

## **Optex Incorporated**



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## **Description**

Doc: Architect/ Engineer Specifications  
Model: FX-360  
Desc: 360° Ceiling Mount PIR Intrusion  
Detector

*NOTE: Words/statements within square brackets [ ] may be included when appropriate, or when selection is required.*

The Intrusion Detector[s] shall operate on the Verified Intrusion principle using Passive Infrared (PIR), and shall be Listed by Underwriter's Laboratories, Inc..

### **OUTPUT AND ENCLOSURE**

[Each] [The] detector shall provide the detection, signal processing, alarm relay, and operating power circuitry in the same enclosure; and shall provide an alarm relay actuation upon the detection of an intruder moving into or through its protection pattern. The enclosure shall be ready for mounting to a ceiling without modification.

The total weight shall be 4.9 oz. (140g).

[Each] [The] detector shall feature a single piece electronics board whose circuitry is specifically designed for this detector alone. The board shall be mounted to a housing with the cover being secured with a screw. A running test on every circuit board ensures that all circuit boards shall have sustained a substantial "Burn-in" test for many hours, prior to use. The case shall include easy wiring knockouts.

### **LED OPERATION**

The detector[s] shall incorporate a single, Red LED to indicate the operating conditions. Red LED illuminated shall indicate an alarm condition. Red LED not illuminated shall indicate a non-alarm condition. The LED Alarm Indicator shall be optional; it shall be capable of being field disabled using an On/Off pin switch.

### **POWER REQUIREMENT**

The detector[s] shall be capable of operating from a DC power source rated within the range of 9.5 to 18 volts DC, and shall draw a nominal 17 milli-amperes (mA) (normal) and 18 milli-amperes (mA) (maximum) within this range.

### **ALARM OPERATION**

A condition of alarm shall occur when the PIR alarm conditions are met. The Sensitivity shall be 3°F (1.6°C) at 2ft/sec. (0.6m/sec.). The Detectable Speed shall be 1 ~ 5 ft/sec. (0.3 ~ 1.5m/sec.). The Alarm Period shall be 2.0 ± 0.5 seconds. The Alarm Output shall be capable of handling 28VDC, 0.2A max, N.C.. The pulse count shall be 20 ± 5 sec., and shall allow for a selection mode of 2 or 4 triggers to initiate an alarm output. [Each] [The] detector shall signal the condition of alarm using a Normally Closed Reed Relay with terminal strip connections. The detector[s] shall also contain a tamper switch that shall open when the cover is removed.

To accomplish PIR detection, [each] [the] detector shall contain a sealed Pyro-Electric sensor peaked for the detection of near-infrared energy in the 10 micron region.

### **SENSOR STABILITY**

To guard against false activations caused by RF interference, the detector shall incorporate RFI Protection capability. The logic built into this noise-reduction circuitry shall allow the sensor chip to cancel

50% of all popcorn noise. No alarm shall occur at 20V/m from the range of 100MHz to 1GHz.

Temperature Compensation Circuitry shall also increase detection capability under high temperature conditions where the background temperature is similar to that of the human body. The patented multi-focus lens creates zones with high vertical density, providing maximum detection sensibility that shall remain stable even in these high temperature conditions. [Each] [The] detector shall be rated to operate within the temperature range of [minus 4° Fahrenheit to plus 122° Fahrenheit] [minus 20° Celsius to plus 50° Celsius]. [Each] [The] detector shall also tolerate an environmental humidity rate of 95% max. No false alarm shall occur within these operating conditions.

Sealed optics shall also eliminate the chance of false alarm due to drafts or small insects. The Pyro shall be sealed with the inside of the molding of the housing cover to prevent these elements from affecting the pyroelectric sensor.

To ensure proper circuit operation, the detector[s] shall incorporate a PIR self-test with defaults. When the device is turned on, the warm-up period shall be approx. 30 seconds, during which time the LED blinks.

### **LENS AND DETECTION PATTERN**

[Each] [The] detector shall contain a hard and durable spherical Fresnel lens that shall focus received infrared energy onto the sensor. The precision with which this lens is designed shall enable the detector[s] to provide reliable detection throughout its 360° area. The sensor and module combined shall construct 360° of protection, with 62 zones of detection. The coverage pattern shall be  $\varnothing 25\text{ft} \sim \varnothing 40\text{ft}$  ( $\varnothing 8\text{m} \sim \varnothing 12\text{m}$ ).

The mounting height of the detector[s] shall be 8—12ft., or 2.6—3.6m.

### **MODEL**

The Intrusion Detector shall be model FX-360 (360° Ceiling Mount PIR Intrusion Detector).