

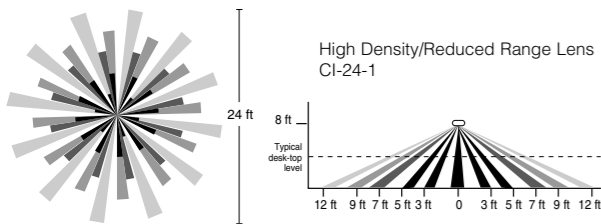
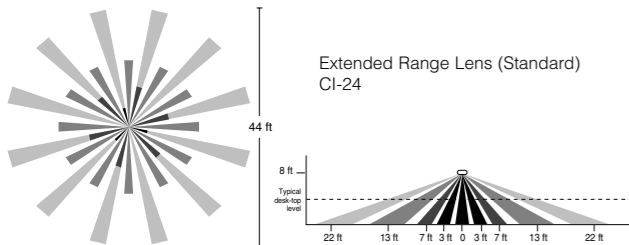
DESCRIPTION

The CI-24 is a 24VAC or 24VDC Passive Infrared (PIR) occupancy sensor which integrates with HVAC or EMS systems. The CI-24 provides isolated relay contacts that are Normally Open or Normally Closed, based on occupancy. PIR sensing systems are passive systems which react to changes in infrared energy (moving body heat) within the coverage area. PIR sensors must directly "see" motion of an occupant to detect them, so careful consideration must be given to sensor placement.

COVERAGE PATTERNS

The CI-24 has a multi-cell, multi-tier Fresnel lens with a field of view of 360°. The sensor has two lens pattern options. The Extended Range Lens will cover up to 1200 sq ft and 22 feet from the sensor when mounted at 8 feet. The High Density/Reduced Range Lens will cover up to 500 sq ft and 12 feet from the sensor when mounted at 8 feet. Coverage shown in the diagrams below is maximum and represents coverage for half-step, walking motion, with no barriers or obstacles.

DRAWING NOT TO SCALE



PLACEMENT

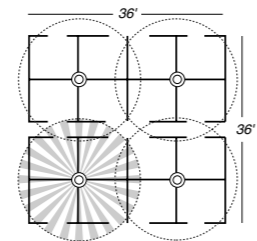
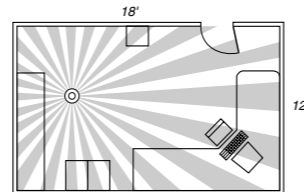
The effective coverage distances may be slightly less than the maximum sensing distance (see Coverage Patterns), depending upon obstacles such as furniture or partitions, and this must be considered when planning the number of sensors and their positioning. See the list below for approximate coverage distances for different types of motion.

Approximate coverage, for a mounting height of 8 feet:

Lens option	Walking motion	Workstation (hand motion)
Extended Range	up to 22 ft radius (1200 sq ft)	12ft radius (500 sq ft)
High Density	up to 12 ft radius (500 sq ft)	9ft radius (300 sq ft)

The CI-24 sensor can be mounted at various heights. When you will be mounting at heights other than 8 feet, be aware that as you decrease the mounting height, you will decrease the range and increase the sensitivity to smaller motions. Conversely, when you increase the height, you will increase the range and decrease the sensitivity to smaller motions. At heights of more than 12-14 feet, you may start to significantly reduce sensitivity.

Often the best location to install a CI-24 in a **closed office** is off-center (see fig. 1). Avoid placing a sensor directly in line with an open door in which it has a clear view out, as the sensor may detect people walking by.



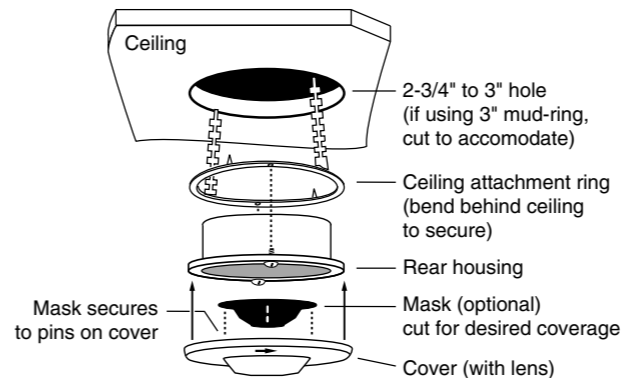
For **open office** areas with partitions it is best to place sensors over intersections of four workstations (see fig. 2).

Also avoid placing the sensors close to **air ducts**, as rapid air currents or the differences in temperatures may cause false activations. For large areas of coverage use multiple sensors.

INSTALLATION



TURN POWER OFF AT CIRCUIT BREAKER BEFORE INSTALLING SENSOR



A 4-S junction box can be used with a 3" mud-ring when local building codes mandate that low voltage connections be contained in a junction box.

Otherwise a 3" mud-ring or the provided ceiling attachment ring can be used.

IMPORTANT: If the lens will be masked, the junction box or mud ring may need to be positioned so that the mask is oriented properly when the sensor is installed (see Masking).

Cut a hole in the ceiling tile—if using a:

- Ceiling attachment ring (provided)—cut about 2-3/4" to 3" in diameter.
- 3" mud ring—cut the hole to accommodate.

To assemble the sensor:

1. If using the ceiling attachment ring, bend the securing straps up so the sensor housing can be inserted, and attach it to the sensor with the provided screws.
2. Attach the mask, if using, into the lens recess and onto the securing pins of the cover.
3. Attach the cover to the rear housing—align tabs on inside of cover to notches on outside perimeter of rear housing, place cover on sensor, and twist clockwise to lock.
4. Insert the assembled sensor into the ceiling hole, and **if using the mask**, turn the sensor so that the unmasked part of the lens is toward and centered on the area to be covered.
5. Bend the ceiling attachment ring straps behind the hole to secure (or attach sensor to mud ring with screws).

MASKING

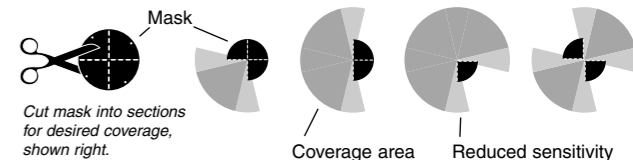
An insert (mask) is supplied to allow elimination of coverage in unwanted areas. The mask is cut as needed and mounted onto anchor pins in the sensor's cover.

IMPORTANT: Do not use the mask if full coverage is desired.

IMPORTANT: Before securing the sensor in the mounting location, the assembled sensor must be turned so the unmasked portion of the lens faces the coverage area (the blue masked area is visible through the lens).

IMPORTANT: For an already installed sensor—If the sensor can NOT be turned, then the mask must be cut so that when installed it will be oriented correctly (note the **location of the securing pins** in the cover and note that the cover turns as it locks into position).

Note: At the edges of the masking, there is a small area of **reduced sensitivity**, illustrated as the lighter area in the examples below.



WIRING DIRECTIONS



TURN POWER OFF AT CIRCUIT BREAKER BEFORE WIRING SENSOR

- Connect 24VAC or +24VDC Supply to the RED and Return to the BLACK wire from the sensor.

Isolated Relay: (Rated for 1A @24VDC or 24VAC)

Connect the wires necessary to the application that requires this output.

- GREEN (**Normally Closed**)—Open when occupancy is detected
- ORANGE (**Common**) (must be used for proper operation)
- YELLOW (**Normally Open**)—Closed when occupancy is detected

