



### EXTENDED RANGE 360° SENSOR CEILING MOUNT • LOW VOLTAGE • PASSIVE INFRARED (PIR)

#### SPECIFICATIONS

##### FEATURES

- 100% Digital PIR Detection, Excellent RF Immunity
- 360° Coverage Pattern
- Push-Button Programmable Adjustable Time Delays
- No Field Calibration or Sensitivity Adjustments Required
- Convenient Test Mode
- 100 hr Lamp Burn-in Timer
- Green LED Indicator

##### LAMPMAXIMIZER® TECHNOLOGY

- Protects Lamp Life while Maximizing Energy Savings
- Minimum On Timer (15 min default)
- Occ. Time Delay (10 min default)
- LampMaximizer+ Mode - Optimizes Lamp Life & Energy Savings (disabled by default)
- Switch Counter (in 1000's)
- Total Lamp On Time (in khrs)

##### PHYSICAL SPECS

SIZE 4.55" Dia. (11.56 cm)  
1.55" Deep (3.94 cm)

WEIGHT 6 oz

##### MOUNTING

- Ceiling Tile Surface
  - 3.5" Octagon Box
  - Single Gang Handy Box
- COLOR White

##### ELECTRICAL SPECS

OPERATING VOLTAGE  
12-24 VAC/VDC

##### CURRENT DRAW

Standard, 4 mA  
w/ R option, 16 mA

DIMMING LOAD Sinks < 20mA;  
~40 Ballasts @ .5mA each

RECOMMENDED POWER PACK  
PP20

##### ENVIRONMENTAL SPECS

OPERATING TEMP  
14° to 160° F (-10° to 71° C)

STORAGE TEMP  
-14° to 160° F (-26° to 71° C)

RELATIVE HUMIDITY  
20 to 90% non-condensing

SILICONE FREE  
ROHS COMPLIANT

##### OVERVIEW

The **CM 10** Series Extended Range 360° occupancy sensor incorporates Passive Infrared (PIR) technology into an attractive and economical sensor to provide maximum viewing from the ceiling. When mounted at 9 ft (2.74 m), this sensor views up to 28 ft (8.53 m) in all directions. Its circular coverage pattern is designed for walking motions; making it ideal for T-shaped intersections in corridors, or other areas where wall mounting a sensor is not practical. A long hallway, for example, may require a **HW13** Series Hallway sensor at each end, with **CM 10**'s mounted in the center to fill in the distance. Low ceiling heights are also best covered by the **CM 10**. For example, when mounted at only 7 ft (2.13 m), the height of pick aisles in many distribution centers, the **CM 10** provides a 32 ft (9.75 m) diameter pattern of coverage. In applications where detection of minor motion is also required, use the **CM PDT 10** Series Dual Technology sensor.

##### SENSOR OPERATION

The sensor detects changes in the infrared energy given off by occupants as they move within the field-of-view. When occupancy is detected, a DC output goes high and can drive up to 200 mA of connected load. The sensor is powered with 12-24 VAC/VDC and typically operates with a **PP20** or **MP20** power pack, enabling complete 20 Amp circuits to be controlled. This innovative sensor requires no field calibration or sensitivity adjustments.

##### LAMPMAXIMIZER®

This sensor also contains patented LampMaximizer technology that allows users to aggressively target energy savings while still protecting lamp life. A minimum on timer, factory set at 15 minutes, helps preserve lamp life by eliminating all lamp cycles shorter than lamp manufacturers' recommendations.

A standard occupancy time delay is also present that ensures lights turn off (assuming minimum on timer has elapsed) if no occupancy is detected. This timer is factory set at 10 minutes to promote energy savings, but is adjustable between 30 seconds and 20 minutes. These adjustments can be done manually, through the units push-button, or automatically every two weeks through an advanced mode, called LampMaximizer+, that determines the optimum time delay in order to maximize both lamp life and energy savings. Additionally, this sensor maintains statistics on total lamp on time and number of cycles.

#### OPTIONS

##### LOW VOLTAGE RELAY (R)

- Enables sensors to interface with other systems (e.g., BMS, lighting panels)
- Provides dry contact closure via a SPDT, 1 Amp, 40 Volt relay
- Only one relay needed per zone
- Changes state when all connected sensors register unoccupied
- Relay requires sensor power to function

##### OCCUPANCY CONTROLLED DIMMING (D)

- Provides dimming output to control 0-10 VDC dimmable ballasts
- Provides a second occupancy time-out period that enables the lights to go to a dim setting before turning off
- Adjustable max/min dim setting
- Only one sensor per zone needs to have dimming output

##### PHOTOCELL (P)

- Auto set-point calibration
- Two selectable modes of operation
- On/Off mode: Photocell has full control during periods of occupancy
- Inhibit mode: Photocell can prevent lights from turning on if adequate daylight is available, but cannot turn lights off

##### PHOTOCELL W/ DIMMING (ADC)

- Photocell within sensor maintains total room light level by controlling levels of 0-10 VDC dimmable ballasts
- Photocell also has full on/off control during periods of occupancy
- Provides a second occupancy time-out period that enables the lights to go to a dim setting before turning off

Note: LampMaximizer+ features not available with ADC option

##### LOW TEMP/HIGH HUMIDITY (LT)

- Sensor electronics are coated for corrosion resistance
- Operates down to -40° F/C)
- Required for cooler/freezer applications



TITLE 24  
ASSEMBLED in U.S.A.  
5 YEAR WARRANTY

#### ORDERING INFO CM 10 [RELAY] [DIMMING/PHOTOCELL] [TEMP/HUMIDITY]

##### RELAY

Blank = None  
R = Low Voltage Relay

##### DIMMING / PHOTOCELL CHOOSE ONE ONLY

Blank = None  
D = Occupancy Controlled Dimming  
P = Photocell  
ADC = Photocell w/ Dimming

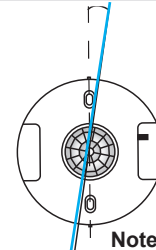
##### TEMP/HUMIDITY

Blank = Standard  
LT = Low Temp

# COVERAGE PATTERN

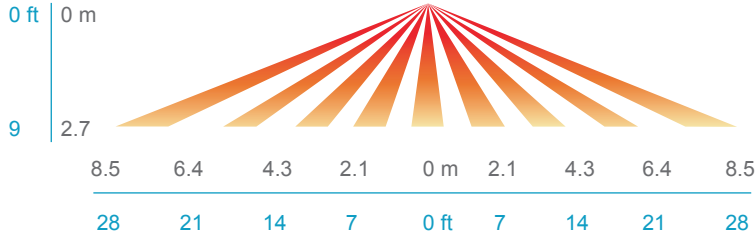
## EXTENDED RANGE 360° LENS

- Best choice for large motion (e.g. walking) detection
- Viewing angle of 67° in a 360° conical shaped pattern
- Provides 28 ft (8.53 m) radial coverage when mounted to standard 9 ft (2.74 m) ceiling
- 7 to 15 ft (2.13 to 4.57 m) mounting heights provide 16 to 36 ft (4.88 to 10.97 m) radial coverage

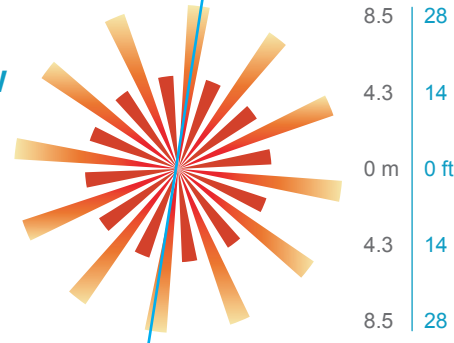


**Note:** Sensor's screw axis is offset 7.5° from a long detection segment

### SIDE VIEW



### TOP VIEW



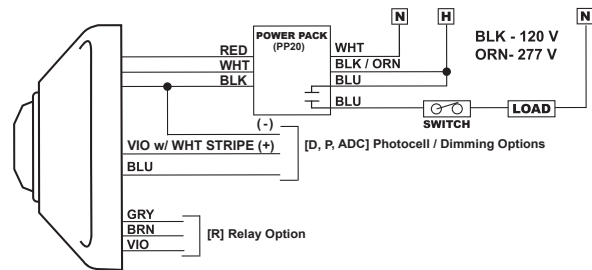
# WIRING (DO NOT WIRE HOT)

## STANDARD WIRING

- RED** - Power Input (12-24 VAC/VDC)
- BLACK** - Common
- WHITE** - Occupancy State (high VDC for occupied)

## PHOTOCELL/DIMMING OPTIONS (D, P, ADC)

- BLUE** - Direct output to power pack for providing photocell control and/or secondary dim time out. Output is high VDC with occupancy & low light. Output also held high during secondary dim time out. For multi-level control, use two power packs and connect White wire to primary load and Blue to daylight load.
- VIOLET w/ WHITE STRIPE** - Connect to 0-10 VDC control wire (typically Violet) from 0-10 VDC dimmable ballast
- GRAY from Ballast** - Connect to sensor Black wire

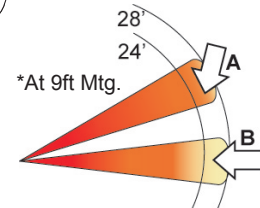
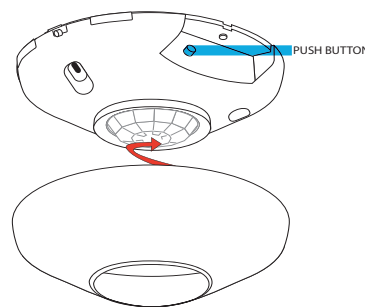


## RELAY OPTION (R)

- GRAY / BROWN** - Connected during occupied state
- VIOLET / BROWN** - Connected during unoccupied state
- Note:** Relay is energized during unoccupied state

# INSTALLATION

- Mount sensor directly to a ceiling tile or a metallic grid (two self-tapping screws provided).
- Sensor's mounting holes also align with 3.5" octagon or single gang handy box (screws not provided).
- Sensor will detect motions crossing segments more effectively than motions parallel to beams.
- For optimal detection, position sensor such that segments are crossed upon entrance and unable to view outside the space.



**A:** When walking across beam, detection will occur at approximately 28 feet. (8.53 m)  
**B:** When walking into beam, detection will occur at approximately 24 feet. (7.32 m)

## PROGRAMMING

Refer to instruction card IC7.001 for default settings and directions on programming the sensor via the push-button.



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**WARRANTY:** Sensor Switch warrants these products to be free of defects in manufacture and workmanship for a period of 60 months. Sensor Switch, upon prompt notice of such defect, will, at its option, provide a Returned Material Authorization number and repair or replace returned product.

**LIMITATIONS AND EXCLUSIONS:** This Warranty is in full lieu of all other representation and expressed and implied warranties (including the implied warranties of merchantability and fitness for use) and under no circumstances shall Sensor Switch be liable for any incidental or consequential property damages or losses.

**TS-CM-001A**