

# Wireless Occupancy Sensor, Recess Mount (WOS2-RM)

## Installation Instructions

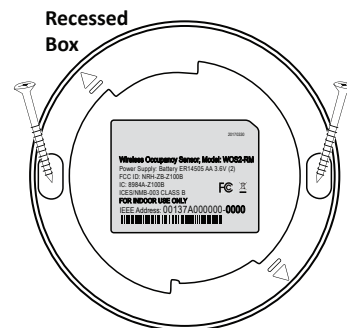
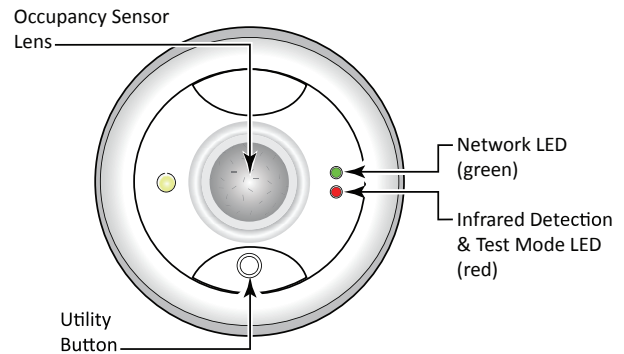
The Daintree recess mounted Wireless Occupancy Sensor (WOS2-RM) is a battery-powered occupancy sensor using passive infrared (PIR) sensing technology to detect movement. Using open, standards based ZigBee wireless communications, the WOS2-RM reports real-time occupancy events to the control system for various functions such as turning on lights or keeping them on when movement is detected, and turning off lights when a space is left vacant. The sensor's off-delay timer is user-configurable from any location using the CSM web-based control application, eliminating the need for on-site, manual sensor adjustment.

The WOS2-RM-S provides the standard coverage area, 500sf with a 360 degree (lateral) coverage. The WOS2-RM-E provides an extended coverage area of up to 1000sf.

- Keep the sensor lens clean. Avoid touching the sensor lens.
- After first-time installation or reinstallation of a new battery, allow up to three minutes for initialization.
- CAUTION: the WOS2-RM is not intended for air handling applications.

## Installation Process

1. Determine the mounting location for the sensor based on the desired occupancy coverage. See [Sensor Placement](#).
2. Remove the sensor from the recessed box by twisting it. Locate the sensor's IEEE address on the label inside the box. Record the IEEE address in the sensor's location on the facility floor plan or relay schedule.
3. Cut a 4-inch diameter (100mm) hole in the ceiling for the recessed box.



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4. Rotate the mounting feet in and insert the box into the hole.



5. Tighten the Phillips head screws until the box is secure. **Note: Do not overtighten screws.** Ceiling access is not necessary for installation. Be sure the label is visible after mounting the recessed box.



6. Install the batteries in the orientation (+ -) shown on the bottom of the battery compartments.

7. Secure the sensor to the ceiling by twisting it onto the base.



8. After the batteries have been installed for at least 3 minutes, initiate the Installation Test Mode: Momentarily press the Utility button. The green LED flashes once then the red LED flashes each time the sensor detects motion. (The test mode times out after 5 minutes).

- A. Walk test the sensor. Walk outside the coverage area and wait for the red LED to stop flashing. Step inside the desired coverage area and observe the red LED.
- B. Repeat from various positions in the coverage area.
- C. If necessary, adjust the sensor as described in [PIR Sensitivity Adjustment](#). Repeat the walk test.
- D. If you do not observe the proper behavior, see [Troubleshooting](#).

9. Exit Installation Test Mode. Momentarily press the Utility button again, or wait 5 minutes for the mode to time out.

10. Complete the installation by resetting the device: press and hold the Utility button for 5 seconds. Release the button when the Network LED begins to flash rapidly. The sensor attempts to join a ZigBee network for up to 30 seconds. See [LED Operation and Joining the ZigBee Network](#).

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## LED Operation

Green LED: Network Indicator	Description
<b>Rapid flash</b> (12 times per second) for up to 30 seconds	Device is trying to join ZigBee network. If it fails to join, it will retry after 15 minutes.*
<b>Solid for 10 seconds</b>	Device successfully joined a ZigBee network.
<b>Flashes once</b>	Utility button was pressed to initiate Installation Test Mode.
<b>Flashes twice</b>	Utility button was pressed for 2 seconds and the device is currently joined to a network.
<b>On for 2 seconds every 30 seconds</b>	The batteries are low; replace the batteries. Will also generate low battery warning within CSM.

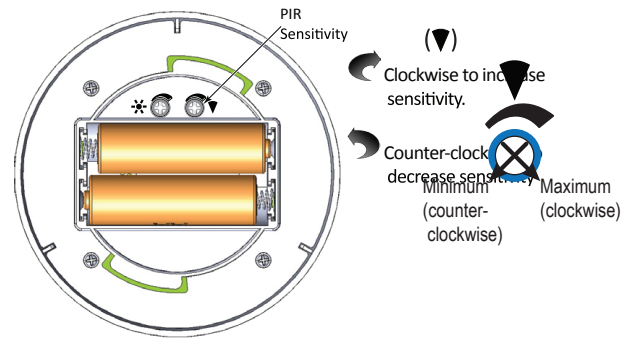
Red LED: Installation Test Mode, Motion	Description
<b>While unit is in Installation Test Mode, Flashes</b>	The red LED flashes each time sensor detects occupancy. Test mode times out after 5 minutes.
<b>Off</b>	Normal operation: either not detecting occupancy, or detected occupancy and in Off Delay. LED turns on with initial occupancy.

## PIR Sensitivity Adjustment

A trimpot next to the battery compartment is used to adjust the PIR motion sensor sensitivity.

Use caution when adjusting the trimpots.

- Do not use excess force, as this will damage the unit.
- Stop turning the trimpot when you feel resistance.



## Sensor Placement

The PIR sensor can only be installed indoors. It is extremely important to select the appropriate installation location to avoid false occupancy reporting while obtaining the best sensitivity. A proper installation should meet the following conditions:

- The PIR sensor is typically mounted 6.5' to 10' (2m to 3m) from the floor. The height affects the coverage area.
- The PIR sensor must be 4' to 6' away from hot or cold sources such as heat or air conditioner vents, refrigerators, stoves, etc. The PIR sensor should not be installed in places with strong airflows.

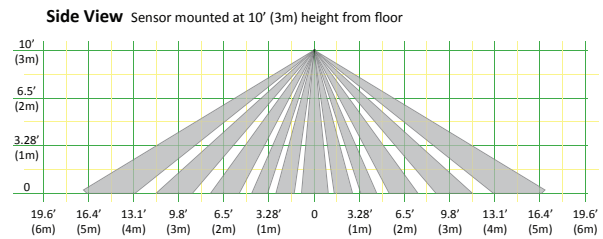
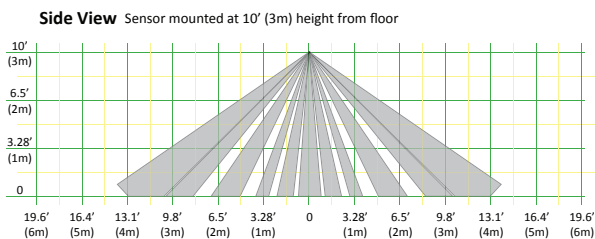
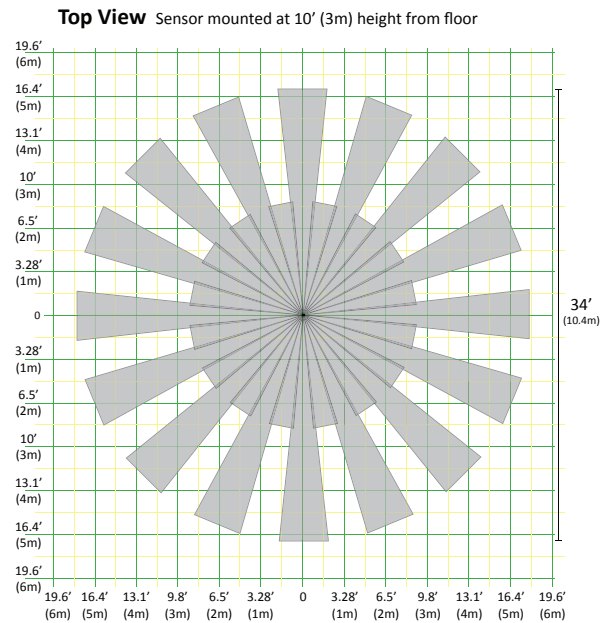
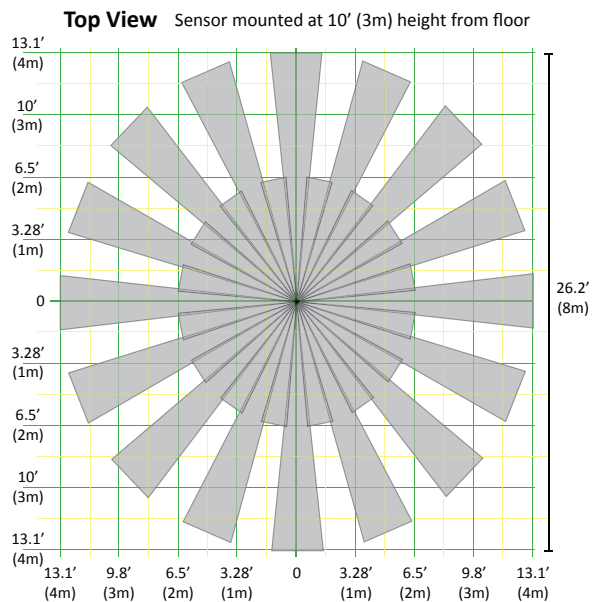
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## Sensor Placement continued

- The PIR sensor must have clear line of sight to the coverage area. It may not detect a human body if it is blocked by furniture, fixtures, large plants, glass, curtains, etc.
- Install the detector securely to the ceiling to minimize sensor vibration. The PIR sensor should not be installed on moveable objects, nor exposed to direct sunlight. The resulting hot air and/or motion can cause false activation.

Coverage Pattern, WOS2-RM-S, Standard Coverage	
Installation Height	10' (3m) from floor
Detection Angle	100°
Detection Radius	up to 13' (3.9m)

Coverage Pattern, WOS2-RM-E, Extended Coverage	
Installation Height	10' (3m) from floor
Detection Angle	120°
Detection Radius	up to 17' (5.2m)



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## Joining the Zigbee Network

After successfully completing the Installation Test the occupancy sensor is ready to communicate with the Daintree Wireless Area Controller (WAC).

\* A network join can be retrigged manually at any time using one of the following methods:

- **Reset to factory defaults:** This causes the device to leave any network to which it is currently joined. Following the reset, the device attempts to join a network. Press and hold the Utility button for 5 seconds. Release the button when the Network LED begins to flash rapidly.
- **Activate device:** Press and hold the Utility button for 2 seconds. If the device is already joined to a network, the Network LED flashes twice. If the device is not joined to a network, the Network LED flashes rapidly and the device will attempt to join a network.

For more information about configuring the lighting control network, see the instructions and on-line help provided with the CSM application.

## Troubleshooting

### No LEDs turn on when I press the Utility button.

- Check battery installation.
- Make sure batteries are oriented (+ -) correctly.

### The red Infrared Detection LED does not activate when walking through the coverage area while in Installation Test mode.

- Make sure that the lens is not obstructed and there is no debris on the lens.
- Check to see if the red LED turns on when you wave your hand directly in front of the lens.
  - If the red LED turns on, adjust the PIR Sensitivity trimpot clockwise to increase sensitivity. Check for objects or barriers obstructing the sensor's view of the coverage area.
  - If the red LED does not turn on, the Installation Test mode may have timed out. Restart the Installation Test mode by momentarily pressing the Utility button. The green LED turns on, then the red LED flashes with each detection. Installation Test mode times out in 5 minutes.

### The red LED flashes when nobody is moving in the coverage area.

- Adjust the PIR sensitivity trimpot counter-clockwise to reduce sensitivity. Repeat the walk test.
- Check for sources of hot air flow in the coverage area.
- Review the Placement guidelines and eliminate false trigger sources.

### If lights do not turn Off after the WOS2-RM has Joined the ZigBee network:

- Check the "Off delay" for the zone in the Daintree CSM.
- Check for other CSM scheduled events or manual overrides that may be keeping the lights On.



# Wireless Occupancy Sensor, Recess Mount (WOS2-RM)

## FCC warning message

This equipment has been tested and found to comply with the limits for a Class B digital device, pursuant to Part 15 of the FCC Rules. These limits are designed to provide reasonable protection against harmful interference in a residential installation. This equipment generates, uses and radiates radio frequency energy and, if not installed and used in accordance with the instructions, may cause harmful interference to radio communications. However, there is no guarantee that interference will not occur in a particular installation. If this equipment does cause harmful interference to radio or television reception, which can be determined by turning the equipment off and on, the user is encourage to try to correct the interference by one or more of the following measures:

- Reorient or relocate the receiving antenna;
- Increase the separation between the equipment and receiver;
- Connect the equipment into an outlet on a circuit different from that to which the receiver is connected;
- Consult the dealer or an experienced radio/TV technician for help.

Operation is subject to the following two conditions:

1. This device may not cause harmful interference;
2. This device must accept any interference received, including interference that may cause undesired operation.

Specifications	
Power Supply	(2) Lithium-thionyl chloride batteries (Li-SOCl <sub>2</sub> ) AA 3.6V (included)
Battery Life	5 years (normal operation)
Radio Properties	2.4 GHz, +7dBm transmit power
Sensor Coverage (maximum)	360°, 500 sq. ft (WOS2-RM-S) 360°, 1000 sq. ft (WOS2-RM-E)
Off-Delay Timer	30 seconds (fixed), additional delay time configurable in control application
Operating Environment	14°F to +122°F (-10°C to 50°C) Indoor use only
Compliance	FCC Part 15B, FCC ID: NRH-ZB-Z100B ICES/NMB-003 Class B, IC: 8984A-Z100B
Mounting	Recess ceiling mount (2 screws) Maximum Ceiling Thickness: 1"
Dimensions	Diameter x Depth: 4.6" x 2.6" (117mm x 67mm) Weight (without battery): 2.85 oz. (81g)

## Industry Canada (IC) Warning Message

Product complies with Part 15 of the FCC Rules. Operation is subject to the following two 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.

