detection with high error immunity. The internal microprocessor analyzes the information from the PIR technology and determines the optimum setting to use in order to properly cover the space.
Specifications

Timer Adjustment
- Automatic mode: Continually adapting sensor automatically adjusts settings to the space
- Manual mode: 8 to 30 minutes
- Test mode: 8 seconds

LED Lamp
- Red: infrared motion detected

Housing
- Rugged, high-impact, injection-molded plastic
- Color-coded leads 6 in (15 cm)

Power
- Operating voltage: 20 - 24 V, PELV (Class 2: USA) low-voltage
- Operating current: 33 mA nominal
- Control output: 20 - 24 V active high logic control signal with short-circuit protection, open collector when unoccupied
- UL and CUL listed

Operating Environment
- Temperature: 32 to 104 °F (0 to 40 °C)
- Relative humidity: less than 95%, non-condensing
- For indoor use only

Dimensions
Measurements are in inches (mm)

Front View

Side View

4.5
1.4

(114)
(38)
Wiring

Note: Power pack may be required when interfaced to lighting control system; see below.

Single Sensor to System

![Single Sensor Diagram]

2 or More Sensors to System

![Multiple Sensors Diagram]

Power Supply Options

<table>
<thead>
<tr>
<th>Lutron Lighting Control System</th>
<th>Power Pack Required?</th>
</tr>
</thead>
<tbody>
<tr>
<td>Digital microWATT™</td>
<td>No</td>
</tr>
<tr>
<td>EcoSystem®</td>
<td>No</td>
</tr>
<tr>
<td>GRAFIK 5000 / 6000 / 7000™</td>
<td>No, when used with seeTouch® wallstations with occupant sensor connections.</td>
</tr>
<tr>
<td>GRAFIK Eye® 3000 / 4000</td>
<td>Yes</td>
</tr>
<tr>
<td>HomeWorks®</td>
<td>Yes</td>
</tr>
<tr>
<td>LCP128™</td>
<td>No, when used with seeTouch® wallstations with occupant sensor connections.</td>
</tr>
<tr>
<td>microWATT®</td>
<td>No</td>
</tr>
<tr>
<td>RadioRA®</td>
<td>Yes</td>
</tr>
<tr>
<td>RadioTouch®</td>
<td>No</td>
</tr>
<tr>
<td>Softswitch128®</td>
<td>No, when used with seeTouch® wallstations with occupant sensor connections.</td>
</tr>
</tbody>
</table>

**NOTE**: Power Pack may be required for more than one Occupant Sensor. Consult factory for multiple sensor requirements.
Wiring: Stand-Alone Control

1 to 3 Sensors with Power Pack

120 / 277 / 347 V~ 60 Hz;
230 V~ 50 / 60 Hz

Note: Maximum 3 occupant sensors.

Switching Multiple Loads with Auxiliary Power Packs

120 / 277 / 347 V~ 60 Hz;
230 V~ 50 / 60 Hz

Note: Maximum of 3 devices total (occupant sensors and auxiliary power packs) can be connected to a power pack.
Installation

Sensor Placement

- The occupant sensor must have an unobstructed view of the room. Do not mount behind or near tall cabinets, shelves, indirect hanging fixtures, etc.
- Do not place sensor within 6 ft (1.8 m) of air vents, air handlers, windows, fans, etc., as this may cause false triggering.
- Closely follow the diagrams shown concerning major and minor motion coverage. The sensor can detect major motion (such as a person taking a half-step) at a greater distance than it can detect minor motion (such as writing or typing at a desk).
- May not detect occupancy with no significant difference between ambient and body temperatures.

Range Diagrams

![Range Diagrams](image-url)
Installation

Mounting

Normal Mounting
Twist and lock threaded mounting post onto cover plate. Drill through ceiling tile with assembly, using cutter end of the threaded mounting post. Secure with washer and nut.

Mounting to Non-Standard Ceiling or Fixture
Mount twist-lock cover plate using mounting screws, nuts, and washers (included). Drill/punch wire routing hole through ceiling tile at center of cover plate.

Wire Lengths

<table>
<thead>
<tr>
<th># Sensors</th>
<th>1</th>
<th>2</th>
<th>3</th>
<th>1</th>
<th>2</th>
<th>1</th>
</tr>
</thead>
<tbody>
<tr>
<td># Aux. PP</td>
<td>0</td>
<td>0</td>
<td>0</td>
<td>1</td>
<td>1</td>
<td>2</td>
</tr>
<tr>
<td>22 AWG</td>
<td>750 ft</td>
<td>375 ft</td>
<td>250 ft</td>
<td>375 ft</td>
<td>250 ft</td>
<td>250 ft</td>
</tr>
<tr>
<td>0.5 mm²</td>
<td>365 m</td>
<td>180 m</td>
<td>120 m</td>
<td>90 m</td>
<td>120 m</td>
<td>90 m</td>
</tr>
<tr>
<td>20 AWG</td>
<td>1200 ft</td>
<td>600 ft</td>
<td>400 ft</td>
<td>600 ft</td>
<td>400 ft</td>
<td>400 ft</td>
</tr>
<tr>
<td>0.75 mm²</td>
<td>730 m</td>
<td>365 m</td>
<td>240 m</td>
<td>365 m</td>
<td>240 m</td>
<td>365 m</td>
</tr>
<tr>
<td>18 AWG</td>
<td>2400 ft</td>
<td>1200 ft</td>
<td>800 ft</td>
<td>1200 ft</td>
<td>800 ft</td>
<td>800 ft</td>
</tr>
</tbody>
</table>

Using the Infrared Mask

Center Ceiling Mount
(Mask blocks sensor seeing out doorway into hall)

Corner Ceiling Mount
(No mask needed)

Typical Mask Patterns

Conference Room Mask
180° Mask
Full Mask
Rectangular Areas
Over the Door
Specific Areas You Wish to Mask
Sensor Adjustments

Override Settings

A  Off (Default)  
1  Auto/Manual Threshold
2  LED Motion Indicator
3  Reset Learned Settings

B  Off
1  Strong Airflow Compensation
2  Over Doorway Installation
3  Timer Adjust
4  Auto Sensitivity

Factory Settings

Red: Infrared sensitivity
75% default

Black: Timer
8 min.

Timer Test Mode

1. Remove the retainer cover.
2. Rotate the black timer adjustment knob to about midway (12 o’clock).
3. Return setting to minimum setting (full CCW).

Note: The timer will remain in the 8-second test mode for 1 hour, then automatically reset to 8 minutes.

4. To manually take the timer out of the 8-second test mode, turn the timer adjustment approximately 1/16 in (1.5 mm) clockwise to make the setting slightly above minimum (just above the 8-minute setting).