



# COOPER Lighting Solutions VAC-DT Dual Tech Ceiling Sensor Low Voltage User Manual

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**COOPER Lighting Solutions VAC-DT Dual Tech Ceiling Sensor Low Voltage**



#### Product Certification



#### Product Features



PIR Activated



Ultrasonic Activated



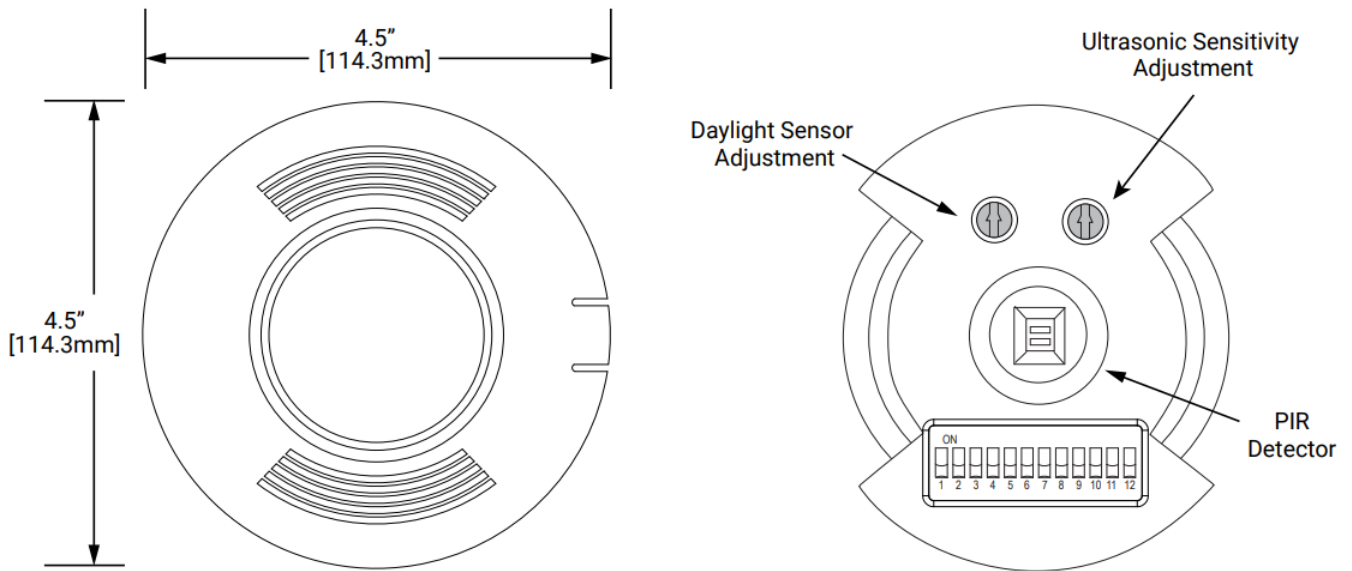
Self-Adjusting

#### Top Product Features

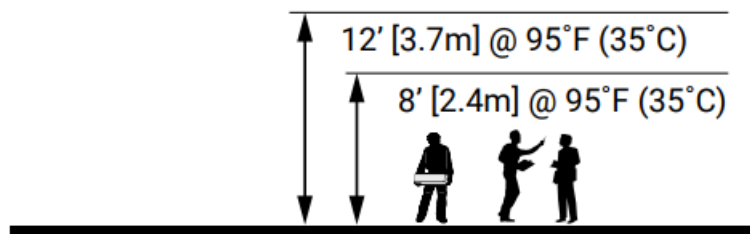
- MicroSet self-adjusting Time Delay and sensitivity
- Optional built-in light level sensor
- Optional BAS/HVAC isolated relay
- Products tested to NEMA WD 7 – 2011 Occupancy Motion Sensors Standard
- Requires Manual On for activation

#### Dimension

#### Dimensional and Mounting Details



### Scale or Mounting Height



### Order Information

Catalog Number	Maximum Room Size	Field of View	Frequency	Features
VAC-DT-2000-R	2000 sq. ft.	Two Way (360°)	32 kHz	w/ BAS Relay & Daylight Sensor
VAC-DT-1000-R	1000 sq. ft.	Two Way (360°)	32 kHz	w/ BAS Relay & Daylight Sensor
VAC-DT-0501-R	500 sq. ft.	One Way (180°)	40 kHz	w/ BAS Relay & Daylight Sensor

### Optional Accessory Components

Catalog Number	Description
GMDS-W	Low Voltage Manual ON Switch(es)

### Product Specifications

- **Technology**
  - Passive Infrared (PIR) and Ultrasonic (US)
- **Mechanical**
  - **Size:** 1.42" H x 4.5" W (36.068mm x 114.3mm)

- **Mounting:** Mounts directly to ceiling tile, to a 4" square box and round mud ring or to 4" octagon box
- **Environment:**
  - **Operating temperature:** 32°F to 104°F (0°C to 40°C)
  - **Relative humidity operating:** 20% to 90% non-condensing
  - For indoor use only
- **Housing:** Durable, injection molded housing. Polycarbonate resin complies with UL 94V-0
- **Electrical**
  - **Power Requirements:**
    - 120 to 347 VAC, 50/60 Hz – Neutral Required
  - **Input**
    - 10-30 VDC from Greengate Switchpack or Greengate system
    - Maximum current needed is 25mA per sensor
  - **Output**
    - Open collector output to switch up to ten Greengate Switchpacks
    - BAS with Isolated Form C Relay in (-R) model
    - Isolated Form C Relay Ratings: 1A 30 VDC/VAC
- **Hardware Specifications**
  - **LED Indicators:**
    - Red LED for PIR detection
    - Green LED for Ultrasonic detection
- **Controls and Performance**
  - **Time delays:**
    - Self-adjustable, 15 seconds/test (10 minutes Auto), or Selectable 5, 15, 30 minutes, or Zero Time Delay
  - **Coverage:**
    - 500, 1000 and 2000 sq. ft.
  - **Light sensing level (-R Models):**
    - 0 to 300 foot candles
- **Standards/Ratings**
  - cULus Listed – Energy Management Equipment (UL916)
  - FCC Compliant
  - RoHS Compliant
- **Warranty**
  - Five year warranty standard

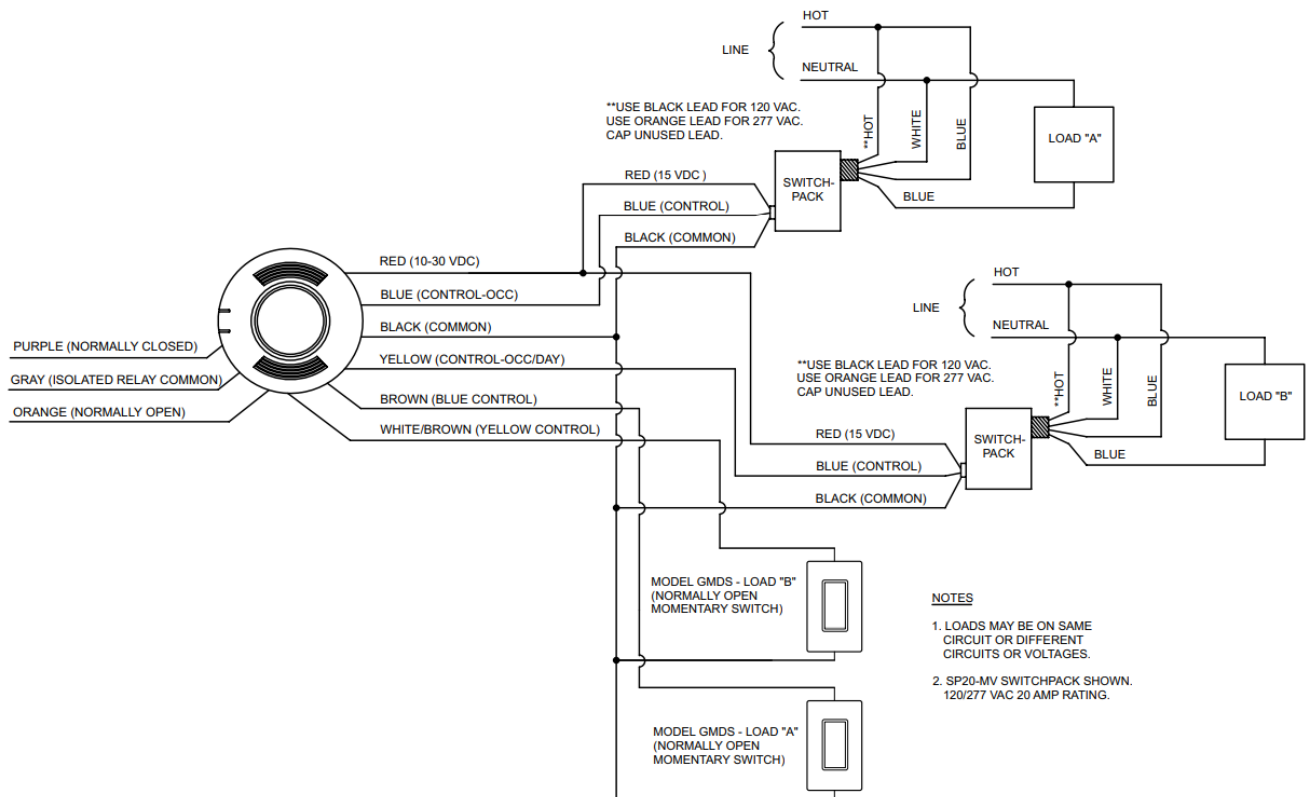
## Overview

The MicroSet Dual Technology Low Voltage Vacancy Ceiling Sensor increases energy savings by requiring a Manual On input to turn ON the lighting. The Dual Technology sensor's combination of Ultrasonic and Passive Infrared technologies offers the most complete sensing equipment available today. This pairing helps eliminate false deactivations for additional energy savings. The MicroSet self-adjusting technology continuously monitors multiple sub-frequencies in the event that if a continuous Doppler shift occurs, such as those created by airflow from an air duct, the sensor will identify the noise as continuous and then block it out of view at a select sub-frequency. It will continue to monitor other sub-frequencies for human motion. This avoids false activation, while still maintaining the high level of sensitivity that is necessary for sensing minor motion in a changing environment. Separate concurrent time delays for both Passive Infrared and Ultrasonic technologies avoid false activations or

deactivations. The lights are turned ON by activating a momentary switch (model # GMDS-\*) that is connected to the sensor. When enabled, the Daylighting feature prevents lights from turning ON when the room is adequately illuminated by natural light.

## Wiring Diagrams

### VAC-P-1500-R Model



#### • OAC AND VAC MANUAL MODE OPERATION:

1. SWITCHES ARE REQUIRED TO TURN CORRESPONDING LOADS ON.
2. LOADS TURN OFF WHEN SENSOR TIMES OUT OR WITH SWITCHES.
3. IF DAYLIGHT SENSOR IS ENABLED AND LIGHT LEVEL IS ABOVE SETPOINT, SWITCHPACK CONNECTED TO YELLOW LEAD WILL NOT TURN LOAD ON.

#### • OAC AUTOMATIC MODE OPERATION:

1. WHEN SENSOR ACTIVATES, BOTH LOADS TURN ON.
2. SWITCHES CAN BE USED TO TURN LOADS ON OR OFF.
3. IF DAYLIGHT SENSOR IS ENABLED AND LIGHT LEVEL IS ABOVE SETPOINT, SWITCHPACK CONNECTED TO YELLOW LEAD WILL NOT TURN LOAD ON. RECOMMENDED WIRE: 18-3 AWG STRANDED WIRE SHIELDED OR NON/SHIELDED

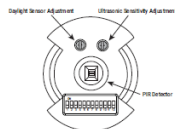
\*Wiring diagram for single sensor application. Visit our website for other wiring diagrams.

## Controls

# DIP Switch Legend

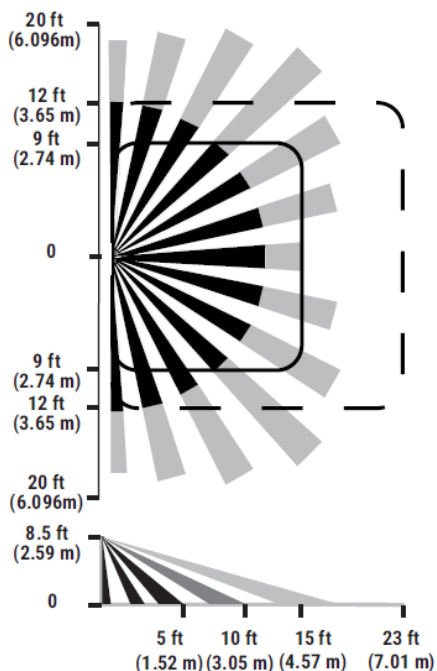
DIP Switch	Time Delay		Not Used		PIR Sensitivity	Not Used	LEDs	Override	Sweep	Full/Half Logic	HVAC/Tracking	Zero Time Delay
	1	2	3	4	5	6	7	8	9	10	11	12
Auto*	▼	▼			Full		Enable	Disable	Disable	Full	Disable	Disable
5 Minutes	▼	▲			50%		Disable	Enable	Enable	Half	Enable	Enable
15 Minutes	▲	▲										
30 Minutes	▲	▲										
(- R model only) (- R model only)												
*Self-Adjusts to 10 min. user mode												

Default =

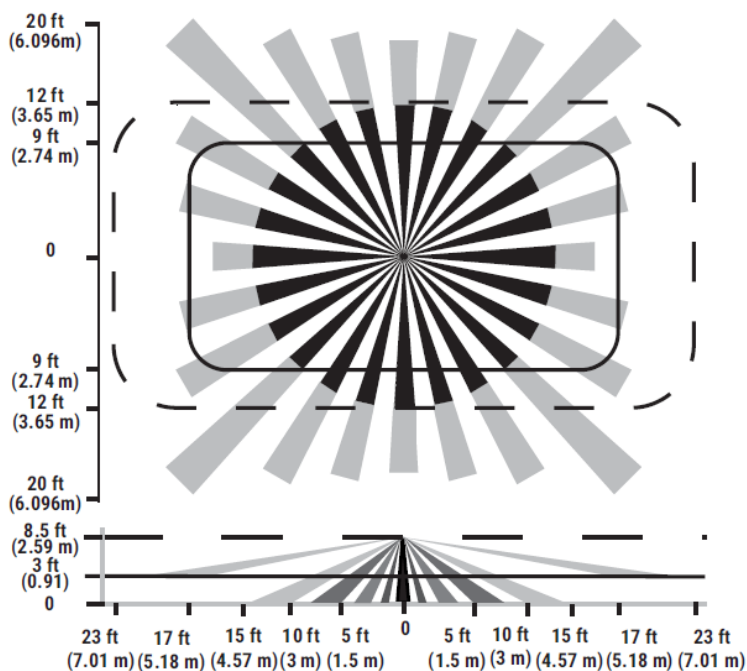


## Field of View

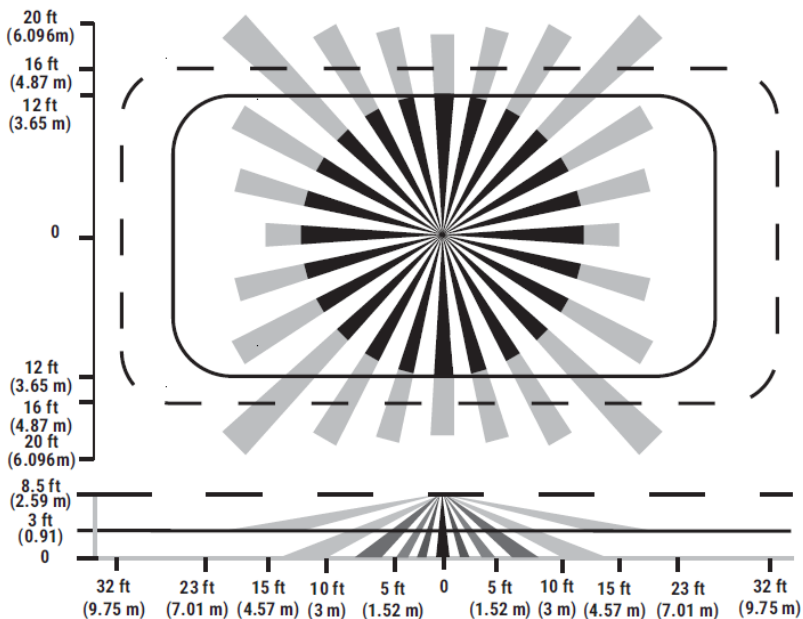
**VAC-DT-0501-R**  
500 sq. ft



**VAC-DT-1000-R**  
1000 sq. ft



**VAC-DT-2000-R**  
2000 sq. ft



Recommended Mounting Height: 8 to 12 ft

Minor Motion, IR



Major Motion, IR



Minor Motion, Ultrasonic




Major Motion, Ultrasonic



Maximum coverage area may vary somewhat according to room shape and the presence of obstacles.

Documents / Resources

	<p><a href="#">COOPER Lighting Solutions VAC-DT Dual Tech Ceiling Sensor Low Voltage</a> [pdf] User Manual</p> <p>VAC-DT Dual Tech Ceiling Sensor Low Voltage, VAC-DT, Dual Tech Ceiling Sensor Low Voltage, Tech Ceiling Sensor Low Voltage, Ceiling Sensor Low Voltage, Sensor Low Voltage, Low Voltage</p>
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References

- [Commercial Lighting Company | Cooper Lighting Solutions](#)