

MODEL 420

PASSIVE INFRARED INTRUSION SENSOR



ADVANCED STAND-ALONE SENSOR DESIGNED FOR SPECIALIZED OUTDOOR INTRUSION DETECTION APPLICATIONS

Model 420 Passive Infrared (PIR) Intrusion Sensor is an advanced stand-alone sensor designed for specialized outdoor intrusion detection applications. A four-zone, continuous and gap-free curtain sensing pattern detects intruders by sensing temperature (heat radiation) difference between the background scene and intruder. The pattern includes long, medium and short range detection segments, plus a controllable Creep Field that protects the area surrounding the mounting pole, which eliminates the detection 'dead zone' characteristic of traditional PIR sensors.

Minimal clear zone requirements for the Model 420's detection pattern make this sensor ideal for intrusion detection in very narrow corridors.

The latest detector and signal processing technology, plus precision mirror optics, allow Model 420 to operate in broad-ranging environments. Double optical filtering, Digital Signal Processing (DSP), Signal Shape Analysis (SSA), and Adaptive Threshold Decoding (ATD) ensure reliable operation under changing climatic conditions. Nuisance alarms from rain, snow, wind, and fog are virtually eliminated.

Model 420 electronics and optics are housed in a rugged IP65 heavy-duty plastic enclosure. An internally regulated heater connected to sensor electronics and operating from the supply voltage prevents the unit's optical surface from fogging or frosting in cold weather. A universal mounting bracket allows mounting to flat surfaces or 100 mm (4 in) O.D. posts.

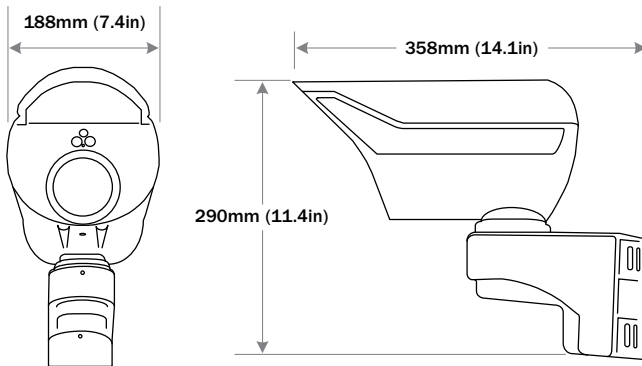
User-friendly installation software with flexible controls simplifies alignment, signal check and routine maintenance. Set-up is easily accomplished by aiming the sensor slightly downward into the area being protected, applying power and allowing the sensor to establish a reference level for operation. A walk test and final sensitivity adjustment optimizes detection.

KEY FEATURES

- DETECTION TO 122 M (400 FT)
- 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
- NEAR SURROUNDING AREA SURVEILLANCE
- DETECTOR MASKING ALARM

MODEL 420 SPECIFICATIONS

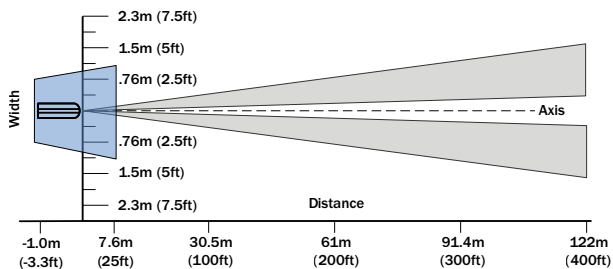
DIMENSIONS



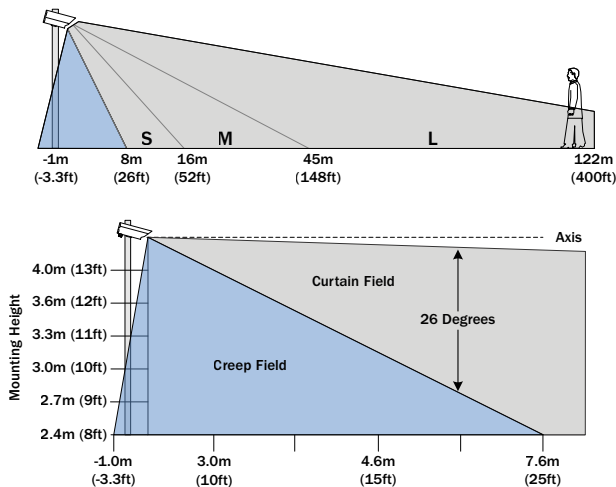
PATTERN

Model 420 provides a narrow, well-defined detection pattern with a maximum range of 122 m (400 ft) and a maximum width of 3.3 m (11 ft). 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 26 degrees, measured downward from the detector axis. Typical horizontal and vertical detection patterns are shown below.

HORIZONTAL COVERAGE (TOP VIEW)



VERTICAL COVERAGE (SIDE VIEW)



Specifications subject to change without notice.

OPERATION

Model 420 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 420 Technical Manual.

SPECIFICATIONS

Equipment Supplied: Model 420 sensor and mounting bracket. Required set-up software / interface module (Part # 64A46954-A01) sold separately.

Detection Range: 122 m (400 ft) typical for man/woman target

Detection Pattern Width and Height: Varies with range, 0.5 m to 3.3 m (1.5 ft to 11 ft)

Detector: Pyroelectric differential triple channel sensor

Spectral Response: 8-14 microns – double filtered

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

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

Heater Voltage: .5 watts, 41 mA (12 VDC) @ -40°C

Alarm Relay: SPST 0.25 amp @ 28 VDC

Tamper Switch: SPST 0.25 amp @ 28 VDC

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

Weight: 2.3 kg (5.0 lbs.) including mounting bracket

Shipping Weight: 3.6 kg (8.0 lbs.)

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