

Model 415

Outdoor Passive Infrared Intrusion Sensor



Model 415 Passive Infrared (PIR) Intrusion Sensor is an advanced stand-alone sensor specifically designed for outdoor intrusion detection applications. Two curtain-shaped sensing patterns detect intruders by sensing the temperature (heat radiation) difference between the background scene and that of the intruder.

Through the use of the latest detector and signal processing technology, Model 415 is able to operate in almost any environment. Double optical filtering, Digital Signal Processing (DSP), Signal Shape Analysis (SSA), and Adaptive Threshold Decoding (ATD) ensure reliable operation under changing environmental conditions. Nuisance alarms from rain, snow, wind, and fog are virtually eliminated.

Model 415 electronics and optics are housed in a rugged IP64 heavy-duty plastic enclosure. The universal mounting bracket allows mounting to flat surfaces or up to 4" (100 mm) O.D. posts.

An internally regulated heater prevents the optical surface from fogging or frosting in cold weather. The heater is connected to the electronics and operates from the supply voltage.

Set-up and adjustment are easy to accomplish. Simply aim the sensor slightly downward into the area that you wish to protect, apply power and allow a few minutes for the sensor to establish a reference level for operation. Perform a walk test and adjust sensitivity to provide optimum detection. Optional installation software further simplifies alignment, signal check and routine maintenance.

Advanced Stand Alone Sensor Designed for Outdoor Intrusion Detection Applications

Features:

- ▶ Outdoor Intrusion Detection to 350 Feet (107 m)
- ▶ Well-Defined, Narrow Field-of-View
- ▶ Double Optical Filtering Blocks Unwanted Radiation from Sunlight and other High Intensity Light Sources
- ▶ Gap-free Coverage: No Finger-and-Gap Coverage Patterns
- ▶ Anti-vandal Function Signals an Alarm if Sensor Alignment is Altered
- ▶ Adaptive Threshold Decoding
- ▶ Non-Emitting Sensor
- ▶ Insensitive to Vibration, Wind, Rain, Fog, Snow or Temperature Extremes



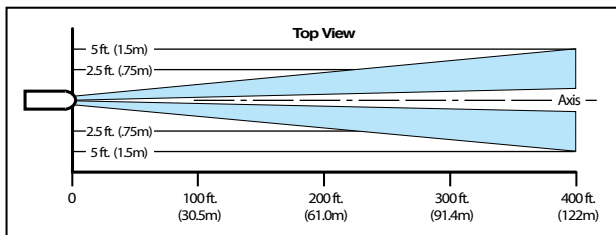
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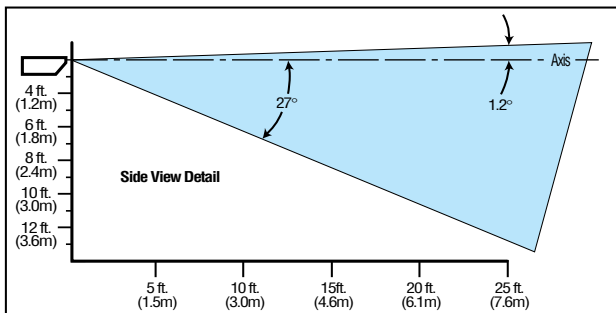
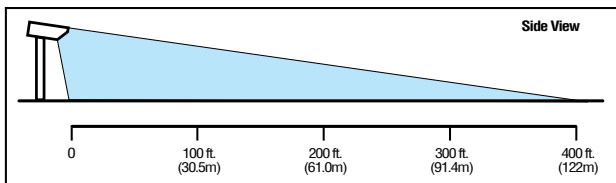
Pattern

Model 415 provides a narrow, well-defined detection pattern with a maximum range of 350 feet (107 m) and a maximum width of ten feet (3 m). The detection pattern is actually comprised of two fields-of-view that establish a narrow curtain of coverage in the area to be protected. Vertical detection pattern is approximately 27 degrees, measured downward from the detector axis. Typical horizontal and vertical detection patterns are shown below.

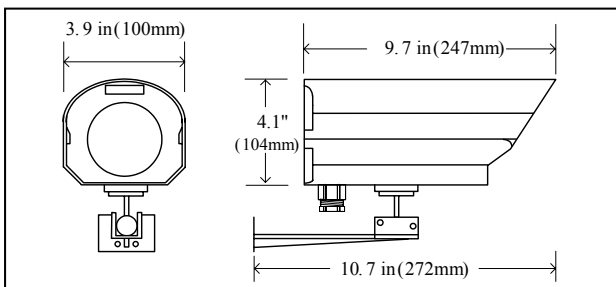
Horizontal Coverage



Vertical Coverage



Dimensions



How to Order

Specify Model 415. Specify item 64A46398-A01 for optional Installation Software Kit. Specifications subject to change without notice. Manufactured for Southwest Microwave by Xtralis.

Operation:

Model 415 detects intrusions by sensing temperature contrast between an intruder and the background environment. The intruder produces a temperature (heat radiation) change within the sensor's field-of-view when moving through the detection pattern. A temperature contrast as small as 1°C can generate an alarm. A precision mirror focuses the radiation onto a pyroelectric differential triple channel sensor element. Double optical filtering restricts the radiation to an 8-14 micron "atmospheric window" where humidity, fog, rain, and snow least affect the transmission of infrared radiation. Double optical filtering also attenuates unwanted radiation from sunlight and other high intensity infrared sources such as automobile headlights. To avoid unwanted detection of very large infrared heat sources such as trucks, trains, or aircraft outside the protected area, it may be necessary to aim the sensor slightly downward and away from the heat source of concern.

For detailed information on application, installation and adjustment, consult Model 415 Technical Manual.

Specifications:

Equipment Supplied Model 415 sensor and mounting bracket

Detection Range 350 feet (107m) typical for man/woman target

Detection Pattern Width and Height Varies with range, 1.5 feet (0.5 m) to 10 feet (3 m)

Detector Pyroelectric differential triple channel sensor

Spectral Response 8-14 microns – double filtering

Target Velocity 0.7 to 17 ft/s (0.2 to 5 m/s)

Target Size 0.8 square meter (man/woman) walking, running, or on hands and knees crawling. 0.2 square meter (prone crawling) target may be detected at shorter ranges with special site considerations

Probability of Detection 0.99 minimum on 0.8 square meter target, based on equipment S/N ratio

Supply Voltage 10.5 to 30 VDC @ 18mA typical (12 VDC)

Heater Voltage 2 watts maximum

Alarm Relay SPST 0.25 amp @ 28 VDC

Tamper Switch SPST 0.25 amp @ 28 VDC

Temperature Range -40°F to +140°F (-40°C to +60°C)

Weight 6.0 lbs. (2.7 kg) including mounting bracket

Shipping Weight 9.0 lbs. (4.1 kg)



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