

### Overview

The IoT Ceiling Sensor (MOS-MT) is the ideal starting point for enhancing building performance and personnel productivity through the aggregation of wireless data.

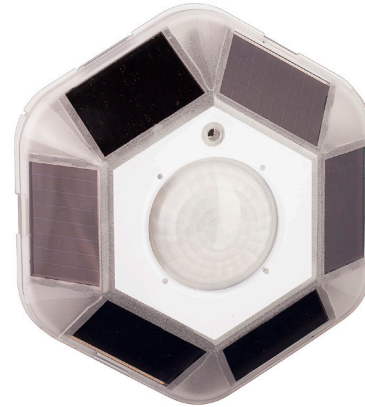
The IoT sensor is a self-powered wireless sensor offering occupant detection, light level, temperature and sound level monitoring for the collection of and sharing of data for Internet of Things applications.

Today's hot-desking office neighborhoods provide employees with choices; on background noise, ambient light, and office environment. The IoT sensor provides feedback on each space's utilization and environmental conditions in real-time so employees can find a workplace that suits their individual needs.

Facility operations use the IoT sensor data via gateways or interfaces to track occupancy levels and environment mapping for building-use optimization. Areas not being used can be placed into set-back mode to conserve energy.

The sensor is powered using solar energy harvesting from natural and artificial light sources. The advanced power management and efficient solar energy harvesting features make the optional battery redundant in normal workplace environments.

Wireless, battery-free sensing: no maintenance, no invasive wire runs, and no down-time during installation. A great starting point for staying on budget, enhancing employee satisfaction and improve building performance.



### Features

- Solar powered wireless IoT sensor
- Ceiling mount occupancy and vacancy sensing
- Light level sensing: up to 380 foot candles (4095 lux)
- Temperature sensing: 32 .. 104 °F (0 .. 40°C)
- Sound level monitoring: 40 to 80 dBA
- Small area lens (1000 sq. ft.) models or large area lens (1900 sq. ft.) models offered
- Battery and super capacitor voltages are monitored and transmitted
- Stores energy for full functionality even in a dark room with no battery
- Uses open, standardized communication protocols for interoperability
- Embedded test features allows installers to verify operation during installation and commissioning
- Operates in 5 foot candles of light
- Reliable radio reception range of 80 ft. in typical office spaces and up to 330 ft. line of sight
- Available in radio frequencies for North America, Asia and Europe

### Ordering Information

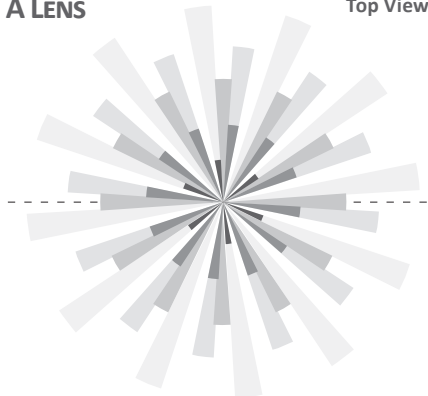
Description	902 MHz Models	902 MHz PN	868 MHz Models	868 MHz PN
IoT Ceiling Mount Sensor, small office coverage	MOS-MT-UA	8188A1287-X-1	MOS-MT-YA	8188A1430-X-1
IoT Ceiling Mount Sensor, large office coverage	MOS-MT-UB	8188A1288-X-1	MOS-MT-YB	8188A1431-X-1

# MOS-MT

## PIR Lens Ray Diagrams

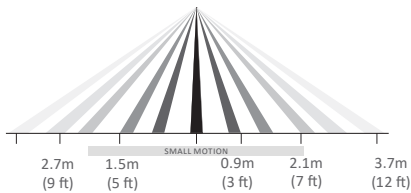
**A LENS**

Top View



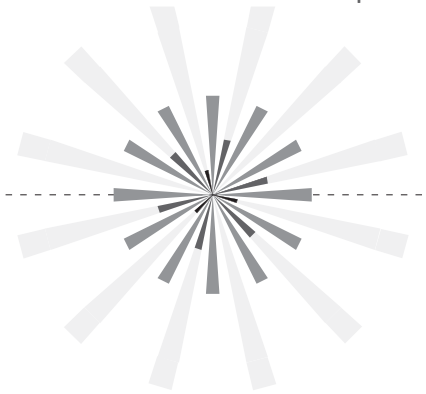
Typical ceiling height 8 ft (2.4 m)

Side View



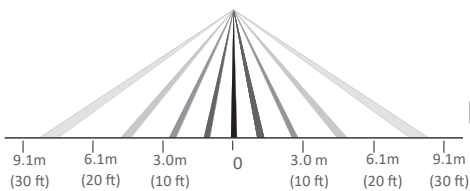
**B LENS**

Top View



Typical ceiling height 9 ft (2.7 m)

Side View



## Measured Parameters

Light level	0-380 foot candles, 0-4095 lux
Temperature	32-104 °F (0-40°C)
Occupancy	Vacant or occupied
Sound level RMS	40.0 - 80.0 dBA,
Battery voltage	0-5.5 VDC
Super cap voltage	0-5.5 VDC

## Hardware Specifications

Power Supply	Integrated solar cell
Operational Light Level	5 fc (54 lux) minimum
Minimum charge time to begin operation	3 minutes @ 20 fc (215 lux)
Maintain charge time	2.5 hours per 24 hours @ 46 fc (500 lux)
Maximum charge time	6 hours @ 32 fc (345 lux)
Operating life at full charge	115 hours in 0 fc/lux
Battery - start assist	CR2032 coin cell, optional - not included
Input	Teach button for assignment to receiver
Output	Test mode LEDs - red, green and amber

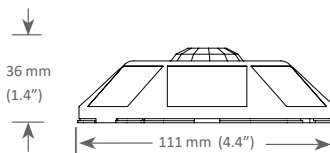
## Communications

Radio Frequency	902 MHz(U) or 868 MHz(Y)
Communication Protocol	EnOcean Generic Profiles
Antenna	Integrated whip
Transmission Range	24 m (80 ft) - commercial office spaces (typical), up to 100m (330 ft) line of sight
Telegram Transmission	On motion or on heartbeat period
Telegram Heartbeat Period	Minimum 100 seconds

## Mechanical Specifications

Operating Temperature	-10°C to 45°C (14°F to 113°F)
Storage Temperature	-25°C to 65°C (-13°F to 149°F)
Relative Humidity	5% to 92% RH (non-condensing)
Weight	104 g (3.7 oz)
Dimensions	111 mm flat edges x 36 mm height (4.4" x 1.4")
Mounting	Screws or double sided tape (not supplied)

## Dimensioned Diagram



## Agency Listings and Compliance

CEC Title 24 Compliant

**902 MHz models**

FCC Part 15.231 Remote Control Transmitter  
IC RSS-210

**868 MHz models**

CE Marking



Specifications are subject to change without notification. | Document 8DC-0834 | Revision 1.1



Echoflex Solutions, Inc.

#1, 38924 Queens Way | Squamish | BC | Canada | V8B 0K8

Toll Free: 888-324-6359 | Phone: (778) 733-0111 | Fax: (604) 815-0078

email: [info@echoflexsolutions.com](mailto:info@echoflexsolutions.com) | [www.echoflexsolutions.com](http://www.echoflexsolutions.com)

