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Phone: (800) 966-7839 or (310) 533-1500 - Fax: (310) 533-5910

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DX-40

*Passive Infrared &
Microwave Detector*

Optex is a leading manufacturer of high technology security products. We aggressively develop new product ideas and technologies to build quality products that meet our customer's needs and lifestyles. Our wide range of indoor and outdoor motion detectors, photoelectric detectors, control systems for burglary and fire alarm applications, and closed circuit television equipment, allow you to choose Optex equipment for all of your most critical security needs.



SECURITY - END USER INFORMATION

What should I look for when purchasing security equipment?

Most customers look for long term value. Selecting equipment which exceeds your expectations, and performs flawlessly for many years, is your best investment. Often, conditions in the protected premises change during the long life of a security system. Well designed control panels and detectors meet a wide range of operational requirements and are the best long term value.

Why should I select Optex equipment?

Optex has produced the finest quality sensors for the security industry since 1979. Our Passive Infrared detectors and photoelectric detectors have set the standard for false alarm immunity, high sensitivity, quality, and aesthetic design.

With the purchase of Morse Security Group in 1994, Optex added 70 years of experience in security control panel and alarm communications technology to our product offerings. Morse controls have long been the preferred choice for financial, government, and other high security applications. Morse engineering and design experience are apparent in the quality and elegant operation of Optex Burglar and Fire Alarm Systems.

What should I consider when designing my system?

If you've never owned a security system before, you might want to try to keep the system simple, but still complete. Hopefully this will help you to integrate the security system into your daily lifestyle as easily as possible. By selecting a control system which offers extra features, you can start with a more basic system and then add features later (such as exterior annunciation).

A fire alarm system with smoke detectors is a valuable addition to your security system and should be considered from the beginning.

How should I select my security service company (installation company)?

Here again, quality and long term satisfaction are usually buyer's first considerations. Initial cost savings disappear quickly if the problems develop in the system and the installer is not available to remedy them.

Do I really need monitoring?

Security systems call for help. Monitoring ensures your call is heard and response is dispatched.

Additional questions? Please e-mail your questions to us, we'd be happy to reply.

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<u>Genesys 824 Alpha</u>	<u>Genesys 824R</u>	<u>Genesys 824 Alpha Fire</u>
<u>MDC</u>	<u>Super MDC</u>	<u>Vision</u>



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OPTEX MODEL NUMBER
GENESYS 824
ALPHA
 CONTROL PANEL



Alphanumeric Display
8 Zone Control Communicator
Expandable to 24 Zones

The New Genesys Generation

Genesys 824 Alpha provides a variety of unique features designed to be installer and user friendly.

5 Year Warranty



- **Alpha and Segmented LCD Keypad Compatibility**

The Intelligent Alpha LCD keypad can be programmed with custom zone names either from keypad or from Remote Downloading Software. You need only to program one alpha keypad with custom zone names in multiple alpha keypads application. Also it can be used with segmented LCD keypads for any application.

- **Full Remote Programming Capability from Windows Software**

G-824-ALPHA is supported by easy to use download software. (RPU) featuring full remote programming including custom zone names plus...

- Site initiate down load
- Down load security call back
- Remote Arming/Disarming and much more

- **Keypad Features**

- Real time clock
- Auto arming with Pre-Arm warning
- 1-Digit Quick Arm function
- Manual Fire, Panic and Emergency (programmable)
- Segmented LCD / Alpha LCD Keypad / Key Switch or any combination
- LED status indication for Key Switch use
- 16 User Codes w/5 Security Levels
- Guest PIN with Auto Deletion
- User Activated Bell test

- **Additional Features**

- Multiple transmission formats including SIA
- Unique "intelligent" two-stage battery charging circuit
- 16 even Alarm Memory with Time Stamp
- 2 Auxiliary Programmable 12 VDC outputs
- Monitors phone and bell
- 2 phone capability

● **Programming Features**

- 8 zone expandable to 16 or 24 (fully programmable)
- Select from 5 different Loop Types (Optional E.O.L.)
- 3 different types of Interior Zones designed to reduce false alarms caused by user error
- All zones have Fire capability
- Compatible with 2 or 4 wire Smoke Detector
- 2 Entry/Exit delay times
- Allows for TRUE PARTITIONING including separate Keypads, Alarm Zones and PINs
- Programmable Monitor and Walk-Test modes

● **Long Range Radio Capability**

The RF-RM1 Long Range Radio Transmitter is the most cost effective method to ensure that your customer has the higher level of security available in the even the land line should be cut. The RF-RM1 transmitter employs the super fast Varitech FSK method of communications to ensure fast and reliable reporting of all events. Consult your central station for availability of the service.

RF-RM-1 Features:

- No programmers required/Easy Interface (4 wire)
- Reporting by Zone, Opening/Closing, Panic, Fire Emergency and all Housekeeping signals.

SPECIFICATIONS:

Model	824 Alpha
Control Cabinet	11 1/2"W x 11 1/2"H x 3 1/2"D Steel w/hinged cover. Knockout for lock. Knockouts top, bottom, side and back.
Primary Power	16.5 VAC 20VA transformer (not included)
Standby Power	12 VDC rechargeable Gel type (not included)
Continuous Aux Power	750 mA (Max 2Amps for Non UL)
Lightning Protection	MOV; spark gap
Keypad	Maximum 4 keypads per system wired with 4 conductor cable.

Current Draw

Panel = 100 mA
 Keypad = G-KP-Alpha: 40 mA (G-KP: 24 mA)
 Expander module 29 mA (each)
 Fire module 30 mA (each)

GENESYS MODELS:

Model	Description
G-824ALPHA/KP	Control / Keypad
G-824ALPHA/KP-F	Red Control / KP For Fire Applications w/ G-FM
G-KP-ALPHA	Alpha Keypad
G-KP-ALPHA-F	Red G-KP-ALPHA for Fire Applications
G-KP	Segmented LCD Keypad
G-KP-F	Red G-KP for Fire Applications
G-EX	8 Zone Expander Module
G-FM	Fire Module
G-EXC	8 Zone Expander Module w/ Cabinet
RF-RM-1	Long Range Radio Transmitter

Note: G-FM Fire module is required for UL fire applications.

FULL UL LISTING:

	Description
U.L. 365	Police Connect
U.L. 609	Local Alarm
U.L. 985	Household Fire Alarm
U.L. 1023	Household Burgular Alarm
U.L. 1610	Central Station Burgular Alarm
U.L. 864 / NFPA71	Central Fire Station
NFPA72 Chapter 6	Local Protective Signal System



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OPTEX

CCTV PRODUCTS

[DC-20](#)

Covert Camera and PIR Detector.

[WonderTrack](#)
[WT-110](#)

Instant high resolution digital recording using High Tech Digital CCTV Technology



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SPECIFICATION SHEET

OPTEX MODEL NUMBER
DC-20/DC-20P
COVERT CAMERA
& DETECTOR

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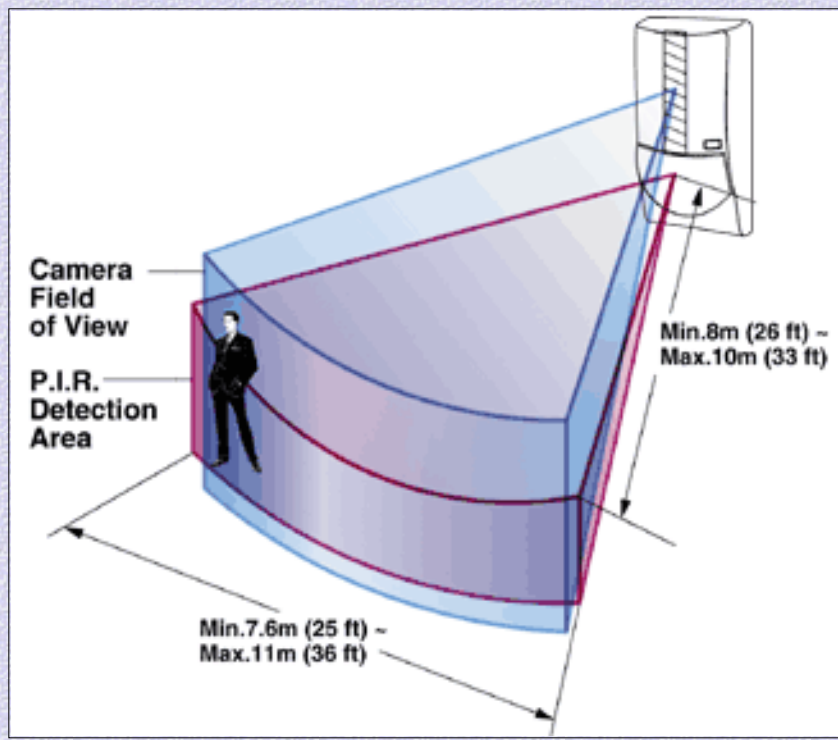
PROFESSIONAL AND SOPHISTICATED DESIGN OF THE CAMERA HOUSING MAKES THE LENS INCONSPICUOUS!!

With the wide range of cameras and technology available in today's market, Optex adopts the high-end post visual processing technology.

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- **Easy Installation**

The PIR and CCD are set at almost the same angle in production, making the troublesome work of alignment a thing of the past



- **HIGH QUALITY PIR**

Our state of the art technology offers the best PIR ever used on a covert camera, which adopts the latest Quad Zone Logic technology, assuring not only that reliable alarm outputs are sent to the alarm system, but also that crucial pictures are captured by the CCTV system

- **HIGH SENSITIVITY**

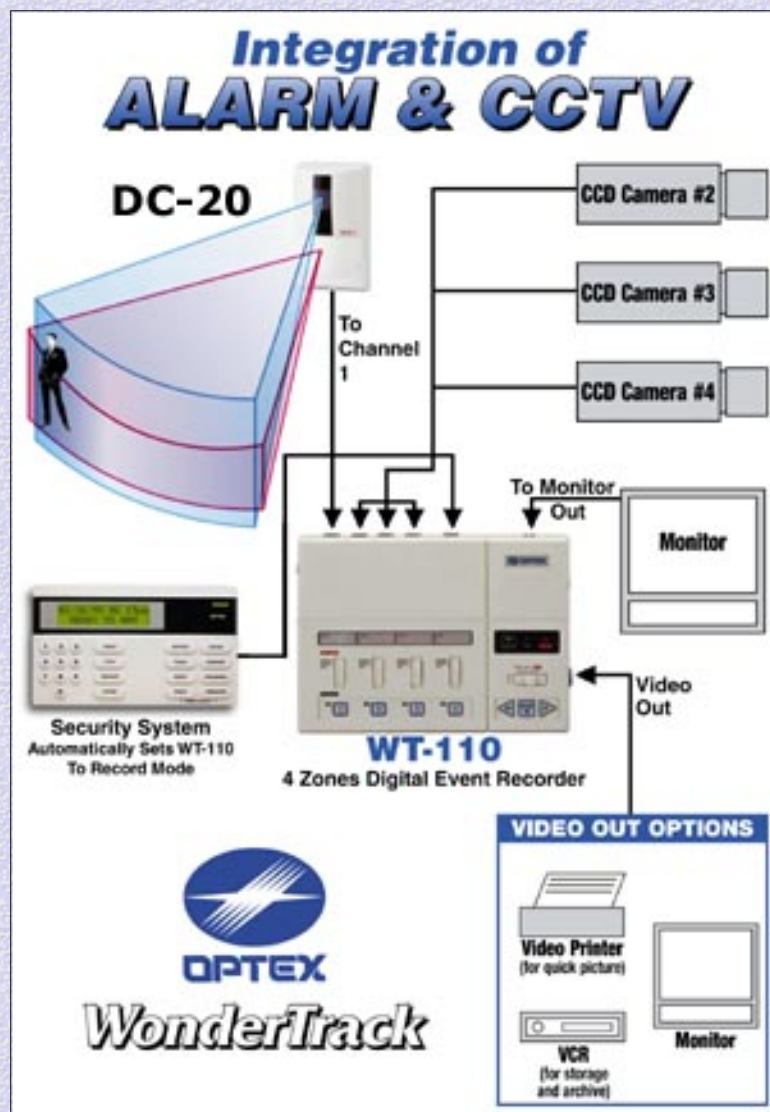
Clear vision in light conditions as low as 0.5lux

- **AUTO GAIN CONTROL**

AGC gives a better picture enabling recognition of the target's face even if the camera is against the light

- **UNIQUE DEDICATED 2 OUTPUTS / INTEGRATION OF THE ALARM AND CCTV SYSTEM**

There are 2 output relays enabling the integration of the security system and CCTV system by sending two signals separately



- Optional Brackets**

FA-1W

Wall Mount Bracket,
Adjustable $\pm 45^\circ$ Horizontally,
0-20° Vertically Downwards

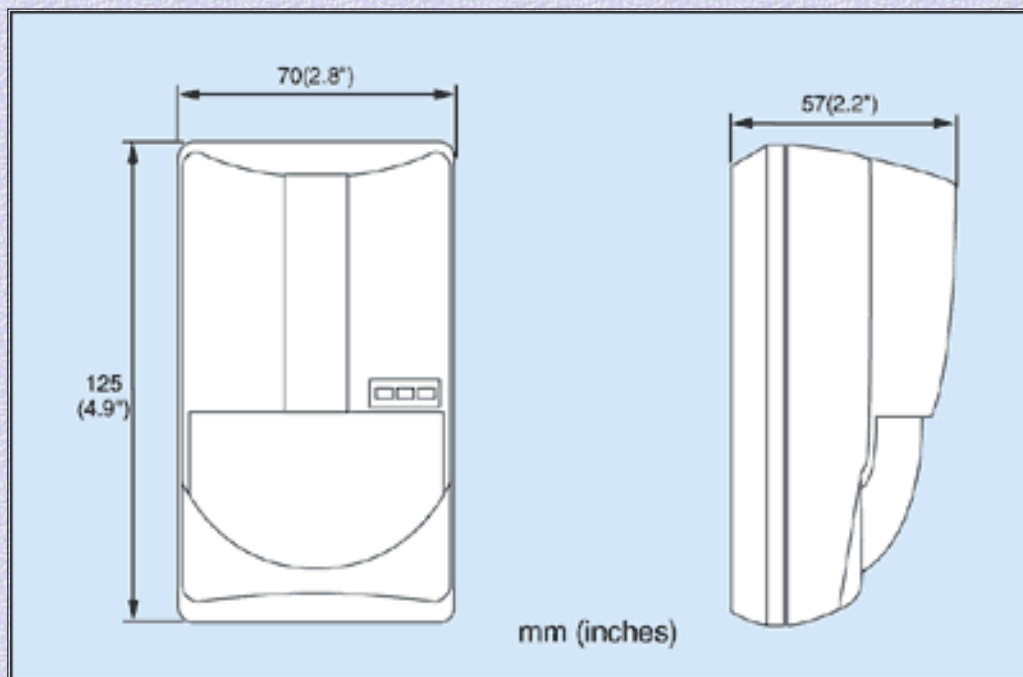


FA-3

Compact Wall & Ceiling Mount
Bracket,
Adjustable $\pm 45^\circ$ Horizontally,
0-10 $^\circ$ Vertically Downwards

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[Click Here To
See The DC-20 Detection Patterns](#)

DIMENSIONS[Go To Top of Page](#)**SPECIFICATIONS**[Go To Top of Page](#)**DC-20**

Model	DC-20P(25C)	DC-20P(37C)	DC-20P(60C)
Supply Voltage	12V DC \pm 10%		
Power Consumption	130mA (P,PM type 150mA)		
Operating, Temperature Range	-10 $^\circ$ C ~ +50 $^\circ$ C (14 $^\circ$ C ~ 122 $^\circ$ F)		
Storage, Temperature Range	-20 $^\circ$ C ~ +60 $^\circ$ C (-4 $^\circ$ C ~ 140 $^\circ$ F)		

LED Indicator	Detection Indicator
Dimensions	H125mm x W70mm X D57mm (4.9" x 2.8" x 2.2")
Environmental Humidity	85% RH max.
Installation Place	indoor only
Weight	140g (4.9oz)

CCD Camera

Model	DC-20P(25C)	DC-20P(37C)	DC-20P(60C)
Pickup Element	1/3" interline CCD		
Video Output	1.0Vp-p/75ohms \pm 10%		
Scanning Method	2:1 interlaced		
Resolution	380 TV lines		
Number of Effective Pixels	510(H) x 492(V)		
Focal Distance	f = 2.5mm	f = 3.7mm	f = 6.0mm
Lens Type	Conventional	Pinhole	Conventional
View Angle	109°(H) x 82°(V)	72°(H) x 54°(V)	45°(H) x 34°(V)
Minimum Illumination	0.5 lux		
TV Method	CCIR		
Synchronization	inside		

Detector

Model	DC-20P(25C)	DC-20P(37C)	DC-20P(60C)
Detection Method	Passive Infrared		
Coverage Detection Zones	MAX 12 m x 12 m (40 ft x 40 ft) 85° wide		
Sensitivity	0.3 ~ 1.5 m/sec. (1 ~ 5 ft./sec.)		
Relay Output	N.C. or N.O. 28VDC 0.2A max		
Warm-up Period	Approx. 20 sec.		

Model List	Conventional Lens		Pinhole
	2.5mm	6.0mm	3.7mm

CCIR	Camera	DC-20(25C)	DC-20(60C)	DC-20(37C)
	Camera + PIR	DC-20P(25C)	DC-20P(60C)	DC-20P(37C)
	Camera + PIR + Mic	DC-20PM(25C)	DC-20PM(60C)	DC-20PM(37C)
EIA	Camera	DC-20(25E)	DC-20(60E)	DC-20(37E)
	Camera + PIR	DC-20P(25E)	DC-20P(60E)	DC-20P(37E)
	Camera + PIR + Mic	DC-20PM(25E)	DC-20PM(60E)	DC-20PM(37E)



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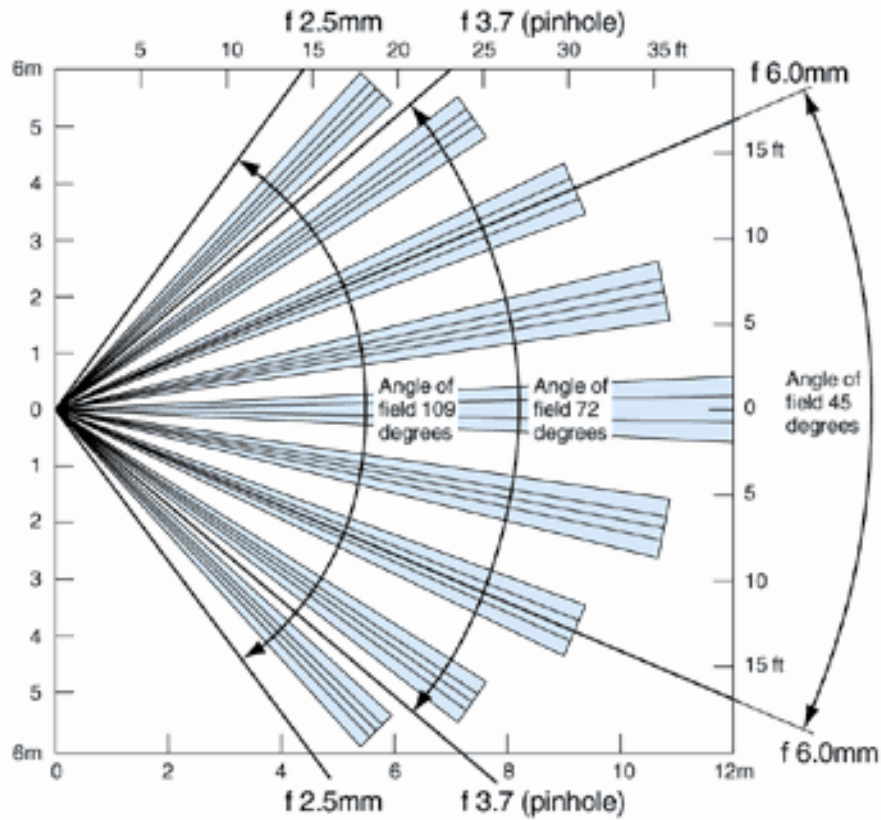
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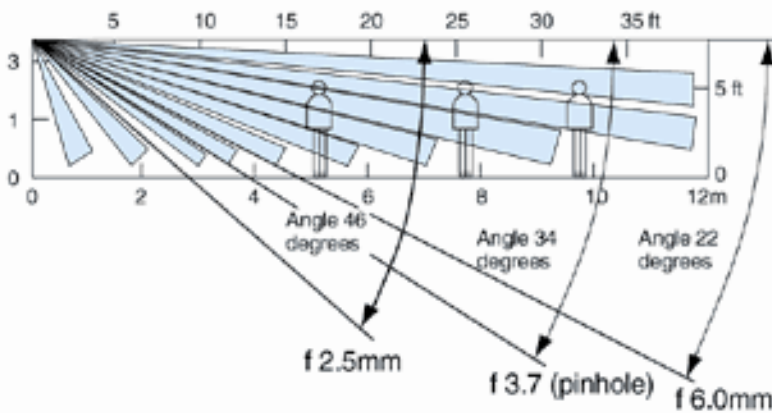
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OPTEX MODEL NUMBER

LX-40/80N

(40x50ft. Wide) (80ft. Long Range
Narrow)

PHOTOELECTRIC DETECTOR

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Sunlight Immune Detector: A New Standard For Outdoor Detection

**Outdoor Detection with the LX-40/80N, The
Smart Way to Expand Your Business
Opportunities**

OPTEX's outdoor detection offers many advantages for your business. The LX-40/80N is not only simple to install, but provides greater reliability against false alarms caused by sunlight.

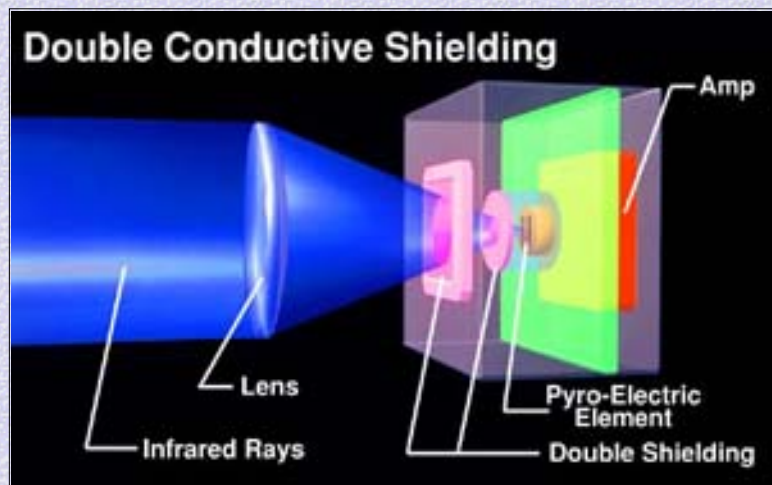
Conventional outdoor passive infrared detectors often produce false alarms caused by sunlight. But, OPTEX's LX-40/80N employs Double Conductive Shielding which resists more than 50,000 lux of sunlight (e.g. during sunrises and sunsets). This provides highly stable performances, while allowing the units to be used in many different applications.

FEATURES

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- **Patented Double Conductive Shielding**

Double filtering and conductive metal shielding of the Pyro blocks out visible light and RFI. This allows only infrared energy to reach the pyroelectric elements.



● **Reliable Performance**

- **Temperature Compensation Circuit**
Automatically adjusts the detection sensitivity according to the environmental temperature.
- **Selectable Detection Patterns**
Multi-level or Pet Alley detection patterns can be selected by sliding the PCB and flipping the mirror.
- **Area Masking Strips (LX-40 Only)**
Unwanted detection areas can be easily eliminated by attaching supplied masking strips.
- **Selectable Sensitivity**
- **Selectable Pulse Count: 1 or 2**
- **Day or Night Mode**
- **Form C Relay Output**

● **Easy Installation**

- **Quick Installation**
The LX-80N, for example, provides 80 ft (24 m) long range narrow detection, eliminating the need for long outdoor wiring when the unit is mounted on a building.

● **Design Durability**

- **Highly Durable and Heat Resistant Housing and Lens**
- **High Grade UV-Resistant Lens**
- **Stainless Steel Screw**

● **Applications**

- **Activation of CCD camera, light, siren, and/or other devices**
- **Front and/or backyard alongside fences, garage / parking lots, delivery door, etc.**

● **Options**

- **CA-1W: Multi-Angle Wall Mount Bracket**
Horizontally: $\pm 45^\circ$
Vertically: 0° to 20° Downward
- **CA-2C: Ceiling Mount Bracket**
Horizontally: $\pm 45^\circ$
Vertically: 0° to 20° Downward

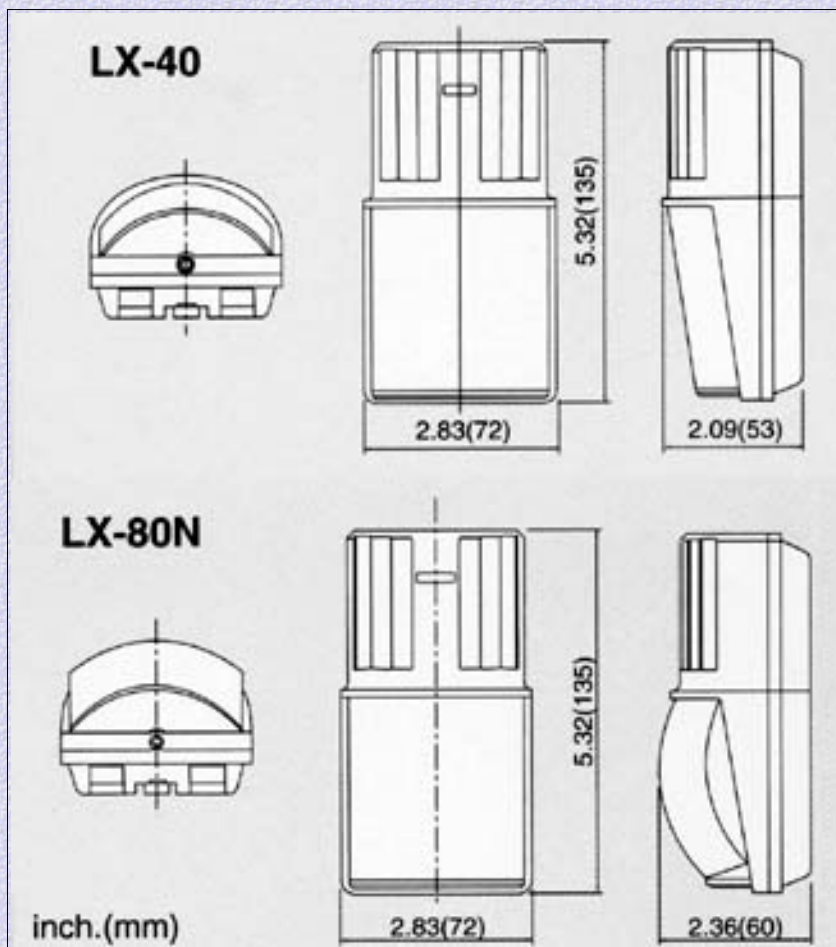
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[Click Here To See The LX-40/80N Detection Patterns](#)

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Model	LX-40	LX-80N
Detection Method	Passive Infrared	

Coverage	40ft x 50ft (12m x 15m) 120° wide	80ft x 6ft (24m x 2m) long range
Detection Zones	Normal Area: 40 zones	Multi-Level Area: 12 zones
	Pet alley area: 18 zones	Pet alley area: 4 zones
Mounting	Normal Area: 8.3ft (2.5m) max.	
	Pet alley area: 4 ~ 5ft (1.2 ~ 1.5m)	
Detectable Speed	1 ~ 3.3ft/sec. (0.3 ~ 1.0m/sec)	
Sensitivity Adjustment	Selectable 3 position (H,M,L)	
LED Indicator	LED lights on during detection	
Alarm Period	2.0 ± 1sec. (Delay timer)	
Alarm Output	NC. NO 28V DC 0.2A Max	
Tamper Switch	Opens when cover removed.	
Pulse Count	"2" position: 2 (20 ± 5 sec.)	
	"TEST" mode: 1 pulse	
Photocel Adjustment	Day to night mode (Approx. 10 to 100,000 lux)	
Warm-up Period	Approx. 60 sec.	
Power Input	12VDC ± 10%	
Current Draw	25mA max.	
Installation Place	Indoor or outdoor on the wall	
Operating Temperature	-4°F ~ +122°F (-20°C ~ +50°C)	
Environment Humidity	95% max	
Weight	5.3oz (150g)	

*Specifications and design are subject to change without prior notice.

NOTE: This unit is designed to detect movement of an intruder and activate an alarm control panel. Being only part of a complete alarm system, we cannot accept responsibility for any damages or other consequences resulting from an intrusion.



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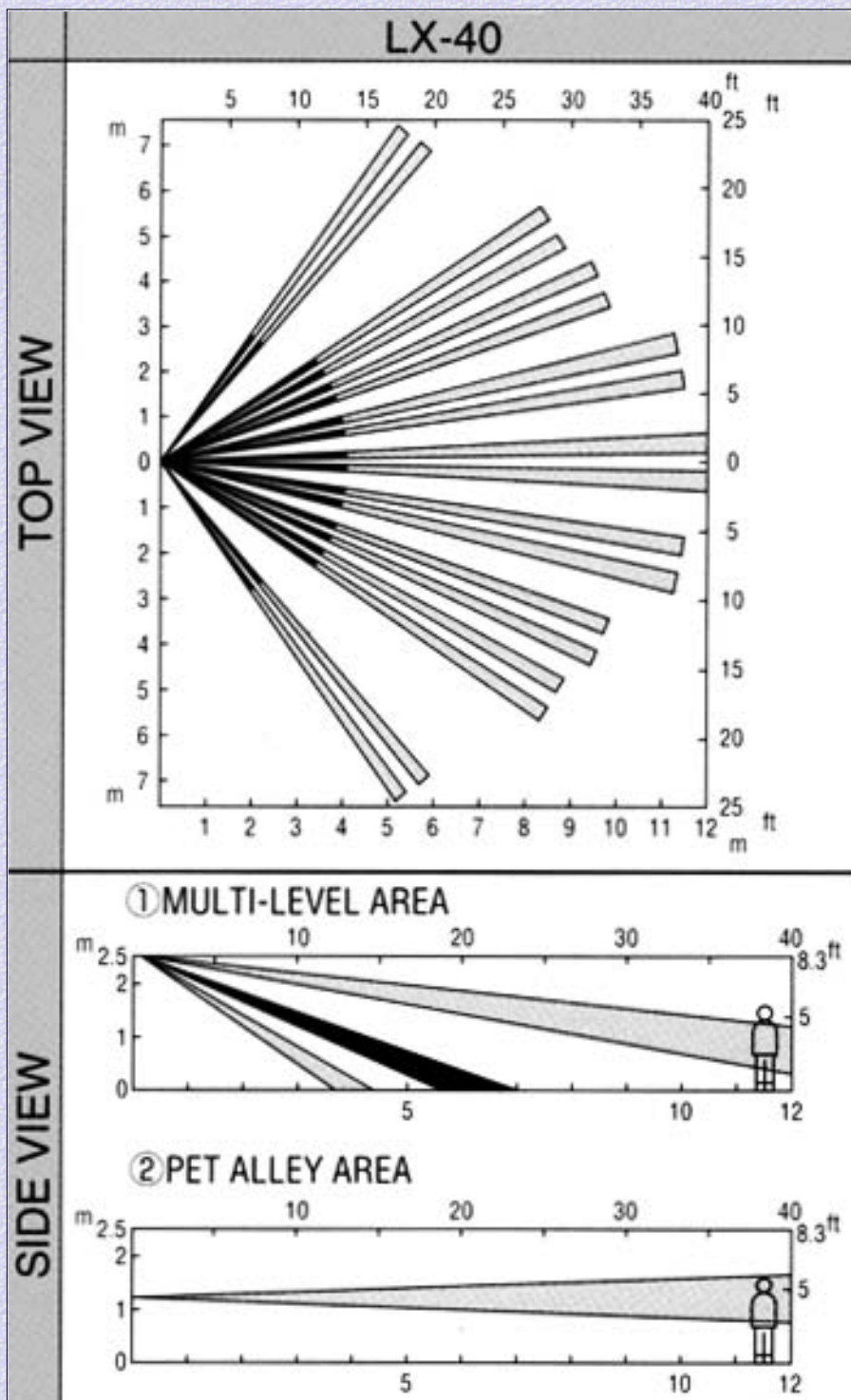
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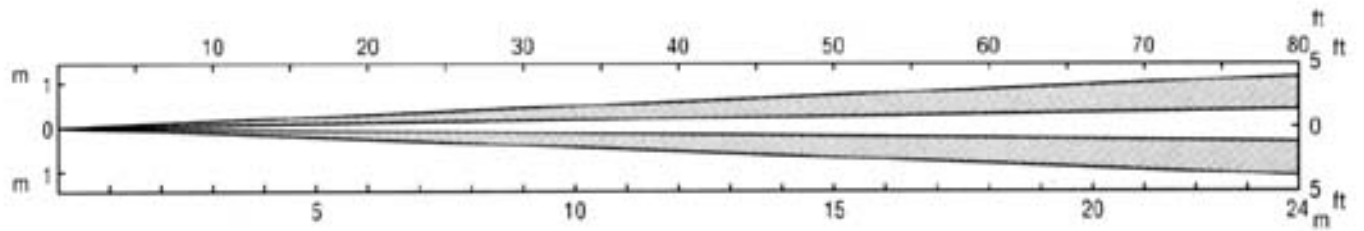
(40x50ft. Wide) (80ft. Long Range Narrow)

PHOTOELECTRIC DETECTOR

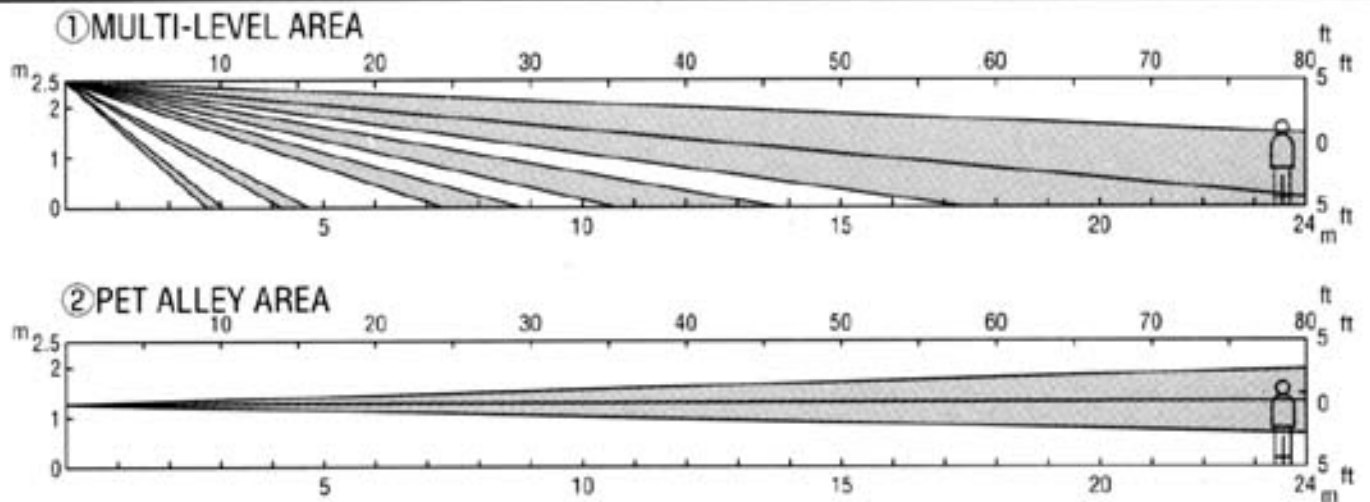


LX-80N

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VX-40/40A

MULTI STABILIZED OUTDOOR DETECTOR

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Introducing The Most Innovative Idea In Outdoor Detection. Optex's Advanced "MDP" (Multiple Detection Pattern) Technology.

Optex's advanced PIR technology takes a giant leap into the future of outdoor detection. Our patented design allows this sensor to adapt to many different applications and offer reliable detection and unique deterrent capability.

The VX-40 Series has unique technology which makes it absolutely the most stable outdoor sensor which utilizes Passive Infrared Technology. Designed to provide Reliable Performance, Ease of Installation and Multiple Applications for the Dealer and End User, the VX-40 allows your customer the ability to utilize perimeter awareness in their home or business.

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- **The Highest Reliability Available in Outdoor Detection**

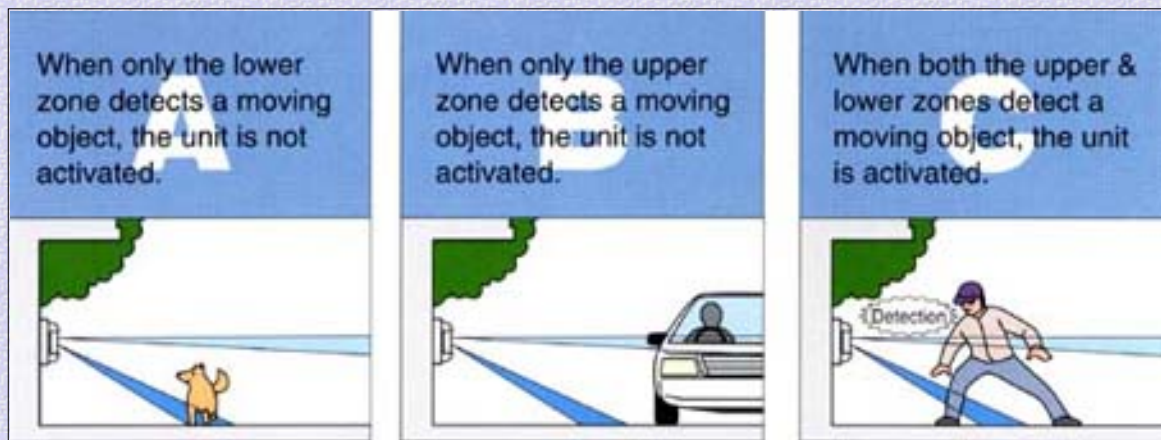
The patent pending "MDP" Technology eliminates the chance of false alarm caused by moving objects or small animals within the detection area. The VX-40 includes the first Layered Detection Pattern which provides logic for discrimination of objects in the detection area. The upper zone stays parallel to the ground at all times and the lower zone is adjustable from 6.7ft. (2.0m) to 40ft. (12m). Only when both upper and lower zones are activated will the VX-40 generate an alarm.

- **Limited Detection Range Function**

The detection range of the VX-40 can be limited to avoid detecting unwanted objects. By eliminating detection range, false alarms due to unwanted movement (i.e. cars, persons or animals outside the detection area) can be reduced.

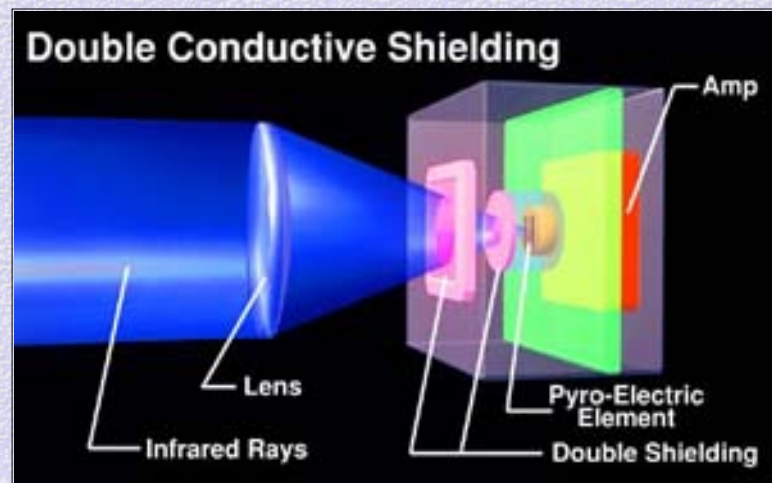
- **Size Judging Function**

The VX-40 is designed to discriminate between large and small objects. By utilizing this ability, false alarms due to small animals can be virtually eliminated.



- **Bright Light Disturbance Immunity with Double Conductive Shielding**

The VX-40 is equipped with Patented Double Conductive Shielding Technology. A special conductive filter covers the element window allowing infrared energy to pass through while blocking and grounding out light and RFI sources.



- **High Durable Housing & Lens**

- **Weather Proof Structure (IP54)**

- **Easy Installation**

Installation of the VX-40 has been simplified by the addition of a conduit access in the bottom of the unit. You can conveniently install the VX-40 anywhere since it can be wired either through a conduit access in the bottom of the unit or through a wiring access on the back of the unit. In addition, rubberized grommets increase the resistance of the sensor to the attack of natural elements.

- **Wiring Convenience**
Wiring can enter the sensor from the top or bottom, making installation quick and easy.
 - **Built-In Conduit Entry**
A conduit can be installed directly into the bottom of the unit by removing the knockout on the cover.
 - **Area Masking Plate**
Unwanted detection area(s) can be easily eliminated by attaching supplied masking plates.
 - **Area Angle Adjustment**
The detection area can be adjusted 45° left or right from the center to allow for custom applications for the sensor.
-
- **Extensive Application**
By connecting to additional detectors such as PIRs, Active IR Beams, or Magnetic Contacts, the VX-40 can provide additional features without the use of any special control panel. Self-contained functions can offer not only higher reliability but also the ability to be utilized in various applications.
 - **Detection Area Extension Function**
Wiring two VX-40 sensors together and selecting the "OR" Mode will allow the detection pattern to be effectively doubled.
 - **Directional Detection Function**
The VX-40 can also be used in conjunction with another sensor to create even greater stability. By selecting the "AND" Mode and programming which sensor should be activated first (DIP Switch Programming), the VX-40 can sense direction and will activate only if motion is in a specific direction.
 - **Sequentially Confirmed Alarm Containment**
With this option selected, an alarm will only be generated if two detectors activate sequentially and separately. This function dramatically increased the reliability of the system. It is no longer necessary to reduce sensitivity or parallel sensors together. The logic is all internally controlled.
-
- **Voice Warning Function (VX-40A Model Only)**
When the system is armed, the Voice Warning Feature (Weatherproof speaker inside sensor) delivers one of two types of voice messages to anyone entering the protected area. This warning is designed to deter a would-be intruder from continuing towards the protected area.
-
- **Various Applications**
The VX-40 is equipped to provide Directional Access Control features. Applications for this technology include opening an automatic gate when approached from one direction, counting cars or people going one direction through an area and not counting those going the other way.



● **Other Features Include:**

- Selectable NC or NO Alarm Output
- Temperature Compensation Circuit
- Illuminance Sensor
- Day-Night Mode
- Sensitivity Adjustment: Low, Medium, High
- LED On/Off Switch
- Selectable Pulse Count: 2 or 4
- Spare Terminals

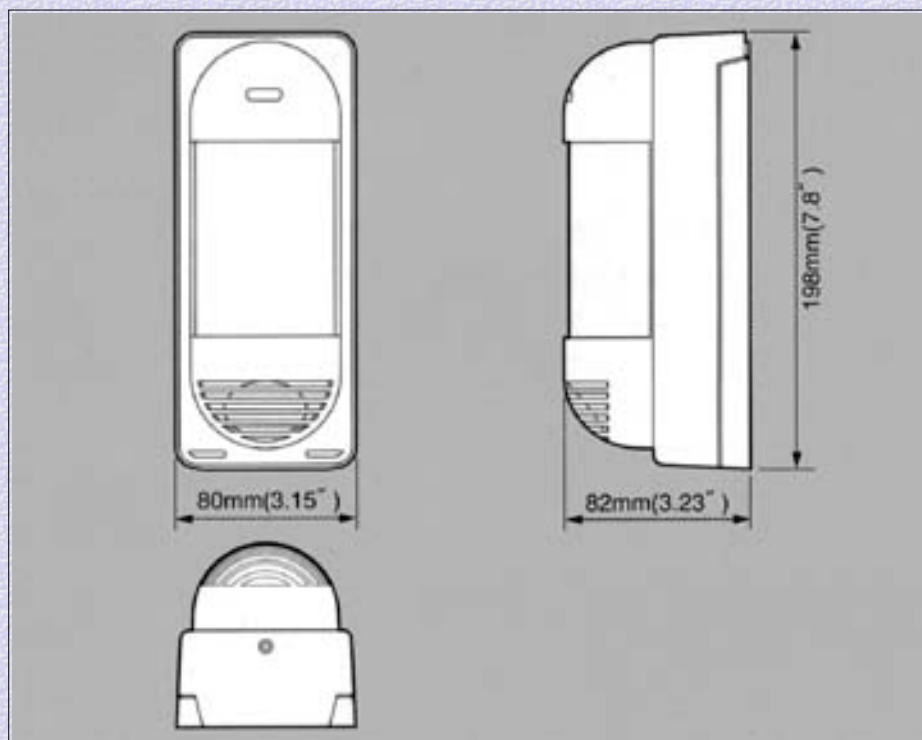
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Model	VX-40	VX-40A
Detection Method	Passive Infrared	
Coverage	12m (40ft) 90° wide	
Detection Zones	14 zones	
Mounting Height	0.8 ~ 1.2m (2.7 ~ 4ft)	
Sensitivity	1.6°C (3°F) at 0.6m/s (2ft/s)	
Detectable Speed	0.3 ~ 1.5m/s (1 ~ 5ft/s)	
Power Input	9.5 ~ 18VDC	
Current Draw	NC	Normal 25mA Max 28mA
	NO	Normal 10mA Max 35mA
		Normal 12mA Max 200mA
Alarm Period	2 ± 1sec	
Alarm Output	Selectable NC/NO:28VDC 0.2A Max	
Tamper Switch	NC Opens when cover removed	
Pulse Count	20 ± 5 sec 2 or 4	
Warm-up Period	Approx 30sec (LED blinks)	
LED Indicator	LED is blinking durin warm-up period Alarm condition	
Weather proof	IP54	
Operating Temperature	-20 ~ +50°C (-4 ~ +122°F)	
Environment Humidity	95% Max	
RF Interference	NO Alarm 30V/m	
Mounting	Wall, Pole, Conduit and Electrical Box	

Weight	550g (19.4oz)
Standard Accessories	Pole Mount Kit, Screw Kit, Area Masking Plate

*Specifications and design are subject to change without prior notice.

NOTE: This unit is designed to detect movement of an intruder and activate an alarm control panel. Being only a part of a complete system, we cannot accept responsibility for any damages or other consequences resulting from an intrusion. This product conforms to the category "Residential, Commercial and Light Industry" of EMC Directive 89/336 EEC.

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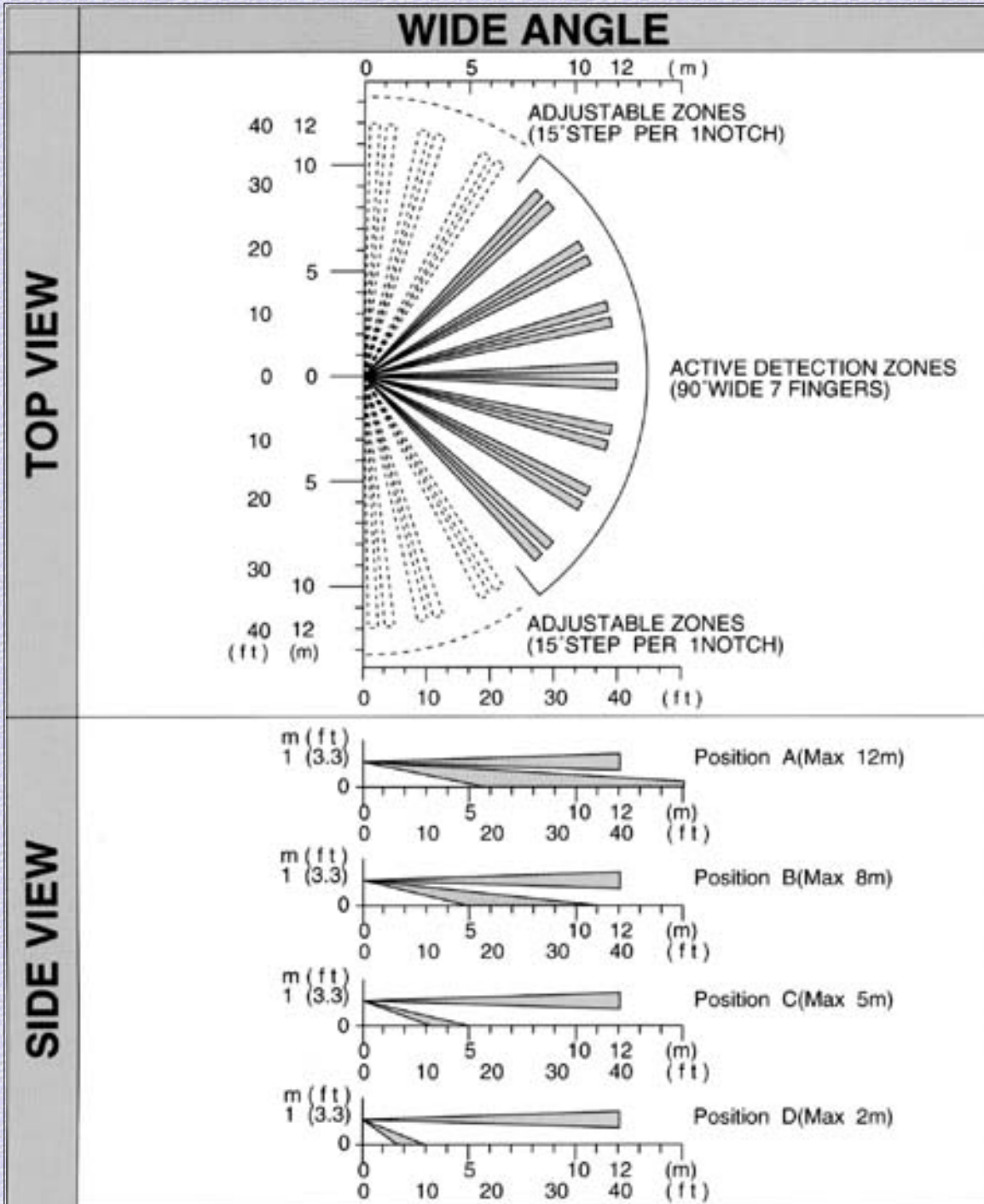


OPTEX
DETECTION PATTERNS

OPTEX MODEL NUMBER

VX-40/40A

**MULTI STABILIZED
OUTDOOR DETECTOR**



Length of lower finger decides detection length. The upper detection finger stays parallel to the ground all the time while the lower detection finger moves as shown depending on the switch position. Consequently, the length of the detection area is limited by the length of the lower finger since both the upper and lower fingers have to be blocked at the same time to activate the sensor.





OPTEX
PASSIVE INFRARED SENSORS - INDOOR

Standard Ranges

(40' x 40' Wide Angle, 80' curtain pattern or less)

<u>DX-40</u>	PIR/Microwave detector with Anti-Masking, Microwave Shaping, Microwave Watchdog circuitry, and Quad Zone Logic PIR.
<u>EX-35T</u>	"Flip Lens" provides 35'x35' wide angle or 5'x5' long range pattern, built-in pet alley option and selectable pulse count.
<u>FX-40</u>	40'x40' pattern with look down zone or 60' curtain with optional lens, temperature compensation and sealed optics.
<u>FX-360</u>	Ceiling mount detector for easy installation, superior aesthetics, and less blockage. 25' to 40' detection area on 8' to 12' ceiling.
<u>RX-40PI</u>	Quad Zone Logic provides pet immunity to eliminate false alarms from objects 16" tall or less. High sensitivity allows use in virtually all apps.

Extra Long Ranges

(Designed specifically for large area coverage)

<u>CX-50</u>	Dual purpose lens for 50'x50' (108 zones) or 80'x6' curtain pattern, double conductive shielding, anti-masking available (CX-50AM).
<u>CX-70M</u>	70'x70' wide angle or 150'x8' long range patterns on dual purpose lens, double conductive shielding and sealed optics.
<u>SX-45C</u>	45'x45' ceiling mount with in-line Quad elements for ceiling heights from 7' to 18', dense coverage, attractive design.

[SX-75C](#)

75'x20' ceiling mount with in-line Quad elements for ceiling heights from 7' to 18', dense coverage, attractive design.

[SX-360Z](#)

276 zones in a 360° pattern, Zooms to compensate for ceiling height, delivers 60' diameter pattern on 6'-16' ceilings.



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DX-40/40PLUS

INTEGRATED PASSIVE INFRARED & MICROWAVE DETECTOR

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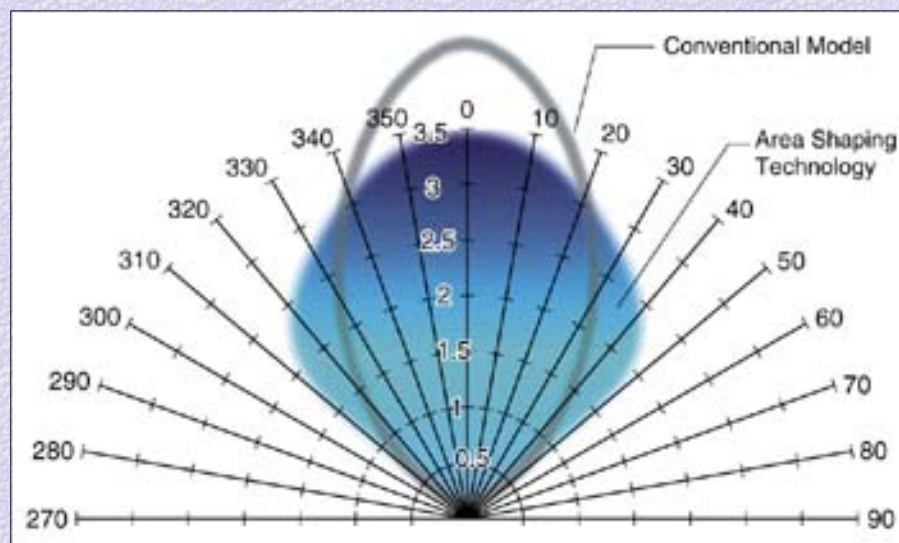
DX-40 Combines Advanced Optical PIR Technology and Unique Microwave Detection

DX-40 is the result of Optex's advanced research with PIR and microwave technology. Unique advancements include Patent Pending "MICROWAVE AREA SHAPING TECHNOLOGY" and PIR technology with New Spherical Lens to improve QUAD ZONE LOGIC in a compact housing. Mechanical design of this product will offer easy and trouble-free installation. DX-40 has features that will satisfy almost every installation.

FEATURES

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- **Microwave Technology - Patent Pending "Area Shaping Technology"**

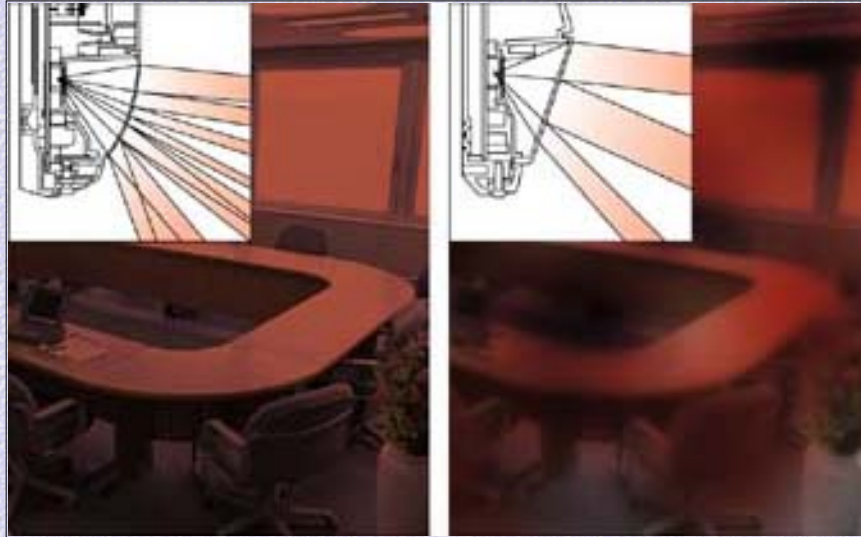


Optex Research and Development Department have created a breakthrough in Microwave Detection. The DX-40 reduces one of the biggest weak points of microwave detection, that is the penetration of

walls and unwanted detection of movement outside the coverage area. In addition, the detection area has uniform sensitivity which minimizes false activation's caused by spot movement in the detection area, i.e. small animals. The DX-40 is a new dimension in microwave technology.

- **Passive Infrared Technology - Patented Quad Zone Logic with New Spherical Lens**

By utilizing Optex Advanced Optical Technology, the DX-40 creates evenly distributed sensitivity throughout the detection area. Accurate focus creates even sensitivity and high resistance to spot temperature changes. Other detectors may have inconsistent detection creating hot spots (false alarm can occur) and dead spots (no detection). In addition, the New Spherical Lens contributes to a superior aesthetic appearance which end users will appreciate.



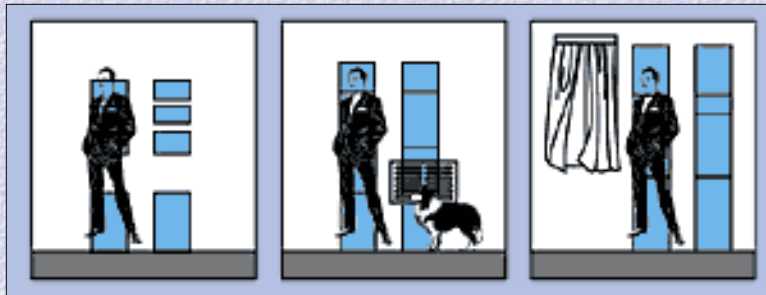
- **Optex Design and Mechanical Technology**

- Easy installation and wiring are engineered into this compact housing.
 - Easy Microwave Area Adjustment:
 - Long or Short Distance Selector Switch
 - Low, Medium or High Sensitivity Adjustment
-

- **Re-Enforced with Electronic Analysis**

- **Detection Area Size Configuration - "Microwave Area Shaping" and "Quad Zone Logic"**

The Microwave Area can be easily shaped to fit the desired area and have even sensitivity. In addition, Quad Zone Logic in the PIR provides high tolerance to spot temperature changes and movements caused by small animals, heating vents, moving curtains and vibrations caused by big machinery.



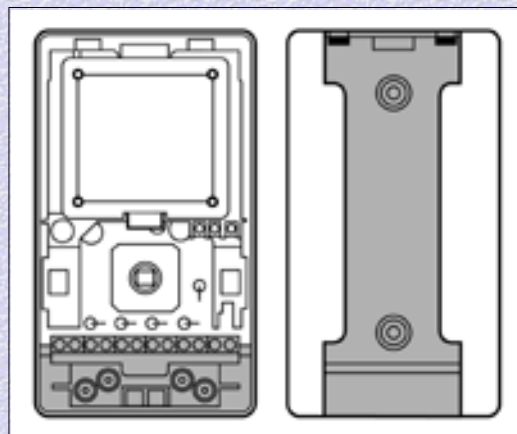
- **No Penetration**

- **No False Alarms due to Penetration through walls**
Passive Infrared does not detect through walls and is never affected by movement beyond these boundaries.
- **No False Alarms by Spot Temperature Changes**
DX-40 is not affected by spot temperature changes or by sunlight caused by the movement of sunlight through a detection area.
- **Enhanced Sealed Optics** (patent pending)

- **No Temperature or Light Disturbance**

- **Trouble-Free Installation**
Microwave Area Shaping allows for simple two step adjustment. By making minor adjustments to the Long or Short Range Selector and the Low, Medium, High Sensitivity Volume, the microwave can be shaped to match room size. This technology will not only reduce installation hassle but will reduce false alarms caused by penetration of walls by the microwave detector.

Wiring Guide and Wide Space at Terminals - Increases Ease of Installation



Easy To Operate Pin Switches (with instruction directly on the detector)

High Visibility LED Display (3 LEDs) - selectable On/Off

Easy Knockout



- **Improved Tolerance to Spot Movements**

- **False Safe Technology - Automatic Trouble Monitoring**

Passive Infrared does not detect through walls and is never affected by movement beyond these boundaries.

Microwave Watchdog Circuit (Self-checking function)

When microwave operation fails, DX-40 automatically switches to single PIR operation in Enhanced Reliability Mode avoiding Missed Alarms.

Anti-PIR Tamper Function (Patent Pending)

When PIR Detection fails, (something near the detector blocking the field of view) a trouble output will generate via the * alarm output (Selectable option with DX-40) and LED Display. (*DX-40PLUS has separate Relay Output)

- **DX-40Plus Enhanced Model**

- **Separate Relay Output for Automatic Trouble Monitoring**
 - **Alarm Memory, Selectable Positive or Negative Input**
 - **LED Remote On/Off Control Input from Control Panel**
 - **Metal Shielded Relay**

- **Optional Brackets**

FA-1W

Wall Mount Bracket,
Adjustable $\pm 45^\circ$ Horizontally,
0-20° Vertically Downwards

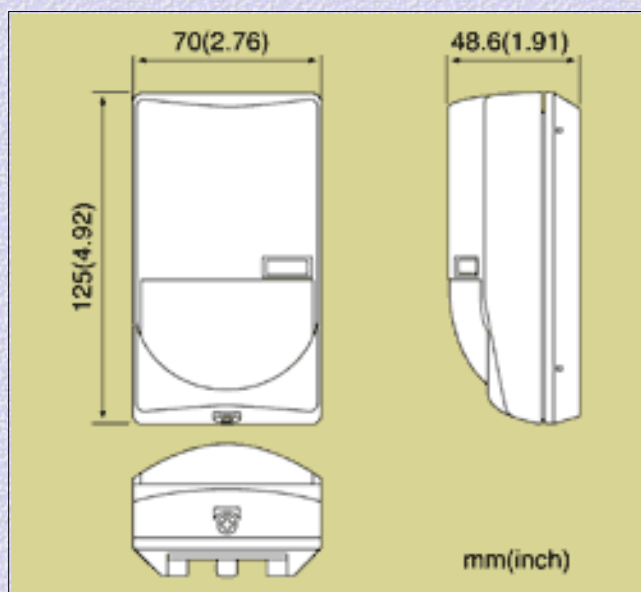


FA-3

Compact Wall & Ceiling Mount
Bracket,
Adjustable $\pm 45^\circ$ Horizontally,
0-10 $^\circ$ Vertically Downwards

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	DX-40
Detection Method	Passive Infrared and Microwave
Coverage	40 x 40 ft (12m x 12m) 85 $^\circ$ wide
Detection Zones	82 zones (PIR)
Mounting Height	5 ~ 8 ft. (1.5m ~ 2.4m)
Sensitivity	3 $^\circ$ F (1.6 $^\circ$ C) at 2 ft. / sec. (.6m / sec.), 40ft (12m)
Detectable Speed	1 ~ 5 ft. / sec. (.3 ~ 1.5m / sec.)
Alarm Period	Approx. 2 sec.
Alarm Output	N.C., 28VDC 0.2A max.

Tamper Switch	N.C., Opens when cover is removed.
Warm Up Period	Approx. 30 sec.
LED Indicator	Flicker during warm-up. RED: Alarm, Alarm Memory, and Trouble Indicator YELLOW: MW and Trouble Indicator GREEN: PIR and Trouble Indicator
Power Input	9 ~ 18VDC
Current Draw	12mA(normal), 35mA(max.) at 12 VDC
RF Interference	No alarm 30V/m
Operating Temperature	14°F ~ +122°F (-10°C ~ +50°C)
Environmental Humidity	95% max.
Microwave Frequency	9.90GHz/10.525GHZ 10.687GHz (UK Version)
Weight	5.3oz(150g) - Plastic Antenna Version 8.1 oz(230g)- Metal Antenna Version

	DX-40Plus
Current Draw	17mA (normal), 40mA(max.) at 12 VDC
DL Terminal	LED remote control terminal
Alarm Memory	Selectable positive and negative control
Trouble Output	N.C., 28VDC 0.2A max.
Microwave Frequency	9.90GHz/10.525GHZ 10.687GHz (UK Version)

*Specifications are subject to change without notice for improvement.



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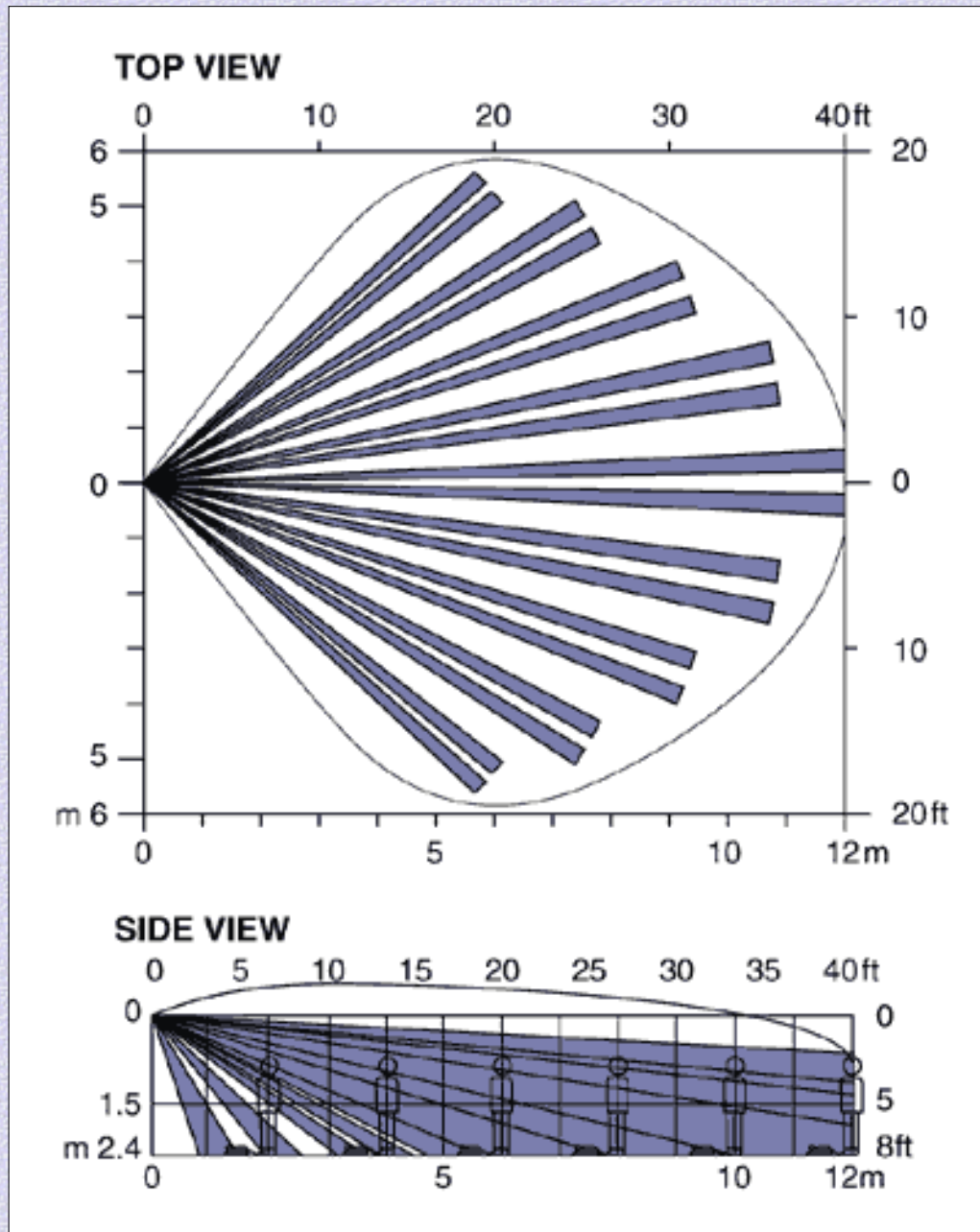


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DX-40/40PLUS

**INTEGRATED PASSIVE INFRARED
& MICROWAVE DETECTOR**



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EX-35**PASSIVE
INFRARED DETECTOR**

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Twice The Features At Half The Cost

The EX-35 Combines A Unique Dual Purpose Lens, Patented Multi-Focus Technology and Selectable Sensitivity to Create 4 Precise Detection Pattern Selections.

The EX-35 breaks the mold of low cost, quality deficient detectors. You can select between precise Wide Angle or Long Range Coverage, and also Multi-Level or Pet Alley Detection Patterns. By incorporating our Patented Multi-Focus Technology into the Spherically Designed Lens, the EX-35 has successfully eliminated sensitivity problems caused by changes in detection patterns.



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- **Advanced Design Multi-Purpose Spherical Lens**

Unique technology provides unmatched optical performance for Wide Angle and Long Range Detection in Multi-Level or Pet Alley Patterns, using the same lens surface.

- **Selectable Detection Patterns**

The EX-35 provides reliable and precise detection performance.

- **Wide Angle and Long Range Detection Patterns**

By simply rotating the spherical lens, you select between Wide Angle and Long Range Detection Patterns.

- **Multi-Level and Pet Alley Detection Patterns**

Multi-Level and Pet Alley Detection Patterns can be selected by simply sliding the P.C.B. up or down.

- **Patented Multi-Focus Lens**

Creates zones with high vertical density, providing maximum detection sensitivity that remains stable even in high temperature conditions.

- **False Alarm Protection**

- **RFI Protection**
No alarm at 20V/m from 100MHz to 1GHz.
 - **Temperature Protection**
No alarm during temperature changes from -4°F to +122°F (-20°C to +50°C)
 - **Noise Reduction Circuit**
 - **Selectable Pulse:** 2 or 4
 - **LED On/Off Switch**
-

- **Optional Multi-Angle Bracket**

- **FA-2C:** Ceiling Mount
 - **EA-1W:** Wall Mount
-

- **Versions**

- **EX-35**
- **EX-35T:** Tamper Switch
- **EX-35V:** Tamper Switch and Alarm Memory

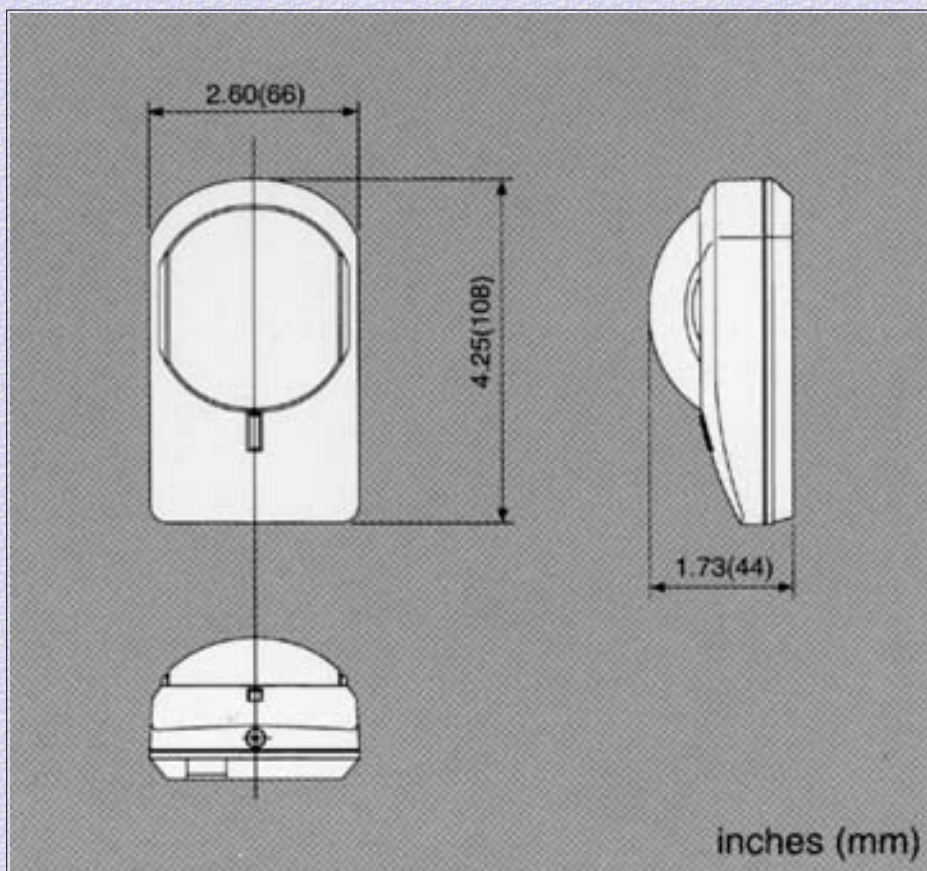
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Model	EX-35	EX-35T
Detection Method	Passive Infrared	
Coverage	WIDE: 35 ft. x 35 ft. (11m x 11m) 85° Wide LONG: 55 ft. x 5.5 ft. (17m x 1.7m) Long Range	
Detection Zones	WIDE: 64 zones / 28 zones (Pet Alley) LONG: 12 zones / 4 zones (Pet Alley)	
Mounting Height	Normal: 4 ~ 8 ft. (1.2m ~ 2.4m) Pet Alley: 2 ~ 4 ft. (.6 ~ 1.2m)	
Sensitivity	3°F (1.6°C) at 2 ft. / sec. (.6m / sec.)	
Detectable Speed	1 ~ 5 ft. / sec. (.3 ~ 1.5m / sec.)	
LED Indicator	Alarm Indicator Optional	
Alarm Period	Approx. 2.5 sec.	
Alarm Output	N.C., 28V DC., 0.2A max	
Tamper Switch	&SHY;	N.C., Opens when cover is removed.
Pulse Count	Approx. 20 sec. 2 or 4 (When using long range, always set pulse count selector on "2")	
Warm Up Period	Approx. 30 sec.	

Power Input	9.5 ~ 14V DC
Current Draw	18mA max.
Weight	3.2 oz. (90 g)
Operating Temperature	-4°F ~ +122°F (-20°C ~ +50°C)
Environmental Humidity	95% max.
RF Interference	No alarm 20V/m

*Specifications are subject to change without notice for improvement.

V Version (Alarm Memory)		
Model	EX-35V	EX-35V(P)
Alarm Memory	Armed: 0 ~ 1V DC	Armed: OPEN or +5 ~ 14V DC
Current Draw	18mA (normal), 25mA (max.)	



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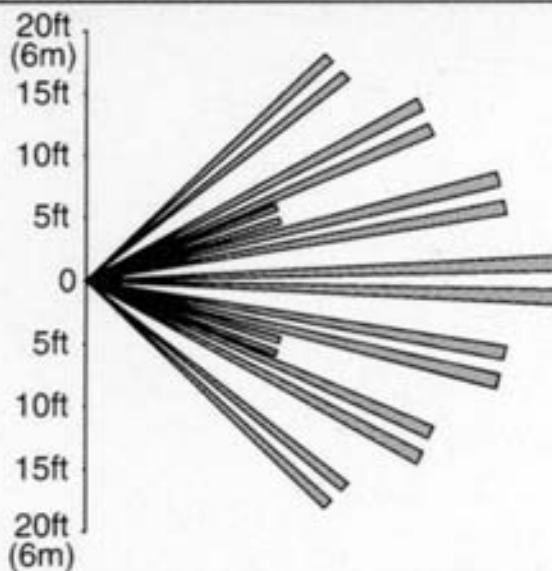
OPTEX MODEL NUMBER

EX-35

**PASSIVE
INFRARED DETECTOR**

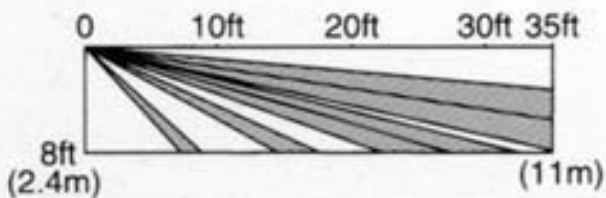
WIDE ANGLE

TOP VIEW

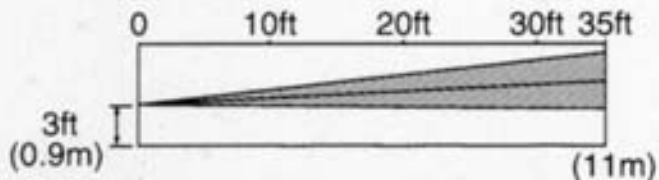


SIDE VIEW

**NORMAL
(Multi-Level)
AREA**



**Pet Alley
AREA**



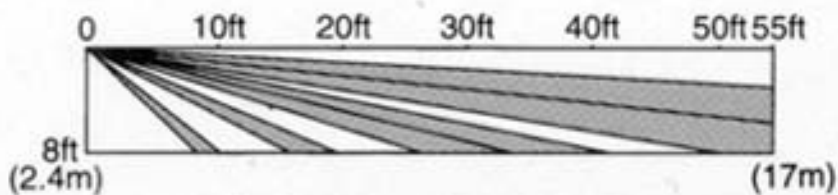
LONG RANGE

TOP VIEW

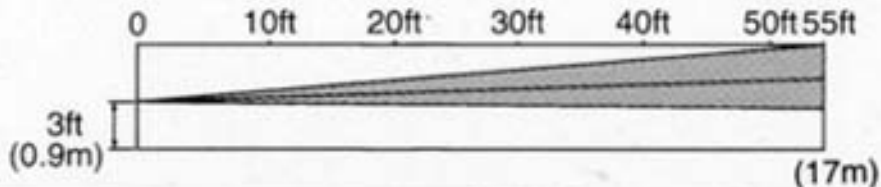


SIDE VIEW

**NORMAL
(Multi-Level)
AREA**



**Pet Alley
AREA**



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OPTEX

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FX-40 Series
 PASSIVE INFRARED DETECTOR

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"Reliability" - The Keyword in PIR Detection

OPTEX reliability will surpass all your expectations.

The combination of the stable, secure performance of OPTEX optical technology and simplified installation creates a new standard in sensor reliability.

When thinking about sensors, think OPTEX. Our Multi-Focus Optics, Spherical Lens Design and superior optical technology provide precise detection capability and durability for unbeatable performance. OPTEX's unique sensors satisfy your everyday needs - simplified installation combined with small innovations like easy wire knockouts and invaluable wiring guide convenience.

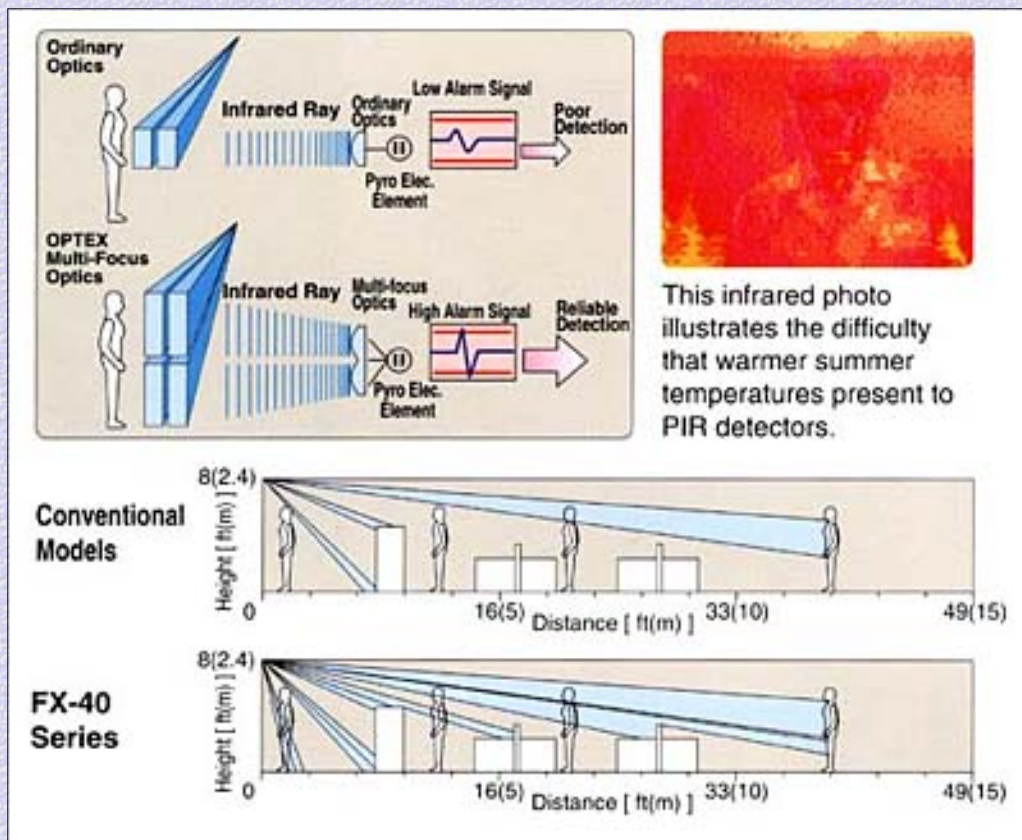
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STANDARD VERSION FX-40/40L

Performance

- **Patented Multi-Focus Optics**

The highly accurate and reliable detection pattern will maintain its sensitivity throughout the entire detection area even in high temperature or low contrast environments. Multi-Focus Optics create an extremely high vertical zone density, two or three times the size of conventional PIRs. These taller zones capture the entire body mass and enable detection of even the smallest temperature contrast against the temperature of the background. In addition, the vertical detection density has been improved to take into account dead zones created by furniture or partitions.



- **Look Down Zone**

The Look Down Zone creates greatly improved vertical sensitivity.

- **Sealed Optics**

Prevents drafts and small insects from getting on to the pyroelectric element. This practically eliminates the chance of false alarm due to these causes since the pyro is sealed with the inside molding of the housing cover.

- **False Alarm Protection**

- RFI Protection: No alarm at 20 V/m from 100MHz to 1GHz
- Temperature Protection: No alarm during temperature changes from -4° to +122°F (-20° to +50°C)

- **LED ON/OFF Switch**

- **Selectable Pulse Count: 2 or 4**

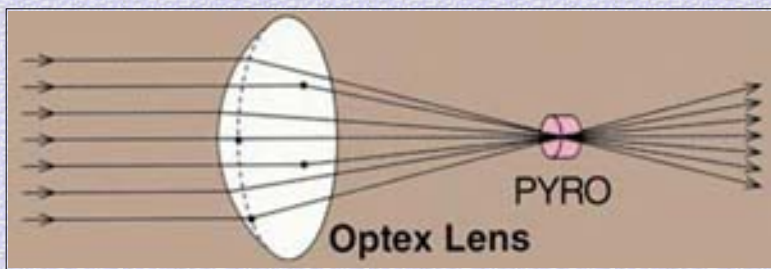
- **Tamper Switch (FX-40/40L/40D/40DL)**

- **Selectable Alarm Memory (Polarity) (FX-40L/40DL): Positive or Negative**

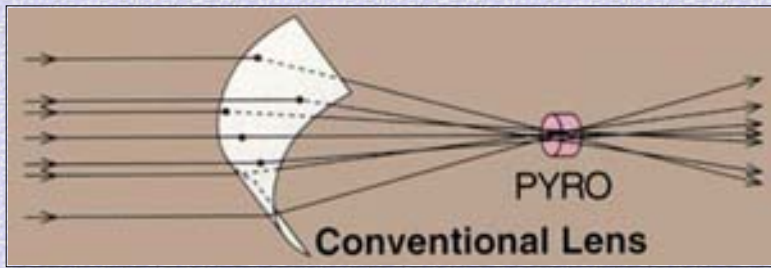
- **Spherical Lens Design**

Conventional flat lenses inevitably create sensitivity distortion problems when they are bent to fit a curved housing. OPTEX's spherically designed lens will obtain sharp detection because no bending is required.

Designed to collect IR energy from the detection area, and focus it directly onto the pyro.



Since a flat lens is "bent," sensitivity distortion occurs at both sides of the lens (the lens surface is not directing IR energy correctly), resulting in poor sensitivity for long distance detection applications.



- **ECO Technology (Environmental Compensation from OPTEX)**

The FX-40 series features "ECO technology." This technology is designed to increase the sensor's resistance to all kinds of environmental disturbances. Logic built into the chip allows the sensor to recognize, discriminate and adjust for temperature changes within the sensor's environment. This technology also makes the unit less susceptible to false alarms due to RFI disturbances.

- **Special Custom-Made Pyro Electric Element**

- **Temperature Compensation Circuit**

The Temperature Compensation Circuit will increase detection capability under high temperature conditions where the background temperature is similar to that of the human body. It maintains a high level of false alarm protection while providing accurate detection by automatically adjusting its sensitivity according to the environmental temperature.

Easy Installation

- **No Vertical Adjustment**

Vertical area adjustment and dead zones are eliminated by high density detection zones.

- **Easy Wiring Knockout**

Wiring knockouts can be opened with a simple push from a screwdriver. Making and adjusting wiring holes to the right width for the cables is much easier.

- **Wiring Guide & Wide Wiring Space**

- **Easy-to-View LED**

- **Spare Terminal**

Design Durability

- **Hard & Durable Spherical Lens**

OPTEX's Spherical Lens provides higher durability against shocks compared to ordinary PIRs using flat fresnel lenses or mirrors.

- **PC Board Protection Wall**

Damage caused by the tip of the screwdriver, etc. to the PC board can be easily prevented by the PC Board Protection Wall.

- **Non-Distortion Chassis**

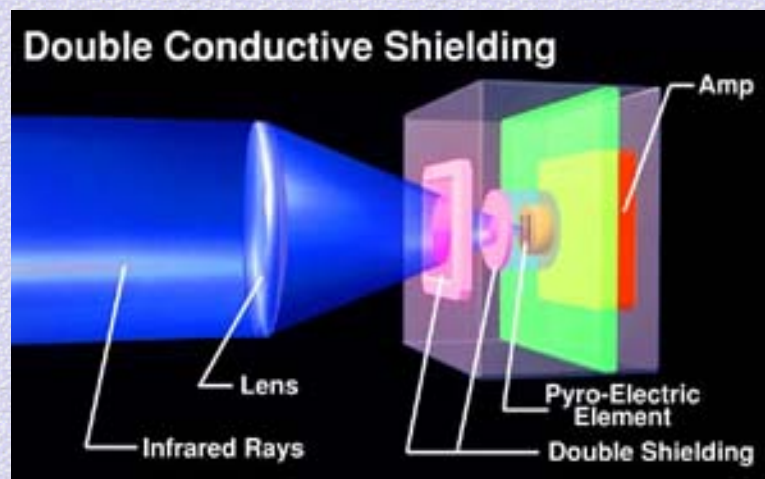
- **Attractive Design**

SUPERIOR VERSION FX-40D/40DL

Greater Performance Double Conductive Shielding Commercial Market

- **Patented Double Conductive Shielding of Pyro Electric Element**

The Double Conductive Shielding lets infrared energy pass through, but blocks and grounds out the RFI and light sources since it features a special conductive filter that covers the element window. A conventional metal shielded pyro electric element has an open window for infrared energy to enter. This allows RFI and light to enter and does much less to protect against many types of interference.



- **False Alarm Protection**

- RFI Protection - No alarm against 10W transmitter with 3.3ft (1.0m) with a field strength of 30V/m within the range of 100MHz to 1GHz.

- Visible Light Protection - Provides a high protection level that exceeds H4 halogen (car headlight) within 8ft (2.4m) or 50,000lx of morning sunlight reflection within the detection area.

- Temperature Protection - No alarm in high, low and changing temperatures from -4° to +122°F (-20° to +50°C)

Options

- **FA-3 Options**

Wall & Ceiling Mount Brackets:

Horizontally: 45° / Vertically: 0° to 15° downwards

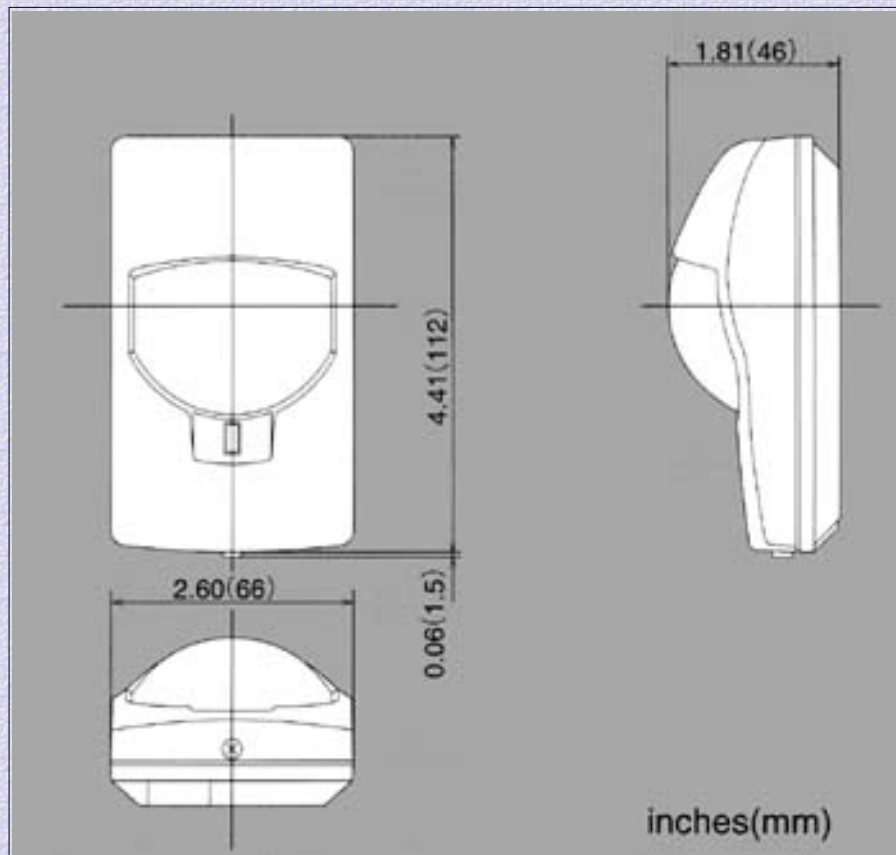
- **FL-60N**
- Long Range (Extremely Dense Multi Layer Curtain) Lens

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FX-40's Detection Patterns](#)

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Model	FX-40, FX-40D
Detection Method	Passive infrared
Coverage	WIDE: 40ft x 40ft (12m x 12m) 85°wide
Detection Zones	WIDE: 72 zones
Mounting Height	NORMAL 5 ~ 8ft (1.5m ~ 2.4m)
Sensitivity	3°F (1.6°C) at 2ft/sec. (0.6m/sec.)
Detectable Speed	1 ~ 5ft/sec. (0.3 ~ 1.5m/sec.)
LED indicator	Alarm indicator optional
Alarm Period	Approx. 2.5 sec.

Alarm Output	N.C., 28V DC 0.2A max.
Tamper Switch	N.C., Open when cover is removed
Pulse Count	Approx. 20 sec. 2 or 4
Warm-up Period	Approx. 30 sec.
Power Input	9.5 ~ 16VDC
Current Draw	17mA (max.)
Weight	3.2 oz. (90g)
Operating Temperature	-4°F ~ +122°F (-20°C ~ +50°C)
Environmental Humidity	95% max.
RF Interference	NO Alarm 20V/m (FX-40/40L)
	NO Alarm 30V/m (FX-40D/40DL)

*Specifications and design are subject to change without prior notice.

L Version (Alarm Memory)

Model	FX-40L, FX-40DL	
Polarity	Positive	Negative (Cut jumper)
Alarm Memory	armed: OPEN or +5 ~ 16	armed: 0 ~ 1VDC (grounded)
Current Draw	18mA (normal), 25mA (max.)	

FL-60N: Optional Lens for Long Range (Extremely Dense Multi Layer Curtain) Area Pattern

Coverage	LONG: 60ft x 6ft (18m x 1.8m) Long Range
Detection Zones	LONG: 20 ZONES

*Accessories: Two Mounting Screws

*FL-60N: Pack of 5

NOTE: This unit is designed to detect movement of an intruder and activate an alarm control panel. Being only a part of a complete system, we cannot accept responsibility for any damages or other consequences resulting from an intrusion. This product conforms to the category "Residential, Commercial and Light Industry" of EMC Directive 89/336 EEC.



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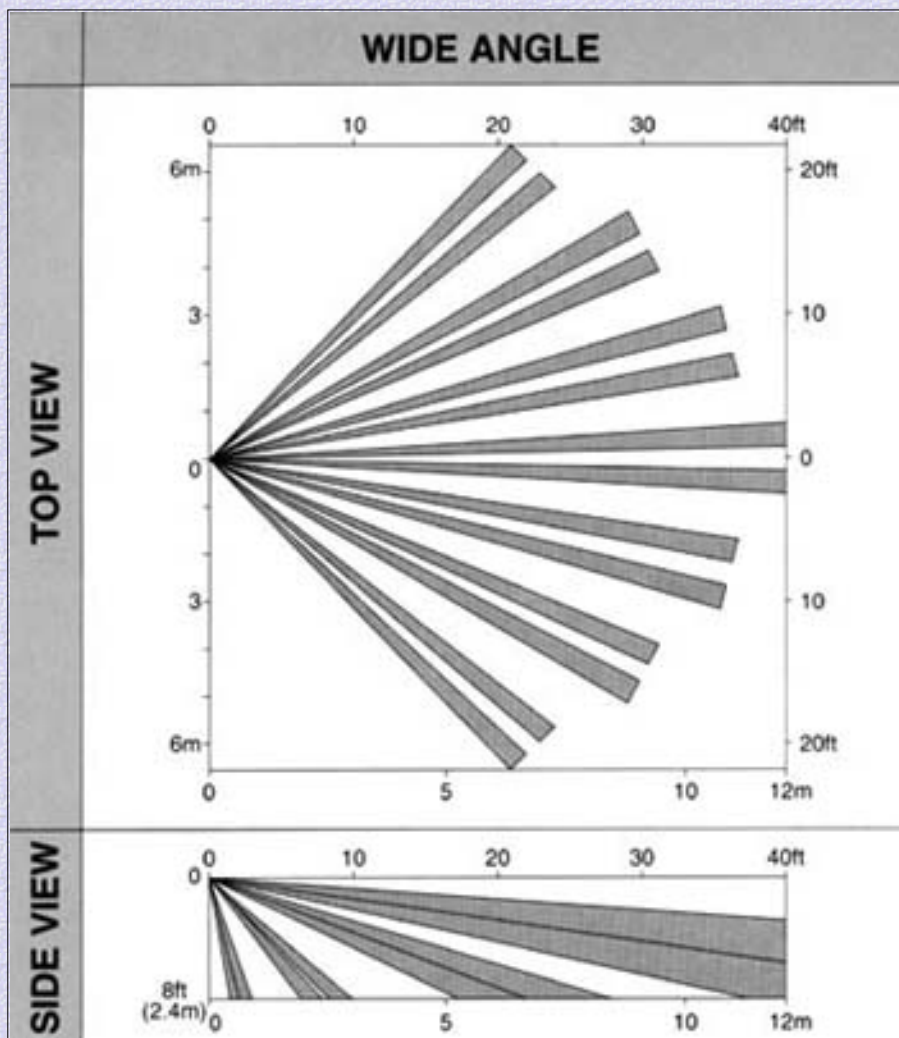
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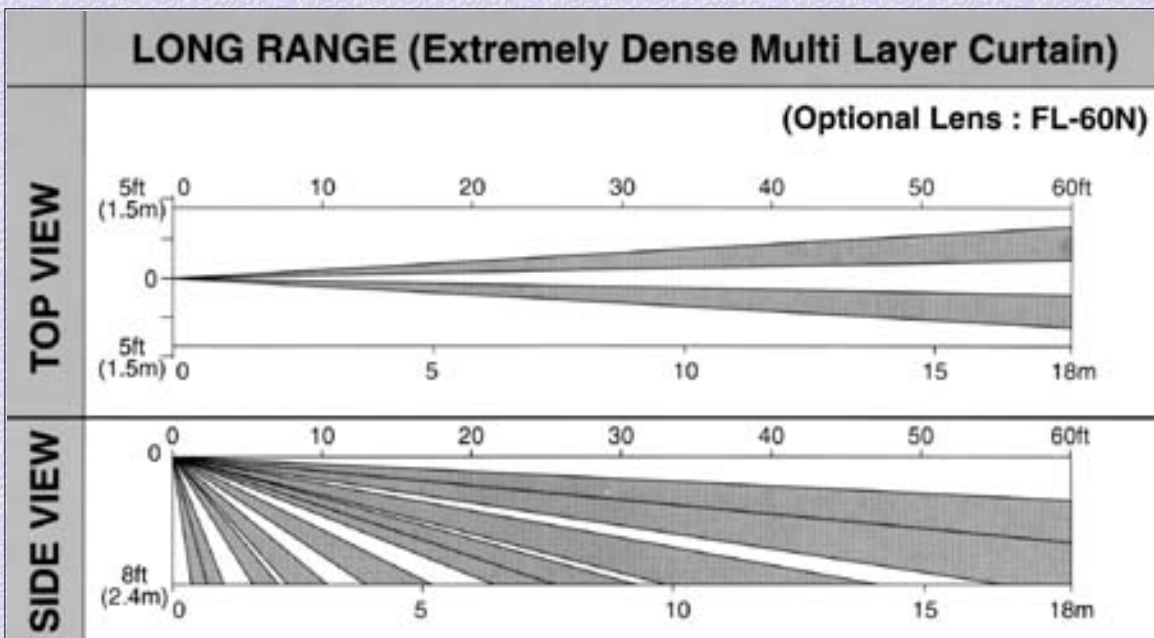
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OPTEX MODEL NUMBER
FX-40 Series
PASSIVE INFRARED DETECTOR





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Spec Sheet**



Dual Beam Photobeams for Outdoor Use

<p><u>AX-70T / AX-130T</u></p>	<p>Outdoor, dual beam photoelectric detectors for 70' and 130' ranges. High immunity to fog and snow, and automatic gain adjustment.</p>
<p><u>AX-100 / 200 Plus</u> <u>AX-100/200 Alpha</u></p>	<p>100' and 200' beams feature 4x greater lightning protection than industry standard, rubber "O" ring seals, and 450x signal strength.</p>
<p><u>AX-250 / 500 Plus</u></p>	<p>250' and 500' beams feature shock resistant covers, 14kV lightning protection, and the industry's largest beam spread.</p>
<p><u>AX-350 / 650 MKII</u></p>	<p>Our longest range beams include Plus Series features and patented IASC technology for transmitter and receiver alignment readouts.</p>

Specialty Photobeams

<p><u>OS-1C / OS-2C</u></p>	<p>Miniature photobeams with .6 inch (1.5mm) sensor heads and up to 33' (10m) detection range.</p>
<p><u>BX-100</u></p>	<p>'BoundryGard' dual beam photoelectric detector mounts directly to building exterior. Provides perimeter protection before attack.</p>
<p><u>AX-100S / AX-100SR</u></p>	<p>Indoor photoelectric beams which mount onto single gang electrical box, surface or recessed models.</p>



Home Page

Passive Infrared Outdoor Sensors
Passive Infrared Indoor Sensors

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Control Panels

Vision Control Panels
Automatic Door Access Control

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OPTEX

SPECIFICATION SHEET

OPTEX MODEL NUMBER

AX-70T/AX-130T

PHOTOELECTRIC DETECTOR

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The "99% Solution" Twin Beam Photoelectric Detectors

- Compact design, indoor/outdoor use
- Reliably withstands as much as 99% loss of beam energy
- Two synchronized beams of pulsed infrared energy
- Maximum arrival distance is 10 times longer than rated operating distance

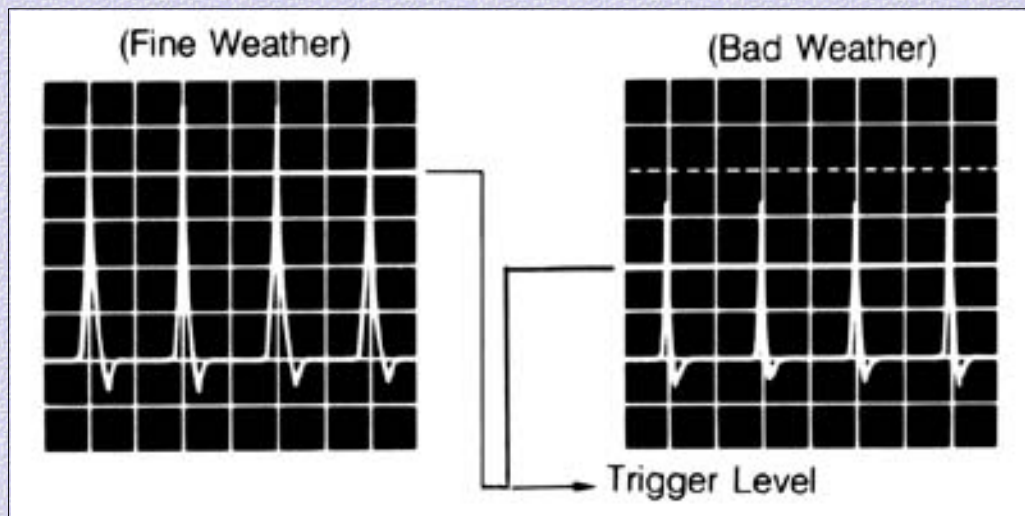
NOTE: The AX-70T should be upgraded to the [AX-100Plus](#) and the AX-130T should be upgraded to the [AX-200Plus](#) as they provide better performance.

FEATURES

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● Rain, Fog and Snow Protection

- Two beams of pulsed infrared energy provide reliable operation despite as much as 99% blockage of beam energy caused by heavy rain, dust storm, fog, or falling snow.
- Automatic Gain Control (AGC) circuit continually monitors gradual changes in signal strength caused by weather conditions and adjusts the trigger level accordingly, to maintain proper sensitivity.
- Signal Wave of Beam Output

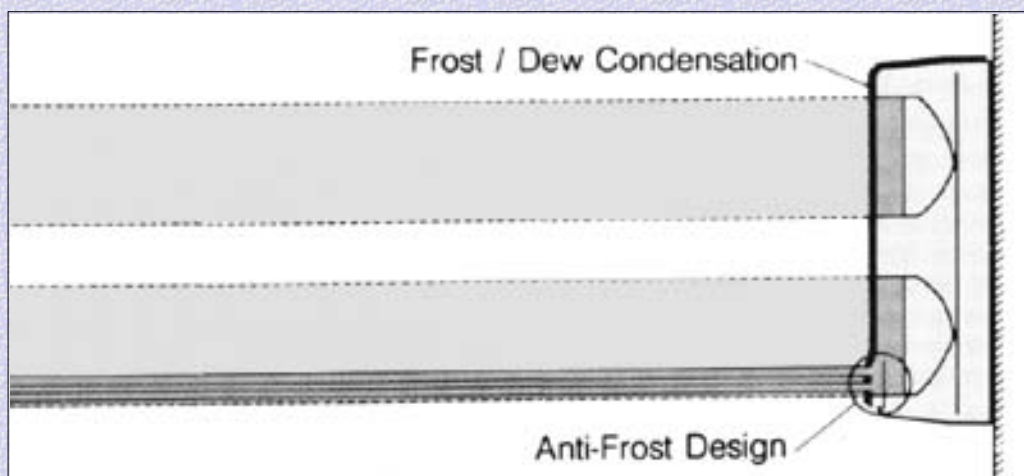


● Protection Against Birds, Insects and Falling Leaves

- Twin beams require simultaneous interruption to trigger an alarm. No alarm is generated when only one beam is blocked by a small object.
- Beam interruption time can be adjusted according to the peculiarities of each installation site. When protecting a wall or fence, a long interruption time will catch intruders, but let jumping cats pass through. This allows you to increase stability, while maintaining reliability at every installation site.

● Frost, Dust and Insect Protection

- Anti-Frost design incorporates special slots on the cover allowing beam passage even when the cover is completely frosted over. The OPTEX casing design also reduces condensation and water built-up, while sealed optics proved greater protection against dust and insects.

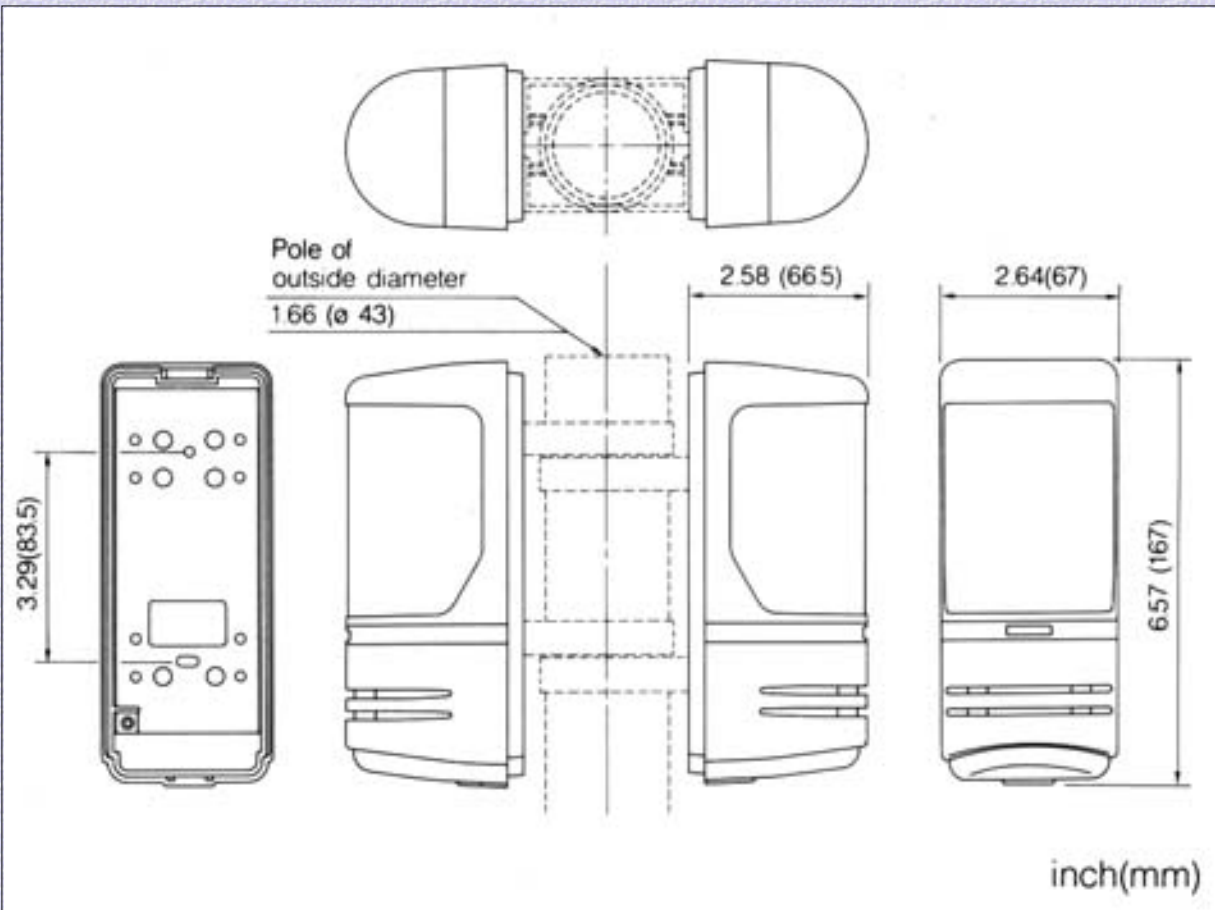


● Easy Installation and Alignment

- View Finder provides rough alignment, while voltage meter jacks allow fine tuning. Powerful twin beams are sharply defined and will attain the optimum signal strength easily.
- The pole mount brackets supplied will allow installation of two units on a pole at the same height.

DIMENSIONS

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SPECIFICATIONS

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Model	AX-70T	AX-130T
Detection Method	Infrared Photoelectric	
Range	outdoor 70ft. (21m) indoor 165ft. (50m)	outdoor 130ft. (40m) indoor 330ft. (100m)
Maximum Arrival Distance	700ft. (210m)	1,300ft. (400m)
Beam Characteristics	1,000pps. 8,800A pulsed infrared	
Interruption Period	50 to 500msec (variable)	
Power Input	10 ~ 30VDC	
Current Draw	30mA max (10 ~ 30VDC)	39mA max (10 ~ 30VDC)

Indicator	Transmitter-Green LED On in transmitting condition. Receiver-Red LED On in alarm condition.
Alarm Period	2 sec (± 1) nominal
Alarm Output	N.C. 28VDC, 0.2A max
Tamper Switch	Opens when cover is removed.
Operating Temperature	-13°F to 131°F (-25°C to 55°C)
Environment Humidity	95% Max.
Alignment Angle	$\pm 5^\circ$ Vertical, $\pm 90^\circ$ Horizontal
Mounting	Wall or Pole
Dimensions inches (mm)	6.57"/H x 2.64"/W x 2.58"/D (167/H x 67/W x 66.5/D)
Weight	24.3oz (690g)
Standard Accessories	Screws (0.6" x 3/4" self tapping) x 4 Pole mount kit

*Specifications and design are subject to change without prior notice.

NOTE: This unit is designed to detect movement and activate an alarm control panel. Being only part of a complete alarm system, we cannot assume responsibility for theft or damages, should it occur.

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OPTEX

SPECIFICATION SHEET

OPTEX MODEL NUMBER
AX-100/200Plus
AX-100/200Alpha
PHOTOELECTRIC DETECTOR

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Photoelectric Detectors Improved with Optex Innovation to Provide Advanced Performance in Outdoor Detection

Optex Photoelectric Detectors with Innovative Features for Easy Installation Provide Stable Performance against False Alarms for More Effective Outdoor Detection and Non-Security Applications

The Optex AX-100/200 Photoelectric Detector Series is the next step in Outdoor Detection and will satisfy all the needs of both users and installers. Optex unique technology and design provide a wide range of functions that greatly simplify installation and maintain reliable performance even in many adverse weather and environmental conditions.

FEATURES

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STANDARD VERSION: AX-100/200 Plus

- **Quick Optical Alignment**

- **Alarm Indication LED in Viewfinder**

The alarm condition is visually displayed using an alarm indication LED which is visible on the front of the unit and can also be seen through a viewfinder.



LED is On: Beam energy from the transmitter is not reaching the receiver.

LED is Off: Beam energy from transmitter is reaching the receiver.

- **Clear Viewfinder Visibility**

A conveniently placed viewfinder allows for easy alignment even in some of the most difficult mounting situations.

- **Fine Angle Adjustment for Alignment**

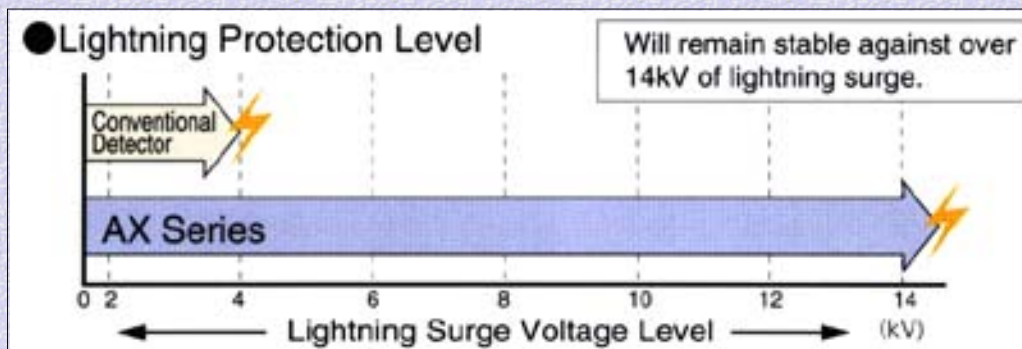
The rotating dial allows the installer to finely adjust the beam easily either horizontally ($180^\circ / \pm 90^\circ$) or vertically ($10^\circ / \pm 5^\circ$) with or without the use of a screwdriver (finger adjustable).



- **Reliable Performance**

- **Lightning & Surge Protection**

An improved EMI surge absorber and high surge resistiveness relay will maintain stable operation even in the most lightning prone areas.



- **Rain, Dust, and Insect Protection**

The Rubber O-Ring and Rubber Grommets used in the AX-100/200Plus and Alpha Series prevent rain, dust, and tiny insects from adversely affecting performance.

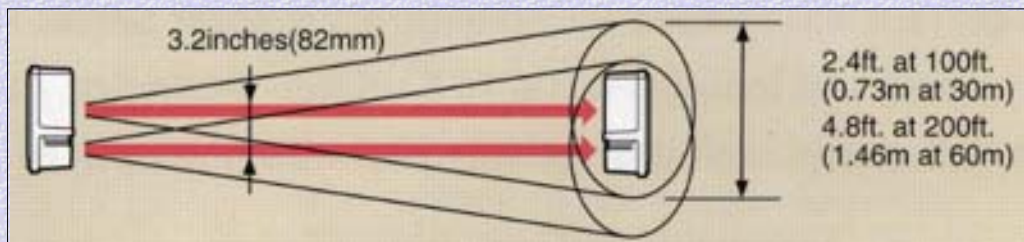


○ **Frost and Dew Protection**

An anti-frost and convex visor design is incorporated to protect the detector from effect of frost and dew.

○ **High Grade Aspherical Lens**

The high grade aspherical lens creates more sharply defined and precise infrared beams compared to ordinary fresnel lenses.



○ **Twin Synchronized Pulsed Beams Designed for Greater Stability**

"And Gate" dual beams require simultaneous interruption of both beams to trigger an activation. No activation is generated when a bird or falling leaves break just one beam.

○ **99.5% Beam Blocking Stability**

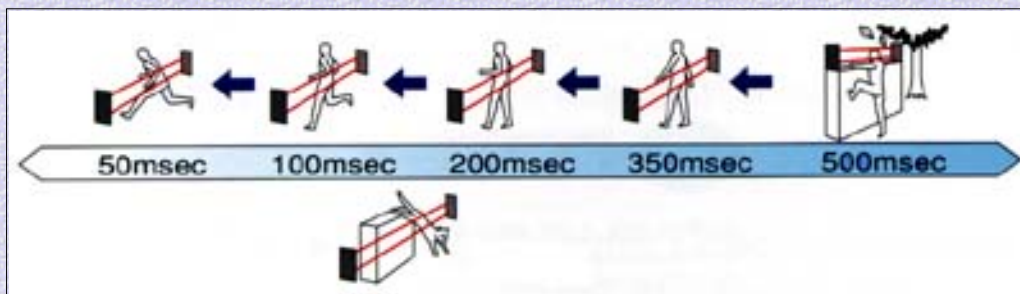
Enables stable operation with as much as 99.5% loss of beam energy caused by heavy rain, dust storms, fog or snow.

○ **A.G.C. (Automatic Gain Control) Circuit**

The A.G.C. Circuit continually monitors for gradual changes in the signal's strength caused by changing weather conditions. It adjusts the sensitivity accordingly to maintain the proper signal level for the current environmental conditions.

○ **Adjustable Beam Interruption Period**

The Beam Interruption Time (the amount of time a beam must be broken for an alarm to occur) can be adjusted to fit any application. For example, when protecting a wall or fence, a longer interruption time will catch intruders, but let jumping cats pass through without setting off an alarm.



- **Design Durability**

- **Highly Durable and Heat-Resistant Housing Cover and Chassis**

The housing cover and chassis provide higher durability against shocks, high temperatures, and many other harsh environmental conditions.

- **Stainless Steel Screw & Back Plate**

STANDARD VERSION: AX-100/200 Alpha

- **Superior Version**

- **3 Step LED Indicator for Fast and Accurate Fine Beam Alignment**

The alignment condition is visually displayed on the front and in the viewfinder of the receiver. Verification of alignment is achieved by using the 3-step process shown below.



LED is On: Before Alignment

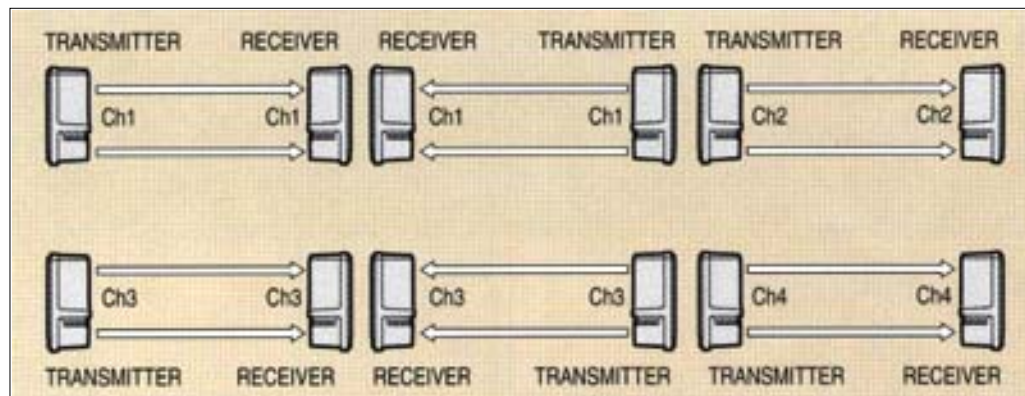
LED is Flickering: Beam energy from transmitter is reaching receiver

LED is Off: Ready for fine tuning

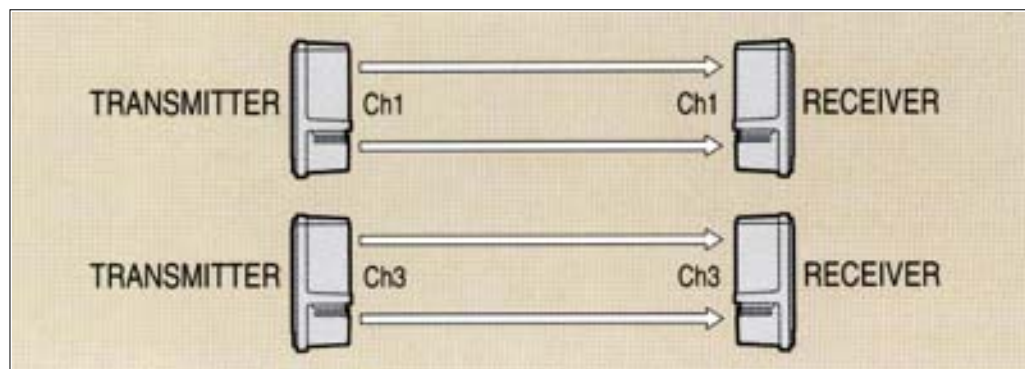
- **Selectable 4-Channel Beam Frequencies**

The selectable beam frequencies can be used to avoid unwanted cross talk that can occur when using multiple photobeams for long distance or beam stacking applications.

2 Beam Stacking

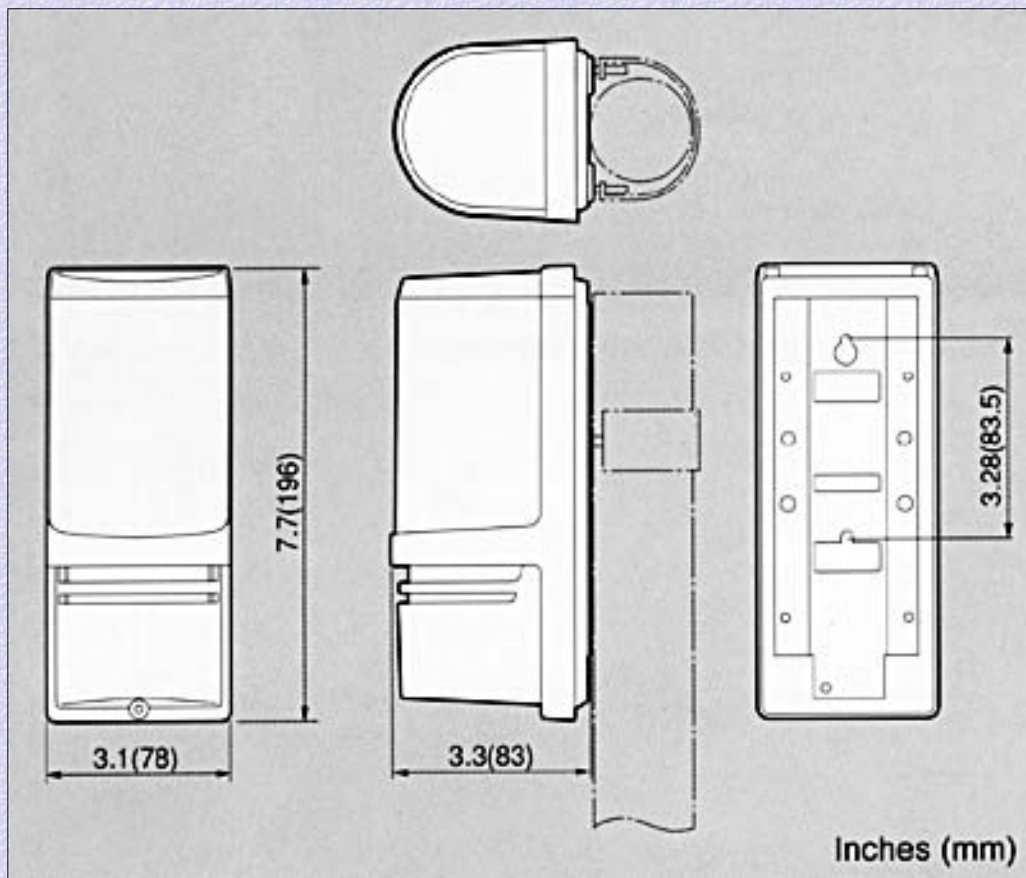


2 Beam Long Distance Stacking



DIMENSIONS

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SPECIFICATIONS
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Model		AX-100Plus	AX-200Plus	AX-100Alpha	AX-200Alpha
Detection Method		Infrared Photoelectric			
Range	Outdoor	100ft. (30m)	200ft. (60m)	100ft. (30m)	200ft. (60m)
	Indoor	200ft. (60m)	400ft. (120m)	200ft. (60m)	400ft. (120m)
Maximum Arrival Distance		1,000ft. (300m)	2,000ft. (600m)	1,000ft. (300m)	2,000ft. (600m)
Beam Characteristics		Pulsed Infrared			
Selectable Beam Frequency		-		4 channel (Automatic synchronization)	
Interruption Period		50 ~ 500msec (Selectable)			
Power Input		10 ~ 28V DC			
Current Draw (Transmitter+Receiver)		Normal operation 46mA max		Normal operation 40mA During optical alignment 46mA max	
Alarm Period		2 sec (±1) nominal			
Alarm Output		Form C Relay (28V DC 0.2A max)			
Tamper Switch		N.C. opens when cover is removed (Receiver Only)			
Operating Temperature		-30°F ~ 131°F (-35°C ~ 55°C)			
Environment Humidity		95% Max.			
Alignment Angle		± 5° Vertical, ± 90° Horizontal			
Mounting		Wall or Pole			

Weight

36.7oz (1040g) (Both Transmitter and Receiver)

*Specifications and design are subject to change without prior notice.

NOTE: This unit is designed to detect an intruder and activate an alarm control panel. Being only a part of a complete system, we cannot assume responsibility for theft or damages, should it occur.

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Indoor Sensors](#)[Photoelectric
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OPTEX

SPECIFICATION SHEET

OPTEX MODEL NUMBER

AX-250/500PLUS

PHOTOELECTRIC DETECTOR

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Innovative Design Meets Unsurpassed Quality in the New AX-250/500 Plus

The Photoelectric Beams of OPTEX's AX-250/500PLUS Series combine precise detection capability with increased reliability providing superior outdoor detection.

A dual beam design incorporates synchronized pulsed signals, and an adjustable beam interruption time can virtually eliminate unwanted activation. A high level of detection accuracy will be maintained, no matter how harsh the environment.

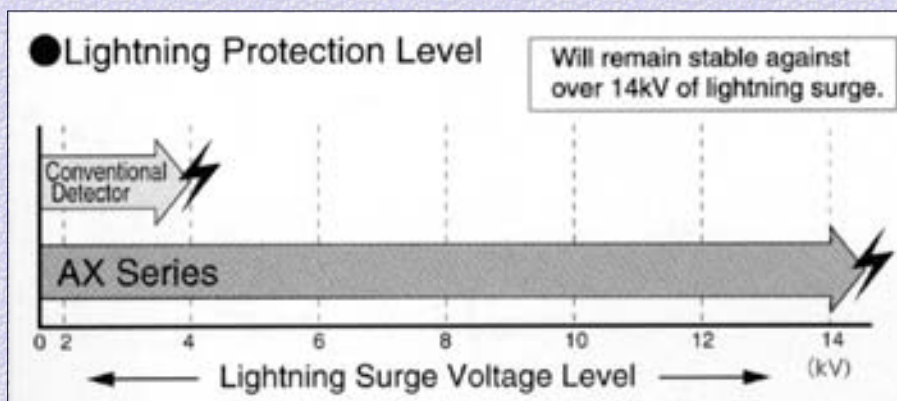
The AX-250/500PLUS will automatically compensate for changes in the surrounding conditions. The advanced mechanical design allows for easy installation and set-up providing long-term reliability, ideal for today's outdoor security systems.

FEATURES

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- Lightning & Surge Protection**

An improved EMI surge absorber and high surge resistiveness relay will maintain stable operation even in the most lightning prone areas.



- **A.G.C. (Automatic Gain Control) Circuit**

The A.G.C. Circuit continually monitors for gradual changes in the signal's strength caused by changing weather conditions. It adjusts the sensitivity accordingly to maintain the proper signal level for the current environmental conditions.

- **Reliability Chart for Outdoor Protection**

Specially designed to eliminate various causes of outdoor false alarms.

False Alarm Causes	Technology to Solve	AX Function & Features
Lightning & High EMI Disturbances	High EMI Resistance	High Surge Resistiveness Relay & EMI Surge Absorber
Insect Entering into Housing	Sealed Enclosure Housing	IP54
Dew Condensation Fog, Frost & Heavy Rain	High Sensitivity Tolerance Excellent Optical Alignment Environmental Analysis	Ultra High Power Transmitter Anti-Frost Mechanism Easy Optical Alignment Mechanism Automatic Gain Control
Birds or Flying Objects	Size Analysis	Twin Synchronized Pulsed Beams

- **Adjustable Beam Interruption Period**

Beam interruption time can be adjusted according to the peculiarities of each installation site. When protecting a wall or fence, a long interruption time will catch intruders, but let jumping cats pass through. Adjustable from 50 to 500msec.

- **Twin Synchronized Pulsed Beams Designed for Greater Stability**

"And Gate" dual beams require simultaneous interruption of both beams to trigger an activation. No activation is generated when a bird or falling leaves break just one beam.

- **99% Blocking Rate**

Stable operation is maintained with as much as 99% of the beam's energy blocked by heavy rain, dust storms, snow or fog.

- **Anti-Frost Design**

- **Stainless Steel Screws & Back Plate**

- **Knock-Outs for 1/2 Inch Conduit**

- **Form C Relay Providing More Flexibility**

- **Options**

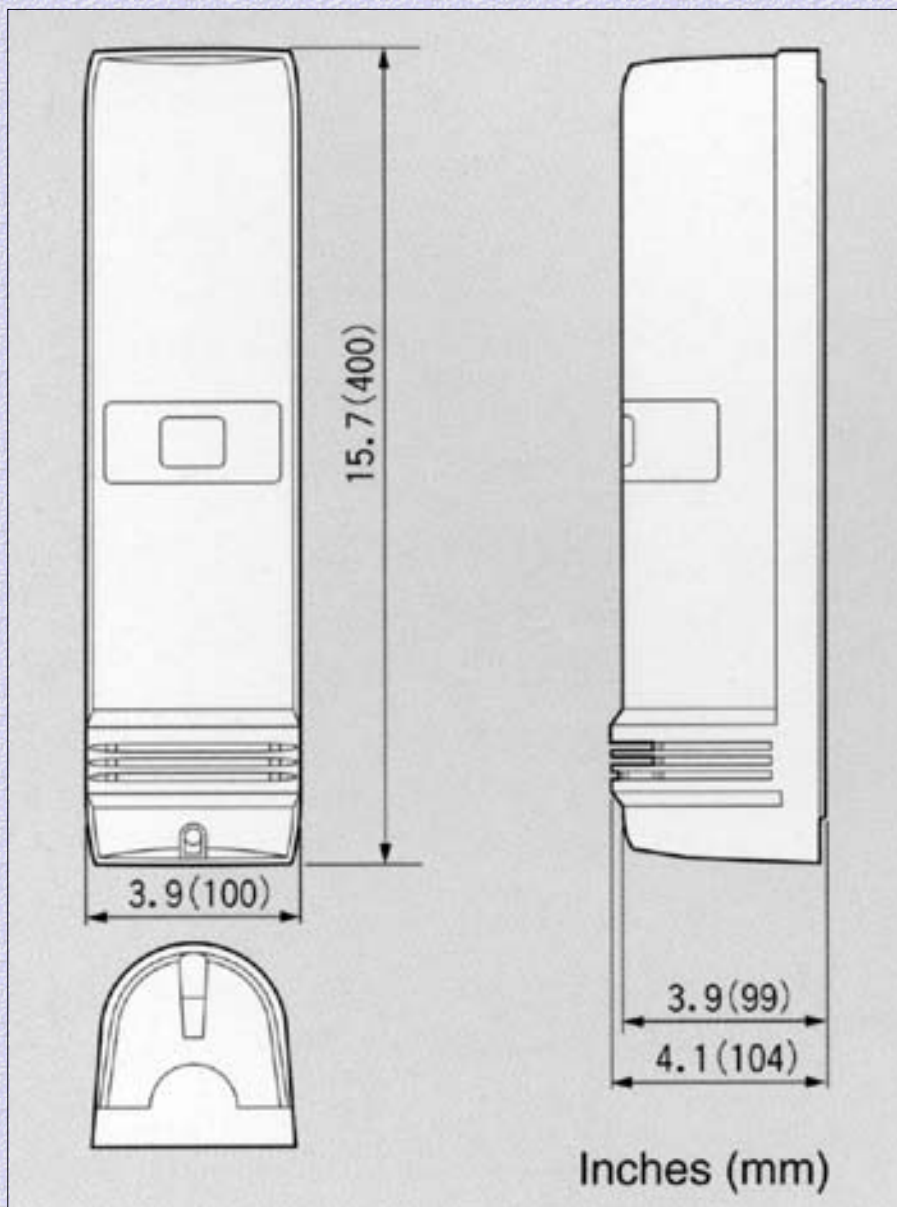
HU-1: Heating Unit

For use in cold areas. 24V DC/AC, 430mA max.

BC-1: Back Cover

DIMENSIONS

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SPECIFICATIONS


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Model	AX-250PLUS	AX-500PLUS
Detection Method	Infrared Photoelectric	
Range (Outdoor)	250ft. (75m)	500ft. (150m)
Maximum Arrival Distance	2,500ft. (750m)	5,000ft. (1,500m)
Beam Characteristics	Pulsed Infrared	

Interruption period	50 ~ 500msec (Selectable)
Power Input	10.5 ~ 30VDC
Current Draw (transmitter+receiver)	Normal operation 50 mA max
Alarm Period	2 sec (± 1) nominal
Alarm Output	Form C Relay (28V DC 0.2A max)
Tamper Switch	N.C. opens when cover is removed (Receiver Only)
Operating Temperature	-30°F ~ 131°F (-35°C ~ 55°C)
Environment Humidity	95% Max.
Alignment Angle	$\pm 10^\circ$ Vertical, $\pm 90^\circ$ Horizontal
Mounting	Wall or Pole
Weight	95.2 oz(2700g) (Both Transmitter and Receiver)

*Specifications and design are subject to change without prior notice.

NOTE: This unit is designed to detect an intruder and activate an alarm control panel. Being only a part of a complete system, we cannot assume responsibility for theft or damages, should it occur.

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The Optex Vision Page has moved. If you are not automatically sent to the correct page, [click here](#).



OPTEX
SPECIFICATION SHEET



Vision

It's like having
FOUR systems in ONE!

'Turn on the security system'

Now it's as easy as A, B, C. Just select the area you wish to secure and press 'On'. Vision, with its 'Point & Click' design, stands out as the easy to understand, easy to use, security system.

To view a pdf of the product sheet,
[click here.](#)

QUAD KEY

Vision's Quad Key shows each part of the system and makes security as easy as A, B, C. Customers understand Vision and appreciate its simplicity. Vision's Keep It Simple design makes it everyone's first choice for security.

THREE ARMING METHODS

Select Mode, Zone Type, or Area Arming; it's your choice, whichever is best for your customer.

AREA ARMING

Zone Groups can arm & disarm together (like partitions). Area arming gives 'point & click' operation of up to 4 preset arming configurations and eliminates the need for routine bypassing of windows or doors.

OUTDOOR ZONES

Outdoor detectors integrate directly to Vision, taking you beyond traditional 'interior-only' security systems.



V-LCD1



V-LED1

Quad Key...for EZ partial Arming

Select the arming method which best suits the user's needs

- Area Arming, for Outside, Garage, Living Room
- Mode Arming, for Away, Home, Night
- Zone Type Arming, for Doors, Windows, Interior, Exterior

On Key for EZ Arm

Just select arming area(s) and press 'On' to arm. You can also arm the entire system by pressing 'On' for two seconds

Off Key for EZ Disarm

Pressing 'Off' silences the entry tone for 15 seconds, reducing confusion and distraction during the disarming process..

Enter Code LED for EZ Operation

Lights when a User PIN is required to proceed.

PROGRAMMING POWER

- 4 built-in templates virtually eliminate programming.
- Download quickly with virtually any modem.
- Direct connect programming to on-site computer.
- Field programmer holds up to 4 programs (optional).
- Zones configure independently for greater flexibility.
- SIA and Contact ID formats.
- Installer's Walk-Test and Communicator Test.

ADVANCED PERFORMANCE

- On-site serial printer interface.
- Bell Circuit & Telephone Circuit Supervision.
- 100 event memory buffer.
- 3 programmable output terminals, with options that include Keyswitch Arming & Tamper Input.
- Automatic Daylight Savings Time adjustment.
- Double EOL Zone type

USER FRIENDLY OPTION

- Exterior Zones integrate Outdoor Protection.
- Night By-Pass Zones for easy 'at-home' arming.
- Up-Arm to add more areas without disarming.
- Quick Exit and Arm Without Delay options
- Report-To-Pager reporting.
- Personal Alarm Call reporting.
- PGM Activation with or without PIN.
- Annunciator Chime selectable by zone.

ORDERING INFORMATION

V-CP1 LED*	Includes control panel, cabinet, and LED keypad.
V-CP1 LCD*	Includes control panel, cabinet, and LCD keypad.
V-LED1*	LED keypad for Vision control
V-LCD1*	LCD keypad for Vision control
V-RPU DOS	Remote Programming Utility (DOS)
V-RPU WIN	Remote Programming Utility (Windows)

* add (S) after part number for Spanish version

SPECIFICATIONS:**Hardware (V-PCB1/V-LED&V-LCD)**

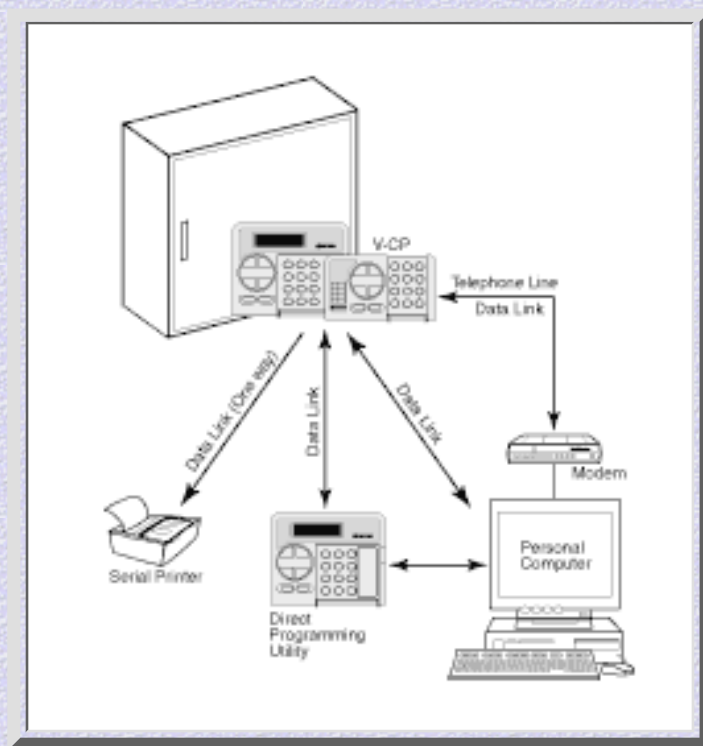
Power	16.5V AC
Outputs Auxiliary Power Bell/Siren Programmable*	12V DC, Total 1A
* Each programmable output cannot exceed 50mA	
Number of Keypads	Max 4 units per system
Dimensions/Current Draw	<u>W x H x T mm/mA</u>
V-LED 1 Keypad	147 x 84 x 22mm/65mA
V-LCD 1 Keypad	147 x 120 x 22mm/65mA
V-PCB 1 Main Board	191 x 73mm/100mA
Serial Port	Serial Printer, DPU or RPU

PIN Codes

User codes	8*
* User #08 can be programmed as a temporary PIN Code	
Utility code	1
Installer code	1
Duress code	1
Call RPU code	1

Zones & Programmable In/Out

Number of Zones	Total 8 Main board: 6 Keypad: 2
Programmable In/Out*	1 Input + 2 Outputs or 3 Outputs
* 1 output can be programmed as 2 wire smoke detector	



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VISION

It's like having
FOUR systems in ONE!



V-LED 1

V-LCD 1

'Turn on the security system'

Now it's as easy as A, B, C. Just select the area you wish to secure and press 'On'. Vision, with its 'Point & Click' design, stands out as the easy to understand, easy to use, security system.

QUAD KEY

Vision's Quad Key shows each part of the system and makes security as easy as A, B, C. Customers understand Vision and appreciate its simplicity. Vision's Keep It Simple design makes it everyone's first choice for security.

THREE ARMING METHODS

Select Mode, Zone Type, or Area Arming; it's your choice, whichever is best for your customer.

AREA ARMING

Zone Groups can arm & disarm together (like partitions). Area arming gives 'point & click' operation of up to 4 preset arming configurations and eliminates the need for routine bypassing of windows or doors.

OUTDOOR ZONES

Outdoor detectors integrate directly to Vision, taking you beyond traditional 'interior-only' security systems.



8 Zone Security Control System

Quad Key...for EZ partial Arming

Select the arming method which best suits the user's needs:

- Area Arming, for Outside, Garage, Living Room
- Mode Arming, for Away, Home, Night
- Zone Type Arming, for Doors, Windows, Interior, Exterior

On Key for EZ Arm

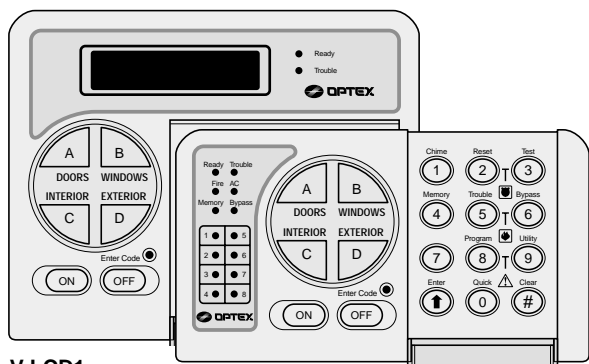
Just select arming area(s) and press 'On' to arm. You can also arm the entire system by pressing 'On' for two seconds

Off Key for EZ Disarm

Pressing 'Off' silences the entry tone for 15 seconds, reducing confusion and distraction during the disarming process..

Enter Code LED for EZ Operation

Lights when a User PIN is required to proceed.



V-LCD1

V-LED1

Programming Power

- ♦ 4 built-in templates virtually eliminate programming.
- ♦ Download quickly with virtually any modem.
- ♦ Direct connect programming to on-site computer.
- ♦ Field programmer holds up to 4 programs (optional).
- ♦ Zones configure independently for greater flexibility.
- ♦ SIA and Contact ID formats.
- ♦ Installer's Walk-Test and Communicator Test.

User Friendly Options

- ♦ Exterior Zones integrate Outdoor Protection.
- ♦ Night By-Pass Zones for easy 'at-home' arming.
- ♦ Up-Arm to add more areas without disarming.
- ♦ Quick Exit and Arm Without Delay options
- ♦ Report-To-Pager reporting.
- ♦ Personal Alarm Call reporting.
- ♦ PGM Activation with or without PIN.
- ♦ Annunciator Chime selectable by zone.

Advanced Performance

- ♦ On-site serial printer interface.
- ♦ Bell Circuit & Telephone Circuit Supervision.
- ♦ 100 event memory buffer.
- ♦ 3 programmable output terminals, with options that include Keyswitch Arming & Tamper Input.
- ♦ Automatic Daylight Savings Time adjustment.
- ♦ Double EOL Zone type

Ordering Information:

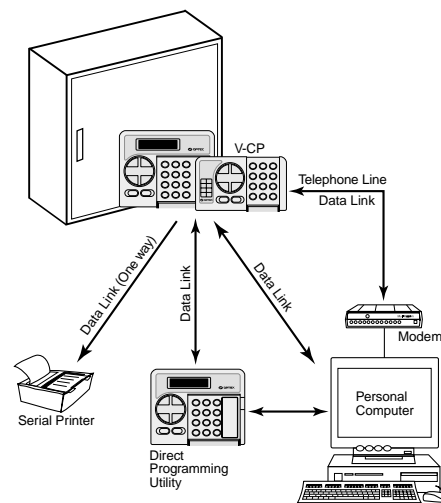
- V-CP1 LED* Includes control panel, cabinet, and LED keypad.
- V-CP1 LCD* Includes control panel, cabinet, and LCD keypad.
- V-LED1* LED keypad for Vision control
- V-LCD1* LCD Keypad for Vision control
- V-RPU DOS Remote Programming Utility (DOS)
- V-RPU WIN Remote Programming Utility (Windows)
- * add (S) after part number for Spanish version

Specifications

Hardware (V-PCB1/V-LED&V-LCD)	
Power	16.5V AC
Outputs	
Auxiliary Power	12V DC, Total 1A
Bell/Siren	
Programmable*	
*Each programmable output cannot exceed 50mA	
Number of Keypads	Max. 4 units per system
Dimensions/Current Draw	W x H x T mm/mA
V-LED 1 Keypad	147 x 84 x 22mm/55mA
V-LCD 1 Keypad	147 x 120 x 22mm/65mA
V-PCB 1 Main Board	191 x 73mm/100mA
Serial port	Serial printer, DPU or RPU

PIN Codes	
User codes	8*
*User #08 can be programmed as a temporary PIN code	
Utility code	1
Installer code	1
Duress code	1
Call RPU code	1

Zones & Programmable In/Out	
Number of Zones	Total 8
Main board	6
Keypad	2
Programmable In/Out*	1 Input+2 Outputs or 3 Outputs
*1 output can be programmed as 2 wire smoke detector	



OPTEX INCORPORATED
1845 W. 205th St. Torrance, Ca. 90501-1510 U.S.A.
TEL:(310)533-1500 TOLL FREE (800) 966-7839 FAX:(310)533-5910

OPTEX CO., LTD. (ISO 9001 Certified by LRQA)
4-7-5 Nionohama Otsu, 520-0801 Japan
TEL:(077)524-6047 FAX:(077)522-9022

OPTEX (EUROPE) LTD. (ISO 9002 Certified by NQA)
Clivernon Road, Cordwallis Park, Maidenhead, Berkshire, SL6 7BU U.K.
TEL:(01628)631000 FAX:(01628)636311





<u>OA-50C</u>	<u>OA-60C</u>	<u>OA-201C</u>	<u>OA-202C</u>	<u>OA-601C</u>
<u>OP-03 Series</u>	<u>OP-08</u>	<u>OS-1C / OS-2C</u>	<u>HA-6000T/S</u>	



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OPTEX

SPECIFICATION SHEET

OPTEX MODEL NUMBER

OA-50C

**ACTIVE
INFRARED PRESENCE SENSOR**

FEATURES

DETECTION AREA

DIMENSIONS

SPECIFICATIONS



Innovative Technology for Safe, Reliable Motion and Presence Detection

SAFETY: The OPTEX OA-50C combines two different methods of detection (motion and presence) to assure safe and sure operation for both moving and/or stationary people and objects.

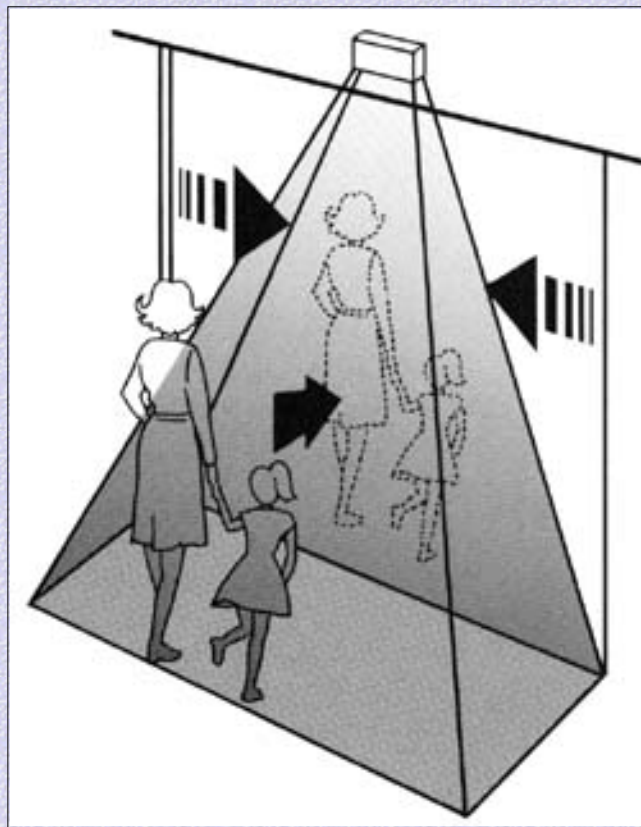
RELIABILITY: The OA-50C provides super-dependable, low maintenance operation all year round. Innovative active infrared technology will sense both motion and presence, even in extremely harsh environments, without false operation.

FEATURES

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- **Combining Motion and Presence Detection**

For safe, reliable and economical operation, the OA-50C's presence sensor will hold doors open for a selected 2, 7 or 15 second time period when any non-moving object is within its detection area. When the selected time expires and no further movement is detected, the doors are released. However, when people simply travel through the detection area, the doors are released as soon as they have safely exited the area.



- **Environmental Disturbance Immunity**
- **Reliable 9 Zone Detection Area**
- **Right and Left Area Angle Adjustments**
- **Detects Humans as Well as Objects**
- **Compact, High Tech Design Fits Any Installation**
- **Meets ANSI Standards**

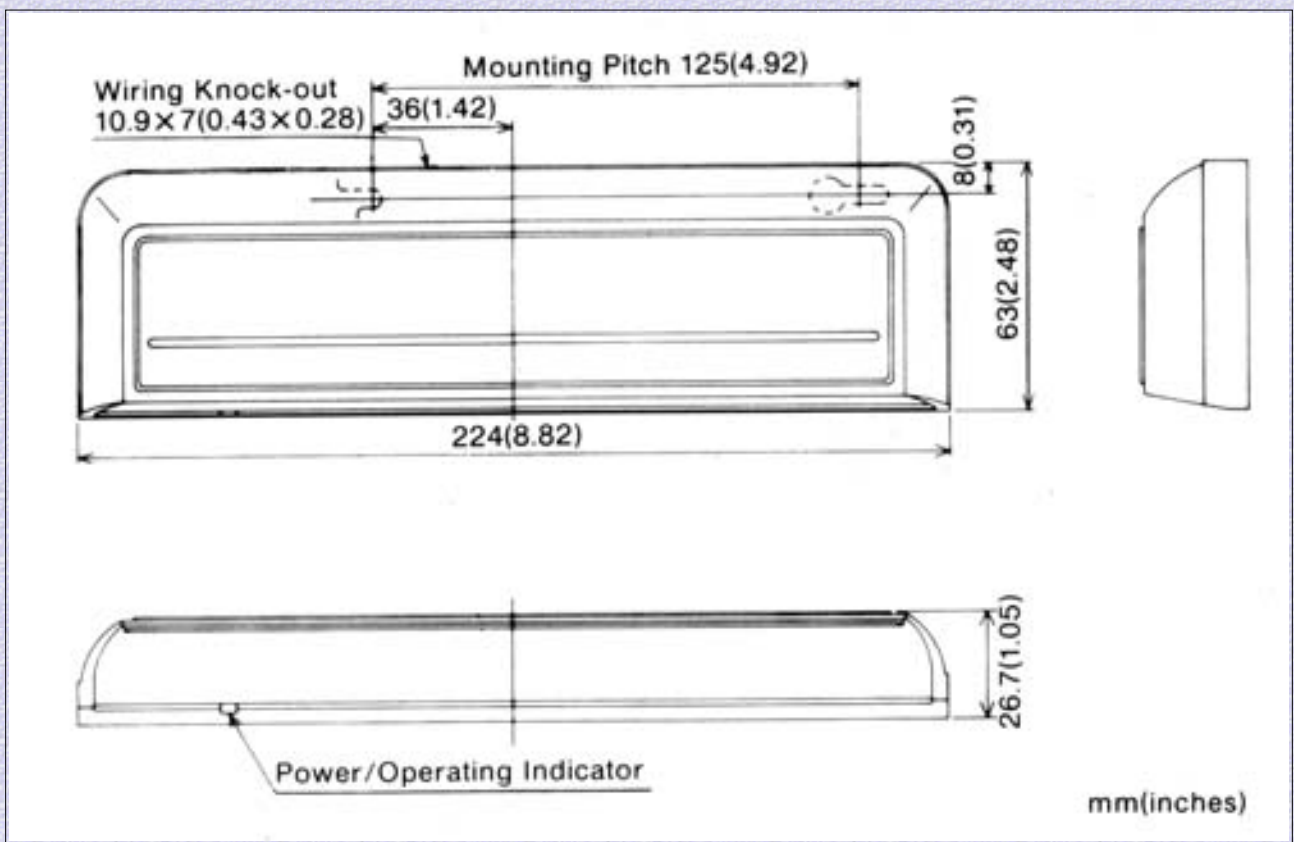
DETECTION AREA

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[Click Here To See The OA-50C's
Detection Area and How To Adjust It](#)

DIMENSIONS

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SPECIFICATIONS

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Model	OA-50CB/OA-50CS/OA-50CW
Detection Range	2.0m(6.6ft) ~ 2.7m(8.9ft) Max.
Detection Area	See the chart
Detection Method	Near Infrared Reflection Method
Depth Area Variable Range	7.5° ~ 23.5° = 16°(4° x 4steps) Adjustable
Width Area Variable Range	-8° ~ +8° = 16°(4° x 4 steps) Adjustable
Power Input	12 ~ 24V AC/DC
Current Draw	200mA Max. (at 12V AC)
Power/Operating Indicator	LED ON (Stand by) LED OFF (When detecting)
Output Contact	N.O. Relay 50V 0.3A (Resistance Load)
Output Hold	0.5sec. Delay
Operating Temperature	-20°C ~ +55°C (-4°F ~ +131°F)
Weight	190g (6.7oz)
Accessories	2m(6.6ft) Wire with plug, 2 Mounting Screw, Mounting Template

*Specifications subject to change without prior notice.



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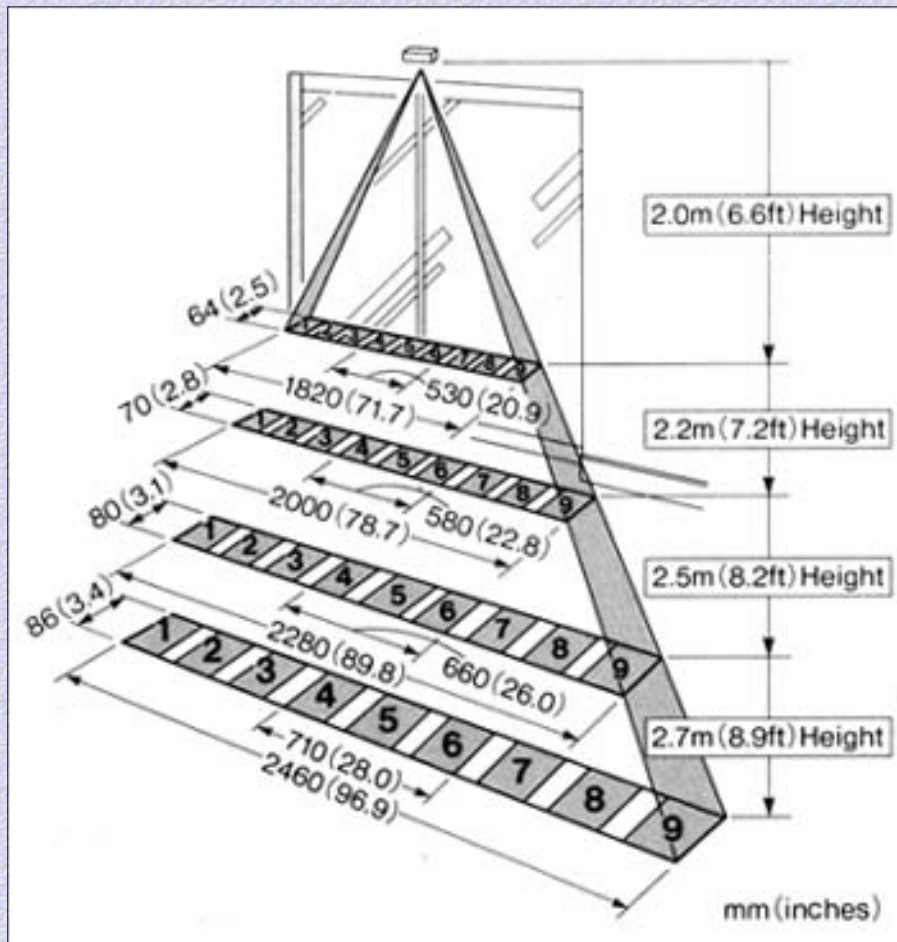
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OPTEX MODEL NUMBER
OA-50C
ACTIVE
INFRARED PRESENCE SENSOR

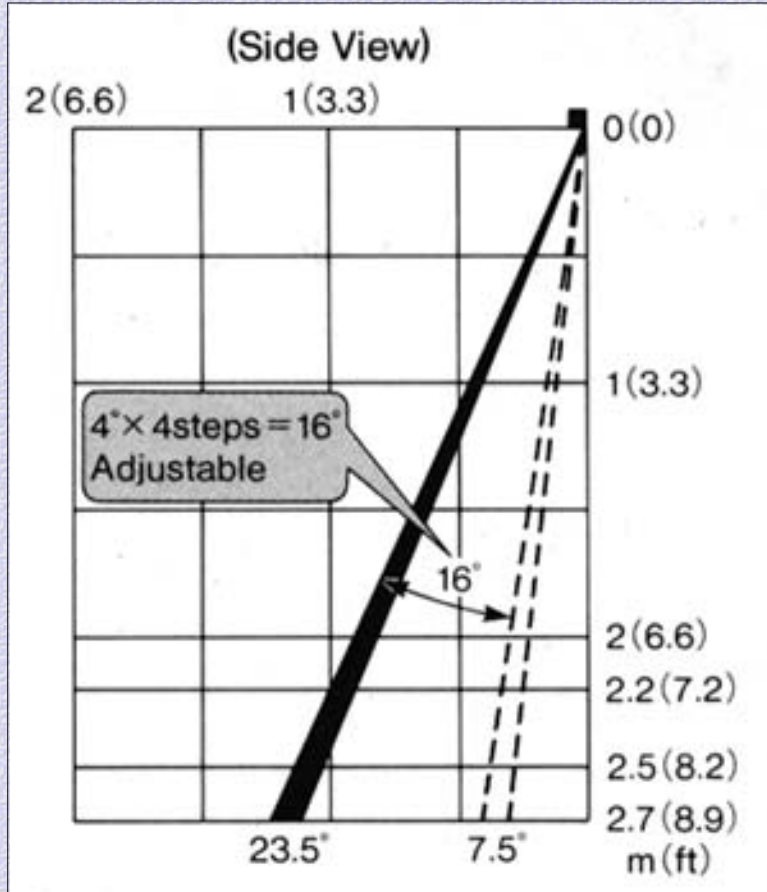
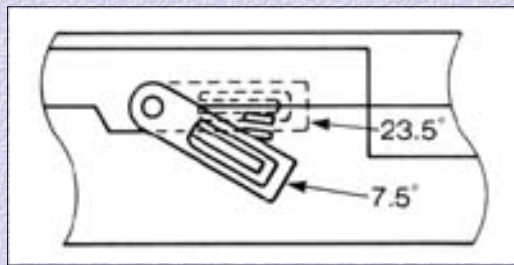
EXTREMELY DENSE AND FLEXIBLE DETECTION AREA



The OA-50C's detection area consists of 9 solid outer zones, assuring safe and reliable operation even when environmental conditions, such as rain and snow, are present.

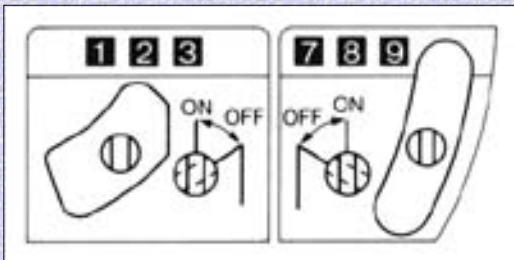
ADJUSTING THE DETECTION AREA

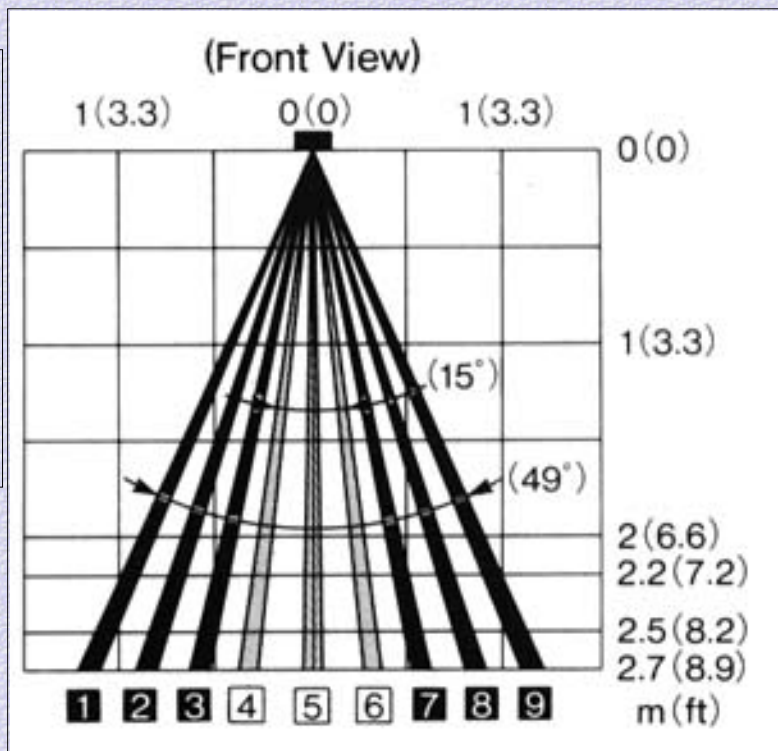
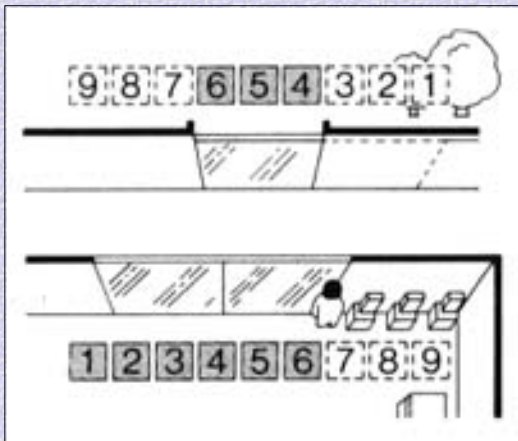
Area Depth Adjustment



The area depth can be adjusted in 4 steps (7.5° to 23.5°)

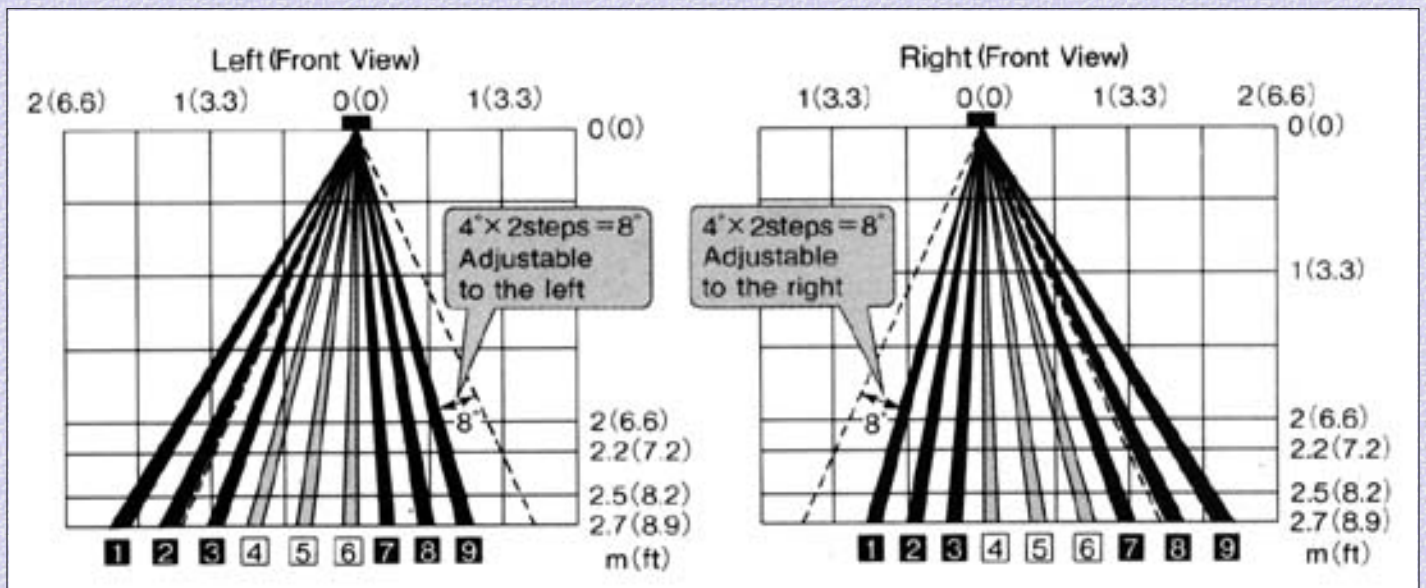
Area Width Adjustment





Area Width Elimination: Areas 1,2,3 or 7,8,9 can be easily eliminated, allowing the OA-50C to work in various installation applications, i.e. single leaf doors, double doors, and when miscellaneous objects such as plants, etc. are within the area.

Right and Left Angle Adjustment



The width of the detection area can be also adjusted to the right and the left 8° (4° x 2 steps) to compensate for obstacles within the detection area.





OPTEX

SPECIFICATION SHEET

OPTEX MODEL NUMBER

OA-60C**ACTIVE
INFRARED PRESENCE SENSOR**

FEATURES

DETECTION AREA

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SPECIFICATIONS



Ceiling Mount, Recessed Sensor With Safe And Reliable Presence Detection

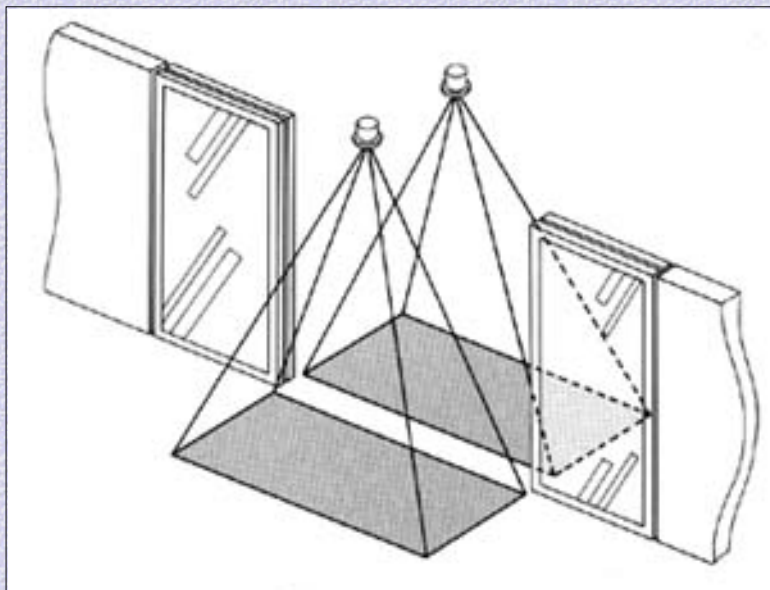
The OA-60C is a recessed, ceiling mounted sensor for automatic doors which provides a high level of safety. Its wide detection range and presence sensing capabilities make this unit flexible enough to adjust to almost any installation.

FEATURES

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- **Presence Detection With Complete Area Coverage**

For safe operation, the OA-60C's presence sensor will hold doors open for a selected 2, 15, or 60 second time period when any non-moving person or object is with the detection area. And the flexible detection area adjustment provides no undetected area just behind the doors.



- **Dense Yet Flexible Detection Area**

The OA-60C's detection area consists of 18 individual detection zones which can be adjusted to obtain the desired detection area.

- **Environmental Disturbance Immunity**

The OA-60C provides extremely dependable, low maintenance operation all year round. Presence Detection achieved with innovative Active Infrared Technology. This advanced design allows the unit to operate reliably even in harsh environments.

- **Attractive Designed to Suite Any Installation Decor**

Slim projection of only 15mm (0.59 inches)

- **12 - 24V AC/DC Universal Power Input**

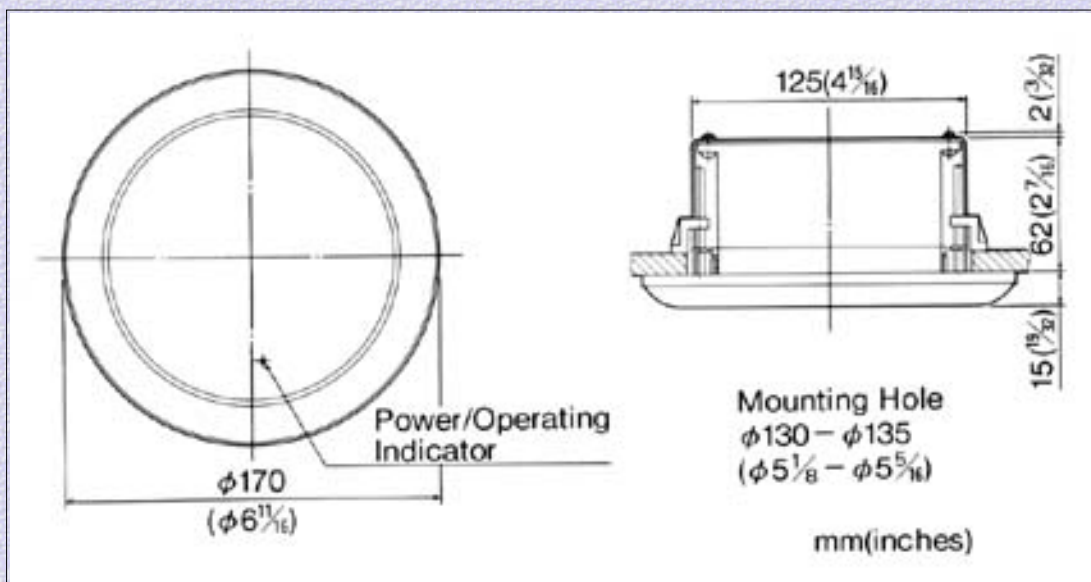
DETECTION AREA

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[Click Here To See The OA-60C's
Detection Area and How To Adjust It](#)

DIMENSIONS

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SPECIFICATIONS

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Model	OA-60C
Detection Range	2.0m(6.6ft) ~ 4.0m(13.1ft) Max.
Detection Area	See chart
Detection Method	Near Infrared Reflection Method
Depth Area Variable Range	Inner Area: approx 0 ~ 18° Approach Area: approx 0 ~ 26°
Power Input	12 ~ 24V AC/DC
Current Draw	300mA Max. (at 24V AC)
Power/Operating Indicator	LED ON in stand by LED OFF when detecting
Output Contact	N.O. Relay 50V 0.1A (Resistance Load)
Output Hold	0.5 sec. Delay
Operating Temperature	-20°C ~ +55°C (-4°F ~ +131°F)
Weight	430g (15.2oz)
Accessories	3m Wire with plug, 2 Mounting Screws, Mounting Template, Area Masking Seals

*Specifications subject to change without prior notice.

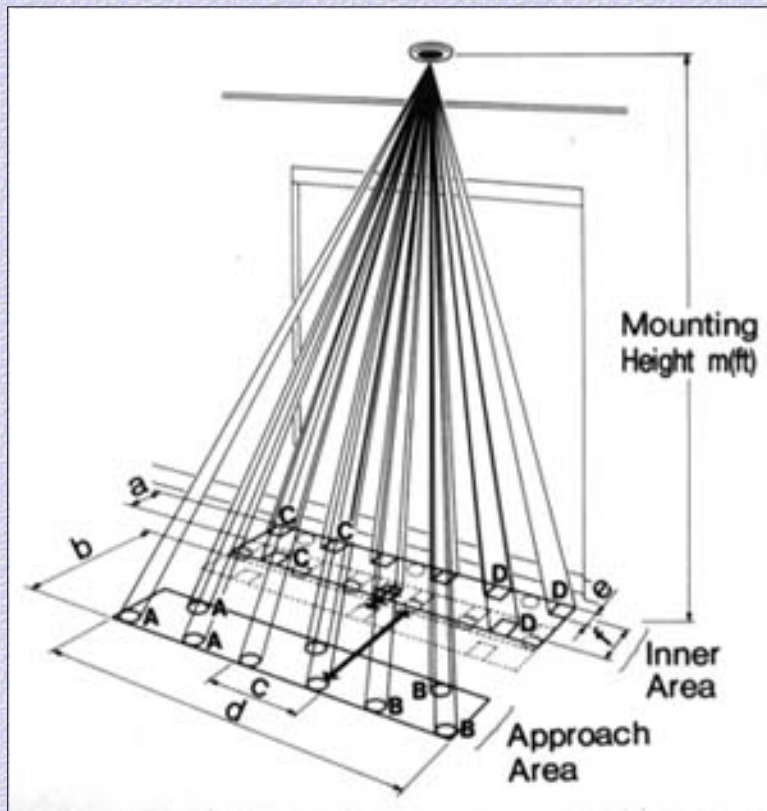
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OPTEX MODEL NUMBER
OA-60C
ACTIVE
INFRARED PRESENCE SENSOR

DENSE YET FLEXIBLE DETECTION AREA

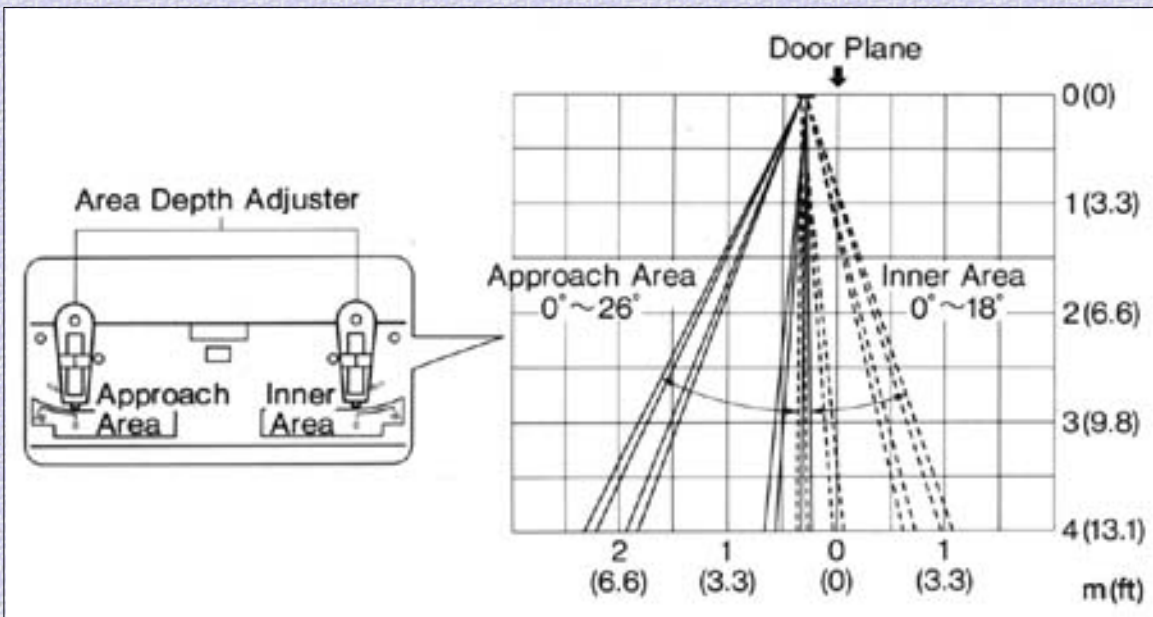


Mounting Height m(ft)	a	b	c	d	e	f
2.5 (8.2)	0~800 (0~31 1/2)	0~1300 (0~51 3/16)	480 (18 7/8)	1800 (70 7/8)	80 (3 1/8)	230 (9 1/16)
3 (9.8)	0~1000 (0~39 3/8)	0~1500 (0~59 1/16)	580 (22 7/8)	2180 (85 7/8)	100 (3 15/16)	280 (11 1/16)
4 (13.1)	0~1300 (0~51 3/16)	0~1900 (0~74 13/16)	770 (30 5/16)	2900 (114 3/16)	120 (4 3/4)	370 (14 9/16)

mm (inches)

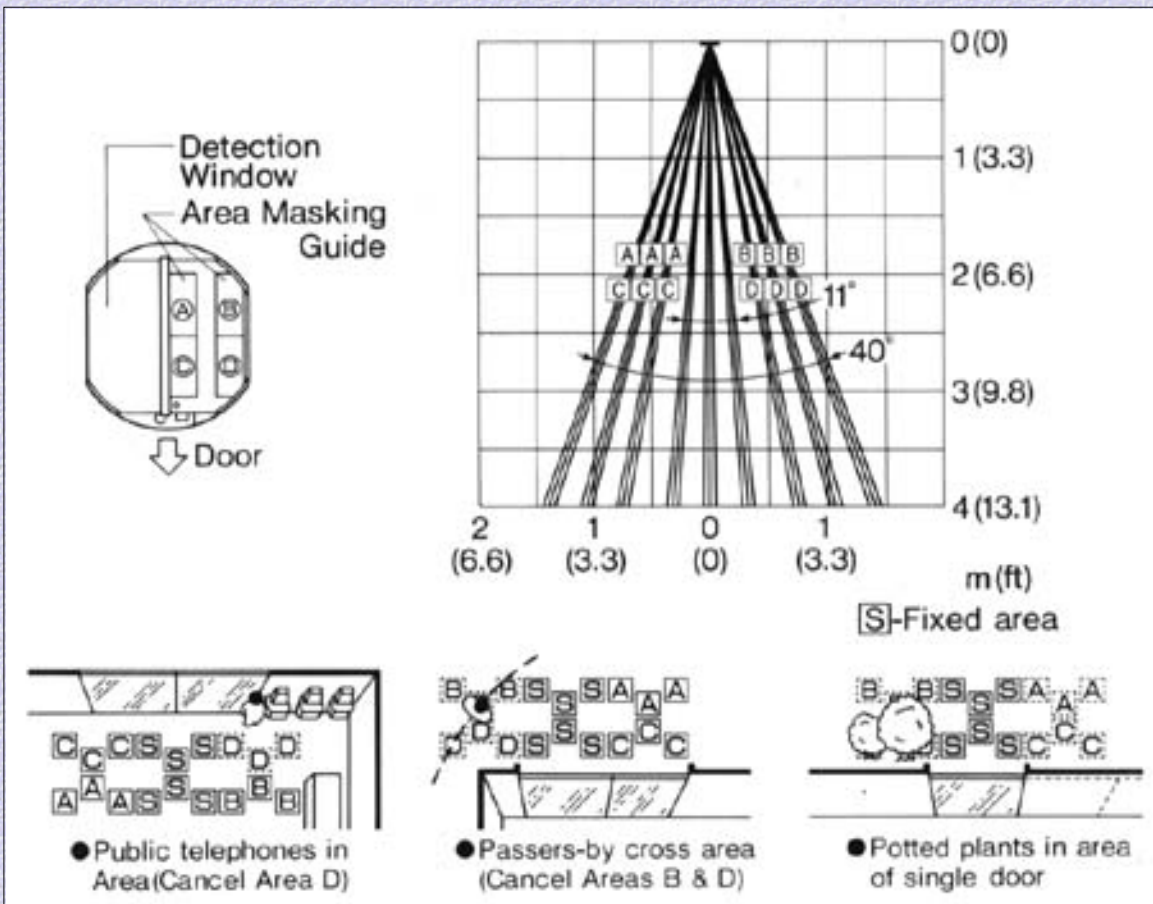
ADJUSTING THE DETECTION AREA

Area Depth Adjustment



Both of inner area and approach area can be adjusted independently by Area Depth Adjuster.
 Inner Area: 0° ~ 18° = 2° x 9 steps; Approach Area: 0° ~ 26° = 2° x 13 steps

Area Width Adjustment




Areas A,B,C, and D can be easily eliminated by Area Masking Seals, allowing the OA-60C to work in various installation applications i.e. single leaf doors, double doors, and when miscellaneous objects such as plants, etc. are within the area.





<u>BGS Series</u>	<u>C Series</u>	<u>J Series</u>	<u>K Series</u>
<u>JRF Series</u>	<u>JRF-T Series</u>	<u>R Series</u>	<u>S Series</u>
<u>X-400, 5140, VF-Series Thermo-Hunters</u>	<u>Thermo-Hunter PT-3LF</u>	<u>Thermo-Hunter BUILT-IN2</u>	<u>V Series</u>
<u>V2 Series</u>			

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OPTEX
ABOUT THE COMPANY

Meeting the Needs of our Modern World Through Sensing Technology



Optex America Inc.

Corporate Headquarters

1845 West 205th St., Torrance, CA 90501
Phone: 800-966-7839 + Fax: 310-533-5910

Optex, America markets products manufactured by Optex Company Limited of Otsu, Japan throughout the continents of North and South America. We specialize in passive and active infrared technology, control systems, and CCTV products which are applied in the fields of Security, Automatic Door Controls, and Factory Automation.

Since its founding in 1979, Optex has established a world-wide reputation for quality, innovation, and technical excellence. Our products always represent an investment in performance and long term satisfaction.

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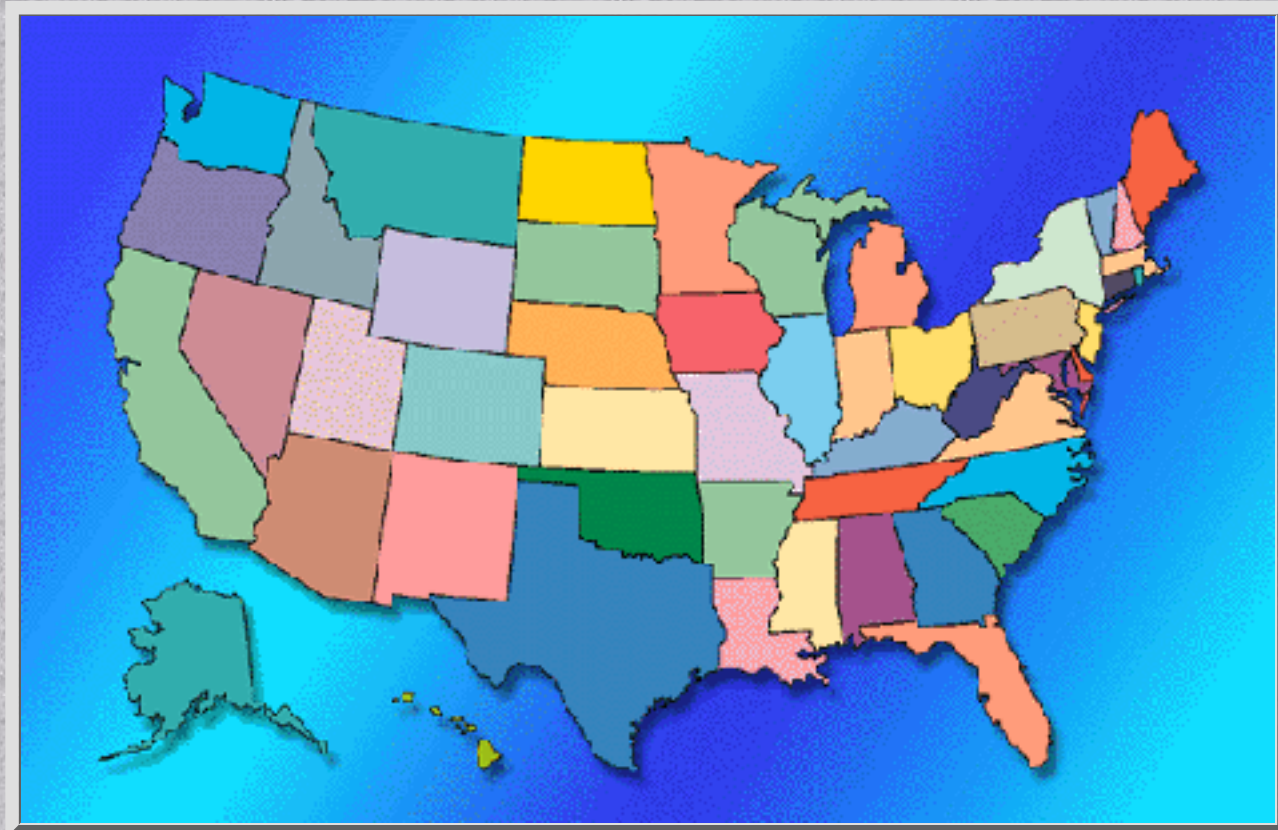
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The Sales Representatives For Canada are:



Name: **Jay Vaare-Lamoureux**

Title: Canadian Regional Sales Manager

Phone Number: (800) 966-7839

Fax Number: (310) 533-5910

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The Sales Representatives For This Section of the United States are:

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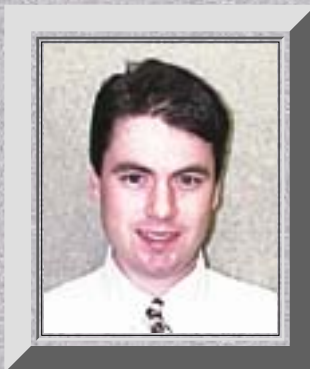
Name: **Griff Kimble**

Title: Western Regional Sales Manager

Phone Number: (800) 966-7839

Fax Number: (310) 533-5910

AUTOMATIC DOOR



Name: **Kevin Rogers**

Title: Western Regional Sales Manager,
Automatic Door Division

Phone Number: (800) 966-7839

Fax Number: (310) 533-5910

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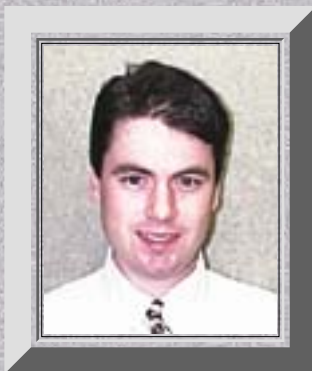
Name: **Keith Daulton**

Phone Number: (800) 966-7839 Ext. 205

Fax Number: (310) 533-5910

E-mail Address: kdaulton@optexamerica.com

AUTOMATIC DOOR



Name: **Kevin Rogers**

Title: Western Regional Sales Manager,
Automatic Door Division

Phone Number: (800) 966-7839

Fax Number: (310) 533-5910

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E-Mail Address: SecuritySolutions@worldnet.att.net

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Mid Atlantic Sales Manager - Lise Carper (States covered: VA, WV, MD, DE, DC, PA)

Mid South Sales Manager - Rod Warren (States covered: GA, AL, MS, NC, SC, TN)

Inside Sales and Administrative Support:

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Amy Drews - Executive Assistant, Business Development

Joyce DiVirgilius - Executive Assistant, Sales

Maureen Starks - Senior Account Manager: GA, NC, and SC and outside sales for PR

Connie Haman - Senior Account Manager: FL, AL, MS, TN

Maria Rovinelli - Senior Account Manager: WV, VA, MD, DE, DC, PA

AUTOMATIC DOOR



Name: **Joe Agabiti**

Phone Number: (800) 966-7839

Fax Number: (310) 533-5910

E-mail Address: jagabiti@optexamerica.com

CONTROL PANELS



Name: **Jay Kessel**

Phone Number: (310) 533-1500 Ext. 101

Fax Number: (310) 533-5910

E-mail Address: jkessel@optexamerica.com

FACTORY AUTOMATION

PHOTOELECTRIC SENSORS

HTM electronics industries

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Phone Number: (716) 283-1461 or Toll Free 1-800-644-1756

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Website: <http://www.htm-optex.com>

Contact: **Art Ramsay**

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DeltaTRAK

P.O. Box 398, Pleasanton, California 94566

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Fax Number: (510) 846-1147

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The Sales Representatives For This Section of the United States are:

SENSORS



Phone Number: 800-662-9178

Fax Number: 508-880-0932

E-mail Address: tmgmtgroup@aol.com

AUTOMATIC DOOR



Name: **Joe Agabiti**

Phone Number: (800) 966-7839

Fax Number: (310) 533-5910

E-mail Address: jagabiti@optexamerica.com

CONTROL PANELS



Name: **Jay Kessel**

Phone Number: (310) 533-1500 Ext. 101

Fax Number: (310) 533-5910

E-mail Address: jkessel@optexamerica.com

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Phone Number: (716) 283-1461 or Toll Free 1-800-644-1756

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Website: <http://www.htm-optex.com>

Contact: **Art Ramsay**

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P.O. Box 398, Pleasanton, California 94566

Phone Number: (510) 426-3011 Ext. 20 or Toll Free 800-962-6776

Fax Number: (510) 846-1147

Contact: **Fredrick L. Wu**

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The Sales Representative For This Section of the United States is:

SECURITY / AUTOMATIC DOOR



Name: **Jay Kessel**

Phone Number: (310) 533-1500 Ext. 101

Fax Number: (310) 533-5910

E-mail Address: jkessel@optexamerica.com

FACTORY AUTOMATION

PHOTOELECTRIC SENSORS

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P.O. Box 398, Pleasanton, California 94566

Phone Number: (510) 426-3011 Ext. 20 or Toll Free 800-962-6776

Fax Number: (510) 846-1147

Contact: **Fredrick L. Wu**

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The Sales Representative For This Section of the United States is:

SECURITY / AUTOMATIC DOOR

Name: **Michael Skjerven**

Phone Number: (800) 966-7839

Fax Number: (310) 533-5910

E-mail Address: mskjerven@optexamerica.com

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OPTEX

SPECIFICATION SHEET

OPTEX MODEL NUMBER

C Series

CYLINDRICAL PHOTOELECTRIC SENSORS

FEATURES

DIMENSIONS

SPECIFICATIONS



Vibration Resistance With Full Injection of Epoxy Inside the Metal-Armed Body, Being Even Strong to Environmental Noise

M8 connector type are also available for full range of products.

1500cm	Through-Beam Type
300cm	Retro-Reflection Type
100cm	Retro-Polarizing Type
11cm	Diffused Reflector Type
40cm	Diffused Reflection Type (long range detection)

FEATURES

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- **Durable Metallic Body**

Vastly superior to plastic bodies in terms of durability and resistance to chemicals. Can be used in severe conditions, and the screw thread is unlikely to be damaged in installation.



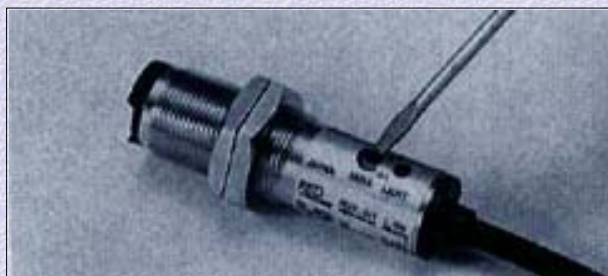
- **Plug-In Connector**

It has greatly simplified the installation procedure. Maintenance after the switch has been installed is simple.



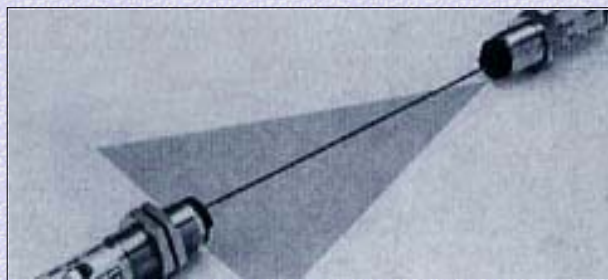
- **All Models Fitted with a Sensitivity Adjuster (DC)**

All models are fitted with a sensitivity adjuster. Sensitivity can be adjusted according to sensing conditions, and the switch can quickly be adjusted for sensing different kinds of objects.



- **15m Long-Distance Sensing (Through-Beam Type):**

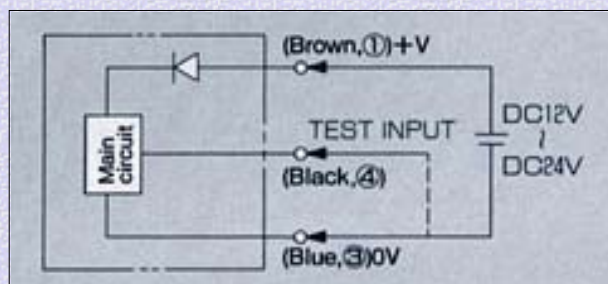
The through-beam type has a sensing range of 15m, and the retro-reflection type has a sensing range of 3m, both of which surpass the conventional standards. Outstandingly stable, even for sensing minute objects.



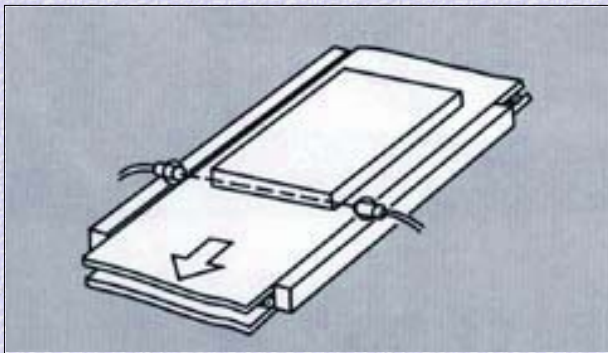
- **Detects mirror-like and shiny surfaces CRD(A)F retro-reflection type with built-in polarizing filter**

- **External diagnosis TEST INPUT function (Only on emitter of CTD-1500 through-beam type)**

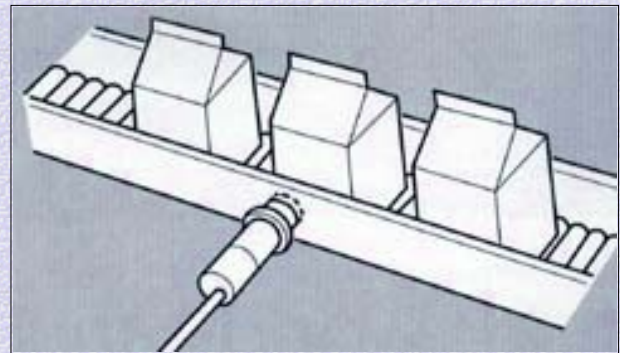
When the white lead line of the emitter is connected to 0V, a interrupted state is created electrically.



- **Typical Uses**



Lengthwise Positioning
Through-Beam Type CTD-1500(C)(N,P)



Sensing the position of food packages
Diffused Reflection Type CDD-11(C)(N,P)

- **Water-Proof to IP66 (IEC144)**
Vibration-Resistance also vastly increased

- **2 Types: L/ON D/ON**
Control Output

- **Built-In short-circuit protection**

- **Beam axis can be bent 90° with a side-on attachment (optional)**

- Type T000 for CTD-1500, CRD-300, CRDF-100
- Type T110 for CDD-11
- Type T400 for CDD-40

- **Straight and L-Shaped Connectors as Options**

- CCN-S = Standard Straight Model
- CCN-L = L-Shaped Model

- **Sensor Models**

Model	Type	Output	Model Number
CTD-1500 Through-Beam Type [15m]	Direct Cording	NPN	CTD-1500N
		PNP	CTD-1500P
	Plug-in connector	NPN	CTD-1500CN
		PNP	CTD-1500CP
CRD-300 Retro-Reflection Type [3m]	Direct Cording	NPN	CRD-300N
		PNP	CRD-300P
	Plug-in connector	NPN	CRD-300CN
		PNP	CRD-300CP
CRDF-100 Retro-Reflection Type [1m] (with built-in polarizing filter)	Direct Cording	NPN	CRDF-100N
		PNP	CRDF-100P
	Plug-in connector	NPN	CRDF-100CN
		PNP	CRDF-100CP

CDD-11	Direct Cording	NPN	CDD-11N
		PNP	CDD-11P
	Plug-in connector	NPN	CDD-11CN
		PNP	CDD-11CP
Diffused Reflection Type [40cm] (long range detection)	Direct Cording	NPN	CDD-40N
		PNP	CDD-40P
	Plug-in connector	NPN	CDD-40CN
		PNP	CDD-40CP

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	Model				
	Through-Beam Type	Retro-Reflection Type	Retro-Reflection Type (with built-in polarizing filter)	Diffused Reflector Type	Diffused Reflector Type (long range detection)
	CTD-1500	CRD-300	CRDF-100	CDD-11	CDD-40
Detecting Distance	15m	0.05~3m	0.05~1m	11cm(20cm mat white paper)	40cm
Supply Voltage	DC12 ~ 24V ± 20%				
Power Consumption	40mA	30mA			
Detecting Object	Opaque Object 15mm min.	Opaque Object 45mm min.	Semi-transparent objects and mirror-surfaced objects	Transparent and Opaque Objects	Transparent and Opaque Objects
Response Time	1.5 msec. max.				
Hysteresis	-			10% max.	10% max.
Light Source	Infrared LED (except CRDF-100 with Red LED)				
Sensitivity Adjustment	Single Turn Adjuster				
Indicator	Sensor Indicator (red LED) (power indicator on the through-beam type emitter)				
Control Output	NPN or PNP open collector MAX 100mA DC30V residual voltage 1V max.				
Operation Mode	LIGHT ON / DARK ON slected by control wiring				
Connection	2m cable 4 x 0.3mm ² PVC ø5/M12 x 4 plug-in connector				

Noise Resistance (power line noise)	1,000Vp pulse 1µsec width (on noise simulator)	
Insulation Resistance	20M Ω min. (DC 500V)	
Ambient Temperature	-25 ~ 55°C	
Ambient Humidity	35 ~ 85% RH	
Ambient Operating Illumination	Sunlight; 10,000 lux max., Halogen light; 3,000 lux max.	
Vibration Resistance	10-55Hz Amplitude 1.5mm 2 hours in each XYZ directions	
Shock Resistance	500 m/s ² (approx. 50G) 3 times in each of XYZ directions	
Protection Category	IEC standard IP66 (water resistant model)	
Enclosure Materials	Case; BSBM + Ni Lens; PC	
Weight (excluding cord and nuts)	Approx. 40g for emitters and receivers	Approx. 40g



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Passive Infrared
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Beams
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Panels

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Automatic Door
Access Control

Home and
Office Automation
Misc. /
Accessories

New
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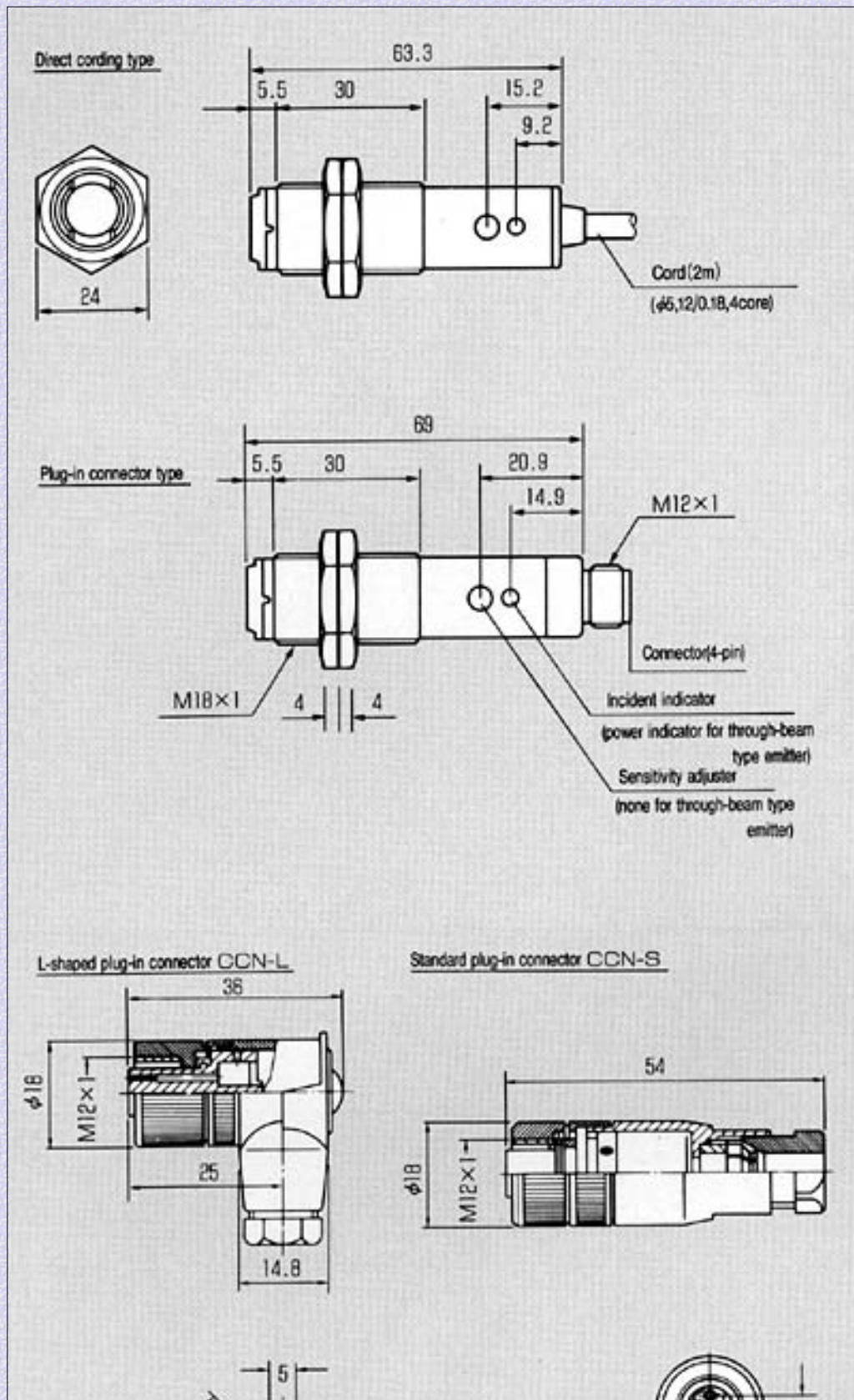
OPTEX

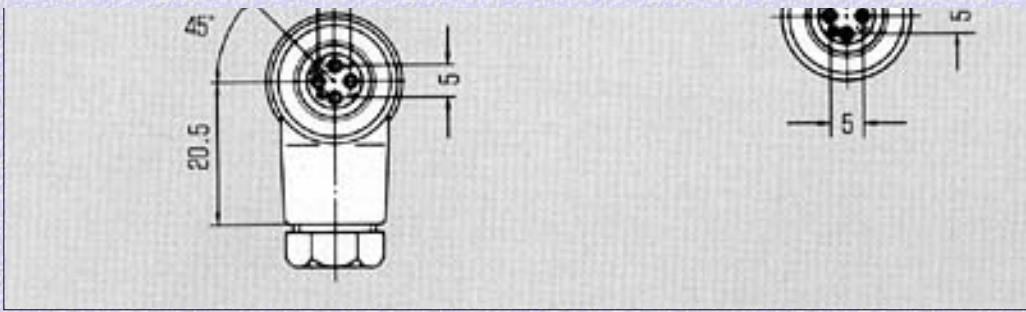
DIMENSIONS

OPTEX MODEL NUMBER

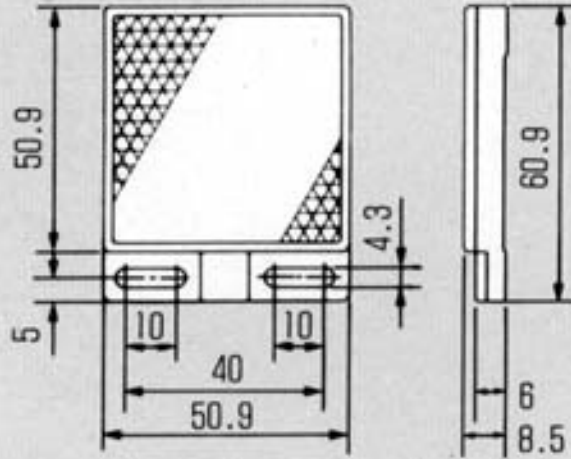
C Series

CYLINDRICAL
PHOTOELECTRIC SENSORS

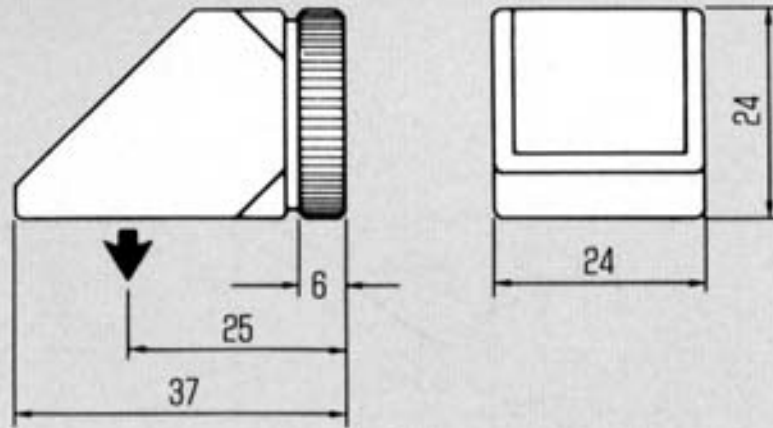




Retro-reflection mirror V-61



Side-on attachment T000, T110, T400



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Spec Sheet**



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Phone

Last Name

Company

Fax

Address

City

E-Mail (Required)

State

Zip

Country

Select The Products You Would Like Information On:

Passive Infrared Outdoor Sensors:

LX-40 / 80N
VX-40 / 40A
All of the Above

Passive Infrared Indoor Sensors:

CX-50 / 50 AM
CX-70M
EX-35
FX-40
FX-360
RX-40PI
RX-F30
SX-45C / SX-75C
SX-360Z
All of the Above

Photoelectric Detectors:

AX-70T / AX-130T
AX-100S / AX-100SR
AX-100 / 200 Plus
AX-100 / 200 Alpha
AX-250 / 500 Plus
AX-350 / 650 MKII
OS-1C / OS-2C
All of the Above

Control Panels:

Genesys 824 Alpha
Genesys 824R
Genesys 824 Alpha Fire
MDC
Super MDC
Vision
All of the Above

Misc. / Accessories:

AX-BT
BC-1
CA-1W
CA-2C
EA-1W
FA-1W
FA-2C
FR-100
HU-1
LS-360S

Automatic Door Access Control:

OA-50C
OA-60C
OA-201C
OA-202C
OA-601C
OP-03 Series
OP-08
OS-1C / OS-2C
HA-6000T/S
All of the Above

SMA-45
All of the Above

**Home and
Office Automation:**

Wireless 1000
LX-40/80N
VX-40/40A

**Factory
Automation:**

BGS Series
C Series
J Series
JRF Series
JRF-T Series
K Series
R Series
S Series
Thermo-Hunter PT-3LF
Thermo-Hunter BUILT-IN2
X-400, 5140, VF- Series
Thermo-Hunters
V Series
V2 Series
All of The Above

How would like to receive this information?

Additional Comments:



First Name

Phone

Last Name

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Fax

Address

City

E-Mail (Required)

State

Zip

Country

Select The Products You Would Like Information On:

Passive Infrared Outdoor Sensors:

LX-40 / 80N
VX-40 / 40A
All of the Above

Passive Infrared Indoor Sensors:

CX-50 / 50 AM
CX-70M
EX-35
FX-40
FX-360
RX-40PI
RX-F30
SX-45C / SX-75C
SX-360Z
All of the Above

Photoelectric Detectors:

AX-70T / AX-130T
AX-100S / AX-100SR
AX-100 / 200 Plus
AX-100 / 200 Alpha
AX-250 / 500 Plus
AX-350 / 650 MKII
OS-1C / OS-2C
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OA-60C
OA-201C
OA-202C
OA-601C
OP-03 Series
OP-08
OS-1C / OS-2C
HA-6000T/S
All of the Above

SMA-45
All of the Above

**Home and
Office Automation:**

Wireless 1000
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C Series
J Series
JRF Series
JRF-T Series
K Series
R Series
S Series
Thermo-Hunter PT-3LF
Thermo-Hunter BUILT-IN2
X-400, 5140, VF- Series
Thermo-Hunters
V Series
V2 Series
All of The Above

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OPTEX

SPECIFICATION SHEET

OPTEX MODEL NUMBER

J Series

**COMPACT-TYPE PHOTO SENSOR
WITH BUILT-IN AMPLIFIER**

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Water-tight with IP-67g protection realized by full injection of hard epoxy inside the body.

M8 connector types are also available for full range of products.

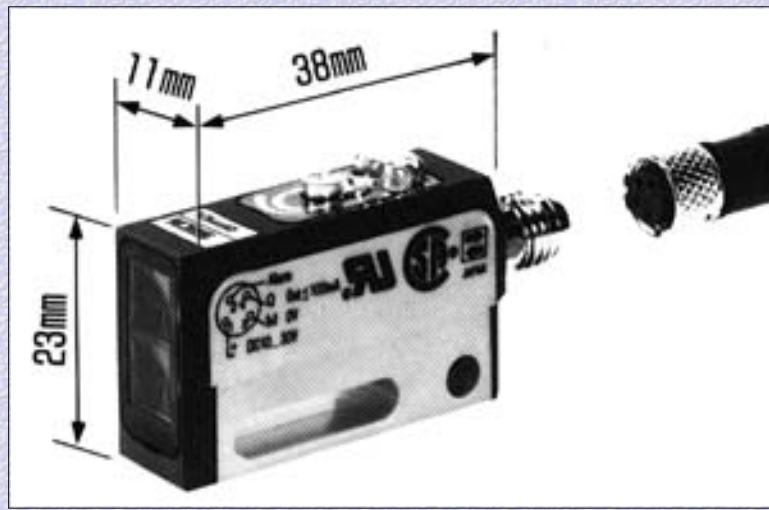
JT-700	Through-Beam Type
JR-200	Retro-Reflection Type (with Polarized Filter)
JD-R30	Diffused Reflection Type
JD-L03	Limited Range (Convergent) Type
JD-W08	Wide Angle (Divergent) Type

FEATURES

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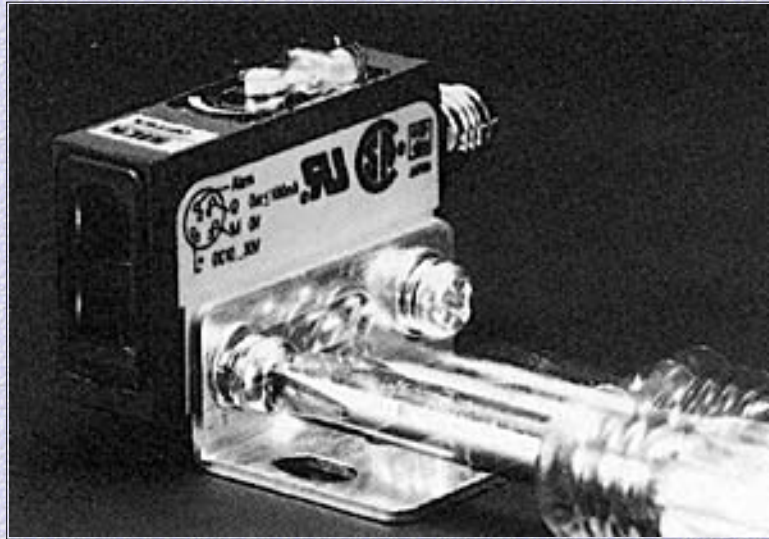
- **M8 connector to minimize the space**

Small M8 connector type together with a cord type enables this sensor to be installed even in a narrow space.



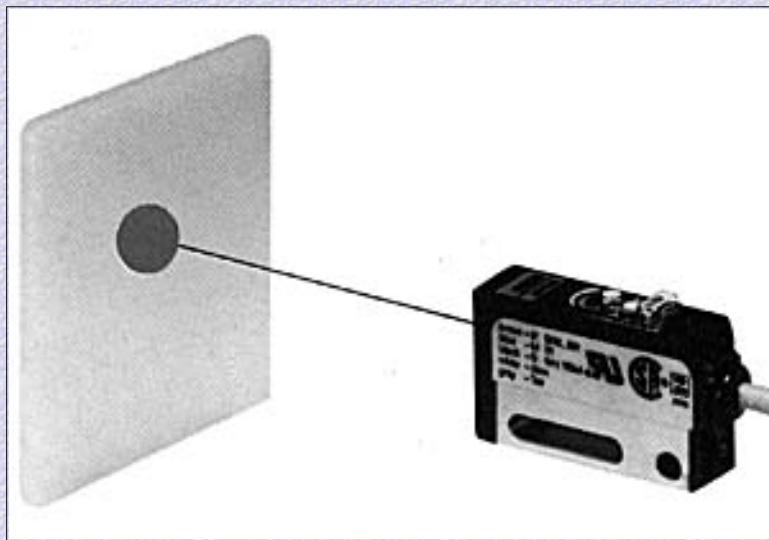
- **Screw hold design enhancing the flexibility of mounting (The screw M3/M4 can be used)**

The mounting pitch is 25.4mm and can be mounted on any mounting bracket.



- **Visible red spot that lights up detecting points (provided on each type of the convergent, diffused, and retro-reflection types)**

The visible red LED makes alignment of the detection point easy. The red spot is approximately 20mm diam. at 30cm away from the sensor.



- **Able to detect even a mirror-surface object or a glossy object properly**

The built-in polarizing filter on Retro-reflective models enables detection of metallic surfaces.

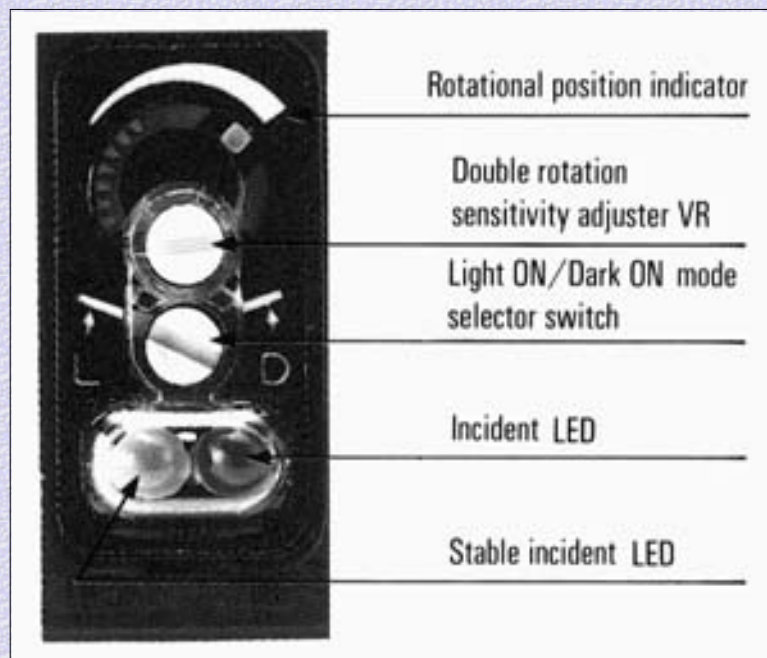
- **Water-proof IP-67. Vibration resistance has been also remarkably enhanced. (The inside is packed with resin)**

- **Two types of control outputs, NPN and PNP (Selected by model number)**

Output circuit diagram

- **Light ON/Dark ON selector switch is mounted on all models**

All adjustment functions are grouped together LED indicator protrudes above the sensor so that it is visible from all viewing angles.



- **Self-diagnosis function is mounted on all models**

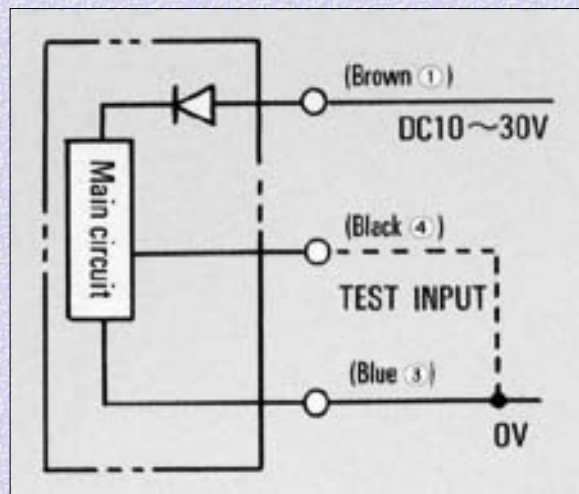
The self-diagnostic output warns of lens contamination before the sensor stops detecting or

immediately upon misalignment. This prevents down-time.

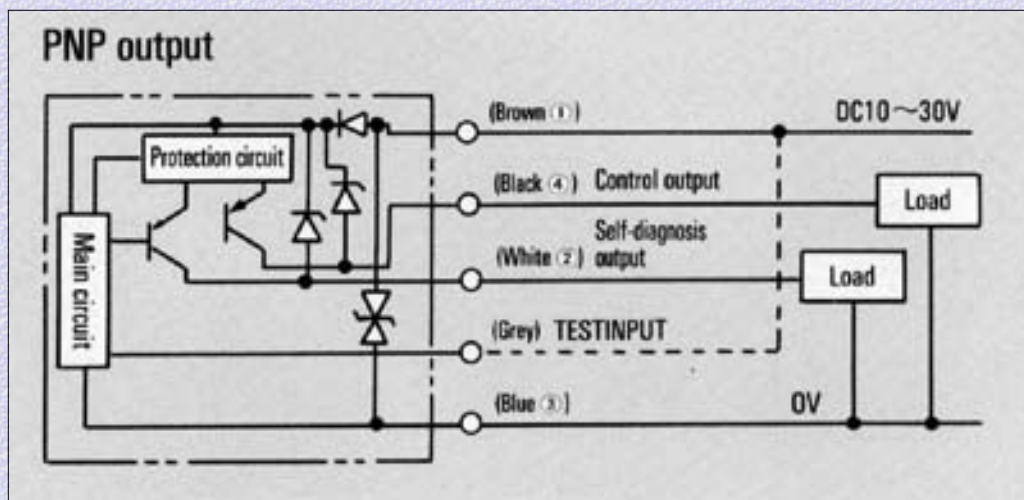
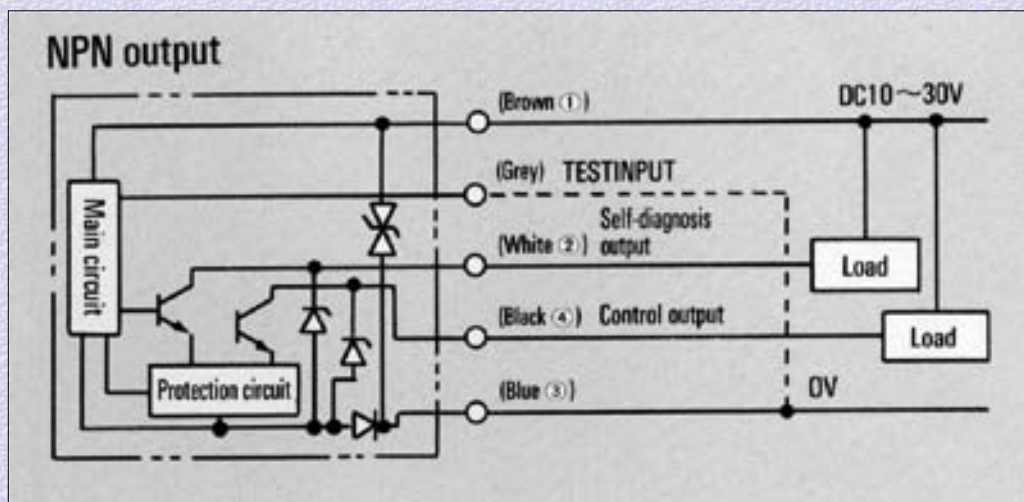


-
- **External diagnosis TEST INPUT function (Only mounted on all models of cord type and transmission type of connector type)**

Operation test can be performed electrically interrupting the right emission.



-
- **Output Circuit Diagrams**



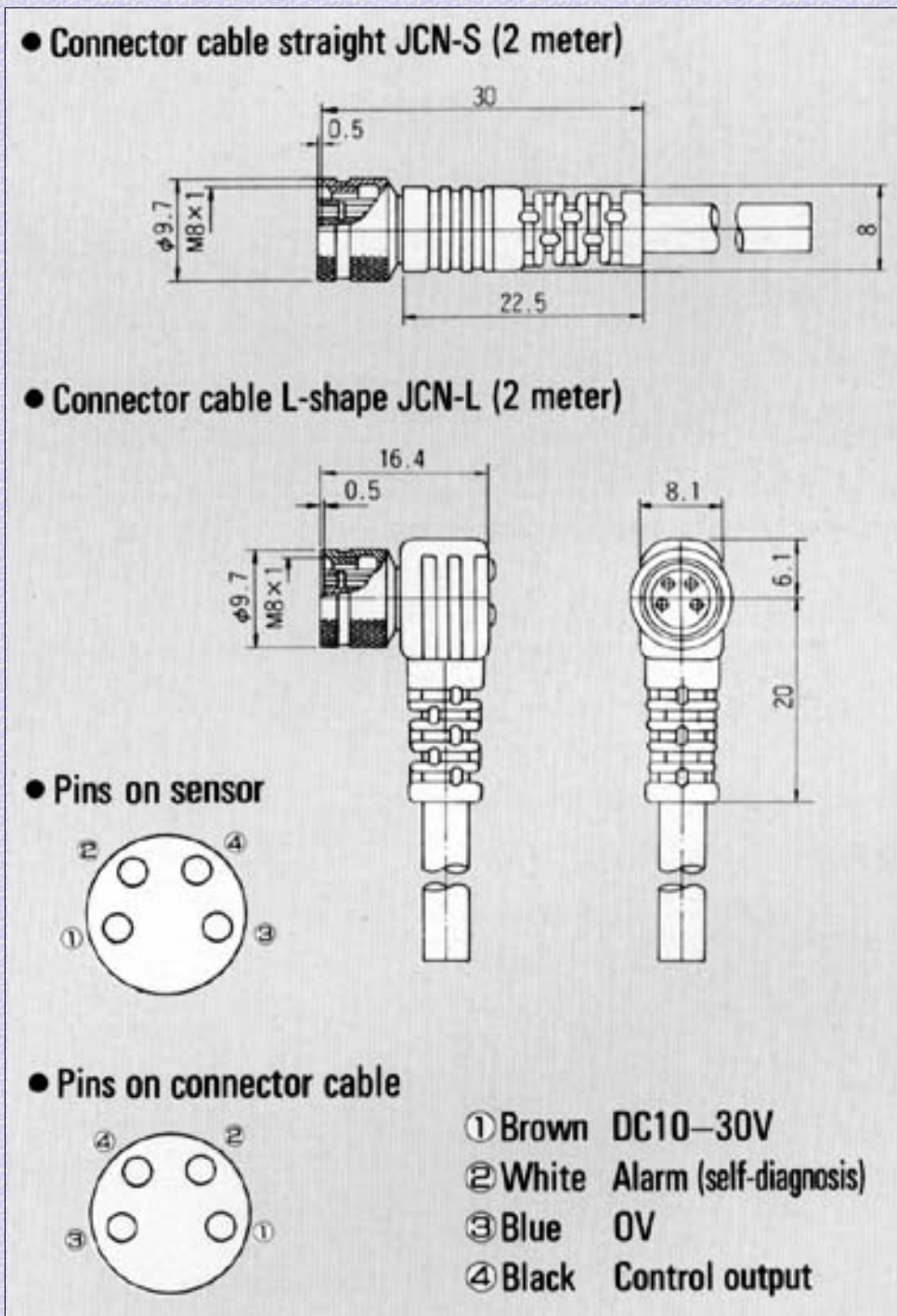
● **Type Numbers**

	Optical system	Side On	Head On
Cord Type	Through-beam	JT-S700N	JT-H700N
		JT-S700P	JT-H700P
	Retro-reflection	JR-S200N	JR-H200N
		JR-S200P	JR-H200P
	Diffused reflection	JD-SR30N JD-SR30P	JD-HR30N JD-HR30P
Convergent	JD-SL03N JD-SL03P	JD-HL03N JD-HL03P	
Divergent	JD-SW8N JD-SW8P	JD-HW08N JD-HW08P	

	Optical system	Side On	Head On
	Through-beam	JT-S700CN JT-S700CP	JT-H700CN JT-H700CP

Connector Type	Retro-reflection	JR-S200CN JR-S200CP	JR-H200CN JR-H200CP
	Diffused reflection	JD-SR30CN JD-SR30CP	JD-HR30CN JD-HR30CP
	Convergent	JD-SL03CN JD-SL03CP	JD-HL03CN JD-HL03CP
	Divergent	JD-SW8CN JD-SW8CP	JD-HW08CN JD-HW08CP

● **Connector Type**



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	Through-Beam	Retro-Reflector	Diffuse Reflection
	JT-(S,H)700(C)(N,P)	JR-(S,H)200(C)(N,P) With Polarizing Filter	JD-(S,H)30R(C)(N,P)
Detecting Distance	7m	2m	30cm§
Detecting Object	Opaque Object 10mm min.	Opaque Object 45mm min.	Transparent and Opaque Object
Supply Voltage	DC10~30V Including ripple (P-P) 10%		
Power Consumption	Emitter 20mA max. Receiver 30mA max.	30mA max.	
Response Time	1.5ms max.	0.9ms max.	
Hysteresis	-		20% max.
Light Source	IR LED	Red LED	
Sensitivity Adjustment Operating Mode	2 rotation volume / Light ON Dark ON Selectable by switch		
Indicator	Incident Indicator (Red) - Stable Incident Indicator (Green) Power Indicator for Power		
Control Output	NPN/PNP Open Collector 100mA max./DC30V		
Alarm Output	NPN/PNP Open Collector 100mA max./DC30V		
Test Input	Cord Type: Available for all types - Connector: Available only in Emitter		
Connection	Cord Type: Cable 2 meter - Connector Type: M8 x 4 pins		
Insulation Resistance	20M Ω or more (DC500V)		
Vibration / Shock Resistance	Vibration: 10~55Hz width 1.5mm, XYZ 2 hours / Shock: 500m/s ² XYZ 3 times		
Ambient Temperature / Humidity	Operating: -25~55°C / 35~85% RH Storage: -40~70°C / 35~95% RH		
Environmental Illuminance	Sunlight: 10,000 lux max. - Incandescent Light: 3,000 lux max.		
Protective Category Material	IEC 144 - IP 67 / Case: PBT - Lens: PC (PMMA for polarizing filter type)		
Weight	Emitter 60g Receiver 65g	65g	

§White Paper

	Limited Range (convergent)	Wide Angle (divergent)
	JD-(S,H)L03(C)(N,P)	JD-(S,H)W08(C)(N,P)
Detecting Distance	2~5cm§	8cm§
Detecting Object	Transparent and Opaque Objects	
Supply Voltage	DC10~30V Including ripple (P-P) 10%	
Power Consumption	Emitter 20mA max. Receiver 30mA max.	30mA max.
Response Time	1.5ms max.	0.9ms max.
Hysteresis	-	
Light Source	Red LED	IR LED
Sensitivity Adjustment Operating Mode	2 rotation volume / Light ON Dark ON Selectable by switch	
Indicator	Incident Indicator (Red) - Stable Incident Indicator (Green) Power Indicator for Power	
Control Output	NPN/PNP Open Collector 100mA max./DC30V	
Alarm Output	NPN/PNP Open Collector 100mA max./DC30V	
Test Input	Cord Type: Available for all types - Connector: Available only in Emitter	
Connection	Cord Type: Cable 2 meter - Connector Type: M8 x 4 pins	
Insulation Resistance	20M Ω or more (DC500V)	
Vibration / Shock Resistance	Vibration: 10~55Hz width 1.5mm, XYZ 2 hours / Shock: 500m/s ² XYZ 3 times	
Ambient Temperature / Humidity	Operating: -25~55°C / 35~85% RH Storage: -40~70°C / 35~95% RH	
Environmental Illuminance	Sunlight: 10,000 lux max. - Incandescent Light: 3,000 lux max.	
Protective Category Material	IEC 144 - IP 67 / Case: PBT - Lens: PC (PMMA for polarizing filter type)	
Weight	65g	

§White Paper

	Passive Infrared Outdoor Sensors Passive Infrared Indoor Sensors	Photoelectric Beams Control Panels	Vision Control Panels Automatic Door Access Control	Home and Office Automation Misc. / Accessories	New Products Factory Automation	About Optex Locate A Sales Rep
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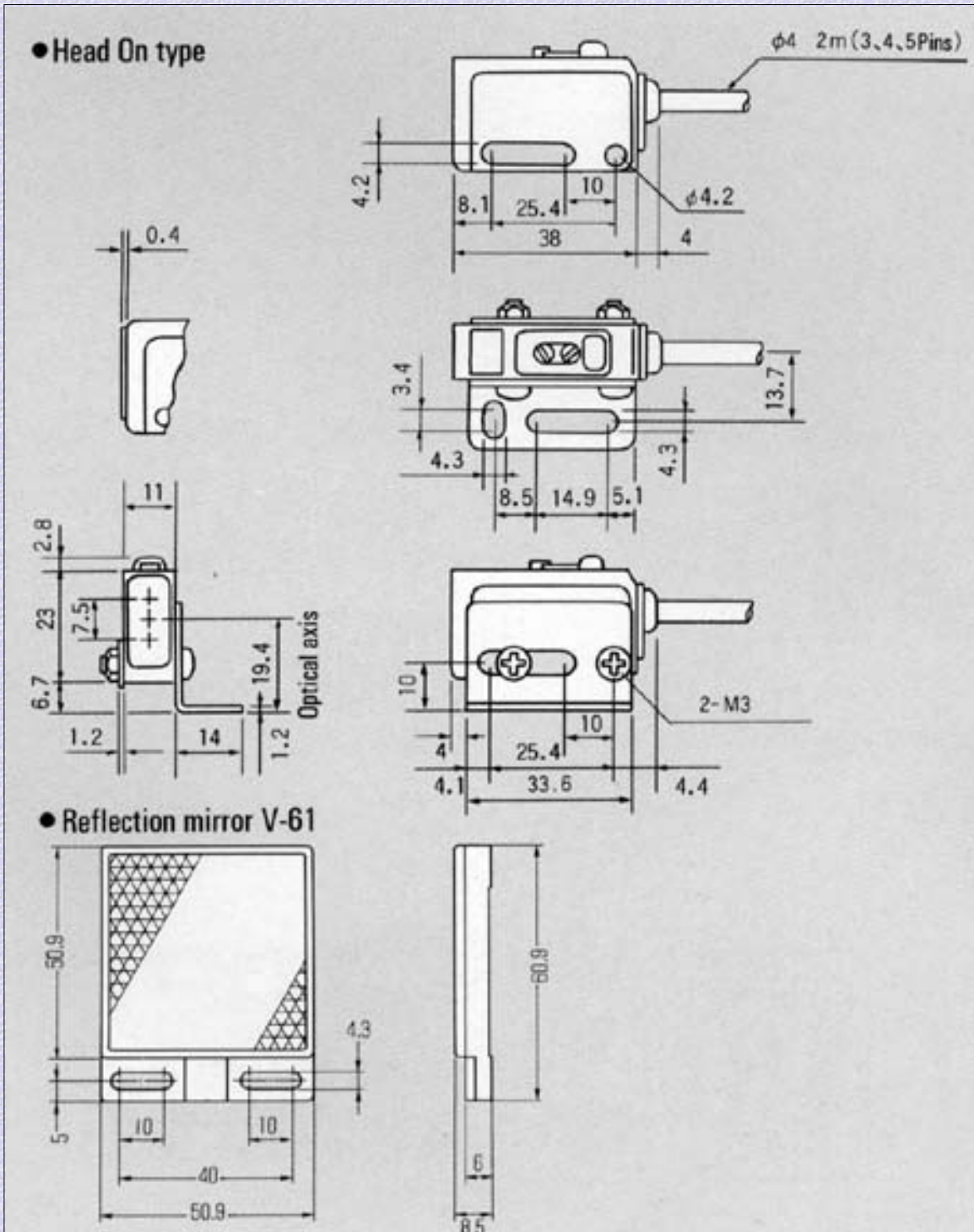
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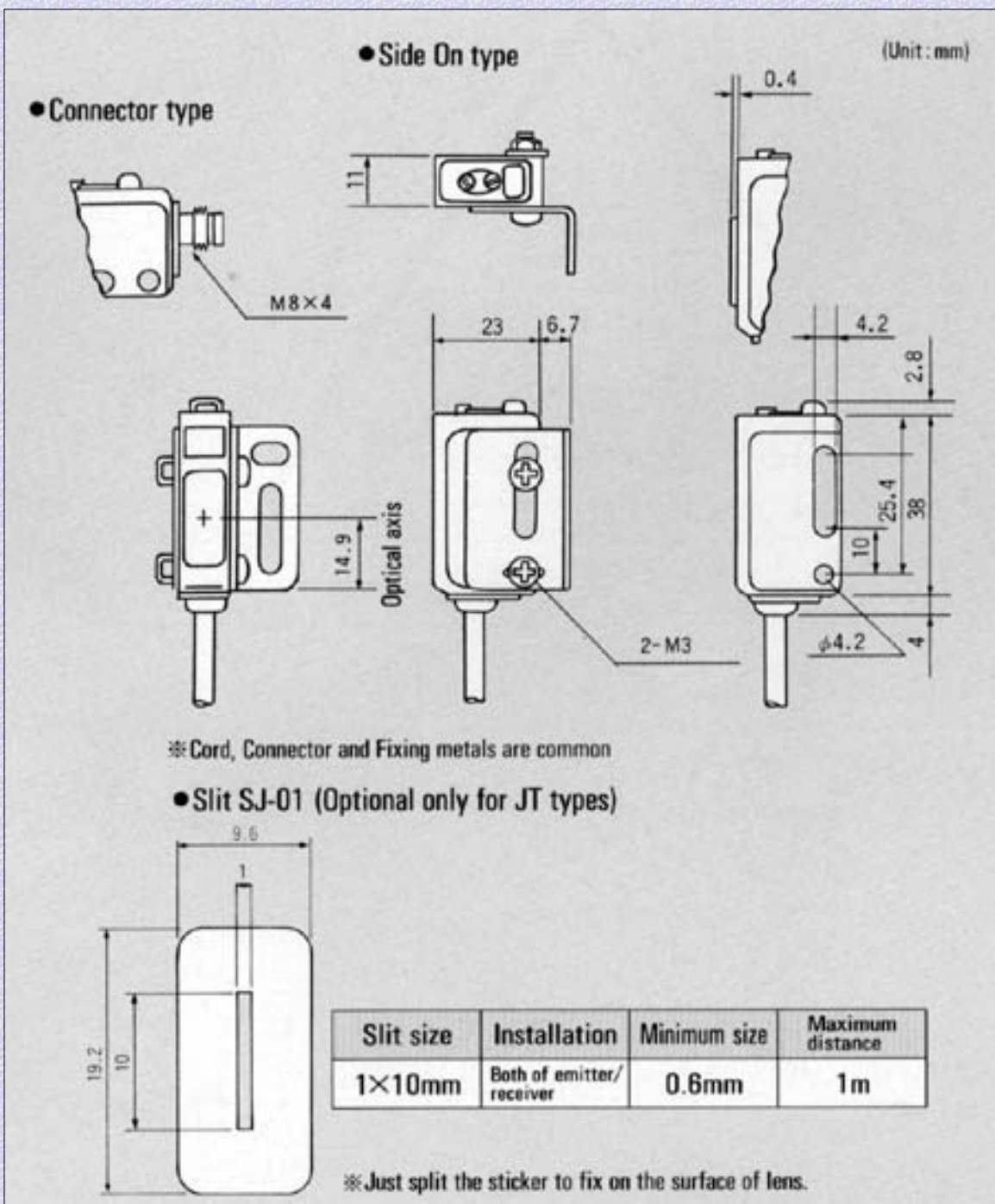


OPTEX MODEL NUMBER

J Series

COMPACT-TYPE PHOTO SENSOR WITH BUILT-IN AMPLIFIER





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OPTEX

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OPTEX MODEL NUMBER

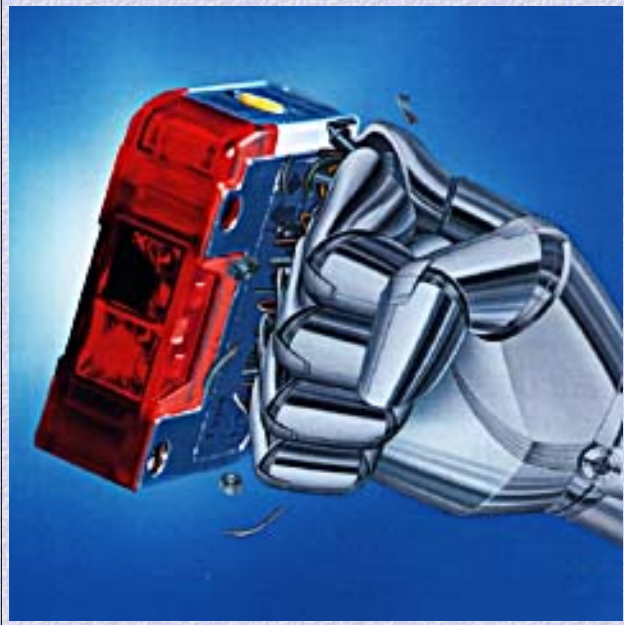
K Series

COMPACT-TYPE PHOTO-ELECTRIC
SENSOR WITH BUILT-IN AMPLIFIER

FEATURES

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No Other Sensor Is As Tough as the Metal-Armed!!

The rigid stainless steel casing protects the sensor from side impacts.

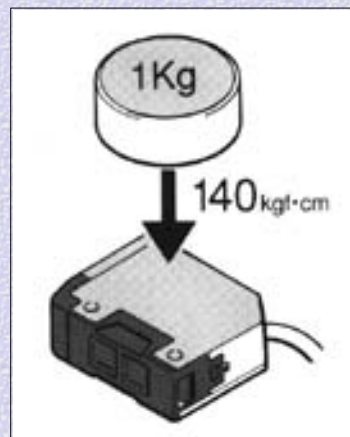
KT-700	Through-Beam Type
KR-250	Retro-Reflection Type
KD-40	Diffused Reflector Type
KD-L09	Fine Spot (Convergent) Type
KR-Q50NW KR-Q150NW	Transparent Type

FEATURES

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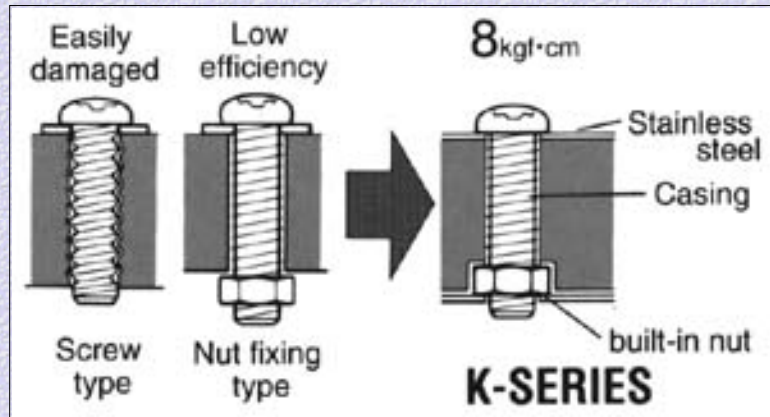
- **Stainless Steel Casing Which Protects the Sensor from Side Impacts**

The stainless steel casing protects the sensor from damage when it is stuck by sharp edges or corners of passing objects.



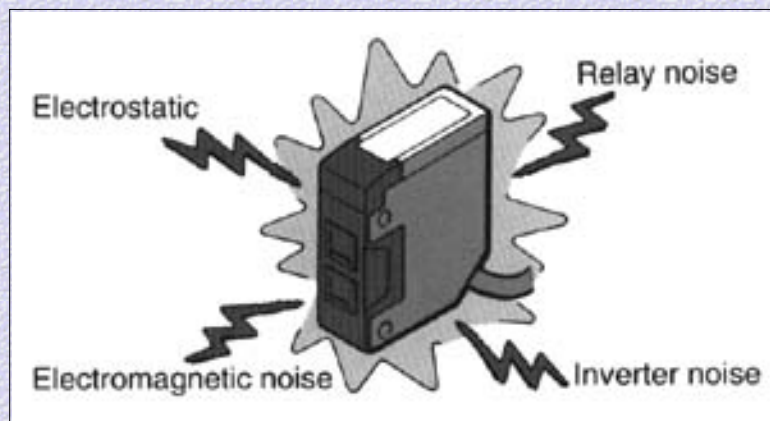
- **Built-In Nuts Which Cannot Be Damaged BY Over-Tightening**

The built-in nuts makes installation easy and efficient, eliminating the problem of thread damage caused by over-tightening.



- **Surpasses the VDE Standard For Electrical Noise Immunity**

The noise resistant circuitry is built in accordance with the strict VDE standard. Further in-house Feilen Noise testing assures high reliability and compliance with international standards.

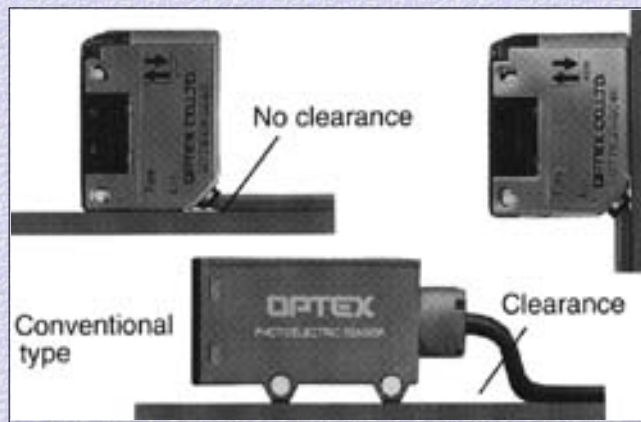


- **Additional Features Include:**

- A multi-rubber stopper prevents the invasion of water, oil, etc.
- Small diameter cable (water-proof, oil, heat, and freeze resistant)
- Sensor-encasing noise-resistant shield
- 3 way wide angle indicator
- A polarizing filter PFK-01 (option) which prevents optical interference between through-beam sensors.
- A slit attachment SK-01 (option) which permits the detection of extremely small objects.

	Slit SK-01 (Emitter+Receiver)	Polarizing Filter PFK-01	Slit + Filter
Detection Distance	1000mm	3000mm	500mm
Minimum Diameter	ø1mm	ø7mm	ø1mm

- **Can Be Mounted in Vertical or Horizontal Position**

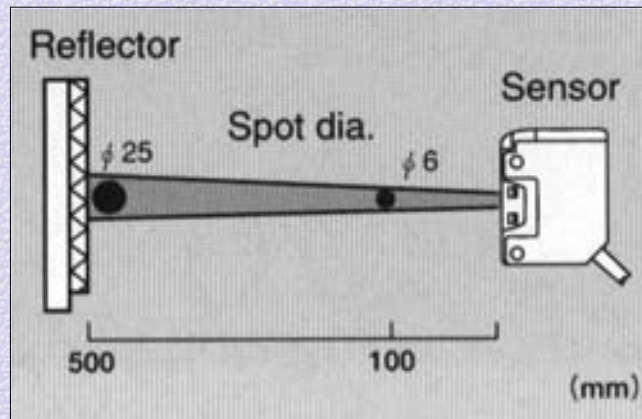


- **The Target Spot Is Clearly Visible Even at a Distance of 400mm**

- **IP67 Protection Allows Use In Slightly Oily and Wash Down Areas**

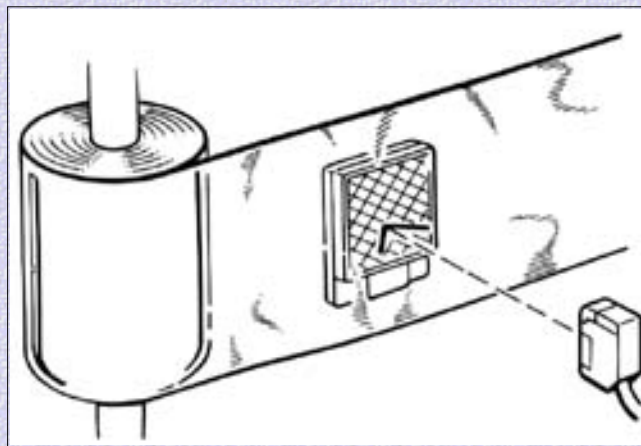
- **Accurate Detection Even of Transparent Materials (KR-Q50NW and KR-Q150NW)**

- Non-protruding Design integrated display system with high intensity LED
- Small reflector mirror (V-42) which is a must in designing products to fit into limited spaces.
- Designed with a long, narrow field of view which enables target detection through narrow gaps.



- **Detection of Transparent Film**

Stable detection even of thin film is a feature of the KR-Q50NW and KR-Q150NW (Thickness 15 μ m). The high precision of the unit makes possible the detection of wrinkled film.



- Type Numbers**

Types	Detecting Distance	LightOn/ DarkOn	Sensitivity Adjustment	Red LED	Test Input	Supply Voltage	Operating Mode	Model Number
Through-Beam	7m	○	-	○	○	DC10 ~30V	NPN PNP	KT-700N KT-700P
Retro-Reflective	2.5m	○	-	○	-		NPN PNP	KR-250N KR-250P
Diffuse Reflective	400mm	○	○	○	-		NPN PNP	KD-40N KD-40P
Convergent	10~90mm	○	○	○	-		NPN PNP	KD-L09N KD-L09P
Transparent Objects	500mm	○	○	○	-		NPN	KR-Q50NW
	1.5m		○	○	-		NPN PNP	KR-Q150NW KR-Q150PW

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K-Series Dimensions](#)

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	Through-Beam	Retro-Reflector	Diffuse Reflection
Cord Type	KT-700N/KT-700P	KR-250N/KR-250P	KD-40N/KD-40P
Connector Type	KT-700CN/KT-700CP	KR-250CN/KR-250CP	KD-40CN/KD-40CP
Detecting Distance	7m	2.5m	400mm ^Y
Light Source	Red LED		
Min. Detecting Object	ø7mm	-	ø40mm

Response Time	1 msec. max.	0.7 msec. max.	
Hysteresis	-	20% Max.	
Sensitivity Adjustment	Not equipped		
Indicator	Red LED		
Control Output	NPN or PNP Open Collector, 100mA Max/30V DC		
Test Input	Equipped	Not Equipped	
Operation Mode	Light On / Dark On switchable by wiring		
Connection	Cable Type: 4-core 2 meter, 3.8 mm diameter / Connector Type: M8 Connector		
Insulation Resistance	20M ohm or more (500V DC)		
Supply Voltage	10-30V DC		
Power Consumption	35mA max.	30mA max.	
Noise Resistance	JIS Standard	C 4525	
	IEC Standard	IEC 1000-4-2,3,4 Level 3	
	In-House Standard	Feilen Test Level 3	
VDE Standard	Level 3		
Ambient Resistance	Ambient Temp / Humidity	-25°C ~ 55°C / 35 ~ 85% RH	
	Ambient Illuminance	Sunlight 20,000 lux / Halogen light 4,000 lux	
	Vibration	10 ~ 55Hz, vibration 1.5mm, X. Y. Z, 2 hours	
	Shock	Approx. 100G (1000m/s ²) X. Y. Z. 3 times	
	Protection	IP-67	
Materials	Cover (SUS304), Case (ABS), Lens (PC), PMMA for Retro type		
Weight (Net)	25g (20g for emitter of through-beam type)	25g	

Y White 90% of 200 x 200mm

	Convergent	Transparent objects	
Cord Type	KD-L09N/KD-L09P	KR-Q50NW	KR-Q150NW/KR-Q150PW
Connector Type	KD-L09CN/KD-L09CP	-	-
Detecting Distance	10 ~ 90m§	500mm	1.5m
Light Source	Red LED		
Min. Detecting Object	ø7mm	-	ø40mm
Response Time	0.7 msec. max.		
Hysteresis	10% Max.	-	-

Sensitivity Adjustment		1 rotation VR
Indicator		Red LED
Control Output		NPN or PNP Open Collector, 100mA Max/30V DC
Test Input		Equipped Not Equipped
Operation Mode		Light On / Dark On switchable by wiring
Connection		Cable Type: 4-core 2 meter, 3.8 mm diameter / Connector Type: M8 Connector
Insulation Resistance		20M ohm or more (500V DC)
Supply Voltage		10-30V DC
Power Consumption		30mA max.
Noise Resistance	JIS Standard	C 4525
	IEC Standard	IEC 1000-4-2,3,4 Level 3
	In-House Standard	Feilen Test Level 3
VDE Standard		Level 3
Ambient Resistance	Ambient Temp / Humidity	-25°C ~ 55°C / 35 ~ 85% RH
	Ambient Illuminance	Sunlight 20,000 lux / Halogen light 4,000 lux
	Vibration	10 ~ 55Hz, vibration 1.5mm, X. Y. Z, 2 hours
	Shock	Approx. 100G (1000m/s ²) X. Y. Z. 3 times
	Protection	IP-67
Materials		Cover (SUS304), Case (ABS), Lens (PC), PMMA for Retro type
Weight (Net)		25g (20g for emitter of through-beam type) 25g

§ White 90% of 100 x 100mm



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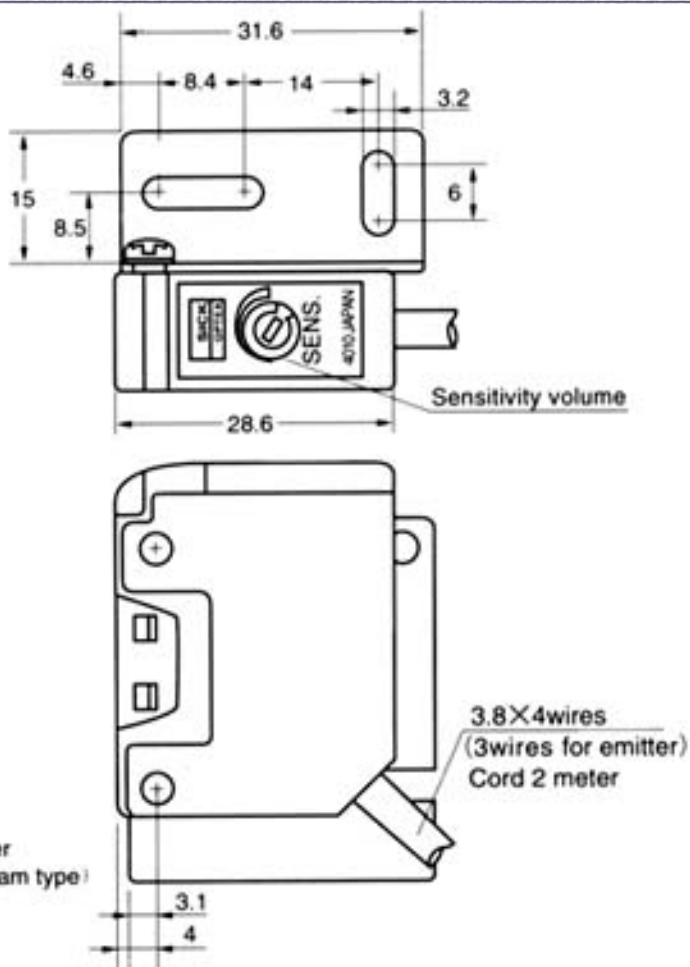
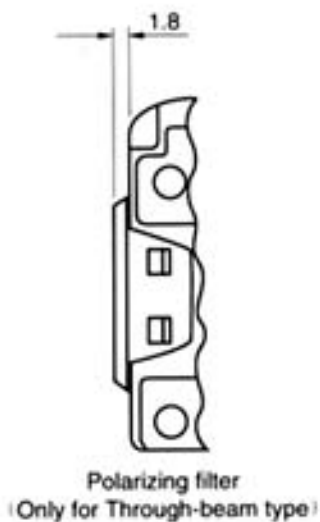
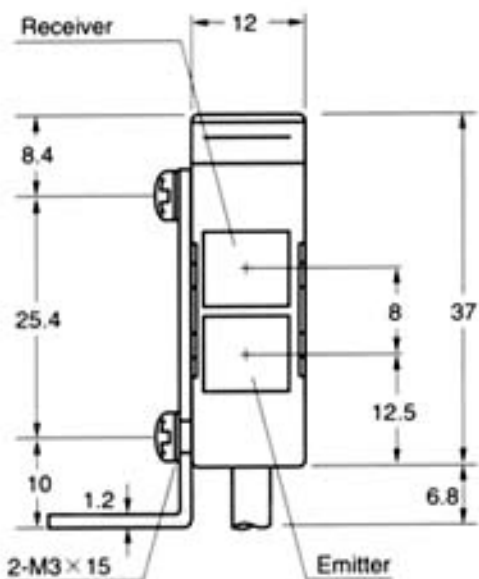
OPTEX MODEL NUMBER

K Series

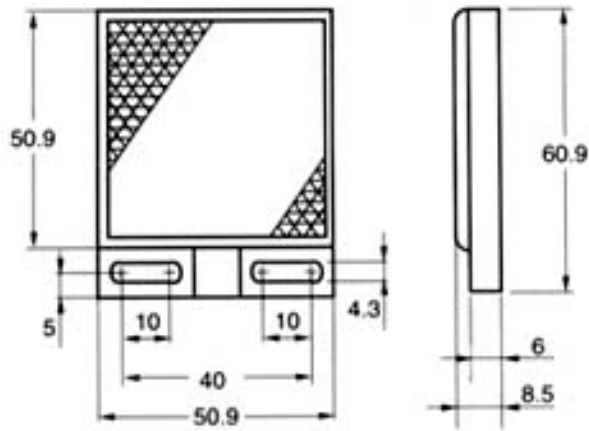
COMPACT-TYPE PHOTO-ELECTRIC
SENSOR WITH BUILT-IN AMPLIFIER

● Sensor

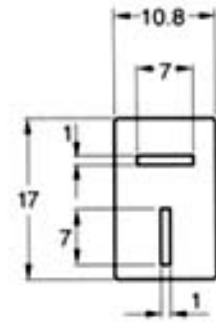
(TYPE:KD-40)



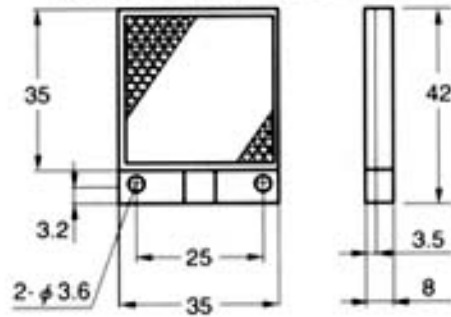
● Reflection mirror V-61



● Slit SK-01 (option)



● Compact type reflection mirror V-42 (option)



(Unit:mm)



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**FIBER-OPTIC
PHOTOELECTRIC SENSOR**

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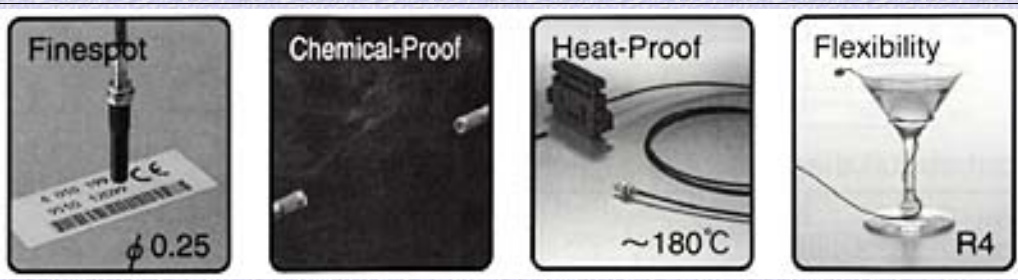
SPECIFICATIONS



Easy Alignment With Visible Beam

When the optical axis is aligned, the orange light changes to red.

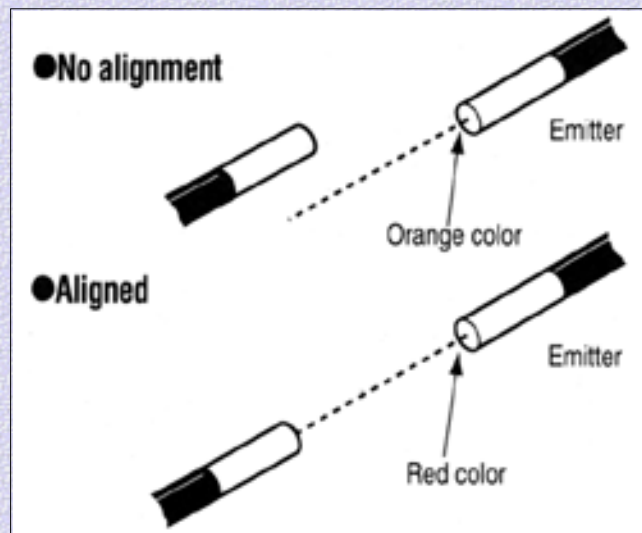
JRF-N	Cord Type, NPN
JRF-P	Cord Type, PNP
JRF-NC	Connector Type, NPN
JRF-PC	Connector Type, PNP



FEATURES

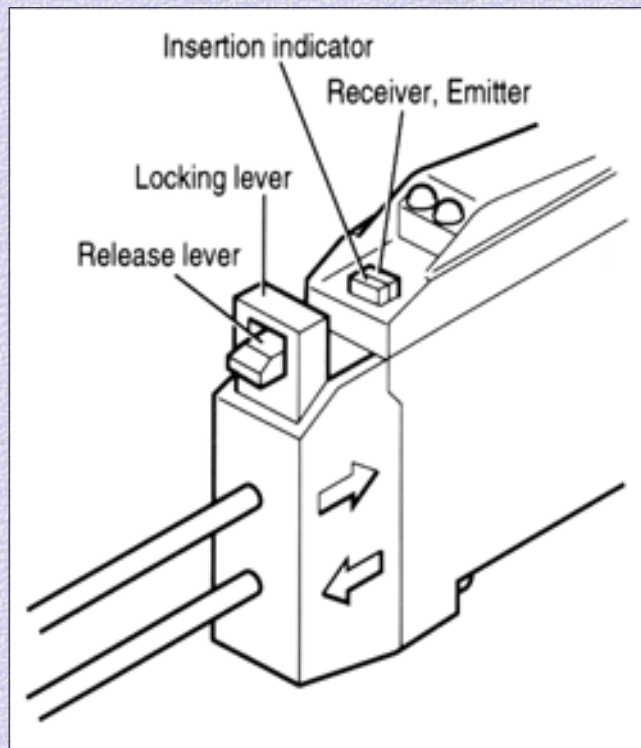
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- **Simply Alignment**
Adjust the optical axis by the color of the light source.



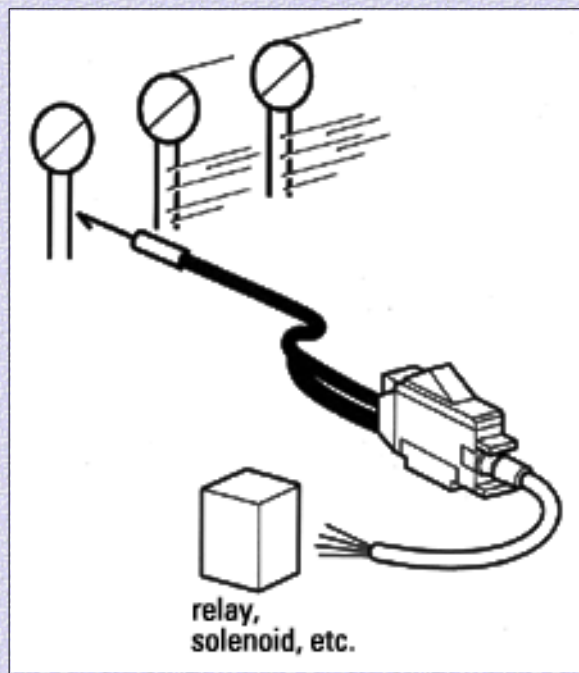
- **Quick Connection of FiberOptics**

Insertion indicator proves the fiberoptic is firmly assembled.



- **OFF Delay Timer**

Adjustable 5-100m sec.



- **Test Input - an external diagnosis**

This function is used as the operational check of the sensor by electrically making an interruption state.

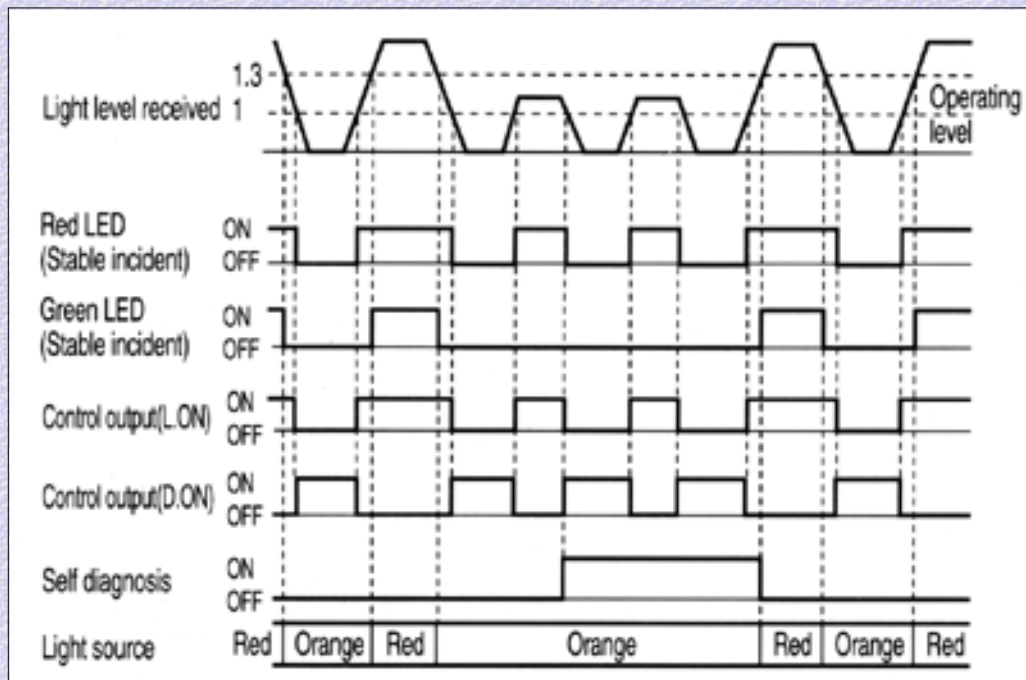
- **WaterProof IP66 [IEC standard]**

- **Two types of Output; NPN or PNP**

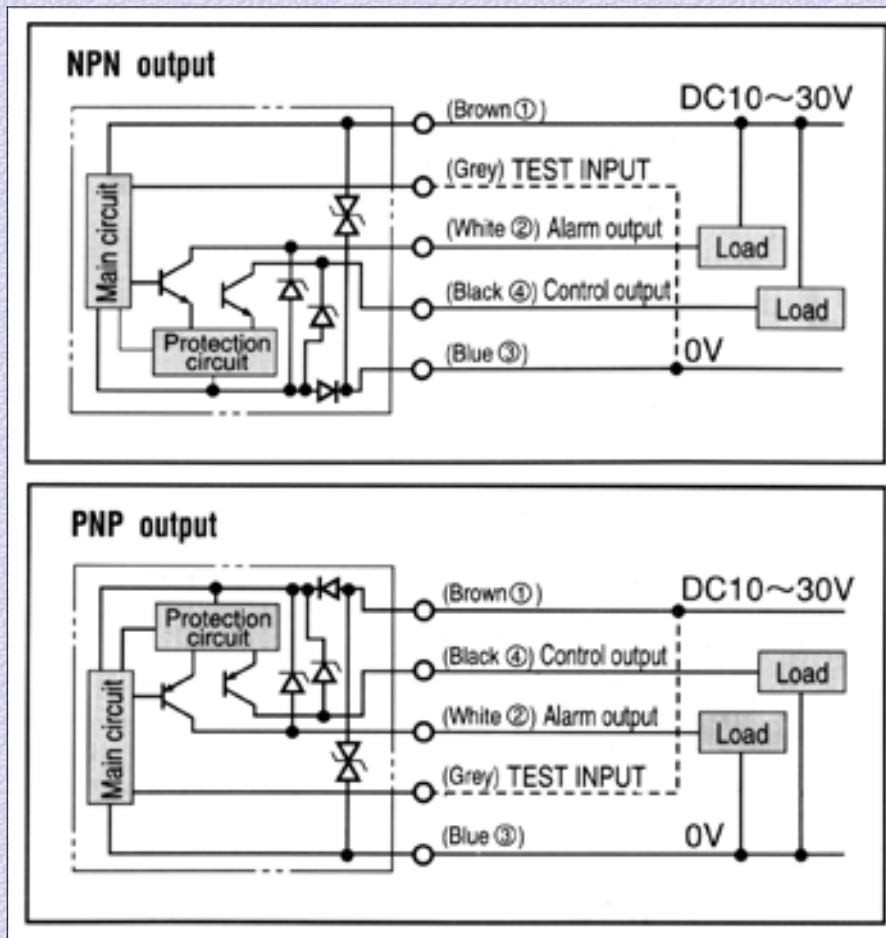
- **Light / Dark ON selectable**

- **Quick DIN rail mounting**

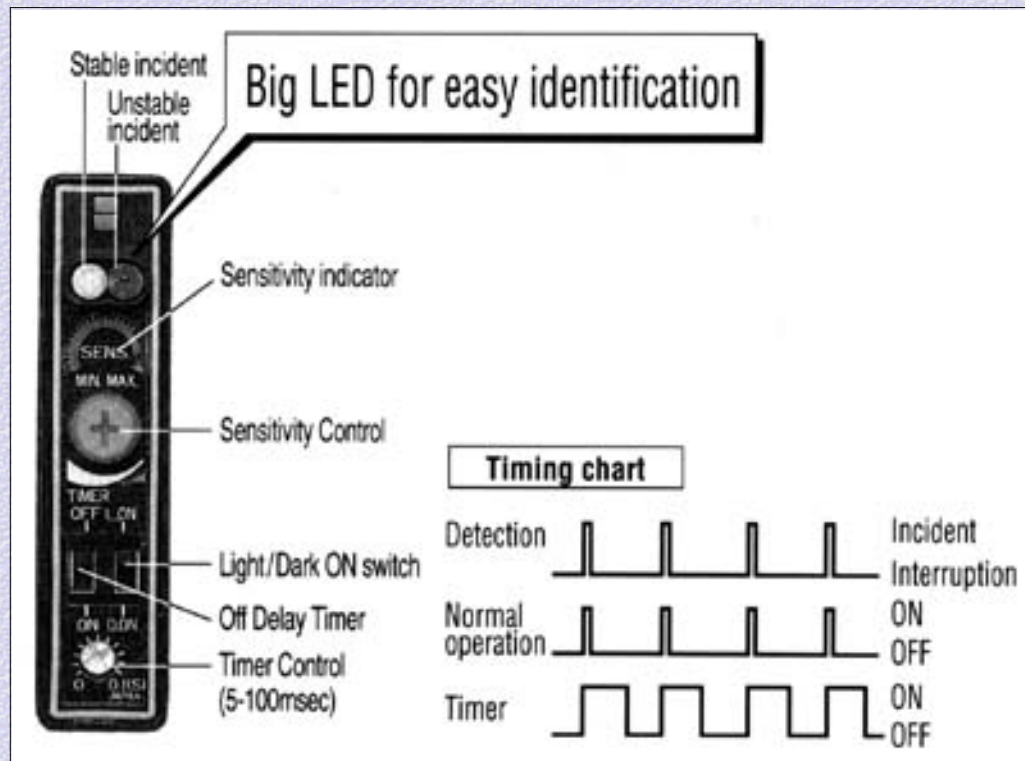
- **Operation Mode**



● **Output Circuit Diagram**



● **Functions**



[Click Here To See The
JRF-Series Dimensions](#)

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Type	JRF-(N,P) (C)
Supply Voltage	DC 10 ~ 30V (10% of ripple inclusive)
Current Consumption	40mA max.
Response Time	350 μ s max.
Hysteresis	10%
Light Source	Red LED
Sensitivity Adjustment	4 Turn Potentiometer
Indicator	Incident Indicator (Red), Stable Incident Indicator (Green)
Control Output	Open Collector max. 100mA/DC30V
Alarm Output	Open Collector max. 100mA/DC30V
Test Input	Available only in cord type
Circuit Protection	Reverse protection, over current protection
Timer Function	OFF delay 5 ~ 100 ms
Ambient Temperature / Humidity	Operating: -25°C ~ 55°C / 35 ~ 85% RH Storage: -40°C ~ 70°C / 35 ~ 95% RH
Ambient Light Immunity	Sunlight: 10,000 lux max. Incandescent Light: 3,000 lux max.
Protection Category, Material	IEC IP 66 Case: polysulfone Cover: PC
Weight [Net]	Approx. 20g (except cord and connector)



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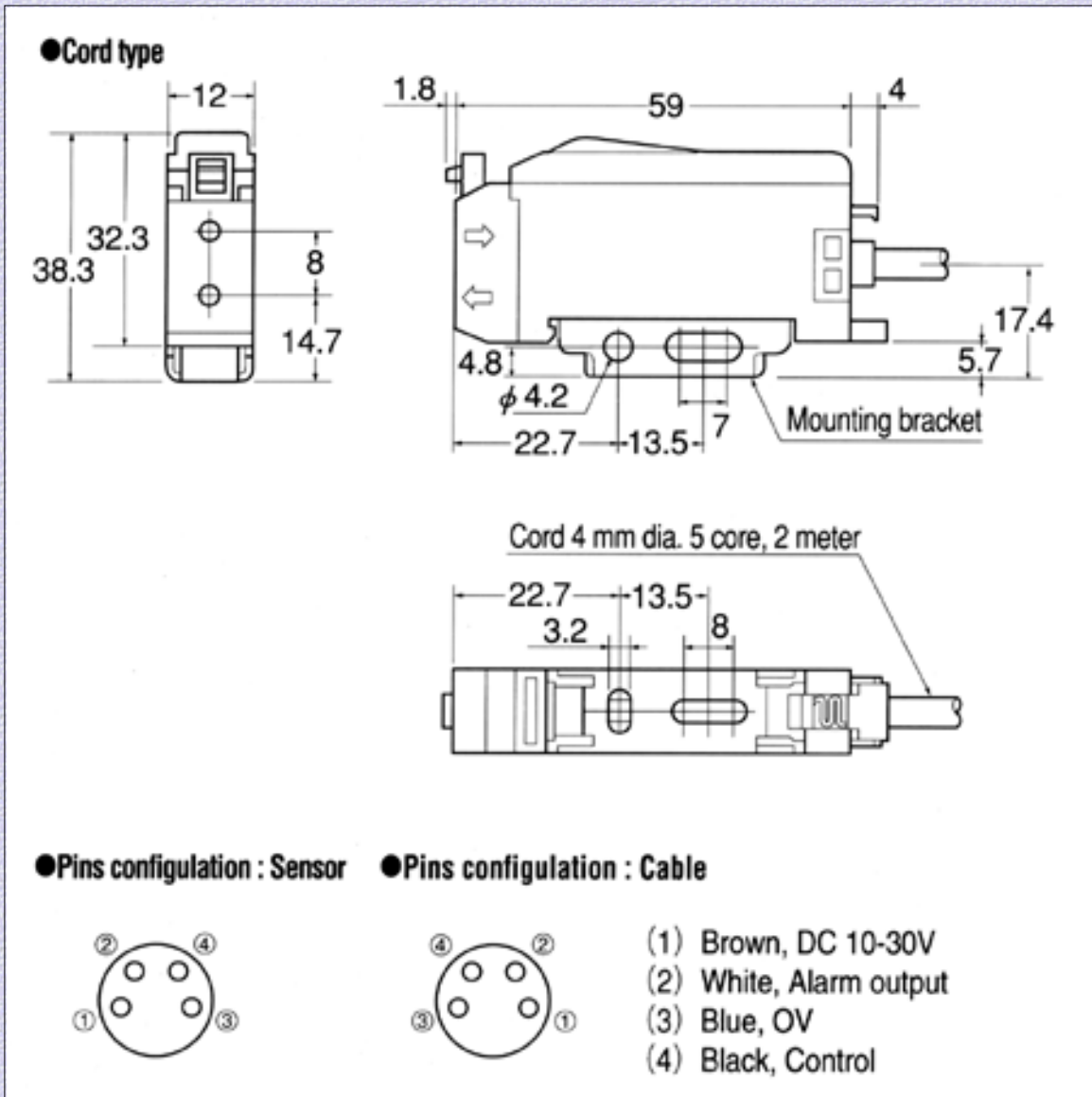
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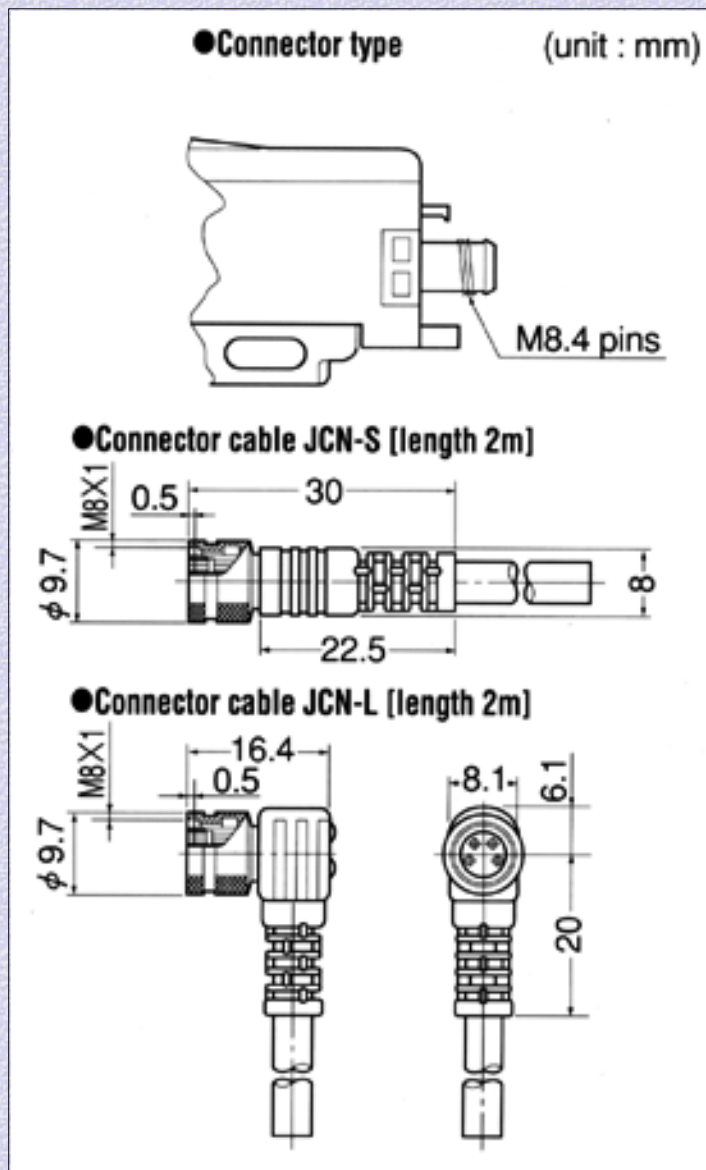


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JRF Series

**FIBER-OPTIC
PHOTOELECTRIC SENSOR**





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JRF-T Series
 FIBER-OPTIC
 PHOTOELECTRIC SENSOR

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Self Teaching Fiber-optic Photoelectric Sensor

Self Adjusting Sensitivity - the Intelligent Photosensor.

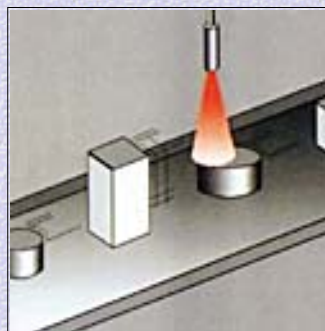
The JRF-T series is capable of accurately operating on high-speed production lines.

FEATURES

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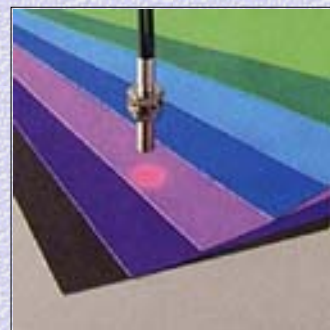
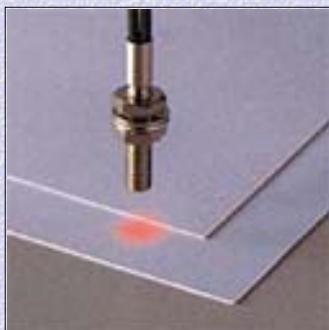
- **INTELLIGENT: Moving Work Pieces**

The sensitivity setting can be automatically performed by depressing the set-up button and holding it while the work pieces pass the sensor. This method of teaching the sensor is convenient when the line cannot be stopped or when the target is in free fall.



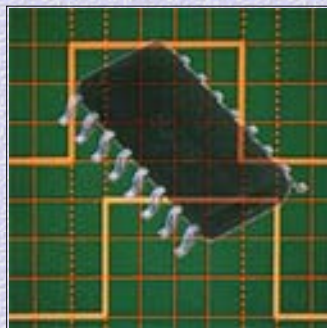
- **ACCURATE: 0.2mm Detection Capability Offers High Resolution**

Level differences as close as 0.2mm can easily be distinguished with the JRF-T series. This high resolution also enables the sensor to distinguish between colors.



● **FAST: 300µS High-Speed Response**

The JRF-T is the world's fastest self-teaching fiber optic sensor and can respond to signals as fast as 300µs. Previously, this fast response was only available in manually adjusted models.



4 Automatic Sensitivity Modes with One Push Button



MAX Sensitivity

Maximum sensitivity is obtained by simply sliding a switch without pushing a button. Slide the switch to the MAX position for long distance scanning. This mode is ideal when there is a large difference between the light and dark signal.

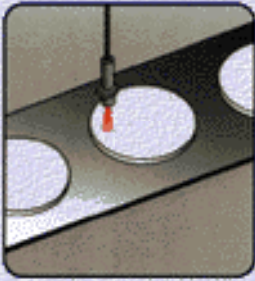
* Response speed is reduced to 600 µs in this mode.



EASY Adjustment with one push of a button

This setting method requires only one push of the set-up button. This mode is best when there is background behind the target object. The sensitivity of the sensor is switched to the minimum difference possible and allows detection of very fine differences.

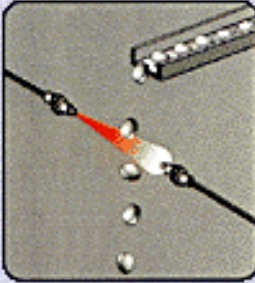
* The alarm output should not be used in this mode.



Precision Adjustment

In this mode, the set-up button is depressed twice. This is the setting which automatically sets the detection point midway between the light and dark target values. This method is best for position, level and mark detection.

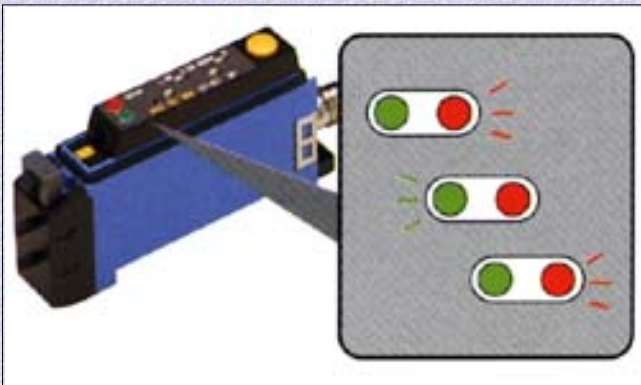
* It does not matter if the light or dark signal is set first.



In Motion Adjustment

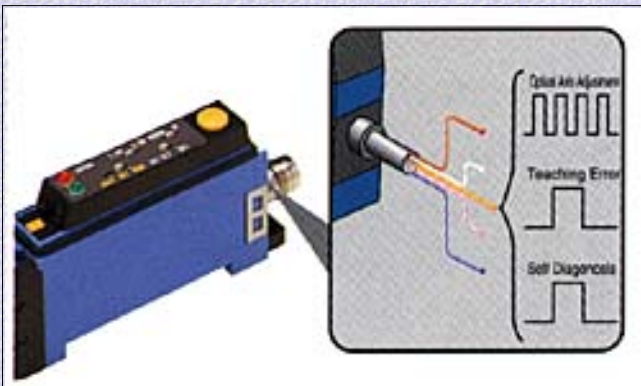
This mode results in the most accurate setting for moving objects. Its simple set-up allows accurate sensitivity setting without stopping the production.

Teaching Error Sign



Sensitivity ERROR Signal

This new display uses both a green and red LED which blink alternately when an error set-up has been made. This display prevents detection errors and false signals.



Alarm Output Function Independent of the Mode

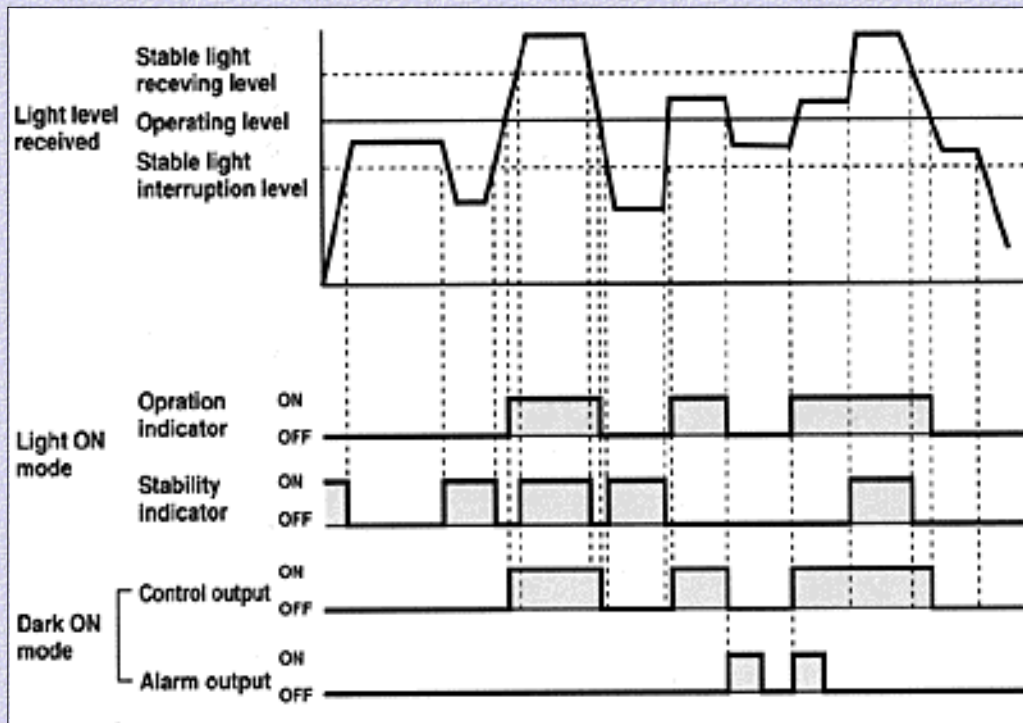
Conventional alarm outputs employ a self-diagnosis circuit which produces an output when the light signal becomes weak. In addition to this signal, the JRF-T also incorporates a function which produces an output when a sensitivity teaching error occurs.

Fiber-Optics

[Click Here To See The
Fiber Optics Innovation](#)

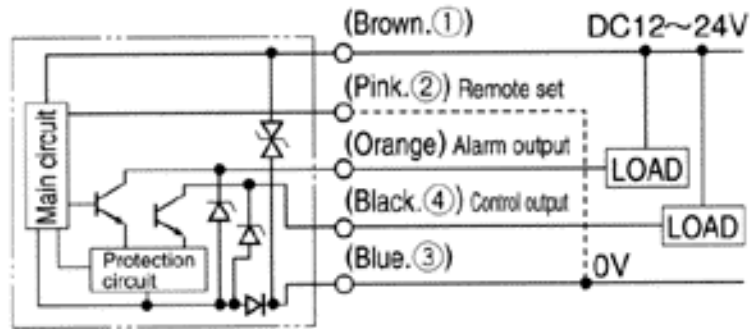
[Click Here To See The
Fiber Optics Features](#)

Alarm Output

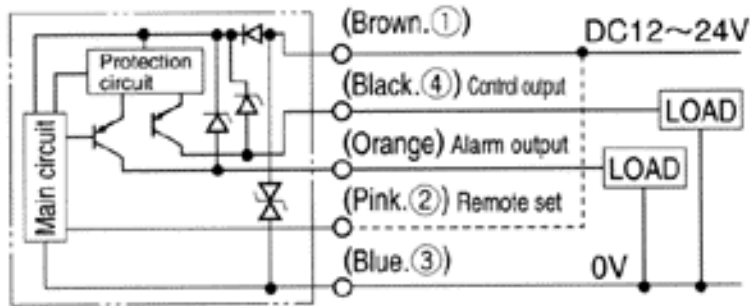


Circuit

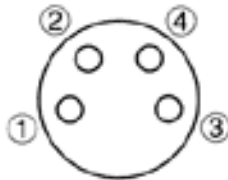
NPN output



PNP output



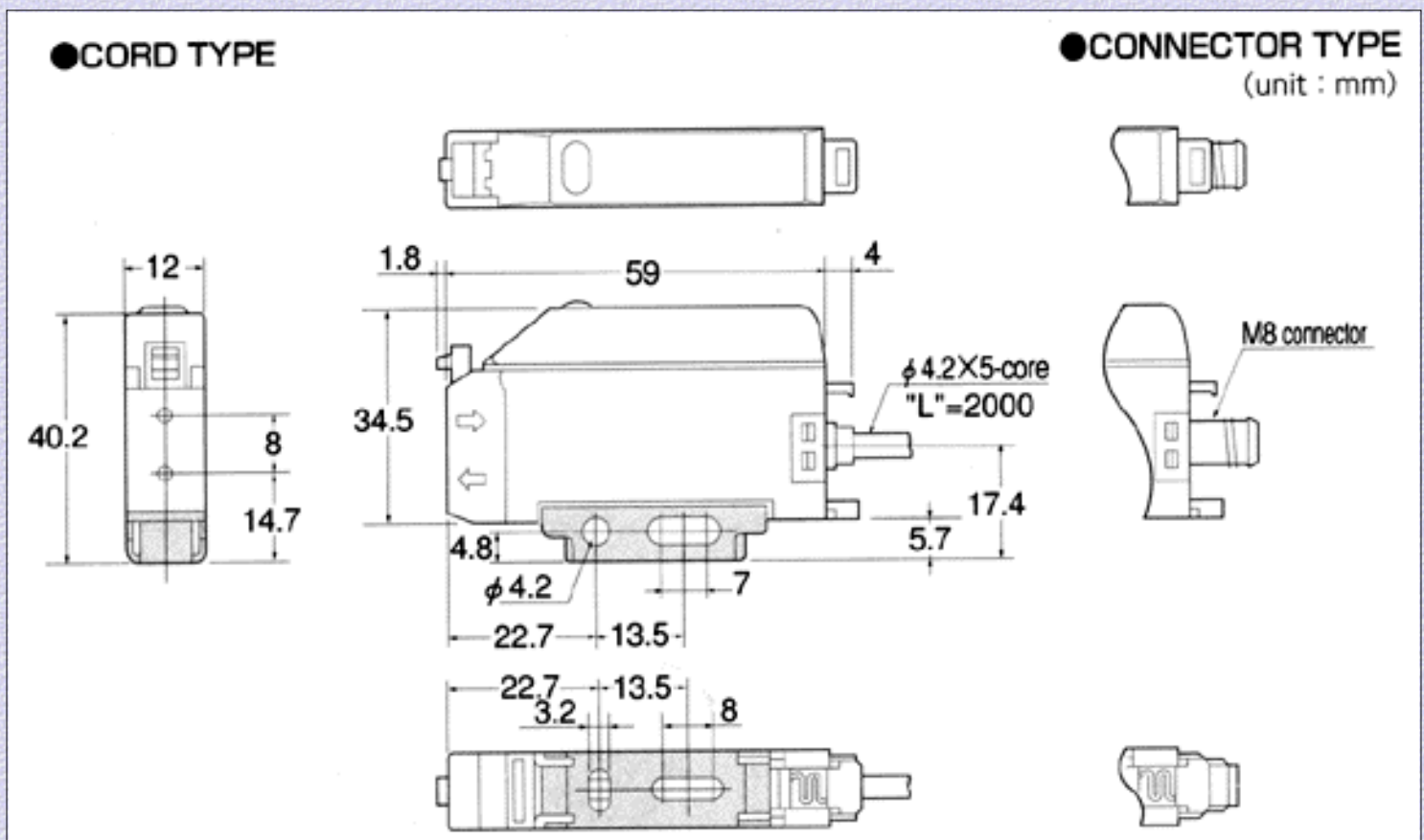
Pins configuration



- Pin No,
 ① 12~24VDC
 ② Remote set
 ③ 0V
 ④ Control output

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Model	CORD TYPE	CONNECTOR TYPE
Type	JRF-TN, JRF-TP	JRF-TCN, JRF-TCP
Light Source	Red LED (60nm)	
Response time	300 μ s/600 μ s changeable	
Sensitivity Adjustment	Push Button Sensitivity Teaching Mode	
Indicator	Operation (Red)/Stability (Green) Indicator	
Control output	NPN/PNP Open Collector Max. 100mA/DC30V	
Alarm output	NPN/PNP Open Collector Max 30mA/DC30V	-
Timer function	OFF delay fixed at 40ms	
Remote set function	Equipped	
Supply voltage	12~24V AC \pm 10% of ripple	
Power consumption	50mA Max.	
Noise resistance	JIS standard	C4525 500V
	IEC standard	IEC801-24 LEVEL4, IEC-801-3, LEVEL3
Circuit protection	Reverse protection, Over current protection	
Ambient	Temp/humid	-25~55°C/35~85% RH
	Illuminance	Sunlight. 10,000 lux Max, Halogen light: 3,000 lux Max.

resistance	Vibration	10~55Hz Vibration 1.5mm, X, Y, Z, 3times	
	Shock	Approx 50G (500m/s) X, Y, Z, 3times	
	Protection	IP66(IEC 144)	
Materials	Case: ABS Cover: PC (Glass fiber included)		
Weight	Approx 75g	Approx 35g	

* Specifications is subject to change without notice

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OPTEX MODEL NUMBER
JRF-T Series
 FIBER-OPTIC
 PHOTOELECTRIC SENSOR



Premia Golden

The high permaability of the fiber cable greatly enhances its pliability and its capability to be wound. Plus, the cable can withstand temperature conditions from -40° to 85°C. (Conventional models can withstand conditions from -40° to 70°C.)



Flexibility

A bend radius of 4mm is possible even with M4 through-beam types and M6 reflection types. this greater flexibility allows the sensors to be used in such application such as robotic arms.



Heat Resistance

We offer two types, a 100° and 180°C type, for our heat-resistance units which can be freely cut. Moreover, the 180°C type allows 350mm long-distance detection.



Chemical-Resistance

We protect the fiber with fluorine resin, allowing use in chemical environments. The fluorine resin employs PFA with a high degree of purity.



Long Distance

The diameter of the fiber core has been increased by 1.5 times over conventional models to increase the detection range.



Minute Spot

Minute spots as small as ϕ 0.25mm can be detected using the sensor with the NF-DT01 model fiber. Parts as small as 0.01mm can also be detected.



Side View

For times when there is no depth. The back corners have been rounded, making it easy to attach with a screw and simple to adjust the optical axis.



Liquid Surface Detection

Combined with the JRF-T, milky liquids can also ge detected. Since the sensor has a 120°C heat-resistant fluorine coating, it can be used in a wide range of liquids such as water, oil and chemicals. Plus, it can be used in conditions of fog and steam.

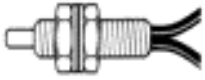

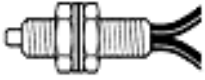

















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Reflection Type


	Form	Sensing-Distance Unit:mm	Feature	Model
Standard		70(ϕ 0.015) 50(ϕ 0.015) 70(ϕ 0.02)	M6 COAXIAL 1	NF-DB01
		70(ϕ 0.015) 50(ϕ 0.015) 70(ϕ 0.02)	M6 COAXIAL WITH SLEEVE	NF-DB02
		70(ϕ 0.015) 50(ϕ 0.015) 70(ϕ 0.02)	M6 COAXIAL 2	NF-DB03
		70(ϕ 0.015) 50(ϕ 0.015) 70(ϕ 0.02)	M4/M6 COAXIAL	NF-DB04
Small head		70(ϕ 0.015) 50(ϕ 0.015) 70(ϕ 0.02)	M4 LONG-DISTANCE	NF-DM01
		25(ϕ 0.015) 18(ϕ 0.015) 25(ϕ 0.02)	M4 STANDARD	NF-DM02
		20(ϕ 0.015) 14(ϕ 0.015) 20(ϕ 0.02)	M4 SLEEVE	NF-DM03
Fine head		25(ϕ 0.015) 18(ϕ 0.015) 25(ϕ 0.02)	M3 COAXIAL	NF-DT01
		5(ϕ 0.015) 3(ϕ 0.015) 5(ϕ 0.02)	M3 SLEEVE	NF-DT02

		20(ϕ 0.015) 14(ϕ 0.015) 20(ϕ 0.02)	ϕ 2.5 CYLINDRICAL	NF-DT03
High-Frex		70(ϕ 0.015) 50(ϕ 0.015) 70(ϕ 0.02)	M6 MULTICORE	NF-DR01
		9(ϕ 0.015) 6(ϕ 0.015) 8(ϕ 0.02)	M3 TWO FINE CORE	NF-DR02
		20(ϕ 0.015) 14(ϕ 0.015) 20(ϕ 0.02)	ϕ 3 FOUR FINE CORE	NF-DR03
		9(ϕ 0.015) 6(ϕ 0.015) 8(ϕ 0.02)	ϕ 1.5 FOUR CORE	NF-DR04
		5(ϕ 0.015) 3(ϕ 0.015) 5(ϕ 0.02)	ϕ 3 SLEEVE TWO CORE	NF-DR05
	Heat-proof		100(ϕ 0.015) 70(ϕ 0.015) 100(ϕ 0.02)	HEAT RESISTANCE 180°C
Side view		40(ϕ 0.015) 30(ϕ 0.015) 40(ϕ 0.02)	STANDARD	NF-DV01
Liquid level detection			ϕ 6 WITH FLUORORESIN	NF-DF01


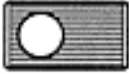
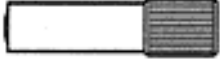
Reflection Type

	Form	Sensing-Distance Unit:mm	Feature	Model
--	------	-----------------------------	---------	-------

Standard		400(ø0.5) 280(ø0.5) 400(ø0.5)	M4 LONG DISTANCE	NF-TB01
		200(ø0.2) 150(ø0.2) 200(ø0.2)	M4 STANDARD	NF-TB02
		200(ø0.2) 150(ø0.2) 200(ø0.2)	M4 SLEEVE	NF-TB03
		70(ø0.1) 50(ø0.1) 70(ø0.2)	M4/M6	NF-TB04
Micro head		200(ø0.2) 150(ø0.2) 200(ø0.2)	M3 LONG-DISTANCE	NF-TM01
		70(ø0.1) 50(ø0.1) 70(ø0.2)	M3 STANDARD	NF-TM02
		70(ø0.1) 50(ø0.1) 70(ø0.2)	ø1.5 CYLINDRICAL	NF-TM03
Flexible		180(ø0.2) 130(ø0.2) 180(ø0.2)	M4 MULTICORE	NF-TR01
		55(ø0.1) 40(ø0.1) 50(ø0.2)	M3 FOUR FINE CORES	NF-TR02
		55(ø0.1) 40(ø0.1) 50(ø0.2)	ø1.5 FOUR FINE CORES	NF-TR03
Heat Proof		180(ø0.2) 130(ø0.2) 180(ø0.2)	M4 HEAT-RESISTANCE 100°C	NF-TH01
Heat-proof		350(ø0.5) 240(ø0.5) 350(ø0.5)	M4 HEAT RESISTANCE 180°C	NF-TH02
Chemical proof		1000(ø0.5) 700(ø0.5) 1000(ø0.8)	ø6 WITH FLUORORESIN	NF-TY01

Side View		40(ϕ 0.2) 30(ϕ 0.2) 40(ϕ 0.2)	FINE	NF-TV02
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Attachment

	Form	Sensing Distance	Applicable Fiber Unit	Model
Long-Distance		MAX 8times Longer	NF-TB01, TB02, TR01, TH01	NF-TA01
Side view		MAX 1.5times Longer	NF-TB02, TB02, TR01, TH01	NF-TA02
Fine spot		0.4mm at 6mm \pm 1mm	NF-DT01	NF-DA01



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R Series

SEPARATE TYPE PHOTOELECTRIC SENSOR

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Separate Type Photoelectric Sensor

Tiny sensor heads for space saving

R series amplifiers with its "MARKING MODE" provide identification even of white substances.

Amplifier	RSA-N	
Sensor Head	RT-1500	RS-20R
	RT-F300	RS-16G
	RD-150	RM-16R
	RD-F50	RM-16G

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**Ideal for OEM application in need of space saving.
Also is a marking function of RS-20R and RS-16G.**

- **CE conforming, world's first for this sort of Separate Types.**

R series amplifiers designed in CE conforming provide tough-to-noise performance required by OEM specifications.

- **Fastest 0.2ms response.**

A fastest response among Separate Type sensors with its Marking Mode.

- **IP-66 of Sensor heads.**

The sensor heads are waterproofed IP-66, being able to use a tougher environment.

- **Variety of Connector Types.**

Connector types are ready for plug-in specification. PNP output applies to add models.

- **8 types of sensor heads shaped in 3.2mm thin size.**
Green LED is applicable for marking.

Sensor Head	Type	Detecting distance	Operation mode	Light source
Diffuse focused (Red)	RS-20R	20±2mm	Normal/Mark	Red LED
Diffuse mark (Red)	RM-16R	16±2mm	Normal/Mark	Red LED
Diffuse focused (Green)	RS-16G	16±1mm	Mark	Green LED
Diffuse mark (Green)	RM-16G	16±1mm	Mark	Green LED
Through beam (Long)	RT-1500	1.5mm	Normal	Red LED
Through beam (Flat)	RT-F300	300mm	Normal	Red LED
Diffuse reflection (Long)	RD-150	150mm	Normal	Red LED
Diffuse reflection (Flat)	RD-F50	50mm	Normal	Red LED

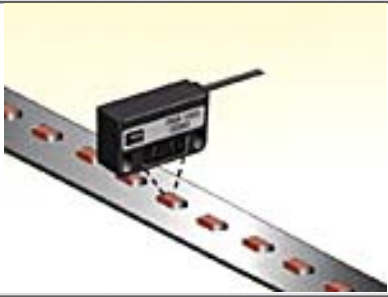
Amplifier	Type	Connection	Operation mode	Supply voltage
Cable type	RSA-N	Cable length 2m	Normal/Mark	DC10~30V
	RSA-P		Normal/Mark	DC10~30V
Connector type	RSA-CN	M8 Connector	Normal/Mark	DC10~30V
	RSA-CP		Normal/Mark	DC10~30V

APPLICATIONS



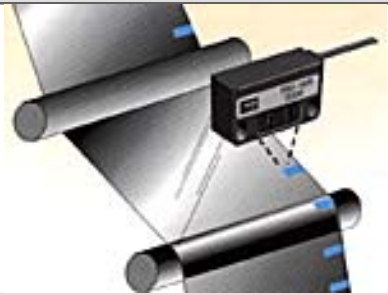
Adhesive control RS-20R

In the mark mode, the RS-20R detect even subtle colors. This can promptly notify operators when adhesive has run out.



Surface identification of chip components/RM-16G

The RM-16G can give subtle color discrimination that go undetected with apply the conventional MARK SENSORS. Both red and green LEDs are available so you would apply the sensor to your color schemes.



Packing mark detection/RM-16R

In the mark mode, the RM-16R offers a 0.2ms response speed, excellent for use on high-speed lines as Packing Machines.



IC mark detection/RM-16R

The RM-16R has a 1x4mm slit spot. It stably detects pattern changes such as prints on IC.

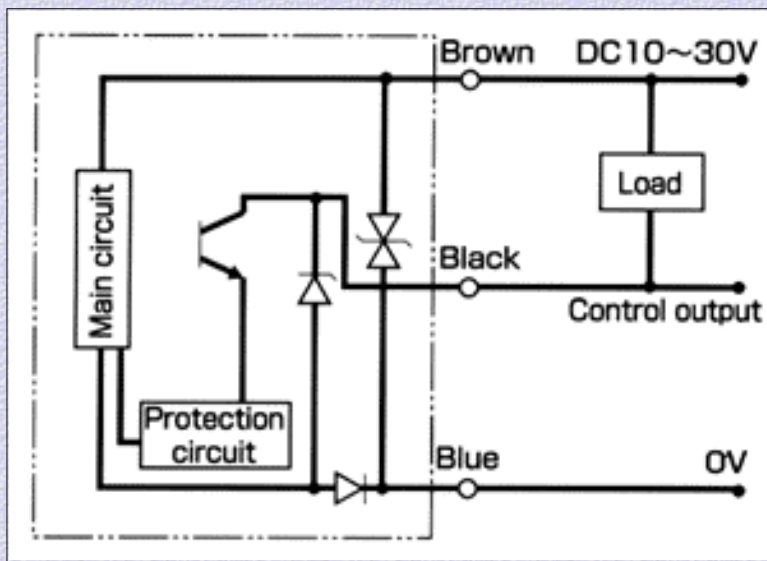


Wafer cassette detection/RD-F50

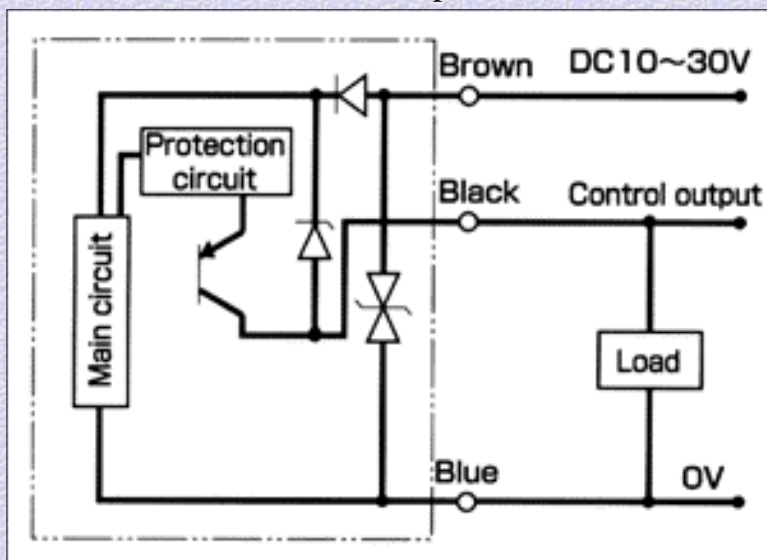
Just because of 3.2mm thin, the RD-F50 can be installed practically in any tight spot, where conventional sensors will suffer from space problems.

CIRCUIT DIAGRAM / LOCATION OF SWITCHES / SENSITIVITY ADJUSTMENT

NPN Output

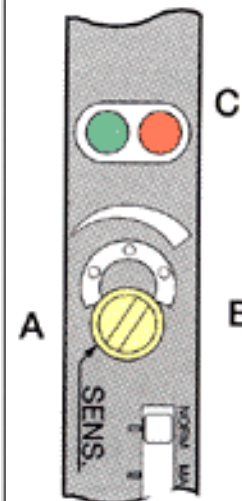


PNP Output



Sensitivity Adjustment

1. Set the detectable object at the detection position and turn the sensitivity adjuster slowly from MIN toward MAX until the Operation Indicator lights up. Call it position A.
2. Remove the detectable object and turn the sensitivity adjuster from MAX toward MIN position where the Operation Indicator is extinguished. Call it position B.
3. Point C, midway between A and B, is the optimum Sensitivity Position



Other Precautions

- **Other Precautions**

- Wiring must be done after turning off the power.
- Verify voltage fluctuation so that it does not exceed the rated value.
- When a switching regulator is to be used with a power supply, be sure to ground the Frame Ground Terminal.
- Do not use the R series outdoors, or in a place where extraneous light can enter the light receiving surface directly
- Do not use the R series in a transient State at power on. (about 100 ms)
- Be careful not to install the R series at following locations, as it may otherwise malfunction. Where a lot of dust, vapor, or the like is present. Where corrosive gas is produced. Where water, oil or the like flies directly onto the R series.
- Do not run amplifier cables near a high-voltage lines or put them together in the same raceway. this warning should be strictly observed to prevent malfunctions cause by inductive interference.

INSTALLATION

- **Amplifier Unit**

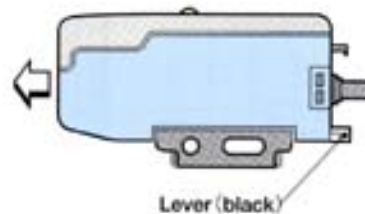
Assembling

1. Latch the front on DIN rail or bracket.
2. Push the tail down until there is a distinct snap.



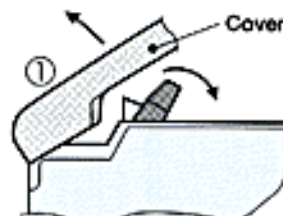
Removing

1. Pull of the lever (black) of the tail by screwdriver, or push the amplifier unit toward and left the front.

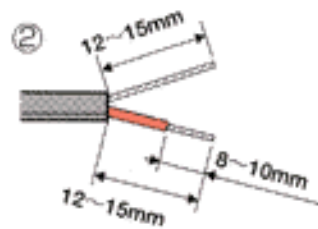


- **Sensor Head**

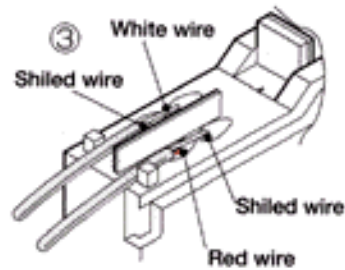
1. Open a cover and pull up the Locking Lever.



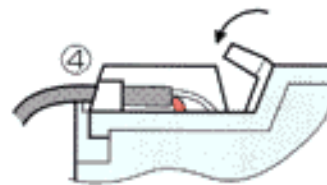
2. Process the cable end as shown.



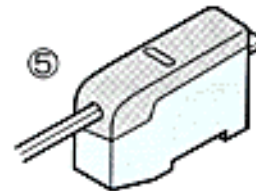
3. Put the cables into the amplifier insertion Holes as shown.



4. Bring down the Locking Lever.



5. Put on the cover.



DIMENSIONS

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Click on the Model You Would Like To See Dimensions For:

[RSA-N / RSA-P](#)
[RSA-CN / RSA-CP](#)
[RT-1500](#)
[RT-F300](#)
[RD-F50](#)

[RD-150](#)
[RS-20R / RS-16G / RM-16R / RM-16G](#)
[JSN-S](#)
[JCN-L](#)

SPECIFICATIONS

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● Sensor Head

	Diffuse focused (Red)	Diffuse mark (Red)	Diffuse focused (Green)	Diffuse mark (Green)
Type	RS-20R	RM-16R	RS-16G	RM-16G
Detecting distance	20mm±2mm(Normal mode) 16mm±2mm(Mark mode)	16mm±2mm	16mm±1mm	16mm±1mm

Spot size	ø1mm(20mm)	1x4mm(16mm)	ø1mm(16mm)	1x4mm(16mm)
Standard detecting object	-			
Hystersis	20%	-	20%	-
Light source	Red LED		Green LED	
Ambient temp/humidity	-25°C~55°C / 35~85%RH			
Ambient illuminance	Sunlight: 10000lx Halogen: 3000lx			
Protection category	IP-66			
Shock resistance	50G (X, Y, Z 3times each)			
Vibration resistance	10~55Mz (Multiple amplitude 1.5mm X, Y, Z 2hours each)			

- Sensor Head**

	Through beam (Long)	Through beam (Flat)	Diffuse reflection (Long)	Diffuse reflection (Flat)
Type	RT-1500	RT-F300	RD-150	RD-F50
Detecting distance	1500mm	300mm	150mm	50mm
Spot size	-			
Standard detecting object	ø5mm opaque object	ø2.5mm opaque object	-	
Hystersis	-		20%	30%
Light source	Red LED			
Ambient temp/humidity	-25°C~55°C / 35~85%RH			
Ambient illuminance	Sunlight: 10000lx Halogen: 3000lx			
Protection category	IP-66	IP-50	IP-66	IP-50
Shock resistance	50G (X, Y, Z 3times each)			
Vibration resistance	10~55Mz (Multiple amplitude 1.5mm X, Y, Z 2hours each)			

- Amplifier**


	Cable type	Connector type
Type	RSA-N/RSA-P	RSA-CN/RSA-CP

Supply voltage	DC10~30V	
Current consumption	35mA	
Response time	Normal mode: 500 μ s Mark mode: 200 μ s	
Timer Function	OFF delay fixed at 40ms	
Control output	NPN or PNP Open collector output (max DC30V/100mA)	
Operation mode	Normal mode/Mark mode	
Circuit protection	Reverse protection, over current protection	
Ambient temp/humidity	-25°C~55°C / 35~85%RH	
Protection category	IP-40	
Connection	Cable length 2m	M8 connector

* Specifications are subject to change without prior notice for improvement.

● **Option**

Model Number	Features
JCN-S	Straight M8 connector cable 2m
JCN-L	L-shaped M8 connector cable 2m
BL-130S-SK	Slits for RT-1500 (Width 0.5mm, 1.0mm, 2.0mm endlesed together in the packing box)

 Home Page	Passive Infrared Outdoor Sensors Passive Infrared Indoor Sensors	Photoelectric Beams Control Panels	Vision Control Panels Automatic Door Access Control	Home and Office Automation Misc. / Accessories	New Products Factory Automation	About Optex Locate A Sales Rep
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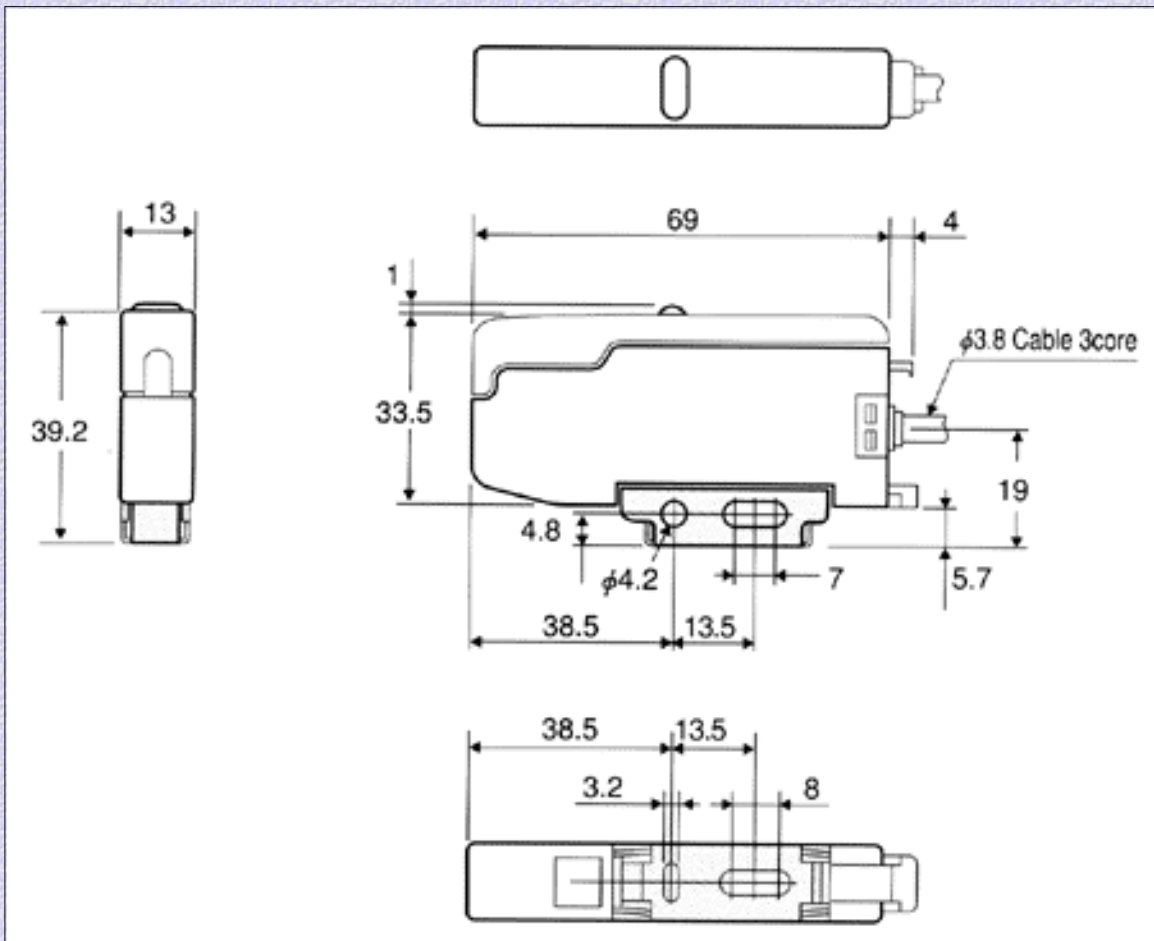
OPTEX MODEL NUMBER

R Series

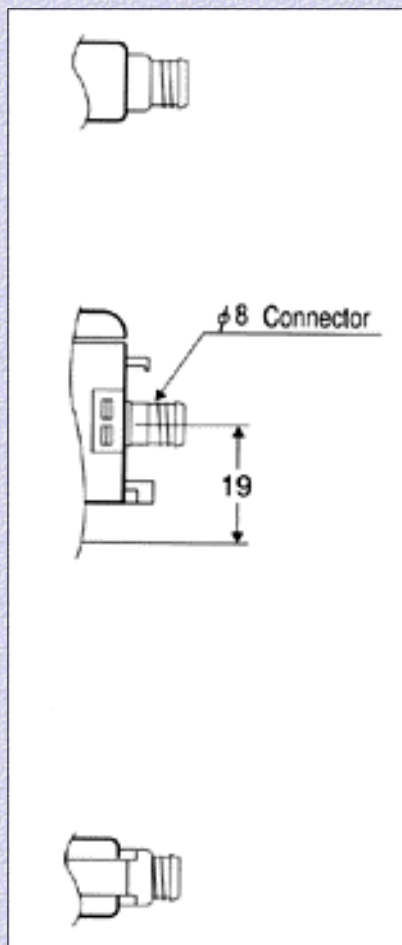
SEPARATE TYPE
PHOTOELECTRIC SENSOR

Amplifier

RSA-N / RSA-P



RSA-CN / RSA-CP



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Spec Sheet**



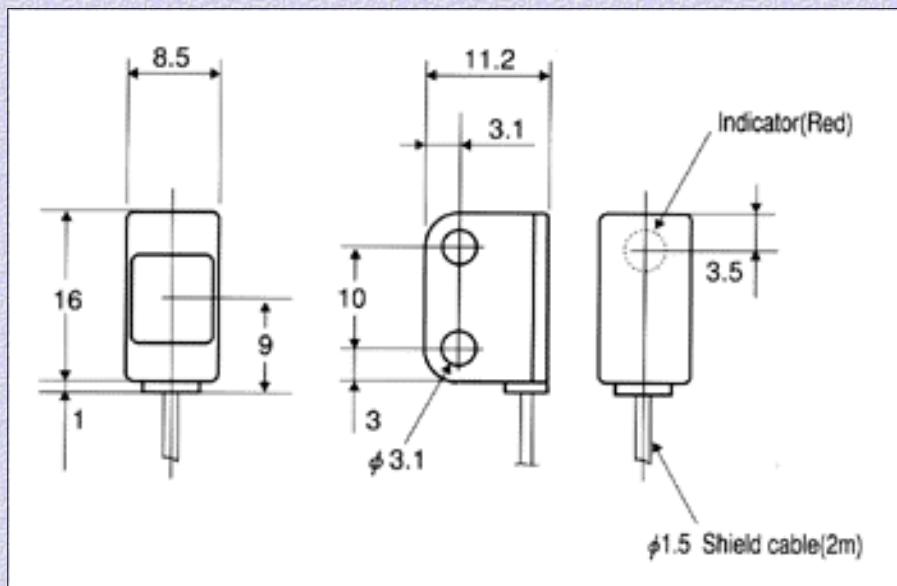
OPTEX MODEL NUMBER

R Series

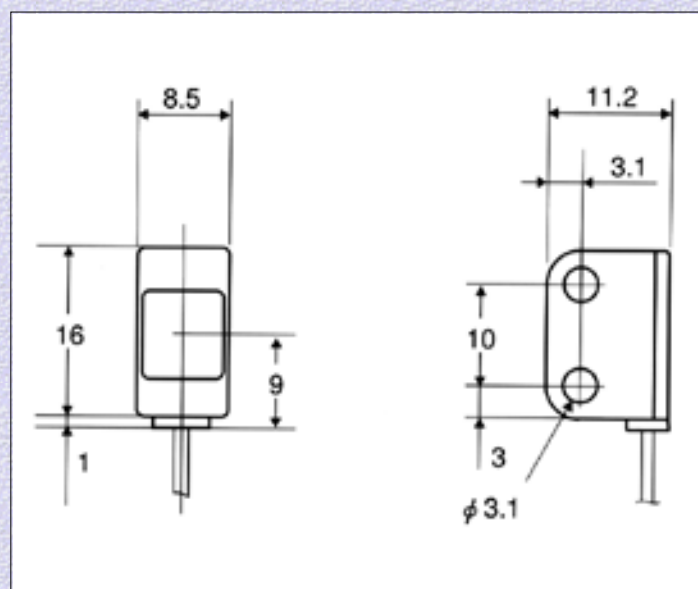
SEPARATE TYPE
PHOTOELECTRIC SENSOR

Sensor Head

RT-1500 (Sender)

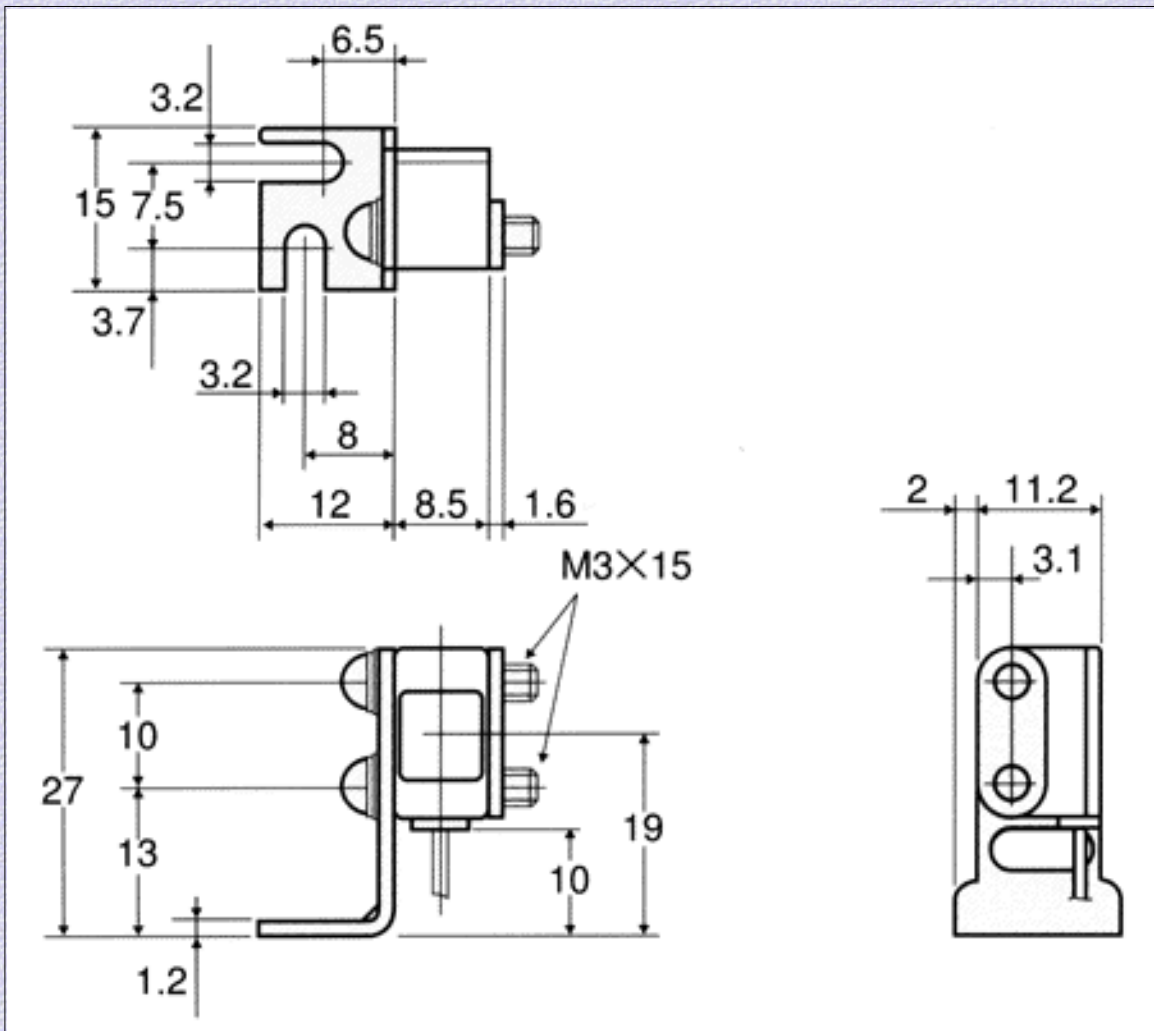


RT-1500 (Receiver)



Sensor Head Assemble Mounting

RT-1500



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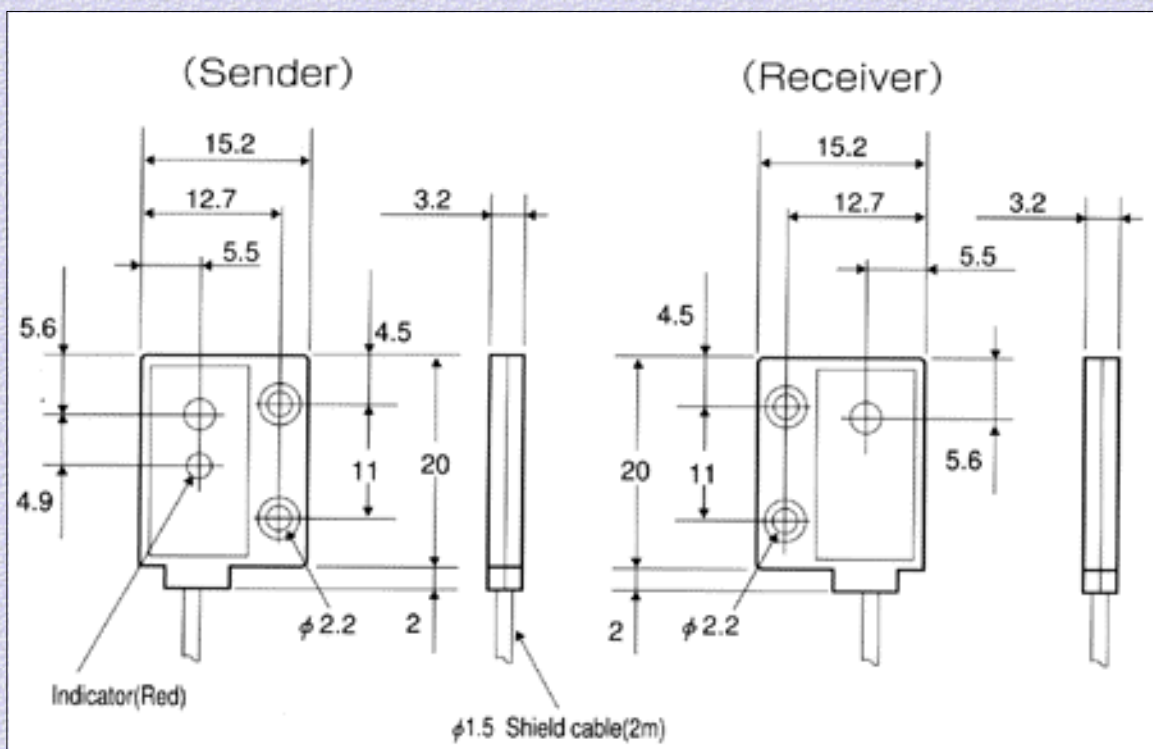
OPTEX MODEL NUMBER

R Series

SEPARATE TYPE
PHOTOELECTRIC SENSOR

Sensor Head

RT-F300



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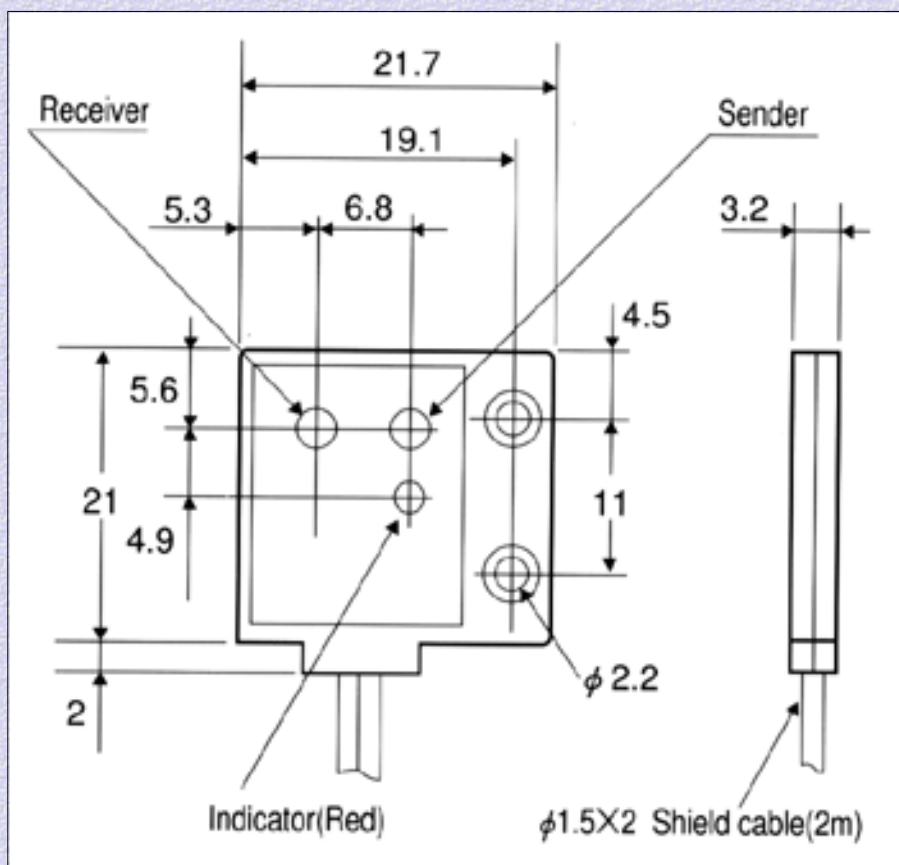
OPTEX MODEL NUMBER

R Series

SEPARATE TYPE
PHOTOELECTRIC SENSOR

Sensor Head

RD-F50



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Spec Sheet**



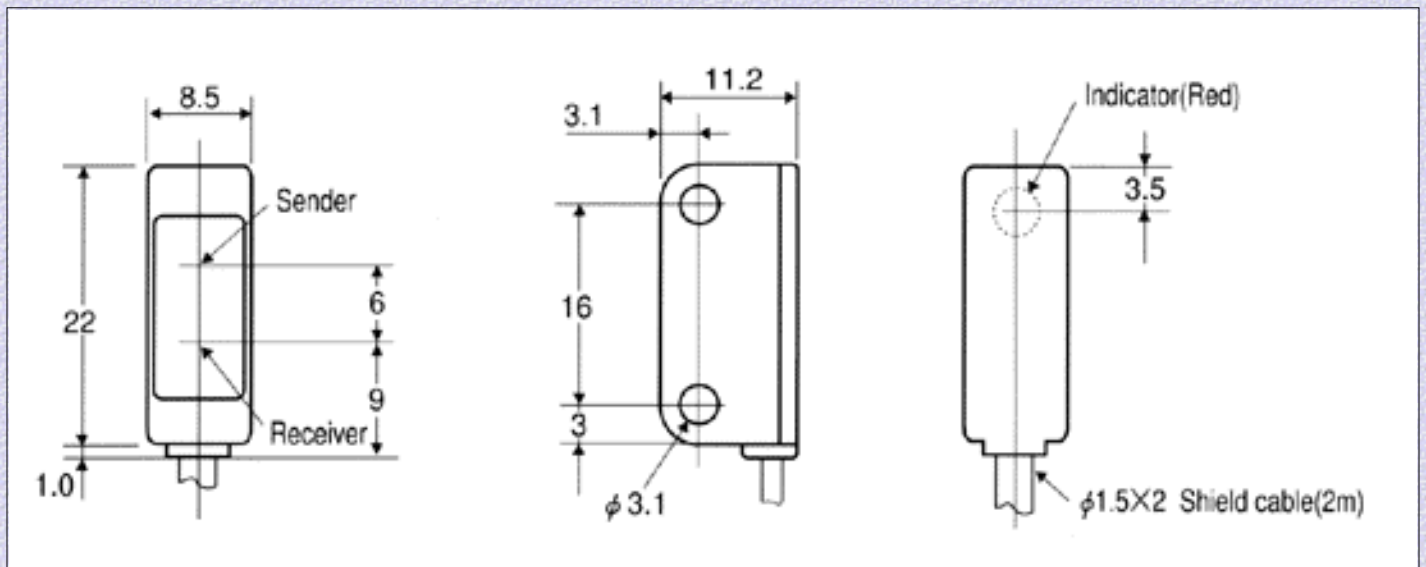
OPTEX MODEL NUMBER

R Series

SEPARATE TYPE
PHOTOELECTRIC SENSOR

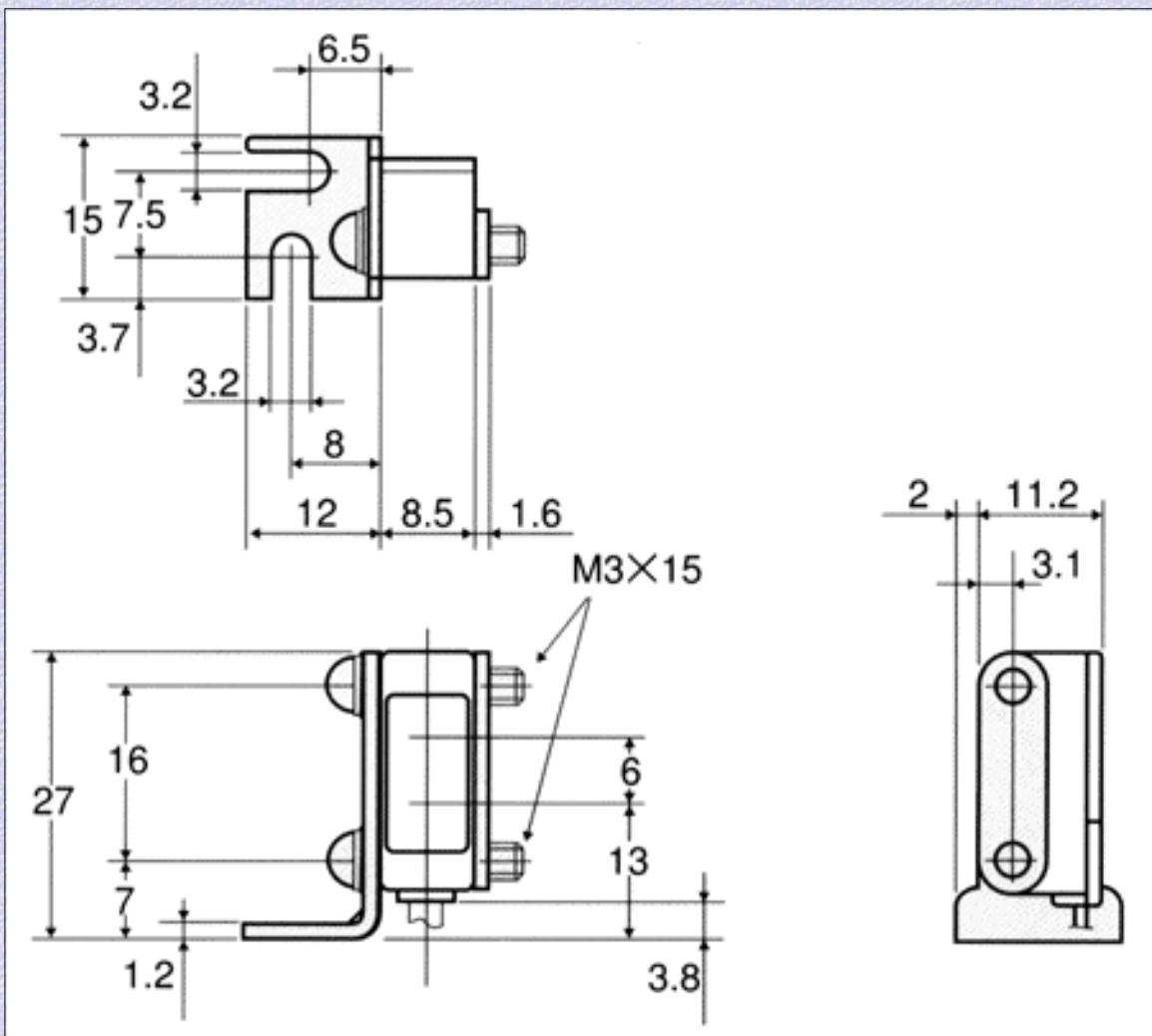
Sensor Head

RD-150



Sensor Head Assemble Mounting

RD-150



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Spec Sheet**

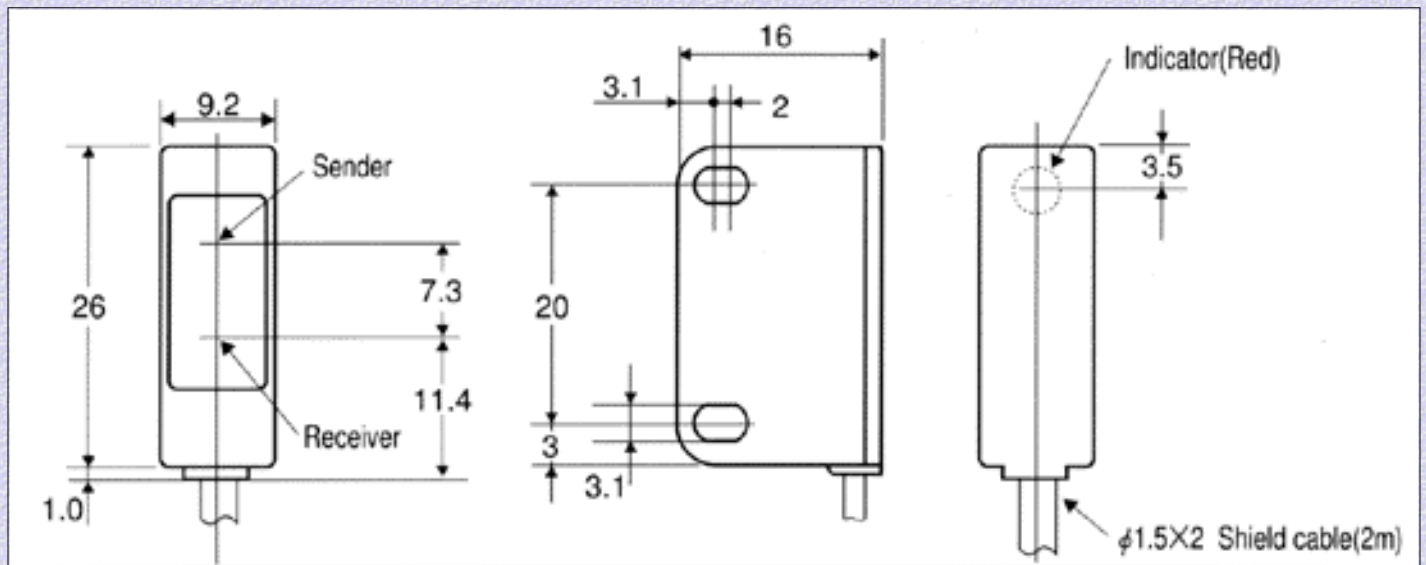


OPTEX MODEL NUMBER

R SeriesSEPARATE TYPE
PHOTOELECTRIC SENSOR

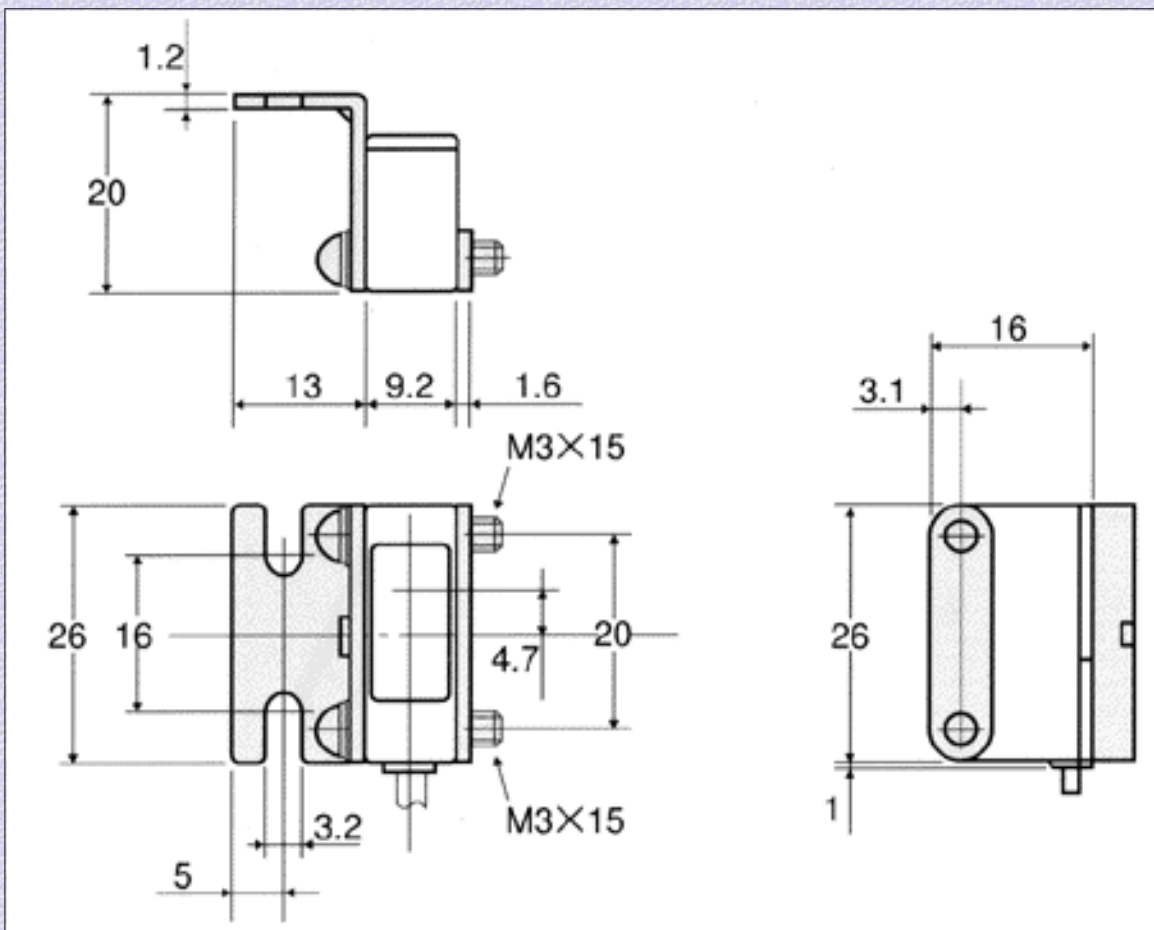
Sensor Head

RS-20R / RS-16G / RM-16R / RM-16G



Sensor Head Assemble Mounting

RS-20R / RS-16G / RM-16R / RM-16G



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Spec Sheet**



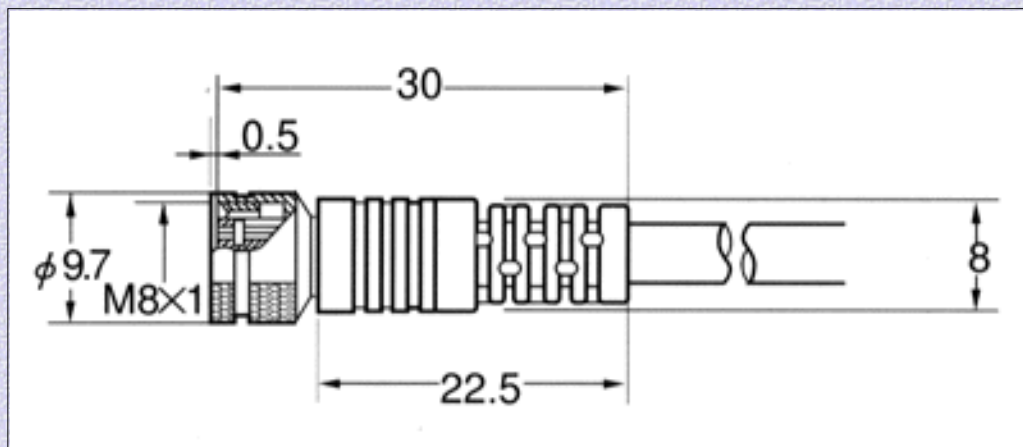
OPTEX MODEL NUMBER

R Series

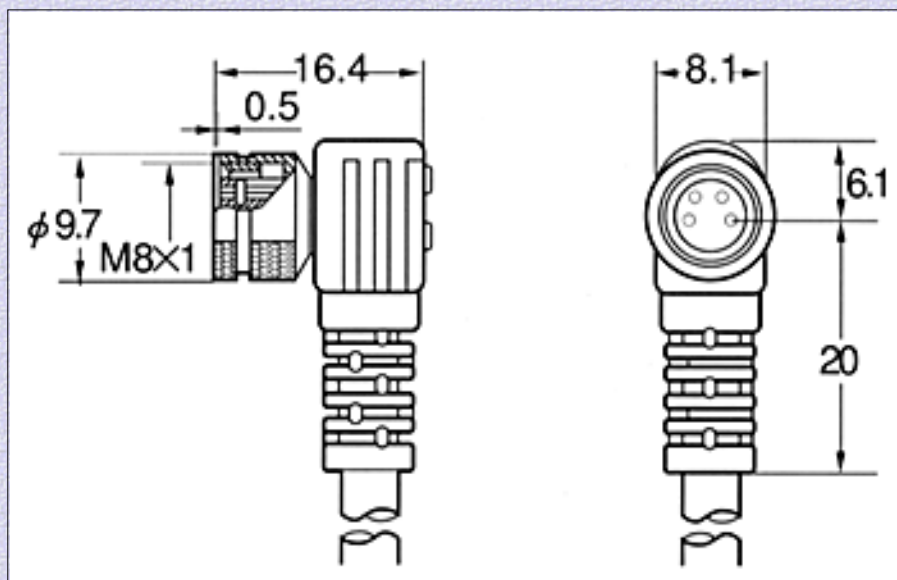
SEPARATE TYPE
PHOTOELECTRIC SENSOR

Connector Cable

JSN-S



JCN-L



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OPTEX

SPECIFICATION SHEET

OPTEX MODEL NUMBER

S Series

**COMPACT PHOTOELECTRIC SENSORS
WITH BUILT-IN AMPLIFIER**

FEATURES

DIMENSIONS

SPECIFICATIONS



Highest Reliability Packed In The Smallest Dimensions

Small but tough, its our standard!

ST-400	Through-Beam Type
SR-150	Retro-Reflection Type
SD-20	Diffused Reflector Type
BGS-S08	BGS Type

FEATURES

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- **Flexible Adaptability of World Top Level**

Four different types of extreme small size photoelectric sensors; through-beam type, diffuse-reflection type, retro-reflection type, and BGS type are selectively available. In addition, each of these is also available in either connector type or NPN/PNP output type so as to ensure flexible and broad adaptability of world top level. (Especially "BGS type" gives highest performance type designed in the world's smallest size.

- **Type Numbers**



CORD TYPE 2m

Types	Through-Beam	Diffuse Reflection	Retro Reflection	BGS
Models	ST-400N/P	SD-20N/P	SR-150N/P	BGS-S08N/P
Detecting Distance	4m	200m	1.5m	10~80mm
Visible Red Spot	○	○	○	○

Power Voltage	DC10~30V
Output	NPN / PNP



CONNECTOR TYPE

Types	Through-Beam	Diffuse Reflection	Retro Reflection	BGS
Models	ST-400CN/P	SD-20CN/P	SR-150CN/P	BGS-S08CN/P
Detecting Distance	4m	200m	1.5m	10~80mm
Visible Red Spot	○	○	○	○
Power Voltage	DC10~30V			
Output	NPN / PNP			

- **Compliance With Appliance Standards in Major Countries**

Because of its strict compliance with CE, VDE, and UL, the S Series can be used in major areas of the world.

- **Noise Resistance of High Level Conforming to CE Standard!**

A smallest size, but excellent noise resistance having met the requirements of CE standard. This fact means reliability and flexibility of the S series being applicable to various equipment and machines.

- **0.5ms High Speed Response**

It's world's toplevel. A highest speed response among the amplifier built-in sensors.

- **Safe Design Conforming to VDE Standard**

VDE Standard does not allow sparking from the sensor body even if the sensor encounters sudden electrical trouble (short-circuit, over-voltage, etc.)

- **High Rigidity For 100G Shock Resistance!**

Rigid design for high resistance to shock such as contact or collision against workpiece allows you to adopt the S Series with ease.

- **Options**

Type	Features
V-61	Reflection mirror for SR-150 (Standard accessory)
V-42	Small reflection mirror (Detection 1.0m)
JCN-L	L-Shaped M8 connector cable 2m
JCN-S	Straight M8 connector cable 2m
BL-150-10	Slits for ST-400 (width 4.5mm, 1.0mm, 2.0mm-ended together in the packing box)
BEF-W150B	Fitting Metal (Horizontal type)

DIMENSIONS

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[Click Here To See The
S-Series Dimensions](#)

SPECIFICATIONS

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	Model			
	Through-Beam	Diffuse Reflection	Retro Reflection	BGS
Cable Type	ST-400N/P	SD-20CN/P	SR-150N/P	BGS-S08N/P
Connector Type	ST-400CN/P	SD-20CN/P	SR-150CN/P	BGS-S08CN/P
Detecting Distance	4m	20cm	1.5m	10~80mm
Supply Voltage	DC10 ~ 30V			
Current Consumption	30mA	20mA		
Hysteresis	-	20%	-	10%
Minimum Detecting Object	ø6 opaque object	-	45mm opaque object	-
Response Time	0.5 msec.			
Control Output	NPN or PNP open collector or output DC30V 100mA max.			
Operation Mode	Light ON / Dark ON selectable by wiring			
Sensitivity Adjustment	1 turn volume			5 turns (endless)
Indicator	Light Indicator (red)			
Ambient Temperature / Humidity	-25~55°C / 35~85% RH			
Protection Category	IP-67			
Ambient Illuminance (illuminance on light receiving surface)	Sunlight: 10,000 lux - Halogen: 3,000 lux			
Shock Resistance	100G (X, Y, Z 3 times each)			
Vibration Resistance	10 ~ 55Hz multiple amplitude 1.5mm (X,Y,Z 2 hours each)			

Connection

Cord Type: Cable length 2m ø3.5mm (longer cord type of 5m is available as option) - Connector Type: M8 Connector



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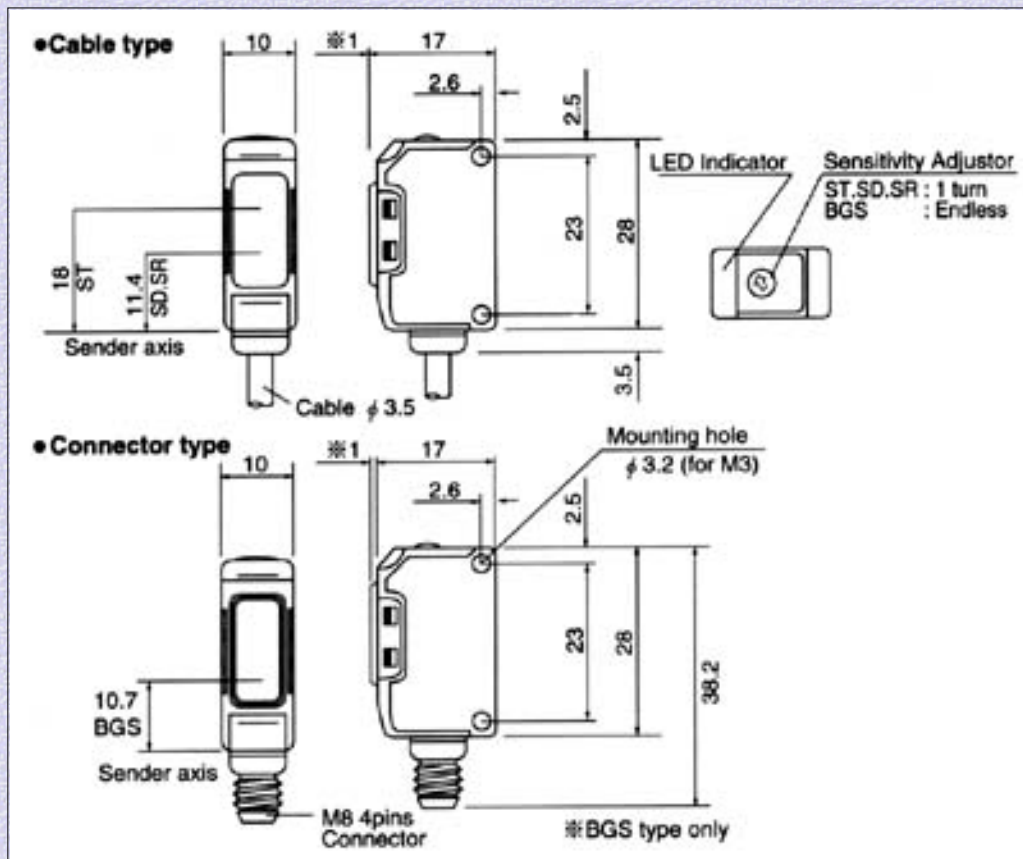
[CLICK HERE TO REQUEST ADDITIONAL INFORMATION](#)

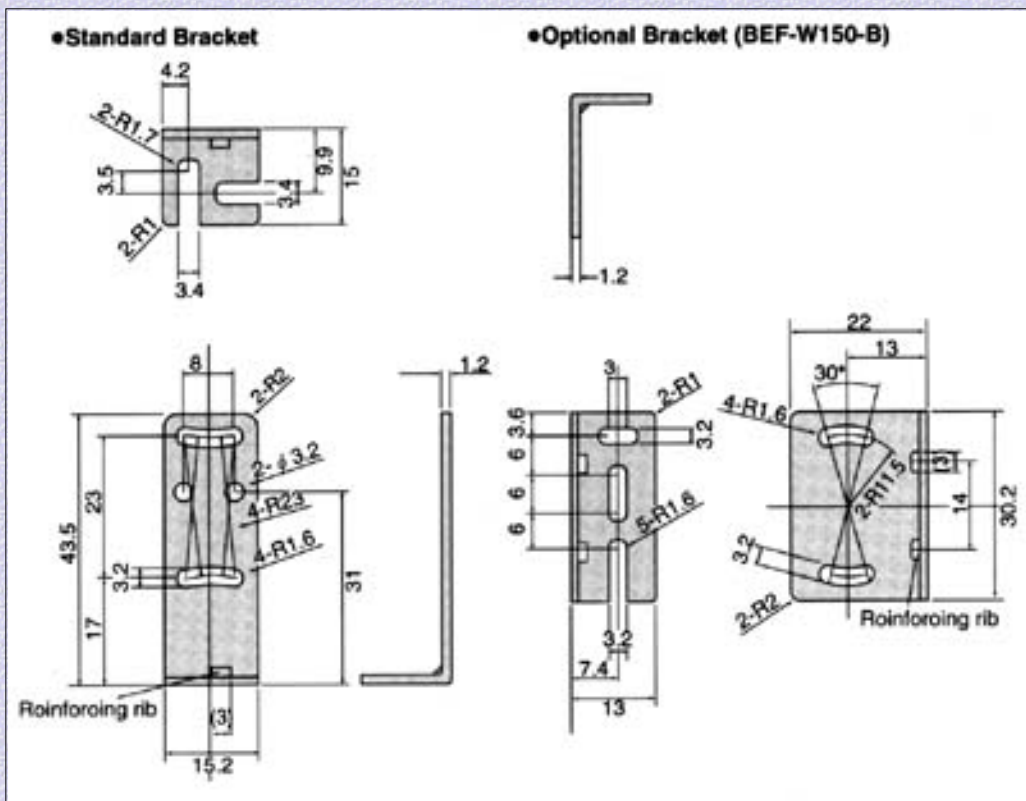


OPTEX MODEL NUMBER

S Series

COMPACT PHOTOELECTRIC SENSORS
WITH BUILT-IN AMPLIFIER





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Spec Sheet**



OPTEX

SPECIFICATION SHEET

OPTEX MODEL NUMBER
THERMO-HUNTER

X-400 / **VF-** 850G
5140 / **VF-** 1600S
2100S

PORTABLE NON-CONTACT INFRARED THERMOMETER

FIELD OF VIEW

DIMENSIONS

SPECIFICATIONS

See The Temperature With Your Eyes!



X-400

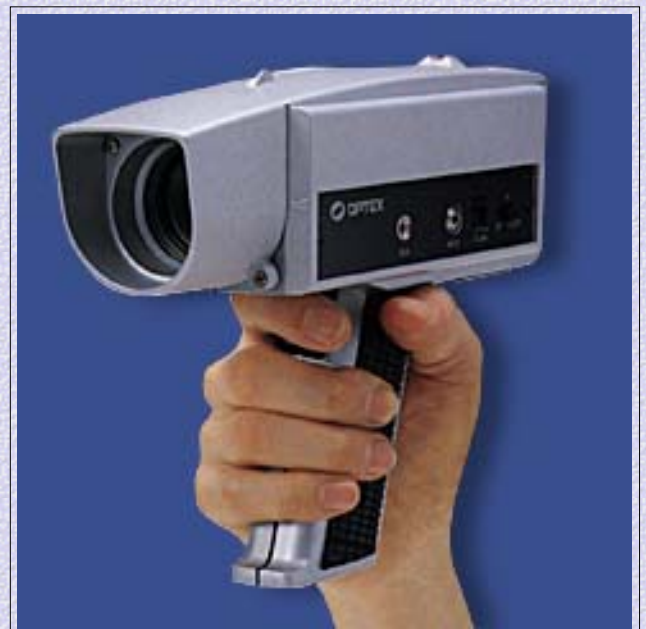
Economical Model

0 ~ 400°C

5140

Sophisticated Model

-50 ~ 1400°C





VF-850G, 1600S, 2100S

Metal Applications

Applications



FIELD OF VIEW

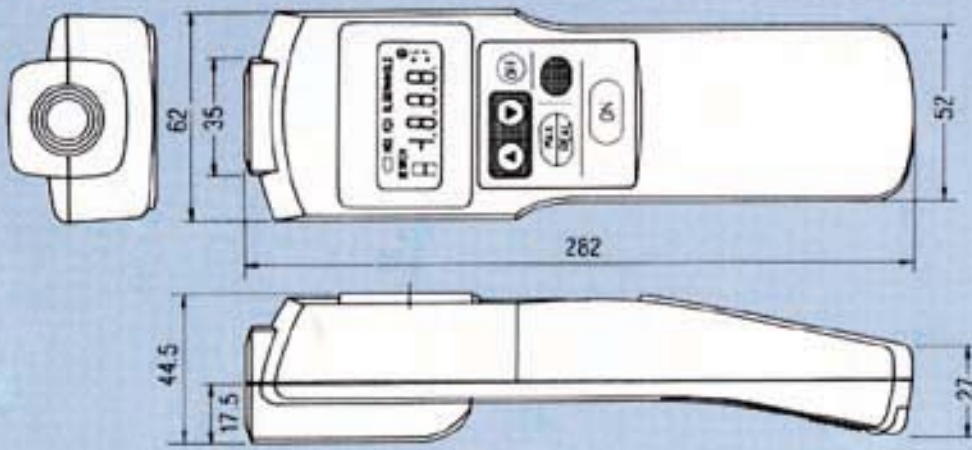
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[Click Here To See These
ThermoHunter's Field of View](#)

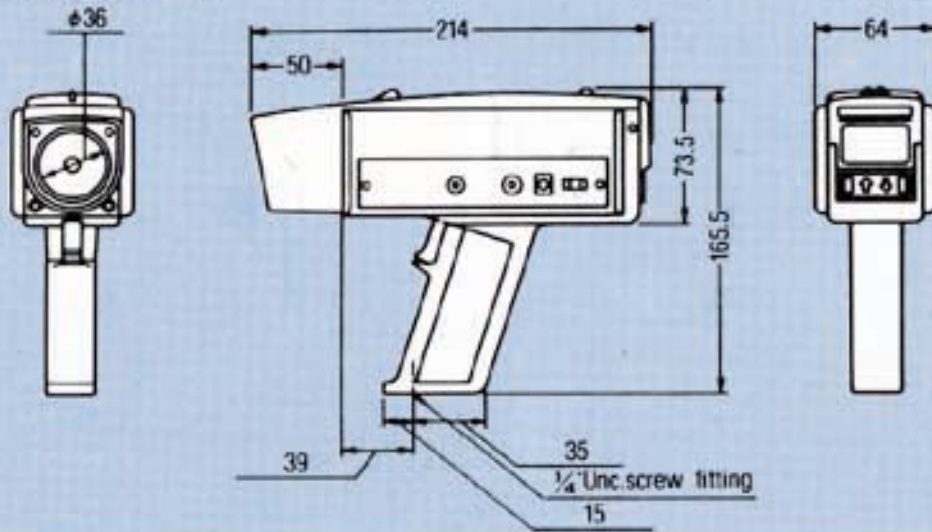
DIMENSIONS

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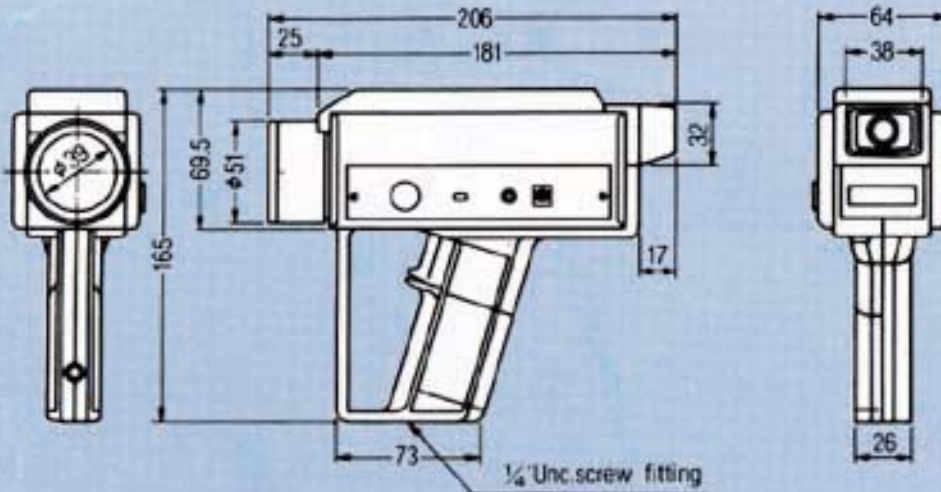
X-400



5140L-5140S



VF-850G-VF-1600S-VF2100S



SPECIFICATIONS

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Model	X-400	5140L-RS	5140S-RS
Measuring Field Diameter	ø25 / 200mm	ø32 / 1000mm	ø4 / 125mm
Measuring Range	0 ~ 400°C	-50 ~ 1400°C	-50 ~ 500°C
Resolution	1°C or 1°F	0.1°C: -50 ~ 150°C 1°C: 150 ~ 1400°C	
Spectral Response	7 ~ 14 μ m	8 ~ 14 μ m	
Accuracy	±2°C(0-199°C) / ±2% of reading (200~400°C)	±1K% ± 1 digit of reading	
Emissivity Adjustment	0.10 ~ 1.00 (0.01 step)	0.20 ~ 1.00 (0.01 step)	
Response Time	0.5 sec.	1.0 sec.	
Infrared Detection Element	Thermo-Pile	Thermo-Pile	
Sighting Method	-	Sighting Notch	LED Spot Marker
Ambient Temperature	-20 ~ 55°C (Normal Humidity)	±0 ~ 50°C (Normal Humidity)	
Analog Output	-	1 mV / °C	
Weight (Net)	180g (without batteries)	800g (without batteries)	
Power Supply	006P (9V) Battery		
Standard Accessories	-	Bag, Hand Strap, AC Adapter, Analog Output / Input Cable	
Functions	-	Digital Output Unit (RS-232C), 1000 points memory	

Model	VF-850G	VF-1600S	VF-2100S
Measuring Field Diameter	ø15 / 1000mm	ø 4 / 1000mm	
Measuring Range	250 ~ 800°C	600 ~ 1600°C	1100 ~ 2100°C
Resolution	1°C		
Spectral Response	0.9 ~ 1.9 μ m	0.7 ~ 1.1 μ m	.65 μ m
Accuracy	±5°C ± 1 digit of reading		
Emissivity Adjustment	0.10 ~ 1.00 (Continuously Variable)		
Response Time	0.07 ~ 0.15 sec.	0.02 ~ 0.15 sec.	
Infrared Detection Element	Ge Diode	Silicon Photo-Diode	
Sighting Method	View Finder of Single Lens Reflex Type		
Ambient Temperature	±0 ~ 50°C (Normal Humidity)		

Analog Output	0 ~ 1000 mV
Weight (Net)	820g (without batteries)
Power Supply	006P (9V) Battery
Standard Accessories	Bag, Hand Strap, AC Adapter, Lens Cap, Close-Up Lens Attachment, Digital Output (RS-232C)

*Specifications are subject to change without prior notice for improvement.

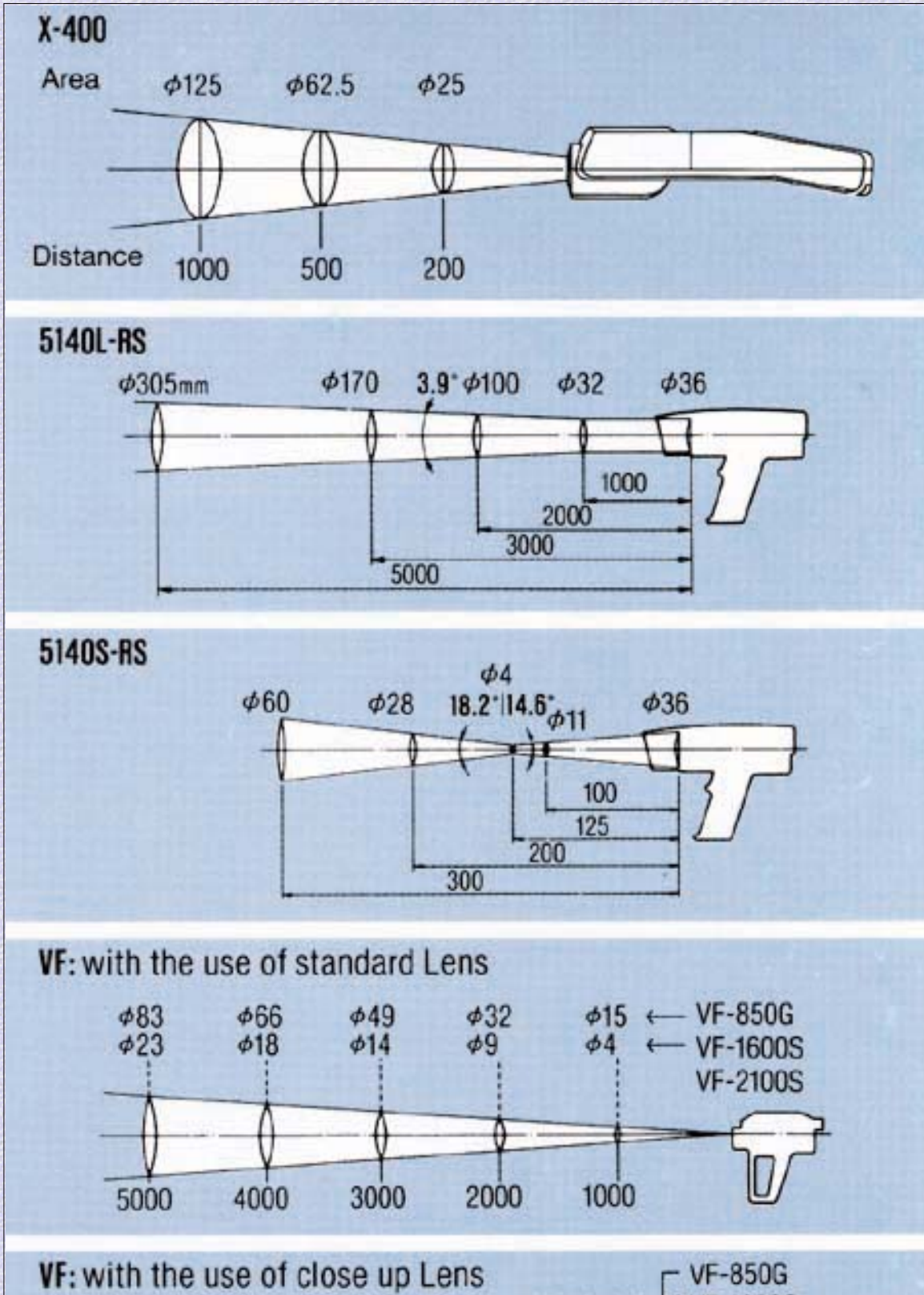
 Home Page	Passive Infrared Outdoor Sensors	Photoelectric Beams	Vision Control Panels	Home and Office Automation	New Products	About Optex
	Passive Infrared Indoor Sensors	Control Panels	Automatic Door Access Control	Misc. / Accessories	Factory Automation	Locate A Sales Rep

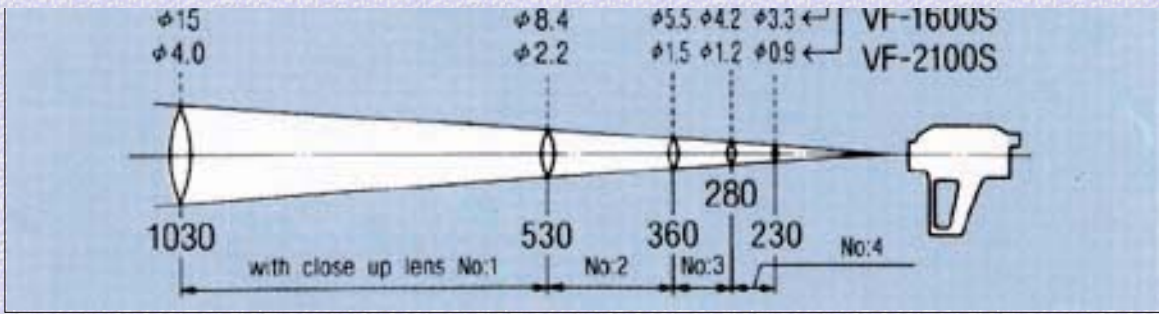
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OPTEX
FIELD OF VIEW

OPTEX MODEL NUMBER
THERMO-HUNTER
X-400 / VF- 850G
5140 1600S
2100S
PORTABLE NON-CONTACT INFRARED THERMOMETER





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OPTEX

SPECIFICATION SHEET

OPTEX MODEL NUMBER
THERMO-HUNTER
PT-3LF
PORTABLE NON-CONTACT
THERMOMETER

FEATURES

FIELD OF VIEW

SPECIFICATIONS



Quick, Non-Contact, Surface Temperature Measurement

Precise Measurement of $\square 30\text{mm}$ at 1m Distance

You can precisely measure a narrow area where you can not close. ($\square 20 / 500\text{mm}$)

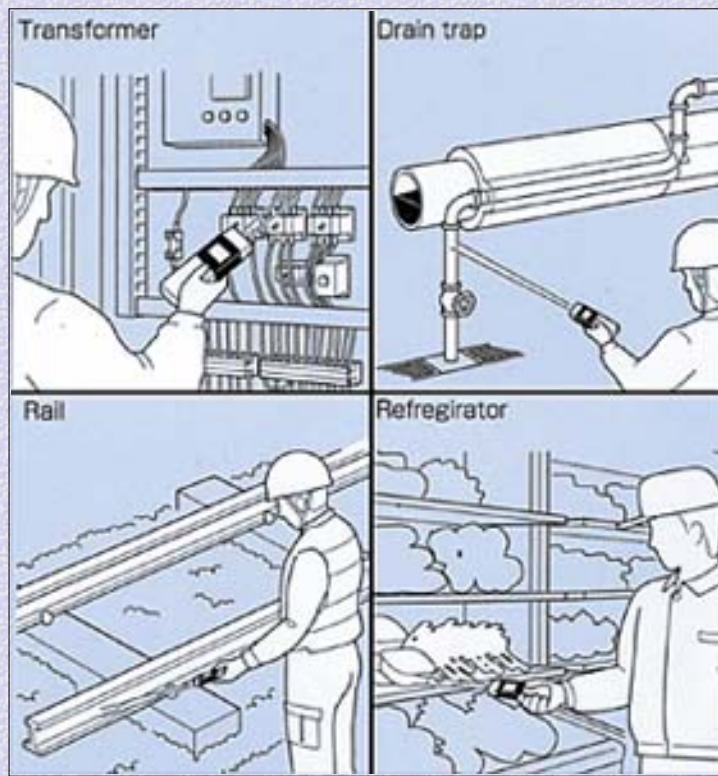
Coaxial Laser Marker Pinpoints the Center of the Measuring Area

It enables you to quickly and easily focus on the object with precision since it aims at the center of the measuring area.

FEATURES

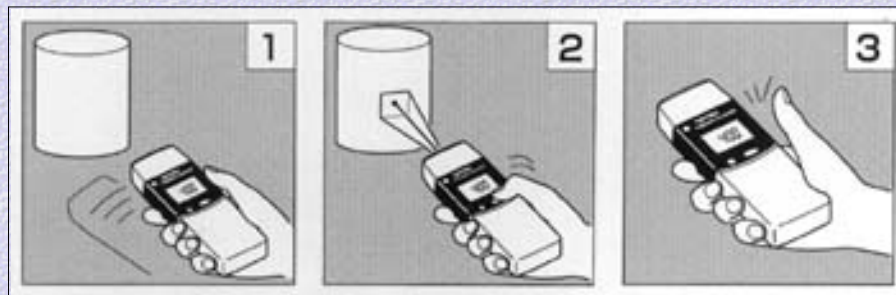
[Go To Top of Page](#)

- **Applications**



- Measuring Temperature Range: -20 ~ 400°C
- Auto Back-light On-Off (display)
- 200g lightweight / portable telephone size
- Quick Response: 1.5 seconds

● **Easy Operation**

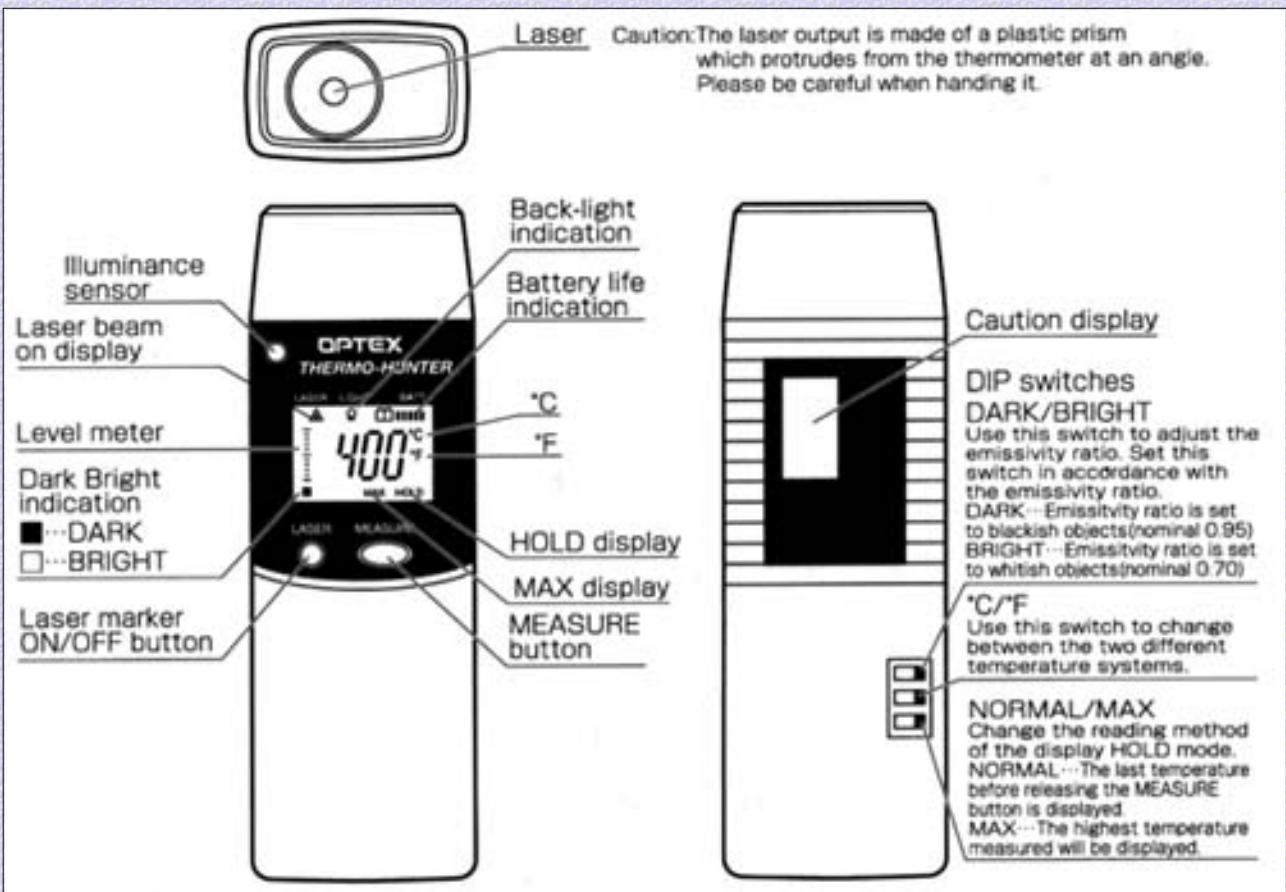


1. Point at the Target (Field of View $\square 30 / 1000$ mm)
2. Press the measure button to start measurement.
3. With release of the button, display is hold and auto off after 10 seconds




Auto Back-Light On/Off in the Dark / Bright Place
(Temperature can be read even in the dark)

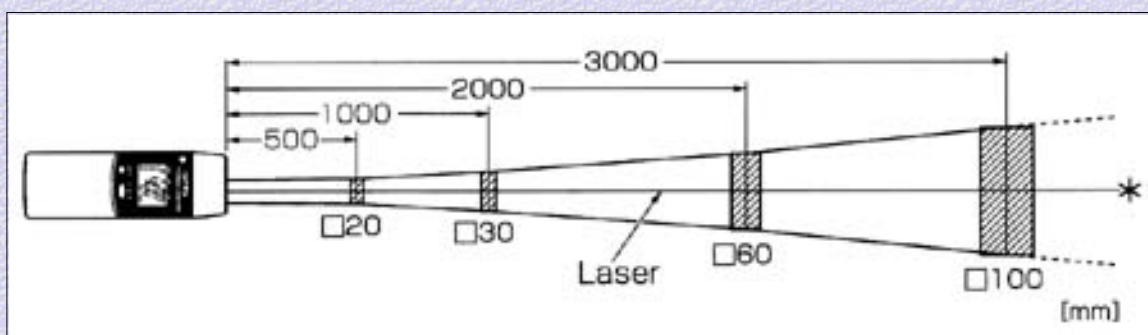
● **Display and Function**



● **Options**

	<p>HB-100 Black Tape for Non-Contact Thermometers</p> <p>The Black Tape can be applied to any object, letting you easily and correctly measure the temperature of any object. When measuring objects with manual emissivity settings, use the black tape and adjust the emissivity ratio of the model to 0.95. The Black Tape can endure temperatures up to 150°C.</p>
	<p>PH-1 Protective Pouch for PT-3LF</p>

FIELD OF VIEW

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*The laser marker is aimed at the center of the measuring area. The laser has a 90% optical efficiency rate. The size of the object to be measured must be sufficiently bigger than the measuring diameter shown in the above illustration.

SPECIFICATIONS

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Model	PT-3LF
Measuring Range	-20 ~ 400°C (display -30 ~ 430°C)
Field of View	□30 / 1000 mm
Optics	Silicon Lens
Sensing Element / Wavelength	Thermopile / 8 ~ 14 μ m
Response Time	1.5 sec. / 90%
Measuring Accuracy	±1% of reading value (e=0.95) or ±2°C ± 1 digit, whichever is greater
Repeatability	±1°C of reading value
Display Resolution	1°C (1°F)
Sighting Method	Coaxial Laser Marker (Class 2)
Emissivity Ratio Adjustment	Dark / Bright (Switchable)
Temperature Unit	°C / °F (Switchable)
Measuring Mode	Normal / Max (Switchable)
Battery Life	Approx. 100 hours with backlight and LD Off and alkaline battery
Ambient Temperature	0 ~ 50°C
Ambient Humidity	35 ~ 85% RH (without dew condensation)
Storage Temperature	-20°C ~ 60°C
Dimensions	162mm high x 52mm wide x 32mm deep
Weight	200g (including batteries)



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OPTEX

SPECIFICATION SHEET

OPTEX MODEL NUMBER

THERMO-HUNTER

BUILT-IN2**NON-CONTACT THERMOMETER**

FEATURES

FIELD OF VIEW

DIMENSIONS

SPECIFICATIONS



Measure Objects Quickly and Accurately From a Safe Distance - Spot measuring within a temperature range of 0 ~ 500°C at a $\pm 1\%$ level of precision

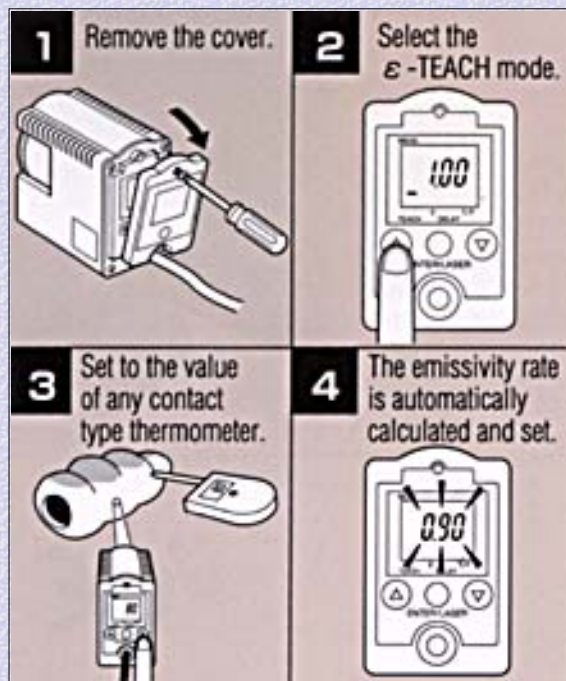
Optex's Built-In2 Thermo-Hunter is the first non-contact thermometer of its class to incorporate a digital display. Plus, it comes in a compact body packed with many built-in user-friendly features to help you measure objects with high precision. The E-Teach function lets you easily adjust the emissivity ratio. The Coaxial Laser Marker allows you to confirm the measuring area.

FEATURES

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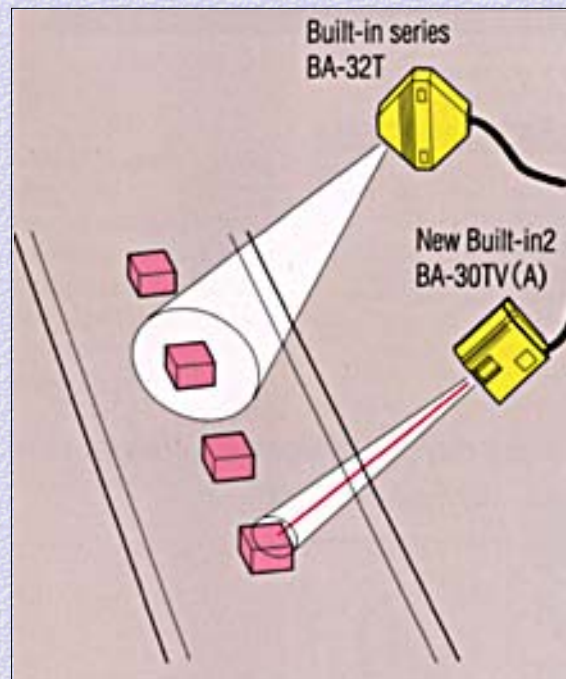
- **E-Teach Function For Automatic Adjustment of the Emissivity Ratio**

Just input the temperature of the object you wish to measure, and the built-in E-teach function automatically calculates the emissivity ratio, which is indispensable to high-precision measuring. It quickly adapts to any changes in the procedure or in the production line. And of course, adjusting the the emissivity ratio by the conventional method is also possible.



- **Precise Spot Measurement in Sharp Fields of View From A Safe Distance**

You can precisely measure small targets within a narrow area from a distance. You can measure an object's temperature with accuracy just like aiming a spot-light at the object.



- **Coaxial Laser Marker Lets You Check The Target With Your Own Eyes**

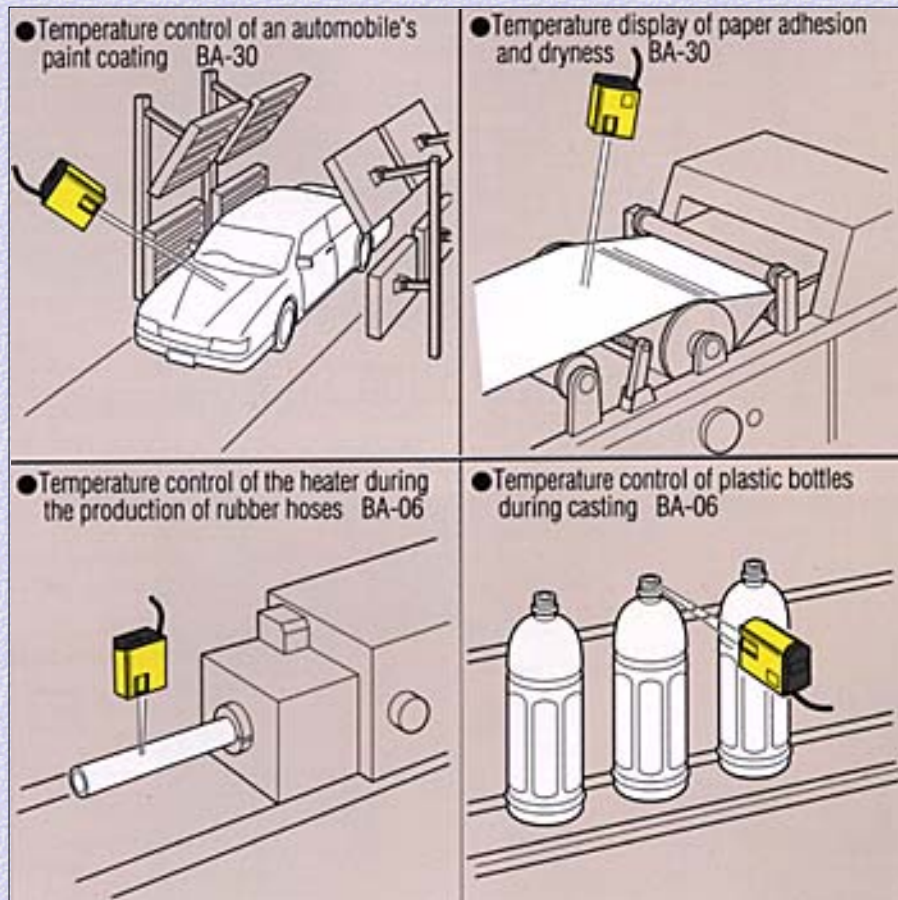
The built-in coaxial laser marker allows you to check the field of view. It also enables you to quickly and easily focus on the object with precision since it aims at the center of the object, preventing the thermometer from slipping slightly off into the wrong axis.



- **2-Type Analog Output**

You can choose between two types of analog output: a TV type (1 mV / °C) which can be connected to such devices as a panel meter or a TA-type (4-20mA) which is option for long-distance transmissions.

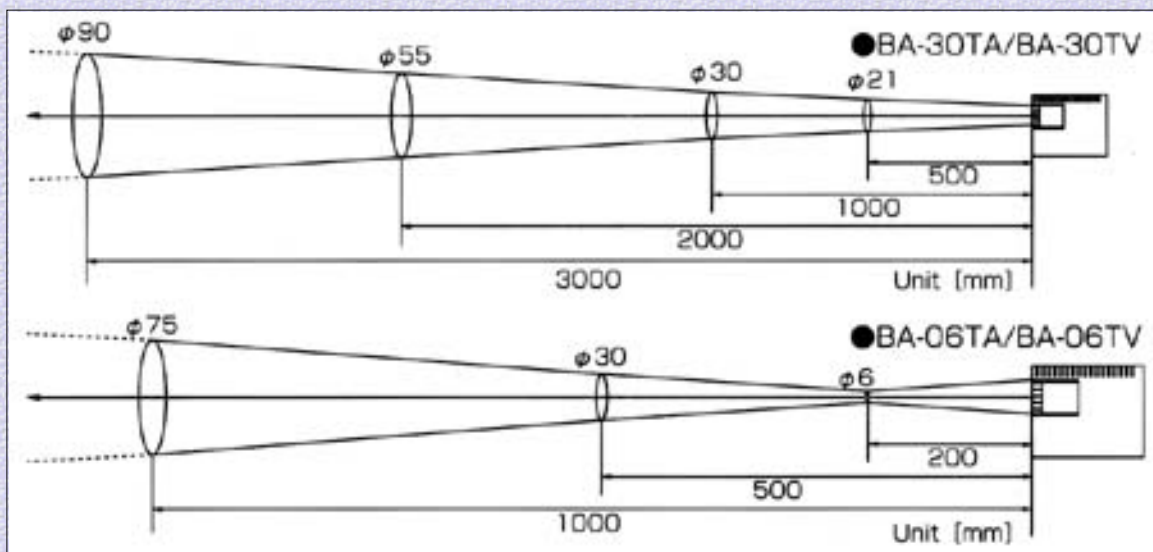
- **Non-Contact Measuring and the Digital Display Offer a Wide Range of Applications**



- **Options**

	<p>BA-AP1 Air Purge Collar (Option) Adaptable to Dusty Environments</p>
	<p>SC-A1 The world's first built-in Automatic Trigger makes synchronizing signals unnecessary. Controller made especially for the Thermo-Hunter Built-In 2.</p>
	<p>HB-100 Black Tape for Non-Contact Thermometers The Black Tape can be applied to any object, letting you easily and correctly measure the temperature of any object. When measuring objects with manual emissivity settings, use the black tape and adjust the emissivity ratio of the model to 0.95. The Black Tape can endure temperatures up to 150°C.</p>

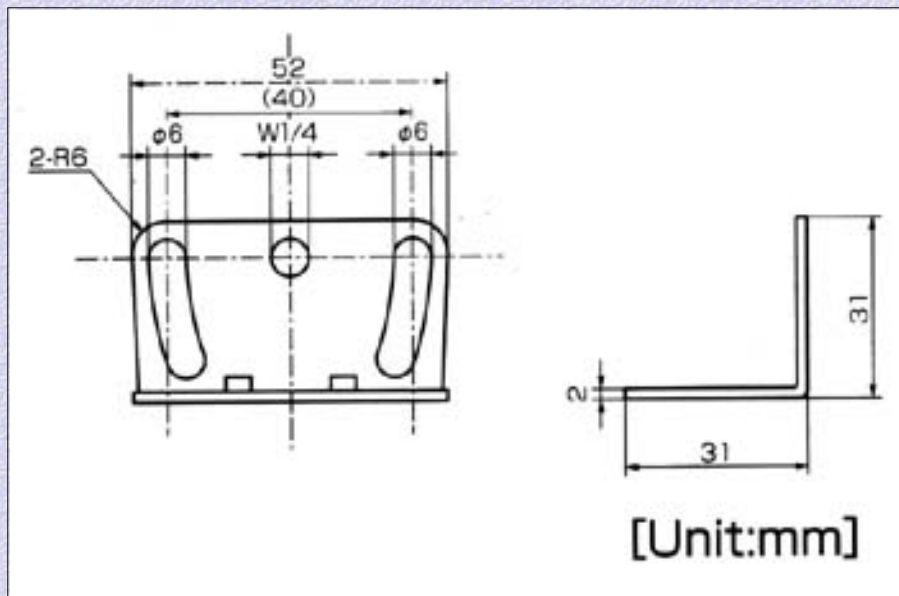
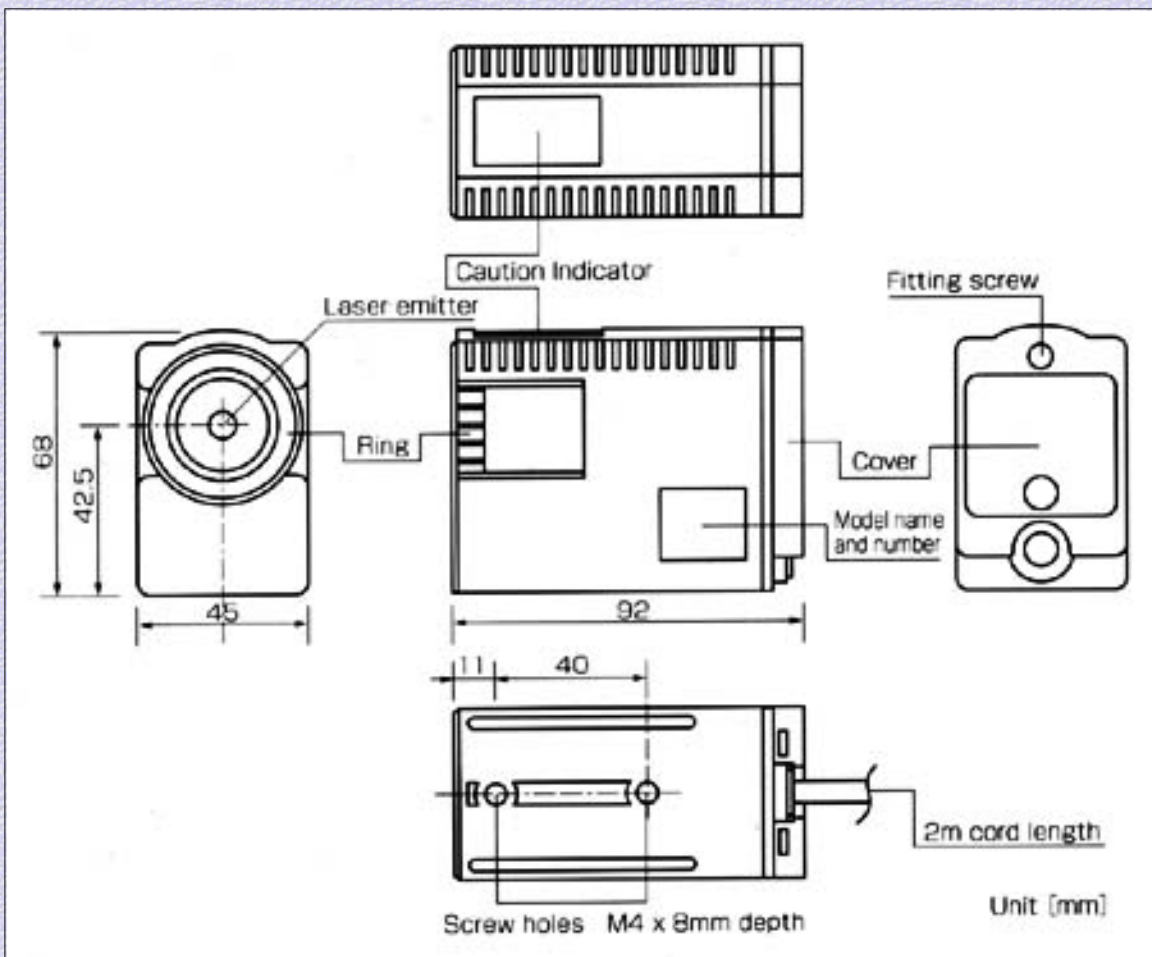
FIELD OF VIEW

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*The laser marker is aimed at the center of the measuring area. The laser has a 90% optical efficiency rate. The size of the object to be measured must be sufficiently bigger than the measuring diameter shown in the above illustration.

DIMENSIONS

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SPECIFICATIONS

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Model	BA-06TV	BA-06TA	BA-30TV	BA-30TA
Measuring Range	0 ~ 500°C (display -20 ~ 520°C)			
Field of View	$\phi 6 / 200$ mm		$\phi 30 / 1000$ mm	
Optics	Silicon Lens			

Sensing Element	Thermopile / 8 ~ 14 μ m			
Response Time	500 ms / 90%			
Measuring Accuracy	$\pm 1\%$ of reading value or $\pm 2^{\circ}\text{C}$, whichever is larger			
Repeatability	$\pm 1^{\circ}\text{C}$ of reading value			
Display Resolution	1 $^{\circ}\text{C}$			
Analog Output	1mV/ $^{\circ}\text{C}$	4-20mA	1mV/ $^{\circ}\text{C}$	4-20mA
Output Resolution	0.2 $^{\circ}\text{C}$			
Sighting Method	Coaxial Laser Marker (Class 2)			
Emissivity Ratio Adjustment	0.10 ~ 1.20 (0.01 / 1 step)			
Power Source / Consumption of Power	DC12 ~ 24V \pm 10% - 150mA			
Ambient Temperature	0 ~ 50 $^{\circ}\text{C}$			
Ambient Humidity	35 ~ 85% RH (without dew condensation)			
Storage Temperature	-10 $^{\circ}\text{C}$ ~ 60 $^{\circ}\text{C}$			
Vibration Resistance	3G (20 ~ 50Hz, according to JIS C0911)			
Water Resistance	IP65			
Materials	Ring Case: glass containing PBT, Rear Cover: PC			
Weight	350g			

Standard accessories: attachment fittings x 1, attachment screw (M4) x 2

Optional Accessories: Air Purge Collar

Design and specifications are subject to change for product improvement without prior notice.

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OPTEX

SPECIFICATION SHEET

OPTEX MODEL NUMBER

V Series

**FREE VOLTAGE
PHOTOELECTRIC SENSORS**

FEATURES

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20m Sensing - the longest range through-beam sensor

Free voltage photoelectric sensor with both vertical and horizontal lead-in opening

2000	Through-Beam Type
500	Retro-Reflection Type
80	Diffused Reflector Type

FEATURES

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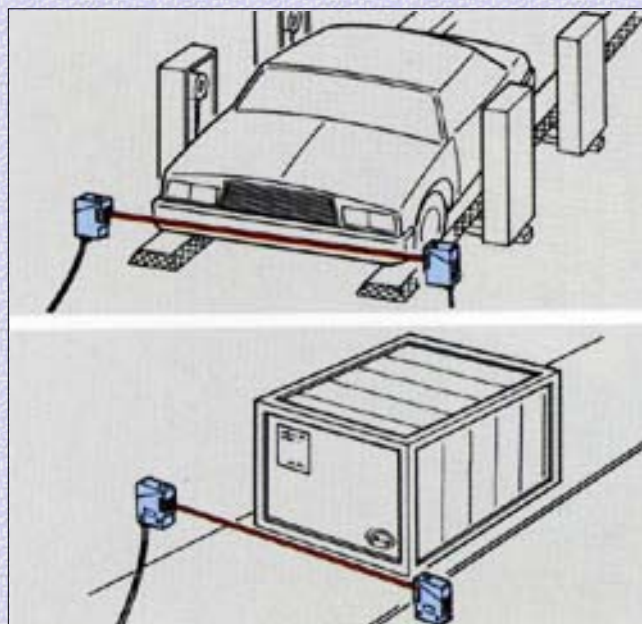
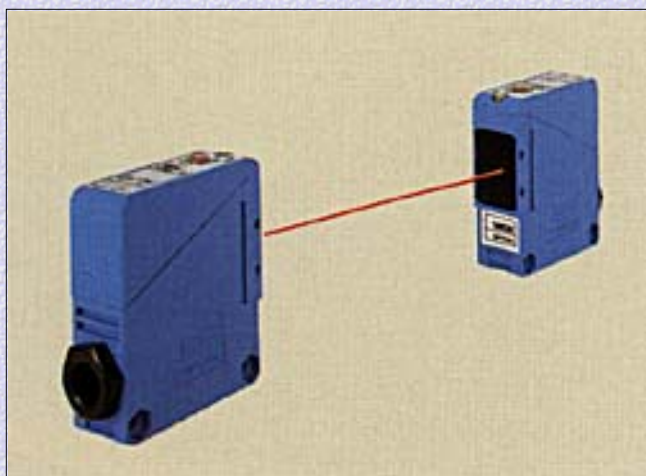
• VT Series

- VT2000 - (AC/DC)**
- VT2000T - (AC/DC with timer)**
- VT2000D - (DC NPN output)**
- VT2000DP - (DC PNP output)**

Major increase in detection distance to date. Long range sensor ideal for detecting large objects. Vast improvements in safety.

Practical Applications:

- Car position detector for parking tower
- Detecting passage of large packages and crates



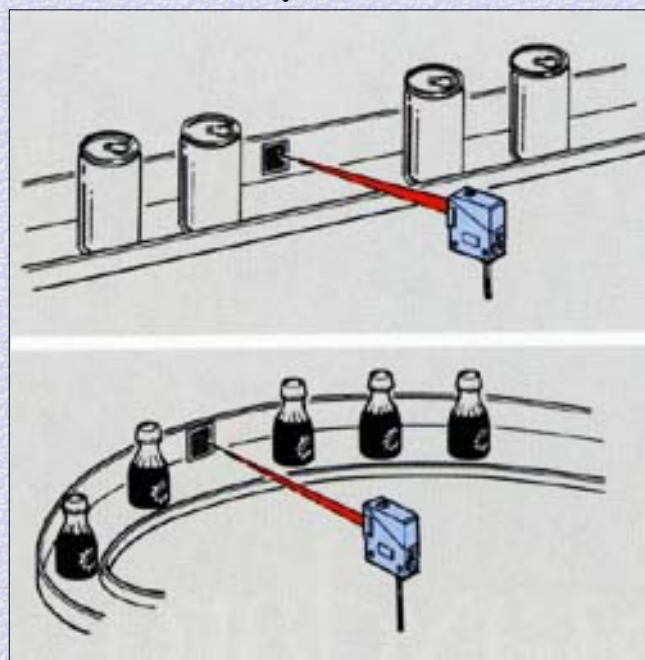
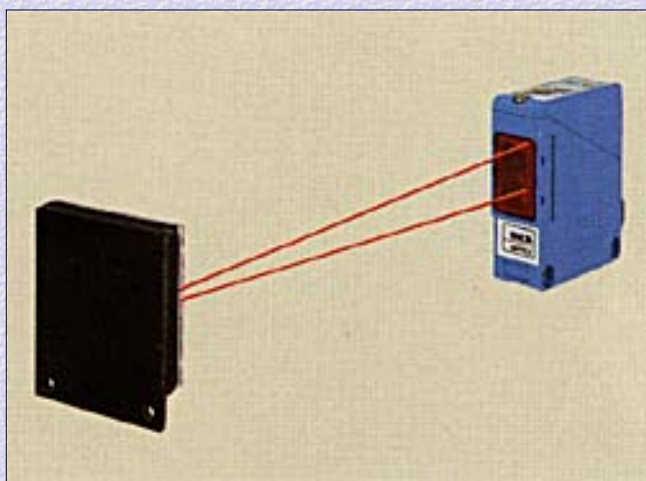
● VR Series

- VR500 - (AC/DC)**
- VR500T - (AC/DC with timer)**
- VR500D - (DC NPN output)**
- VT500DP - (DC PNP output)**

Optics include polarizing filters. General purpose sensor for mirror detection. Red light beam makes for easy axis adjustment.

Practical Applications:

- Detecting the passage of metallic parts
- Sensing on production lines with installation space on one side only



● **VD Series**

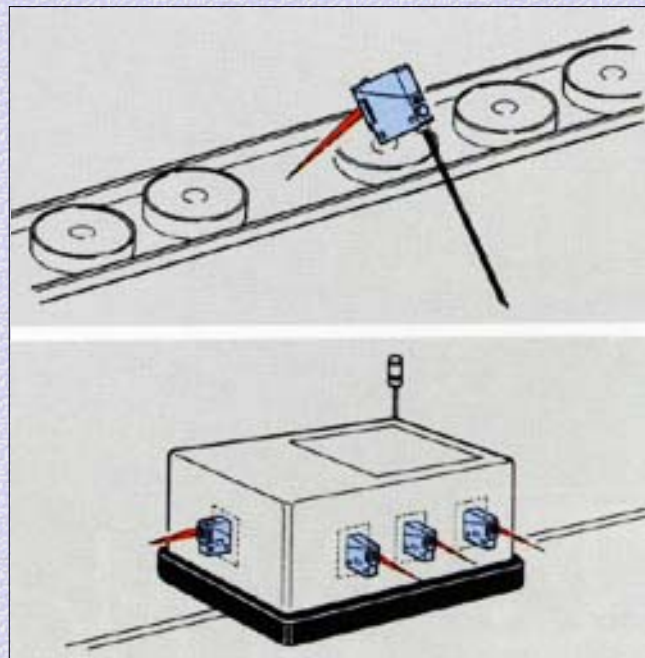
- VD80 - (AC/DC)**
- VD80T - (AC/DC with timer)**
- VD80D - (DC NPN output)**
- VD80DP - (DC PNP output)**



Big savings on installation time. Easy To Operate. No need to bother with axis adjustment.

Practical Applications:

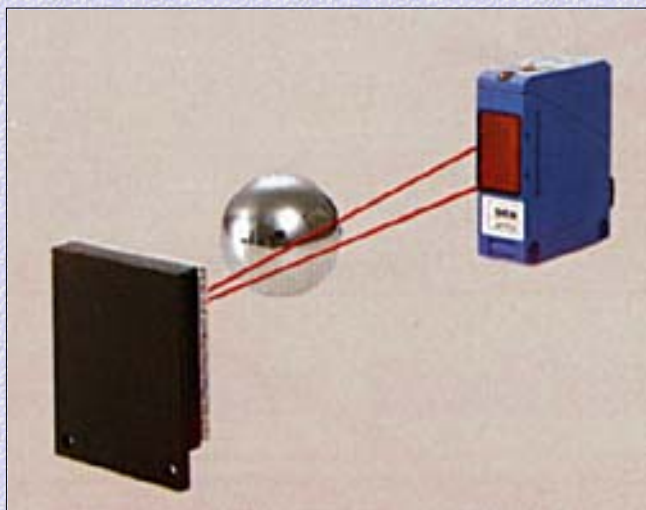
- Counting items on a narrow line
- Preventing unmanned conveyor truck collisions



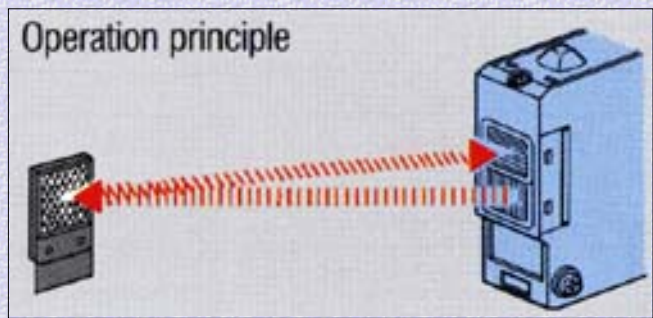
- **Both vertical and horizontal lead-in opening**

Fixed single-direction lead-in opening is uneconomical in terms of installment space. All models in the "V" Series have both vertical and horizontal lead-in opening, allowing greater flexibility and preventing problems with cord bending.

- **Detects mirror-like and shiny surfaces (VR-500 Retro-Reflection type only)**



Has polarizing filter in the lens. Distinguishes clearly between light reflected from the reflecting mirror and other interference, so that it can be used for sensing metal and metal plated objects without any problem.



- **Quick Response DC Type**

Responds quickly in 1m sec., DC types.

- **Variable AC/DC power supply**

AC 22 ~ 240V

DC 12 ~ 240V

- **Multi-Functional 4-Mode Timer**

Set between 0.1 and 0.5 seconds in any of four different modes:

- 1. One-Shot Delay (O.S.D.)**

Sensor outputs a signal for a fixed period from the point when sensing starts.

- 2. Off Delay (OFF.D.)**

Sensor continues to output a signal for a set time after the point when sensing stops.

- 3. On Delay (ON.D.)**

Sensor starts to output a signal if sensing continues for longer than a fixed period.

- 4. Normal (NORMAL)**

Sensor outputs a signal for a fixed period from the point when sensing starts.

- **LED indicator easily visible from any direction**

The light indicator can be seen easily from both the rear and the side. Internally, there is a separate indicator for checking sensor output status.

- **Alarm Output function (Available only in DC types)**

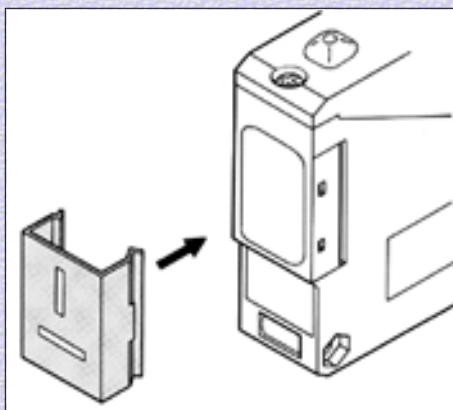
This function gives a warning when receiving light intensity that is reduced less than 150% of detection level due to some dirt on the lens or wrong positioning of light axis. The photosense indicator blinks and alarm output signal comes out.

- **Test Input function**

When the #5 terminal is connected to 0V, an interrupted status is electronically invented by stoppage of emission. This function can be used as the operational check of the sensor by electric interrupted state without detectable object.

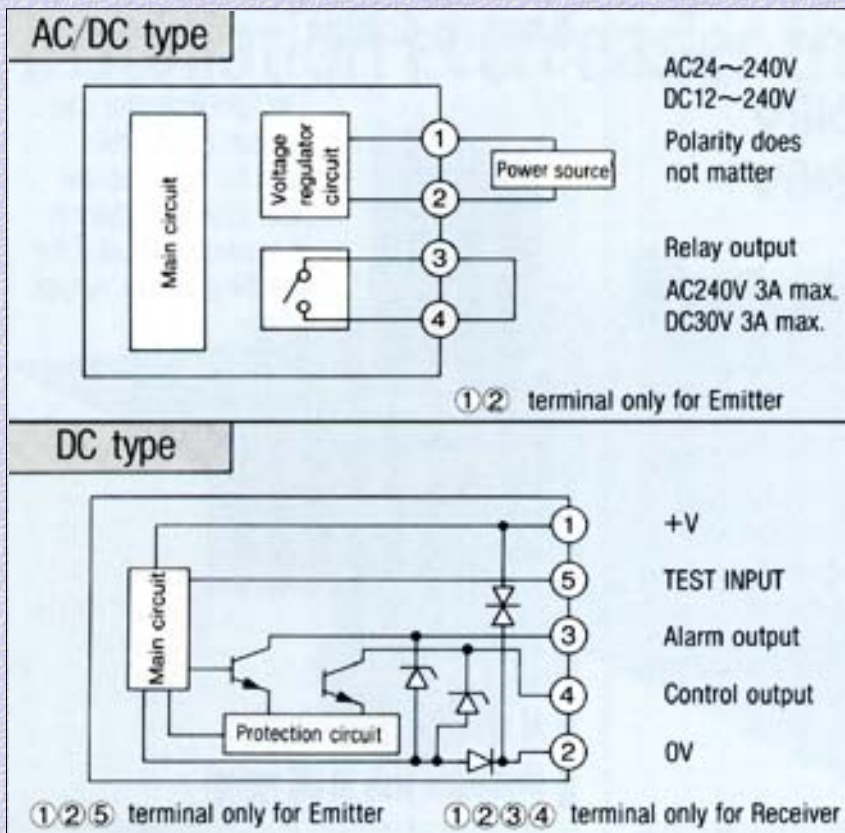
- **Water Resistant to IP66 (IEC 144)**

- **Three different slits for reliable sensing of minute objects (Option with through-beam type)**

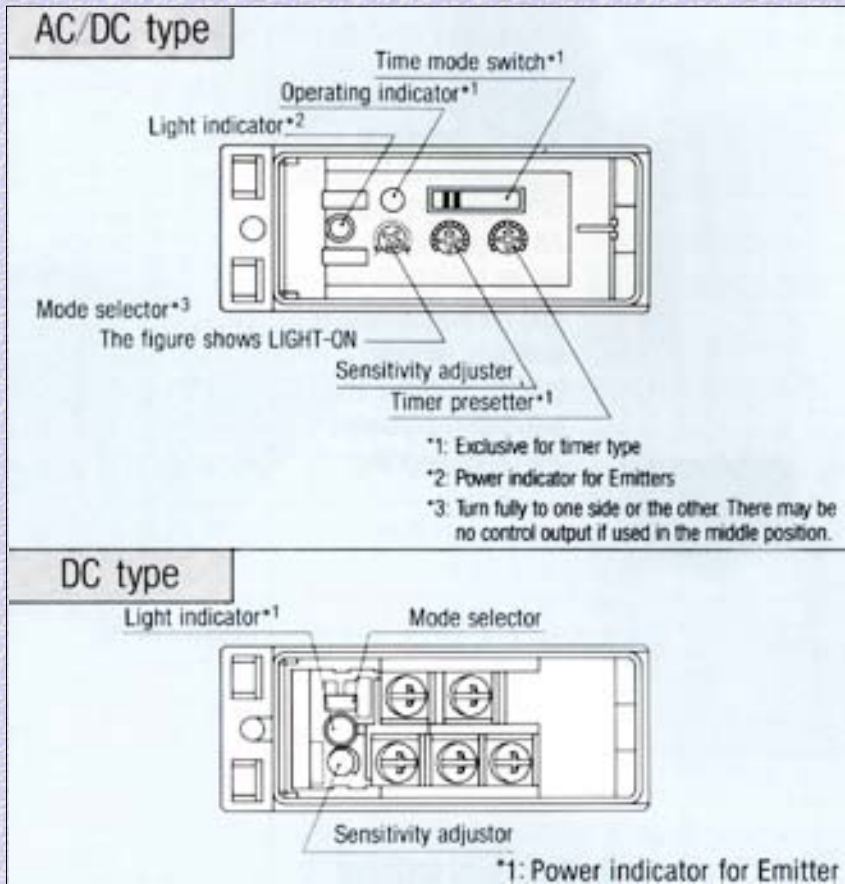


Slit Type	Photo	Attach	Min. Detection	Detection Range
V-01 (1mm type)		Both Sides	1 x 10mm	1500 mm
V-02 (2mm type)		Both Sides	2 x 10mm	3000 mm
V-05 (5mm type)		Both Sides	5 x 10mm	6000 mm

- Output Circuit**



● **Components**



DIMENSIONS

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[Click Here To See The
V-Series Dimensions](#)

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	VT-2000(T) Through-Beam	VR-500(T) Retro-Reflector (with polarizing filter)	VD-80(T) Diffused Reflection
Detecting Distance	20m	5m	80cm
Supply Voltage	12 ~ 240V DC \pm 10% / 24 ~ 240V AC \pm 10% 50/60Hz		
Power Current Consumption	3VA max.	2VA max.	
Response Time	20ms max.		
Detecting Object	Opaque Object 20mm min.	Opaque and Mirror Surface Object 45mm min.	Opaque and Transparent Surface
Hysteresis	-		15% (at 80cm)
Light Source	IR LED	Red LED	IR LED
Sensitivity Adjustment	1 rotation volume		
Indicator	With timer function: Light Indicator (Red)+Operating indicator (Red) Without time function: Light Indicator (Red)+Power Indicator for emitter		
Timer Function	On delay, Off delay, One-Shot delay, Selectable Timer: 0.1~5sec. (variable)		
Operating Mode	LIGHT ON / DARK ON selectable		
Control Output	Relay Output 1a 240V AC 3A max. 30V DC 3A max. (resistive load)		
Connection	Terminal base (ϕ 6~10mm) PF1/2(JIS B0202) Conduit outlet		
Ambient Temperature / Humidity	-25 ~ 55°C (but not freezing) / 35 ~ 85% RH		
Ambient Operating Illuminance	Sunlight: 10,000 lux max. Incandescent lamp: 3,000 lux max.		
Noise Resisitance	10,000Vp-p pulse width 1 μ s (noise simulator)		
Insulation Resistance	20M Ω min. (at 500V DC)		
Withstand Voltage	2,000V AC for 1 minute (between power supply and outlet)		
Vibration Resistance	10 ~ 55 Hz amplitude 1.5mm 2 hours in each of XYZ directions		
Shock Resistance	500m/s ² (approx 50G) 2 times in each XYZ directions		
Protection Category	IP66 (IEC 144 water resistant model)		
Enclosure Material	Case; lid: PPE Lens: PMMA		

Weight	Receiver 130g / Emitter 110g	130g	
	VT-2000D(P) Through-Beam	VR-500D(P) Retro-Reflector (with polarizing filter)	VD-80D(P) Diffused Reflection
Detecting Distance	20m	5m	80cm
Supply Voltage	10 ~ 30V DC		
Power Current Consumption	55mA max.	35mA max.	
Response Time	1.5ms max.	1.0 ms max.	
Detecting Object	Opaque Object 20mm min.	Opaque and Mirror Surface Object 45mm min.	Opaque and Transparent Surface
Hysteresis	-		15% (at 80cm)
Light Source	IR LED	Red LED	IR LED
Sensitivity Adjustment	1 rotation volume		
Indicator	Light Indicator (Red) When unstable incident, indicator comes to blink for alarm Power Indicator for emitter.		
Timer Function	On delay, Off delay, One-Shot delay, Selectable Timer: 0.1~5sec. (variable)		
Operating Mode	LIGHT ON / DARK ON selectable		
Control Output	NPN or PNP open collector (Total 200mA max. 30V DC)		
Alarm Output	When unstable incident, output transistor ON (Total 200mA max. 30V DC)		
Connection	Terminal Base (ø6~10mm)PF1/2 (JIS B0202) Conduit Outlet		
Ambient Temperature / Humidity	-25 ~ 55°C (but not freezing) / 35 ~ 85% RH		
Ambient Operating Illuminance	Sunlight: 10,000 lux max. Incandescent lamp: 3,000 lux max.		
Noise Resisitance	10,000Vp-p pulse width 1μs (noise simulator)		
Insulation Resistance	20MΩmin. (at 500V DC)		
Withstand Voltage	2,000V AC for 1 minute (between power supply and outlet)		
Vibration Resistance	10 ~ 55 Hz amplitude 1.5mm 2 hours in each of XYZ directions		
Shock Resistance	500m/s ² (approx 50G) 2 times in each XYZ directions		
Protection Category	IP66 (IEC 144 water resistant model)		
Enclosure Material	Case; lid: PPE Lens: PMMA		
Weight	Receiver 80g / Emitter 75g	85g	



**Passive Infrared
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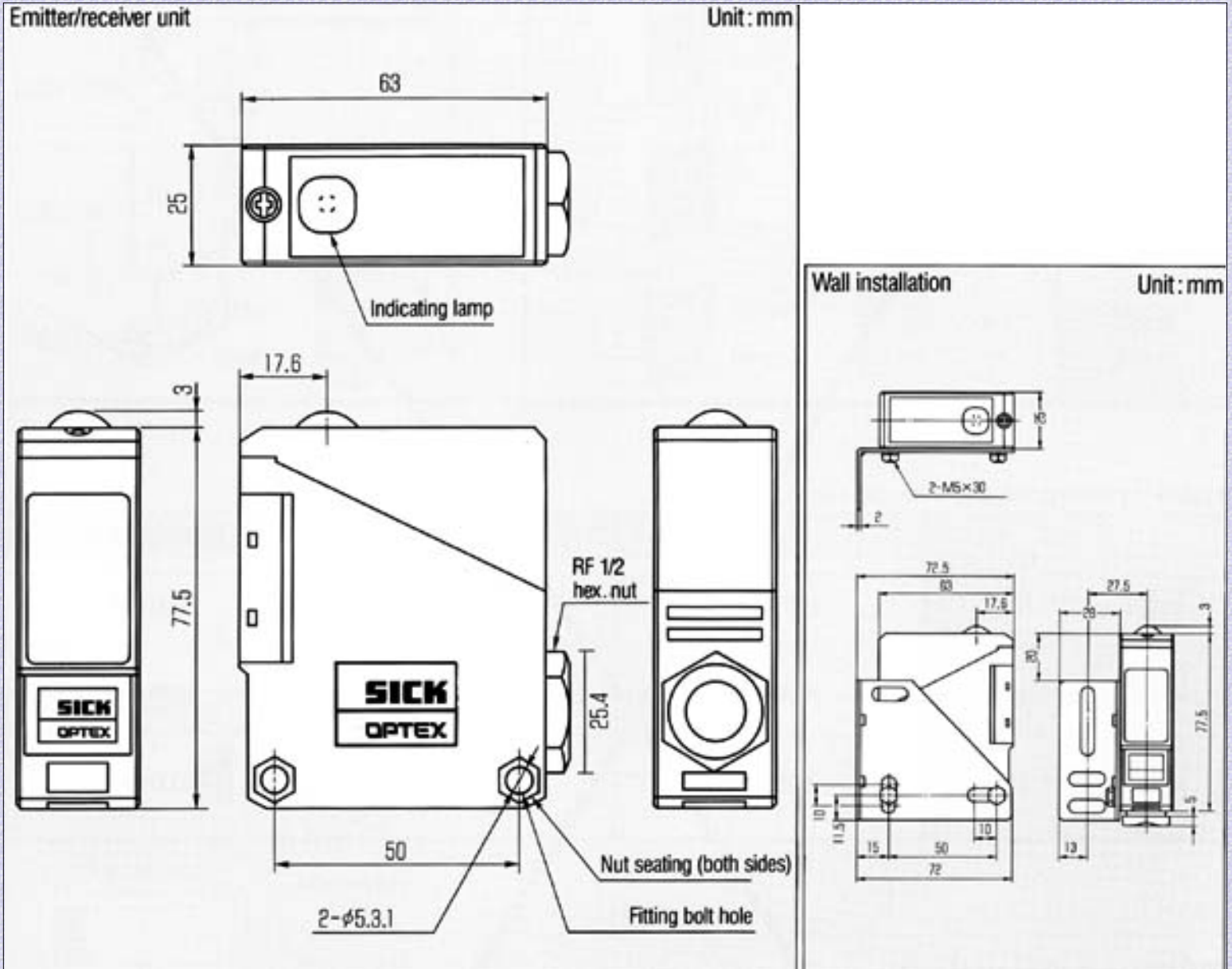


OPTEX MODEL NUMBER

V Series

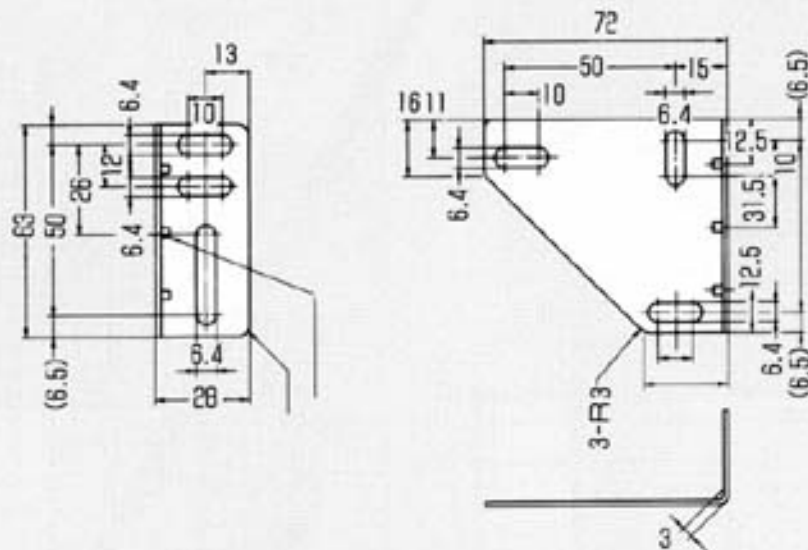
**FREE VOLTAGE
PHOTOELECTRIC SENSORS**

VT, VD, and VR All Use the Same Casing



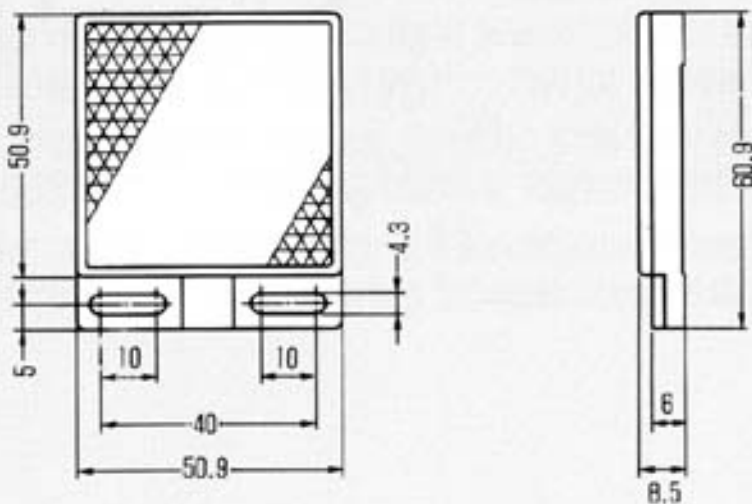
Mounting accessories

Unit: mm



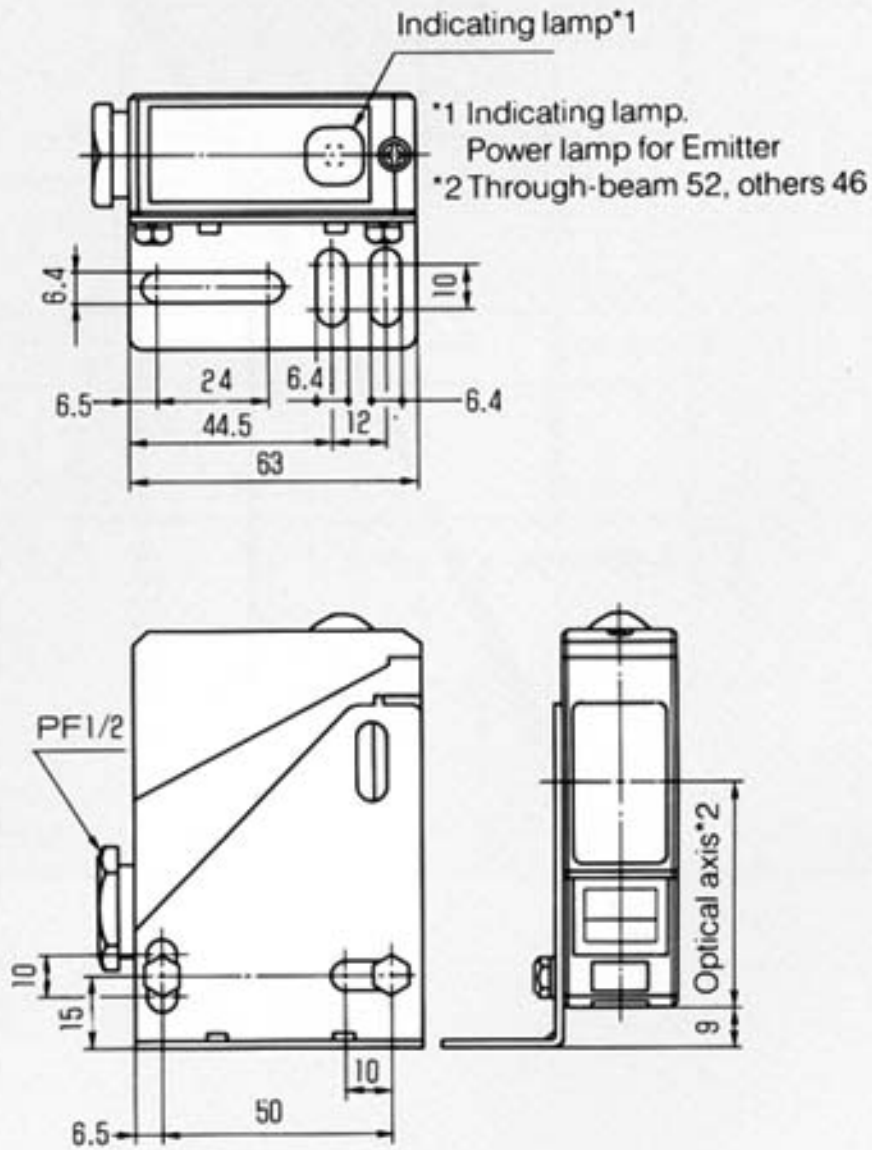
Retro-reflection mirror V-61

Unit: mm



Floor installation

Unit: mm



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OPTEX

SPECIFICATION SHEET

OPTEX MODEL NUMBER

V2 Series

**MULTIVOLTAGE TYPE
PHOTOELECTRIC SENSORS**

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Multivoltage Type Photoelectric Sensors

The **STRONGEST** Performance
for the **LONGEST** Distance

OPTEX's Noise-Resistant Long-Range Sensors
Offer Stable Detection with Built-In BGS
Function.

V2T-2000	Through-Beam Type
V2R-800	Retro-Reflection Type
BGS-V50	BGS Type (Cord Direct Type, Connector Type)
BGS-V39	

FEATURES

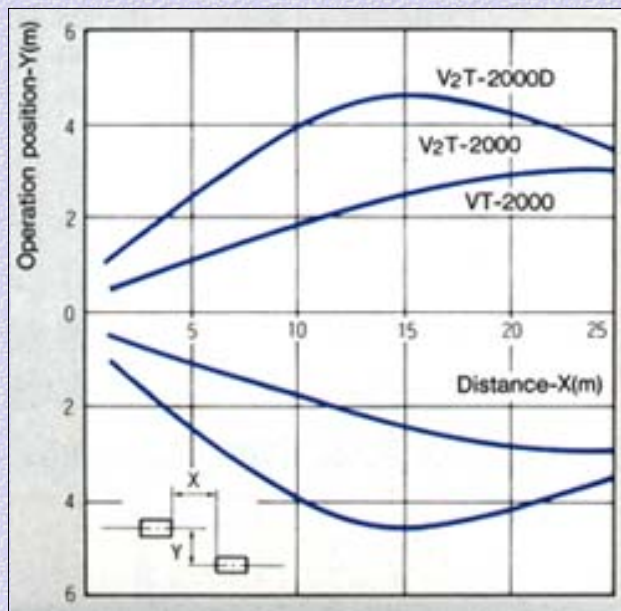
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OPTEX's BGS-Type Sensors Now Offer You Stable Long Range Detection in All Environmental Conditions

- **20 Meter Long-Range Detection Even with a Red LED Indicator**

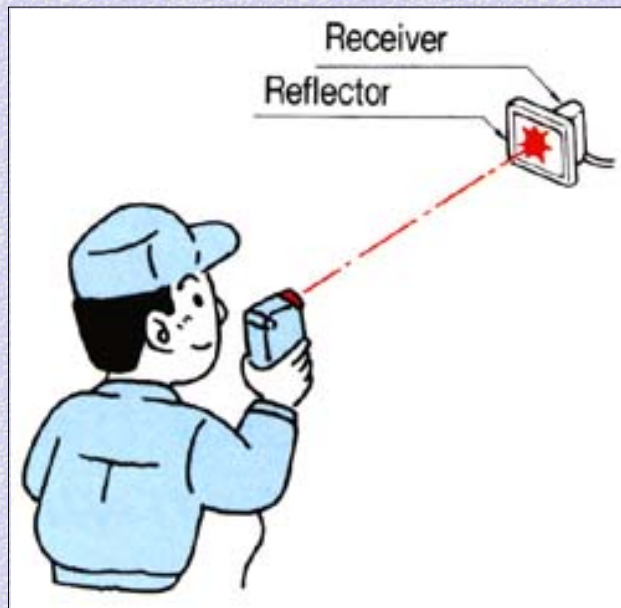
1. A Wide Optical Projection Lets You Simply Adjust the Light Axis

The longer the detection distance, the more difficult it is to adjust the light axis. But, the V2 model easily solves this problem since it features a parallel displacement approximately 1.7 times greater than that of conventional models.



2. A High Luminance Design Allows You to Check the Optical Axis.

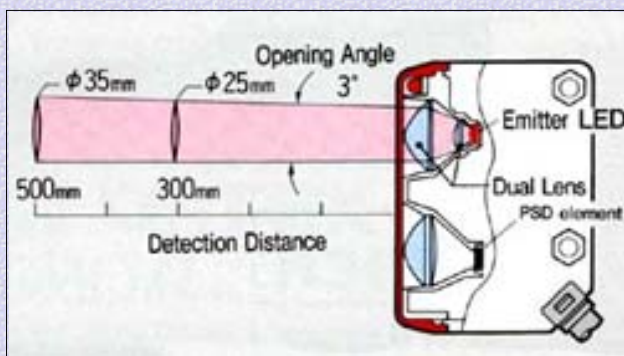
By placing a retro-reflector in front of the receiver, the visible red light emitted by the transmitter can easily be seen. This makes accurate alignment to ensure detection of objects over a range of up to 20 meters.



- **You Can Even Detect Black Objects at 400 Millimeters**

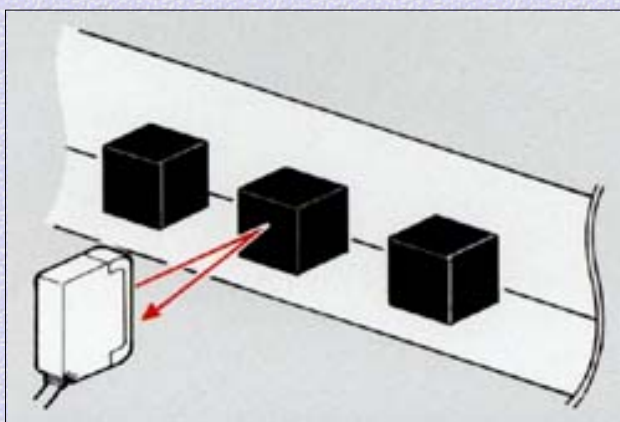
1. Long-Range Detection Thanks to a Dual Lens

Optex employs a condenser lens which enables the maximum LED light possible at the emitter's large diameter lens. The large lens reconverges the beam to be similar to parallel light, creating a long range small spot. This innovation allows the detection of even black objects at a distance of 400 millimeters.



2. Reliable detection with minimal background influence

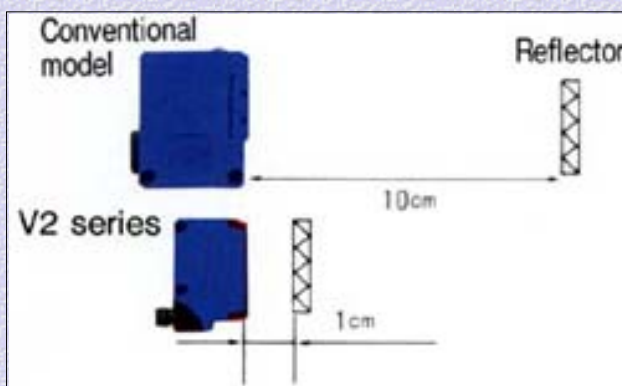
When the object to be detected is black and the background is white, it is almost impossible to accurately sense using conventional diffused sensors. The PSD element in the Optex receiver produces stable detection with minimum hysteresis.



● You can Detect Objects at a Distance of 8 Meters with a Red LED Indicator

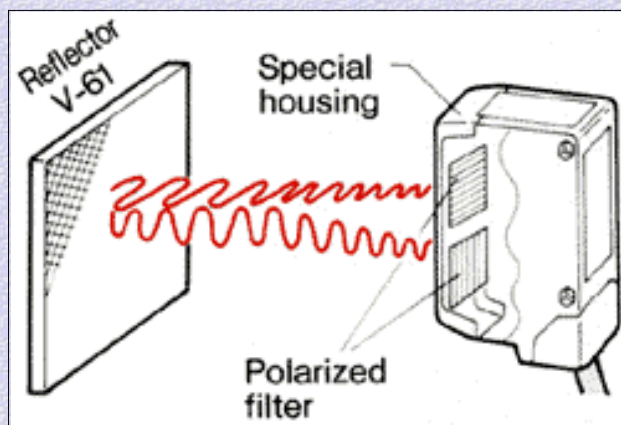
1. A reflector can be installed down to 1 centimeter

A greater range of applications can be solved with the V2 series since the distance from the sensor to the reflector can be reduced to 1/10 of that of conventional models.



2. Shiny objects can be detected at a distance of 800 mm

The Optical Axis housing contains polarized filters which allow only polarized light from the reflector to reach the receiving element; reflected light from shiny objects cannot produce a false signal.



- **Exclusive Connector makes these sensors easier to use**

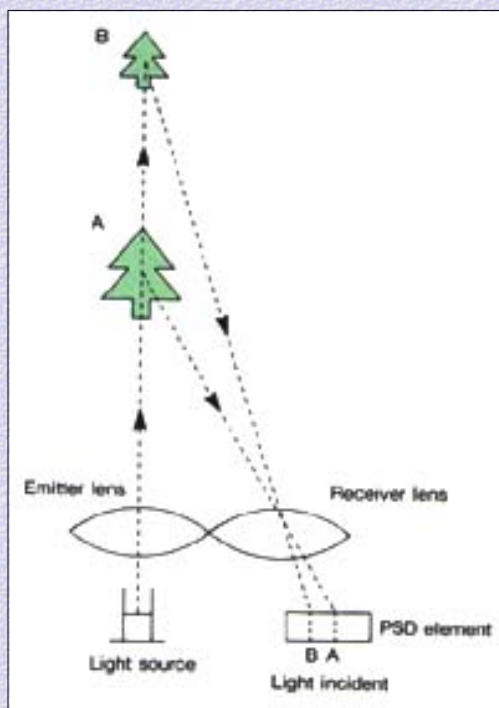
DC Power Connector

Optex's new pivoting connector allows vertical or horizontal cable installation by a simple rotation. Even though the connector rotates 180°, it still maintains IP67 enclosure rating.






- **Philosophy of BGS - What is BGS?**

Conventional diffuse Reflection sensors work by detecting the quantity of incoming light. Optex's BGS senses the distance to the object in the same manner as an object in the same manner as an Auto-focus camera. The PSD element in the sensor detects the angle of the light entering the lens and thus the distance to the reflecting object.



● Type numbers

	Types	Detecting distance	Light ON/Dark ON	Sensitivity adjustment	Red LED	Test input	Supply voltage	Operating mode	Model Number	
	Through-beam	20m	o	o	o	-	AC 24~240V ±10%	Relay 1c	V2T-2000	
	Retro-reflection	0.01~8m	o	o	o	-			DC 12~240V ±10%	V2R-800
	BGS	longer	20~550mm	o	o	o	-			BGS-V50
		shorter	10~300mm	o	o	o	-		BGS-V30	
		Through-beam	20m	o	-	o	o	DC 10~30V	NPN/PNP	V2T-2000DN/P
		Retro-reflection	0.01~8m	o	o	o	-			V2R-800DN/P
BGS		longer	20~550mm	o	o	o	-			BGS-V50N/P
		shorter	10~300mm	o	o	o	-			BGS-V30N/P
	Through-beam	20m	o	-	o	o	DC 10~30V	NPN/PNP	V2T-2000CDN/P	
	Retro-reflection	0.01~8m	o	o	o	-			V2R-800CDN/P	
	BGS	longer	20~550mm	o	o	o			-	BGS-V50CN/P
		shorter	10~300mm	o	o	o			-	BGS-V30CN/P

● Options

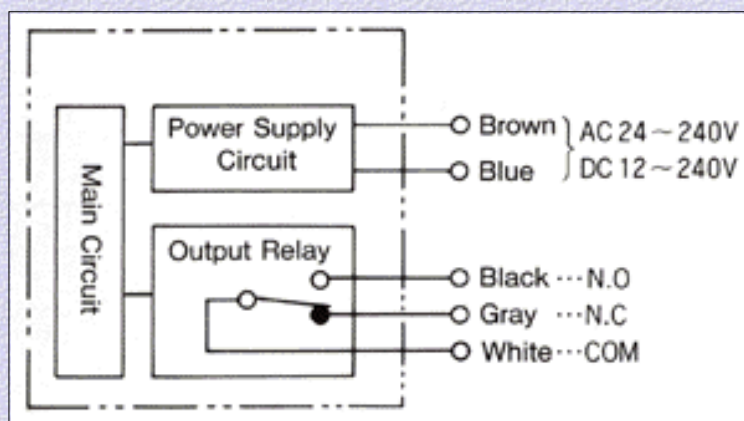
Feature	Model number
M12 Connector Cable 2m	1699981
Retro-reflector V-61	V-61

- Operation Mode (AC/DC)**

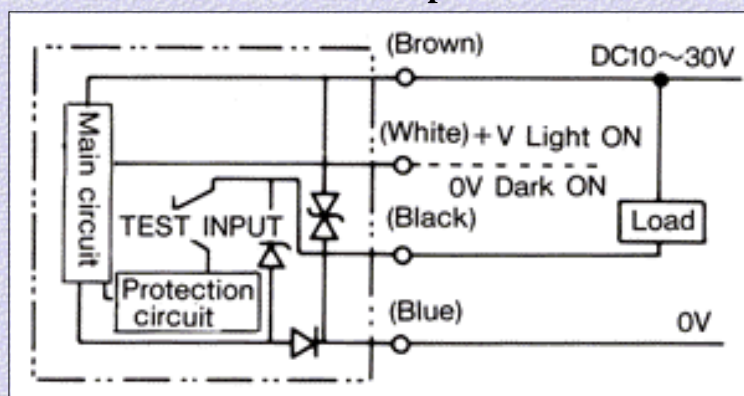
Types		T-Beam/Retro		BGS	
		Light ON			
Output		N.O. Black Cable	N.C. Gray Cable	N.O. Black Cable	N.C. Gray Cable
Output Mode	Power OFF	Open	Close	Open	Close
	Light ON	Close	Open	Close	Open
	Dark ON	Open	Close	Open	Close

- Output circuit diagram**

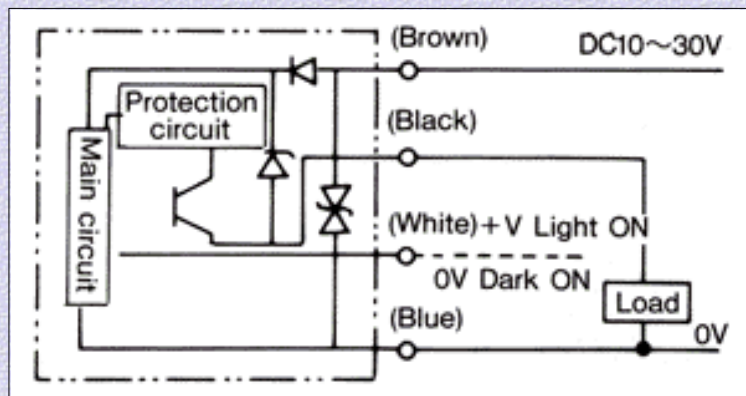
AC/DC



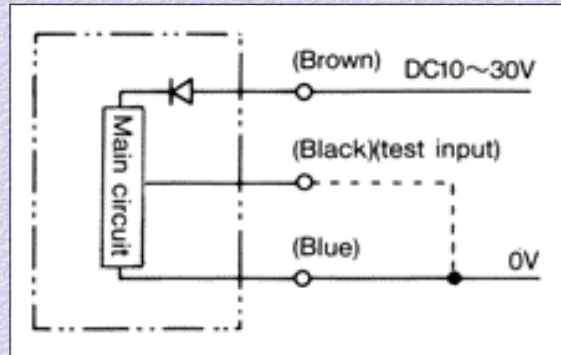
NPN Output



PNP Output



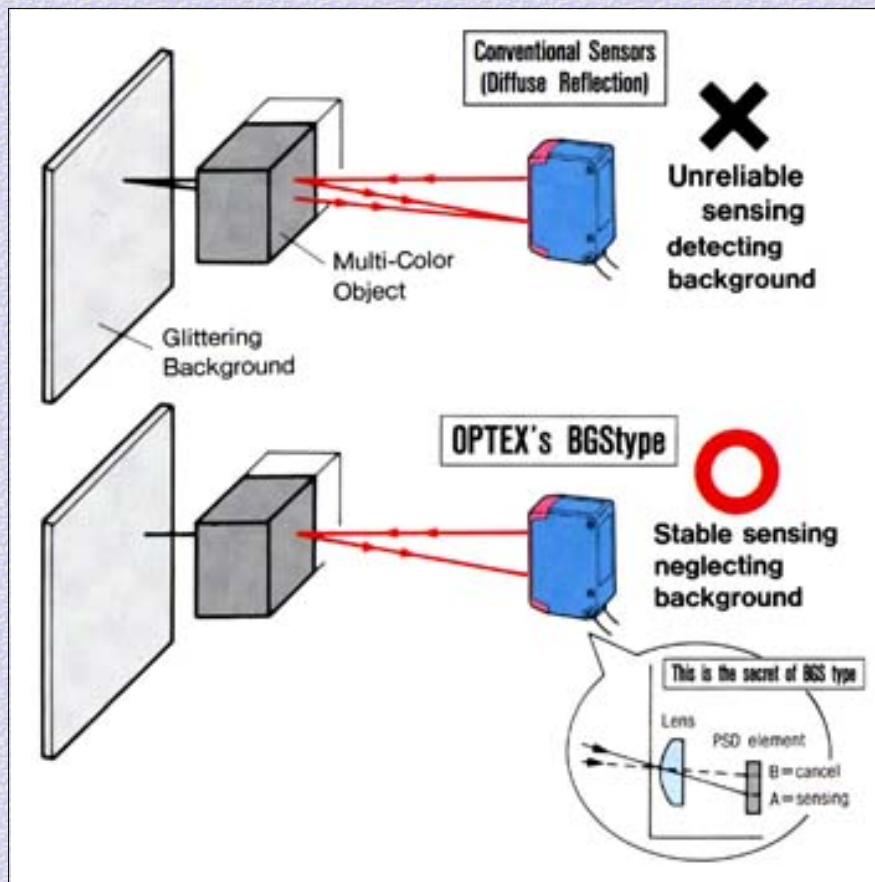
Through Beam Type Emitter

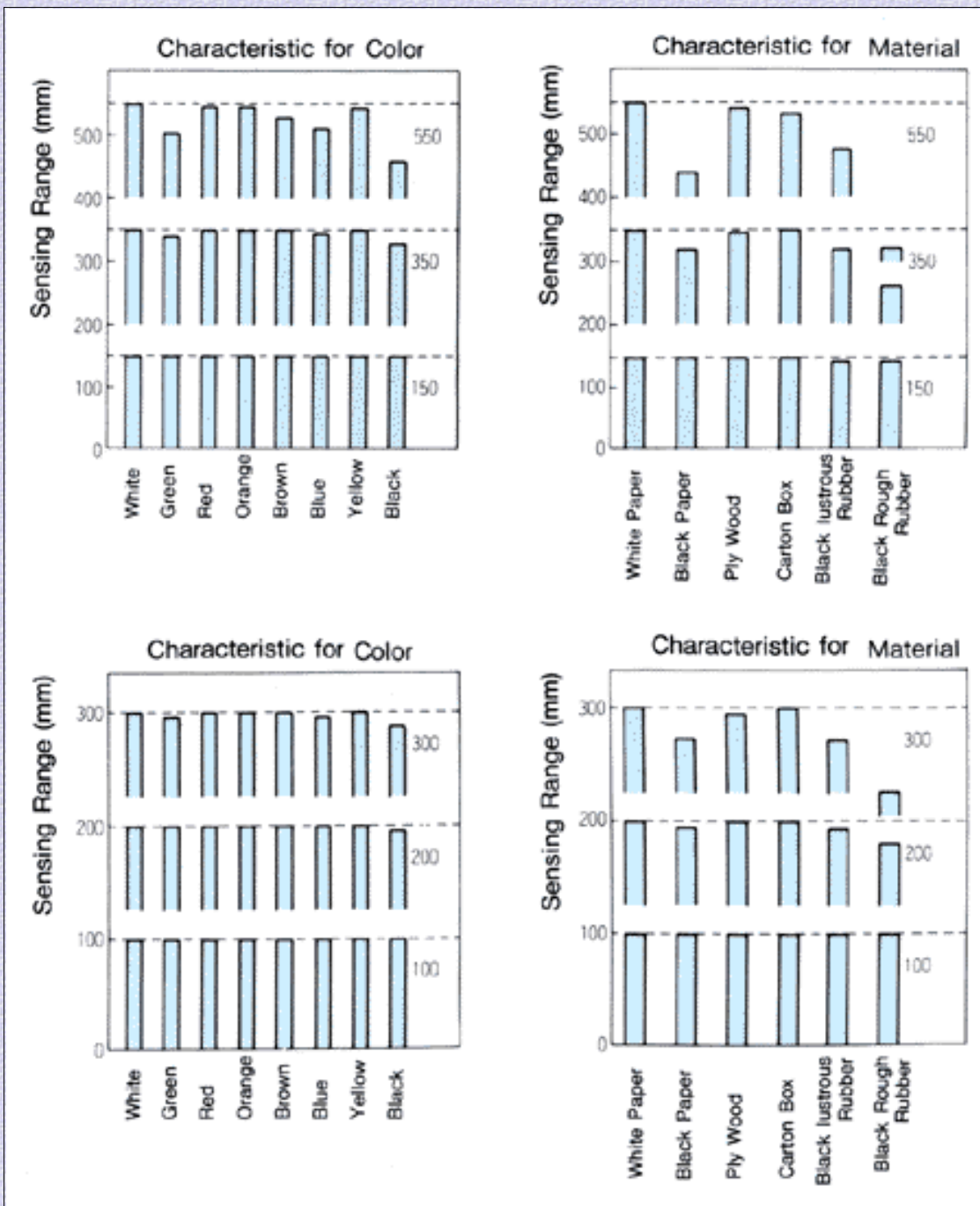


Connector Pins

1. Brown - 2. White - 3. Blue - 4. Black

- **BGS's philosophy**





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		AC/DC Type			
Model		Through-Beam	Retro-Reflection	BGS	
Type	Cord Type	V2T-2000	V2R-800	BGS-V50	BGS-V30
	Connector Type	-	-	-	-

Detecting distance	20m	0.01~8m	20~550mm	10~300mm
Light source	Red LED			
Detecting object	ø15mm	40mm	-	
Response time	15 msec. max.			
Hysteresis	-		5% max.	
Sensitivity adjustment	2 rotation volume			
Indicator	Red LED			
Control output	Relay Output 1c 250V AC 0.3A/30V DC 2A			
Test input	-			
Operating mode	-			
Connection	4-core cable 2m			
Supply voltage	12~240V DC ± 10% 24~240V AC ± 10%			
Power consumption	2VA max.			
Noise resistance	JIS Standard	C4525 1000V		
	IEC Standard	IEC1000-4-2, 4 : Level 4 IEC1000-4-3 : Level 3		
Withstand Voltage	1000V / sec			
Ambient Resistance	Temp / Humidity	-25~55°C / 35 ~ 85% RH		
	Illuminance	Sunlight 1,000 lux / Halogen light 3000 lux		
	Vibration	10~55Hz, vibration 1.5mm, X,Y, Z 2 hours		
	Shock	Approx. 50G (500m/S ²) X,Y,Z 3 times		
Protection	IP-67 (IEC 144)			
Materials	Cover: ABS (Glass fiber included)			
Weight	45g (15g for emitter of through-beam type)			

		DC Type			
Model		Through-Beam	Retro-Reflection	BGS	
Type	Cord Type	V2T-2000DN / V2T-2000DP	V2R-800DN / V2R-800DP	BGS-V50N / BGS-V50P	BGS-V30N / BGS-V30P
	Connector Type	V2T-2000CDN / V2T-2000CDP	V2R-800CDN / V2R-800CDP	BGS-V50CN / BGS-V50CP	BGS-V30CN / BGS-V30CP
Detecting distance	20m	0.01~8m	20~550mm	10~300mm	
Light source	Red LED				
Detecting object	ø15mm	40mm	-		
Response time	1 msec max.	0.7 msec max.	2 msec. max.		
Hysteresis	-		5% max.		
Sensitivity adjustment	-	2 rotation volume			

Indicator	Red LED	
Control output	NPN or PNP open collector (Total 100mA 30V DC)	
Test input	Equipped	-
Operating mode	Light ON / Dark ON selectable by wiring	
Connection	Cable Type: 4-core cable 2m Connection type: M12 x 4	
Supply voltage	10~30V \pm 10% DC	
Power consumption	35mA max.	25mA max.
Noise resistance	JIS Standard	C4525 1000V
	IEC Standard	IEC1000-4-2, 4 : Level 4 IEC1000-4-3 : Level 3
Withstand Voltage	1000V / sec	
Ambient Resistance	Temp / Humidity	-25~55°C / 35 ~ 85% RH
	Illuminance	Sunlight 1,000 lux / Halogen light 3000 lux
	Vibration	10~55Hz, vibration 1.5mm, X,Y, Z 2 hours
	Shock	Approx. 50G (500m/S ²) X,Y,Z 3 times
	Protection	IP-67 (IEC 144)
Materials	Cover: ABS (Glass fiber included)	
Weight	45g (15g for emitter of through-beam type)	



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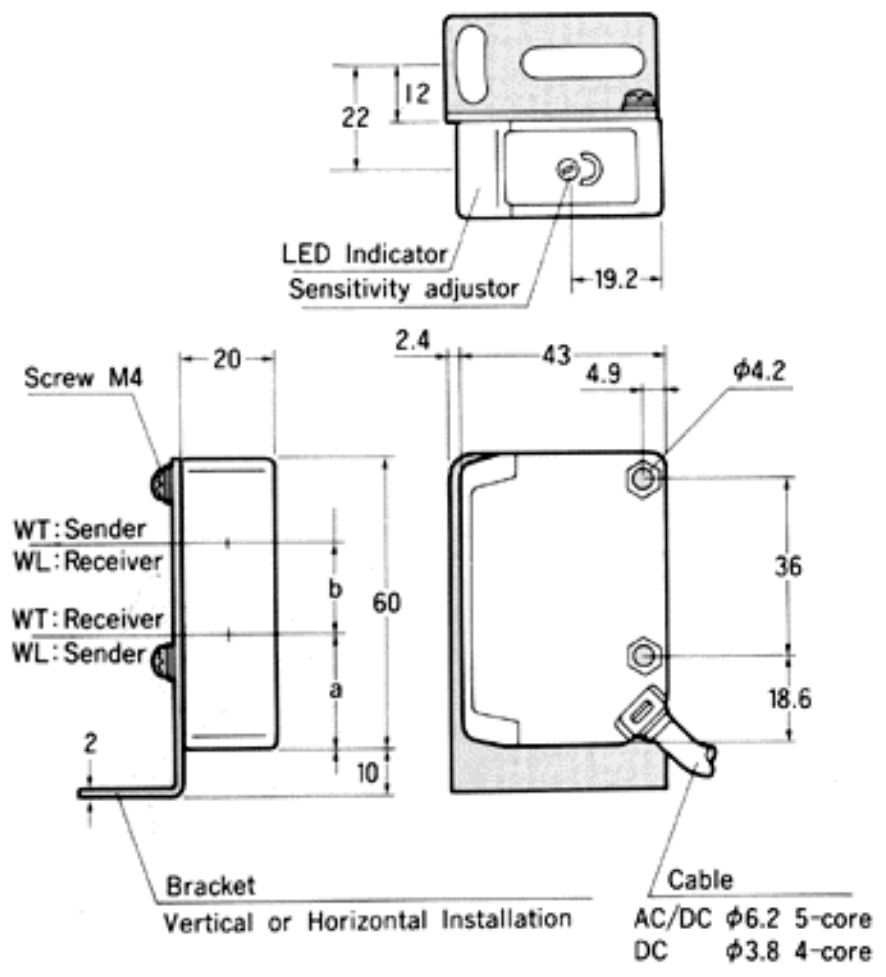


OPTEX MODEL NUMBER

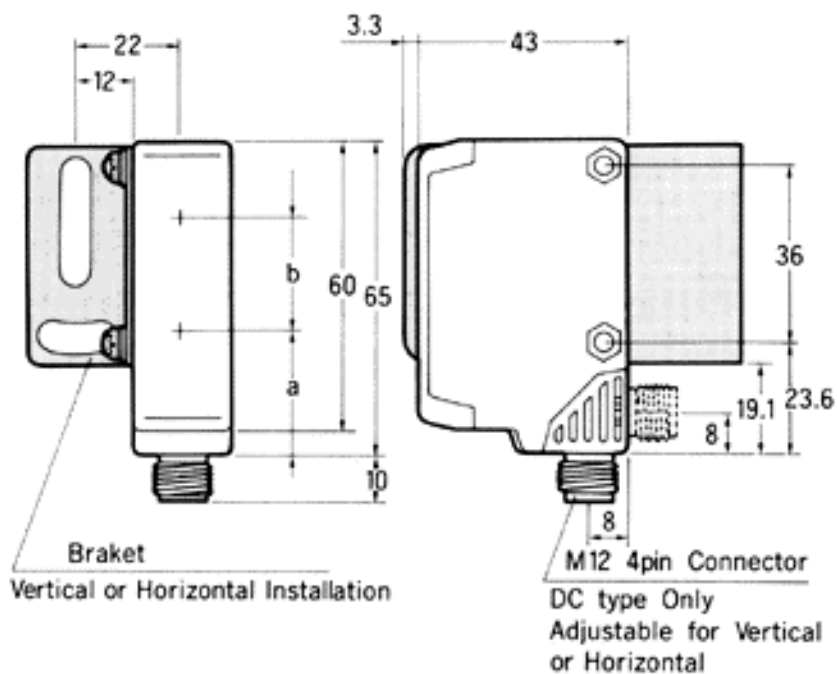
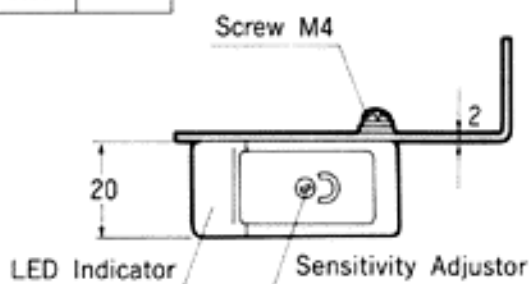
V2 Series**MULTIVOLTAGE TYPE
PHOTOELECTRIC SENSORS**

Sensor

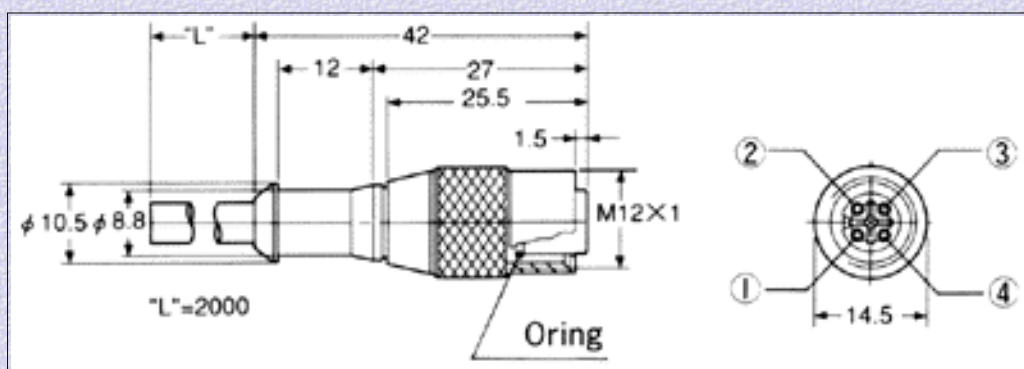
	V2T-2000	V2T-800	BGS-V50	BGS-V30
a	44	19	18	18.7
b	—	17.4	26	25.3



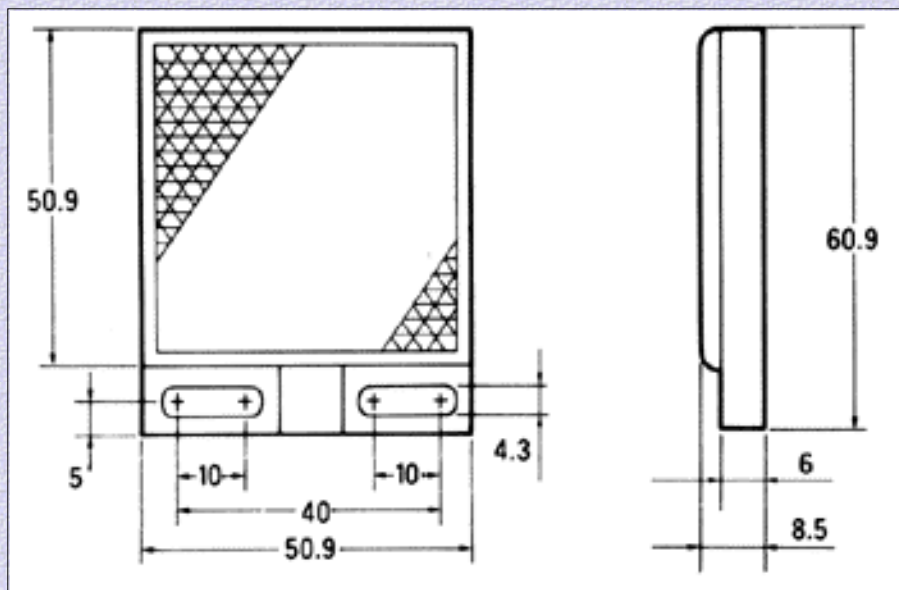
	BGS-V30C	BGS-V50C	VZR-800C	VZR-2000C
a	23.7	23	24	49
b	25.3	26	17.4	-



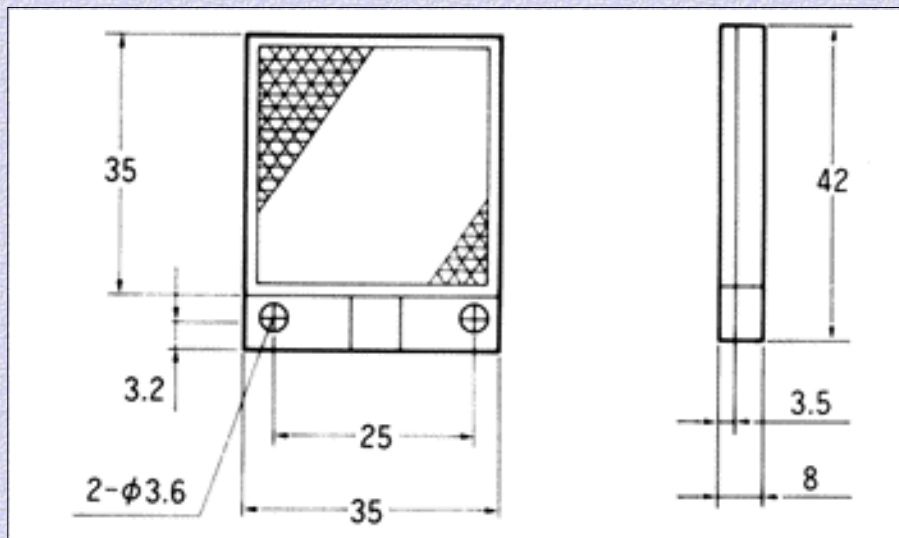
Cable Connector



Reflection Mirror V-61



Compact Type Reflection Mirror V-42 (option)



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OPTEX MODEL NUMBER

OA-201C

**ACTIVE
INFRARED PRESENCE SENSOR**

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Provides a Level of Safety Never Before Possible in the Automatic Door Industry

The OA-201C is a front sash mount automatic door sensor which provides a high level of presence sensing a wide enough detection area (2.3 m. width x 1.5 m. depth at 2.5 m. mounting height/ 7.5 ft. width x 4.9 ft. depth at a 8.2 ft. mounting height) to assure safe and smooth operation for even slow moving and(or) stationary people or objects around the doors.

FEATURES

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- **Presence Detection = Safety**

The OA-201C's Presence Detection capability assures safe and reliable operation. It is capable of sensing moving as well as slow moving or stationary people or objects. Its presence detection timer is adjustable for 2, 15 or 60 seconds.

- **Wide and Dense Detection Area**

The OA-201C's detection area consists of 18 individual detection zones (6 zones x 3 rows) which represent 2.3 m. width x 1.5 m. depth at a 2.5 m. mounting height (7.5 ft. width x 4.9 ft. depth at a 8.2 ft. mounting height.)

- **Flexible Detection Area Setting**

The width and depth of the detection area can be easily adjusted to obtain the desired detection area.

- **Environmental Disturbance Immunity**

The OA-201C provides extremely dependable, low maintenance operation all year round. It operates reliably even in harsh environments such as rain and snow because of the advanced signal processing circuitry built into the unit.

- **Attractive Design to Suit Any Installation Decor**
- **12 - 24V AC/DC Universal Power Input**
- **Form C Relay Output (Normally Open or Normally Closed Selectable)**
- **Meets ANSI Standards**

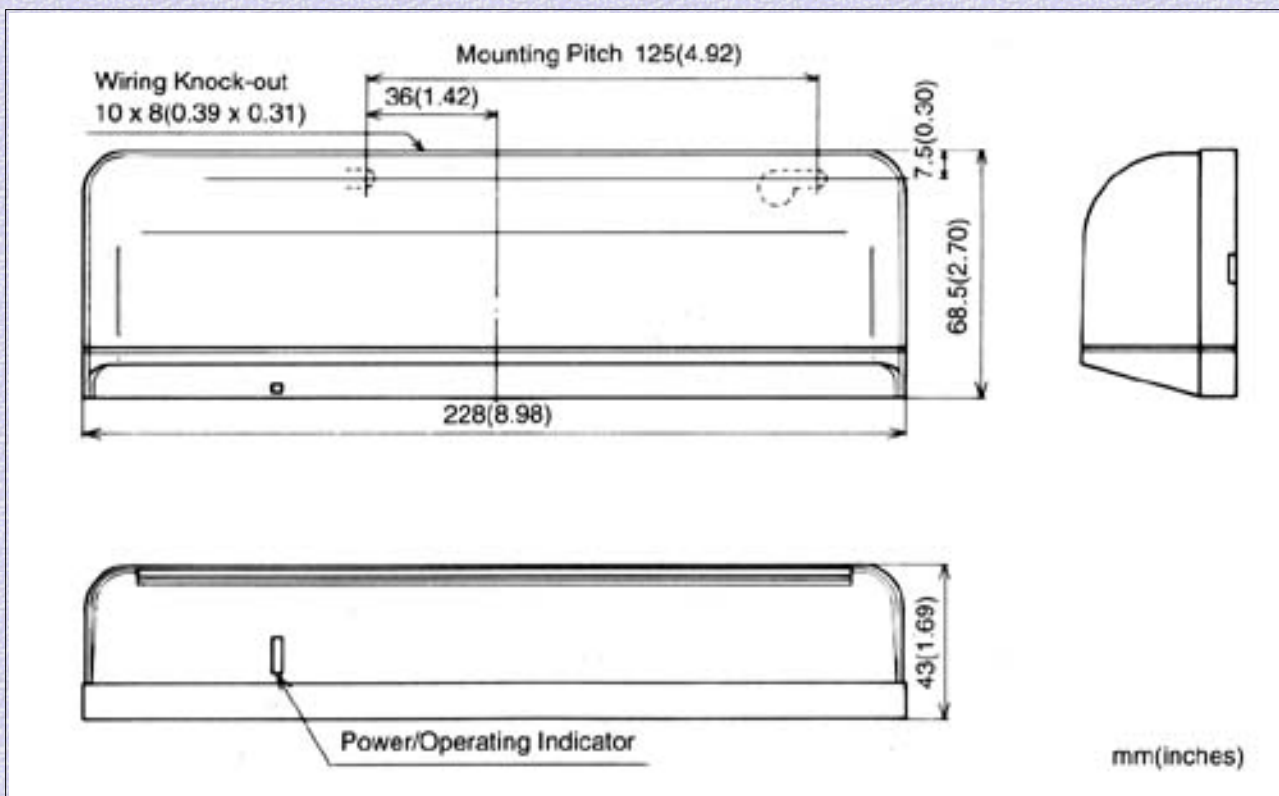
DETECTION AREA

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[Click Here To See The OA-201C's Detection Areas](#)

DIMENSIONS

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SPECIFICATIONS

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Model	OA-201CS/OA-201CBL
Detection Range	2.7m(8.9ft.) Max
Detection Area	See Chart
Detection Method	Near Infrared Reflection Method
Power Input	12 ~ 24V AC/DC
Current Draw	150mA Max. (at 12V AC)
Power/Operating Indicator	LED ON in stand-by LED OFF when detecting

Output Contact	Form C Relay 50V 0.3A(Resistance Load)
Output Hold	0.5sec. Delay
Operating Temperature	-20°C ~ +55°C (-4°F ~ +131°F)
Weight	260g(9.2 oz.)
Accessories	2m Wire with Plug, 2 Mounting Screws, Mounting Template, 2 Prism Lenses

*Specifications subject to change without prior notice.

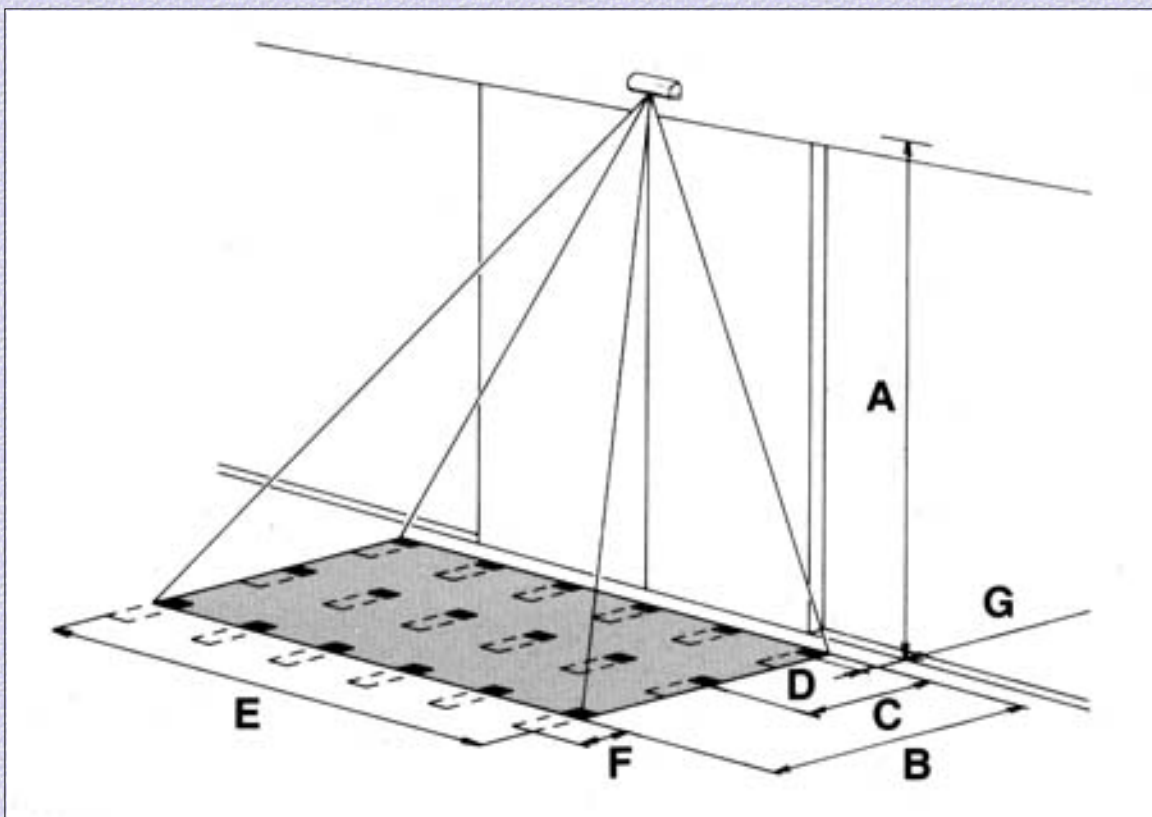
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OA-201C
ACTIVE
INFRARED PRESENCE SENSOR

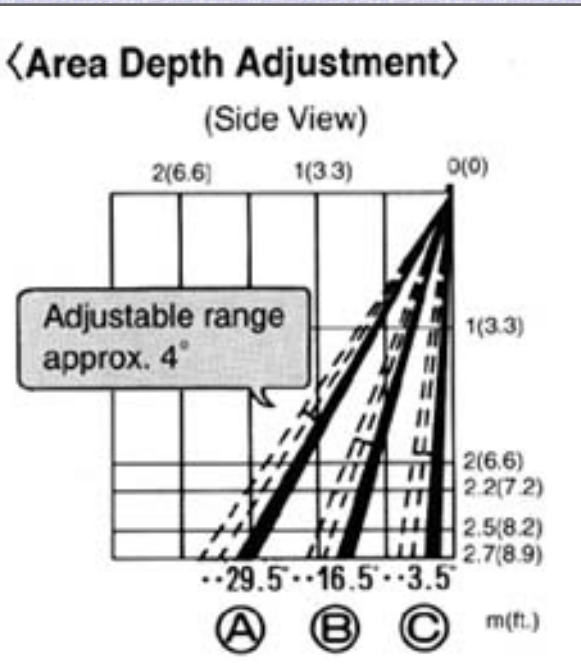
DETECTION AREA CHART



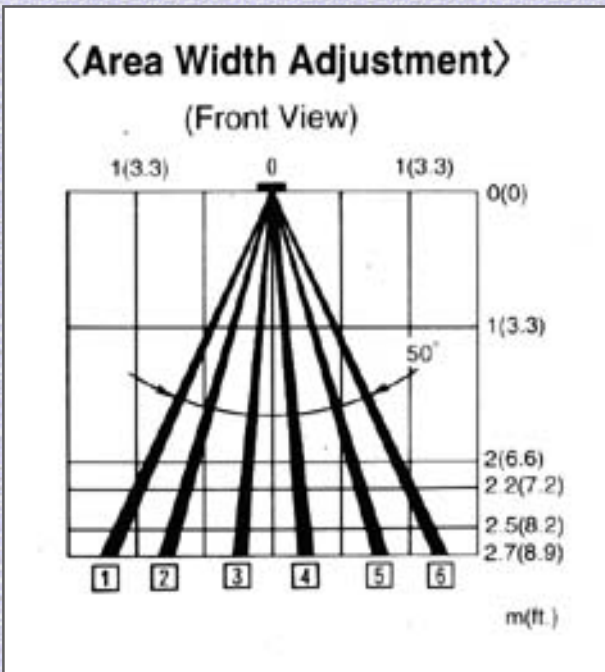
A	Mounting Height	2.00 (6.56)	2.20 (7.21)	2.50 (8.20)	2.70 (8.86)
B	Area Depth	1.10 (3.61)	1.20 (3.94)	1.40 (4.59)	1.50 (4.92)
C	Area Depth	0.55 (1.80)	0.60 (1.97)	0.70 (2.30)	0.75 (2.46)
D	Area Depth	0.06 (0.20)	0.07 (0.23)	0.08 (0.26)	0.09 (0.30)
E	Area Width	1.90 (6.23)	2.10 (6.89)	2.30 (7.55)	2.50 (8.20)
F	Adjustable Range	0.20 (0.66)	0.22 (0.72)	0.24 (0.79)	0.26 (0.85)
G	Distance from Mounting Surface	0.08 (0.26)	0.09 (0.30)	0.10 (0.33)	0.11 (0.36)

m (ft.)

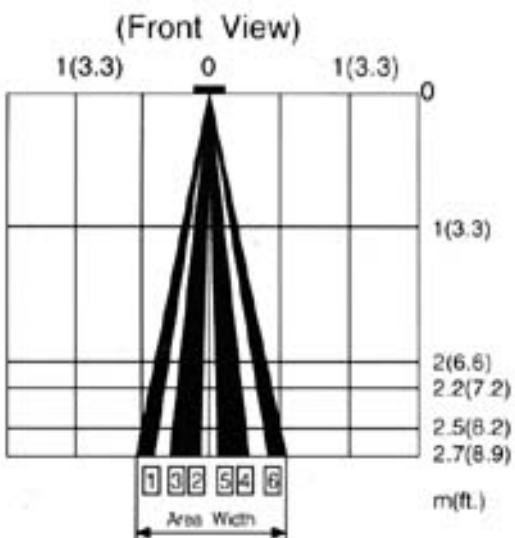
ADJUSTING THE DETECTION AREA



The detection angle can be adjusted approximately 4°. Also, Area A and (or) Area B can be easily eliminated by simply turning off the switches.

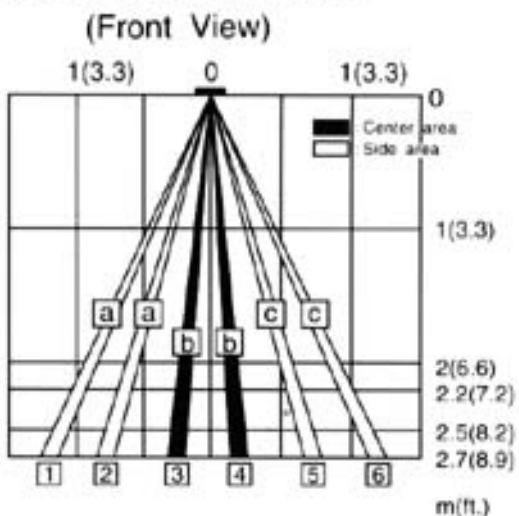


● **Using Prism Lens to narrow detection area**



The detection area can be narrowed with the Prism Lens provided.

● **Using Area Adjusting Masking to eliminate side area**



The side area A and (or) B can be eliminated with the Area Adjusting Masking provided.



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OPTEX

SPECIFICATION SHEET

OPTEX MODEL NUMBER

OA-202C

ACTIVE INFRARED PRESENCE SENSOR

FEATURES

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Activation for Approaching Traffic and Threshold Safety in One Sensor is the Concept Behind PROSAFE.

The PROSAFE OA-202C will not only activate an automatic door from over 2m (7ft.) away, but also provides a safe zone up to 0.8m (2.6ft.) away from the door's threshold. By incorporating SMD (Surface Mount Device) technology, micro-computer based signal processing and industry leading optical systems, OPTEX is able to provide superior reliability and safety in ONE compact package.

FEATURES

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- **Presence Detection**

The OA-202C recognizes the presence of a motionless person from up to 0.8m (2.6ft.) away from the door's threshold, even at floor level. The presence "Hold Open Time" is selectable from 2, 60 or 180 seconds. If any motion is detected during the hold open period, the timer will reset and begin again.

- **Deep and Wide Detection Area**

The OA-202C's detection area consists of 29 individual detection zones which represent 2.3 m. width x 3.0 m. depth maximum at a 2.5 m. mounting height (7.5 ft. width x 9.8 ft. depth at a 8.2 ft. mounting height.)

- **Flexible Detection Area Setting**

The width and depth of the detection area can be easily adjusted to obtain the desired detection area.

- **Attractive Housing Design and Three Color Choices**

- **12 - 24V AC/DC Universal Power Input**

- **Form C Output Relay (Normally Open or Normally Closed Selectable)**

- **Meets ANSI Standards**

- **Three Colors**

OA-202CW (White)

OA-202CS (Silver)

OA-202CBL (Black)

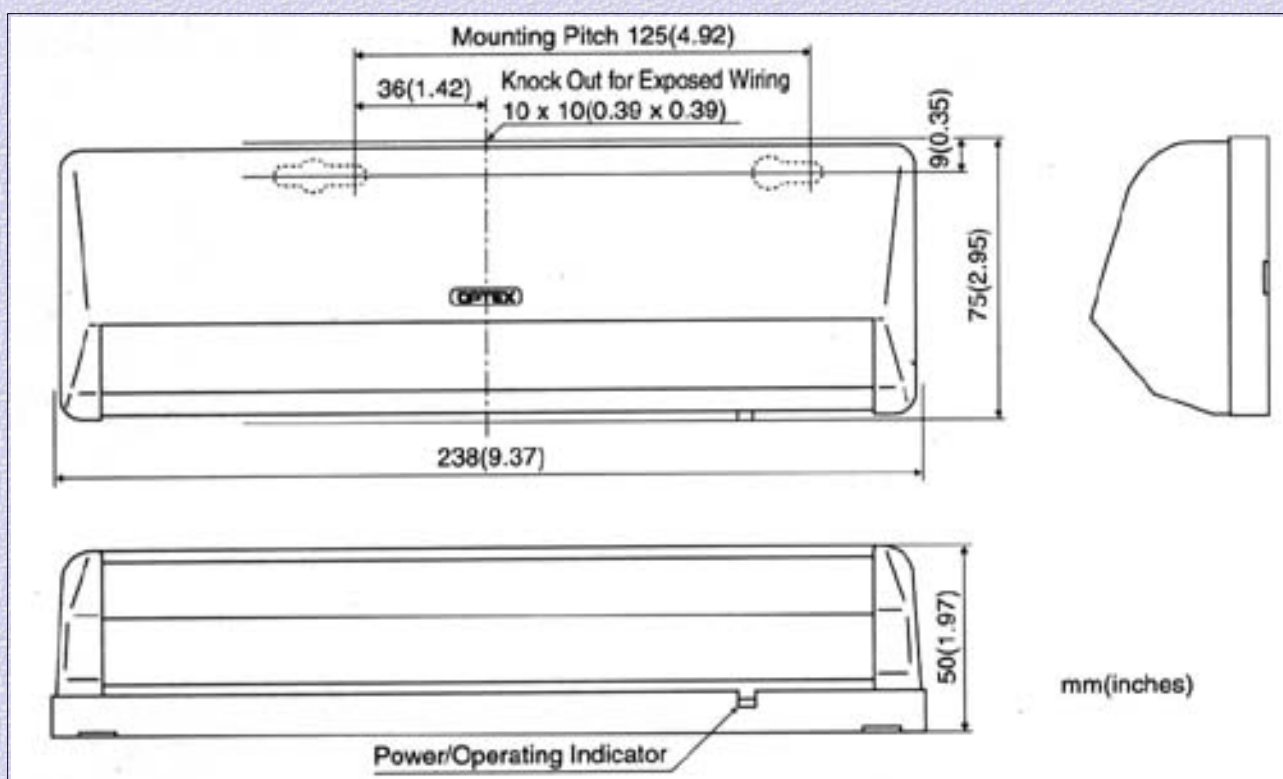
DETECTION AREA

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[Click Here To See The OA-202C's Detection Areas](#)

DIMENSIONS

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SPECIFICATIONS

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Model	OA-202CS / OA-202CBL / OA-202CW
Detection Range	2.6m (6.5ft.) ~ 3.0m (9.8ft.)
Detection Area	See Chart
Detection Method	Active Infrared Reflection Method (Presence Detection Type)
Power Input	12 to 24V AC/DC Universal
Current Draw	Within 150mA (at 12V DC)

Power/Operating Indicator	When Power is Present: The Green Indicator Lamp is Turned On When Operating: The Green Indicator Lamp is Turned Off
Output Contact	Relay Contact "Form C," 50V, Within 0.3A (Resistance Load)
Output Holding Time	Approx. 0.5 second
Operating Temperature	-20°C ~ +55°C (-4°F ~ +131°F)
Weight	320g(11.3 oz.)
Accessories	Wiring Cord (2m, 1 pc.), Mounting Screw (2 pcs.), Mounting Template (1 pc.), Area Mask Seal (1 sh.)

*Specifications subject to change without prior notice.

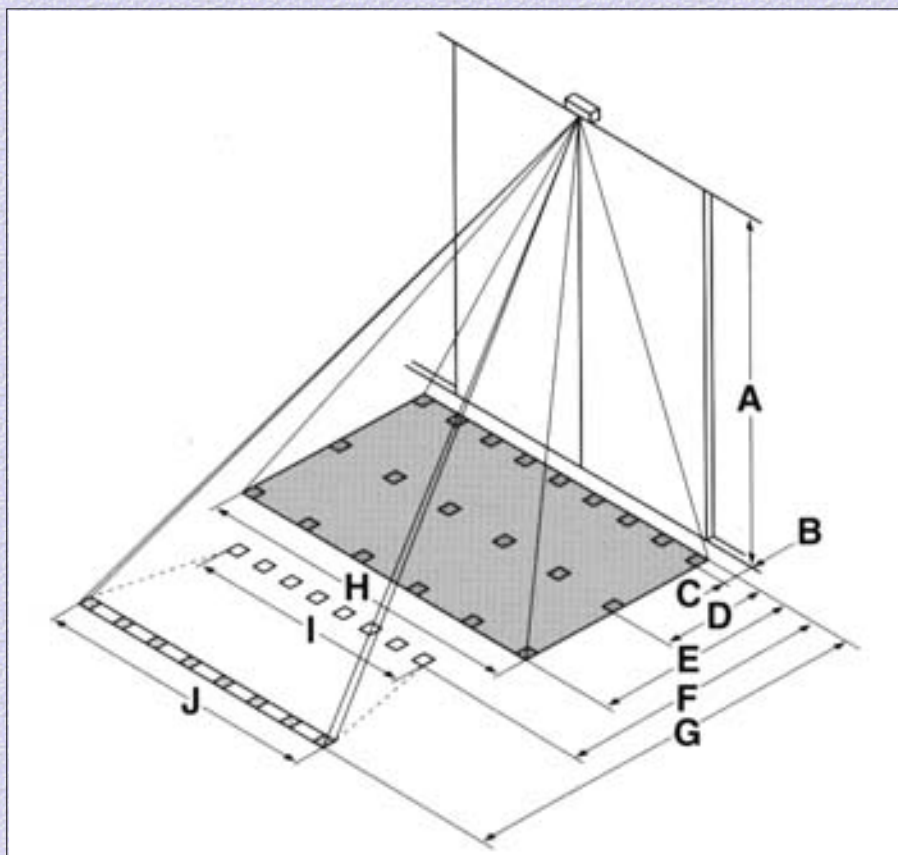
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OPTEX MODEL NUMBER
OA-202C
 ACTIVE
 INFRARED PRESENCE SENSOR

DETECTION AREA CHART



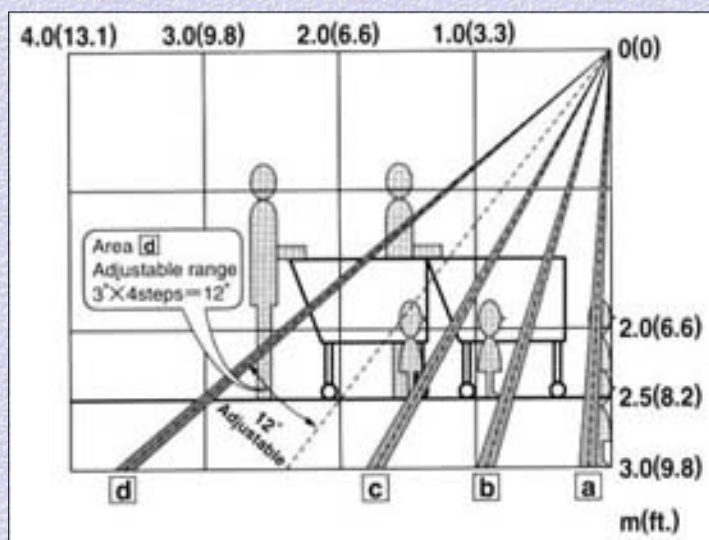
A	Mounting Height	2.20 (7.21)	2.50 (8.20)	2.70 (8.86)	3.00 (9.84)
B	Distance to Mounting Surface	0.10 (0.32)	0.11 (0.36)	0.12 (0.39)	0.13 (0.42)
C	Area Depth	0.07 (0.22)	0.08 (0.26)	0.09 (0.29)	0.10 (0.32)
D	Area Depth	0.70 (2.29)	0.80 (2.62)	0.90 (2.95)	1.00 (3.28)
E	Area Width	1.30 (4.26)	1.50 (4.92)	1.70 (5.57)	1.80 (5.90)
F	Area Width	1.80 (5.90)	2.00 (6.56)	2.10 (6.89)	2.40 (7.87)
G	Area Width	2.60 (8.52)	3.00 (9.84)	3.20 (10.49)	3.60 (11.80)
H	Area Depth	2.00 (6.56)	2.30 (7.54)	2.40 (7.87)	2.70 (8.85)
I	Area Depth	1.40 (4.59)	1.60 (5.24)	1.70 (5.57)	1.90 (6.23)
J	Area Depth	1.70 (5.57)	2.00 (6.56)	2.10 (6.88)	2.40 (7.87)

m (ft.)

ADJUSTING THE DETECTION AREA

Area Depth Adjustment

Side View

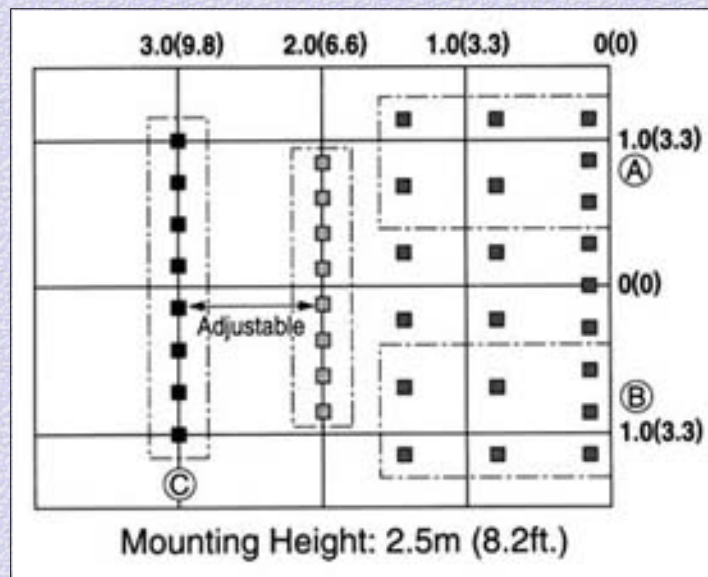


The detection area D can be adjusted approximately 12° (3° x 4 steps). The detection areas A, B, and C are fixed.

Areas A & B - Presence Detection
 Areas C & D - Motion Detection

Area Masking

Top View



The detection areas A, B, and C can be eliminated with the Area Adjusting Masking provided.





OPTEX

SPECIFICATION SHEET

OPTEX MODEL NUMBER
PROSWING
OA-601C
ACTIVE INFRARED
PRESENCE SENSOR

FEATURES

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PROSWING OA-601C was developed to assure the presence of a safety signal at the door control in the event a person or an object is within the swing-zone of an automatic swinging door.

PROSWING OA-601C is ideally suited for any brand of automatic swinging door. The area presence pattern can be precisely adjusted for any size (single or pair of doors) by installing one of 4 prism lens sets (included).

PROSWING OA-601C utilizes the same advanced active infrared technology found in our PROSAFE products.

PROSWING combines high reliability and safety with superior presence detection technology.

FEATURES

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- **Prism Lenses**

OPTEX provides 4 unique pair of prism lenses to conform the presence pattern to a precise fit for any size door (single or pair). Eliminates guesswork of adjusting and tweaking sensitivity to fit the area. The presence detection pattern which is adjusted by prism lenses meets ANSI 156.10 standards.

- **Lockout Relay Operation**

The PROSWING OA-601C operates in conjunction with a lockout relay and an infrared beam to complete the safety system (lockout relay is active during closing cycle only).

- **Presence Detection Area = Safety**

PROSWING OA-601C's detection area consists of an 18-zone presence detector. Capable of sensing moving or stationary targets, the presence detection feature assures a safety signal is present at the door control should a person or object be within the swing-zone. The presence detection timer can be preset to 2, 60 or 180 seconds of duration.

- **Attractive Housing Design**

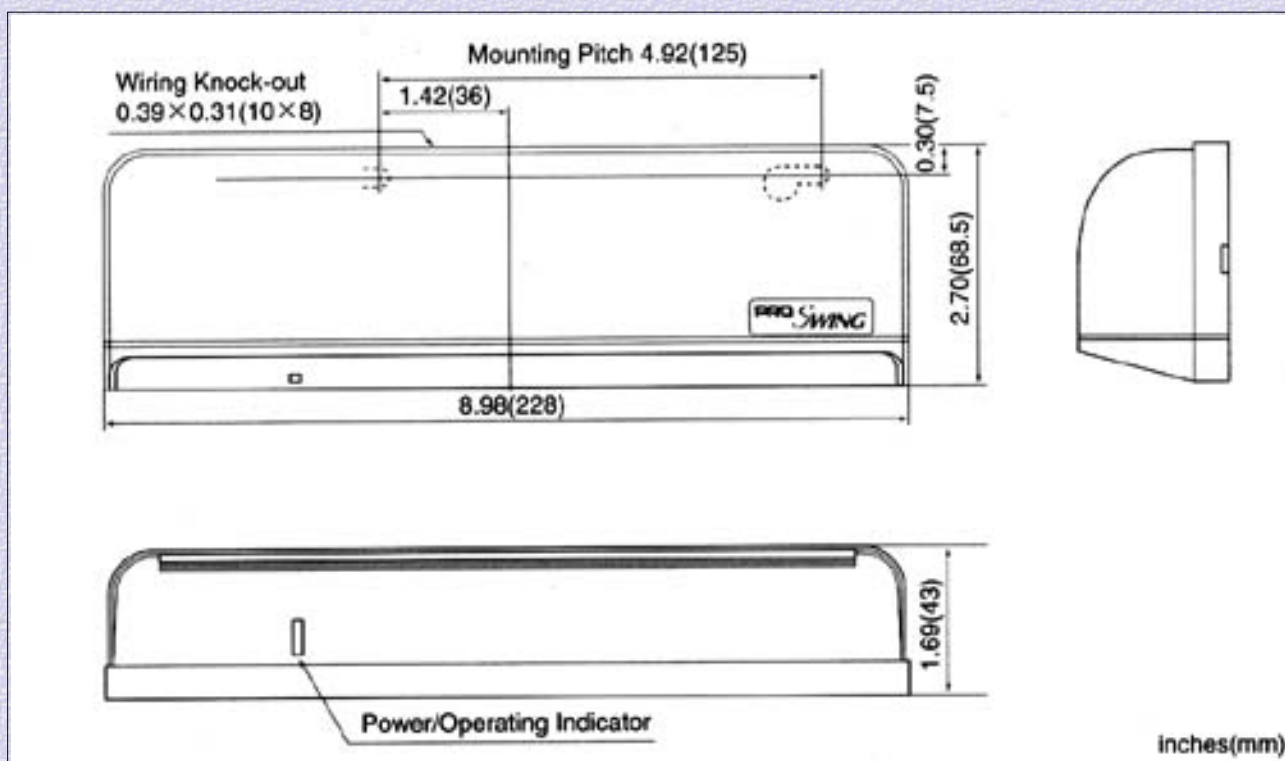
Available in three color choices (black, silver, and white)

DETECTION AREA

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[Click Here To See The
OA-601C's Detection Area](#)

DIMENSIONS

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Model	OA-601CS / OA-601CBL / OA-601CW
Mounting Height	8.86 ft. (2.70 m) Max.
Detection Method	Near Infrared Reflection Method
Power Input	12 ~ 24V AC/DC
Current Draw	120mA Max. (at 12V DC)
Power / Operating Indicator	LED ON when standby by LED OFF when detecting
Output Contact	Form C Relay 50V 0.3A (Resistance Load)
Output Hold	0.5 sec. delay
Operating Temperature	-20°C ~ +55°C (-4°F ~ +131°F)
Weight	260g (9.2 oz.)

Accessories

2m Wire with Plug, 2 Mounting Screws,
Mounting Template, 4 Pair Prism Lenses

*Specifications subject to change without prior notice.



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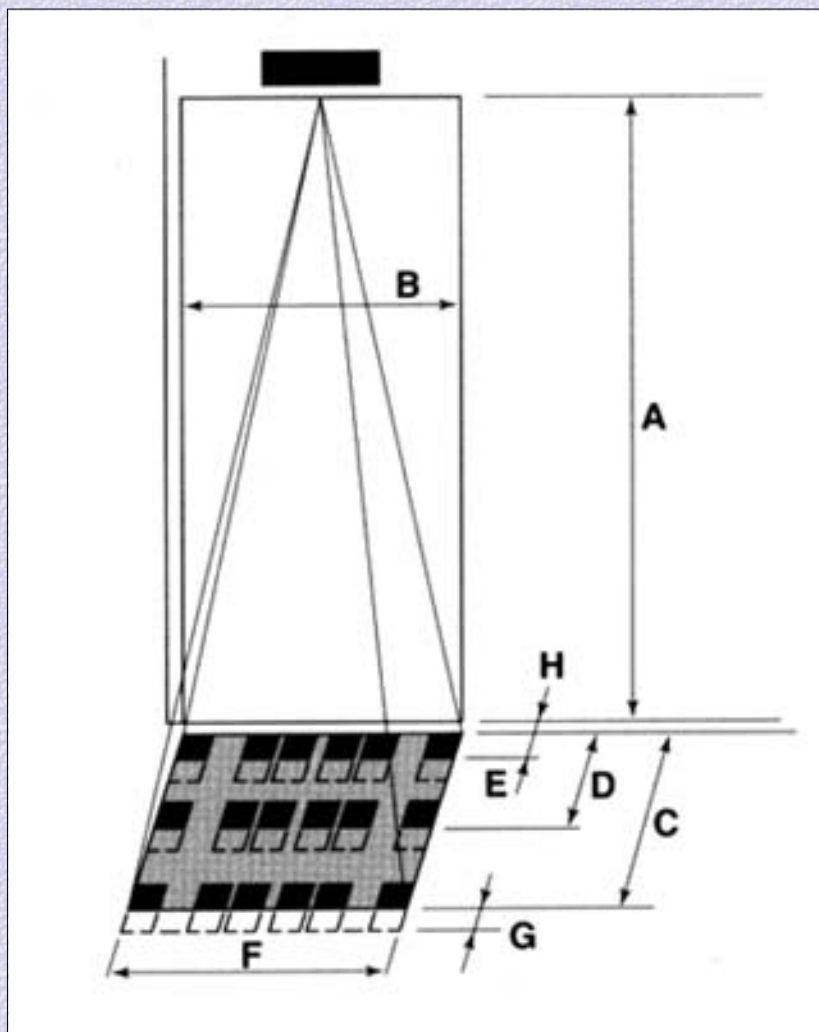
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OPTEX MODEL NUMBER
PROSWING
OA-601C
ACTIVE INFRARED
PRESENCE SENSOR

SINGLE DOOR

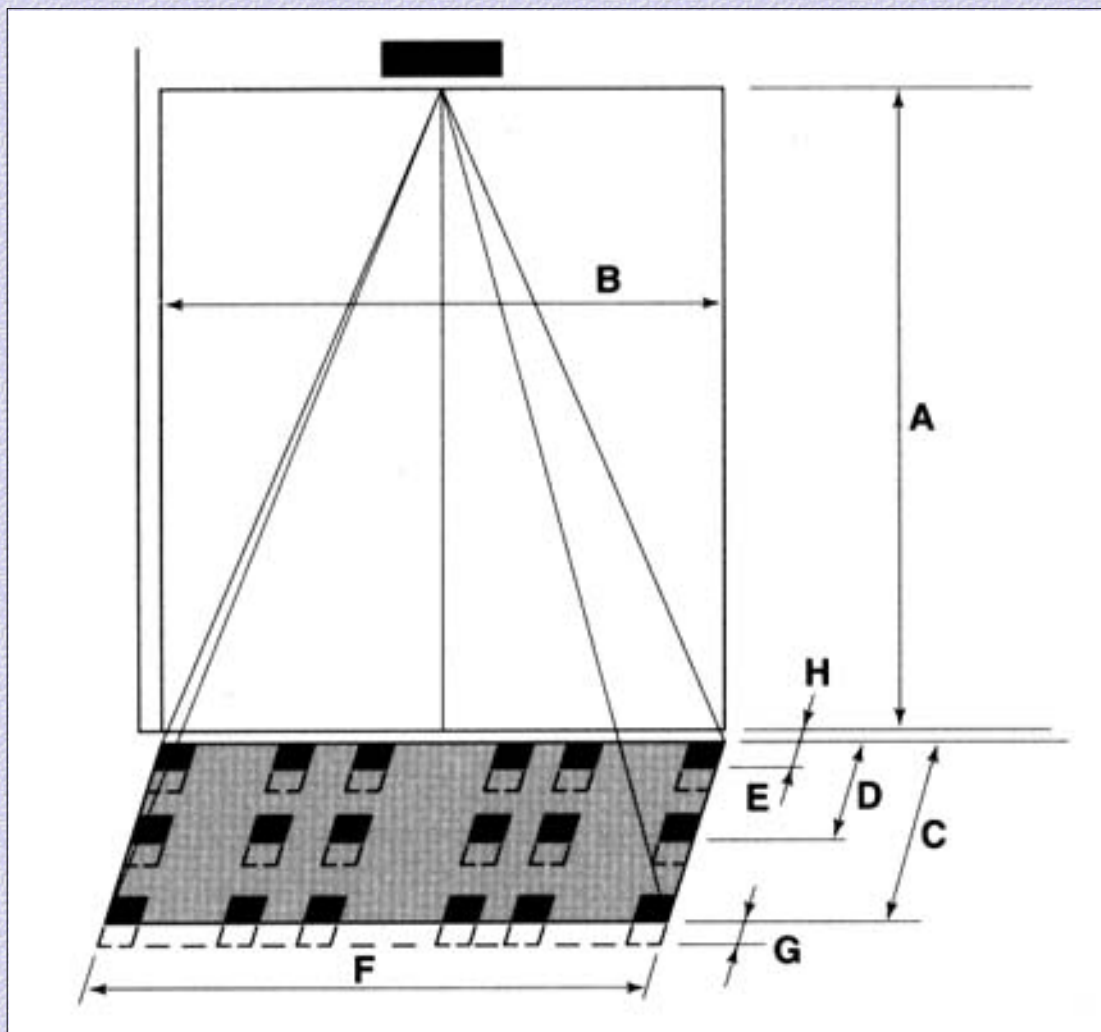


A	Mounting Height	7.2 (2190)		7.5 (2290)	
	Correct Prism	▲	♥	▲	♥
B	Door Width	42 inch	36 inch	42 inch	36 inch
C	Area Depth	3.94 (1200)		4.1 (1250)	
D	Area Depth	1.97 (600)		2.03 (620)	
E	Area Depth	0.23 (70)		0.24 (73)	
F	Area Width	3.22 (980)	2.72 (830)	3.35 (1020)	2.85 (870)

G	Adjustable Range	0.72 (220)	0.75 (230)
H	Distance from Mounting Surface	0.30 (90)	0.31 (93)

ft. (mm)

PAIR OF DOORS



A	Mounting Height	7.2 (2190)		7.5 (2290)	
	Correct Prism	●	■	●	■
B	Door Width	42 inch pair	36 inch pair	42 inch pair	36 inch pair
C	Area Depth	3.94 (1200)		4.1 (1250)	
D	Area Depth	1.97 (600)		2.03 (620)	
E	Area Depth	0.23 (70)		0.24 (73)	
F	Area Width	6.36 (1940)	5.38 (1640)	6.53 (1990)	5.54 (1690)
G	Adjustable Range	0.72 (220)		0.75 (230)	

H	Distance from Mounting Surface	0.30 (90)	0.31 (93)
----------	--------------------------------	-----------	-----------

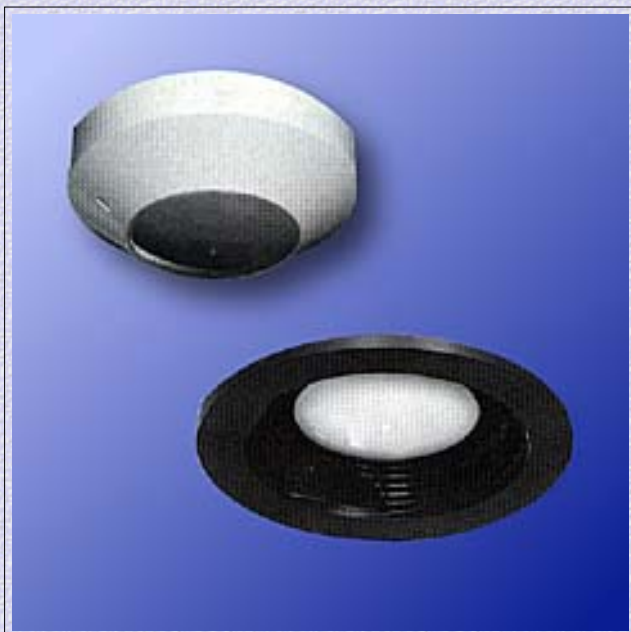
ft. (mm)



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OPTEX MODEL NUMBER
OP-03 Series
PASSIVE
INFRARED DETECTOR



Passive Infrared Sensor

The Bi-Tec circuit assures performances free from false operation. It has an illumination sensing function, designed by Optex, to allow a high degree of automatic sensitivity adjustment especially under high temperature operation.

FEATURES

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Surface and Recess Mount

OP-03AS = 12 V DC, Surface Mount

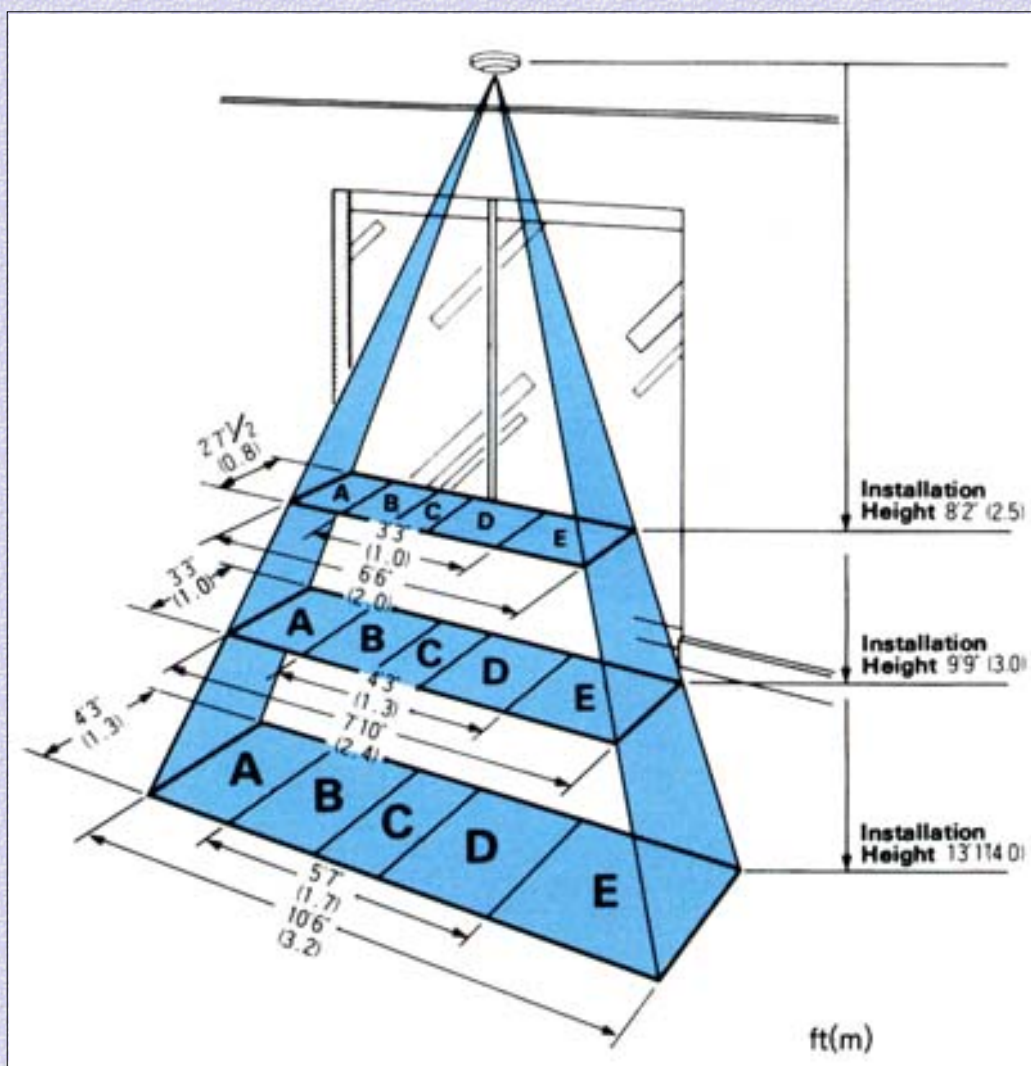
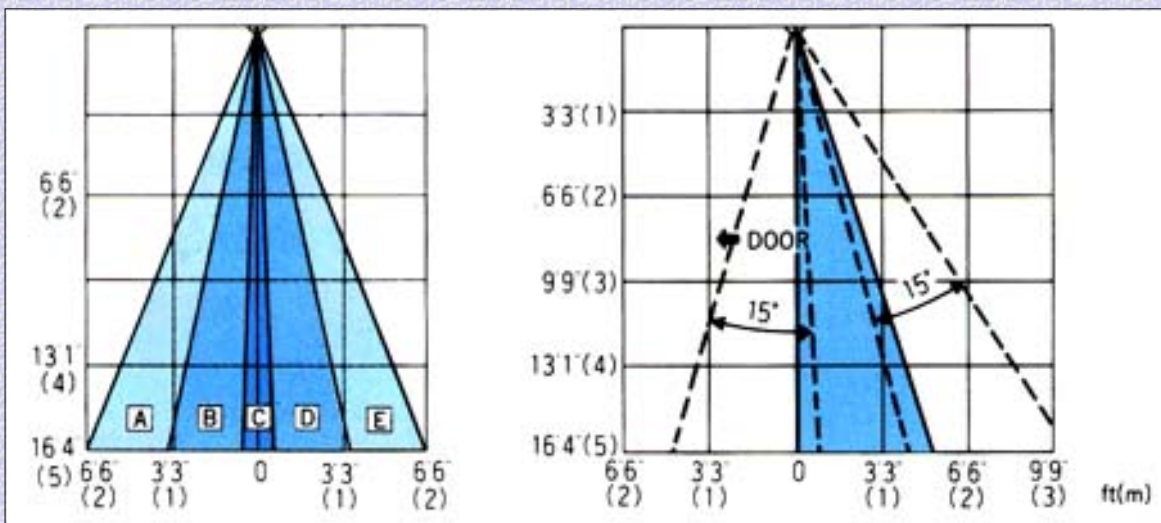
OP-03AR = 12 V DC, Recess Mount

OP-03BS = 24 V DC, Surface Mount

OP-03BR = 24 V DC, Recess Mount

Detection Area

Front and Side View



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OPTEX MODEL NUMBER

OP-08C**PASSIVE
INFRARED DETECTOR**

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Introducing the most advanced, compact body, Passive Infrared Sensor for Request To Exit Applications.

FEATURES

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- **Compact and Attractive Housing Design**

The OP-08C's compact and attractive housing design fits any installation. The exact size of the sensor without the cover is only 139mm (5.47 in.) wide by 40mm (1.57 in.) high by 29mm (1.14 in.) deep allowing for easy recessed or concealed mounting.

- **Ceiling Mounting**

The OP-08C can not only be mounted on the door's transom, but also on ceiling surfaces as pictured below.



Recessed Mount



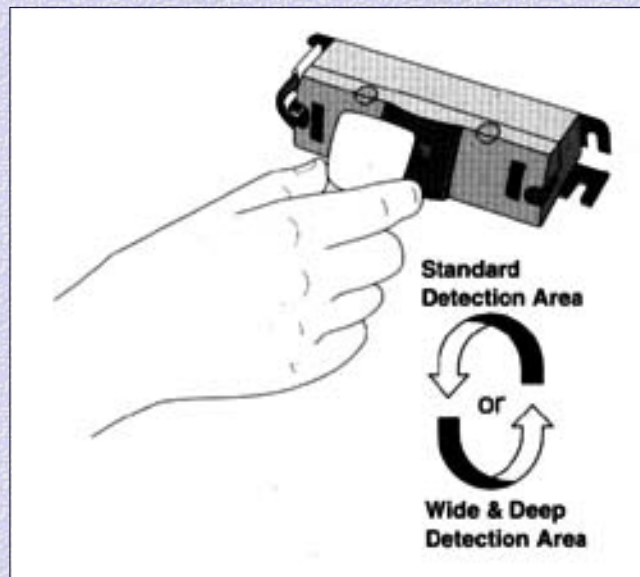
Ceiling Mount

- **Environmental and Artificial Disturbance Immunity**

The newly developed AGC circuitry, built into every unit, allows for reliable operation in areas you never thought possible in the past. Sunlight, wind, rain and radio frequency noise can cause a conventional passive infrared sensor to false activate, not the OP-08C.

- **Flexible Detection Area Setting**

The OP-08C's detection area consists of 10 individual detection zones (5 zones x 2 rows). Each zone can be easily eliminated by applying area masking seals. Also Standard Detection Area or Wide & Deep Detection Area can be selected by simply rotating the spherical lens.



- **Two Color Choices (Black / White)**

- **12 -24 V AC/DC Universal Power Input**

- **"Form C" Output Relay (N/O or N/C)**

- **Fail Safe or Fail Secure Selectable**

- "CE" Marked

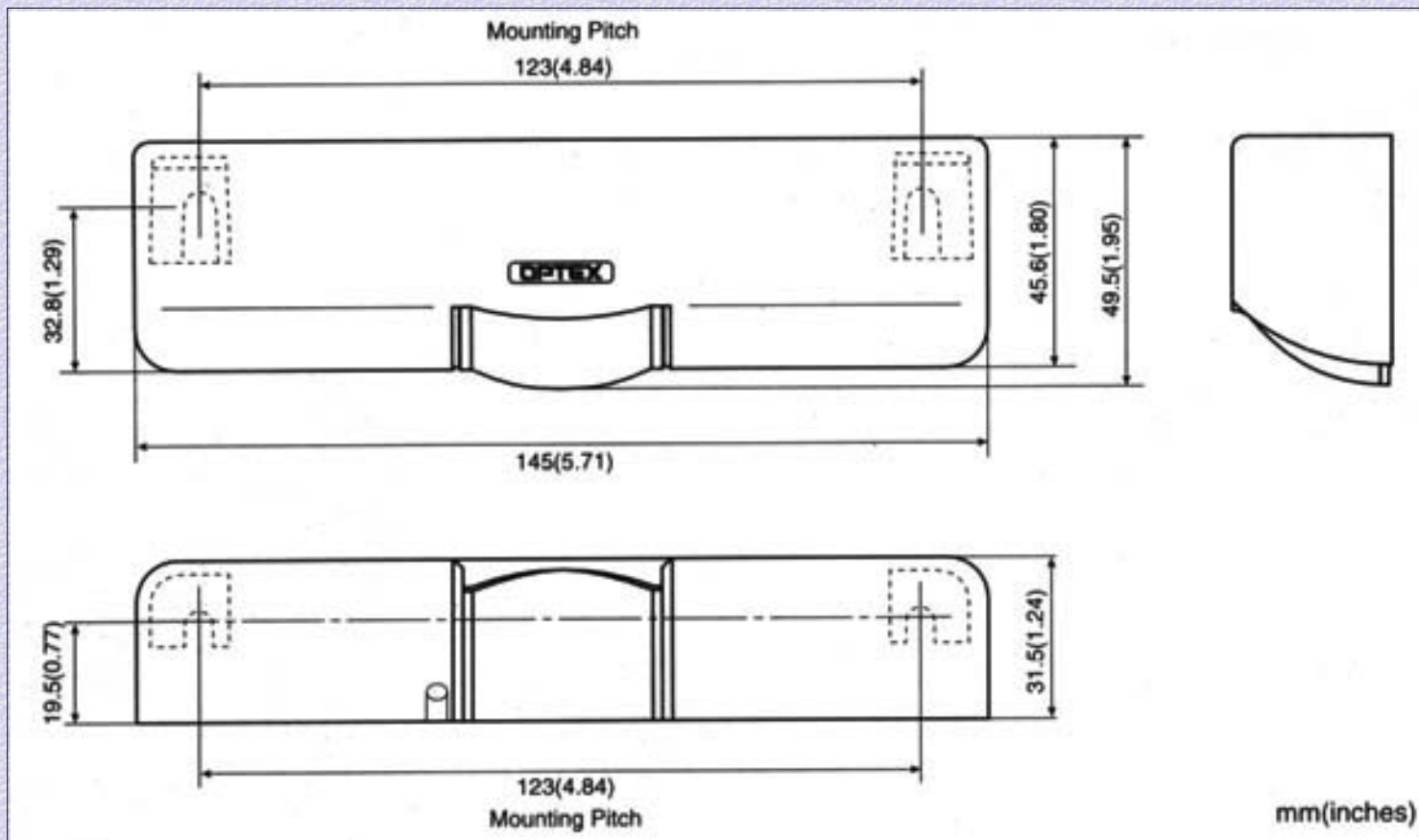
DETECTION AREA

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[Click Here To See The
OP-08C's Detection Areas](#)

DIMENSIONS

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SPECIFICATIONS

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Model	OP-08CBL / OP-08CW
Mounting Height	Within 4.0m (13.1 ft.)
Detection Method	Passive Infrared Method
Power Input	12 to 24V AC/DC Universal
Current Draw	Within 50mA (at 24V DC)
Power / Operating Indicator	LED ON in standby LED OFF when detecting
Output Contact	Form C Relay 50V 0.3A (Resistance Load)
Output Holding Time	Approx. 1.5 sec.
Operating Temperature	-20°C ~ +55°C (-4°F ~ +131°F)

Weight	90g (3.2 oz.)
Accessories	Wiring Cord (2m, 1 pc.) Mounting Screws (2 pcs.) Mounting Template (1 pc.) Area Masking Seal (1 sh.)

*Specifications subject to change without prior notice.

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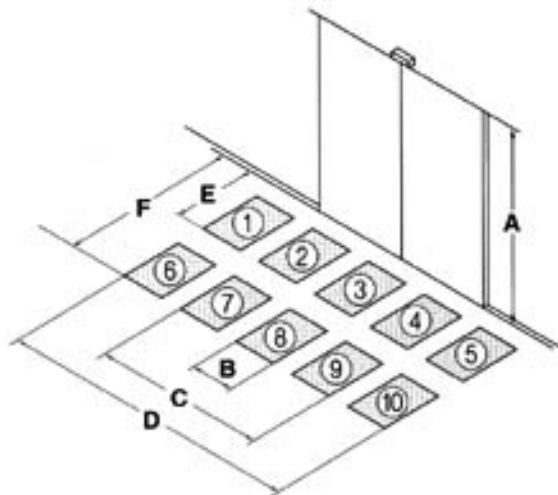


OPTeX MODEL NUMBER

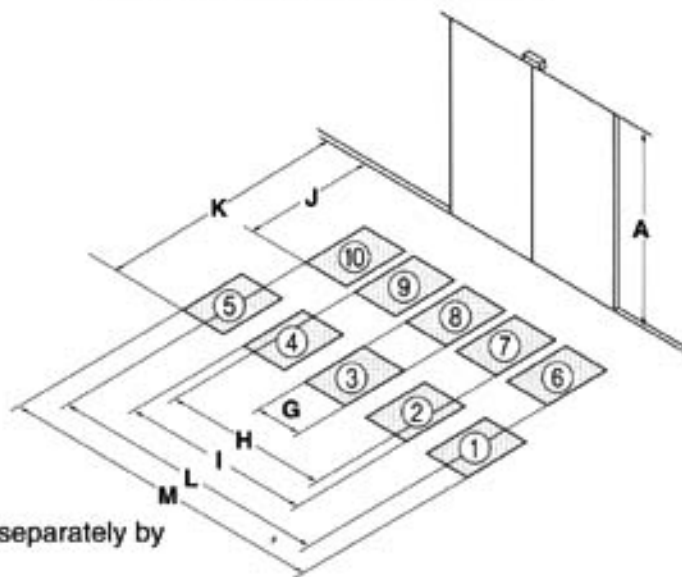
OP-08C

**PASSIVE
INFRARED DETECTOR**

(Standard Detection Area)



(Wide & Deep Detection Area)



Areas ① - ⑩ can be eliminated separately by applying area masking seals.

Standard Detection Area

	A	B	C	D	E	F
Mounting Height	2.5 (8.2)	0.3 (1.0)	1.8 (5.9)	3.6 (11.8)	0.8 (2.6)	2.3 (7.5)
	3 (9.8)	0.4 (1.3)	2.1 (6.9)	4.3 (14.1)	1.0 (3.3)	2.8 (9.2)
	4 (13.1)	0.5 (1.6)	2.9 (9.5)	5.7 (18.7)	1.3 (4.3)	3.7 (12.1)

m (ft.)

Wide and Deep Detection Area

	A	G	H	I	J	K	L	M
Mounting Height	2.5 (8.2)	0.5 (1.6)	1.5 (4.9)	2.5 (8.2)	1.4 (4.6)	3.3 (10.8)	3.0 (9.8)	5.0 (16.4)
	3 (9.8)	0.6 (2.0)	1.8 (5.9)	2.9 (9.5)	1.6 (5.2)	3.9 (12.8)	3.7 (12.1)	6.0 (19.7)
	4 (13.1)	0.8 (2.6)	2.5 (8.2)	3.9 (12.8)	2.2 (7.2)	5.2 (17.1)	4.9 (16.1)	8.1 (26.6)

m (ft.)



**Return To
Spec Sheet**



OPTEX

SPECIFICATION SHEET

OPTEX MODEL NUMBER
OS-1C/OS-2C
(1 Beam) (2 Beams)
**MINIATURE PHOTO
 ELECTRIC SAFETY BEAM**

FEATURES

DIMENSIONS

SPECIFICATIONS



Innovative Photoelectric Technology For Safe and Reliable Door and Gate Control

- Installation flexibility for unlimited applications
- 10m (33 ft.) Detection Range
- Miniature sensor head and compact controller
- Sensor head can be separated from shielding wire at the plugs for easy installation
- Sensor head can be installed by either "Push-In" or "Plate Mounting"
- Form C Relay Output
- 12-24V AC/DC Universal power input
- Fail safe function
- Not affected by sunlight
- OS-1C can also control up to 2 sets of sensor heads, using the sensor head unit

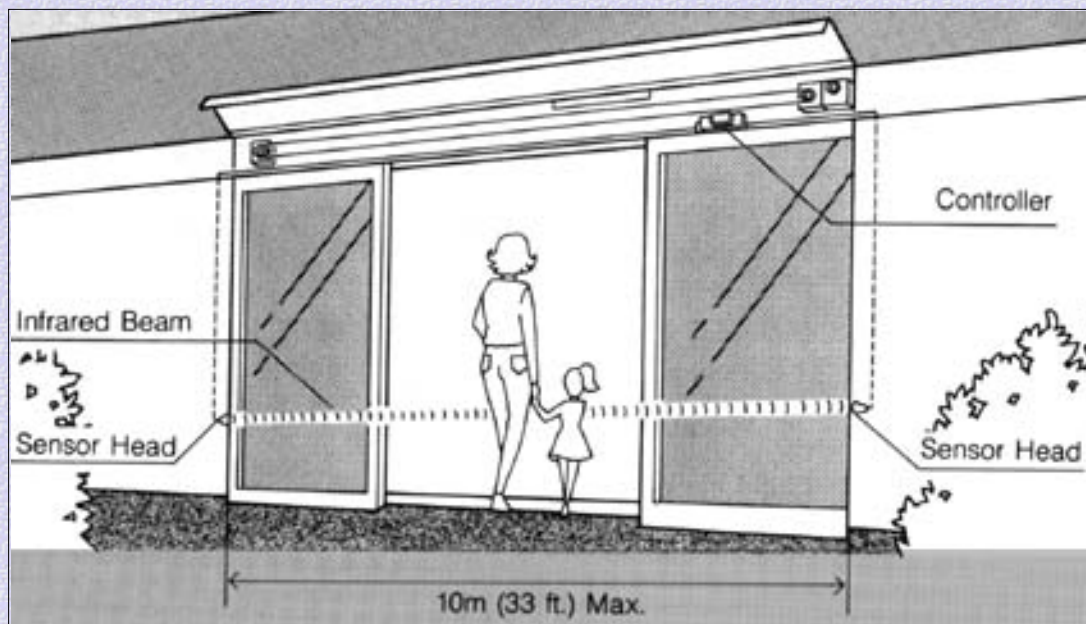
FEATURES

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- **Fail Safe Function**

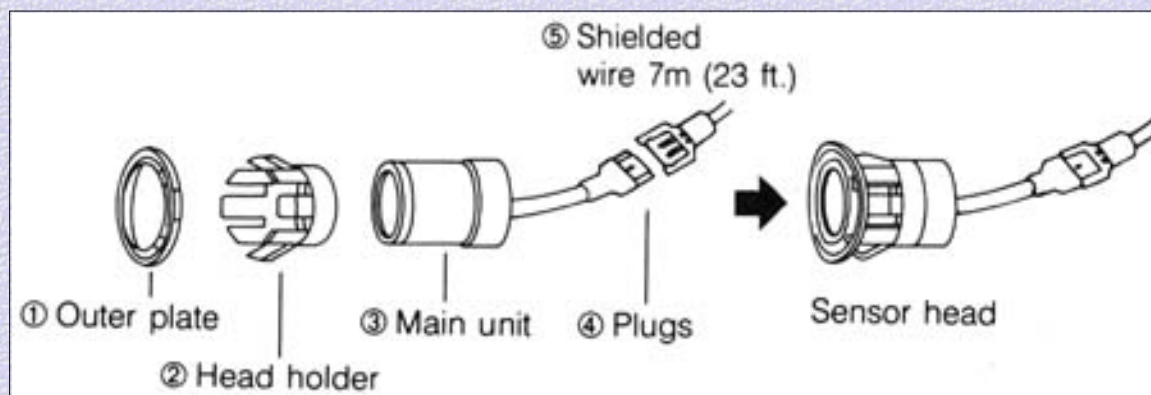
The output relay will change its state, if power is lost to the controller, to keep door opened as shown in the following chart.

	Power OFF	Power ON	Detect
N.O.	Close	Open	Close
N.C.	Open	Close	Open



● Sensor Head Unit

The sensor head unit consists of part 1 thru 5 as shown below. If necessary during wiring, the sensor head can be separated from the shielding wire at the plugs for easy installation.



The sensor head can be mounted by either "Push-In" or "Plate Mounting."

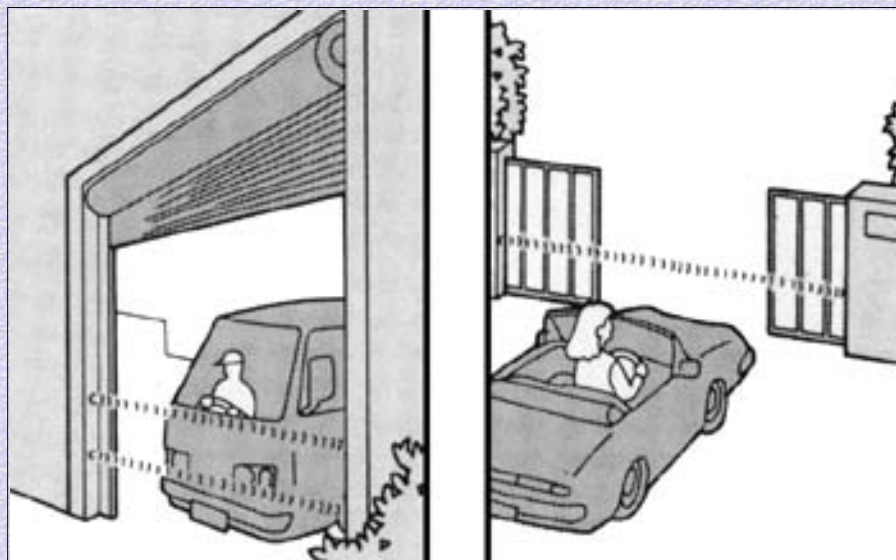
● Model Number & Combinations

Model #	Type	Detection	Options		
			Outer Plate	Mounting Plate	Sensor Head Unit

		Range	Model #	Color	Model #	Color	Model #	Type
OS-1C	Point to point type 1 beam	10m (33 ft.) Max.	PO-C	Chrome	PP-S	Silver	SH-1	Sensor head with 7m (23 ft.) Shielded wire
					PP-B	Bronze		
					PP-C	Chrome		
	Reflection Type	4m (13 ft.) Max.	---	---	PR-S*	Silver		
					PR-B*	Bronze		
					PR-C*	Chrome		
OS-2C	Point to point type 2 beams	10m (33 ft.) Max.	PO-C	Chrome	PP-S	Silver		
					PP-B	Bronze		
					PP-C	Chrome		

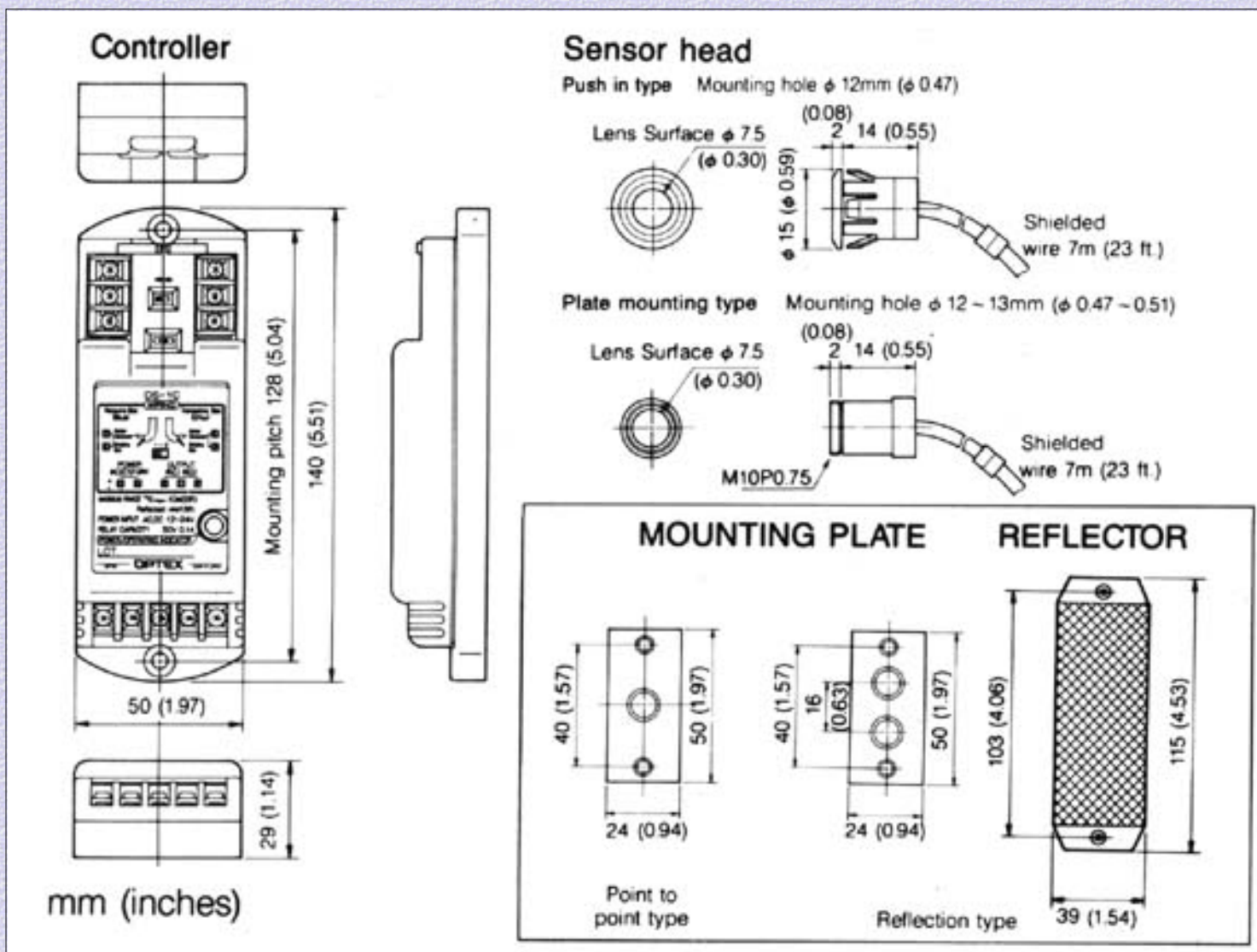
- Applications**

The OS Series is not only for automatic doors but, can be used with garage doors, gate operators, etc. as a safety or primary control device.



DIMENSIONS

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SPECIFICATIONS

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Model	OS-1C (1 beam)	OS-2C (2 beams)
Range	0 ~ 10m (0 ~ 33 ft.) (Point to point) 0 ~ 4m (0 ~ 13ft.) (Reflected)	
Power Input	12 ~ 24V AC/DC	
Current Draw	11mA	130mA
Output Contact	N.O. or N.C. 50F 0.1A (Resistance Load)	
Powering/Operating Indicator	LED ON when stand by LED OFF when detecting	
Operating Temperature	-13°F ~ +131°F (-25°C ~ +55°C)	
Weight	225g (7.94oz.)	350g (12.35oz.)

System Components	1 Controller 1 set of Sensor head unit with 7m (23 ft.) Shielded wire	1 Controller 2 sets of Sensor head unit with 7m (23 ft.) Shielded wire
Standard Accessories	2 Fitting screws	

*Specifications subject to change without prior notice.

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OPTEX

SPECIFICATION SHEET

OPTEX MODEL NUMBER

HA-6000T•S

ACTIVE INFRARED PRESENCE SENSOR

FEATURES

DETECTION AREA

DIMENSIONS

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Long Range Detection for Industrial Applications

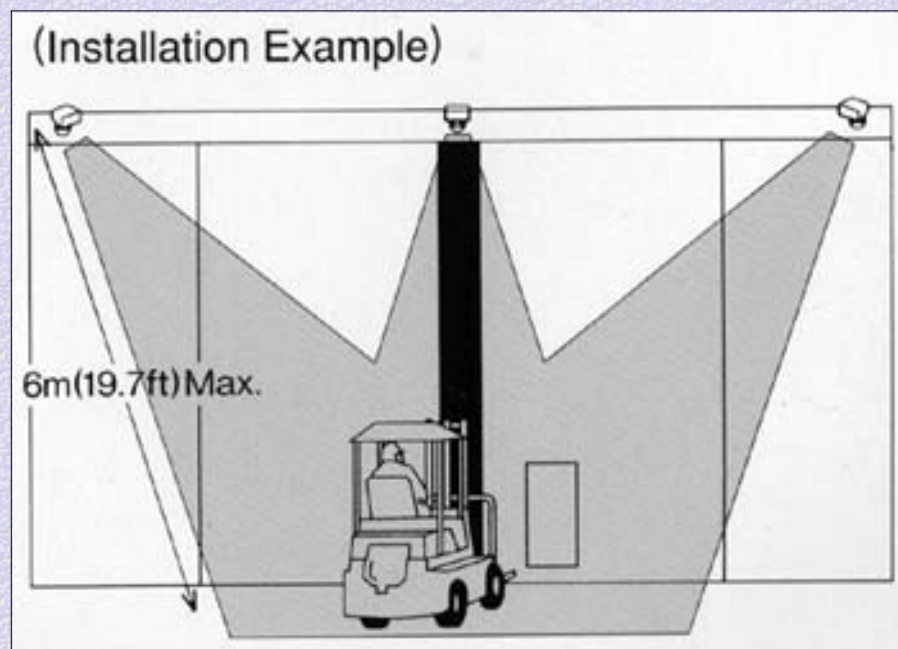
The HA-6000T•S is an Active Infrared Presence Sensor which provides a long-range detection area (6m/19.7ft.)

Its unique design is perfectly suited for industrial and commercial automatic and roll-up door applications.

FEATURES

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- **Installation Example**



- **Long Range Detection Area (6m/19.7ft)**

The HA-6000T·S provides a long range detection area and is cable of sensing in applications where high mounting locations are required.

- **Presence Detection**

The HA-6000T·S has presence detection capability which is designed to provide safe and reliable operation. It is capable of sensing both fast and slow moving objects as well as stationary objects within its field of view. The presence detection time can be adjusted from 2 to 15 or 60 seconds.

- **Wide Detection Area Capability**

A wide detection area can be obtained by using multiple units. Up to 3 HA-6000S (Slave units) can be connected to 1 HA-6000T (Master unit).

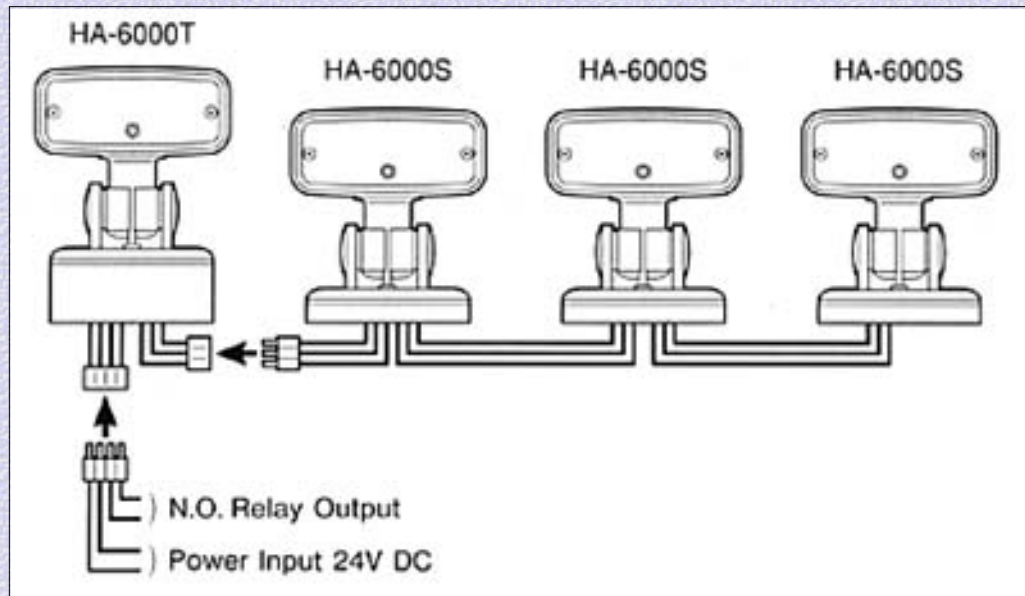
- **Flexible Detection Area Adjustment**

Detection area can be adjusted 140° vertically and 120° horizontally.

- **Environmental Disturbance Immunity**

The HA-6000T·S operates reliably even in harsh environments such as rain and snow because of the advanced signal processing circuitry built into the unit.

- **Wiring Example**



- **Models**

HA-6000T: Master Unit

HA-6000S: Slave Unit

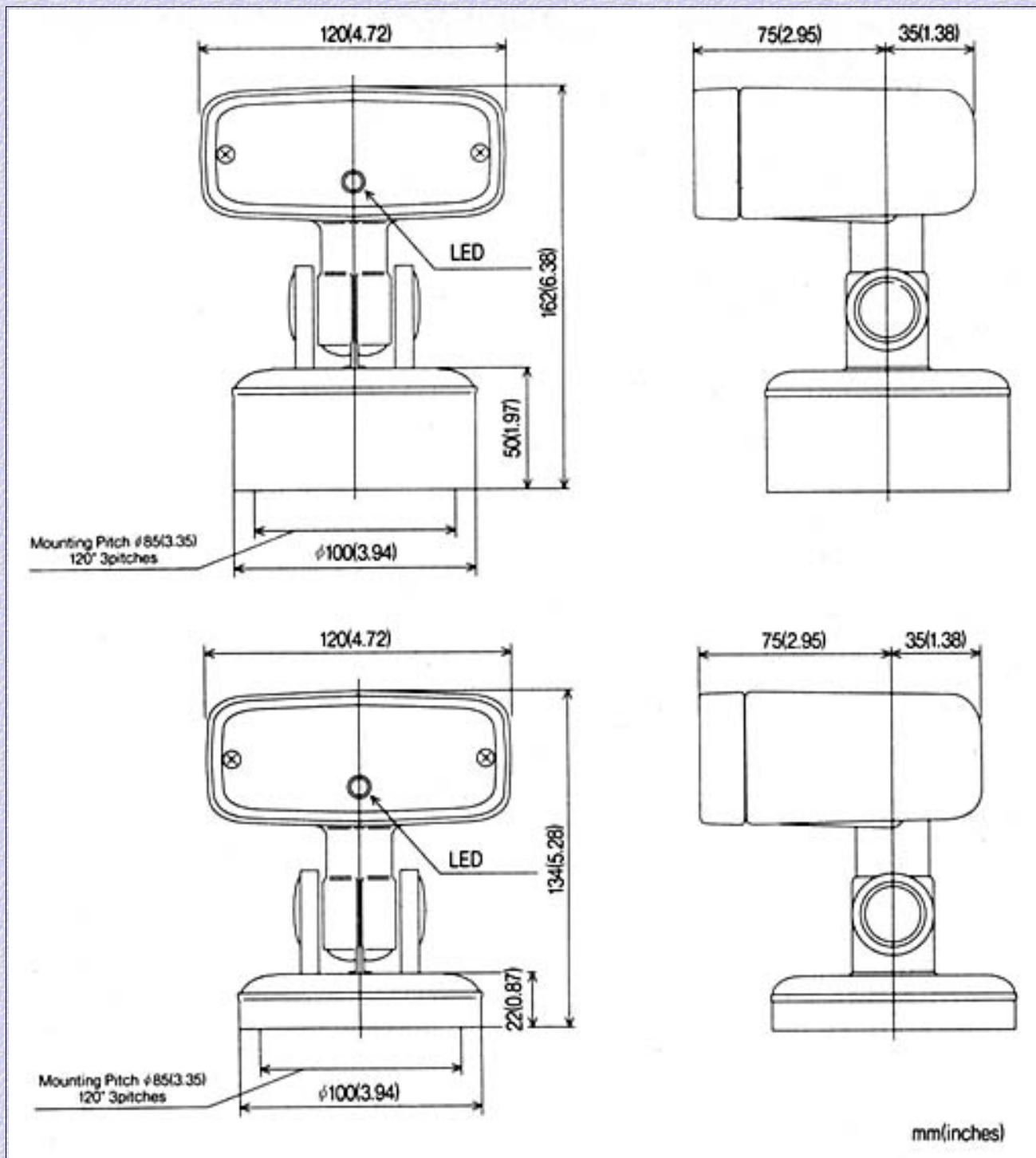
DETECTION AREA

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[Click Here To See The
HA-6000T / S's Detection Area](#)

DIMENSIONS

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SPECIFICATIONS

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Model	HA-6000T(Master unit), HA-6000S(Slave unit)
Detection Range	2 ~ 6m (6.6ft ~ 19.7ft)
Detection Area	See Chart
Detection Method	Near Infrared Reflection Method

Variable Range (vertical)	-60° ~ +80°
Variable Range (right & left)	120°
Power Input	24V DC
Current Draw	300mA Max. (when using 1XHA-6000T and 3XHA-6000S)
Power/Operating Indicator	LED ON in stand-by LED OFF when detecting
Output Contact	N.O. Relay Output AC100V 1A Max. DC30V 0.1A(Resistance Load)
Output Hold	0.5sec. Delay
Operating Temperature	-20°C ~ +55°C (-4°F ~ +131°F)
Weight	6000T: 470g(16.6oz)6000S: 385g(13.6oz)
Accessories	Mounting Template, 3XMounting Screws(M4 X 10) 3m Wire with 4 Poles Connectors (HA-6000T only) 0.22m Wire with 3 Poles Connectors (HA-6000T only)

*Specifications subject to change without prior notice.



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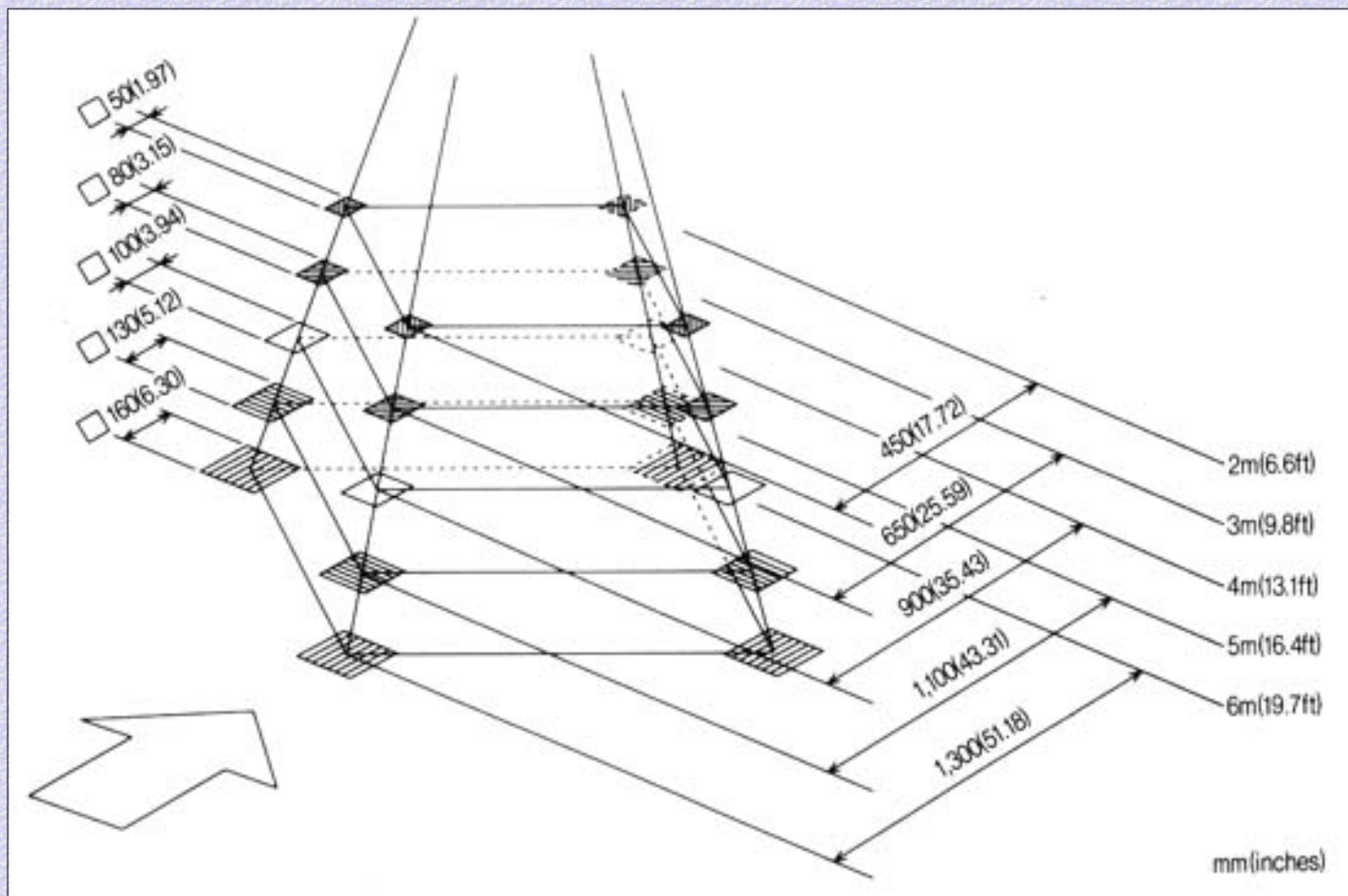
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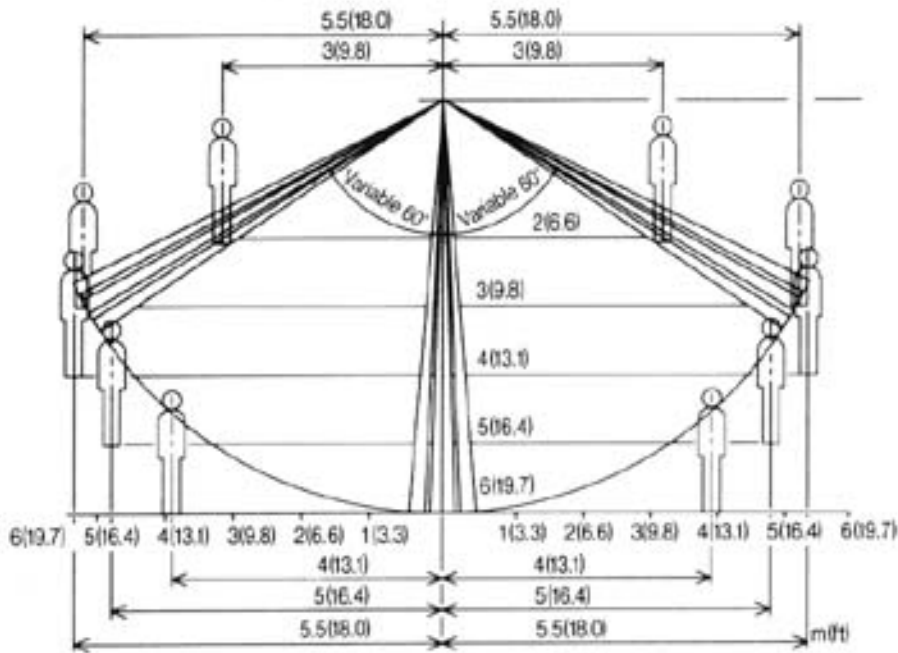
OPTEX MODEL NUMBER
HA-6000T•S
ACTIVE
INFRARED PRESENCE SENSOR

DETECTION AREA CHART

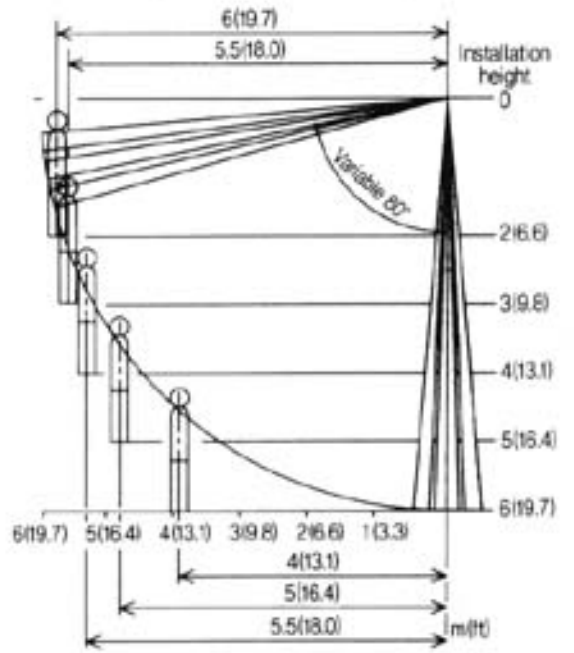


ADJUSTABLE RANGE

Right and left angle
 (* Vertical angle 0°)



Vertical angle
 (* Right and left angle 0°)





OPTEX MODEL NUMBER
GENESYS 824R
CONTROL PANEL



A NEW GENERATION 8 Zone Control Communicator

Expandable To 24 Zones

GENESYS 824R FEATURES

- 8 Zones Expandable To 24
- 16 User Personal Identification Numbers (PINs)
- 5 User Authorization Levels
- Real Time Clock
- Remote Downloading with Security
- Multiple Arming Modes
- Alarm Memory
- Multiple Transmission Formats
- True Partitioning Capability
- 16 Event Retrievable Memory
- Programmable Outputs

GENESYS 824R KEYPAD FEATURES

- Real Time Clock
- Auto Arming with Pre-Arm Warning
- 1-Digit Quick Arm Function
- Manual Fire, Panic and Emergency
- Keypad / Keyswitch or Both
- LED Status Indication for Keyswitch Use
- 16 User Codes w/ 5 Security Levels
- Guest PIN with Auto Deletion
- User Activated Bell Test

GENESYS 824R PROGRAMMING FEATURES

- 8 Zones Expandable to 16 or 24 (Fully Programmable)
- Select from 5 Different Loop Types (Optional E.O.L.)
- 3 Different Types of Interior Zones Designed to Reduce False Alarms Caused by User Error
- All Zones Have Fire Capability
- Compatible with 2 or 4 Wire Smoke Detectors
- Two Entry / Exit Delay Times
- Allows for True Partitioning Including Separate Keypads, Alarm Zones, and PINs
- Programmable Monitor and Walk-Test Modes
- Program via Keypad or Download Software, Both with Security to Protect Against Unauthorized Program Access

GENESYS 824R ADDITIONAL FEATURES

- Compatible with Optex Morse Long Range Radio Equipment
- Unique "Intelligent" Two-Stage Battery Charging Circuit
- 16 Event Alarm Memory
- Bell Output
- 2 Auxilliary Programmable Outputs
- Monitors Phone and Bell

GENESYS 824R SPECIFICATIONS

Control Cabinet:

11 1/2" W x 11 1/2" H x 3 1/2" D

Steel w/ hinged cover. Knockout for lock. Knockouts top, bottom, side, and back.

Primary Power:

16.5 VAC 20VA transformer not included

Standby Power:

12 VDC rechargeable Gel Type (not included)

Continuous Aux Power:

750mA

Lightning Protection:

MOV; spark gap

Keypad:

Maximum 4 Keypads per system, wired with Conductor Cable

Current Draw:

Panel - 100mA

Keypad 24mA (each)

Expander Module 29 mA (each)

GENESYS MODELS:

	Description
G-824/KP	Control / Keypad
G-824	Control Only
G-KP	Keypad Only
G-EX	Expander Module
G-EXC	Expander Module w/ Cabinet
RF-RM1	Long Range Radio Transmitter

U.L. LISTING:

	Description
U.L. 365	Police Connect
U.L. 609	Local Alarm
U.L. 985	Household Fire Alarm
U.L. 1023	Household Burgular Alarm
U.L. 1610	Central Station Burgular Alarm



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OPTEX MODEL NUMBER
GENESYS 824
ALPHA FIRE
CONTROL PANEL



The Genesys 824 Alpha Fire is considered one of the most versatile Fire Control Panels of its kind on the market today.

THE GENESYS 824 ALPHA CONTROL / COMMUNICATOR

- UL listed for Commercial / Residential Fire and Burgular Applications
- Upload / Download Software
- Expandable to 24 Zones
- Partition Capability
- Optex / Morse Quality
- User Friendly
- 5 Year Warranty
- CSFM Listed

COMMERCIAL FIRE APPLICATIONS

Until now, Commercial Fire Applications required the purchase of an expensive panel which made you less competitive in the bidding process. Now, Genesys Alpha gives you flexibility to use a powerful, compact panel with a smaller price and still provide all the features required for U.L. applications.

**SPECIAL FIRE PACKAGE:
G-824-ALPHA / KP-F**

includes:

Genesys Alpha Control Panel

Fire Rated Enclosure (RED)

Alpha Keypad (RED)

G-FM Fire Module (required for UL Applications)

**COMFORMS TO THE
FOLLOWING U.L. LISTING:**

	Description
U.L. 365	Police Connect
U.L. 609	Local Alarm
U.L. 985	Household Fire Alarm
U.L. 1023	Household Burgular Alarm
U.L. 1610	Central Station Burgular Alarm
U.L. 864 / NFPA71	Central Fire Station
NFPA72 Chapter 6	Local Protective Signal System Certified As a Manual & Automatic Fire Alarm System



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OPTEX

SPECIFICATION SHEET

OPTEX MODEL NUMBER

MDC

CONTROL PANEL

MDC Series Control Communicator Systems

The Optex Morse MDC Series computer based 8, 16, and 16 expandable to 48 zone digital control communicator systems provide a new level of functionality, programming flexibility and user acceptance. Designed for use with the MPC-32D Series alphanumeric Personal Control, this system provides the subscriber with control as personal as the individual user.

This MDC Series has the capability of communicating with most of the digital formats currently in use. The attractive and uniquely designed MPC-32D Series introduces a concept in personal controls incorporating a 32 character, alphanumeric prompting system which simplifies system programming for your technical department as well as truly providing a consumer-friendly system for ease of operation by the user.



MDC SERIES SYSTEM FEATURES (FIXED)

- Twelve volt operation
- Twelve volt auxiliary output power
- Smoke detector output
- Local activation of remote downloading with special security PIN
- Five modes of operation automatically selected by user activity:
 1. **On Premise Arming** - perimeters armed; interior bypassed.
 2. **Off Premise Arming** - perimeters and interiors armed with entry / exit delay.
 3. **Special Off Premise Arming** - perimeters armed; interior bypassed; with entry / exit delay.
 4. **Twenty-Four Hour** - system disarmed except for twenty-four hour zones.
 5. **Monitor** - system disarmed; selected zones sound audible and display visually in Personal Control when violated.

- AC power failure indication with reporting to the Central Station
- Low battery detection with reporting to the Central Station
- Watchdog circuit to supervise all system functions for proper operation
- Compatible with Long Range Radio system.
 - requires Model RF-RM1 transmitter
 - transmits all signals
 - selectable modes in transmission

MDC SERIES SYSTEM FEATURES (PROGRAMMABLE)

- Up to 16 or 32 user Personal Identification Numbers (PIN). Each PIN is programmed for one of four different priority levels:
 - Level 1 User** - Arm, disarm, bypass and program other PINs and authorization levels
 - Level 2 User** - Arm, disarm, and bypass
 - Level 3 User** - Arm and disarm only
 - Level 4 User** - Arm only
- A special installer Personal Identification Number programmed by the installation company only to allow for installation and/or service changes in the program
- Opening and closing report by user
- Adjustable entrance and exit delays, 0 - 255 seconds for each. Entrance delay adjustable by zone.
- Adjustable pre-alarm warning delay 0 - 255 seconds
- Individually adjustable bell and relay output cutoff time up to 42 minutes in ten (10) second increments
- Selectable codes for reporting by zone: Alarm, Restore, Trouble, and Bypass.
- Selectable codes for reporting low battery, battery restore, AC power failure, AC restore, self-test, duress (by user), communication failure, panic, and entering or exiting the installer program mode.
- Selectable rotary or touch-tone dial transmission
- Selectable 16 digit telephone numbers for each receiver
- Selection of account numbers for receivers 1 and 2
- Up to eight dialing attempts for each telephone number
- Selectable ring back signal for opening and / or closing. Select Personal Control audible, bell or relay output
- Selectable anti-jam time to eliminate interference from other calls

MDC-8 FEATURES

- Eight (8) end-of-line resistor supervised loop circuits plus emergency and duress
- Two output signals: Bell, and one auxiliary relay output, selectable by zones using any combination.
- Selection of pulsing or steady output for bell
- Up to four (4) Personal Controls (any combination of the MPC-32 Series) per system with only four wire connections to each Personal Control

- Up to 16 user Personal Identification Numbers (PIN). Each PIN is programmed for one of the four different priority levels
- Adjustable self-test signal to the Central Station in one (1) hour increments up to to 255 hours with delay for first test
- One telephone line interface with full line seizure
- Two telephone line interface with full line seizure with addition of the MDC-FSM Fire Supervision Module

MDC-16CET CONTROL COMMUNICATOR SYSTEM

In addition to all of the features in the MDC-8, the Optex Morse MDC-16CET computer based 16 zone digital control communicator system provides a new level of functionality, programming flexibility and user acceptance. Designed for use with the MPC-32D Series alphanumeric Personal Controls, this system provides the subscriber with control as personal as the individual user.

This system has the capability of communicating with most digital formats currently in use.

SYSTEM FEATURES (PROGRAMMABLE)

- Up to 32 user Personal Identification Numbers (PIN), with individually (32) programmable duress PINs. Each PIN is programmed for one of four different priority levels
- A special PIN programmable to activate AUX Relays 1 and 2
- Group Arming by User - 8 programmable groups with common group option
- Partial Arming - 8 programmable groups
- Individually adjustable bell, siren and relay output cutoff times up to ten (10) second increments
- Daily, weekly or monthly programmable self-test signal
- Listen in capability adjustable up to 255 seconds
- 127 Event History buffer
- Programmable buffer capacity warning signals.
- History print program with programmable user authorization levels
- Programmable window schedules with:
 - Permanent and temporary open / close schedules
 - Pre-close warning signal
 - Closing time extension
 - Open and close exceptions report
 - Holiday schedules
 - Daylight Savings Time program
 - Automatic Arming
 - Time and Date display

- User Program options

ZONE EXPANSION

For zone expansion capabilities beyond sixteen zones (up to 48 zones), you must use model MDC-16ETX and the appropriate zone expansion modules, MDX-8M (Master) and MDX-8S (Slave). Refer to Ordering Information below for proper equipment. This model has all the features of the MDC-16 plus expansion capabilities.

MPC-32D PERSONAL CONTROL



The popular MPC-32D Personal Control is compatible with the MDC Series systems, offering its high tech design to your systems. Its unique molded rubber touch pad will complement the decor of most installations. The 32 character 2 line English language alphanumeric display and tactile switch contacts provide the user with the simple to use, easy to read, and understand, operating information.

Available also with a backlit display and unique dimmer control (Model MPC-32DL); the subscriber can adjust the light intensity of the display to their own viewing comfort.

These features, plus the menu propted programming information for the installer, provide all system functions and operations in an easy-to-read and easy-to-use Personal Control.

SPECIFICATIONS:

MDC-8C

Physical

Size	11.5" wide x 11.5 high x 3.5" deep
-------------	------------------------------------

Weight	6 lbs.
Color	Beige
Construction	Steel cabinet with hinged cover and key lock. Knockouts on top, bottom and rear for cable access.
Electrical	
Primary Power	16.5V 20VA Class II Plug-in Transformer
Standby Power	12V DC Rechargeable Standby Battery
Current Draw	260ma (standby)
Max Tolerance Per Loop	1000 ohms
Continuous Auxiliary Output Power	750 mA
Peak Auxiliary Output Power	2 amps
Relay Contact	125V AC 60V DC; 5 amp, 600VA max.
Lighting Protection	MOVs, spark gap

MDC-8CCS - Same as MDC-8C in heavy duty cabinet with special lock.
UL Listed for commercial burglary.

MDC-16CET

Physical	
Size	14.5" wide x 13.5 high x 3" deep
Weight	8.75 lbs.
Color	Beige
Construction	Steel cabinet with hinged cover and key lock. Knockouts on top, bottom and rear for cable access.
Electrical	
Primary Power	16.5V 20VA Class II Plug-in Transformer
Standby Power	12V DC Rechargeable Standby Battery
Current Draw	260ma (standby)
Max Tolerance Per Loop	1000 ohms
Continuous Auxiliary Output Power	750 mA (Smoke Detectors, Bells, Sirens, Personal Controls)
Relay Contact	125V AC 60V DC; 5 amp, 600VA max.
Siren Output	Minimum impedance 8 ohms
Lighting Protection	MOVs, spark gap

MDC-16CCS - Same as MDC-8C in heavy duty cabinet with special lock.
UL Listed for commercial burglary.

MPC-32D SERIES KEYPADS

Maximum	4 per system*
Installation	4 wire plug-in connector
Current Draw	MPC-32D, MPC-32DFA - 70 mA MPC-32DL - Max intensity - 150 mA
Size	8.5 " wide x 5" tall x 5/8" deep
Color	Natural or white
Display	2 line, 32 character, alphanumeric
Mounting	Flat bracket (provided with Personal Control). Aligns with standard single-gang electrical box.

*See manual for additional required equipment.

RF-RM1

Size	7.25" wide x 8.25" high x 4.5" deep
Color	Beige
Construction	Steel cabinet with hinged cover
Installation	4 wire connections to MDC-16

*See manual for additional required equipment.

ORDERING INFORMATION:

Model Number	Part Number	Description
MDC-8CE	7128-0810	Eight (8) Zone Control Communicator (including 16.5V, 20VA Transformer) with Directory, Monitor Mode Options, Mini-Loader Program (Mini-Loaded ordered separately), and Remote Downloading capability. UL Listed Residential Fire and Burglary
MDC-8CCS	7128-0812	Same as MDC-8C, in heavy duty cabinet with special lock. UL listed for Commercial Burgular Alarm System.

MDC-16CET	7128-1605	Sixteen (16) Zone Control Communicator (including 16.5V, 20VA Transformer) with Directory, Monitor Mode Options, Mini-Loader Program (Mini-Loaded ordered separately), Group Arming by User, Partial Arming, Built-In Remote Downloading capability (requires MDC-RDM or MDC-RDL ordered separately) and real Time Clock with Window Schedules, Test Time Programs, Auto Arm and History Buffers. UL Listed Residential Fire and Burglary and Commercial Fire.
MDC-16CCS	7128-1602	Same as MDC-16CET in UL Housing. UL Listed Commercial Burglary.
MDC-16ETX	7128-1609	Same as MDC-16CET, expandable to 48 zones
MDX-8M	7128-0081	Eight zone master expander module; provides two additional Form C Relays; one required for expansion
MDX-8S	7128-0082	Eight zone slave expander module; one required for each eight zones (up to 48) after the MDX-8M is installed
MDC-24ETX	7128-1610	Same as MDC-16ETX with 24 zones
MDC-32ETX	7128-1611	Same as MDC-16ETX with 32 zones
MDC-XPR-24	7128-1612	Twenty-four zone expander in separate cabinet; with two additional Form C Relays; must be used with MDC-16ETX
MDC-XPR-32	7128-1613	Thirty-two zone expander in separate cabinet; with two additional Form C Relays; must be used with MDC-16ETX
MPC-32D	7128-0032	Personal Control with thirty-two (32) character alphanumeric LCD display with bracket
MPC-32D EXP	7128-0048	Same as MPC-32D with expanded address
MPC-32DL	7128-0040	Same as MPC-32D with Backlit Display
MPC-32DL EXP	7128-0032	Same as MPC-32DL with expanded address
MPC-32DFA	7128-0031	Same as MPC-32D with audible and visual annunciation for UL Commercial Fire systems
MPC-32DLFA	7128-0054	Same as MPC-32DFA with Backlit Display
MPC-32DW	7128-0052	Same as MPC-32D, White
MPC-32D/LW	7128-0053	Same as MPC-32DL, White
MPC Mini Loader	7128-0036	Storage File for quick programming
MDC-FSM	7405-0001	Fire Supervisory Module for UL Commercial Fire Systems. Supervises bell and telephone lines
MDC-DISC	7131-0016	Remote Downloader Software
MDC-RDM	7128-0037	Ring Detect Module for Remote Downloading

MDC-RDL	5000-0326	Plug-in module for remote downloading with answering or fax machines on line
RB-1215	9444-0200	12.5V, 1.8 Ah Rechargeable Battery
RF-RM1	7130-1003	Radio Transmitter
MDC Demo Kit	7128-0034	Salesman's Briefcase Demonstrator
Literature	3491-0033	8 Page End User Brochure
Literature	3491-0048	4-Color Brochure with MPC-32D Keypad



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OPTEX

SPECIFICATION SHEET

OPTEX MODEL NUMBER

SUPER MDC

CONTROL PANEL



Super MDC

- Two regular schedules for each partition (8 partitions total)
- Program reporting of open/close for each schedule (Monitors time of open and time of close and reports if the open time is early or delayed)
- Faster Download Speed (Run Time Compression Technology)
- Programmable option to monitor one or both phone lines
- Real Time Clock (Tied to either crystal clock) AC / 50Hz or 60Hz or only DC
- Programmable Name separate for each partition
- Globalize zone programming up to 9 zone types

SUPER MDC HARDWARE FEATURES

- On board two fully supervised phone lines. Supervision for line cut, ringing, and off hook condition
- One supervised fire bell output with provision for external 12 or 24V AVA compliant power supply connection
- 3 Programmable outputs (open collectors): 2-Bell, 2-Relays, and 3 PGMs
- Separate Key switch input
- Separate connection for G-EX expander board, for expanding zone up to 80
- Smart battery charging circuit which monitor load current, change current, and voltage. Digitally controlled.
- Brownout protection by Battery Disconnect Circuit
- No fuses (fuseless)
- Remote Bench Testing

SUPER MDC KEYPAD FEATURES

- Supervisory fire zone to make alarm audible on keypad
- 99 User Pin codes
- Monitor mode: Silent, Audible, Chime, Pin Activate, and Single Key activated monitor mode

- Auto Walk Test: Automatically tests each zone throughout the course of the day and lets you know if a zone did not report.
- 512 event memory buffer
- Open Close supervisory zones
- U.L. Listing
- Time of Day Activity Control
- Alpha Description by Location
- Up to 8 Keypads
- As many as 8 True Partitions
- Real Time Clock
- Unauthorized access detection (Monitors up to 5 attempts then reports to Central Station)
- User function to extend Open/Close time by 1 hour
- Scroll Scan Speed selectable while in installer program menu

SUPER MDC ADDITIONAL FEATURES

- Fire Walk Test (Installer activated only) Recycles latching switch.
- User activated Fire Walk Test
- New advanced utility for installer to debug the system providing voltage and current measurements of battery, aux. Power, fire bell output and ground fault.
- New option of 50Hz / 60Hz AC source for real time clock or option of using crystal clock.
- Single key SCAN option (no pin number needed)
- New flexible receiver reporting routing: 9 different choices
- Separate account numbers for groups with flexible receiver reporting routing Programmable Features
- 16 Zone expandable to 80 (fully programmable)
- Remote zone capability by using G-EX
- Programmable zone type and loop type including Garage Door type zone (ignored for Away arm)
- Temporal code for fire bell: Modulating bell in series of 3 second intervals

SPECIFICATIONS:

Physical	
Size	14.5" wide x 13.5 high x 3" deep
Weight	8.25 lbs.
Color	Beige
Construction	Steel cabinet with hinged cover, key lock and knockouts on bottom and rear.

Electrical

Primary Power	16.5V 40VA Class II Transformer
Standby Power	12V DC Rechargeable Standby Battery
Current Draw	260ma (standby)
Max Tolerance Per Loop	1000 ohms
Cont. Aux. Power	1.65 Amps
Relay Contact	125V AC 60V DC
Lighting Protection	MOVs
PGM Outputs	50ma Outputs 5 amp 600VA Max

ORDERING INFORMATION:

Model Number	Part Number	Description
SMPC-32D	70400	Personal Control with thirty-two (32) character alphanumeric LCD display with bracket
SMPC-32D Exp.	70402	Same as SMPC-32D with Expander Address
SMPC-32DL	70401	Same as SMPC-32DL with Bracket Display
SMPC-32DL Exp.	70404	Same as SMPC-32DL with Expander Address
SMPC-32DFA	70404	Same as SMPC-32DFA Same as SPC-32D with Audio and Visual for UL Commercial Fire system
SMPC-32DFLA	70405	Same as SMPC-32DFA with Backlit Display
SMPC-32DW	70408	Same as SMPC-32D White
SMPC-32DLW	70409	Same as SMPC-32DL White
SMPC-DISC	70320	Remote Downloading Software
RB-1215	9444-0200	12.5V 1.8AH Rechargeable Battery
RF-RM1	7130-1003	Radio Transmitter
MDC Demo Kit	70301	Sales Demonstration Briefcase
G-EX	7128-4001	8 Zone Hardwire Expander
G-EXC	7128-4003	8 Zone Hardwire Expander with Cabinet



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OPTEX

SPECIFICATION SHEET

OPTEX MODEL NUMBER

AX-350/650MKII

PHOTOELECTRIC DETECTOR

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EXTENDED DETECTION RANGE, MORE RELIABLE PERFORMANCE

Advanced Photoelectric Technology now comes with extended range performance, while superior design allows for easy and cost effective installation and maintenance.

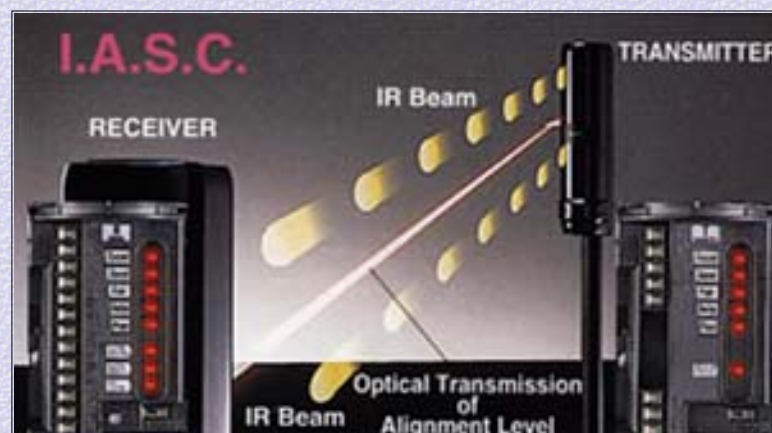
The AX-MKII Series is specially designed for unsurpassed stability even in the most hazardous outdoor environments. Our patented I.A.S.C. circuit assures fast and easy alignment of the photoelectric beams, keeping installation time to a minimum. Just take a look at our industry leading list of advanced features.

FEATURES

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- **Patented Integrated Alignment Status Communication**

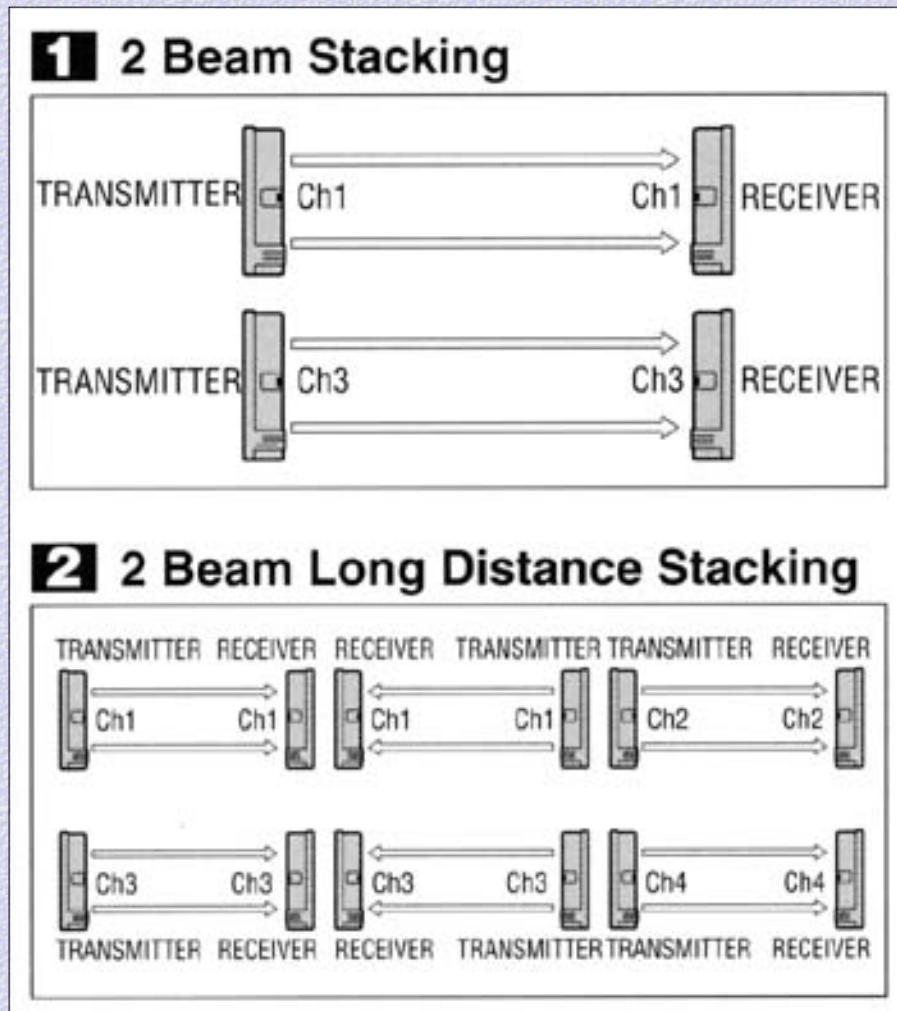
Photobeam alignment is no longer a costly, time-consuming job. The beam alignment level is visually displayed using LED indicators located on both the transmitter and receiver. By simply aiming both units and watching the LED indicators, accurate and reliable alignment is easily achieved. The alignment status at the receiver is optically transferred to the transmitter and is indicated by LEDs. To align the transmitter, one simply monitors the LED level while adjusting.



● **4-channel Selectable Beam Frequencies**

"Cross talk" is eliminated by our field selectable beam frequency.

- 1) 2 Beam Stacking
- 2) 2 Beam Long Distance Stacking



● **Reliability Chart for Outdoor Protection**

Specially designed to eliminate various causes of outdoor false alarms.

False Alarm Causes	Technology to Solve	AX Function & Features
Lightning & High EMI Disturbances	High EMI Resistance	High Surge Resistiveness Relay & EMI Surge Absorber
Insect Entering into Housing	Sealed Enclosure Housing	IP54

Dew Condensation Fog, Frost & Heavy Rain	High Sensitivity Tolerance Excellent Optical Alignment Environmental Analysis	Ultra High Power Transmitter Anti-Frost Mechanism Patented I.A.S.C. Easy Optical Alignment Mechanism Environmental Disqualification Circuit Automatic Gain Control
Birds or Flying Objects	Size Analysis	Twin Synchronized Pulsed Beams
Cross Talk of Beams	Beam Discrimination	Selectable Beam Frequencies

● **Environmental Disqualification Circuit**

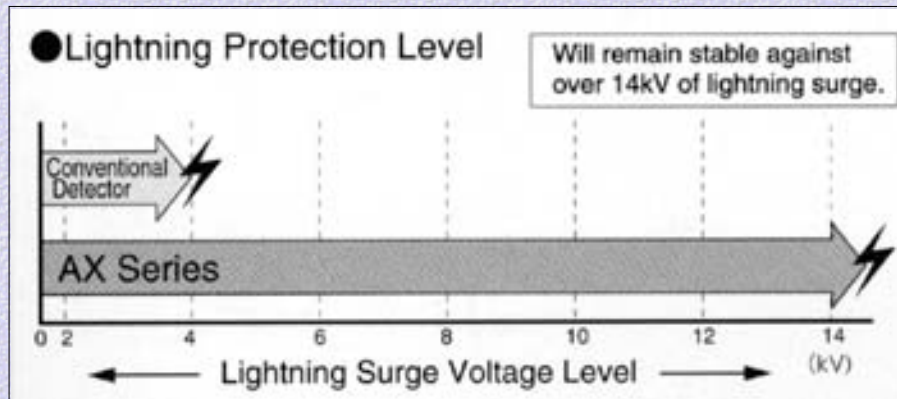
The Environmental Disqualification Circuit eliminates false alarms generated by gradual signal loss caused by extreme weather conditions such as snow, fog, heavy rain, icy build-up.

● **Re-Transmission Capability**

The Re-Transmission Circuit can be used as an alternative to a conventional protective wiring loop, or where a long run of wire is difficult or impossible. It may also be used to eliminate the cost of long distance wiring to remote areas. Simple connection of an N/C device to the beam transmission terminal.

● **Lightning & Surge Protection**

An improved EMI surge absorber and high surge resistiveness relay will maintain stable operation even in the most lightning prone areas.



● **A.G.C. (Automatic Gain Control) Circuit**

The A.G.C. Circuit continually monitors for gradual changes in the signal's strength caused by changing weather conditions. It adjusts the sensitivity accordingly to maintain the proper signal level for the current environmental conditions.

● **Adjustable Beam Interruption Period**

Beam interruption time can be adjusted according to the peculiarities of each installation site. When protecting a wall or fence, a long interruption time will catch intruders, but let jumping cats pass through. Adjustable from 50 to 500msec.

● **Other**

- Twin Synchronized Pulsed Beams Designed for Greater Stability
- 99% Beam Blocking Rate
- Anti-Frost Design
- Stainless Steel Screws & Back Plate
- Knock-Outs for 1/2 Inch Conduit
- Form C Relay Providing More Flexibility

● **Options**

HU-1: Heating Unit

For use in cold areas. 24V DC/AC, 430mA max.

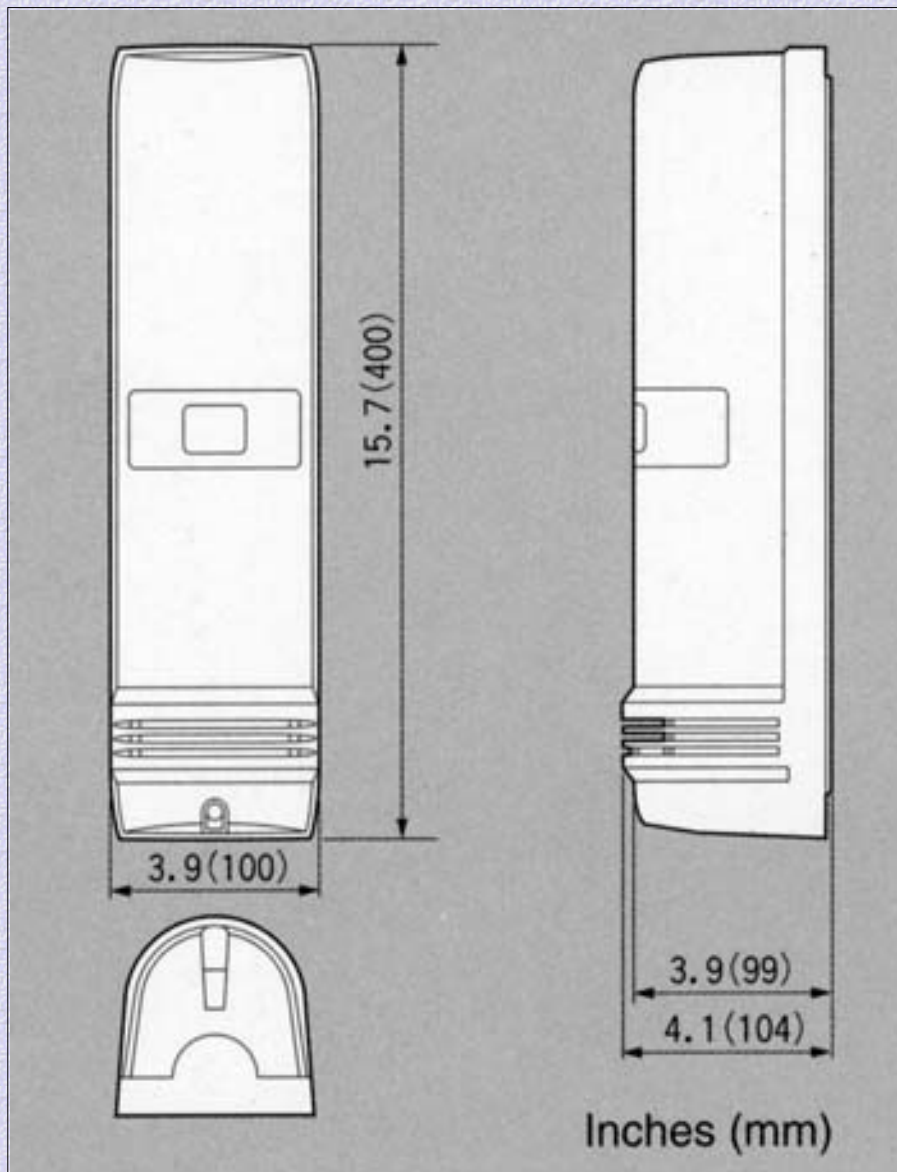
BC-1: Back Cover

AX-BT: Beam Tower

For stacking beams at a height of 5.78 ft. (1.75m)

DIMENSIONS

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Model	AX-350MKII	AX-650MKII
Detection Method	Infrared Photoelectric	
Range (Outdoor)	350 ft. (100m)	650ft. (200m)
Maximum Arrival Distance	3,500ft. (1,000m)	6,500ft. (2,000m)
Beam Characteristics	Pulsed infrared	
Selectable Beam Frequency	4 channel (Automatic synchronization)	
Interruption Period	50 ~ 500m/sec (Selectable)	
Power Input	10.5 ~ 30VDC	
Current Draw (transmitter+receiver)	Normal operation 75mA max During optical alignment 145mA max	
Alarm Period	2 sec (± 1) nominal	
Alarm Output	Form C Relay (28VDC 0.2A Max.)	
Tamper Switch	N.C. opens when cover is removed	
Operating Temperature	-30 ~ 131°F (-35 ~ +55°C)	
Environment Humidity	95% Max.	
Alignment Angle	$\pm 10^\circ$ Vertical, $\pm 90^\circ$ Horizontal	
Alarm Memory	LED indicates memory status. Selectable Negative & Positive	
Environmental Disqualification Circuit	Form C relay operates when beam energy has been gradually reduced to abnormal level	
Mounting	Wall or Pole	
Weight	98.8 oz(2800g) (Both Transmitter and Receiver)	

*Specifications and design are subject to change without prior notice.

NOTE: This unit is designed to detect an intruder and activate an alarm control panel.

Being only a part of complete system, we cannot assume responsibility for theft or damages, should it occur.

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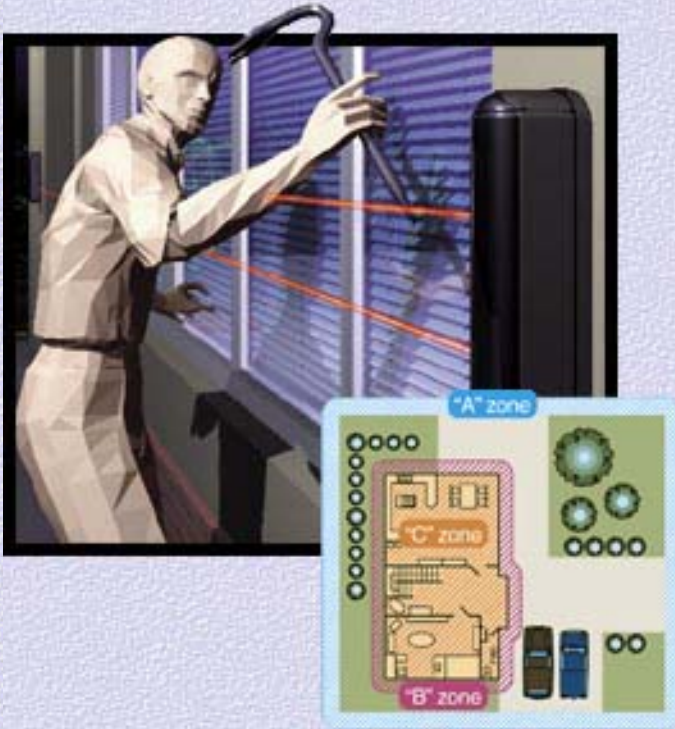
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OPTEX MODEL NUMBER
BX-100PLUS
 BOUNDARYGARD

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Alarm BEFORE burglar breaks in!

Optex presents a new concept, BoundaryGard, which offers more reliable protection and security options. Especially, this is designed to protect the perimeter of the building that we designate as the B zone.

B zone areas like windows and roll-up doors have been secured only by magnetic contacts or glass break detectors so far. Now, BoundaryGard protects a building's exterior by detecting intruders before entry is attempted and can also provide a deterrent with a sounder before the break-in occurs.

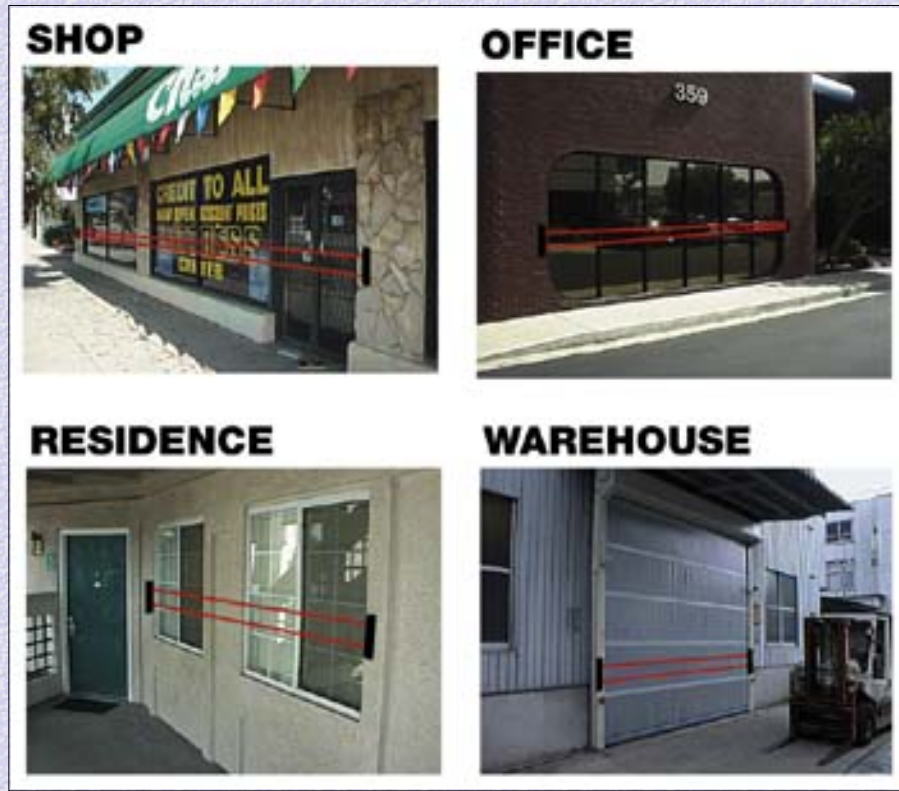
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- **FULL TIME (NO/NC) RELAYS**
 Separate Form A and Form B relays can be used for Security and other functions. Local alarm, annunciation and automation can work simultaneously.
- **ATTRACTIVE, SLENDER DESIGN**
 A smaller design and optional white, paintable cover will allow the unit to harmonize with any type of architecture.
- **EASY ALIGNMENT WITH VISUAL AND AUDIBLE INDICATOR**
 No vertical adjustment is necessary in this detector.
 A sounder activates and LED comes on when the sensor is miss-aligned and shuts off when aligned. This will assist you in the alignment process. Also, the Audible Alignment/Alarm Indicator can be used as a deterrent to intruders. This option can be turned on or off with a switch inside the detector.
- **LIGHT REDUCTION FILTER**
 Increases the units resistance to external light sources making it more reliable and also less likely to be defeated by alternative light sources.
- **MAX 99 PERCENT BEAM BLOCKAGE**

It will increase the units resistance to false alarms caused by environmental disturbance such as fog in the condition the beam alignment status achieves the highest level.

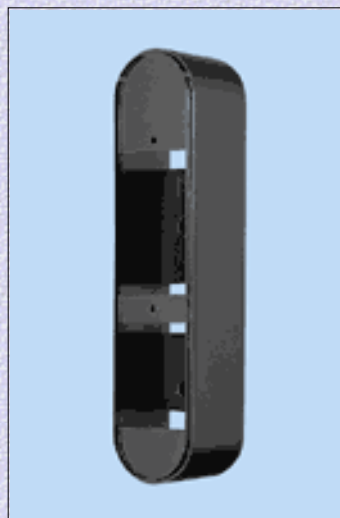
- **Applications**



- **Options**

- **Spacer: SP-1**

(For use when height adjustment of the unit is required.)



- **Metal Guard - MG-1**

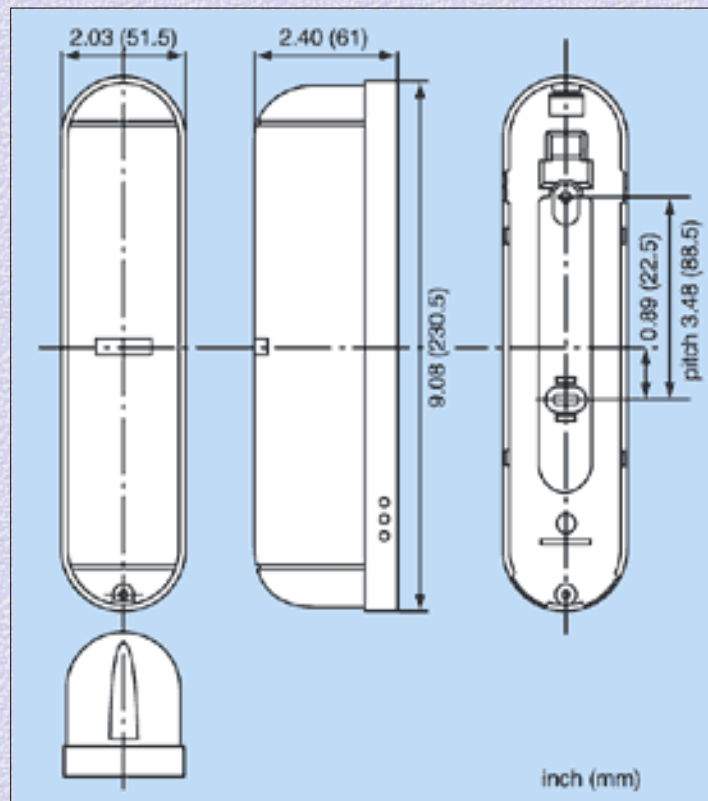
(Helps protect the unit from tampering or vandalism.)

- White Decorative Cover - WC-1

Allows the unit to harmonize with various types of architecture. Hood is included which can be fixed to this cover for rain and frost proof.

DIMENSIONS

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	BX-100PLUS
Range	Outdoor: 100ft. (30m) Indoor: 200ft. (60m)
Max Arrival Dittance	1,000ft. (300m)
Detection Method	Simultaneous interruption of two infrared beams
Beam Characteristics	Pulsed Infrared
Interruption Period	50 msec
Power Input	10.5 - 28V DC
Current Draw	55mA (StandBy) / 75mA (Max)
Alarm Period	2 ± 1 sec (Delay)
Relay Output	2 relay outputs N.O. and N.C. 28VDC 0.2A (Max) each

Beeping Period	15 ± 1 sec (Delay)
Volume of Audible Alarm Indicator	Approx. 70 dB (at 1 meter distance)
Tamper	N.C. opens when cover is removed
Operating Temperature	-30°F ~ +131°F (-35°C ~ +55°C)
Environmental Humidity	95% (max)
Alignment Angle	±92° Horizontal
Mounting	Wall (indoor / outdoor)
Weight	14.1 oz (400g)
IP Rating	IP 54
Accessories	Self Tapping Screws x 4 Wiring Sponges x 2



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OPTEX

SPECIFICATION SHEET

OPTEX MODEL NUMBER
AX-100S • AX-100SR
 Surface Mount Flush Mount
PHOTOELECTRIC DETECTOR

FEATURES


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Versatility That Meets Every Demand

INTERIOR PHOTOELECTRIC SYSTEM

- Distance to 100 feet
- Surface (AX-100S) or Flush (AX-100SR) models
- Both models mount with a standard single gang electric box
- LED alignment indicator - visibly confirms proper alignment
- Multi-Focus Optics eliminates the need for vertical alignment
-  LISTED

FEATURES

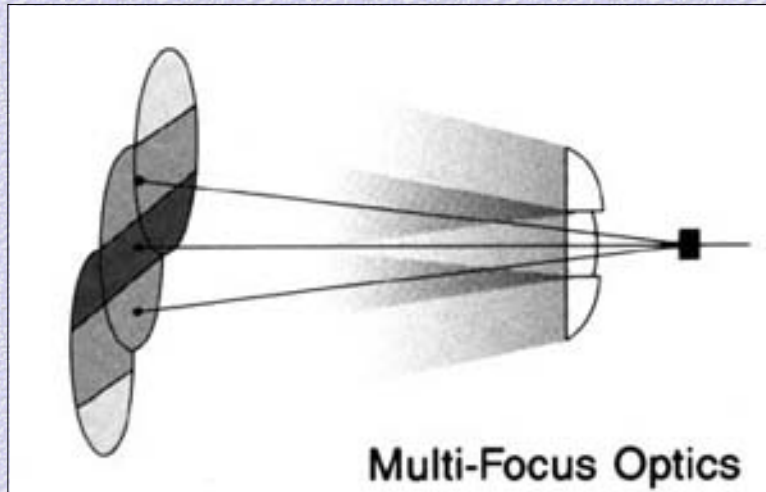
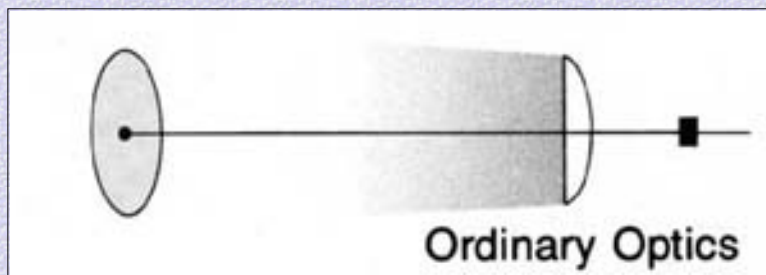
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- **Easy Vertical Alignment**

An improved EMI surge absorber and high surge resistiveness relay will maintain stable operation even in the most lightning prone areas.

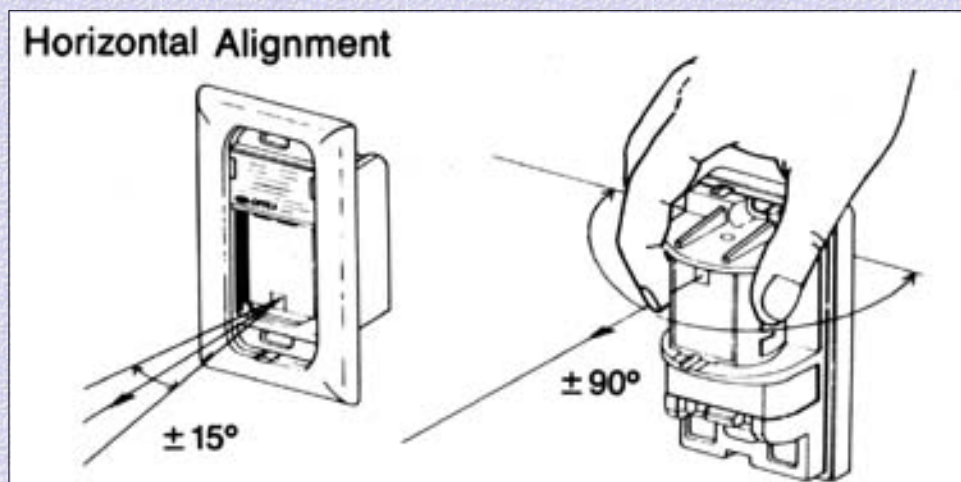
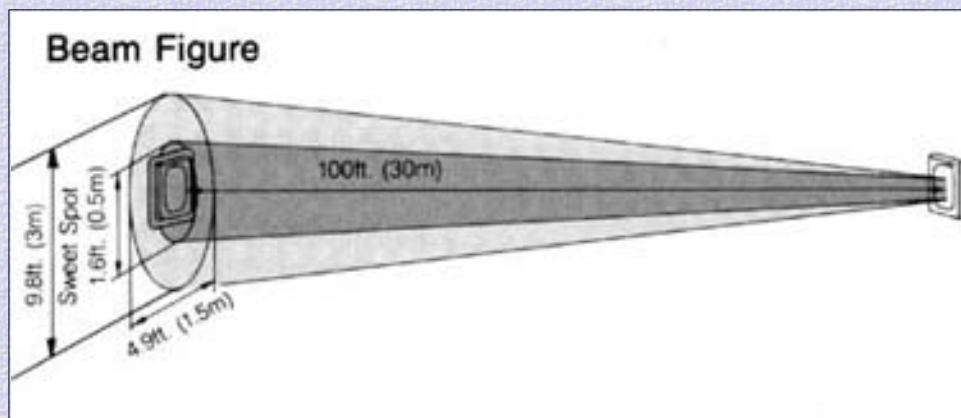
- **No Vertical Alignment Necessary**

With multi-focus optics creating an oval shape beam, if the transmitter and receiver are installed at the same height, vertical adjustments are not necessary.



- **Visible Optical Alignment**

LED indicator of the transmitter visibly confirms the beam alignment. Supplied check-shield confirms proper alignment.



- **Crystal Oscillated Dual Modulated Pulsed Beam**

Receiver discriminates a coded signal from the transmitter, giving high level protection against sunlight, flourescent and incandescent lamps.

- **Installation**

- **Pre-Wired Installation**

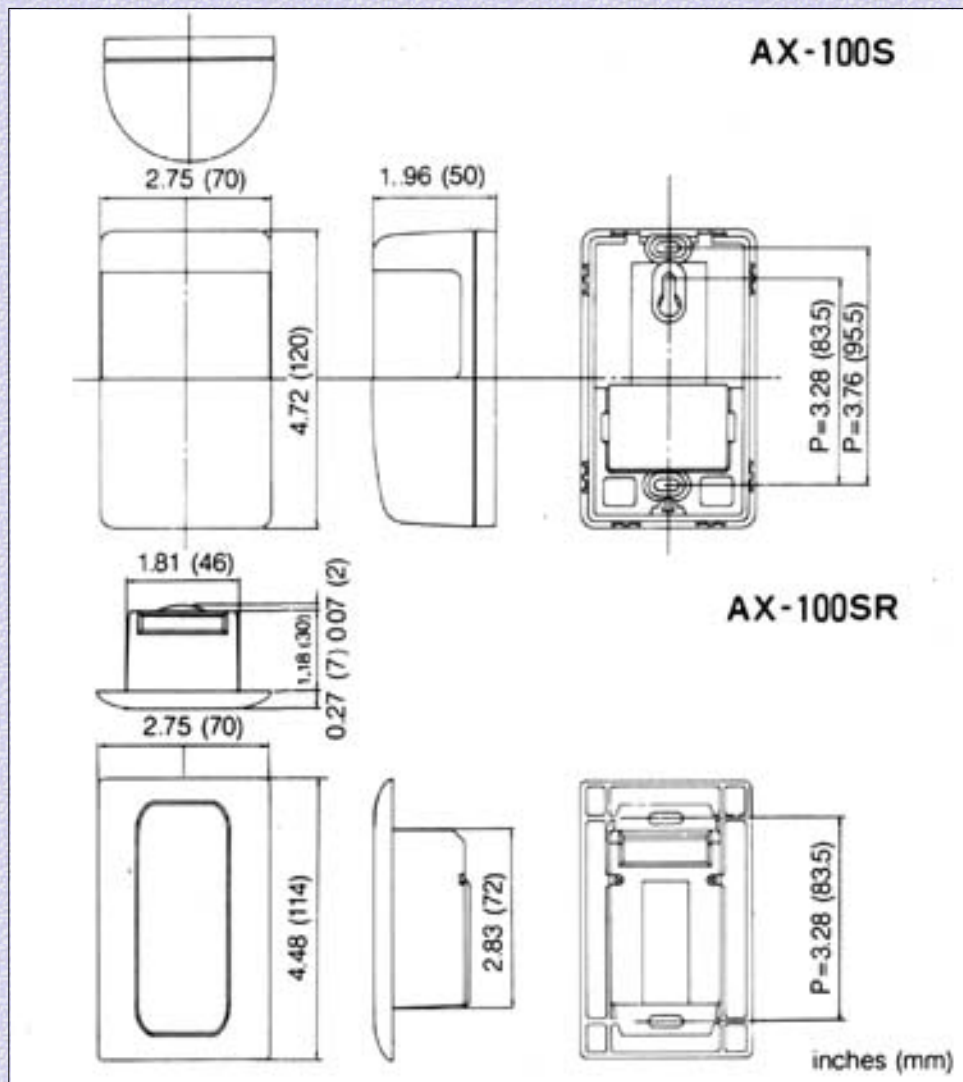
Both units mount easily with a standard single gang electrical box (U.S. standard). The AX-100SR recesses inside, and the AX-100S mounts directly over to cover a single gang box.

- **Options**

FR-100: mounting hardware for AX-100SR if electrical box is not used.

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Model

AX-100S

AX-100SR

Detection Method	Infrared Photoelectric	
Range	Indoor 100ft. (30m) or Less	
Maximum Arrival Distance	400ft. (120m)	
Beam Characteristics	1000 pps. 9500A Double Modulation pulsed infrared	
Interruption Period	50 msec.	
Power Input	8 ~ 18 VDC.	
Current Draw	Transmitter 27mA max/ 8 ~ 18 VDC Receiver-Red LED On in alarm condition	
Alarm Period	2 sec. (+-1) nominal	
Alarm Output	N.C.28VDC., 0.2Amax	
Tamper Switch	Opens when cover is removed.	
Operating Temperature	-4°F to 122°F (-20 °C to 50°C)	
Environment Humidity	95% max	
Alignment Angle	±90° Horizontal	±15 ° Horizontal
Mounting	Wall and SW. Box (Surface)	Wall and SW. Box (Flush)
Weight	8.5 oz. (240 g)	5.6 oz. (160 g)

*Specifications are subject to change without notice for improvement.

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OPTEX

SPECIFICATION SHEET

OPTEX MODEL NUMBER

FX-360

**360° CEILING MOUNT
PASSIVE INFRARED DETECTOR**

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Cost Effective Perfection

The FX-360 Ceiling Mount Detector with its unique, highly durable spherical lens offers unparalleled 360° Detection Performance and Reliability.

The FX-360 is an extremely cost effective 360 ceiling mount detector. It provides the most unbeatable detection performance and reliability in its class. The FX-360's sleek and compact design suits all types of installation applications.



FEATURES

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- **Originally Designed Hard Spherical Lens**

The FX-360's hard spherical lens is designed with precision - an original feature that enables this detector to provide reliable detection throughout its 360° area.

- **False Alarm Protection**

The FX-360 prevents false alarms caused by environmental changes or insensitivity to high temperatures.

- **RFI Protection**

No alarm to 20V/m from 100MHz. to 1 GHz.

- **Temperature Protection**

No alarm during temperature changes from -4° to +122°F at 3° per minute
(-20° to 50°C at 1.7°C per minute)

- **Noise Reduction Circuit**

- **Selectable Pulse Count: 2,4**

- **Advanced Quality Control**

- **Computerized S.M.D. Technology**

- Using robotics to mount miniturized chip components ensures a smooth and uniform production level of high quality.

- **Running Test On Every Circuit Board**

- All circuit boards sustain a "Burn-In" test for many hours.

- **Other Features**

- **LED On/Off Switch**

- **Warm-up Indicator**

- **Versions**

- **FX-360:** Standard

- **FX-360L:** Alarm Memory

- **FX-360S:** Form C Relay

- **FX-360V:** Alarm Memory and Patented Double Conductive Shielding of Pyro Element

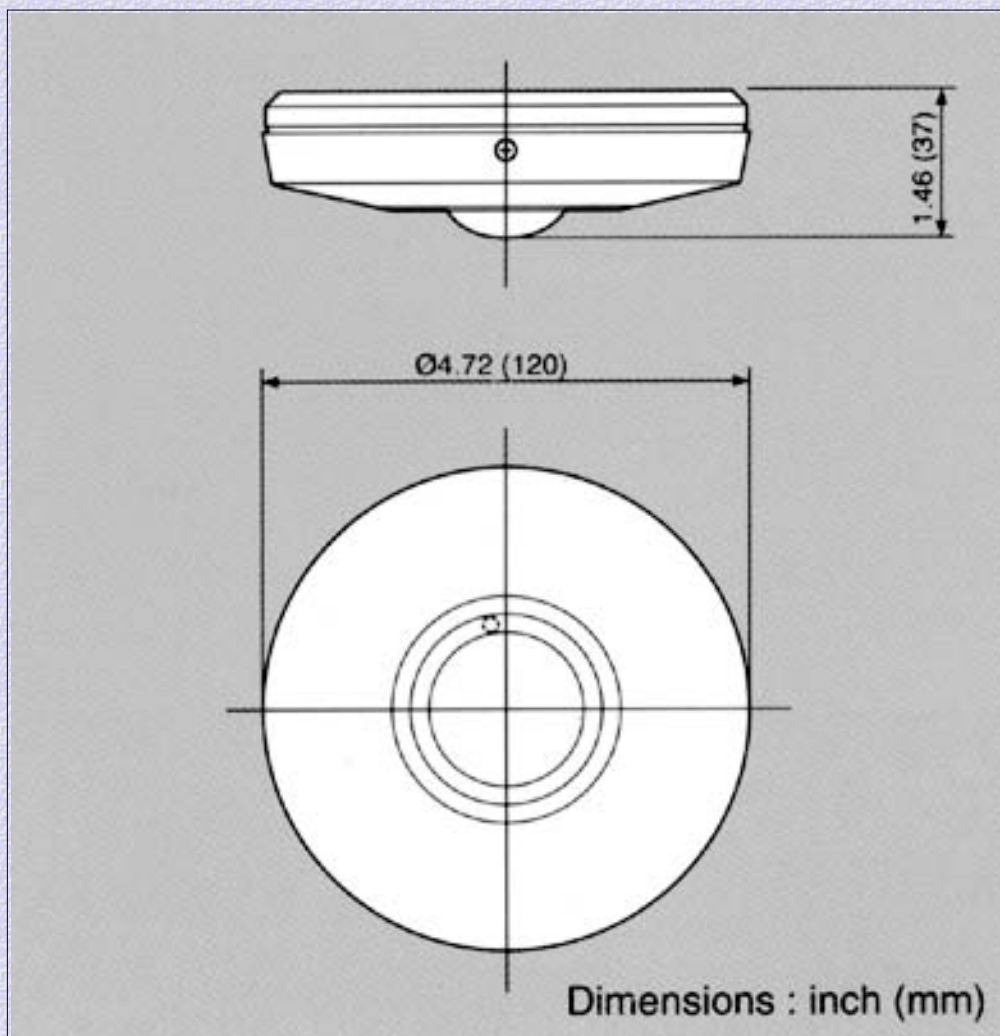
DETECTION PATTERNS

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[Click Here To See The
FX-360's Detection Patterns](#)

DIMENSIONS

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SPECIFICATIONS

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Model	FX-360
Detection Method	Passive Infrared
Coverage	ø25ft. ~ ø40ft.(ø8m ~ ø12m) Height: 8ft. ~ 12ft.(2.4m ~ 3.6m)
Detection Zones	62 zones
Sensitivity	3° F (1.6° C) at 2 ft. / sec. (0.6 m / sec.)
Detectable Speed	1 ~ 5 ft. / sec. (0.3 ~ 1.5 m / sec.)
LED Indicator	LED blinks during warm-up period Alarm indicator optional
Alarm Period	2.0 ± 0.5 sec.
Alarm Output	N.C.28V DC., 0.2A max.
Tamper Switch	N.C., Opens when cover is removed.
Pulse Count	20 ± 5 sec. 2 or 4
Warm-Up Period	Approx. 30 sec. (LED Blinks)

Current Draw	17mA/(normal) 18mA/(max.)
Weight	4.90 oz. (140g)
Operating Temperature	-4°F ~ +122°F (-20°C ~ +50°C)
Environment Humidity	95% max.
RF Interference	No Alarm 20 V/m

*Specifications are subject to change without notice for improvement.

L Version (Alarm Memory)		
Model	FX-360L	FX-360L(P)
Alarm Memory	System Armed: 0 ~ 1V DC (grounded)	System Armed: +5 ~ 20V DC
Current Draw	17mA/(normal) 35mA/(max.)	
Weight	4.90 oz. (140g)	

S Version (Form C)	
Model	FX-360S
Alarm Memory	Form C 28V DC 0.2A max.
Current Draw	32mA/(normal) 35mA/(max.)
Weight	4.90 oz. (140g)

V Version	
Model	FX-360V
Power Input	6 ~ 18V DC
Alarm Memory	System Armed: 0 ~ 1V DC (grounded)
Current Draw	13mA/(normal) 25mA/(max.)
Weight	4.90 oz. (140g)



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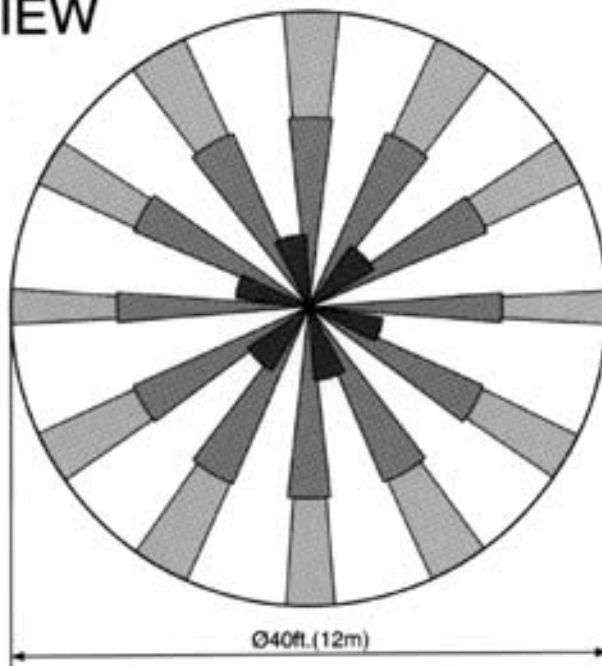
OPTEX
DETECTION PATTERNS

OPTEX MODEL NUMBER

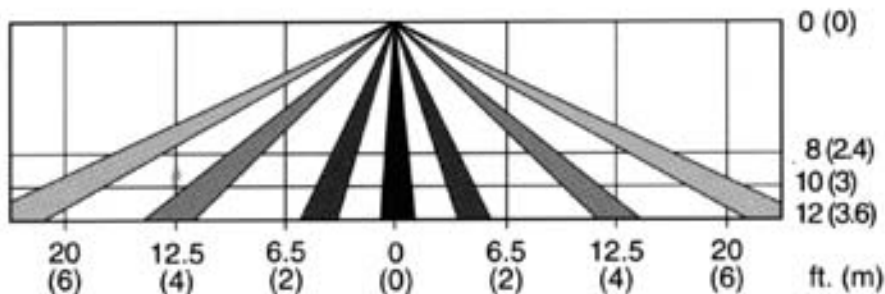
FX-360

**360° CEILING MOUNT
PASSIVE INFRARED DETECTOR**

TOP VIEW



SIDE VIEW



Max. Detection AREA

Installation Height ft.(m)	8 (2.4)	10 (3)	12 (3.6)
Detection Area (Diameter) ft.(m)	25 (8)	32 (10)	40 (12)



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RX-40PI

PASSIVE INFRARED DETECTOR
WITH PET IMMUNITY

[To See The Product Specifications Sheet,
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RX-40PI

PASSIVE INFRARED DETECTOR
WITH PET IMMUNITY

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Quad Zone Logic

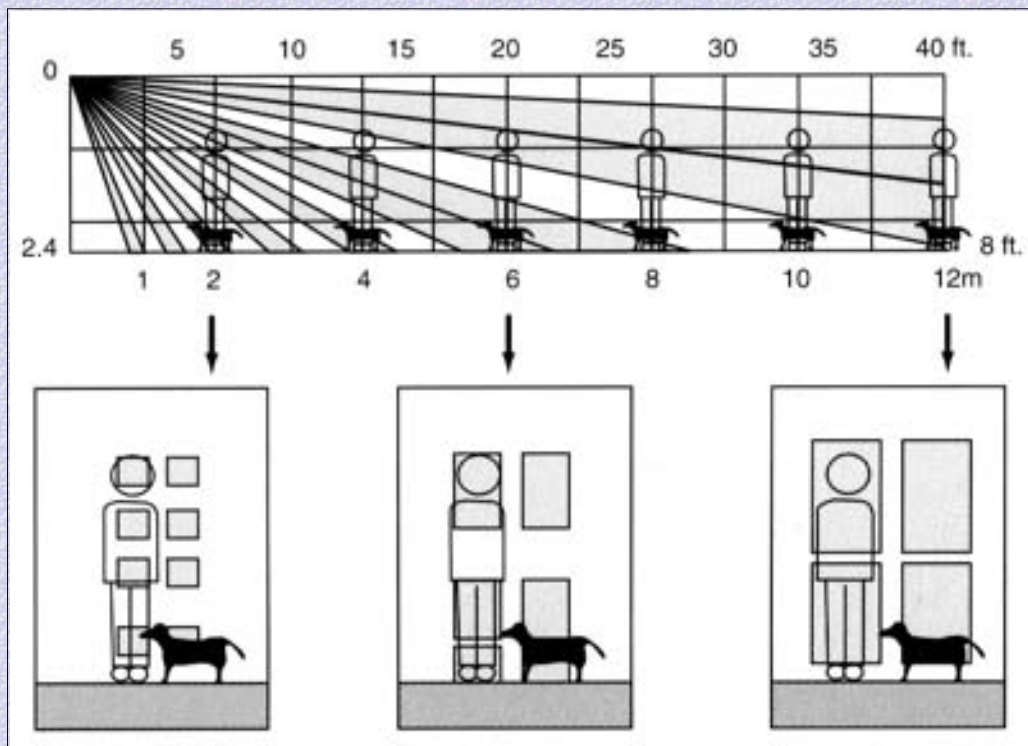
Optex improves its patented "Multifocus Optics" technology to create "Quad Zone Logic" for accurate detection of humans. Using this logic, the RX-40PI has been designed to give extremely high false alarm protection with tolerance to spot temperature changes from curtains or small to medium size animals. Optex's Optical Quad Technology user taller detection zones divided into upper and lower areas. It detects IR energy changes in both areas and then couples them for extremely accurate detections. Offering very high reliability in hostile areas.

FEATURES

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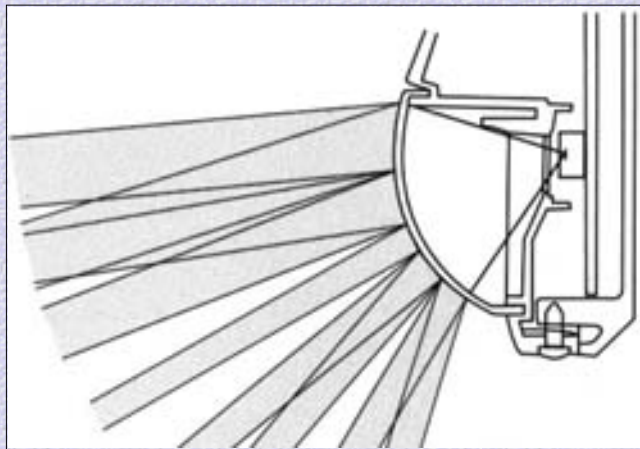
- **Quad Zone Logic - Recognizes humans and ignores most small animals**

Quad Zone Logic provides multi segmented detection zones over the detection area. An alarm signal is created by the cumulated total IR energy of each zone. It is designed so that a human size target will normally fill 4 to 8 zones, and this will cause an alarm to be generated. Any smaller temperature change (i.e. small to medium size pets, rodents or moving curtains) only activates one or two zones at the same time creating a much weaker detection signal. Pet immunity applies to animals 0 to 16 inches in height. These signals are further analyzed by the "ECO" chip and signal processing circuit for accurate detection of humans and avoidance of most small animals.



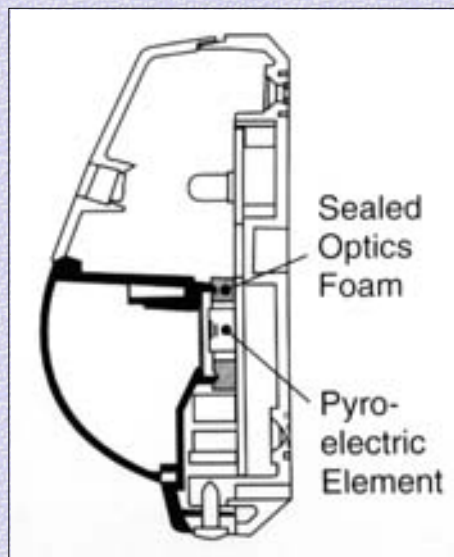
- **Spherical Lens - Technology to Back Up Quad Zone Logic**

Obtains an accurate focal length for each detection zone and maximizes the performance of Quad Zone Logic.

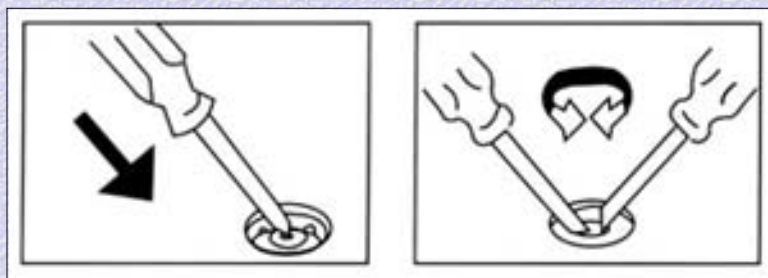


- **Trouble Free and Easy Installation**

- **Sealed Housing** - prevents drafts and insects from reaching the pyro element



- **Trouble-Free and Easy Knockouts** - Simply push with a screwdriver to open a hole of matching size with the cables.



- **Durable Spherical Lens and Housing Design**
- **Good Wiring Space and Guide**
- **Selectable Pulse Count: 2 or 4**
- **LED On/Off Switch**

- **Performance**

- **RFI Protection**
No alarm at 20 V/m from 100MHz to 1 GHz
- **Temperature Compensation Logic**
Eco chip includes temperature compensation circuit. It controls sensitivity to improve stability against changes in environmental conditions.

- **Optional Multi-Angle Bracket**

- **FA-3**
Wall and Ceiling Mounting Bracket
Horizontally $\pm 45^\circ$, Vertically 0° to 15° downwards
- **FL-60N**
Long Range (Extremely Dense Multi Layer Curtain Lens)
(Pet Immunity is not available with FL-60N)

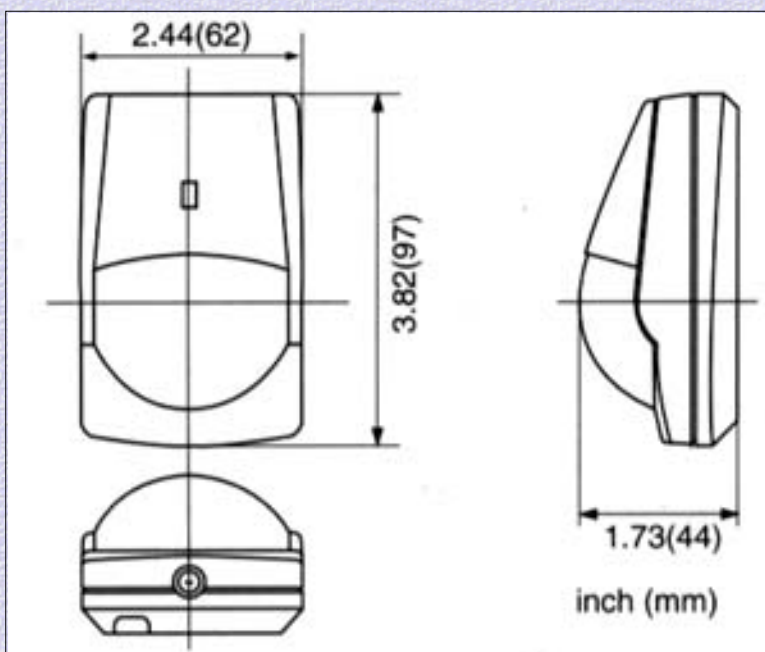
DETECTION PATTERNS

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[Click Here To See The
RX-40PI's Detection Patterns](#)

DIMENSIONS

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SPECIFICATIONS

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Model	RX-40PI
Detection Method	Passive Infrared
Coverage	Wide: 40 ft. x 40 ft. (12m x 12m), 85°Wide
Detection Zones	Wide: 78 zones
Mounting Height	5 ~ 8 ft. (1.5 ~ 2.4m)
Sensitivity	3.6°F (2°C) at 2 ft/sec. (0.6m/sec.)
Detection Speed	1 ~ 5 ft/sec. (0.3 ~ 1.5m/sec.)
LED Alarm Indicator	Switchable On/Off
Alarm Period	Approx. 2.5 sec.
Alarm Output	N.C., 28VDC, 0.2A max.

Pulse Count	Approx. 20 sec. 2 or 4
Warm Up Period	Approx. 30 sec.
Power Input	9.5 ~ 16V DC
Current Draw	17mA (max.) at 12V DC
Weight	2.5 oz. (70 g)
Operating Temperature	-4°F ~ +122°F (-20°C ~ +50°C)
Environmental Humidity	95% max.
RFI Interference	No alarm 20V/m

*Specifications are subject to change without prior notice.

FL-60N (Optional Lens for Long Range Curtain Pattern)

Coverage	Long: 60 ft. x 60 ft. (18m x 18m) Long Range
Detection Zones	Long: 20 Zones



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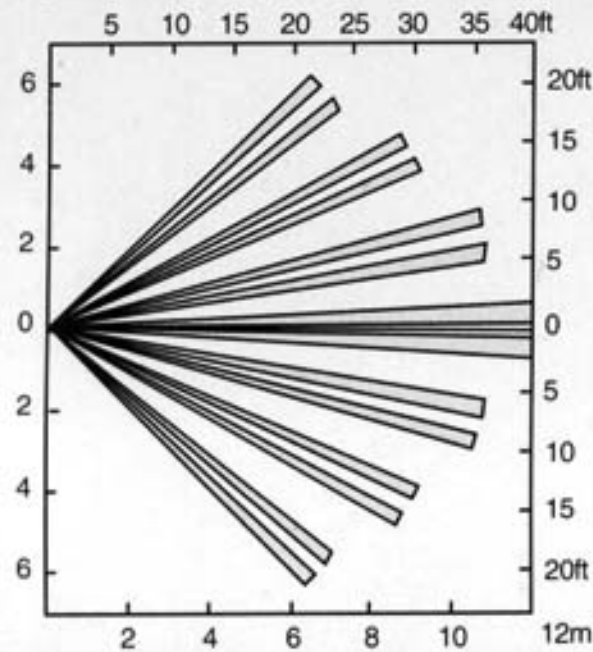
OPTEX MODEL NUMBER

RX-40PI

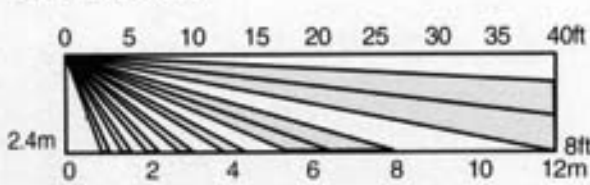
**PASSIVE INFRARED DETECTOR
WITH PET IMMUNITY**

WIDE ANGLE

TOP VIEW

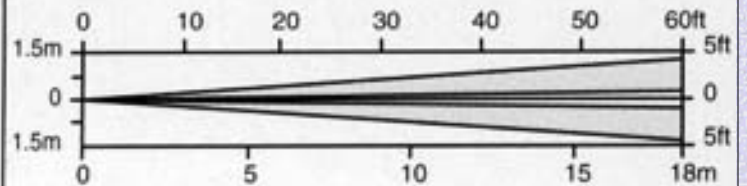


SIDE VIEW

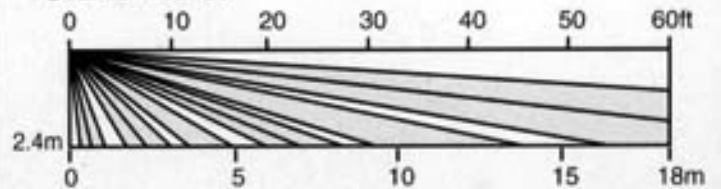


**LONG RANGE
(OPTIONAL LENS : FL-60N)**

TOP VIEW



SIDE VIEW



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All Passive Infrared detectors (PIRs) can detect humans but, few have the ability to discriminate between humans and other, smaller, sources of infrared energy.

In recent years, Optex engineers have focused their efforts on creating a PIR capable of ignoring small to medium animals (pets, rodents, and other false alarm sources) while still maintaining reliable detection of human-sized targets.

PREVIOUS FRAME

RX40-PI

NEXT FRAME

PREVIOUS FRAME**RX40-PI****NEXT FRAME****Pet Immunity****78 Detection Zones****Perfect Focus
For Greater Sensitivity****Installer Friendly
Design****Optex Quality**

The RX-40PI is the achievement from this effort. Seventy-eight detection zones (nearly twice that of conventional PIRs) help the RX-40PI to detect human sized intruders while ignoring other sources of infrared, such as pets, heating vents, and drapes. The RX-40PI's spherical lens creates "perfect focus" and optimum sensitivity, enabling it to achieve such unprecedented capabilities.

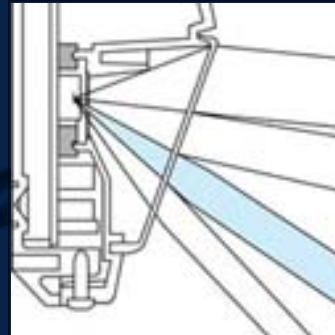
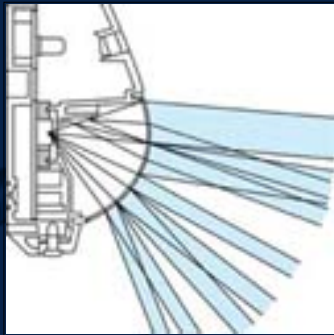
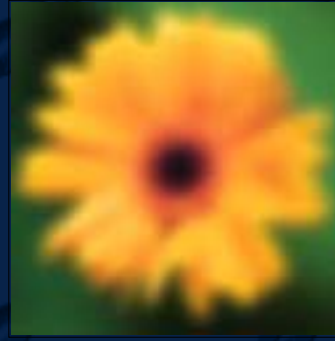
PREVIOUS FRAME**RX40-PI****NEXT FRAME**

PREVIOUS FRAME**RX40-PI****NEXT FRAME**

Perfect Focus with the Spherical Lens



Poor Focus with the Flat Lens



The RX-40PI's "better vision" is a key contributor to its Pet Immunity function.

The spherical lens of the RX-40PI creates a uniform focal length for each detection zone and achieves clear, sharp, zone definition. Conventional lenses are flat and then bent to fit the detector's cover. This creates differing focal lengths within each lens segment and makes the detector's vision blurred, giving it imprecise detection zone borders.

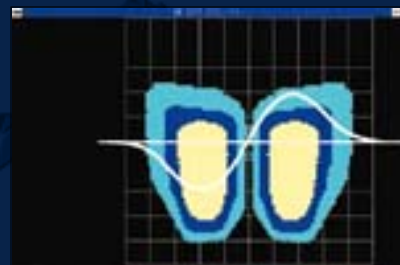
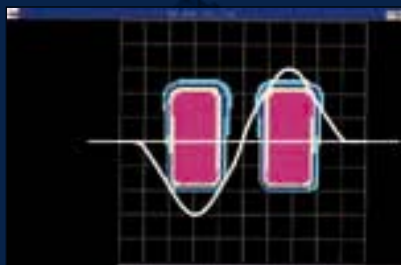
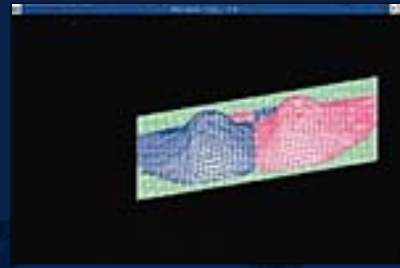
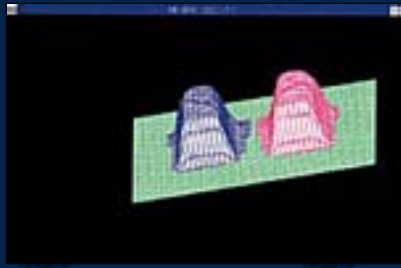
PREVIOUS FRAME**RX40-PI****NEXT FRAME**

PREVIOUS FRAME

RX40-PI

NEXT FRAME

Target Area



**RX-40PI's Spherical Fresnel Lens
(Perfect Focus)**

**Flat Lens
(Poor Focus)**

The 3-D graphs show the actual responses of detectors to the same target signal. Notice how much more sharply the RX-40PI responds than its competitor. The RX-40PI's peak is actually 50% higher than its competitor. Superior sensitivity is a significant contributor to Pet Immunity. The stronger signal created by the RX-40PI (shown on left) creates a larger range in which we can distinguish between humans and smaller sources of infrared energy. In other words, greater sensitivity creates greater contrast between humans and smaller targets.

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RX40-PI

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PREVIOUS FRAME

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Temperature Detection



This picture illustrates temperatures which are typical for a man and a dog. Notice that most targets consist of a variety of temperatures. Depending on the background temperature, either the head, the torso, or the legs might offer optimum contrast.

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Traditional Zones



Traditional detection zones are too small to see the entire target. They often miss areas of the target which offer the greatest temperature contrast. Even if time is spent carefully aiming the detector, full coverage cannot be achieved.

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PREVIOUS FRAME

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RX-40PI Detection Zones



The RX-40PI has a much better way! Its vertically aligned detection zones are coupled together to respond to human sized targets, while ignoring smaller targets. Basically speaking, when four or more zone segments are affected, the RX-40PI will activate. For small to medium sized pets, however, only one or two zones will be affected and no alarm will occur. This is how the RX-40PI achieves high sensitivity to human sized targets, while easily ignoring pets.

PREVIOUS FRAME

RX40-PI

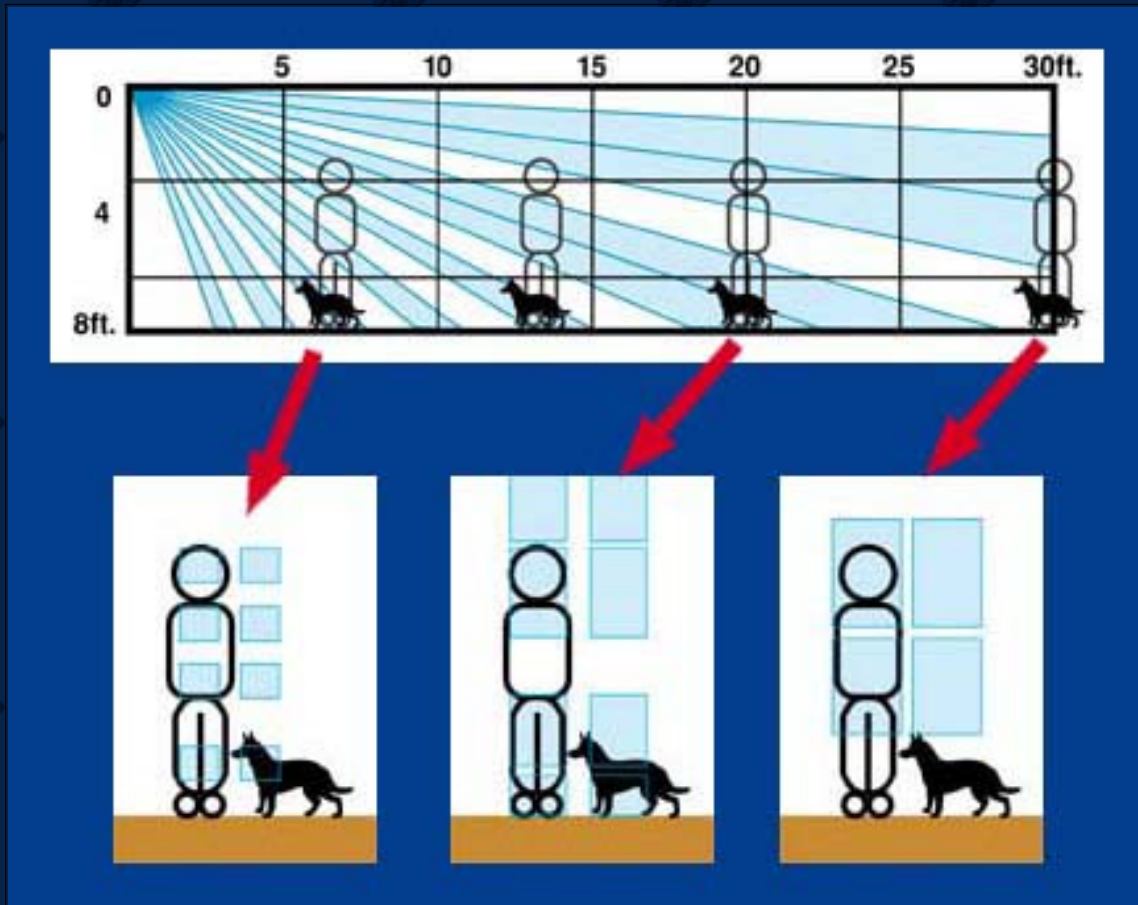
NEXT FRAME

PREVIOUS FRAME

RX40-PI

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Quad Zone Logic



We call this "Quad Zone Logic". Quad Zone Logic refers to the layout of the zones into tall vertical barriers:

Close To The Detector:

Zones cover the entire target, four or more zones are required for an alarm; High sensitivity to humans, ignores small pets and many other causes of false alarms

Middle Range:

Lower zones are still pet immune. Upper zones are slightly more sensitive to humans to ensure good catch. Pet immunity is still achieved.

Furthest Distance:

Lower area has no detection zones. Upper area is slightly more sensitive to ensure good catch. Pet immunity is still achieved.

PREVIOUS FRAME

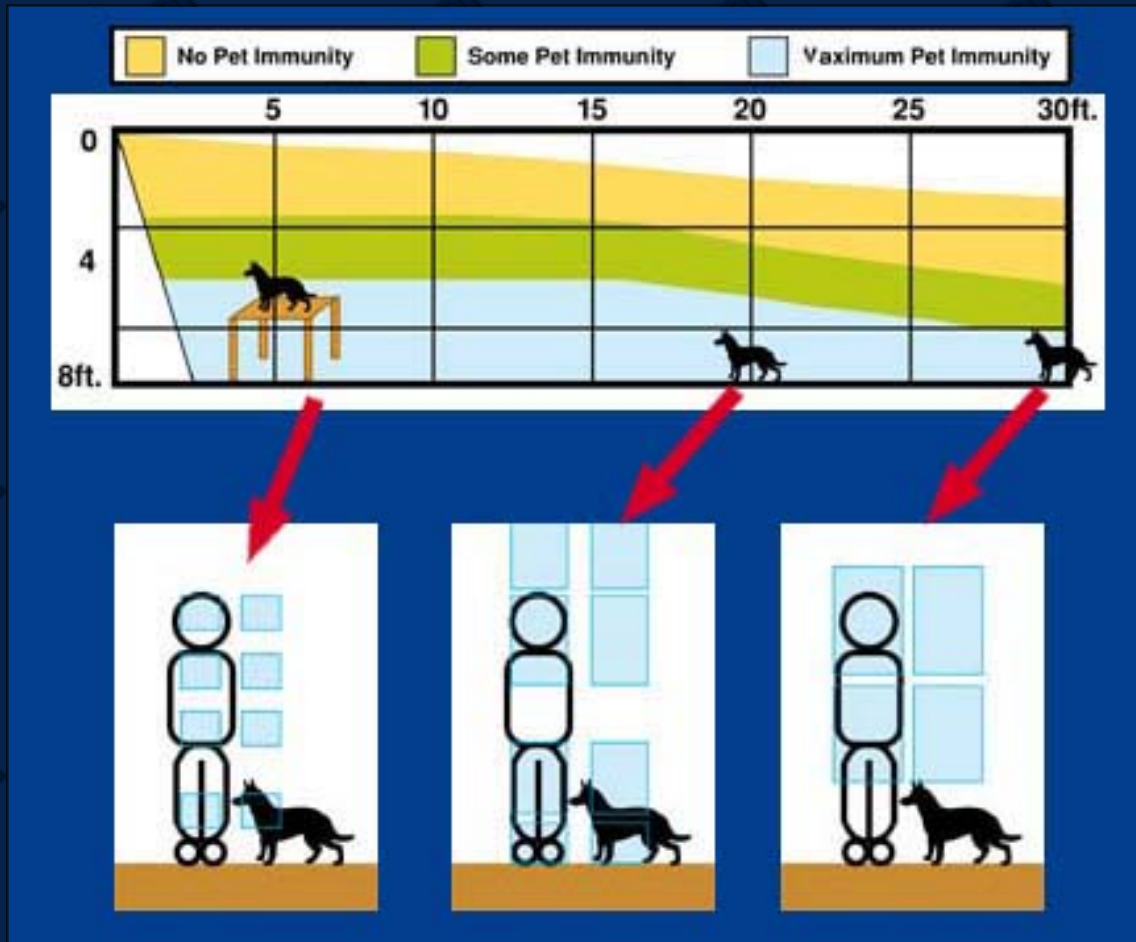
RX40-PI

NEXT FRAME

PREVIOUS FRAME

RX40-PI

NEXT FRAME



This chart show the same detection area as before. Now, it is highlighted to show where pet immunity is greatest. Lower areas of the room, which are more likely to contain a pet, are very resistant to small animals. Upper areas are more sensitive to provide high sensitivity to human sized targets. This method allows for reliable pet immunity, while still remaining sensitive to human targets.

PREVIOUS FRAME

RX40-PI

NEXT FRAME

PREVIOUS FRAME**RX40-PI****NEXT FRAME**

What size pet can the RX-40PI ignore?



Optex knows that providing accurate information about our technology helps security professionals achieve the best pet immunity performance. Since no motion detector (PIR or Dual technology) can determine an object's weight, pet size is the most accurate measure of pet immunity. In nearly every application, the RX-40PI will ignore any animal 16 inches in height or less.

PREVIOUS FRAME**RX40-PI****NEXT FRAME**

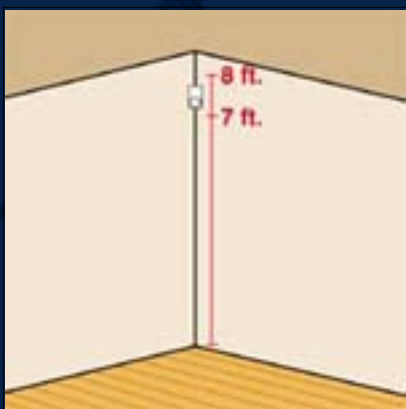
PREVIOUS FRAME

RX40-PI

NEXT FRAME

Simple Installation

For best pet immunity performance, the following installation guidelines must be followed:



Mount the detector between 7 and 8 feet (closer to 8 ft. for more immunity)



Limit the detectors field of view to 30 ft. maximum



Do not angle the detector downward (flat on wall or corner mount only)



Don't allow pet accessible shelves or stairways 5.5 ft. or higher within 15 ft. of the detector

No additional adjustments are necessary! Simple and quick installation.

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RX40-PI

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PREVIOUS FRAME

RX40-PI

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Easy Installation Features



Knockouts



Bracket and Lens



Wiring Guides

RX-40PI also features: **Easy wire knockouts** to simplify installation and provide better sealing of the casing. **Wiring Guides** on the back of the detector to allow for easy passage of wires to the terminals. Optional **long range lens** and optional **wall / ceiling bracket** for greater flexibility and easier installation. (Do not use long range lens or wall / ceiling bracket for pet immunity applications).

PREVIOUS FRAME

RX40-PI

NEXT FRAME

PREVIOUS FRAME**RX40-PI****NEXT FRAME**

False Alarm Hazards



Radio Waves



Headlights and Other Bright Light Sources



Spiders and Other Insects

RX-40PI's RFI immunity exceeds industry standards. With RFI immunity exceeding 20 V/m, Superior white light filtering has been incorporated into the RX-40PI's design to reduce interference from car headlights, sunlight, or other bright light sources. The unit's optical chamber is sealed to create an impenetrable insect shield around the pyroelectric element. The RX-40PI is rated for operating temperatures as low as -4°F.

PREVIOUS FRAME**RX40-PI****NEXT FRAME**

PREVIOUS FRAME**RX40-PI****DONE**

RX-40PI Benefits

Its patented Quad Zone Logic fills rooms with 78 detection zones which are capable of distinguishing between humans and small animals, heating vents, and other causes of false alarms. Easy to install and reliable, the RX-40PI's pet immunity is an important sales advantage for you to offer your customer and a significant false alarm reduction tool for all applications.

PREVIOUS FRAME**RX40-PI****DONE**



OPTEX

SPECIFICATION SHEET

OPTEX MODEL NUMBER
CX-50/50AM
 PASSIVE
 INFRARED DETECTOR

FEATURES

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Introducing the new CX Models with the Most Advanced Technology and Reliability to Fit the Needs of the Commercial Market!

DUAL PURPOSE SPHERICAL LENS:

Wide Angle: 50 x 50ft. (15 x 15 m) at medium sensitivity

Long Range (Curtain): 80 ft x 6 ft. (24 x 1.8m) at medium sensitivity

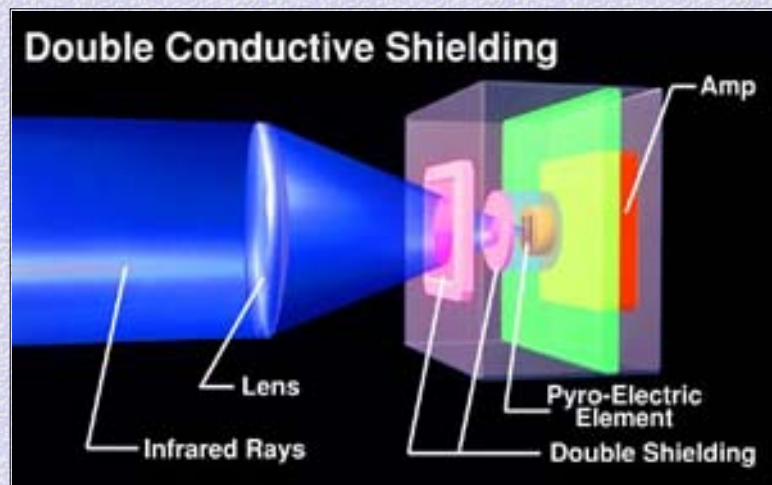
With the introduction of the CX-50, the scope of the CX series is greatly increased. The CX-50 not only includes all the outstanding features of the CX Series, but incorporates such high value added features as Anti-Masking and Self-Checking in the CX-50AM version.

FEATURES

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- **Double Conductive Shielding of Pyro Electric Element (Patent Pending)**

Double filtering and conductive metal shielding of the Pyro blocks out visible light and RFI allowing only infrared energy to reach the pyroelectric elements.



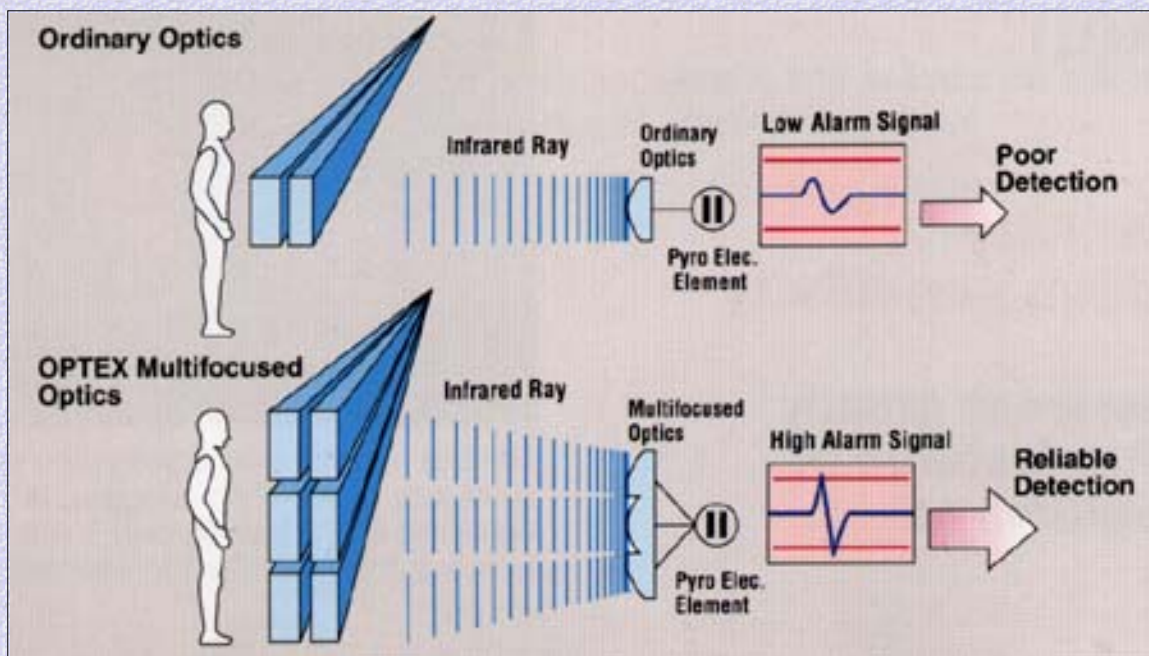
CX-50 (Standard) /50S (Form C) / 50V (Alarm Memory)

● False Alarm Protection

- **RFI Protection**
No alarm from a field strength of 30V/m within the range of 100 to 1,200 MHz.
- **EMI Protection**
Can endure 50,000V of electrical interference from lightning or power surges through the signal or power lines.
- **Visible Light Protection**
Stable against halogen light at 8ft. (2.4m) or 50,000lx of reflected sun light within the detection area.
Exceptionally high level of protection against morning sun reflection or car headlights.
- **Temperature Protection**
No alarm in high, low and changing temperatures from -4°F to +122°F (-20°C to +50°C)

● Stable Detection Performance

- **Temperature Compensation**
The CX-50 Series employs Temperature Compensation to provide accurate detection by automatically adjusting its sensitivity according to the environmental temperature. It will prevent non detection under high temperature conditions where the background temperature is very similar to the human body, while maintaining a high level of false alarm protection.
- **Selectable Sensitivity (H,M,L)**
Offers sensitivity selection to give detection coverage of up to 60 x 60ft. (18 x 18m) Wide Angle or 90 x 7ft. (27 x 2.1m) Long Range.
- **Selectable Pulse Count (1, 2, 3 or 4)**
(2 pulse count on long range detection)
- **Multifocused Optics (Patent Listed)**
Maintains stable detection even in adverse temperature conditions because tall, vertical zones are created through the multifocused optics. They capture an entire human body and detect the smallest temperature contrast against the background.



- **Spherical Lens Technology**

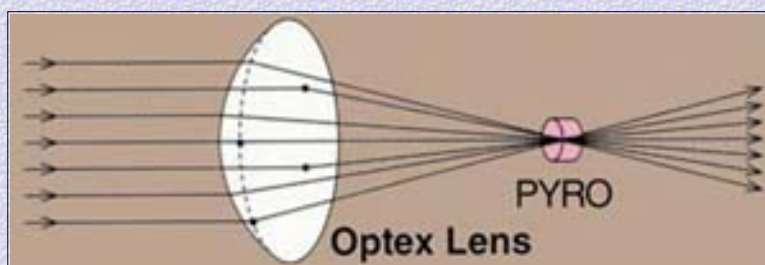
Spherical Lens Technology offers both flexibility and reliability, enabling all installation site requirements to be met by a single detector.

- **Spherical Lens Design**

Conventional interchangeable lenses inevitably meet sensitivity distortion problems when flat long range detection lenses are bent to fit a curved housing cover. Optex's spherically designed lens will obtain sharp detection for both Wide Angle and Long Range using the same lens surface.

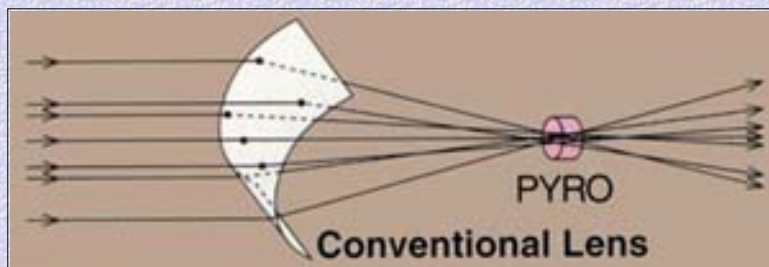
- **Long Range Pattern focused through a spherical lens**

Designed to collect IR energy from the detection area, and purely focus it onto the pyro.



- **Long Range Pattern focused through a bent, flat lens (conventional models)**

Because a flat lens is "bent", sensitivity distortion occurs at both sides of the lens, (the lens surface is not directing IR energy correctly), resulting in poor sensitivity for long distance detection applications.

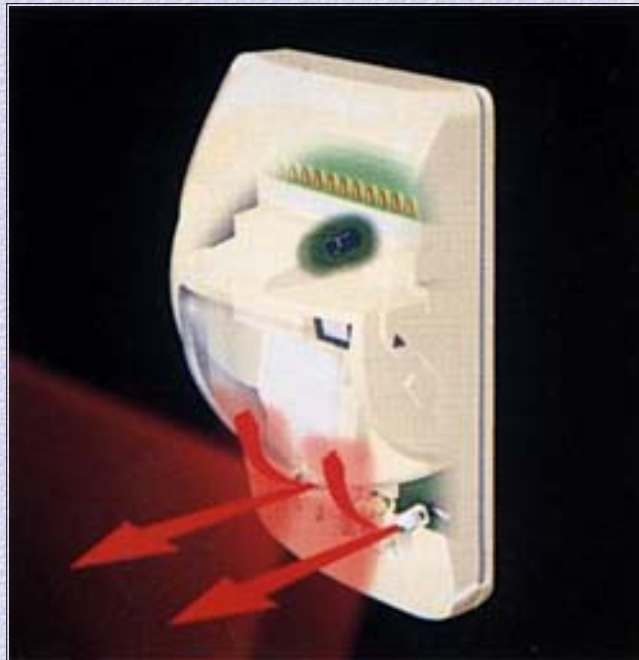


- **Selectable Sensitivity (H,M,L)**
Offers sensitivity selection to give detection coverage of up to 60 x 60ft. (18 x 18m) Wide Angle or 90 x 7ft. (27 x 2.1m) Long Range.
- **Hard & Durable Fresnel Lens**
- **Dual Purpose Lens**
By simply rotating the spherical lens, Wide Angle or Long Range patterns can be selected.

CX-50AM ANTI-MASKING & SELF-CHECKING

- **Improved Reliability**

- **Anti-Masking (Patent Pending)**
By providing two photoelectric detection beams, operating in different directions, the CX-50AM unlike other Anti-masking PIRs will detect masking both directly to the lens surface and also shielding in front of the PIR. Either of these actions will generate a trouble signal.



- **Self-Checking**
This function activates a trouble signal if CX-50AM's sensing ability is not circuits. Correctly, The Sensor and Signal Processing Circuit are automatically checked once every 5 hours and also when the alarm system is armed (a compatible control panel is necessary to send an arming signal to the CX-50AM's alarm memory input). This ensures system integrity.
- **Initial Alarm Memory (CX-50AM Only)**
This function is indicated by a red LED and memorizes which detector was first triggered

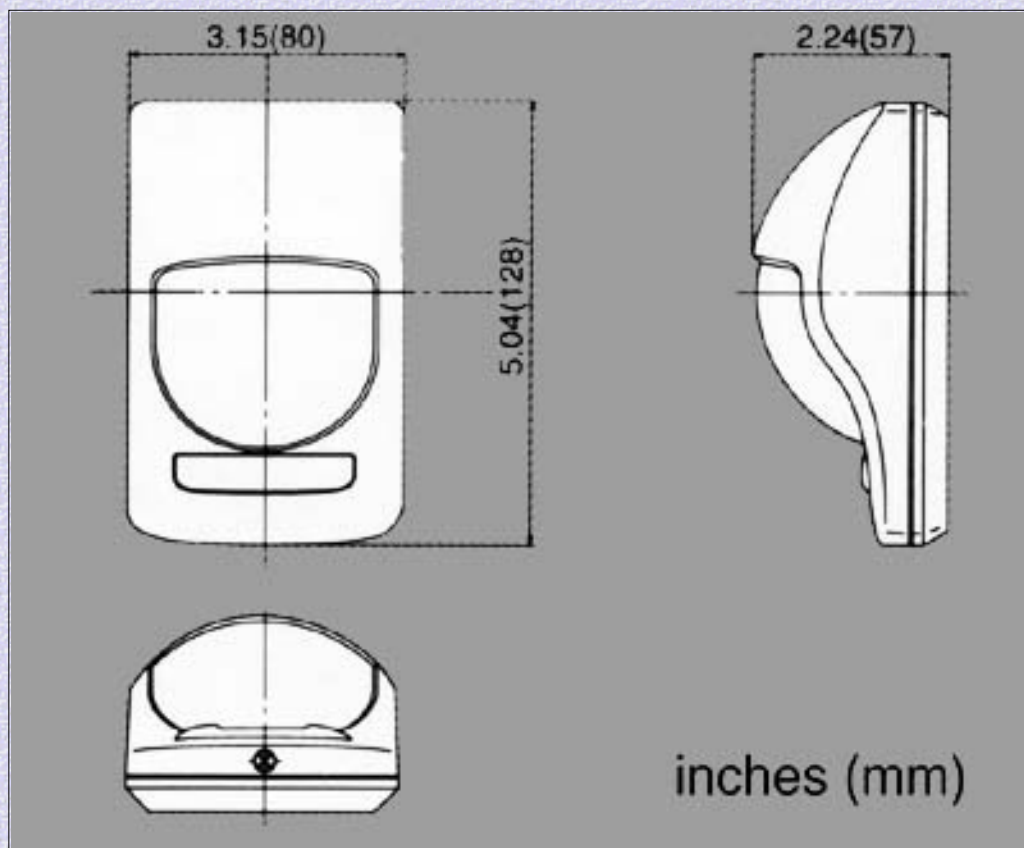
when several detectors are connected in one alarm loop.

DETECTION PATTERNS

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CX-50 / 50AM's Detection Patterns](#)

DIMENSIONS

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SPECIFICATIONS

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Model	CX-40R(NC)	CS-60NR (NC)	CX-40R (NO)	CS-60NR (NO)
Detection Method	Passive Infrared			
Coverage	40ft x 40ft (12m x 12m) 85° Wide	60 ft x 3ft (18m x 1m) Full Curtain	40ft x 40ft (12m x 12m) 85° Wide	60 ft x 3ft (18m x 1m) Full Curtain
Detection Zones	92 zones	20 zones	92 zones	20 zones
	Multi Level Area	Full Curtain Area	Multi Level Area	Full Curtain Area
Mounting	Height 5 ~ 12ft (1.5 ~ 3.6m)			
Sensitivity	3° F (1.6°C) at 2ft/sec. (0.6m/sec.)			

Detectable Speed	1 ~ 6ft/sec. (0.3 ~ 1.8m/sec.)		
LED Indicator	Disabled during normal operation		
Alarm period	1 ± 0.5 sec.		
Alarm Output	N.C. 28VDC 0.2A max	N.O. 28VDC 0.2A max	
Tamper Switch	N.C., Opens when cover removed.	N.O., Closes when cover removed	
Pulse Count	20 ± 5 sec. Second delay		
Warm Up Period	App. 40 sec.		
Power Input	9VDC Alkaline Battery, Lithium Battery		
Current Draw	20µA		
Battery Life	App. 2 years/Alkaline Battery; 4 years/Lithium Battery		
Weight	4.6 oz (130g)	4.8 oz (135g)	4.6 oz (130g) 4.8 oz (135g)
Operating Temperature	-14° F ~ + 122° F (-10° C + 50° C)		
Environment Humidity	95% max		

*Specifications and design are subject to change without prior notice.

Ordering References

Model No.	Detection Pattern	Relay Output
CX-40R NC	40' x 40' (12 x 12 m)	N.C.
CX-60NR NC	60' x 3' (18 x 1m)	N.C.
CX-40R NO	40' x 40' (12 x 12 m)	N.O.
CX-40R NO	60' x 3' (18 x 1m)	N.O.



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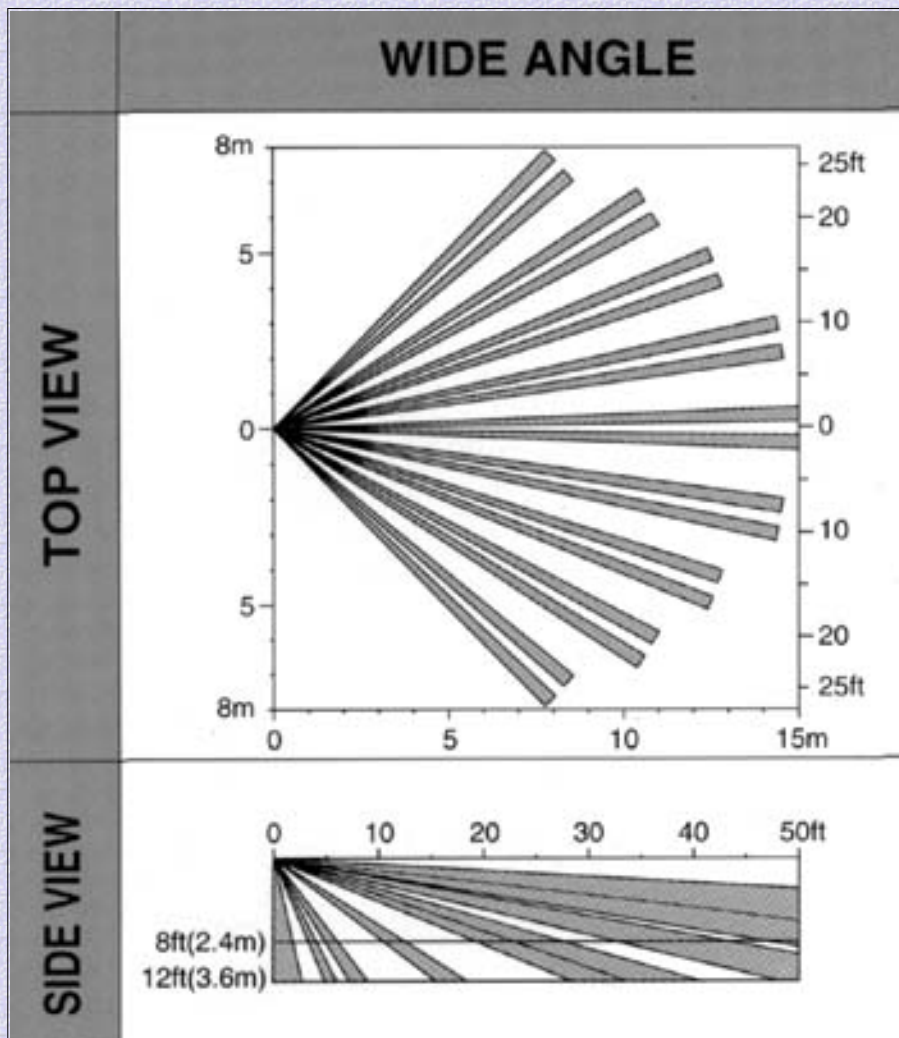


OPTEX
DETECTION PATTERNS

OPTEX MODEL NUMBER

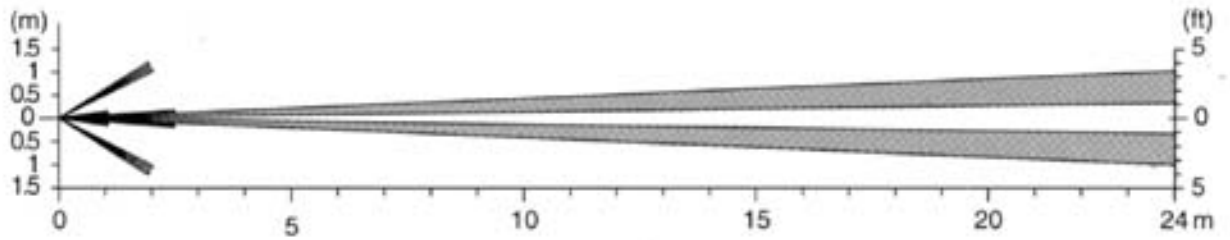
CX-50/50AM

**PASSIVE
INFRARED DETECTOR**

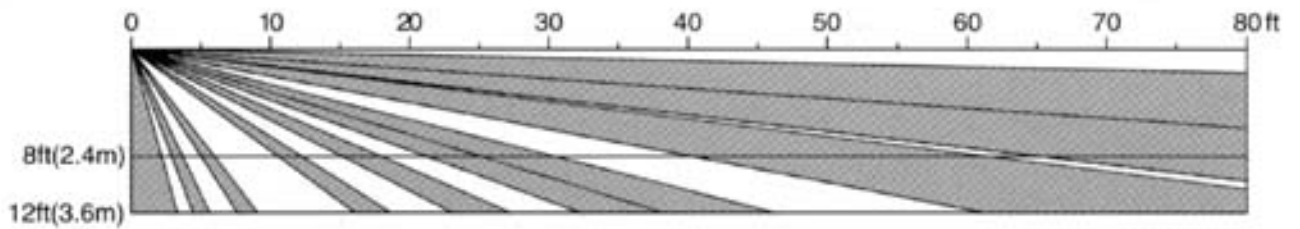


LONG RANGE

TOP VIEW



SIDE VIEW



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OPTEX

SPECIFICATION SHEET

OPTEX MODEL NUMBER

CX-70M

PASSIVE INFRARED DETECTOR

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Dual Purpose Lens

Wide Angle: Up to 70 x 70 ft. (21 x 21m)

Long Range: Up to 150 x 8 ft. (45 x 2.4m)

Proven Performance With Detection Pattern Flexibility For Commercial Applications

Superior reliability and performance makes the CX-70M a logical choice for a wide variety of commercial applications. In addition to providing all of the superior features of our CX-line of P.I.R.s, the CX-70M allows you to select between precise wide angle detection patterns and long range patterns. By incorporating our Patented Multifocus Technology into a Spherically Designed Lens, the CX-70M has successfully eliminated sensitivity problems caused by changing detection patterns.

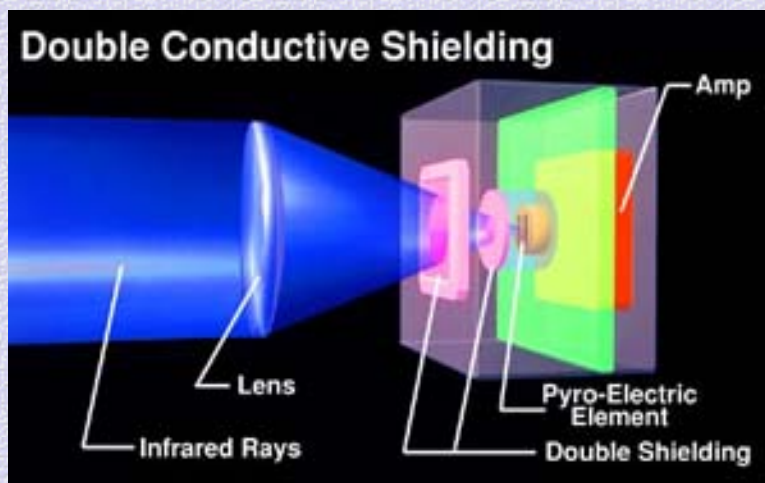


FEATURES

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- **Double Conductive Shielding of Pyro Electric Element (Patent Listed)**

Double filtering and conductive metal shielding of Pyro blocks out visible light and RFI allowing only infrared energy to reach the pyroelectric elements.



- **Dual Purpose Lens**

By simply rotating the spherical lens, you can select between Wide Angle and Long Range patterns. CX-70M will instantly provide reliable and precisely accurate detection in each pattern.

- **Flexibility For Installation Size**

Combining unique Dual Purpose Lens with sensitivity and angle adjustments, CX-70M will create ideal zone patterns for human detection in every size room.

- **False Alarm Protection**

- **RFI**
No alarm at 30V/m from 100MHz to 1.2GHz.
 - **EMI**
No alarm against 50,000V charge
 - **White Light**
No alarm against Halogen light within 8 ft. (2.4m)
 - **Sunlight**
No alarm at 50,000 lx reflected into the detector
-

- **Multi Focus Lens (Patent Listed)**

- **Selectable Sensitivity** - High, Medium, or Low

- **Selectable Pulse Count** - 1, 2 or 4

- **3 Step Angle Adjustment**

- **Options**

- **CA-1W:** Wall Mount Multi-Angle Bracket
- **CA-2C:** Ceiling Mount Multi-Angle Bracket
- **BA-70:** Backbox for Wireless Transmitter

- **Versions**

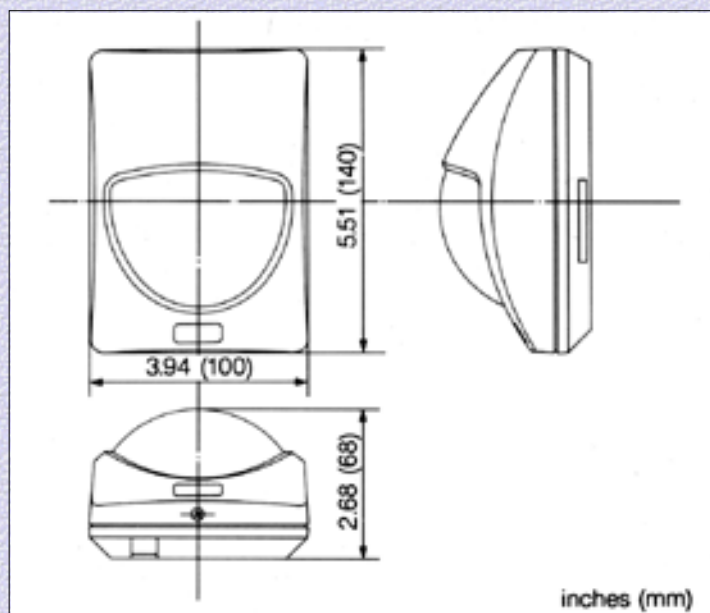
- **CX-70MV** - Alarm Memory
- **CX-70MS** - "Form C" relay output
- **CX-70MR (NC)** - Battery operated, N.C. relay output
- **CX-70MR (NO)** - Battery operated, N.O. relay output

DETECTION PATTERNS

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[Click Here To See The
CX-70M's Detection Patterns](#)

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Model	CX-70M
Power Input	6 ~ 18 V DC
Current Draw	20 mA max (6 ~ 18V DC)
Alarm Output	N.C. 28V DC 0.2A max.
Sensitivity	3°F (1.6°C) at 2 ft. / sec. (.6m / sec.)
Angle Adjustment	4.5° Vertical by 3 steps
Mounting	5 ~ 12 ft. (1.5m ~ 3.6m)
Operating Temperature	-4°F ~ +122°F (-20°C ~ +50°C)
Humidity	Up to 95%

Pulse Count	1,2 or 4 20 ± 5 sec.
Weight	200g
Dimensions	5.51" x 3.94" x 2.68" (140mm x 100mm x 68mm)

*Specifications and design are subject to change without prior notice.

S Version (Form C)

Model	CX-70MS
Alarm Output	Form C
Current Draw	40mA max. (6 ~ 18V DC)
Weight	200g

V Version (Alarm Memory)

Model	CX-70MV
Control Voltage	0 ~ 1V DC (ground)
Current Draw	25mA max. (6 ~ 18V DC)
Weight	200g

Battery Operation Version

Model	CX-70MR (NC)	CX-70MR (NO)
Alarm Output	N.C. 28V DC 0.2A max.	N.O. 28V DC 0.2A max.
Battery Saving Circuit	Requires 2 min. non-activity for an alarm	
Power Input	9V DC Alkaline Battery, Lithium Battery	
Current Draw	Standby 15µA, On Alarm 10mA	
Battery Life	2 years / Alkaline, 4 years / Lithium	
Weight	200g	



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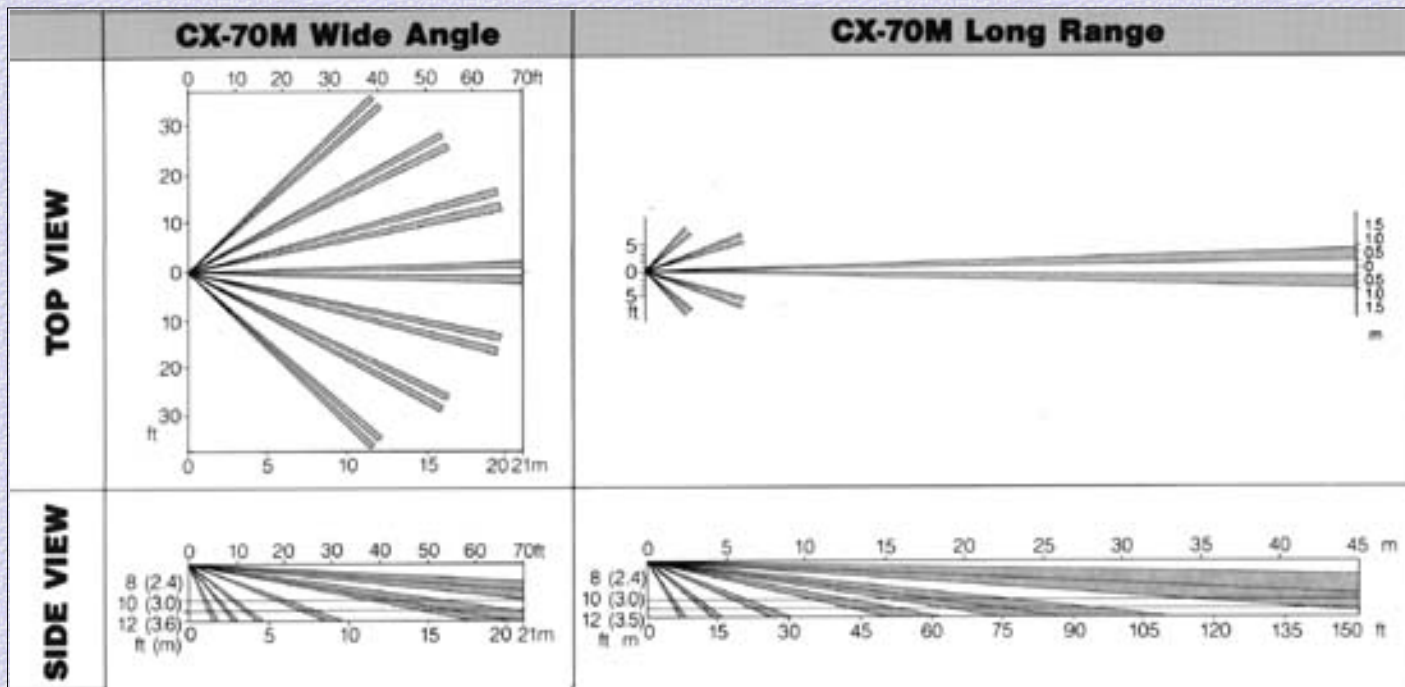
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OPTEX MODEL NUMBER

CX-70M

PASSIVE INFRARED DETECTOR



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OPTEX

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OPTEX MODEL NUMBER
SX-45C • SX-75C
 CEILING MOUNT
 PASSIVE INFRARED DETECTOR

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In-Line Quad/DSP System Multiple Step Protection

Up to now, your choice has been too much sensitivity resulting in false alarms or too little sensitivity resulting in no alarm. Optex has a solution to this dilemma.

Introducing the "IN-LINE QUAD": Two pair of dual elements (side by side) in one housing. Optex has incorporated this feature in its new **SX-45C** and **SX-75C**. The "IN-LINE QUAD" works together with Double Signal Processing (D.S.P.) to cancel environmental false alarms. With this new technology, Optex has achieved the ultimate level of reliability against false alarms, while maintaining extremely high detection sensitivity and coverage.

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- **In-Line Quad**

- **Double Signal Processing (D.S.P.) Circuit**

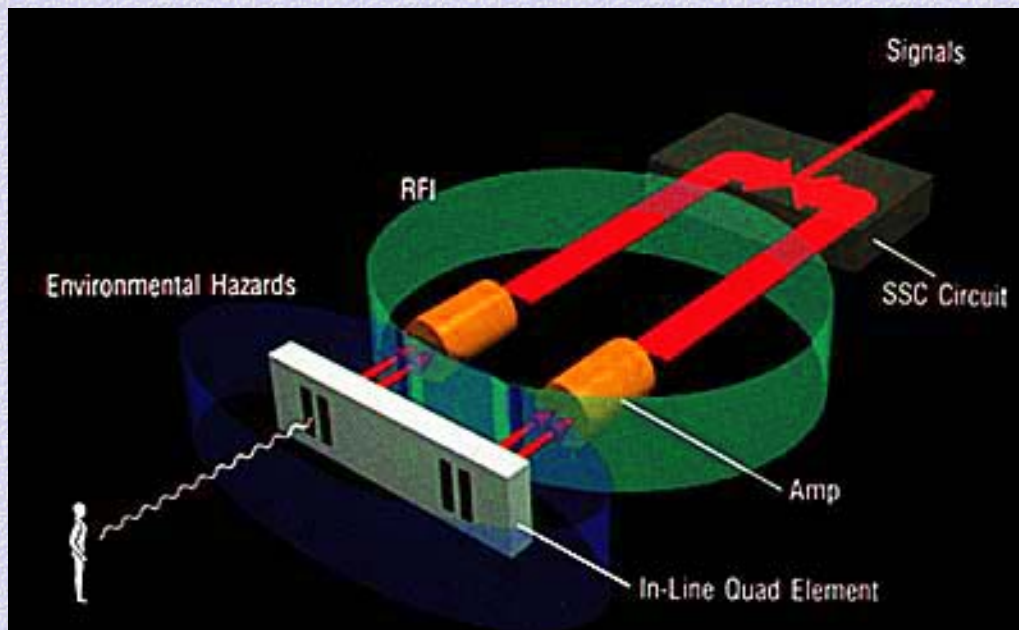
- **Noise Reduction Circuit**


- **Pulse Count**

- **RFI Protection**
 Incorporating D.S.P. and a special circuit which leads RF signals to ground. Field strength as much as 25 V/m.

- **6 to 18 VDC, 14mA Draw**
 (L Version, 20mA max)

- **Slimmest Design**
 Suitable anywhere especially where aesthetics are a concern.



	Only one dual element is affected at a time	Alarm
Environmental Hazards RFI, Lights, Temperature Changes, Draft, etc.	Both dual elements are affected at the same time and these signals are negated by the Simultaneous Signal Cancellation (S.S.C.) Circuit in the D.S.P. system.	No Alarm

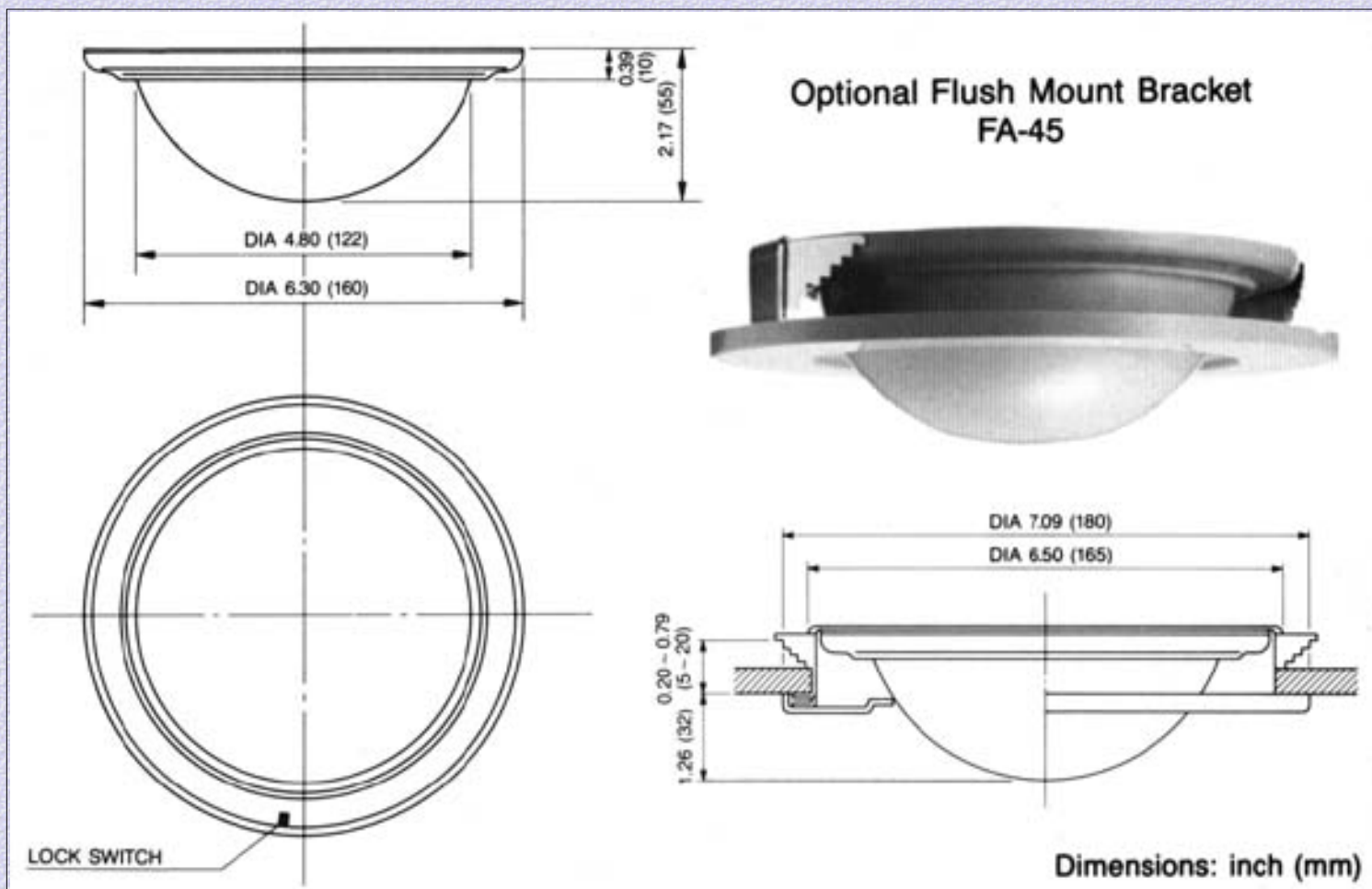
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[Click Here To See The SX-45C and SX-75C's Detection Patterns](#)

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Model	SX-45C	SX-75C
Detection Method	Passive Infrared DSP System	
Coverage	45ft. x 45ft. (13.5m x 13.5m) 85° Wide Angle	75ft. x 20ft. (22.5m x 6m) Long Range
Detection Zones	80 Zones	32 Zones
Mounting	Ceiling: Height 7 to 18 ft. (2.1 to 5.4m)	
Sensitivity	3°F (1.6°C) at 2ft./sec (0.6m/sec.)	
Detectible Speed	1 ~ 6ft./sec.: (0.3 ~ 2.0m/sec.)	
LED Indicator	Alarm Indicator (switched option) Alarm Memory (optional with L version)	
Alarm Period	2.5 ± 1 sec.	
Alarm Output	N. C., 28V DC 0.2A max.	
Tamper Switch	N. C., Opens when body removed	
Pulse Count	20 ± 5 sec. Second delay	

Warm Up Period	Approx. 40sec.
Power Input	6 to 18V DC
Current Draw	14mA max. / 6 to 18V DC
Operating Temperature	-4°F to +122°F (-20°C to +50°C)
Environment Humidity	95% max.
RF Interference	No Alarm 25 V/m.
Weight	7.0oz (200g)

*Specifications are subject to change for improvement, without notice.

NOTICE: This product is designed to detect an intruder and send off a signal. It is not a theft prevention unit. We cannot assume responsibility for a theft, should it occur.

Model	SX-45C-L	SX-75C-L
Alarm Memory	Control Voltage Signal: Positive	
Current Draw	20mA max. / 6 to 18V DC	
Weight	7.4oz (210g)	

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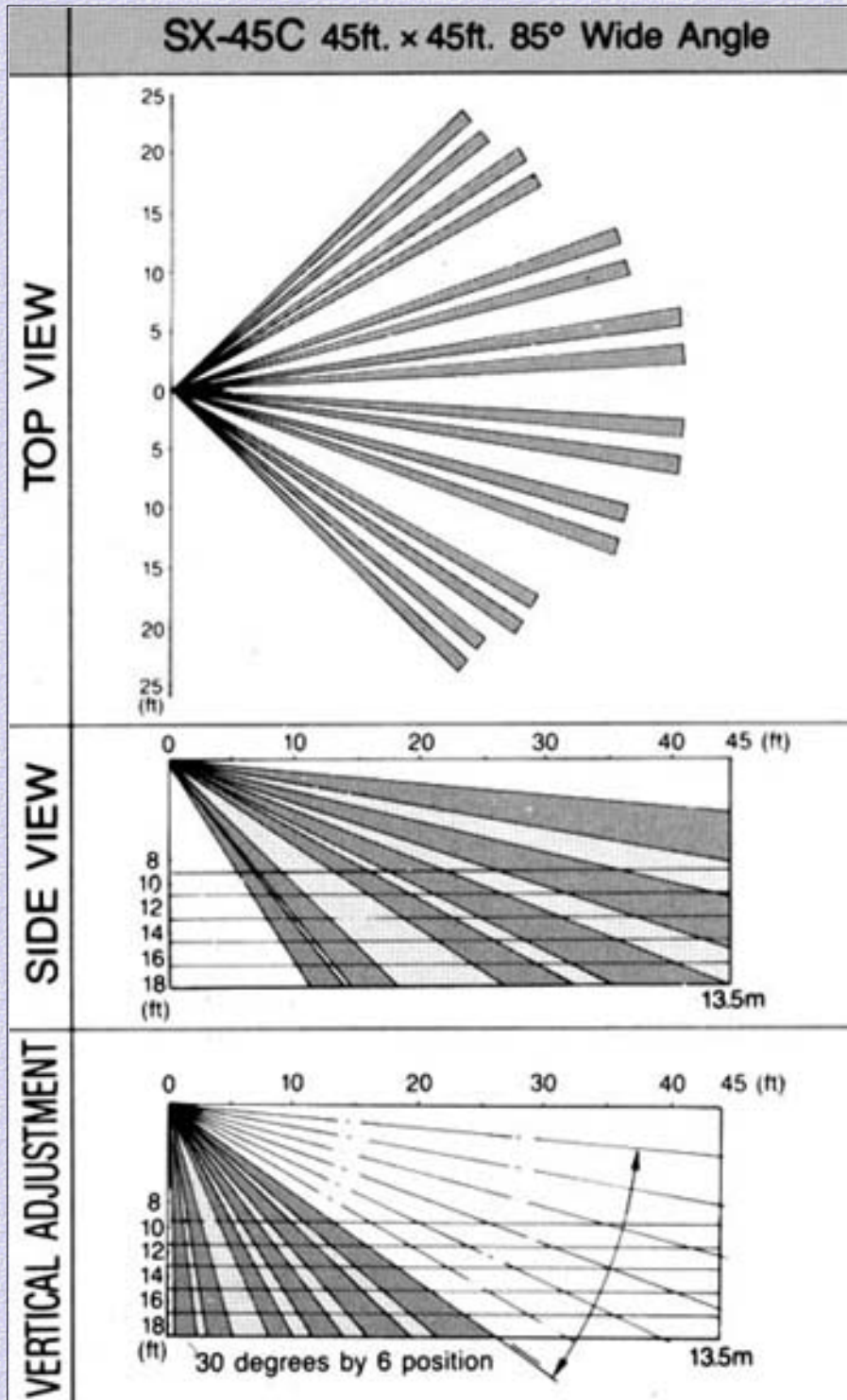
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OPTEX
DETECTION PATTERNS

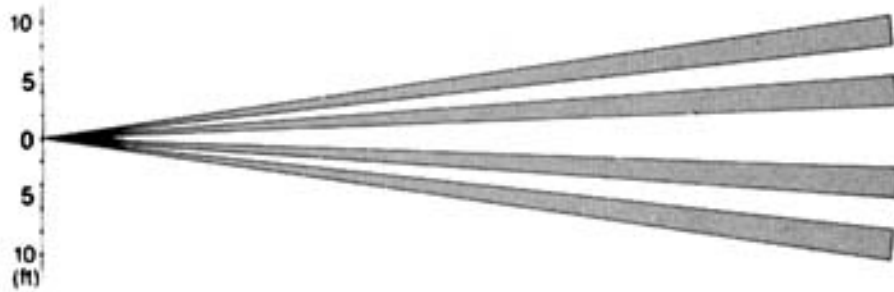
OPTEX MODEL NUMBER
SX-45C • SX-75C

**CEILING MOUNT
PASSIVE INFRARED DETECTOR**

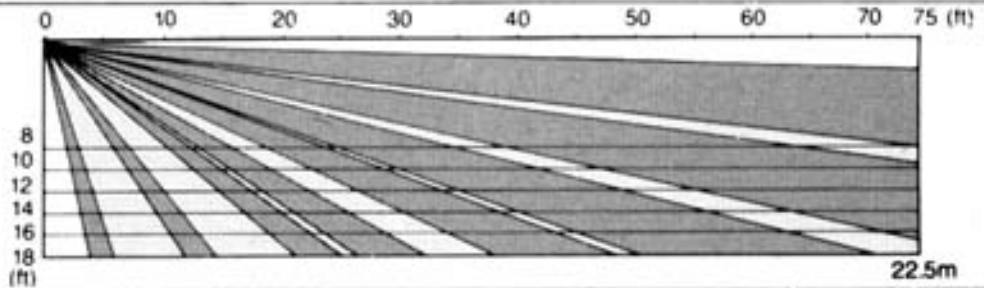


SX-75C 75ft. x 20ft. Long Range

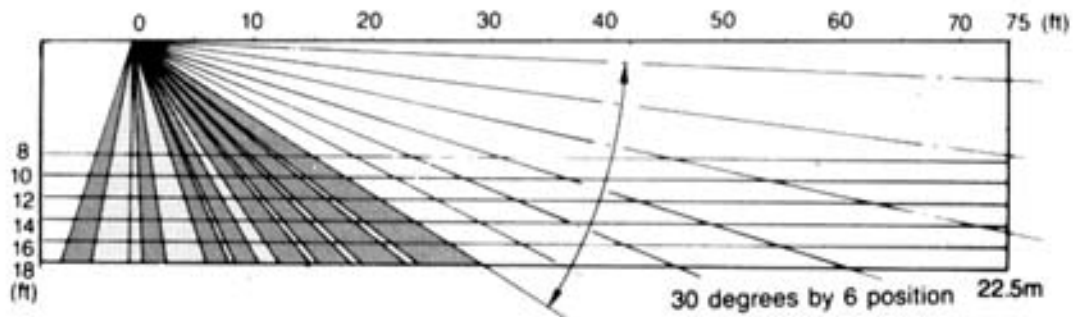
TOP VIEW



SIDE VIEW



VERTICAL ADJUSTMENT



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OPTEX

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OPTEX MODEL NUMBER

SX-360Z

**360° CEILING MOUNT
PASSIVE INFRARED DETECTOR**

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"ZOOM" Into Any Installation

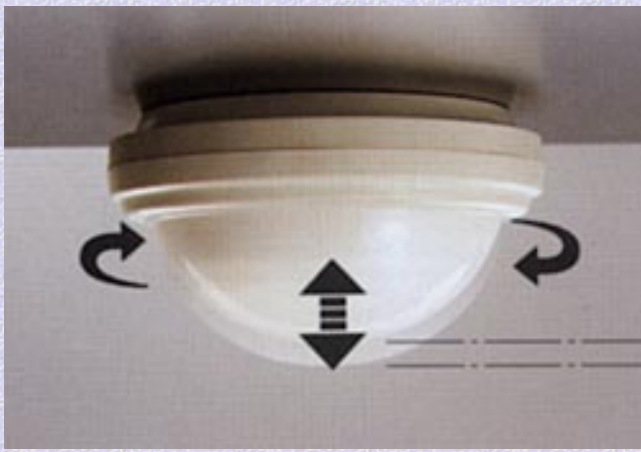
Optex's Unique Zoom Function and Highly Dense, Triple Element Detection Pattern, Provide Unsurpassed Detection Performance at Any Ceiling Height Up to 16 Feet!

OPTEX incorporates its latest technology into a new generation of 360° detectors. The unique "Zoom" mechanism makes the SX-360Z the most flexible detector available. The 276 dense zones will provide a 60 ft. (18m) circular detection area at any installation height from 8 ft. to 16 ft. (2.4m to 5m) with absolutely no dead spots. The SX-360Z's compact design makes it the perfect detector for all types of applications - residential and commercial, large and small.

FEATURES

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- Highly Dense**
 Provides highly dense coverage with as many as 276 detection zones, eliminating dead spots over its broad 60 ft. (18m) diameter detection area.
- Zoom Function / Pattern Adjustment**
 The pattern angle can be variably adjusted. The special lens can be adjusted up and down by rotating the housing cover of the "Zoom" mechanism. The angle adjustment can provide a 360° 60 ft. (18m) diameter detection area at any ceiling height up to 16 ft. (5m) with high detection performance.



- **Patented Multi-Focus Lens**

Creates zones with high vertical density for maximum detection sensitivity.

- **False Alarm Protection**

- **RFI Protection**

No alarm against field strengths levels exceeding 30v/m for the range of 100MHz to 1.2 GHz

- **Temperature Protection**

No alarm in high, low and changing temperatures from -4°F to +122°F (-20°C to +50°C)

- **Noise Circuit Reduction**

- **Selectable Pulse Count:** 1,2,4

- **Selectable Sensitivity:** High, Medium, Low

- **Other Features**

- **LED On/Off Switch**

- **Warm-Up Indicator**

- **Versions**

- **SX-360Z:** Standard

- **SX-360ZS:** Form C Relay

- **SX-360ZV:** Initial Alarm Memory and Patented Double Conductive Shielding of Pyro Element.

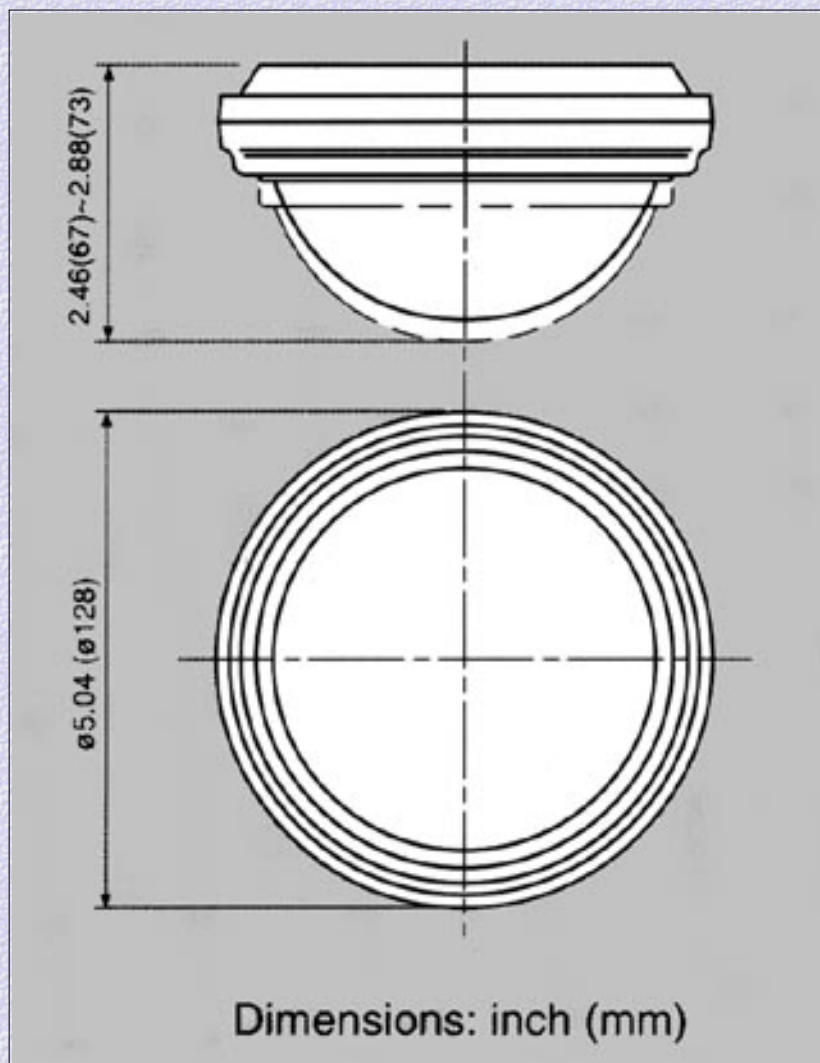
DETECTION PATTERNS

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[Click Here To See The
SX-360Z's Detection Patterns](#)

DIMENSIONS

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SPECIFICATIONS

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Model	SX-360Z
Detection Method	Passive Infrared
Coverage	$\phi 60$ ft. ($\phi 18$ m), 360° ZOOM
Detection Zones	276 zones
Mounting	Ceiling Height: 8 ~ 16 ft. (2.4 ~ 5m)
Sensitivity	3° F (1.6° C) at 2 ft. / sec. (0.6 m / sec.)
Detectable Speed	1 ~ 6 ft. / sec. (0.3 ~ 1.8 m / sec.)
LED Indicator	LED blinks during warm-up period. Alarm condition
Alarm Period	2.0 \pm 0.5 sec.
Alarm Output	N.C. 28V DC., 0.2A max.
Tamper Switch	N.C., Opens when cover is removed.
Pulse Count	20 \pm 5 sec. 1, 2 or 4

Warm-Up Period	Approx. 20 sec. (LED Blinks)
Power Input	6 ~ 18 V DC
Current Draw	13mA/(normal), 18mA/(max.)
Weight	7.90 oz. (224g)
Operating Temperature	-4°F ~ +122°F (-20°C ~ +50°C)
Environment Humidity	95% max.
RF Interference	No Alarm 30 V/m

*Specifications are subject to change without notice for improvement.

S Version (Form C)	
Model	SX-360ZS
Alarm Output	Form C 28V DC 0.2A max.
Current Draw	30mA/(normal) 35mA/(max.)
Weight	7.94oz. (225g)

V Version (Alarm Memory)		
Model	SX-360ZV	SX-360Z(P)
Alarm Memory	Armed: 0 ~ 1V DC	Armed: +5 ~ 20V DC
Initial Alarm Memory	Max. 40 detectors	
Current Draw	13mA/(normal), 25mA/(max.)	
Weight	8.00oz. (227g)	
RF Interference	No alarm 30 V/m	



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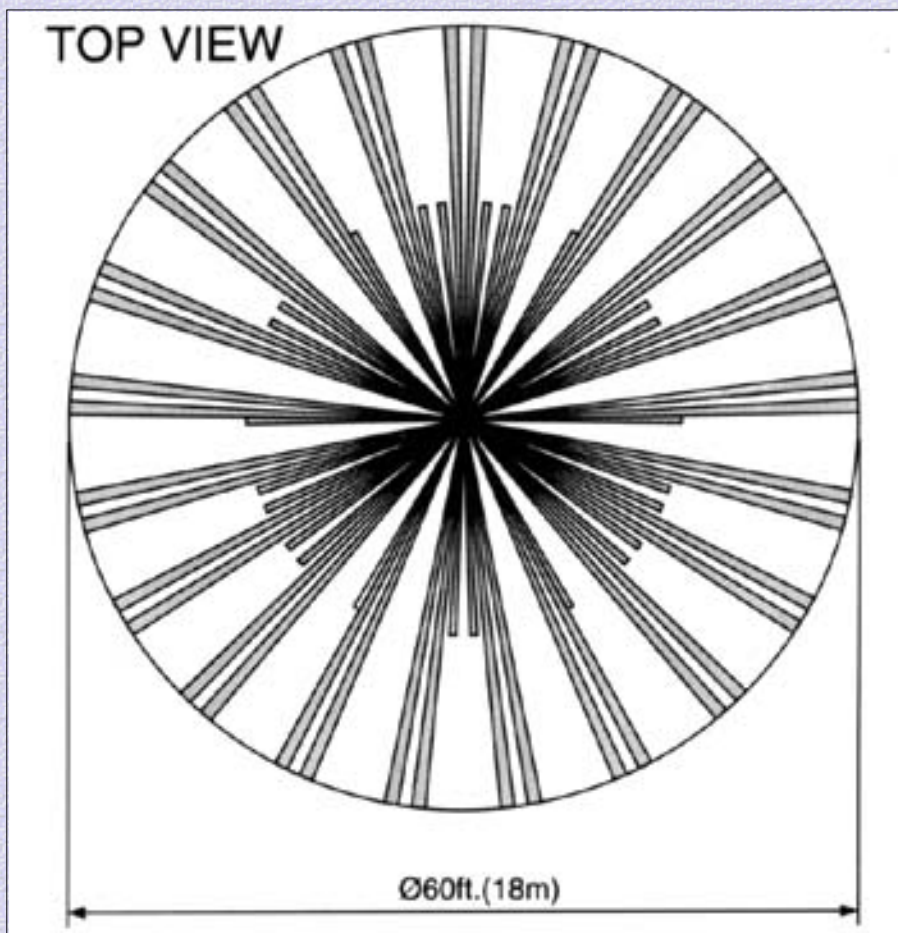


OPTEX
DETECTION PATTERNS

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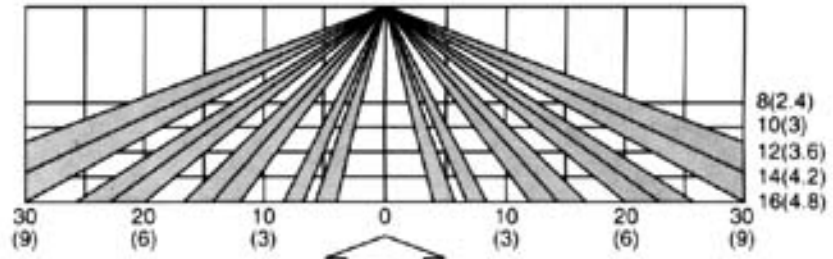
SX-360Z

**360° CEILING MOUNT
PASSIVE INFRARED DETECTOR**

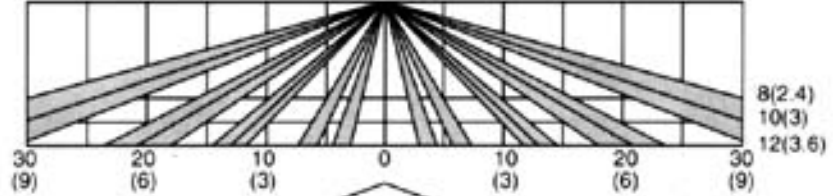


SIDE VIEW

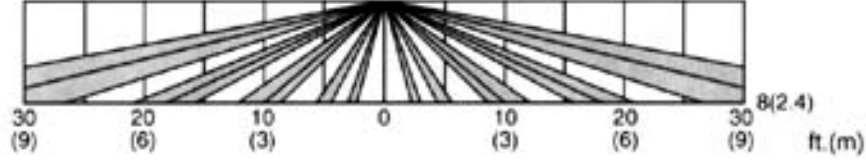
ZOOM*A*Position



ZOOM*C*Position



ZOOM*E*Position



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Error Occurred While Processing Request

Error Diagnostic Information

An error has occurred.

HTTP/1.0 404 Object Not Found

Please inform the [site administrator](#) that this error has occurred (be sure to include the contents of this page in your message to the administrator).



OPTEX

SPECIFICATION SHEET

OPTEX MODEL NUMBER
**WIRELESS
 1000**
 ANNUNCIATOR SYSTEM

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RC-10
Chimebox w/Relay



TD-10
Indoor/Outdoor Sensor Transmitter



RG-10
Single Relay Receiver



TS-10
Hand-Held Transmitter

The Next Generation of Our Wireless Annunciator System!

OPTEX now brings the benefits of its advanced wireless technology in the form of greater RF transmission range and design versatility, to make your life more comfortable and convenient. The Wireless 1000 Annunciator System can be installed anywhere easily and quickly with no wiring. Whether it is for home or business, indoor or outdoor, Wireless 1000 is the ideal choice for perimeter awareness and wireless remote control.

Easy Installation - Indoor / Outdoor Use -
 Long Radio Transmission Range - FCC Approved

- **Wireless 1000 For Safety And Convenience**

No more surprises!

Wireless 1000 monitors your property 24 hours a day to detect approaching vehicles and people, giving you time to prepare.

No more missed visitors or deliveries!

Wireless 1000 serves as a welcome chime or perimeter alert for your home or shop.

No more hard to reach switches!

Wireless 1000 works as a convenient wireless switch for activating a variety of electric equipment (e.g. doorstrikes / magnetic locks, lights, sirens, motors).



The Wireless 1000 Automatic Trigger

1 RC-10 and up to 4

TD-10 can also be used in conjunction with lighting systems or anti-crime alert devices.



The Wireless 1000 Outdoor Protection

1 RC10 and up to 4 TD-10 can be installed around your home entrances for perimeter awareness.



The Wireless 1000 Remote Switch

1 RG-10 and up to 3 TS-10 can be used to remotely open or close electronic locks (electronic door strikes or magnetic locks).

- **Long RF Transmission and Reliable Operation**

Newly developed non-directional antenna (TD-10)

All wireless transmitters have 'dead spots' within their transmission range. TD-10's improved antenna

design greatly reduces 'dead spots' to make installation easier and increase reliability.

High gain antenna & narrow band tuning (RC-10 & RG-10)

Optimal antenna design and fine RF tuning achieve a high signal to noise rate, ensuring long range and consistent operation.

"Best In Its Class" maximum transmission range

TD-10..... 1,000ft

TS-10.....700ft

(These measurements were obtained with receivers and transmitters mounted 7ft. above level ground without obstructions. Natural and man-made obstructions and other environmental factors do shorten transmission ranges.)

Simple, automated set-up

Setup is simple! Just two buttons perform all set up functions.

More than 8 million codes

Transmission codes are preset at the factory with over 8 million possibilities, virtually eliminating the possibility of interference or crosstalk.

Low battery signal

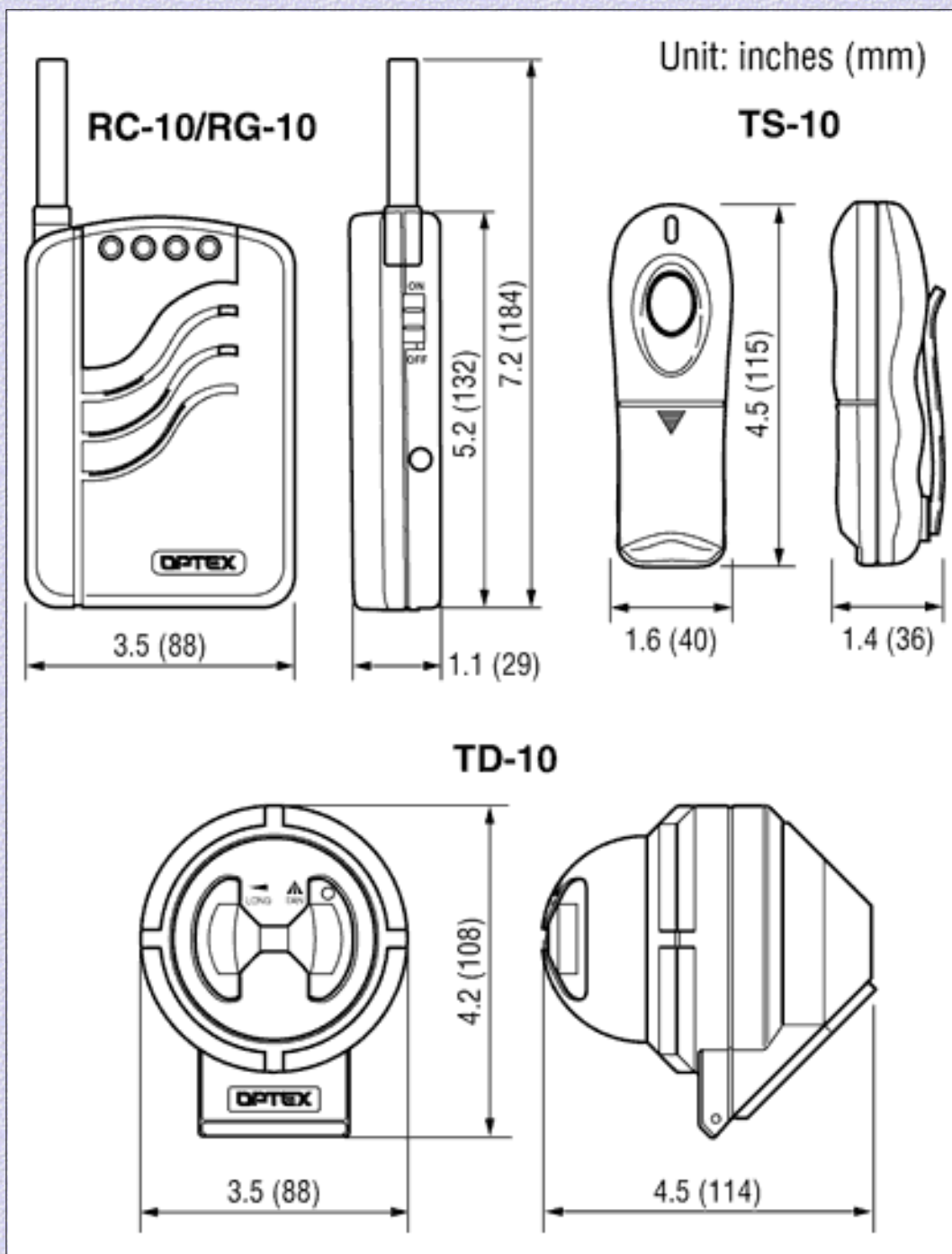
Low battery indication by tone (RC-10) and LED (all models) tells you when to replace batteries and prevents malfunctions.

● Design Versatility

- Specially designed sensor mounts easily on walls, ceilings, fenceposts, desktops, etc.
- Weatherproof design of sensor allows outdoor use.
- Two detection patterns: 50ft Long Range and 17ft. Fan Pattern
- Detection pattern adjusts easily for perfect aiming.
- Portable Hand-Held Transmitter (TS-10).
- TS-10 can be clipped to a belt, worn as a pendant, or mounted to a wall.
- Receivers mount on wall or desktop

DIMENSIONS

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Model	RC-10	RG-10
Description	Chimebox w/ Relay	Single Relay Receiver
Power Source	DC 9V (exclusive AC adapter)	12 ~ 24V AC/DC
Power Consumption	Standby: 1W, Operating: 2W	Standby: 30mA, Operating: 80mA
Chime Tone	3 tone & 1 alarm (optional)	-
Volume	Adjustable: 0~80dB / 5 levels (Continuous zone: max.)	-
Relay Output	Max. 1A / 50 VAC or 1A / 24VDC	Max. 1A / 50 VAC or 1A / 24VDC

Output Timer	Selectable: off/1/5/30/60sec/utility output mode	Selectable: 1/5/30/60sec
Status Indicator	Power Indicator: Green LED Zone Indicator: red LED x 3	Power Indicator: Green LED Zone Indicator: red LED x 3
Radio Frequency	418mHz	418mHz
Operating Temperature	15°F ~ 104°F (-10°C ~ 40°C)	15°F ~ 104°F (-10°C ~ 40°C)
Installation Location	Indoor	Indoor
Weight	6.0 oz. (170g)	4.2 oz. (120g)
Accessories	AC adapter x 1 Mounting Screw x 1	Mounting Screw x 1

Model	TD-10	TS-10
Description	Sensor Transmitter	Hand-Held Transmitter
Detection Method	Passive Infrared	Push Button
Detection Pattern	50ft (15m) long range 17ft (5m) fan pattern	-
Angle Adjustment	90° vertically & ±5° horizontally or ±5° vertically & 90° horizontally	-
Power Source	9V: alkaline battery	3V: AA x 2 alkaline battery
Battery Life	Approx. 2 years [250 / day at 70°F (20°C)]	Approx. 2 years [100 / day at 70°F (20°C)]
Status Indicator	Red LED	Red LED
Radio Frequency	418mHz	418mHz
Operating Temperature	15°F ~ 120°F (-10°C ~ 50°C)	15°F ~ 120°F (-10°C ~ 50°C)
Water Resistance	IP54	IP43
Installation Location	Outdoor / Indoor	Outdoor / Indoor
Weight	6.3 oz. (180g)	1.4 oz. (40g)
Accessories	Mounting Screw x 2	Belt Clip x 1

Other Applications

RC-10 Chime Box Receiver w/ Relay	RG-10 Chime Box Single Relay Receiver		TD-10 Indoor / Outdoor Sensor		TS-10 Hand-Held Push Button
			Fan (wide) Angle	Long Range	
X		Driveway Annunciator		X	
X		Entry / Walkway Chime	X	X	
X		Wireless Doorbell	X		
X		Warehouse Delivery Areas	X	X	

X		Construction Site Guard	X	X	
X		Monitor hard to see or shoplifting prone items	X		
X		Inside display cases at jewelry stores	X		
X		Anti-vandalism at art galleries	X	X	
X		Loss Prevention: Monitor department store dressing rooms and fitting rooms	X		
X	X	Annunciate unauthorized use of emergency exits	X	X	
X		Signaling for drive-up window		X	
X		Location finder for blind			X
X		Delivery doors, roll-up, or bay doors		X	
X		Monitor Supplies: Place in supply room or closet	X		
X	X	Release door strike or magnetic lock	X	X	X
X	X	Annunciate activity at CCTV camera	X	X	



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ProductsFactory
AutomationAbout
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Never Fails To Capture That Critical Moment

- Instant high resolution digital recording
- High Tech Digital CCTV Technology
- No Maintenance Costs
- Versatile applications for Security and Non Security purposes
- Easy to use
- 4 channel Switcher

[Read a Review From PSI Professional Security Installer Magazine](#)

FEATURES

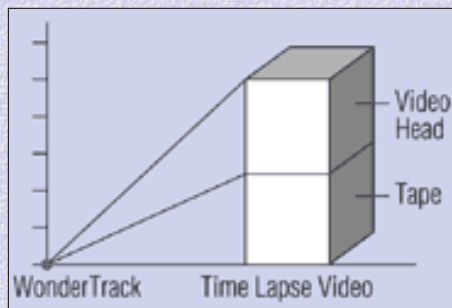
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- **Optex has the ideal system utilizing sensing technology and high-tech Digital Visual recording.** Do you want to see the actual picture when a burglar entered your premises? WonderTrack can take a picture at the crucial moment, using either the new Optex covert camera with Passive Infrared Detector (PIR), or any other normal camera with PIR. Existing systems using Time Lapse Video recorders are unable to capture those important moments. Time Lapse requires a few seconds to go from standby to record, often missing vital pictures. With WonderTrack no such delay occurs.



- **Maintenance Free**

Do you suffer from expensive maintenance charges associated with Time Lapse Video? Is there no alternative recording system to Time Lapse? Optex has one. WonderTrack from Optex offers you an alternative solution, a maintenance free, high technology digital CCTV recording unit, offering user-friendly operation at an incredibly affordable price.



- **Save Labor Costs**

How many hours does it take to check the recorded tapes from a Time Lapse Video? WonderTrack can be programmed to take instant pictures in the event of an alarm, avoiding the requirement for constant recording.

WonderTrack provides an incredibly quick and easy system to enable rapid search of its indexed picture storage, saving on labour costs and the waste of precious time.

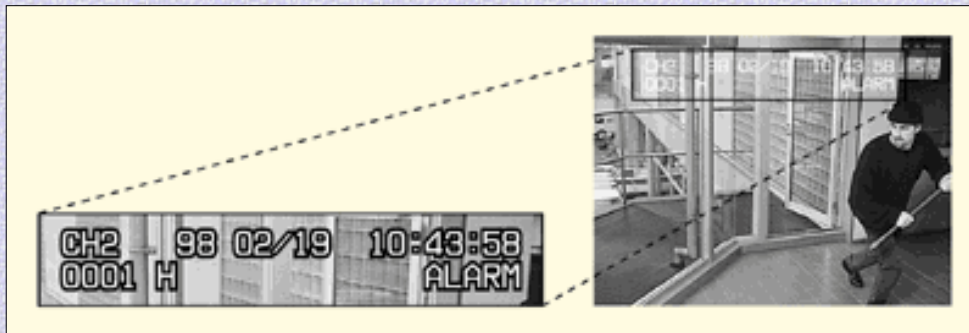
- **Compact and Easy To Use**

WonderTrack is a compact and lightweight unit which can be placed on a desktop or mounted on a wall. Easy to install and operate, it does not require the use of a complicated PC or software to set up the system.

- **Picture Index For Quick Search**

WonderTrack indexes all pictures with such details as the camera number, date/time, and alarm mode (on or

off) in order to allow easy searching.



- **High Speed Compression with Good Black and White Picture Quality**

The combination of an advanced micro-chip and JPEG chip ensures high-speed data compression to the JPEG file within one second. (Speed varies according to picture resolution.)

- **Supports Selective Dual Resolution Modes From Large Memory Storage**

Standard visual formats utilizing JPEG in high and standard resolution modes. Standard 8 MB memory provides more than 330 pictures in high resolution. This can be further expanded up to 747 pictures by adding a maximum of 12 MB of optional memory. Overwrite memory mode enables endless recording.

- **4-Channel Switcher Function**

Up to four cameras can be connected to the WT-100 and support the EIA/CCIR format of the camera data input. Each camera channel has its own alarm input allowing applications such as switching channels for monitoring, or recording visual data in the event of an alarm.

- **WonderTrack's Versatile System Offers Several Modes To Capture The Critical Moment Interval Mode**

This setting enables constant recording in programmed time intervals with sequential chain shots on Alarm. Overwrite selection can be disabled to protect all pictures recorded in memory.



Multi-Angle Mode

This option allows sequential pictures to be taken by more than one camera when only detection by one camera has occurred. This unique feature allows pictures of the same object to be captured from multi-angles.



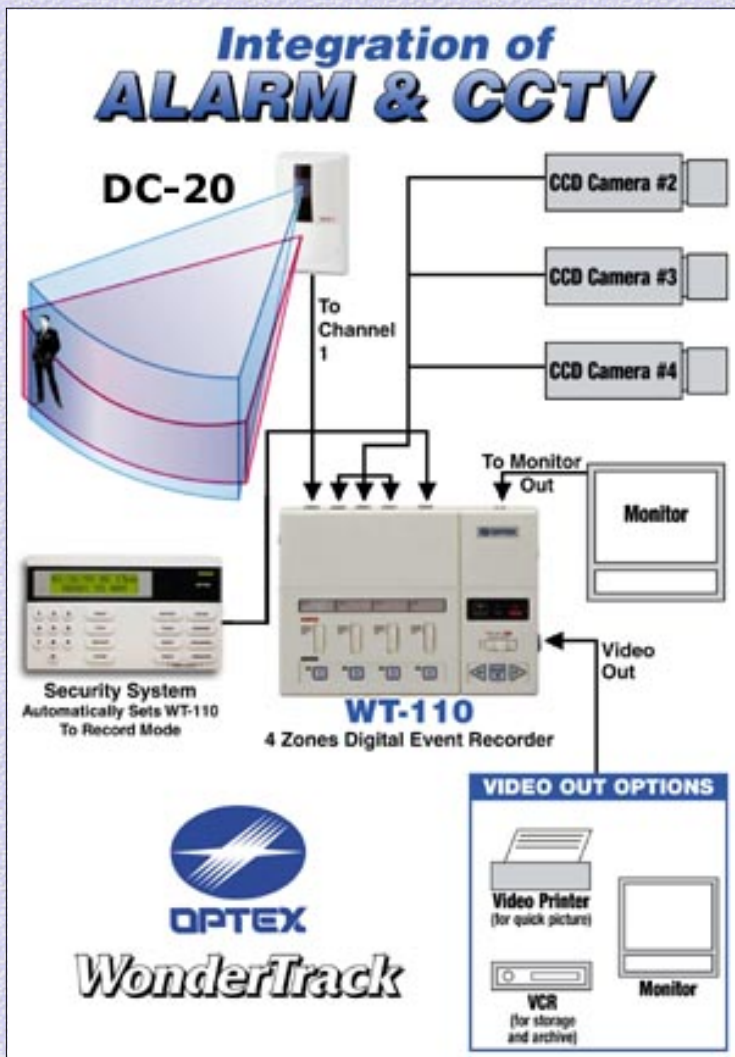
Pre-Alarm Mode (only Channel 1)

Enables a selected number of pictures monitored before an alarm to be safely saved.



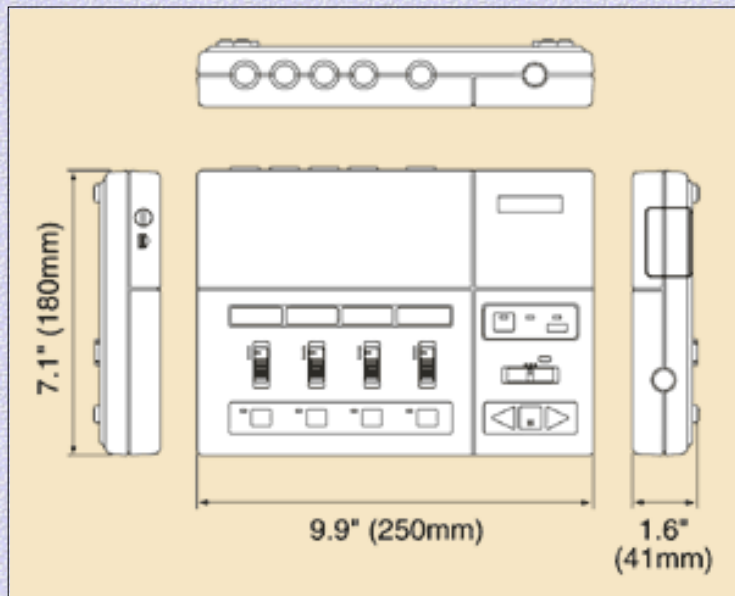
- **Integration of Alarm & CCTV**

Unique double alarm relays of the DC-20 allow connection with any security control panel and WT-100 unit. An alarm is used for the security control panel which simultaneously triggers the WT-100 to capture pictures at the critical moment. The WT-100 can be connected to a security panel, allowing the recording modes of the WT-100 to be switched by remote control.



DIMENSIONS

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SPECIFICATIONS


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Model

WT-110E

WT-110C/CK

Power Supply	100-120VAC 60Hz	230VAC 50Hz/240VAC 50Hz
Current Draw	0.6A (DC 7V)	
Video		
Signal Format	EIA black/white	CCIR black/white
Video Input	4 camera composite 1.0V p-p±10% 75ohm	
Sampling Resolution	640 h x 240 v x 8 bits (b/w)	768h x 288v x 8 bits (b/w)
	Field Mode	
Alarm Command		
Alarm Input	4 relay inputs, 1 per camera, N.C., N.O. Programmable	
Alarm Output	1 relay output 2±0.5 sec/picture, N.C., N.O. 28V DC 0.2A max	
Arming Mode Input	1 relay, open corrector matching	
Memory		
Compression Method	JPEG	
Interval Time	1.5 sec (minimum) - 10 sec Programmable	
Memory Size	8mb (max. 12mb with additional memory)	
Number of Pictures (approx)	High: 330 pictures (add: 495 pictures) / Standard: 495 pictures (add: 745 pictures)	
Physical		
Dimensions	9.9"w x 7.1"h x 1.6"d (250mm x 180mm x 41mm)	
Weight	2 lb (0.8 kg)	
Operating Temperature	32°F tp 104°F (0°C to 40°C)	

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KEEPING TRACK



Optex Wondertrack WT-110 digital image storage unit



The idea behind digital storage is all well and good. In simple terms, it involves taking video images, and storing them on some form of digital media rather than magnetic tape. The benefits are that images become easier to manage, and quicker to locate. There is not always a need to filter through hours of minimal action to find one incident of interest. Other benefits include the ability to instantly start recording images when an alarm input is received, rather than when a tape machine clicks into action. Pre-alarm images can also be achieved, simply by creating a buffer of information

which overwrites itself. When an incident occurs, the entire buffer is simply moved to a secure part of the system.

The question many will be asking is why, if digital storage is such a good idea, are so many engineers wary of making a commitment to the technology. The answer is simple. There are a number of ways digital technology can go, and despite all manufacturers claiming their system is the one the others will follow, no one really knows where this technology will go in the future. Add this to a number of scare stories about the technology, and the hesitancy of

You cannot even approach the concept of CCTV installation nowadays without a fistful of companies screaming about the latest greatest digital recording system. Many of them will tell you that for a few thousand pounds they can furnish you with the latest in high tech wizardry, and your life will never be the same again. Others will caution you about emerging technologies, and tell you theirs will become the industry standard. Indeed, many manufacturers of digital storage devices spend more time slugging each other off than they do actually showing the professional installer the benefits which their system can offer. Now intruder detection specialist Optex has entered the arena with a digital image storage unit. This cost-effective device is designed to offer a credible tool to professional installers, but does it succeed? PSI takes a long hard look at the WonderTrack to see!

many becomes understandable. The final hurdle to overcome is that of price. In short, engineers are unwilling to gamble on equipment with a higher price tag. Perhaps someone should squeeze all the benefits out of the technology, whilst keeping the product at an affordable price. This would allow engineers to sell advanced systems without taking expensive risks. Right on cue, it's time to look at the Optex Wondertrack.

The right direction

The Wondertrack is billed as a digital image storage unit, although that certainly does not tell the whole story. The system can support up to four cameras and four alarm inputs, and captures images onto a memory card, which is removable, in the event of an alarm. Pre-alarm images can also be obtained, and the system can be easily integrated with a traditional intruder alarm system. Stored images are time and date stamped, which is useful for evidential purposes. The most impressive thing about the Wondertrack is its enormous flexibility, and the diverse number of applications in which it can be used. Although the initial response of many is to integrate it with an intruder detection system and use it to verify alarms, this is only scratching the surface. It is a case of the longer you think about it, the more the application potentials seem to grow.

The features of the system are impressive in themselves. The unit provides digital recording and playback of alarm images, and these can be stored in either standard or high resolution formats. In standard resolution,

The memory card allows images to be saved, and is available with different memory capacities.

the system can store up to 500 images on an 8Mb memory card (supplied with the system). If you require a higher number of images, then a 16Mb memory card is available. Obviously higher resolution images will take up more space, although the mode used will be very dependent upon the application.

Probably the best way to get an understanding of the flexibility on offer is to consider the operation of the unit. There are three recording modes, known as Interval, Channel 1 pre alarm, and Multi Angle. Interval recording means that the system will record one image from the camera on a regular basis without an alarm input. This can be set to be every 10, 30, 60, 120, 180, 240, 300 or 360 seconds, or can be switched off so the unit only responds to alarm events. In the event of an alarm activation, the unit will switch to recording one image for a predetermined amount of images - in a time window which can be set between 1 and 10 seconds. The system can be set so that when the memory card is full, it stops recording, or alternatively it can over-write itself, ensuring that you always have a full card of previous images.

The Channel 1 pre-alarm setting allows you to program the system to record alarm images, as



in Interval mode, but without the constant non-alarm images and with the addition of pre-alarm images up to 7 in standard resolution or four in high resolution - on channel 1. Unfortunately this cannot be set for the additional channels.

Finally, the Multi Angle mode allows the system to be set to record a predetermined number of images between 1 and 64 from each input in the event of an alarm activation.

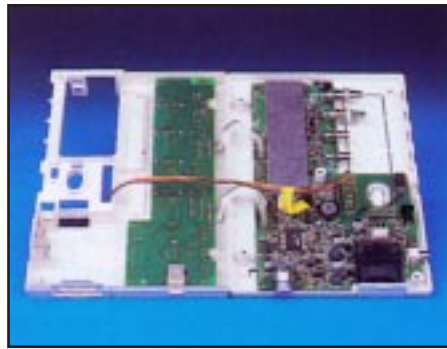
There are also three operating modes, These are Record, Play and Thru. The first two are obviously self explanatory, and are used to record and play back images. The Thru mode is effectively used for monitoring the cameras whilst a site is operations. Subsequently, cameras can be set to switch, with the output displayed on a monitor. Each channel can be given a specific dwell time, making it easier to program the system to respond to the needs of the site. It is also possible to deactivate the alarm record functions on specific channels if required. This ability only covers Thru mode, and will not therefore inhibit recording when the system is set to Record

mode. As such, this can be seen as a day function if 24 hour alarm-activated protection is not required.

Finally, each channel can be set to one of two Record Conditions, depending upon which recording mode is used. For example, in Interval mode, channels can be either set for alarm recording only (as a single shot) or a combination of alarm and interval recording. In Channel I pre-alarm mode, a selection can be made between pre-alarm recording and single shot recording, or pre-alarm and full alarm recording. Finally, in Multi Angle mode, the system can be set to record from the channel in alarm, or from all channels when an alarm activation occurs.

These conditions are selected from channel switches, which also give the option for a particular input to be switched off. In order to prevent tampering, the switches themselves can be disabled, with settings made through an on-screen menu. This is certainly a benefit when considering the system's security abilities.

Now, the above might seem confusing, but you can believe us when we say it's a fair bit clearer than it will be when you first read the manual. The instructions are probably the worst bit of the product, and we would recommend that any installer who tries out a Wondertrack spends a few hours prior to installation setting one up in a workshop and going through the various settings and procedures. It is a complex piece of equipment with a number of possible settings, but once you get a clear idea of what is happening, it does suddenly all become very simple!



Design of the unit shows that Optex have carefully considered the needs of engineers.

Installation

Installation of the system is simple, and Optex have included some very nice touches, which at least show that the requirements of security installers have been considered. The system comes as close to the 'Plug and play' mentality as such an advanced system can, and whilst not requiring any specific engineering skills, does rely upon a good understanding of application-specific security system design if the fullest potential is to be obtained from the Wondertrack.

The parts of the system which need to be accessed by the engineer are hidden beneath a plain cover which is retained by a side-mounted securing screw. Once the flap is lifted away, there are two connector blocks, One of these is for alarm inputs and one is for alarm outputs, There are four BNC connectors for video inputs. Power is supplied via a PSU which connects to an integral connector. The only other items under the cover are a memory reset and a bank of DIP switches, only two of which are used, One selects colour or monochrome recording, and the other controls the alarm out functions.

Performance

Once the programming is set up correctly, the Wondertrack operates faultlessly. Image quality is good, and the various settings meet their specifications. There is a slight difference on some of the timings, but this has more to do with the image processing time than anything else, and is so slight as to not be noticeable unless you make a conscious effort to try and spot it!

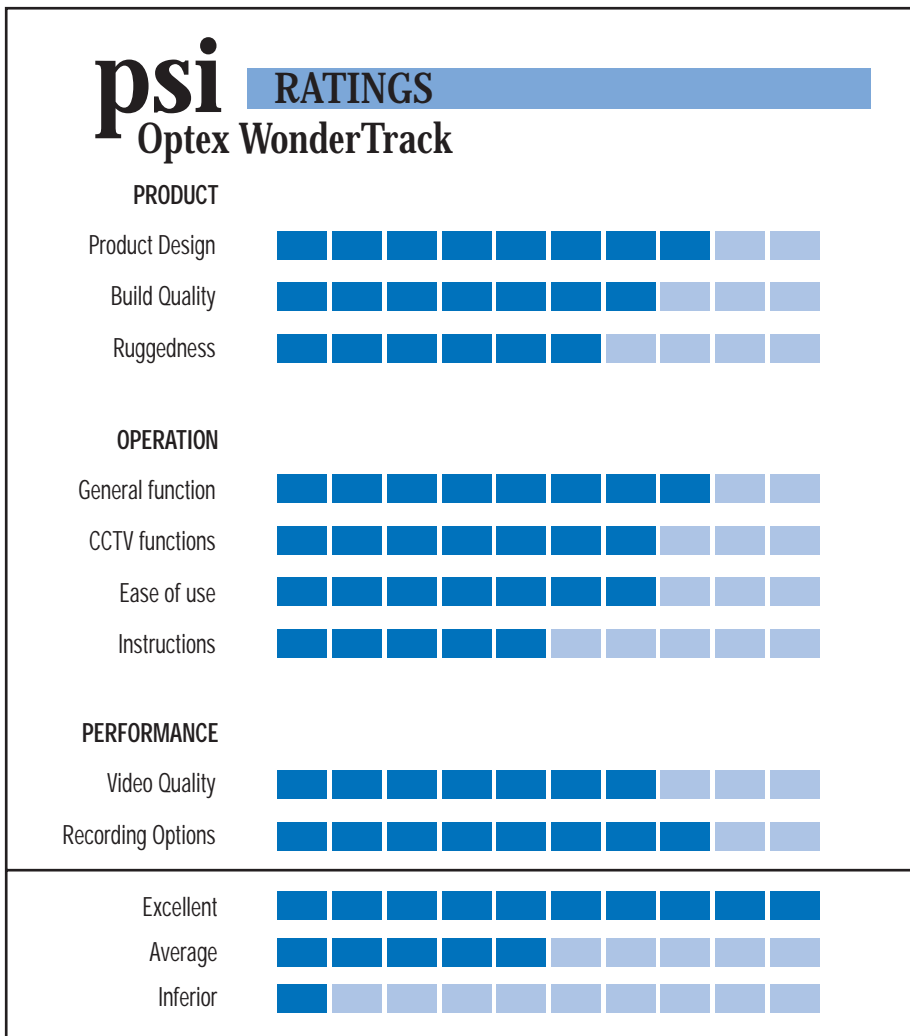
The standard resolution setting is ideal for general surveillance work, although if we were to use the system as a tool capturing images for evidential purposes, the extra added by the higher resolution setting is worthwhile. The difference in the number of recordings held by the system is not great enough to be a major issue. Capacity falls by around 30 per cent when the higher resolution is employed. The pre-alarm function works well, and although the frequency of non-alarm images in the Interval recording mode was a bit hit or miss, there were enough other options to keep us happy. One of the things to remember with the Wondertrack is that if you are not too keen on the choices offered by one setting, there is bound to be another setting which will achieve your goal!

In conclusion

The Optex Wondertrack does something which not many image storage systems do, and that is it employs digital CCTV technology as a security product exploiting the available benefits, rather than trying to offer an alternative to analogue recording machines. With a price which falls well under E500, the WT-110 offers professional security installers a

tool which can ensure a higher level of security.

The Wondertrack is recommended for professional engineers, and is sure to become a success given the huge range of applications which it can be used in. The system is innovative and well thought out, and shows that digital technology can actually become a mainstream product today!





1845 W. 205th St.
Torrance, Ca. 90501
310-533-1500
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Y2K Project

Revised 4/12/99

GENESYS Series Control Panels

While the GENESYS series control panels are microprocessor based alarm systems, they do not have any functions that are dependent upon the a specific time/date and therefore will operate as intended on January 1, 2000 and also on Leap Year Day, February 29, 2000.

MDC16CD and MDC16CE

While the MDC16CD and MDC16CE series control panels are microprocessor based alarm systems, they do not have any functions that are dependent upon the a specific time/date and therefore will operate as intended on January 1, 2000 and also on Leap Year Day, February 29, 2000.

MDC-16CET- MDC16ETX

YEAR 2000

The project engineers assigned to develop this product line were able to encode into the operating software the ability to maintain perpetual time. The date will automatically roll over to the year 2000. The keypad will indicate the turn of the century when programmed to display the clock as 01/01/:0 and all time related functions will operate as intended on January 1, 2000. However you *must* change the date format year to read 00 after the turnover for the alarm system to correctly recognize Leap Year Day (February 29, 2000). The keypad display will change from February 28, 2000 to March 1, 2000 should the :0 format be left on the display after January 1, 2000.

YEAR 2001

- In the event that the alarm system lose both AC power and standby power in the year 2001, the *installer* programmed schedules that may have been used to control automatic arming and a weekly self test will shift by one day. What this means is the schedule set for a Saturday will now become the schedule for Sunday. The remedy for this situation is to either re-download the program into the panel after the power has been re-set in the year 2001 or to request new operating software from Optex America.
- To update the software, Optex America must know if the control panel version is the MDC16ET or the MDC16ETX and the operating software revision. To obtain this information the control panels will have a label on the perforated metal shield located in the center of the PCB assembly that will indicate if the panel is an ET or ETX and will also be followed by **REV. X** (X indicating the software revision).

● **Examples:**

Model MDC16c
TYPE ET REV G

or

Model MDC16c
TYPE ETX REV B

- This situation will only affect the alarm system if the schedules have been enabled for use with your alarm system. We recommend that you contact your alarm company to positively identify if this option has been enabled.
- MDC 16 ET REVs A through L (order kit number 70259 - cost \$10.00)
- MDC 16 ET REVs M or N (order kit number 70258 cost - \$10.00)
- MDC 16 ETX REVs A through G (order kit number 70257 - cost \$10.00)

Note: all of the above kits will include updated plug-in software and a manual on how to insert the new

software.

Warning: *Damage will occur if the software is incorrectly installed and will void all Optex America warranties. We strongly recommend that you contact your alarm company for assistance.*

SMDC Control Panel

The project engineers assigned to develop this product line were able to encode into the operating software the ability to maintain perpetual time. The date will automatically roll over to the year 2000. The keypad will indicate the turn of the century when programmed to display the clock and date as 01/01/00. All time related functions will operate as intended on January 1, 2000 and Leap Year Day February 29, 2000.

MDC8 Series Control Panels (MDC8C - MDC8CE)

While the *MDC8* series control panels are microprocessor based alarm systems, they do not have any functions that are dependent upon the a specific time/date and therefore will operate as intended on January 1, 2000 and also on leap Year Day February 29, 2000.

TSS Control Panel

The project engineers assigned to develop this product line were able to encode into the operating software the ability to maintain perpetual time. The date will automatically roll over to the year 2000. The keypad will indicate the turn of the century when programmed to display the clock and date as 01/01/00. All time related functions will operate as intended on January 1, 2000 and Leap Year Day February 29, 2000.

SPT Series Multiplex Transponders

While the SPT series multiplex transponders are microprocessor based alarm systems, they do not have any functions that are dependent upon the a specific time/date and therefore will operate as intended on January 1, 2000 and also on Leap Year Day, February 29, 2000.

SPC 5000 Multiplex Central Station Receiver

The SPC 5000 central station receiver is also microprocessor based that makes use of an internal calendar which is based on a Julian calendar year. The SPC5000 is not effected by the Year 2000 and therefore will operate as intended on January 1, 2000 and also on Leap Year Day, February 29, 2000.

V-300 Series Central Station Receivers (V300A - V300APT)

Optex Inc. (formerly The Morse Security Group) engineering department developed the V-300 around a real time operating system. The project engineers assigned to develop this product line were able to encode into the operating software the ability to maintain perpetual time. The date will automatically roll over to the year 2000. The V-300 will indicate the turn of the century when programmed to display the clock as 01/01/:0 and all time related functions will operate as intended on January 1, 2000. However you *must* change the date format year to read 00 after the turnover for the V-300 to correctly recognize Leap Year Day (February 29, 2000). The V-300 display will change from February 28, 2000 to March 1, 2000 should the :0 format be left on the display after January 1, 2000.

TRAP & TRT5200 (Touch Response Alarm Processor and Trap Transponders)

The project engineers assigned to develop this product line were able to encode into the operating software the ability to maintain perpetual time. The date will automatically roll over to the year 2000. The keypad will indicate the turn of the century when programmed to display the clock and date as 01/01/00. All time related functions will operate as intended on January 1, 2000 and Leap Year Day February 29, 2000.

MDC Series Long Range Radio Transmitters. (MDC4 & 8RF - RF-RM1 - RF-8000)

While the MDC Series Long Range Radio Transmitters are microprocessor based alarm systems they do not have any functions that are dependent upon the a specific time/date and therefore will operate as intended on January 1, 2000 and also Leap Year Day, February 29, 2000.

All Optex Inc. Sensors (PIRs, Photobeams, Active Sensors, Light Controls, etc.)

While the Optex Inc. line of sensors are microprocessor based, they do not have any functions that are dependent upon the a specific time/date and therefore will operate as intended on January 1, 2000 and also on Leap Year Day, February 29, 2000. Should the installation employ timing functions that are related to the motion sensors, the time functions are controlled by the alarm system not the peripherals.

Please feel free to contact our Technical Support at 310-533-1500 or you may contact your alarm installation company should you have further questions and/or concerns regarding this matter.

Technical Support / Team Y2K

Optex Inc.

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Long Range Wireless 1000 Annunciator System

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Optex's Long Range WIRELESS 1000 Annunciator System reliably alerts users to the approach of visitors, provides outdoor perimeter protection and other 'light' security applications. Both the PIR transmitter (TD-10U) and the push button (TS-10U) transmitter are fully weatherproof for indoor or outdoor use. The receiver (RC-10U) has three tones to identify the transmitter sending the signal, a latching alarm zone, and a 1 Amp form C relay which is ideal for activating door strikes, lights, CCTV, and countless other uses.

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Integrating advanced solid state camera technology with high quality PIR detectors provides an efficient and attractive solution to interior security requirements. Optex's DC Series covert cameras feature high sensitivity CCD devices, automatic gain control, and high speed electronic shutters to provide clear vision with as little as 0.5 lux lighting. The commercial quality PIR has Quad Zone Logic for superior false alarm immunity and separate relays for alarm and CCTV signaling.

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Wondertrack 4 Zone Digital "Catch" Recorder

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Winner of Best New Product of Show Award at ISC West 1999

WT-110, a 4 zone sequential switcher and digital event recorder brings digital recording to new 'low cost' markets. Crystal clear, digital images from up to 4 cameras are stored to 8 or 16MB smart media cards for easy retrieval. Since there's no tape or recording heads to wear-out, WT-110 provides many years of reliable and easy operation. Built-in alarm system interface provides customers with alarm event recording.

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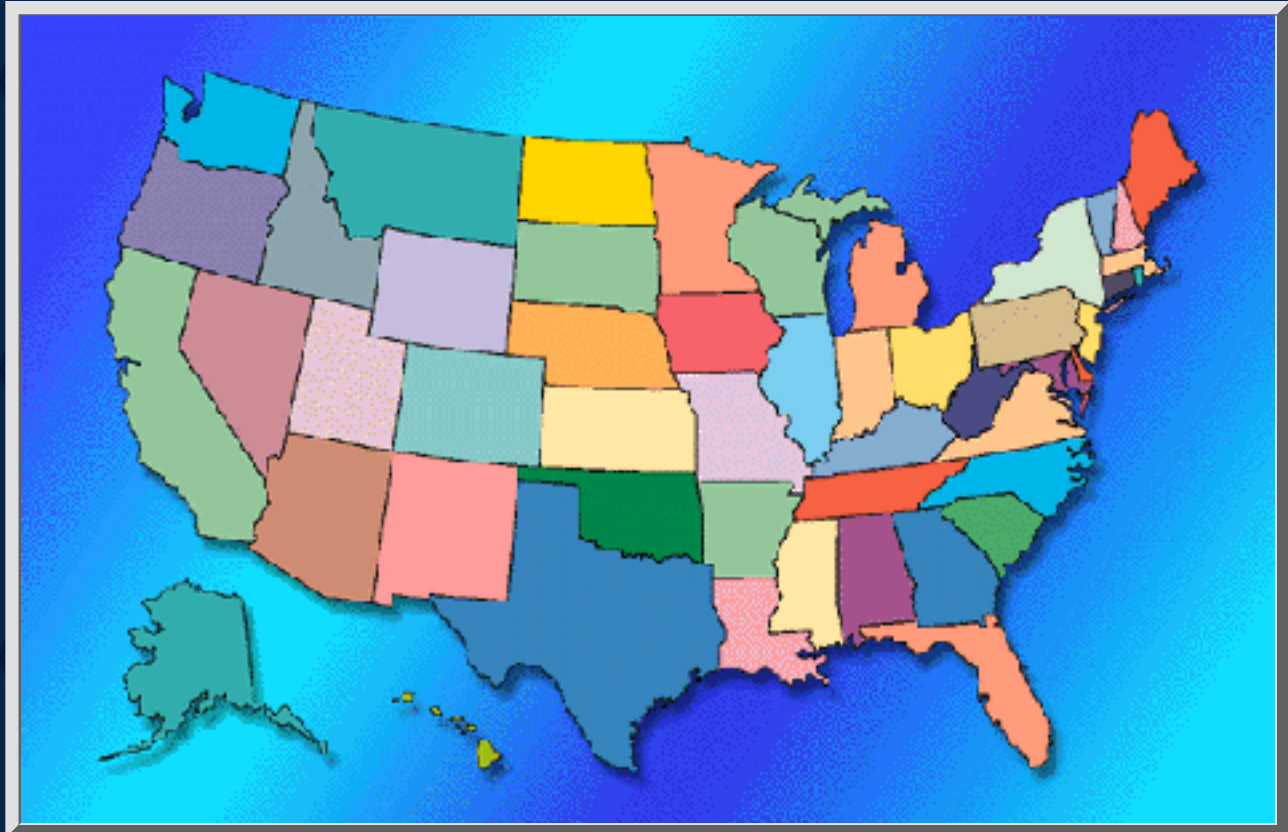
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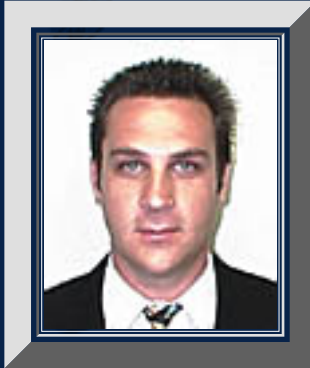
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The Sales Representative For Canada is:



Name: **Jay Vaare-Lamoureux**

Title: Canadian Regional Sales Manager

Phone Number: (800) 966-7839

Fax Number: (310) 533-5910

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The Security Sales Representative For This Section of the United States is:

SECURITY



Name: **Griff Kimble**

Title: Western Regional Sales Manager

Phone Number: (800) 966-7839

Fax Number: (310) 533-5910

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The Security Sales Representative For This Section of the United States is:

SECURITY

Name: **Keith Daulton**

Phone Number: (800) 966-7839 Ext. 205

Fax Number: (310) 533-5910

E-mail Address: kdaulton@optexamerica.com

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The Security Sales Representatives For This Section of the United States are:

SENSORS



3565 Hutchinson Road, Suite 400, Cumming, GA 30040

Phone Number: (770) 887-2844 . Toll Free: (800) 333-2844 . Fax Number: (770) 889-7431

WWW Home Page: <http://www.SecuritySolutions-ga.com>

E-Mail Address: SecuritySolutions@worldnet.att.net

Outside Sales Staff:

Management - Gust Askounis, President & Ben Jackson, Vice President of Sales

Florida Sales Manager - Jack Green (States covered: FL)

Mid Atlantic Sales Manager - Lise Carper (States covered: VA, WV, MD, DE, DC, PA)

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Inside Sales and Administrative Support:

Cindy Askounis - Vice President, Business Development

Amy Drews - Executive Assistant, Business Development

Joyce DiVirgilius - Executive Assistant, Sales

Maureen Starks - Senior Account Manager: GA, NC, and SC and outside sales for PR

Connie Haman - Senior Account Manager: FL, AL, MS, TN

Maria Rovinelli - Senior Account Manager: WV, VA, MD, DE, DC, PA

CONTROL PANELS



Name: **Jay Kessel**

Phone Number: (310) 533-1500 Ext. 101

Fax Number: (310) 533-5910

E-mail Address: jkessel@optexamerica.com

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OPTEX
EMPLOYEES

Employees are listed alphabetically.



Agabiti, Joe

Eastern Regional Sales Manager, Automatic Door Division

Division: Automatic Door Division

Phone: (310) 533-1500 x202

E-mail: jagabiti@optexamerica.com



Armstrong, Norma

Office Manager

Division: Administration

Phone: (310) 533-1500 x103

E-mail: narmstrong@optexamerica.com



Chheda, Nalin

R&D Manager

Division: Engineering and Production

Phone: (310) 533-1500 x130

E-mail: nchheda@optexamerica.com



Galindo, Claudia

Sales Coordinator

Division: Administration

Phone: (310) 533-1500 x100

E-mail: cgalindo@optexamerica.com



Hernandez, Manuel

Shipping / Receiving

Division: Administration

Phone: (310) 533-1500 x151

E-mail: mhernandez@optexamerica.com



Kessel, Jay

Vice President, Sales

Division: Security Division

Phone: (310) 533-1500 x101

E-mail: jkessel@optexamerica.com



Kida, Masaya

Senior Administrative Manager

Division: Automatic Door Division

Phone: (310) 533-1500 x163

E-mail: mkida@optexamerica.com



Kokobo, Mac

Inside Sales and Marketing

Division: Security Division

Phone: (310) 533-1500 x142

E-mail: mac@optexamerica.com



Kreider, Mark

Marketing Director

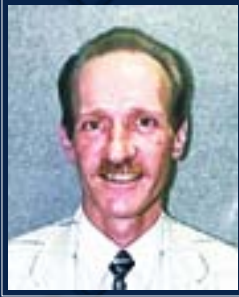
Division: Security Division

Phone: (310) 533-1500 x147

E-mail: mkreider@optexamerica.com



Kuroda, Art
Vice President
Division: Administration
Phone: (310) 533-1500 x104
E-mail: kuroda@optexamerica.com



LaChere, Michael
Vice President, CFO
Division: Administration
Phone: (310) 533-1500 x106
E-mail: mlachere@optexamerica.com



Lara, Jamie
Design Engineer
Division: Engineering and Production
Phone: (310) 533-1500 x133
E-mail: jlara@optexamerica.com



Morioka, Ned
Director of Consumer Division
Division: Security Division
Phone: (310) 533-1500 x107
E-mail: nmorioka@optexamerica.com

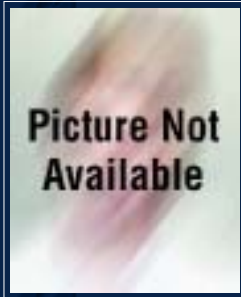


Mosquera, Ivan
Export
Division: Security Division
Phone: (310) 533-1500 x144
E-mail: imosquera@optexamerica.com



Mott, Eric

Technical Support Manager
Division: Technical Support
Phone: (310) 533-1500 x120
E-mail: emott@optexamerica.com



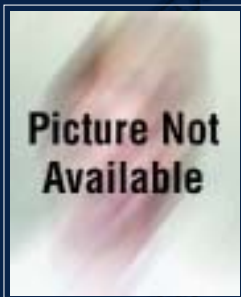
Payton, Gerald

Repairs
Division: Administration
Phone: (310) 533-1500 x154
E-mail: gpayton@optexamerica.com



Quick, Shauna

Accounts Payable, FA Division Assistant and
Inventory Control Administrator
Division: Administration
Phone: (310) 533-1500 x105
E-mail: squick@optexamerica.com



Rivera, Jorge

Technical Support, Spanish & English
Division: Administration
Phone: (310) 533-1500 x124
E-mail: jrivera@optexamerica.com



Rogers, Kevin

Western Regional Sales Manager, Automatic
Door Division
Division: Automatic Door Division
Phone: (310) 533-1500 x161
E-mail: kr Rogers@optexamerica.com



Sanchez, Louise

Accounts Receivable

Division: Administration

Phone: (310) 533-1500 x102

E-mail: lsanchez@optexamerica.com



Sterling, Joshua

Sales Promotion & Marketing

Division: Technical Support

Phone: (310) 533-1500 x140

E-mail: jsterling@optexamerica.com



Takei, Hiro

General Manager, Sales Division

Division: Factory Automation Division

Phone: (310) 533-1500 x137

E-mail: hiro@optexamerica.com



Tharee, Mike

Production Manager

Division: Engineering and Production

Phone: (310) 533-1500 x150

E-mail: mtharee@optexamerica.com



Van Winkle, Paul

Product Manager

Division: Security Division

Phone: (310) 533-1500 x146

E-mail: pvanwinkle@optexamerica.com
