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# *PASSIVE INFRARED DETECTORS REFERENCE GUIDE*



REFERENCE GUIDE

MODEL	SIGNAL PROCESSING	PATTERN TYPE							MOTION MONITOR	OPTICS	PAGE #
		BROAD	BARRIER	LONG RANGE	PET	TRAP	DUAL CORRIDOR	DENSE WIDE ANGLE			
DS774i	Motion Analyzer	50 ft. by 60 ft. 15 m by 18 m	50 ft. by 10 ft. 15 m by 3 m	120 ft. by 9 ft. 37 m by 3 m	•	•				Flip Mirror	4
DS774Ti	Motion Analyzer	50 ft. by 60 ft. 15 m by 18 m	50 ft. by 10 ft. 15 m by 3 m	120 ft. by 9 ft. 37 m by 3 m	•	•				Flip Mirror	6
DS774Z	Motion Analyzer II	50 ft. by 60 ft. 15 m by 18 m	50 ft. by 10 ft. 15 m by 3 m	120 ft. by 9 ft. 37 m by 3 m	•	•			•	Flip Mirror	8
DS775	Motion Analyzer II	50 ft. by 50 ft. 15 m by 15 m	80 ft. by 16 ft. 24 m by 5 m	120 ft. by 10 ft. 37 m by 3 m						Pointable Mirror	10
DS776Z	Motion Analyzer II	50 ft. by 50 ft. 15 m by 15 m	80 ft. by 16 ft. 24 m by 5 m	120 ft. by 10 ft. 37 m by 3 m						Pointable Mirror	12
DS777Z	Q-MAP	50 ft. by 50 ft. 15 m by 15 m	80 ft. by 16 ft. 24 m by 5 m	120 ft. by 10 ft. 37 m by 3 m					•	Pointable Mirror	14
DS794Z	Motion Analyzer II	80 ft. by 50 ft. 24 m by 15 m		120 ft. by 25 ft. 37 m by 7.6 m					•	Changeable Mirror	16
				200 ft. by 10.5 ft. 61 m by 3 m							
DS915	Alternate Polarity Pulse Count	30 ft. by 38 ft. 9.2 m by 11.6 m	30 ft. by 4.8 ft. 9.2 m by 1.5 m	60 ft. by 9.5 ft. 18.3 m by 2.9 m	•		•	•		Fresnel Lens	18
DS918i	2, 4 or 6 Pulse Count	45 ft. by 60 ft. 13.7 m by 18.3 m								Pointable Mirror	20
DS920i	Enhanced	35 ft. by 40 ft. 10.7 m by 12.2 m	35 ft. by 3 ft. 10.7 m by 0.9 m	70 ft. by 7 ft. 21.4 m by 2.1 m	•		•	•		Fresnel Lens	22
DS928i	2 Pulse Count			100 ft. by 8 ft. 30.5 m by 2.4 m						Pointable Mirror	20
DS932Z	Enhanced	35 ft. by 40 ft. 10.7 m by 12.2 m	35 ft. by 8 ft. 10.7 m by 2.4 m	70 ft. by 6 ft. 21.4 m by 1.8 m	•	•			•	Flip Mirror	24
DS934	Motion Analyzer II	35 ft. by 35 ft. 10.7 m by 10.7 m	35 ft. by 10 ft. 10.7 m by 3.1 m	70 ft. by 10 ft. 21.4 m by 3.1 m	•					Pointable Mirror	26
DS935Z	Motion Analyzer II	35 ft. by 35 ft. 10.7 m by 10.7 m	35 ft. by 10 ft. 10.7 m by 3.1 m	70 ft. by 10 ft. 21.4 m by 3.1 m	•				•	Pointable Mirror	28
DS936	Alternate Polarity Pulse Count	24 ft. by 360° 7 m by 360°								Fresnel Lens	30
DS938Z	Motion Analyzer II	60 ft. by 360° 18.3 m by 360°								Changeable Mirror	32

## ***PASSIVE INFRARED***



*The DS774i is a wall mount, Quad Passive Infrared Intrusion Detector which uses a quad element detector and Motion Analyzer Processing to reduce false alarms. Field replaceable "Flip Mirrored Optics," 6 different coverage patterns, and 7 different mounting options provide installation flexibility.*

### ***DS774i Quad Motion Analyzer PIR***

**FEATURING . . . . .**

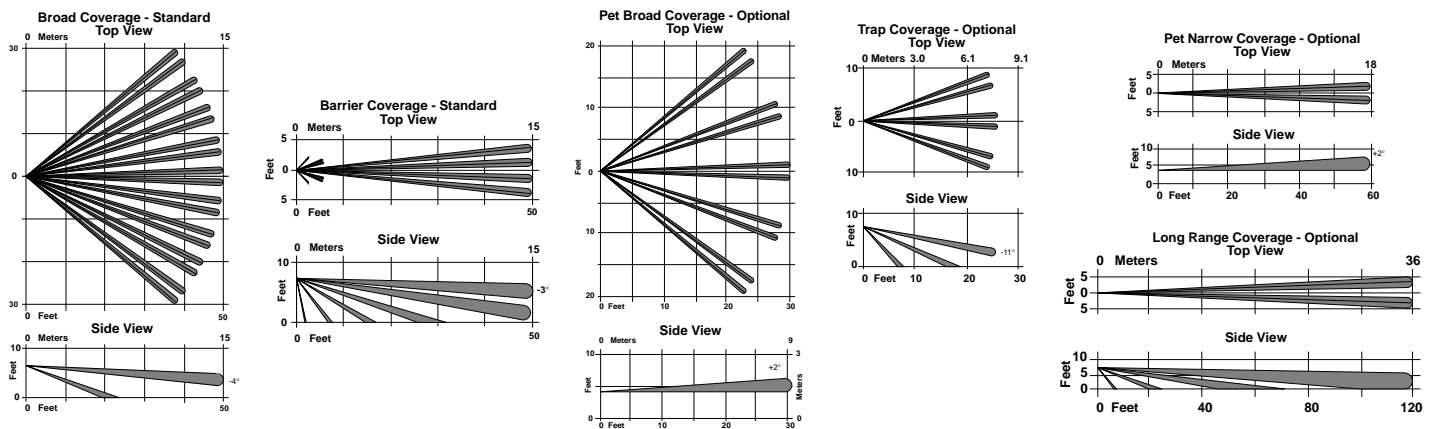
- ***Motion Analyzer Processing\****
- ***Flip Mirrored Optics\****
- ***Four Element Detection***
- ***6 Coverage Patterns***
- ***7 Mounting Options***
- ***U.L. Listed, U.L.C. Listed***

\*Patented

**SPECIFICATIONS**

<b>POWER REQUIREMENTS</b>	6 to 14 VDC, 20 mA @ 12 VDC
<b>COVERAGE</b>	<i>Standard</i> - Broad 50 ft. by 60 ft. (15 m by 18 m) Barrier 50 ft. by 10 ft. (15 m by 3 m) <i>Optional</i> - Long Range 120 ft. by 9 ft. (37 m by 3 m) } OMLR/T-3 Trap 25 ft. by 16 ft. (8 m by 5 m) } Pet (Broad) 30 ft. by 40 ft. (9 m by 12 m) } OMPET-3 Pet (Narrow) 60 ft. by 4.5 ft. (18 m by 1 m) }
<b>SIGNAL PROCESSING</b>	Processes as two separate PIRs in one cabinet. Uses Motion Analyzer Processing to identify thermal motion signals having the required signature and timing. Won't alarm on extreme levels of thermal and illumination disturbances caused by heaters and air conditioners, hot and cold drafts, sunlight, lightning and moving headlights. Provides three sensitivity settings.
<b>ALARM OUTPUT</b>	Form "C" reed relay rated at 3.0 watts, 125 mA @ 28 VDC for resistive loads.
<b>TAMPER OUTPUT</b>	Normally Closed cover activated tamper switch with separate terminals. Tamper contacts rated 125 mA @ 28 VDC maximum.
<b>RADIO FREQUENCY INTERFERENCE (RFI) IMMUNITY</b>	No alarm or setup on critical frequencies in the range from 26 to 950 Megahertz at 50 v/m.
<b>STORAGE &amp; OPERATING TEMPERATURE</b>	-20° to +120°F (-29° to +49°C). For U.L. Certificated installations +32° to +120°F (0° to +49°C)
<b>TEST FEATURES</b>	Externally visible alarm LED. Dual channel internal Noise Voltage Test Pins provide precise pattern location and background disturbance evaluation using a standard analog meter. Internal sounder output for use with Sonalert™ sounder (not supplied by DS).
<b>ALARM MEMORY</b>	Provides indication of stored alarms for use in multiple unit applications by latching the alarm LED. Controlled by a switched voltage from the control panel.
<b>ENCLOSURE DESIGN</b>	Low profile, high impact ABS plastic enclosure; white color. Measures 3.7" H., by 4.3" W., by 2.1" D. (9.4 cm H., by 11 cm W., by 5.3 cm D.). Weight is 6.3 ozs. (180 gms).
<b>MOUNTING</b>	<i>Standard</i> - Wall, corner, or semi-flush. Recommended mounting height is 6.5 ft. (2 m). <i>Optional</i> - B328 Gimbal Mount Bracket, B330 Low Profile Mount Bracket, B333 Swivel Mount Bracket, B335 Low Profile Mount Bracket.
<b>LISTINGS</b>	U.L. Listing BP1448, U.L.C. Listing CBP196
<b>ORDERING INFORMATION</b>	To order specify DS774i and optional accessories.
<b>STANDARD ACCESSORIES</b>	50 ft. (15 m) Broad/Barrier Mirror, Flush Mount Trim Plate, Flush Mount Back Clamp
<b>OPTIONAL ACCESSORIES</b>	OMLR/T-3* Mirror, OMPET-3* Mirror, OM55 Mirror, AE774 Metal Enclosure, B328 Gimbal Mount Bracket, B330 Low Profile Mount Bracket, B333 Swivel Mount Bracket, B335 Low Profile Mount Bracket, TC6000 Test Cord. * Shipped in packages of 3.
<b>U.S. PATENT NUMBERS</b>	#4,764,755; #4,689,486

**COVERAGE**



**Detection Systems, Inc.**

130 Perinton Parkway, Fairport, New York 14450-9199  
 (716) 223-4060 • (800) 289-0096 • Fax: (716) 223-9180

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## ***PASSIVE INFRARED***



*The DS774Ti is a wall mount, Passive Infrared Intrusion Detector which uses Detection Systems' patented Motion Analyzer Processing to reduce false alarms. Field replaceable "Flip Mirrored Optics," 6 different coverage patterns, and 7 different mounting options provide installation flexibility.*

## ***DS774Ti Motion Analyzer PIR***

***FEATURING . . . . .***

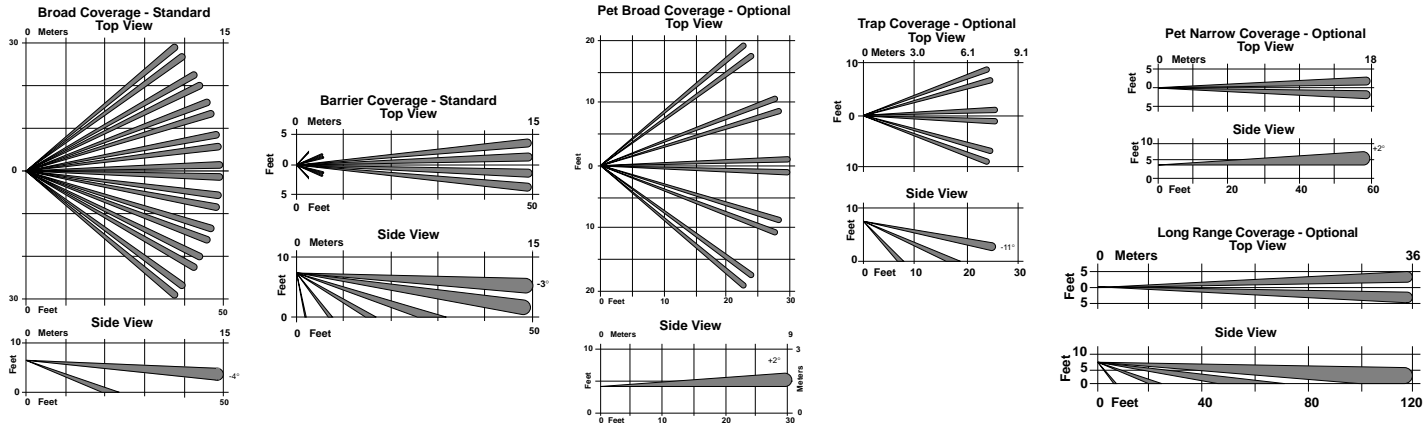
- ***Motion Analyzer Processing\****
- ***Flip Mirrored Optics\****
- ***6 Coverage Patterns***
- ***7 Mounting Options***
- ***U.L. Listed, U.L.C. Listed***

\*Patented

**SPECIFICATIONS**

<b>POWER REQUIREMENTS</b>	6 to 14 VDC, 20 mA @ 12 VDC
<b>COVERAGE</b>	<i>Standard</i> - Broad 50 ft. by 60 ft. (15 m by 18 m) Barrier 50 ft. by 10 ft. (15 m by 3 m) <i>Optional</i> - Long Range 120 ft. by 9 ft. (37 m by 3 m) } OMLR/T-3 Trap 25 ft. by 16 ft. (8 m by 5 m) } Pet (Broad) 30 ft. by 40 ft. (9 m by 12 m) } OMPET-3 Pet (Narrow) 60 ft. by 4.5 ft. (18 m by 1 m) }
<b>SIGNAL PROCESSING</b>	Uses Motion Analyzer Processing to identify thermal motion signals having the required signature and timing. Won't alarm on extreme levels of thermal and illumination disturbances caused by heaters and air conditioners, hot and cold drafts, sunlight, lightning, and moving headlights. Provides three sensitivity settings.
<b>ALARM OUTPUT</b>	Form "C" reed relay rated at 3.0 watts, 125 mA @ 28 VDC for resistive loads and protected by a 4.7 ohm resistor in the common "C" leg.
<b>TAMPER OUTPUT</b>	Normally Closed cover activated tamper switch with separate terminals. Tamper contacts rated 125 mA @ 28 VDC maximum.
<b>RADIO FREQUENCY INTERFERENCE (RFI) IMMUNITY</b>	No alarm or setup on critical frequencies in the range from 26 to 950 Megahertz at 50 v/m.
<b>STORAGE &amp; OPERATING TEMPERATURE</b>	-20° to +120°F (-29° to +49°C). <i>For U.L. Certificated installations +32° to +120°F (0° to +49°C)</i>
<b>TEST FEATURES</b>	Externally visible alarm LED. Internal Noise Voltage Test Pins provide precise pattern location and background disturbance evaluation using a standard analog meter. Internal sounder (not supplied by DS).
<b>ALARM MEMORY</b>	Provides indication of stored alarms for use in multiple unit applications by latching the alarm LED. Controlled by a switched voltage from the control panel.
<b>ENCLOSURE DESIGN</b>	Low profile, high impact ABS plastic enclosure; white color. Measures 3.7" H., by 4.3" W., by 2.1" D. (9.4 cm H., by 11 cm W., by 5.3 cm D.). Weight is 6.3 ozs (180 gms).
<b>MOUNTING</b>	<i>Standard</i> - Wall, corner, or semi-flush. Recommended mounting height is 6.5 ft. (2 m). <i>Optional</i> - B328 Gimbal Mount Bracket, B330 Low Profile Mount Bracket, B333 Swivel Mount Bracket, B335 Low Profile Mount Bracket.
<b>LISTINGS</b>	U.L. Listing BP1448, U.L.C. Listing CBP196
<b>ORDERING INFORMATION</b>	To order specify DS774Ti and optional accessories.
<b>STANDARD ACCESSORIES</b>	50 ft. (15 m) Broad/Barrier Mirror, Flush Mount Trim Plate, Flush Mount Back Clamp
<b>OPTIONAL ACCESSORIES</b>	OMLR/T-3* Mirror, OMPET-3* Mirror, OM55 Mirror, AE774 Metal Enclosure, B328 Gimbal Mount Bracket, B330 Low Profile Mount Bracket, B333 Swivel Mount Bracket, B335 Low Profile Mount Bracket, TC6000 Test Cord. * Shipped in packages of 3.
<b>U.S. PATENT NUMBERS</b>	#4,764,755; #4,689,486

**COVERAGE**



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## ***PASSIVE INFRARED***



*The DS774Z is a wall mount, microprocessor-based Passive Infrared Intrusion Detector which uses Detection Systems' patented Motion Analyzer II Processing to reduce false alarms. Several unique self-test features, including Motion Monitor, provide coverage integrity. Field replaceable "Flip Mirrored Optics," 6 different coverage patterns, and 7 different mounting options provide installation flexibility.*

### ***DS774Z Microprocessor-Based "Smart" PIR***

#### ***FEATURING . . . . .***

- ***Motion Analyzer II Processing\****
- ***Motion Monitor\****
- ***Microprocessor Controlled Self-Test Supervision Systems***
- ***Anti-Masking Protection (optional)***
- ***Flip Mirrored Optics\****
- ***6 Coverage Patterns***
- ***7 Mounting Options***
- ***U.L. Listed, U.L.C. Listed***

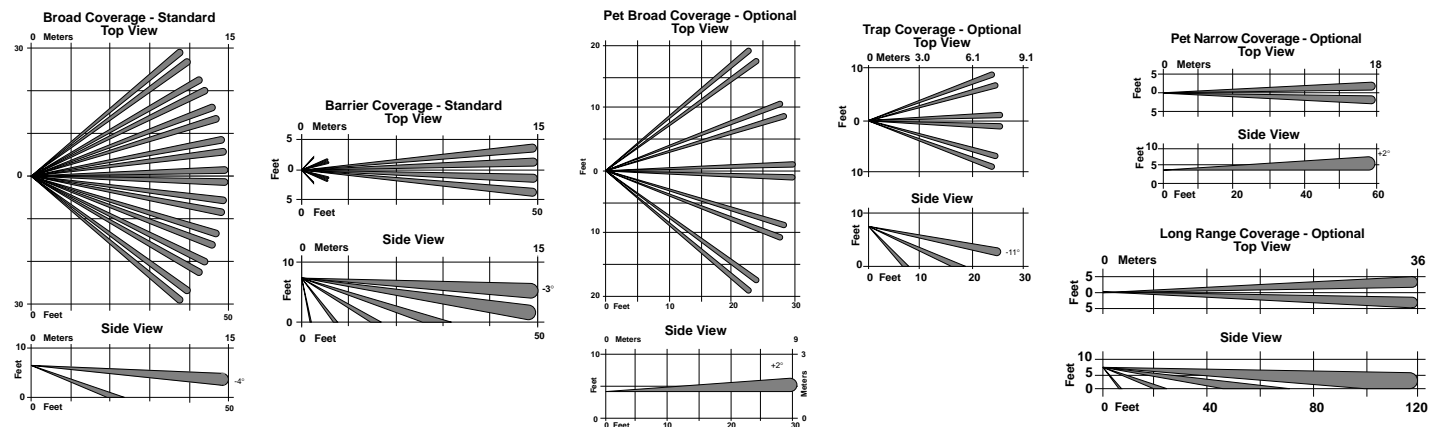
\*Patented



**SPECIFICATIONS**

<b>POWER REQUIREMENTS</b>	6 to 15 VDC, 25 mA @ 12 VDC
<b>COVERAGE</b>	<i>Standard</i> - Broad 50 ft. by 60 ft. (15 m by 18 m) Barrier 50 ft. by 10 ft. (15 m by 3 m) <i>Optional</i> - Long Range 120 ft. by 9 ft. (37 m by 3 m) } OMLR/T-3 Trap 25 ft. by 16 ft. (8 m by 5 m) Pet (Broad) 30 ft. by 40 ft. (9 m by 12 m) } OMPET-3 Pet (Narrow) 60 ft. by 4.5 ft. (18 m by 1 m)
<b>SIGNAL PROCESSING</b>	Motion Analyzer II uses multiple thresholds and timing windows to analyze timing, amplitude, duration, and polarity of signals to make an alarm decision. Won't alarm on extreme levels of thermal and illumination disturbances caused by heaters and air conditioners, hot and cold drafts, sunlight, lightning, and moving headlights. Motion Analyzer II Processing provides three sensitivity settings.
<b>ALARM OUTPUT</b>	Form "C" reed relay rated at 3.0 watts, 125 mA @ 28 VDC for resistive loads and protected by a 4.7 ohm resistor in the common "C" leg.
<b>TAMPER/TROUBLE OUTPUT</b>	Normally Closed (with cover in place) tamper switch. Contacts rated at 28 VDC, 0.125 A maximum. In series with silent operating Normally Closed (not in trouble condition) reed relay. Contacts rated 3 Watts, 0.125 A, 28 VDC maximum for DC resistive loads.
<b>RADIO FREQUENCY INTERFERENCE (RFI) IMMUNITY</b>	No alarm or setup on critical frequencies in the range from 26 to 950 Megahertz at 50 v/m.
<b>STORAGE &amp; OPERATING TEMPERATURE</b>	-20° to +120°F (-29° to +49°C). For U.L. Certificated installations +32° to +120°F (0° to +49°C)
<b>TEST FEATURES</b>	Externally visible alarm LED flashes to indicate trouble condition. Internal Noise Voltage Test Pins provide precise pattern location and background disturbance evaluation using a standard analog meter. Internal sounder (not supplied by DS).
<b>SUPERVISION FEATURES</b>	<i>PIR Supervision</i> - Provides trouble output in the event PIR circuitry fails. <i>Motion Monitor</i> - Switch selectable 1, 8, and 32 day timers verify that there is a clear view of the protection area. <i>Anti-Masking</i> - When ordered (DS774ZA), the detector has an Anti-Masking circuit which can detect intentional or accidental masking.
<b>ALARM MEMORY</b>	Provides indication of stored alarms for use in multiple unit applications by latching the alarm LED. Controlled by a switched voltage from the control panel.
<b>ENCLOSURE DESIGN</b>	Low profile, high impact ABS plastic enclosure; white color. Measures 3.7" H., by 4.3" W., by 2.1" D. (9.4 cm H., by 11 cm W., by 5.3 cm D.). Weight is 6.3 ozs (180 gms).
<b>MOUNTING</b>	<i>Standard</i> - Wall, corner, or semi-flush. Recommended mounting height is 6.5 ft. (2 m). <i>Optional</i> - B328 Gimbal Mount Bracket, B330 Low Profile Mount Bracket, B333 Swivel Mount Bracket, B335 Low Profile Mount Bracket.
<b>LISTINGS</b>	U.L. Listing BP1448, U.L.C. Listing CBP196
<b>ORDERING INFORMATION</b>	To order specify DS774Z or DS774ZA (Anti-Mask) and optional accessories.
<b>STANDARD ACCESSORIES</b>	50 ft. (15 m) Broad/Barrier Module, Flush Mount Trim Plate, Flush Mount Back Clamp
<b>OPTIONAL ACCESSORIES</b>	OMLR/T-3* Mirror, OMPET-3* Mirror, OM55 Mirror, AE774 Metal Enclosure, B328 Gimbal Mount Bracket, B330 Low Profile Mount Bracket, B333 Swivel Mount Bracket, B335 Low Profile Mount Bracket, TC6000 Test Cord. * Shipped in packages of 3.
<b>U.S. PATENT NUMBERS</b>	#4,764,755; #4,689,486; #5,083,106

**COVERAGE**



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## ***PASSIVE INFRARED***



*The DS775 is an ASIC-controlled wall mount, Passive Infrared Intrusion Detector which uses Motion Analyzer II signal processing to reduce false alarms. Internally pointable mirrored optics, 3 coverage patterns, and 4 different mounting options provide installation flexibility.*

### ***DS775 Motion Analyzer II PIR***

***FEATURING . . . . .***

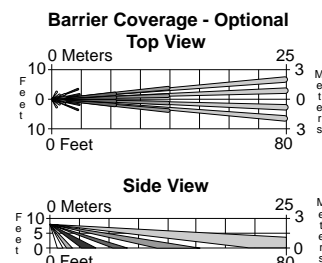
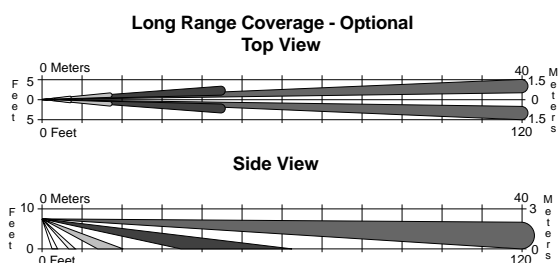
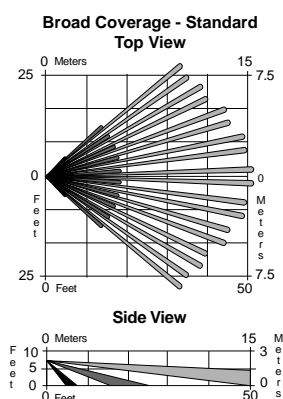
- ***Motion Analyzer II Processing\****
- ***Pointable Mirrored Optics***
- ***3 Coverage Patterns***
- ***4 Mounting Options***
- ***ASIC Electronics***
- ***U.L. Listed, U.L.C. Listed***

\*Patented

**SPECIFICATIONS**

<b>POWER REQUIREMENTS</b>	6 to 15 VDC, 18 mA @ 12 VDC.
<b>ALARM OUTPUT</b>	Form "C" contacts rated at 3.0 watts, 125 mA @ 28 VDC for resistive loads.
<b>TAMPER OUTPUT</b>	Normally Closed. Contacts rated at 28 VDC, 125 mA maximum.
<b>RADIO FREQUENCY INTERFERENCE (RFI) IMMUNITY</b>	No alarm or setup on critical frequencies in the range from 26 to 950 Megahertz at 50 v/m.
<b>STORAGE &amp; OPERATING TEMPERATURE</b>	-40° to +120°F (-40° to +49°C). <i>For U.L. Certificated installations, +32° to +120°F (0° to +49°C).</i>
<b>TEST FEATURES</b>	Externally visible High Output Alarm LED. Internal Noise Voltage Test Pins provide precise pattern location and background disturbance evaluation using a standard analog meter.
<b>SIGNAL PROCESSING</b>	Motion Analyzer II uses multiple thresholds and timing windows to analyze timing, amplitude, duration, and polarity of signals to make an alarm decision. Won't alarm on extreme levels of thermal and illumination disturbances caused by heaters and air conditioners, hot and cold drafts, sunlight, lightning, and moving headlights. Motion Analyzer II Processing provides three sensitivity settings.
<b>INTERNAL POINTABILITY</b>	Coverage is adjustable ±10° horizontally, +2° to -18° vertically.
<b>ENCLOSURE DESIGN</b>	ABS plastic enclosure. Measures 5.75" H., by 3.75" W., by 2.5" D. (14.6 cm H., 9.5 cm W., 6.35 cm D.).
<b>COVERAGE</b>	<i>Standard</i> - Broad 50 ft. by 50 ft. (15 m by 15 m) <i>Optional</i> - Long Range 120 ft. by 10 ft. (37 m by 3 m) OMLR77-3* Barrier 80 ft. by 16 ft. (24 m by 5 m) OMB77-3*
<b>MOUNTING</b>	<i>Standard</i> - Surface or corner mount. <i>Optional</i> - B328 Gimbal Mount Bracket, B335 Low Profile Mount Bracket. Recommended mounting height range is 6.5 ft. to 8.5 ft. (2 m to 2.6 m).
<b>LISTINGS</b>	U.L. Listing BP1448, U.L.C. Listing CBP196
<b>ORDERING INFORMATION</b>	To order specify DS775 and optional accessories.
<b>OPTIONAL ACCESSORIES</b>	B328 Gimbal Mount Bracket, B335 Low Profile Mount Bracket, OMB77-3* Barrier Mirror, OMLR77-3* Long Range Mirror, TC6000 Test Cord. <i>* Shipped in packages of 3.</i>
<b>U.S. PATENT NUMBERS</b>	#4,764,755.

**COVERAGE**



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## ***PASSIVE INFRARED***



*The DS776Z is an ASIC-based wall mount, Passive Infrared Intrusion Detector which uses Motion Analyzer II signal processing to reduce false alarms. Several unique test features, including Motion Monitor, provide coverage integrity. Internally pointable field replaceable mirrored optics, 3 different coverage patterns and 4 different mounting options provide installation flexibility.*

### ***DS776Z ASIC-Based PIR with Self-Test***

***FEATURING . . . . .***

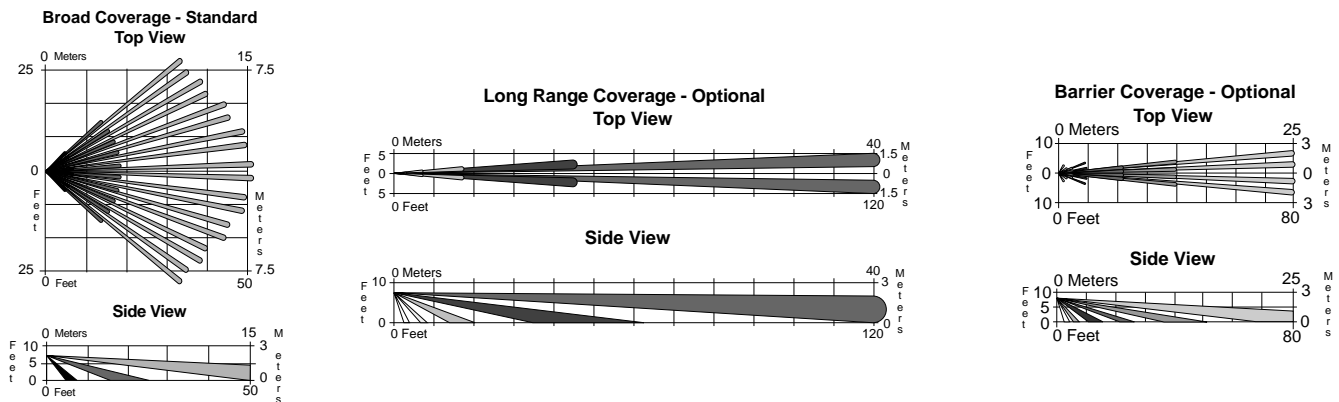
- ***Motion Analyzer II Processing\****
- ***Motion Monitor\****
- ***Self-Test Supervision Systems***
- ***Pointable Mirrored Optics***
- ***3 Coverage Patterns***
- ***4 Mounting Options***
- ***U.L. Listed, U.L.C. Listed***

\*Patented

**SPECIFICATIONS**

<b>POWER REQUIREMENTS</b>	6 to 15 VDC, 18 mA @ 12 VDC.
<b>ALARM OUTPUT</b>	Form "C" contacts rated at 3.0 watts, 125 mA @ 28 VDC for resistive loads.
<b>TAMPER OUTPUT</b>	Normally Closed. Contacts rated at 28 VDC, 125 mA maximum.
<b>TROUBLE OUTPUT</b>	Solid state output, shorts to negative when activated. Maximum current load is 25 mA.
<b>RADIO FREQUENCY INTERFERENCE (RFI) IMMUNITY</b>	No alarm or setup on critical frequencies in the range from 26 to 950 Megahertz at 50 v/m.
<b>STORAGE &amp; OPERATING TEMPERATURE</b>	-40° to +120°F (-40° to +49°C). <i>For U.L. Certificated installations, +32° to +120°F (0° to +49°C).</i>
<b>TEST FEATURES</b>	LED flashes to indicate trouble condition. Internal Noise Voltage Test Pins provide precise pattern location and background disturbance evaluation using a standard analog meter.
<b>SUPERVISION FEATURES</b>	<i>PIR Supervision</i> - Provides trouble output in the event PIR circuitry fails. <i>Motion Monitor</i> - Switch selectable 4 and 30 day timers verify that there is a clear view of the protection area.
<b>SIGNAL PROCESSING</b>	Motion Analyzer II uses multiple thresholds and timing windows to analyze timing, amplitude, duration, and polarity of signals to make an alarm decision. Won't alarm on extreme levels of thermal and illumination disturbances caused by heaters and air conditioners, hot and cold drafts, sunlight, lightning, and moving headlights. Motion Analyzer II Processing provides three sensitivity settings.
<b>INTERNAL POINTABILITY</b>	Coverage is adjustable ±10° horizontally, +2° to -18° vertically.
<b>ENCLOSURE DESIGN</b>	ABS plastic enclosure. Measures 5.75" H., by 3.75" W., by 2.5" D. (14.6 cm H., 9.5 cm W., 6.35 cm D.).
<b>COVERAGE</b>	<i>Standard</i> - Broad 50 ft. by 50 ft. (15 m by 15 m) <i>Optional</i> - Long Range 120 ft. by 10 ft. (37 m by 3 m) OMLR77-3* Barrier 80 ft. by 16 ft. (24 m by 5 m) OMB77-3*
<b>MOUNTING</b>	<i>Standard</i> - Surface or corner mount. <i>Optional</i> - B328 Gimbal Mount Bracket, B335 Low Profile Mount Bracket Recommended mounting height range is 6.5 ft. to 8.5 ft. (2 m to 2.6 m).
<b>LISTINGS</b>	U.L. Listing BP1448, U.L.C. Listing CBP196
<b>ORDERING INFORMATION</b>	To order specify DS776Z and optional accessories.
<b>OPTIONAL ACCESSORIES</b>	B328 Gimbal Mount Bracket, B335 Low Profile Mount Bracket, OMB77-3* Barrier Mirror, OMLR77-3* Long Range Mirror, TC6000 Test Cord. * Shipped in packages of 3.
<b>U.S. PATENT NUMBERS</b>	#4,764,755; #5,083,106.

**COVERAGE**



**Detection Systems, Inc.**  
 130 Perinton Parkway, Fairport, New York 14450-9199  
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## ***PASSIVE INFRARED***



*The DS777Z is a wall mount, Quad Passive Infrared Intrusion Detector which uses Q-MAP signal processing and a 4-element (Quad), dual opposed sensor design to provide excellent catch performance with freedom from false alarms. Several unique test features, including Motion Monitor, provide coverage integrity. Internally pointable field replaceable mirrored optics provide installation flexibility.*

### ***DS777Z Quad Passive Infrared Detector***

#### ***FEATURING . . . . .***

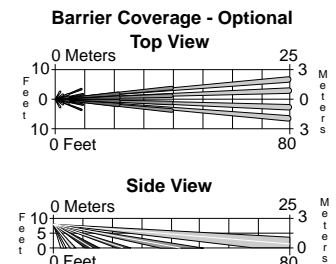
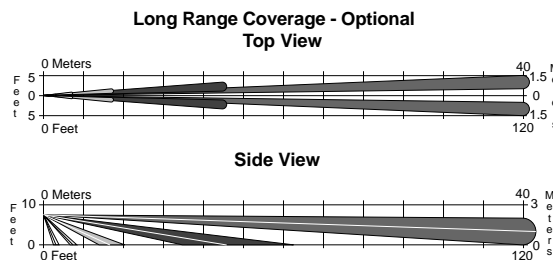
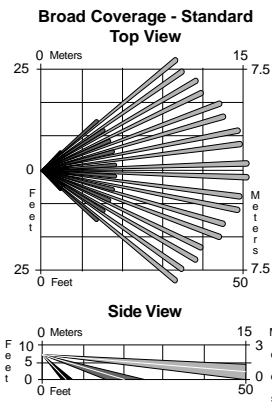
- ***Quad Element Design***
- ***Microprocessor Controlled Self-Test Supervision Systems***
- ***Q-MAP Signal Processing\****
- ***Pointable Mirrored Optics***
- ***Anti-Mask Option***
- ***Motion Monitor\****
- ***Temperature Compensation***
- ***U.L. Listed***

\*Patented

**SPECIFICATIONS**

<b>POWER REQUIREMENTS</b>	6 to 15 VDC, 25 mA @ 12 VDC.
<b>ALARM OUTPUT</b>	Form "C" contacts rated at 3.0 watts, 125 mA @ 28 VDC for resistive loads.
<b>TAMPER OUTPUT</b>	Normally Closed (with cover in place). Contacts rated at 28 VDC, 125 mA maximum.
<b>TROUBLE OUTPUT</b>	Solid state output, shorts to ground when activated. Maximum current load is 25 mA.
<b>RADIO FREQUENCY INTERFERENCE (RFI) IMMUNITY</b>	No alarm or setup on critical frequencies in the range from 26 to 950 Megahertz at 50 v/m.
<b>STORAGE &amp; OPERATING TEMPERATURE</b>	-40° to +120°F (-40° to +49°C). For U.L. Certificated installations, +32° to +120°F (0° to +49°C).
<b>TEST FEATURES</b>	LED flashes to indicate trouble condition. Dual channel internal Noise Voltage Test Pins provide precise pattern location and background disturbance evaluation using a standard analog meter.
<b>SUPERVISION FEATURES</b>	<i>PIR Supervision</i> - Provides trouble output in the event PIR circuitry fails. <i>Motion Monitor</i> - Switch selectable 4 and 30 day timers verify that there is a clear view of the protection area. <i>Anti-Masking</i> - When ordered (DS777ZA), the detector has an Anti-Masking circuit which can detect intentional or accidental masking.
<b>ALARM MEMORY</b>	Provides indication of stored alarms. Controlled by a switched voltage from the control panel.
<b>Q-MAP SIGNAL PROCESSING</b>	Individually analyzes the signals from each channel to virtually eliminate false alarms. The horizontally opposed signals must match with specific timing, amplitude, and signatures to cause an alarm. Q-MAP automatically adjusts for small targets that cause signals in one channel but not the adjacent, opposing channel. This reduces false alarms from small targets such as rodents, while maintaining excellent catch performance of human sized targets.
<b>TEMPERATURE COMPENSATION</b>	Automatically monitors the ambient temperature and adjusts the signal processing to maintain proper catch performance at critical temperature ranges.
<b>INTERNAL POINTABILITY</b>	Coverage is adjustable ±10° horizontally, +2° to -18° vertically.
<b>ENCLOSURE DESIGN</b>	ABS plastic enclosure. Measures 5.75" H., by 3.75" W., by 2.5" D. (14.6 cm H., 9.5 cm W., 6.35 cm D.).
<b>COVERAGE</b>	<i>Standard</i> - Broad 50 ft. by 50 ft. (15 m by 15 m) <i>Optional</i> - Long Range 120 ft. by 10 ft. (37 m by 3 m) OMLR77-3* Barrier 80 ft. by 16 ft. (24 m by 5 m) OMB77-3*
<b>MOUNTING</b>	<i>Standard</i> - Surface or corner mount. <i>Optional</i> - B328 Gimbal Mount Bracket, B335 Low Profile Mount Bracket. Recommended mounting height is 7.5 ft. (2.3 m).
<b>ORDERING INFORMATION</b>	To order specify DS777Z or DS777ZA and optional accessories.
<b>OPTIONAL ACCESSORIES</b>	B328 Gimbal Mount Bracket, B335 Low Profile Mount Bracket, OMB77-3* Barrier Mirror, OMLR77-3* Long Range Mirror, TC6000 Test Cord. * Shipped in packages of 3.
<b>U.S. PATENT NUMBERS</b>	#4,764,755; #5,083,106.

**COVERAGE**



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## ***PASSIVE INFRARED***



*The DS794Z is a Long Range Passive Infrared Intrusion Detector which uses Detection Systems' patented Motion Analyzer II Processing to reduce false alarms. Several unique self-test features, including Motion Monitor, provide coverage integrity. Field replaceable mirrored optics and 3 different coverage patterns provide installation flexibility.*

### ***DS794Z Long Range Passive Infrared Detector***

#### ***FEATURING . . . . .***

- ***Motion Analyzer II Processing\****
- ***Motion Monitor\****
- ***Self-Test Supervision Systems***
- ***Field Changeable Optics\****
- ***3 Coverage Patterns***
- ***U.L. Listed, U.L.C. Listed***

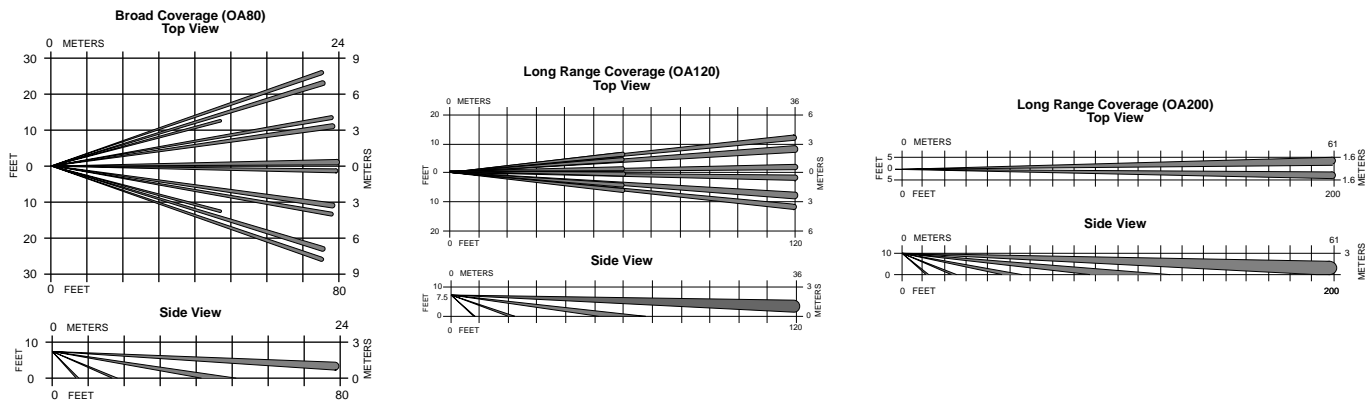
\*Patented



**SPECIFICATIONS**

<b>POWER REQUIREMENTS</b>	6 to 15 VDC, 18 mA @ 12 VDC.
<b>ALARM OUTPUT</b>	Form "C" contacts rated at 3.0 Watts, 125 mA @ 28 VDC for resistive loads.
<b>TAMPER OUTPUT</b>	Normally Closed (with cover in place). Contacts rated at 28 VDC, 125 mA maximum.
<b>TROUBLE OUTPUT</b>	Solid state output, shorts to negative when activated. Maximum current load is 25 mA.
<b>RADIO FREQUENCY INTERFERENCE (RFI) IMMUNITY</b>	No alarm or setup on critical frequencies in the range from 26 to 950 Megahertz at 50 v/m.
<b>STORAGE &amp; OPERATING TEMPERATURE</b>	-20° to +120°F (-29° to +49°C). <i>For U.L. Certificated installations, +32° to +120°F (0° to +49°C).</i>
<b>TEST FEATURES</b>	Externally visible alarm LED flashes to indicate trouble condition. Internal Noise Voltage Test Pins provide precise pattern location and background disturbance evaluation using a standard analog meter. Internal sounder output for use with Sonalert™ sounder (not supplied by DS).
<b>SUPERVISION FEATURES</b>	<i>PIR Supervision</i> - Provides trouble output in the event PIR circuitry fails. <i>Motion Monitor</i> - Switch selectable 4 and 30 day Motion Monitor supervision timers provide the detector with the ability to verify that there is a clear view of the protection area and that it has not been blocked.
<b>SIGNAL PROCESSING</b>	Motion Analyzer II uses multiple thresholds and timing windows to analyze timing, amplitude, duration, and polarity of signals to make an alarm decision. Won't alarm on extreme levels of thermal and illumination disturbances caused by heaters and air conditioners, hot and cold drafts, sunlight, lightning, and moving headlights. Motion Analyzer II Processing provides three sensitivity settings.
<b>ENCLOSURE DESIGN</b>	High impact ABS plastic enclosure with steel grid over optics area; white color. Measures 5" H., by 7.5" W., by 5" D. (14 cm H., 21 cm W., 14 cm D.). Weight is 8 ozs (228 gms).
<b>COVERAGE</b>	DS794Z-80 Broad 80 ft. by 50 ft. (24 m by 15 m) DS794Z-120 Long Range 120 ft. by 25 ft. (37 m by 7.6 m) DS794Z-200 Long Range 200 ft. by 10.5 ft. (61 m by 3 m)
<b>MOUNTING</b>	Surface or corner mount. Bracket mount on wall or ceiling. (Bracket mount recommended). Maximum mounting height is 15 ft. (4.5 m).
<b>ORDERING INFORMATION</b>	To order specify DS794Z-80, DS794Z-120, or DS794Z-200 (depending on pattern requirements) and optional accessories.
<b>STANDARD ACCESSORIES</b>	B334 Swivel Mount Bracket
<b>OPTIONAL ACCESSORIES</b>	OA80-2* Mirror, OA120-2* Mirror, OA200-2* Mirror, TC6000 Test Cord * Shipped in packages of 2.
<b>U.S. PATENT NUMBERS</b>	#4,764,755; #4,920,268; #5,083,106.
<b>LISTINGS</b>	U.L. Listing BP1448, U.L.C. Listing CBP196

**COVERAGE**



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## ***PASSIVE INFRARED***



*The DS915 is a semi-flush mount, Passive Infrared Intrusion Detector which is designed to mount in a standard single gang electrical box or directly to a wall using the supplied flush mount ring. It uses alternate polarity pulse count processing, is internally pointable and uses “grooves-in” Fresnel lenses to provide 6 different coverage patterns.*

### ***DS915 Recess Mount Passive Infrared***

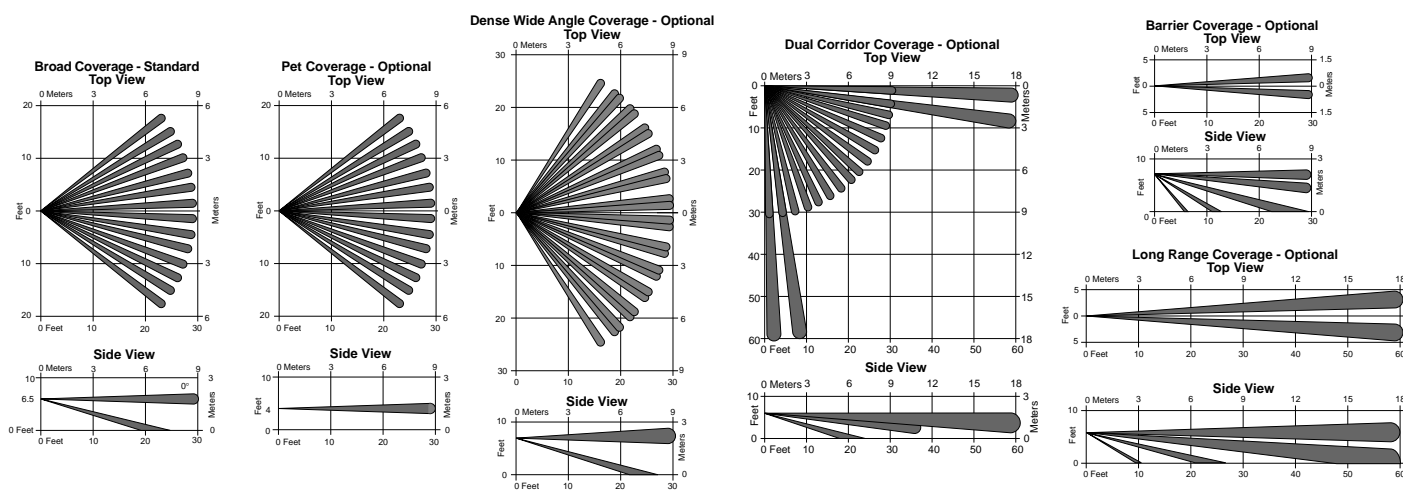
***FEATURING . . . . .***

- ***Pulse Count of 1, 2, or 3***
- ***6 Field Changeable Fresnel Lenses***
- ***Semi-Flush in Standard Switch Box (ideal for new construction)***
- ***Internal Vertical & Horizontal Pointability***
- ***U.L. Listed***

**SPECIFICATIONS**

<b>POWER REQUIREMENTS</b>	10 to 15 VDC, 20 mA @ 12 VDC.
<b>ALARM OUTPUT</b>	Normally Closed reed relay rated at 3.0 watts, 125 mA @ 28 VDC for resistive loads and protected by a 4.7 ohm resistor in the common "C" leg.
<b>RADIO FREQUENCY INTERFERENCE (RFI) IMMUNITY</b>	No alarm or setup on critical frequencies in the range from 26 to 950 Megahertz at 50 v/m.
<b>STORAGE &amp; OPERATING TEMPERATURE</b>	-20° to +120°F (-29° to +49°C). <i>For U.L. Certificated installations, +32° to +120°F (0° to +49°C).</i>
<b>TEST FEATURES</b>	Externally visible alarm LED. Internal noise voltage output provides precise pattern location and background disturbance evaluation using a standard analog meter.
<b>SIGNAL PROCESSING</b>	Alternate polarity pulse count. Field selectable for 1, 2, or 3 pulses.
<b>ENCLOSURE DESIGN</b>	High impact ABS plastic enclosure with internal sliding lens frame. Measures 4.875" H., by 3.25" W., by 0.625" D. (12.5 cm H., 8.4 cm W., 2.0 cm D.).
<b>COVERAGE</b>	<i>Standard</i> - Broad 30 ft. by 38 ft. (9.2 m by 11.6 m) <i>Optional</i> - Barrier 30 ft. by 4.8 ft. (9.2 m by 1.5 m) OLB91-3* Pet 30 ft. by 38 ft. (9.2 m by 11.6 m) OLP91-3* Long Range 60 ft. by 9.5 ft. (18.3 m by 2.9 m) OLR91-3* Dense Wide Angle 30 ft. by 50 ft. (9.2 m by 15.3 m) OLV91-3* Dual Corridor (2) 60 ft. (18.3 m) barriers and 30 ft. by 30 ft. (9.2 m by 9.2 m) center coverage OLC91-3*
<b>MOUNTING</b>	Semi-flush or single gang box. Recommended mounting height is 6.5 ft. (2 m). Mounting height range is from 3 to 8 ft. (0.9 m to 2.4 m).
<b>PATTERN POINTABILITY</b>	Coverage is adjustable +2° to -14° vertically, ±10° horizontally
<b>ORDERING INFORMATION</b>	To order specify DS915 and optional accessories.
<b>OPTIONAL ACCESSORIES</b>	Pet Lens OLP91-3*, Dense Wide Angle Lens OLV91-3*, Dual Corridor Lens OLC91-3*, Barrier Lens OLB91-3*, Long Range Lens OLR91-3*, TC6000 Test Cord * Shipped in packages of 3.
<b>LISTINGS</b>	U.L. Listing BP1448

**COVERAGE**



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## ***PASSIVE INFRARED***



*The DS918i and DS928i are ceiling or wall mount, Passive Infrared Intrusion Detectors which use pulse count processing. They have internally pointable mirrored optics which provide installation flexibility.*

### ***DS918i/DS928i Ceiling/Wall Mount Passive Infrared***

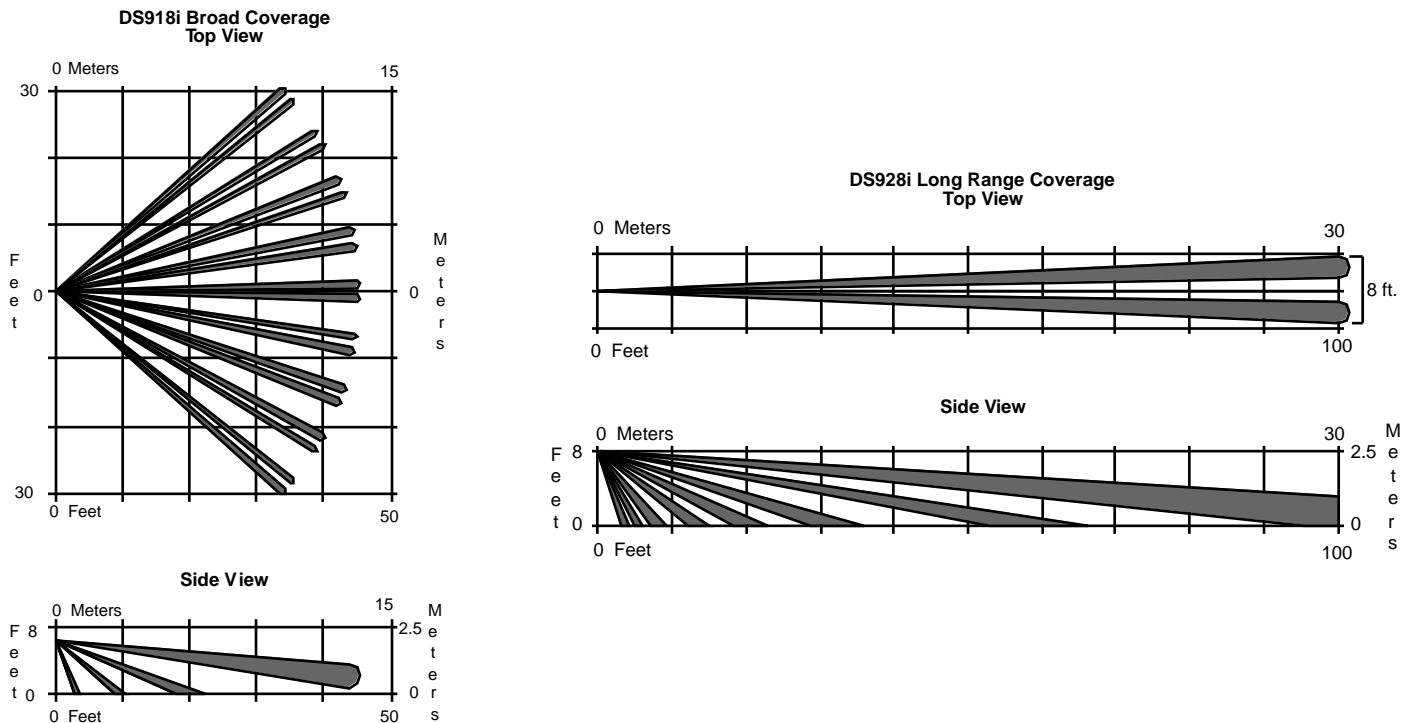
***FEATURING . . . . .***

- ***Pulse Count Operation***
- ***Pointable Mirrored Optics***
- ***3 Mounting Options***
- ***U.L. Listed***

**SPECIFICATIONS**

<b>POWER REQUIREMENTS</b>	9 to 28 VDC, 20 mA @ 12 VDC.
<b>ALARM OUTPUT</b>	Normally Closed contacts rated at 0.2 amps @ 30 VDC.
<b>TAMPER OUTPUT</b>	Normally Closed cover activated tamper switch.
<b>RADIO FREQUENCY INTERFERENCE (RFI) IMMUNITY</b>	No alarm or setup on critical frequencies in the range from 26 to 950 Megahertz at 50 v/m.
<b>STORAGE &amp; OPERATING TEMPERATURE</b>	-4° to +122°F (-20° to +50°C). <i>For U.L. Certificated installations, +32° to +120°F (0° to +49°C).</i>
<b>TEST FEATURES</b>	Externally visible alarm LED. Internal noise voltage output provides precise pattern location and background disturbance evaluation using a standard analog meter.
<b>SIGNAL PROCESSING</b>	Pulse count processing. DS918i provides field selectable 2, 4, or 6 pulse count. DS928i is factory set at a 2 pulse count.
<b>ENCLOSURE DESIGN</b>	High impact ABS plastic enclosure. Measures 2.7" H., by 5.5" D. (6.9 cm H., by 13.9 cm D.).
<b>COVERAGE</b>	DS918i Broad 45 ft. by 60 ft. (13.7 m by 18.3 m) DS928i Long Range Barrier 100 ft. by 8 ft. (30.5 m by 2.4 m)
<b>MOUNTING</b>	Ceiling or wall, surface or semi-flush (using optional FMR918i mounting kit). Maximum mounting height is 10 feet (3 m).
<b>PATTERN POINTABILITY</b>	Coverage is adjustable 115° vertically, ±30° horizontally
<b>ORDERING INFORMATION</b>	To order specify DS918i for 45 ft. (13.7 m) Broad Coverage or DS928i for 100 ft. (30.5 m) Long Range Coverage and optional accessories.
<b>OPTIONAL ACCESSORIES</b>	FMR918i Recess Mount Kit, TC6000 Test Cord
<b>LISTINGS</b>	U.L. Listing BP1448

**COVERAGE**



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## ***PASSIVE INFRARED***



*The DS920i is a wall mount, Passive Infrared Intrusion Detector. It uses “grooves-in” Fresnel lenses to provide 7 different coverage patterns for installation flexibility.*

### ***DS920i Passive Infrared Detector***

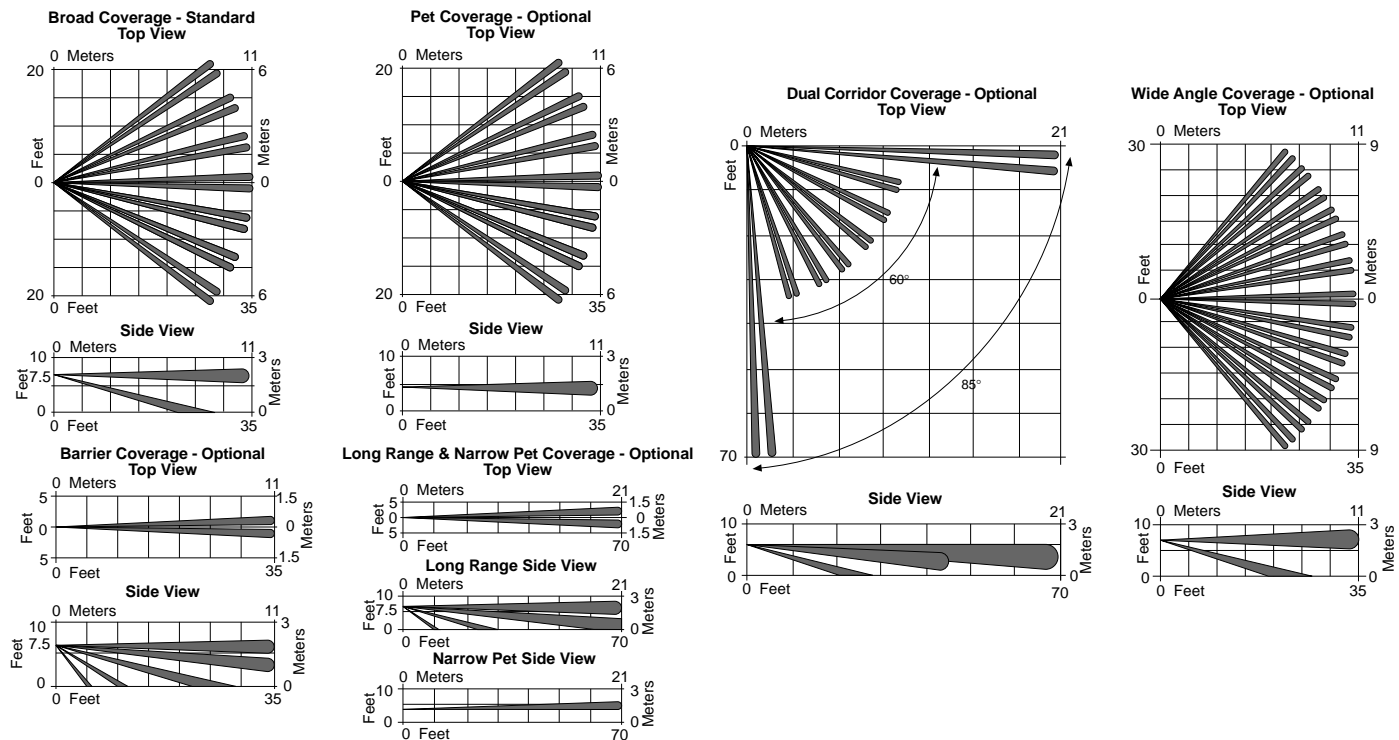
***FEATURING . . . . .***

- ***Enhanced Signal Processing***
- ***Internal Coverage Pointability***
- ***35 Foot (10.7 m) Broad Coverage***
- ***7 Field Changeable Fresnel Lenses***
- ***U.L. Listed***

**SPECIFICATIONS**

<b>POWER REQUIREMENTS</b>	9 to 16 VDC, 16 mA @ 12 VDC.
<b>ALARM OUTPUT</b>	Normally Closed contacts rated 125 mA @ 28 VDC for resistive loads. The relay opens on an alarm condition.
<b>TAMPER OUTPUT</b>	Normally Closed cover activated tamper switch with separate terminals. Tamper contacts rated 125 mA @ 28 VDC maximum.
<b>RADIO FREQUENCY INTERFERENCE (RFI) IMMUNITY</b>	No alarm or setup on critical frequencies in the range from 26 to 950 Megahertz at 50 v/m.
<b>STORAGE &amp; OPERATING TEMPERATURE</b>	-20° to +120°F (-29° to +49°C). <i>For U.L. Certificated installations, +32° to +120°F (0° to +49°C).</i>
<b>TEST FEATURES</b>	Externally visible alarm LED.
<b>SIGNAL PROCESSING</b>	Enhanced signal processing provides 2 sensitivity settings.
<b>ENCLOSURE DESIGN</b>	High impact ABS plastic enclosure with internal sliding lens frame. Measures 3.35" H., by 2.75" W., by 1.9" D. (8.5 cm H., by 6.98 cm W., by 4.8 cm D.).
<b>COVERAGE</b>	Standard - Broad 35 ft. by 40 ft. (10.7 m by 12.2 m) Optional - Barrier 35 ft. by 3 ft. (10.7 m by 0.9 m) OLB94-3* Pet 35 ft. by 40 ft. (10.7 m by 12.2 m) OLP94-3* Long Range 70 ft. by 7 ft. (21.4 m by 2.1 m) OLR94-3* Narrow Pet 70 ft. by 7 ft. (21.4 m by 2.1 m) OLN94-3* Dense Wide Angle 35 ft. (10.7 m) by 110° OLV94-3* Dual Corridor (2) 70 ft. (21.4 m) barriers and 35 ft. (10.7 m) by 10.7 m center coverage OLC94-3*
<b>MOUNTING</b>	Surface or corner mount. Recommended mounting height is 7.5 feet (2.3 m). Mounting range is from 4 to 10 feet (1.2 m to 3 m).
<b>ORDERING INFORMATION</b>	To order specify DS920i and optional accessories.
<b>OPTIONAL ACCESSORIES</b>	OLP94-3* Pet Lens, OLV94-3* Wide Angle Lens, OLC94-3* Dual Corridor Lens, OLB94-3* Barrier Lens, OLR94-3* Long Range Lens, OLN94-3* Narrow Pet Lens. * Shipped in packages of 3.
<b>LISTINGS</b>	U.L. Listing BP1448
<b>U.S. PATENT NUMBER</b>	#4,764,755

**COVERAGE**



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## ***PASSIVE INFRARED***



*The DS932Z is a microprocessor-based wall mount, Passive Infrared Intrusion Detector which uses enhanced signal processing to reduce false alarms. Several unique test features, including Motion Monitor, provide coverage integrity. Field replaceable "Flip Mirrored Optics," 6 different coverage patterns, and 7 different mounting options provide installation flexibility.*

### ***DS932Z Microprocessor-Based PIR with Self-Test***

#### ***FEATURING . . . . .***

- ***Enhanced Signal Processing***
- ***Motion Monitor\****
- ***Microprocessor Controlled Self-Test Supervision Systems***
- ***Flip Mirrored Optics\****
- ***6 Coverage Patterns***
- ***7 Mounting Options***
- ***U.L. Listed, U.L.C. Listed***

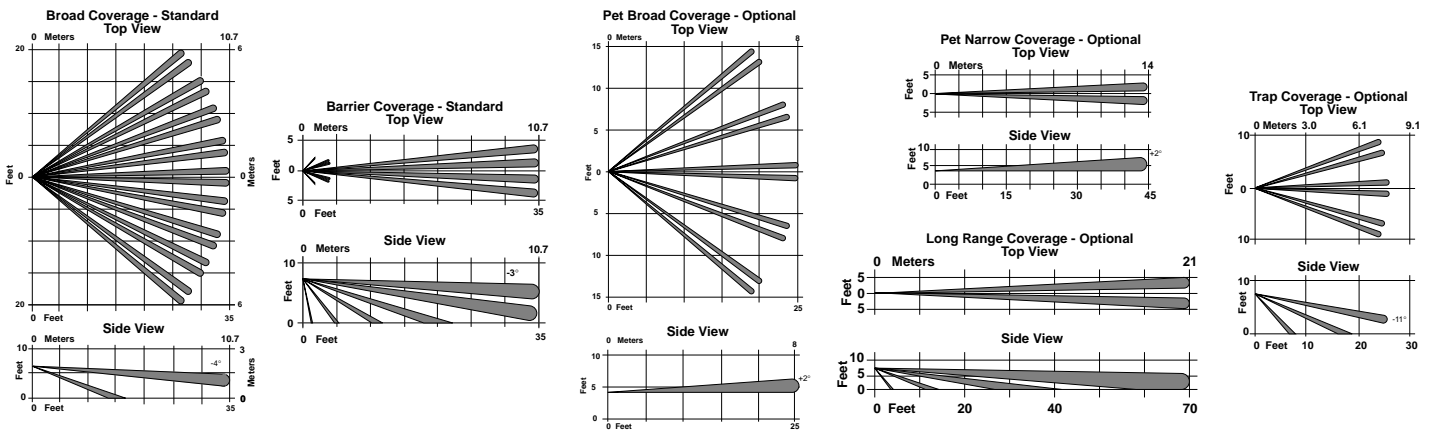
\*Patented



**SPECIFICATIONS**

<b>POWER REQUIREMENTS</b>	6 to 15 VDC, 25 mA @ 12 VDC.
<b>ALARM OUTPUT</b>	Form "C" reed relay rated at 3.0 watts, 125 mA @ 28 VDC.
<b>TAMPER/TROUBLE OUTPUT</b>	Normally Closed (with cover in place). Contacts rated at 28 VDC, 125 mA maximum. In series with silent operating Normally Closed (not in trouble condition) relay. Contacts rated 3 watts, 125 mA, 28 VDC maximum for DC resistive loads.
<b>RADIO FREQUENCY INTERFERENCE (RFI) IMMUNITY</b>	No alarm or setup on critical frequencies in the range from 26 to 950 Megahertz at 50 v/m.
<b>STORAGE &amp; OPERATING TEMPERATURE</b>	-20° to +120°F (-29° to +49°C). For U.L. Certificated installations, +32° to +120°F (0° to +49°C).
<b>TEST FEATURES</b>	Externally visible High Output Alarm LED flashes to indicate trouble condition.
<b>SUPERVISION FEATURES</b>	<i>PIR Supervision</i> - Provides trouble output in the event PIR circuitry fails. <i>Motion Monitor</i> - Switch selectable 3 and 30 day Motion Monitor supervision timers provide the detector with the ability to verify that there is a clear view of the protection area and that it has not been blocked.
<b>SIGNAL PROCESSING</b>	Enhanced signal processing. Field selectable for standard or intermediate.
<b>ENCLOSURE DESIGN</b>	Low profile, high impact ABS plastic enclosure; white color. Measures 3.7" H., by 3.2" W., by 2.1" D. (9.5 cm H., 8.2 cm W., 5.4 cm D.). Weight is 6.3 ozs. (180 gms).
<b>COVERAGE</b>	<i>Standard</i> - Broad 35 ft. by 40 ft. (10.5 m by 12 m) Barrier 35 ft. by 8 ft. (10.5 m by 2.4 m) <i>Optional</i> - Long Range 70 ft. by 6 ft. (21 m by 1.8 m) Trap 25 ft. by 16 ft. (7.5 m by 4.8 m) Pet (Broad) 25 ft. by 30 ft. (7.5 m by 9 m) Pet (Narrow) 45 ft. by 3.9 ft. (13.5 m by 1.2 m)
<b>MOUNTING</b>	<i>Standard</i> - Wall, corner, semi-flush. Recommended mounting height is 6.5 ft. (2 m). <i>Optional</i> - B328 Gimbal Mount Bracket, B332 Low Profile Mount Bracket, B333 Swivel Mount Bracket, B335 Low Profile Mount Bracket.
<b>ORDERING INFORMATION</b>	To order specify DS932Z and optional accessories.
<b>STANDARD ACCESSORIES</b>	Flush Mount Trim Plate, Flush Mount Back Clamp
<b>OPTIONAL ACCESSORIES</b>	OMLR/T-3* Mirror, OMPET-3* Mirror, B328 Gimbal Mount Bracket, B332 Low Profile Mount Bracket, B333 Swivel Mount Bracket, B335 Low Profile Mount Bracket, TC6000 Test Cord * Shipped in packages of 3.
<b>U.S. PATENT NUMBERS</b>	#4,689,486; #5,083,106
<b>LISTINGS</b>	U.L. Listing BP1448; U.L.C. Listing CBP196

**COVERAGE**



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## ***PASSIVE INFRARED***



*The DS934 is an ASIC controlled wall mount, Passive Infrared Intrusion Detector which uses Motion Analyzer II signal processing to reduce false alarms. Field replaceable pointable mirrored optics, 4 different coverage patterns and 3 different mounting options provide installation flexibility.*

### ***DS934 Motion Analyzer II PIR***

***FEATURING . . . . .***

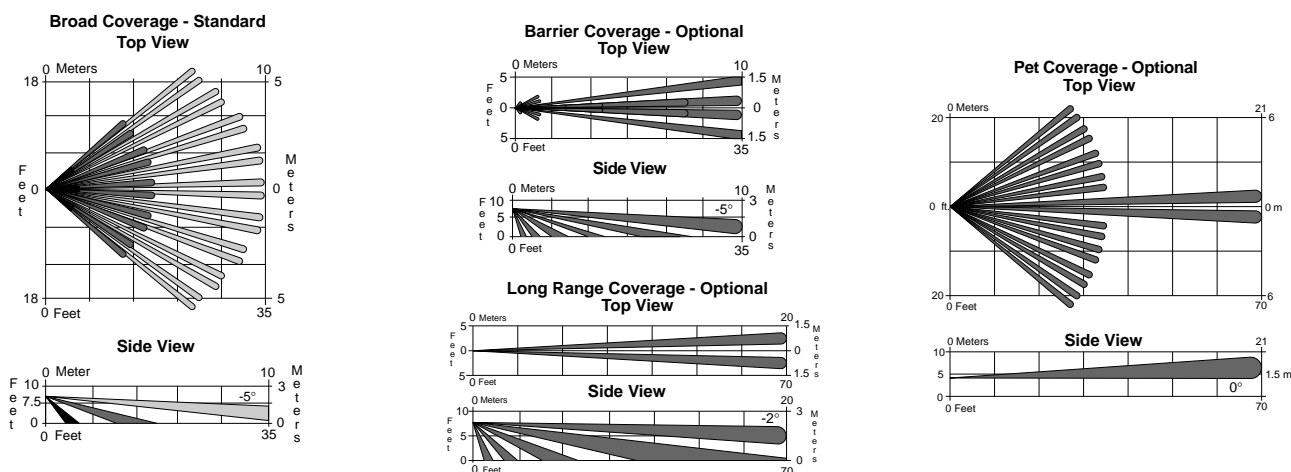
- ***Motion Analyzer II Processing\****
- ***Pointable Mirrored Optics***
- ***4 Coverage Patterns***
- ***3 Mounting Options***
- ***ASIC Electronics***
- ***U.L. Listed***

\*Patented

**SPECIFICATIONS**

<b>POWER REQUIREMENTS</b>	9 to 15 VDC, 15 mA @ 12 VDC.
<b>ALARM OUTPUT</b>	Normally Closed reed relay rated at 3.0 watts, 125 mA @ 28 VDC for resistive loads and protected by a 4.7 ohm resistor in the common "C" leg.
<b>TAMPER OUTPUT</b>	Normally Closed (with cover in place) tamper switch. Contacts rated at 28 VDC, 125 mA maximum.
<b>RADIO FREQUENCY INTERFERENCE (RFI) IMMUNITY</b>	No alarm or setup on critical frequencies in the range from 26 to 950 Megahertz at 50 v/m.
<b>STORAGE &amp; OPERATING TEMPERATURE</b>	-40° to +120°F (-40° to +49°C). <i>For U.L. Certificated installations, +32° to +120°F (0° to +49°C).</i>
<b>TEST FEATURES</b>	Externally visible alarm LED flashes to indicate trouble condition.
<b>SIGNAL PROCESSING</b>	Motion Analyzer II uses multiple thresholds and timing windows to analyze timing, amplitude, duration, and polarity of signals to make an alarm decision. Won't alarm on extreme levels of thermal and illumination disturbances caused by heaters and air conditioners, hot and cold drafts, sunlight, lightning, and moving headlights. Motion Analyzer II Processing provides two sensitivity settings.
<b>ENCLOSURE DESIGN</b>	Low profile, high impact ABS plastic enclosure; white color. Measures 4.25" H., by 2.75" W., by 1.8" D. (10.8 cm H., by 7 cm W., by 4.6 cm D.).
<b>COVERAGE</b>	<i>Standard</i> - Broad 35 ft. by 35 ft. (10.7 m by 10.7 m) <i>Optional</i> - Long Range 70 ft. by 10 ft. (21.4 m by 3.1 m) Barrier 35 ft. by 10 ft. (10.7 m by 3.1 m) Pet 35 ft. by 35 ft. (10.7 m by 10.7 m) with 70 ft. (21.4 m) Long Range Coverage
<b>MOUNTING</b>	<i>Standard</i> - Wall, corner. Mounting range is 6 to 10 ft. (1.8 m to 3.1 m). Recommended mounting height is 7.5 ft. (2.3 m) <i>Optional</i> - B335 Low Profile Mount Bracket
<b>INTERNAL POINTABILITY</b>	Coverage is adjustable -18° to +2° vertically.
<b>ORDERING INFORMATION</b>	To order specify DS934 and optional accessories.
<b>OPTIONAL ACCESSORIES</b>	OMB93-3* Barrier Mirror, OMLR93-3* Long Range Mirror, OMP93-3* Pet Mirror, B335-3* Low Profile Mount Bracket. <i>* Shipped in packages of 3.</i>
<b>U.S. PATENT NUMBERS</b>	#4,764,755
<b>LISTINGS</b>	U.L. Listing BP1448

**COVERAGE**



**Detection Systems, Inc.**

130 Perinton Parkway, Fairport, New York 14450-9199  
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## ***PASSIVE INFRARED***



*The DS935Z is a wall mount, Passive Infrared Intrusion Detector which uses Motion Analyzer II signal processing to reduce false alarms. Several unique test features, including Motion Monitor, provide coverage integrity. Field replaceable pointable mirrored optics, 4 different coverage patterns, and 3 different mounting options provide installation flexibility.*

### ***DS935Z Motion Analyzer II PIR with Self-Test***

***FEATURING . . . . .***

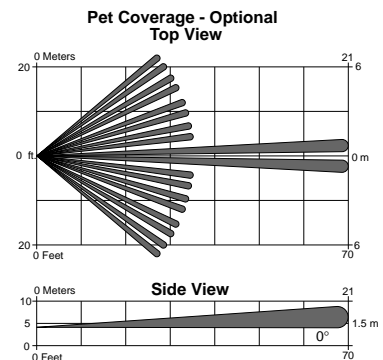
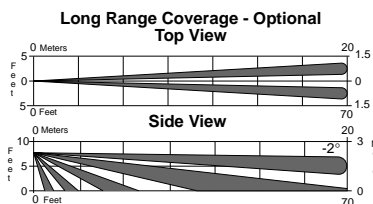
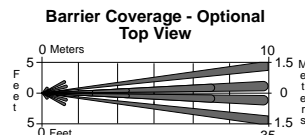
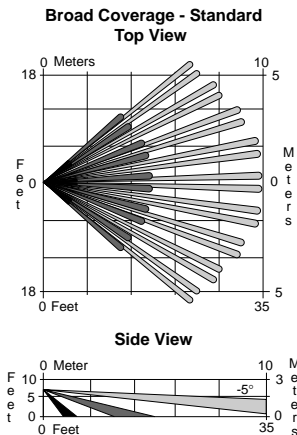
- ***Motion Analyzer II Processing\****
- ***Motion Monitor\****
- ***Self-Test Supervision Systems***
- ***Pointable Mirrored Optics***
- ***4 Coverage Patterns***
- ***3 Mounting Options***
- ***ASIC Electronics***
- ***U.L. Listed, U.L.C. Listed***

\*Patented

**SPECIFICATIONS**

<b>POWER REQUIREMENTS</b>	9 to 15 VDC, 20 mA @ 12 VDC.
<b>ALARM OUTPUT</b>	Form "C" reed relay rated at 3.0 watts, 125 mA @ 28 VDC for resistive loads and protected by a 4.7 ohm resistor in the common "C" leg.
<b>TAMPER OUTPUT</b>	Normally Closed (with cover in place) tamper switch. Contacts rated at 28 VDC, 125 mA max.
<b>TROUBLE OUTPUT</b>	Solid state output shorts to aux power negative when activated. Maximum current load is 25 mA.
<b>RADIO FREQUENCY INTERFERENCE (RFI) IMMUNITY</b>	No alarm or setup on critical frequencies in the range from 26 to 950 Megahertz at 50 v/m.
<b>STORAGE &amp; OPERATING TEMPERATURE</b>	-40° to +120°F (-40° to +49°C). <i>For U.L. Certificated installations, +32° to +120°F (0° to +49°C).</i>
<b>TEST FEATURES</b>	Externally visible alarm LED flashes to indicate trouble condition.
<b>SIGNAL PROCESSING</b>	Motion Analyzer II uses multiple thresholds and timing windows to analyze timing, amplitude, duration, and polarity of signals to make an alarm decision. Won't alarm on extreme levels of thermal and illumination disturbances caused by heaters and air conditioners, hot and cold drafts, sunlight, lightning, and moving headlights. Motion Analyzer II Processing provides two sensitivity settings.
<b>SUPERVISION FEATURES</b>	<i>PIR Supervision</i> - Provides trouble output in the event PIR circuitry fails. <i>Motion Monitor</i> - Switch selectable 4 and 30 day Motion Monitor supervision timers provide the detector with the ability to verify that there is a clear view of the protection area and that it has not been blocked.
<b>ENCLOSURE DESIGN</b>	Low profile, high impact ABS plastic enclosure; white color. Measures 4.25" H., by 2.75" W., by 1.8" D. (10.8 cm H., by 7 cm W., by 4.6 cm D.).
<b>COVERAGE</b>	<i>Standard</i> - Broad 35 ft. by 35 ft. (10.7 m by 10.7 m) <i>Optional</i> - Long Range 70 ft. by 10 ft. (21.4 m by 3.1 m) Barrier 35 ft. by 10 ft. (10.7 m by 3.1 m) Pet 35 ft. by 35 ft. (10.7 m by 10.7 m) with 70 ft. (21.4 m) Long Range Coverage
<b>MOUNTING</b>	<i>Standard</i> - Wall, corner. Mounting range is 6 to 10 ft. (1.8 m to 3.1 m). Recommended mounting height is 7.5 ft. (2.3 m) <i>Optional</i> - B335 Low Profile Mount Bracket
<b>INTERNAL POINTABILITY</b>	Coverage is adjustable -18° to +2° vertically.
<b>ORDERING INFORMATION</b>	To order specify DS935Z and optional accessories.
<b>OPTIONAL ACCESSORIES</b>	OMB93-3* Barrier Mirror, OMLR93-3* Long Range Mirror, OMP93-3* Pet Mirror, B335-3* Low Profile Mount Bracket. * Shipped in packages of 3.
<b>U.S. PATENT NUMBERS</b>	#4,764,755; #5,083,106
<b>LISTINGS</b>	U.L. Listing BP1448; U.L.C. Listing CBP196

**COVERAGE**



**Detection Systems, Inc.**

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## ***PASSIVE INFRARED***



*The DS936 is a Low Profile Ceiling Mount Passive Infrared Intrusion Detector, which uses alternate polarity pulse count. It uses a pointable Fresnel lens to provide up to 24 feet (7.2 m) of coverage and may be mounted on the surface, or semi-flush directly to a ceiling or a standard octagonal electrical box.*

### ***DS936 Low Profile Ceiling Mount PIR***

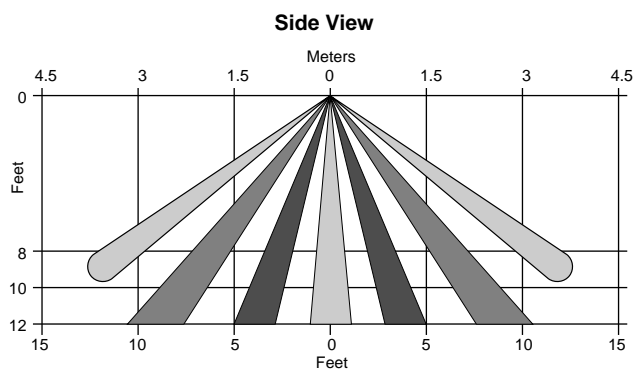
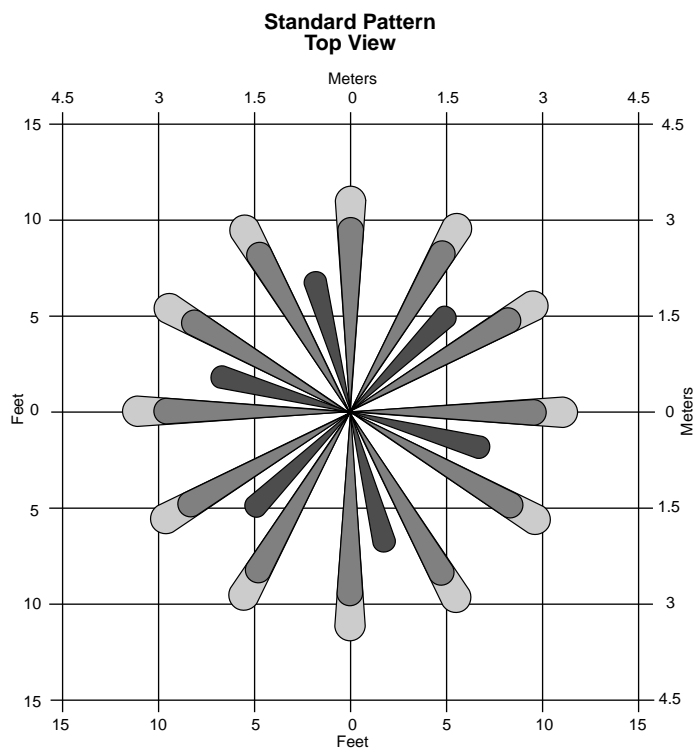
#### ***FEATURING . . . . .***

- ***Alternate Polarity Pulse Count***
- ***360° x 24 Foot (7.2 m) Pattern***
- ***Surface/Semi-Flush Mountable***
- ***Internal Pointability***
- ***Sealed Detector Chamber***
- ***Mounting Height 7 ft. to 12 ft. (2.1 m to 3.7 m)***

## SPECIFICATIONS

<b>POWER REQUIREMENTS</b>	10 to 15 VDC, 20 mA @ 12 VDC.
<b>ALARM OUTPUT</b>	Field selectable Normally Closed or Normally Open reed relay rated at 3.0 watts, 125 mA @ 28 VDC for resistive loads and protected by a 4.7 ohm resistor in the common "C" leg.
<b>TAMPER OUTPUT</b>	Normally Closed cover activated tamper switch with separate terminals. Tamper contacts rated 125 mA @ 28 VDC maximum.
<b>RADIO FREQUENCY INTERFERENCE (RFI) IMMUNITY</b>	No alarm or setup on critical frequencies in the range from 26 to 950 Megahertz at 50 v/m.
<b>STORAGE &amp; OPERATING TEMPERATURE</b>	-20° to +120°F (-29° to +49°C).
<b>TEST FEATURES</b>	Externally visible alarm LED.
<b>SIGNAL PROCESSING</b>	Alternate polarity pulse count. Field selectable for 1, 2, or 3 pulses.
<b>ENCLOSURE DESIGN</b>	High impact ABS plastic enclosure, with internal sliding lens. Measures 1.2" H., by 4.6" D. (3.05 cm H., by 11.7 cm D.).
<b>COVERAGE</b>	Provides 360° coverage pattern. Coverage diameter is approximately 2X the mounting height. (See pattern drawings).
<b>MOUNTING</b>	Surface or semi-flush in/on ceiling or in/on standard 4-inch (10.2 cm) octagonal electrical box. Mounting height range is from 7 to 12 feet (2.1 m to 3.6 m).
<b>INTERNAL POINTABILITY</b>	±15° rotationally
<b>ORDERING INFORMATION</b>	To order specify DS936 and optional accessories.
<b>OPTIONAL ACCESSORIES</b>	TC6000 Test Cord

## COVERAGE



**Detection Systems, Inc.**

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## ***PASSIVE INFRARED***



*The DS938Z is a ceiling mount, 360° Passive Infrared Intrusion Detector which uses Detection Systems' patented Motion Analyzer II Processing to reduce false alarms. Several unique self-test features, including Motion Monitor, provide coverage integrity. Field replaceable mirrored optics allow it to be mounted on ceilings from 8 ft. to 18 ft. (2.4 m to 5.5 m) in height.*

### ***DS938Z Ceiling Mount PIR with Controlled Self-Test***

#### ***FEATURING . . . . .***

- ***Motion Analyzer II Processing\****
- ***Motion Monitor\****
- ***Self-Test Supervision Systems***
- ***Changeable Mirrors***
- ***360° x 60 Foot (18.3 m) Diameter Pattern***
- ***8 to 18 Foot (2.4 m to 5.5 m) Mounting Height***
- ***U.L. Listed, U.L.C. Listed***

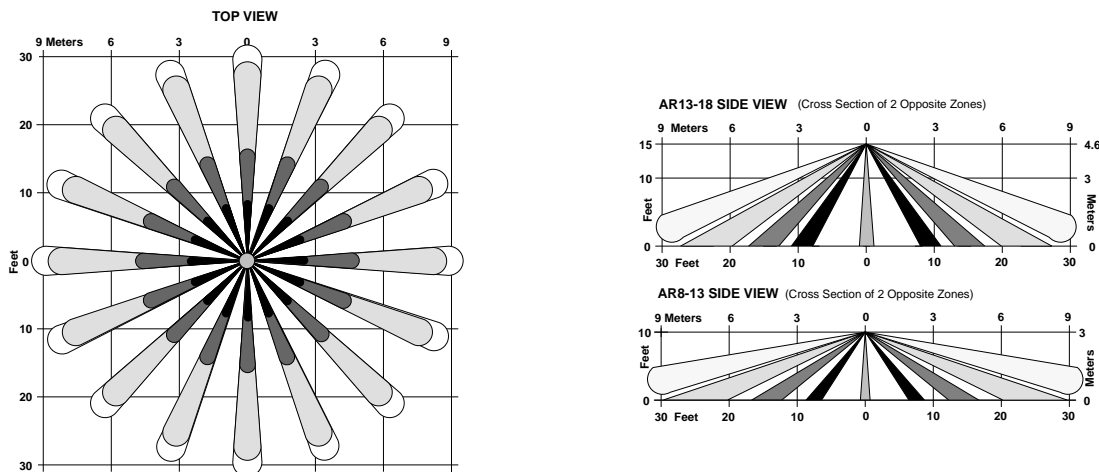
\*Patented



**SPECIFICATIONS**

<b>POWER REQUIREMENTS</b>	6 to 15 VDC, 18 mA @ 12 VDC.
<b>ALARM OUTPUT</b>	Form "C" reed relay rated at 3.0 watts, 125 mA @ 28 VDC for resistive loads.
<b>TAMPER OUTPUT</b>	Normally Closed (with cover in place) tamper switch. Contacts rated at 28 VDC, 125 mA maximum.
<b>TROUBLE OUTPUT</b>	Solid state output, shorts to negative when activated. Maximum current load is 25 mA.
<b>RADIO FREQUENCY INTERFERENCE (RFI) IMMUNITY</b>	No alarm or setup on critical frequencies in the range from 26 to 950 Megahertz at 50 v/m.
<b>STORAGE &amp; OPERATING TEMPERATURE</b>	-20° to +120°F (-29° to +49°C). <i>For U.L. Certificated installations, +32° to 120°F (0° to +49°C).</i>
<b>TEST FEATURES</b>	Three externally visible High Output Alarm LEDs visible from any angle, flash to indicate trouble condition. Internal Noise Voltage Test Pins provide precise pattern location and background disturbance evaluation using a standard analog meter.
<b>SIGNAL PROCESSING</b>	Motion Analyzer II uses multiple thresholds and timing windows to analyze timing, amplitude, duration, and polarity of signals to make an alarm decision. Won't alarm on extreme levels of thermal and illumination disturbances caused by heaters and air conditioners, hot and cold drafts, sunlight, lightning, and moving headlights. Motion Analyzer II Processing provides three sensitivity settings.
<b>SUPERVISION FEATURES</b>	<i>PIR Supervision</i> - Provides trouble output in the event PIR circuitry fails. <i>Motion Monitor</i> - Switch selectable 4 and 30 day Motion Monitor supervision timers provide the detector with the ability to verify that there is a clear view of the protection area and that it has not been blocked.
<b>ENCLOSURE DESIGN</b>	Modular high impact ABS electronic head and mounting/wiring base design with rugged removable polyethylene dome provides easy access to field setup switches. Measures 3.325"H., by 5.25" D. (8.4 cm H., by 13.3 cm D.).
<b>COVERAGE</b>	360° by 60 ft. (18.3 m) diameter. <i>For U.L. Certificated installations, the coverage is 360° by 54 ft. (16.5 m) when mounted 10 to 13 ft. (3.1 m to 4 m) using the AR8-13 Array, and when mounted from 15 to 18 ft. (4.6 m to 5.5 m) using the AR13-18 Array.</i>
<b>MOUNTING</b>	8 to 18 ft. (2.4 m to 5.5 m). Mounts directly to ceiling or to standard 4" (10.2 cm) octagonal electrical box.
<b>ORDERING INFORMATION</b>	To order specify DS938Z and optional accessories.
<b>STANDARD ACCESSORIES</b>	AR8-13-3* Mirror, AR13-18-3* Mirror. * <i>Shipped in packages of 3.</i>
<b>OPTIONAL ACCESSORIES</b>	TC6000 Test Cord
<b>LISTINGS</b>	U.L. Listing BP1448, U.L.C. Listing CBP196.

**COVERAGE**



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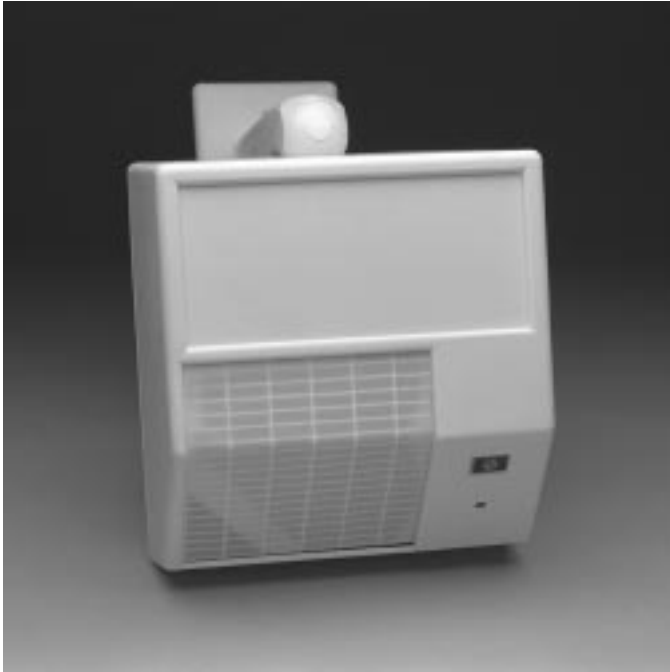
# *TRITECH™ DETECTORS REFERENCE GUIDE*



REFERENCE GUIDE

MODEL	SIGNAL PROCESSING	PATTERN TYPE			MOTION MONITOR	CONTACTS	POWER	OPTICS	PAGE #
		BROAD	LONG RANGE	PET IMMUNITY					
DS720	PIR and Microwave	80 ft. by 50 ft. 24 m by 15 m	120 ft. by 25 ft. 37 m by 8 m		•	Form "C"	6-15 VDC 32 mA @ 12 VDC	Changeable Mirror	36
			200 ft. by 10.5 ft. 61 m by 3 m						
DS820	PIR and Microwave	20 ft. by 20 ft. 6 m by 6 m		•		Normally Closed	9-15 VDC 16 mA @ 12 VDC	Fresnel Lens	38
DS835	PIR and Microwave	35 ft. by 35 ft. 10.5 m by 10.5 m		•		Normally Closed	9-15 VDC 16 mA @ 12 VDC	Fresnel Lens	38
DS860	PIR and Microwave	60 ft. by 60 ft. 18.3 m by 18.3 m	100 ft. by 10 ft. 31 m by 3 m			Normally Closed	9-15 VDC 16 mA @ 12 VDC	Fresnel Lens	40
DS950	PIR and Microwave	50 ft. by 50 ft. 15.3 m by 15.3 m			•	Form "C"	9-15 VDC 22 mA @ 12 VDC	Fresnel Lens	42
DS970	PIR and Microwave	70 ft. by 70 ft. 21.4 m by 21.4 m	100 ft. by 10 ft. 30.5 m by 3.1 m		•	Form "C"	9-15 VDC 22 mA @ 12 VDC	Fresnel Lens	42

## **TriTECH™ PIR/MICROWAVE**



*The DS720 is a microprocessor-based Dual Technology Passive Infrared/Microwave Intrusion Detector. Several unique supervision features including Motion Monitor and Anti-Masking protection, provide coverage integrity. Field replaceable mirrored optics and 3 different coverage patterns provide installation flexibility.*

### ***DS720 Long Range Microwave/PIR Detector***

**FEATURING . . . . .**

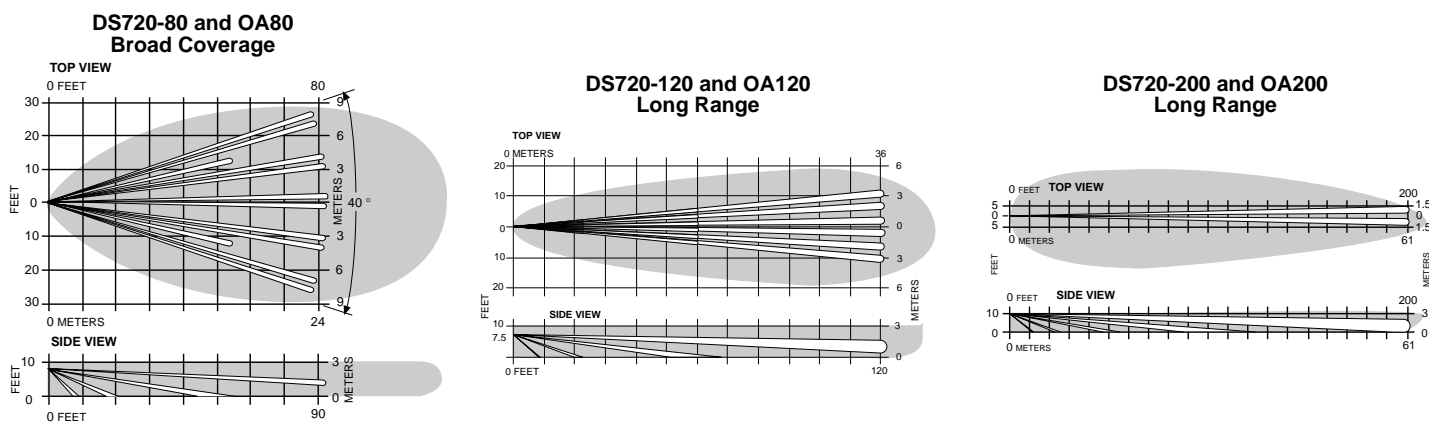
- ***Supervised Microwave and PIR***
- ***Motion Monitor\****
- ***Field Changeable Mirrored Optics\****
- ***Anti-Masking Feature***
- ***3 Coverage Patterns***
- ***U.L. Listed, FCC Certified***

\*Patented

**SPECIFICATIONS**

<b>COVERAGE</b>	DS720-80 Broad 80 ft. by 50 ft. (24 m by 15 m) DS720-120 Long Range 120 ft. by 25 ft. (37 m by 8 m) DS720-200 Long Range 200 ft. by 10.5 ft. (61 m by 3 m)
<b>SIGNAL PROCESSING</b>	Uses passive infrared and microwave technologies to provide an alarm condition upon simultaneous activation of both fields of protection. Adjustable PIR and microwave sensitivity.
<b>POWER REQUIREMENTS</b>	6 to 15 VDC, 32 mA @ 12 VDC
<b>ALARM OUTPUT</b>	Form "C" reed relay rated at 3.0 watts, 125 mA @ 28 VDC for resistive loads and protected by a 4.7 ohm resistor in the common "C" leg.
<b>TAMPER OUTPUT</b>	Normally Closed tamper switch. Contacts rated at 28 VDC, 125 mA maximum.
<b>TROUBLE OUTPUT</b>	Solid State output, shorts to negative when activated. Maximum current load is 25 mA.
<b>RADIO FREQUENCY INTERFERENCE (RFI) IMMUNITY</b>	No alarm or setup on critical frequencies in the range from 26 to 950 Megahertz at 50 v/m.
<b>STORAGE &amp; OPERATING TEMPERATURE TEST FEATURES</b>	-20° to +120°F (-29° to +49°C). For U.L. Certificated installations +32° to +120°F (0° to +49°C) Externally visible alarm LED flashes to indicate a trouble condition. Internal Noise Voltage Test Pins provide precise pattern location and background disturbance evaluation using a standard analog meter. Separate test LEDs for PIR and microwave activation. Internal sounder output for use with Sonalert™ sounder (not supplied by DS).
<b>SUPERVISION FEATURES</b>	<i>Microwave and PIR Supervision</i> - Patented fully supervised microwave and PIR circuitry provides single technology coverage in the event the microwave subsystem fails. The memory circuit can also be used to force a self-test at any time. <i>Microwave Anti-Masking Feature</i> - Selectable to provide a microwave supervision trouble signal if microwave reflective material (i.e. metal, wood, some plastics, etc.) is placed within one foot of the detector. <i>Motion Monitor</i> - Switch selectable 4 and 30 day Motion Monitor supervision timers provide the detector with the ability to verify that there is a clear view of the protection area and that it has not been blocked. The memory circuit can also be used to control this feature.
<b>ALARM MEMORY</b>	Provides indication of stored alarms for use in multiple unit applications by latching the alarm LED. Controlled by a switched voltage from the control panel.
<b>ENCLOSURE DESIGN</b>	High impact ABS plastic enclosure with steel grid over optics area houses a removable circuit board and mirror holder assembly. Measures 8" H. by 7.5" W., by 5" D. (20.8 cm H., 19.5 cm W., 13 cm D.).
<b>MOUNTING</b>	Bracket mount on wall or ceiling. Maximum mounting height is 15 ft. (4.6 m).
<b>LISTINGS</b>	U.L. Listing BP1448
<b>ORDERING INFORMATION</b>	To order specify DS720-80, DS720-120, or DS720-200 depending on pattern requirements.
<b>STANDARD ACCESSORIES</b>	B334 Swivel Mount Bracket
<b>OPTIONAL ACCESSORIES</b>	OA80-2*, OA120-2*, OA200-2* Mirrors, TC6000 Test Cord. * Shipped in packages of 2.
<b>U.S. PATENT NUMBERS</b>	#4,920,268; #5,083,106; #5,077,548; #4,660,024; #5,216,388.

**COVERAGE**



**Detection Systems, Inc.**

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## **TriTECH™ PIR/MICROWAVE**



*The DS820 and DS835 are microprocessor-based Tri-Technology Passive Infrared/Microwave Intrusion Detectors which provide immunity to false alarms caused by pets (a dog up to 80 pounds or up to 5 cats). Patented Passive Infrared and Microwave processing provides excellent catch performance with freedom from false alarms.*

## **DS820 & DS835 TriTech™ PIR/Microwave**



### **FEATURING . . . . .**

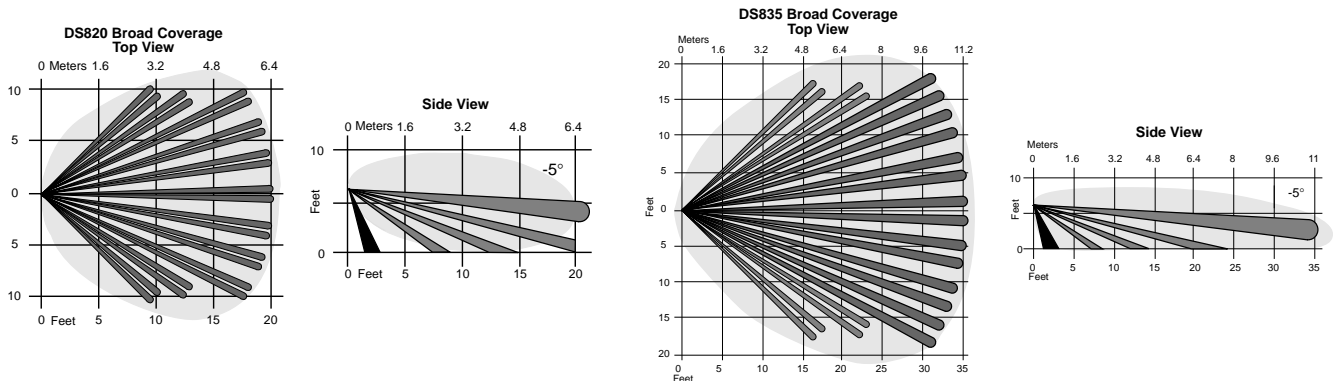
- **Artificial Intelligence**
- **Supervised Microwave and PIR\***
- **Selectable PIR Sensitivity\***
- **Pet Immunity**
- **4 Mounting Options**
- **Vertical and Horizontal Pointability**
- **U.L. Listed, FCC Certified**

\*Patented

**SPECIFICATIONS**

<b>COVERAGE</b>	DS820 Broad 20 ft. by 20 ft. (6 m by 6 m) DS835 Broad 35 ft. by 35 ft. (10.5 m by 10.5 m)
<b>SIGNAL PROCESSING</b>	Uses passive infrared and microwave technologies to provide an alarm condition upon simultaneous activation of both fields of protection. Alarm signals must meet the signaling requirements of both technologies to activate an alarm.
<b>PIR SIGNAL PROCESSING</b>	Motion Analyzer II uses multiple thresholds and timing windows to analyze timing, amplitude, duration, and polarity of signals to make an alarm decision. Won't alarm on extreme levels of thermal and illumination disturbances caused by heaters and air conditioners, hot and cold drafts, sunlight, lightning, and moving headlights. Motion Analyzer II Processing provides three sensitivity settings.
<b>PET IMMUNITY</b>	The detector is able to distinguish between signals caused by humans and signals caused by pets (a dog up to 80 pounds or up to 5 cats) or other small animals. This provides immunity to false alarms while maintaining proper catch performance of human targets.
<b>MICROWAVE SIGNAL PROCESSING</b>	Pattern recognition circuitry identifies and ignores repetitive false alarm sources. Adaptive Processing adjusts to background disturbances which helps to reduce false alarms while maintaining catch performance.
<b>POWER REQUIREMENTS</b>	9 to 15 VDC, 16 mA nominal @ 12 VDC
<b>ALARM OUTPUT</b>	Normally Closed reed relay rated at 3.0 watts, 125 mA @ 28 VDC for resistive loads and protected by a 4.7 ohm resistor in the common "C" leg.
<b>TAMPER OUTPUT</b>	Normally Closed tamper switch. Contacts rated at 28 VDC, 0.125 amp maximum.
<b>RADIO FREQUENCY INTERFERENCE (RFI) IMMUNITY</b>	No alarm or setup on critical frequencies in the range from 26 to 950 Megahertz at 50 v/m.
<b>MICROWAVE FREQUENCIES</b>	DS820 or DS835 10.525 Ghz DS820-A or DS835-A 10.687 Ghz (Export Only) DS820-B or DS835-B 9.9 Ghz (Export Only)
<b>STORAGE &amp; OPERATING TEMPERATURE</b>	-40° to +120°F (-40° to +49°C). For U.L. Certificated installations +32° to +120°F (0° to +49° C)
<b>TEST FEATURES</b>	Externally visible alarm LED flashes to indicate a trouble condition.
<b>SUPERVISION FEATURES</b>	<i>Microwave and PIR Supervision</i> - Patented fully supervised microwave and PIR circuitry provides single technology coverage in the event the microwave subsystem fails.
<b>ENCLOSURE DESIGN</b>	High impact ABS plastic enclosure. Measures 5" H., by 2.8" W., by 2.2" D. (12.7 cm H., 7.1 cm W., 5.6 cm D.).
<b>MOUNTING</b>	<i>Standard</i> - Surface or corner mount. Recommended mounting height is 6.5 ft. (2 m). Mounts to standard single gang electrical box. <i>Optional</i> - B335 Swivel Mount Bracket or B328 Gimbal Mount Bracket.
<b>INTERNAL POINTABILITY</b>	+2° to -10° vertical, ±10° horizontal
<b>ORDERING INFORMATION</b>	To order specify DS820 or DS835 for installations in the U.S., DS820-A, DS820-B, DS835-A, DS835-B for units with different frequencies for specific country requirements and optional accessories.
<b>OPTIONAL ACCESSORIES</b>	B335-3* Low Profile Swivel Mount Bracket, B328 Gimbal Mount Bracket. * Shipped in packages of 3.
<b>U.S. PATENTS</b>	#4,660,024; #4,764,755; #5,077,548; #5,208,567; #5,262,783, #5,450,062. Other patents pending.
<b>LISTINGS</b>	U.L. Listing BP1448

**COVERAGE**



**Detection Systems, Inc.**

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## **TriTECH™ PIR/MICROWAVE**



*The DS860 is a microprocessor-based Tri-Technology Passive Infrared/Microwave Intrusion Detector. Patented Passive Infrared/Microwave processing provides excellent catch performance with freedom from false alarms.*

## **DS860 TriTech™ PIR/Microwave**

### **FEATURING . . . . .**

- **Artificial Intelligence**
- **Supervised Microwave and PIR\***
- **Selectable PIR Sensitivity\***
- **4 Mounting Options**
- **1 Standard Coverage Pattern, 1 Optional**
- **Vertical and Horizontal Pointability**
- **U.L. Listed, FCC Certified**

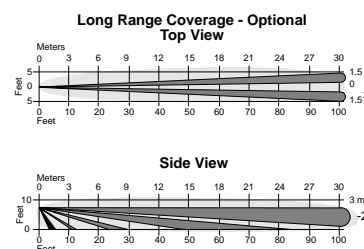
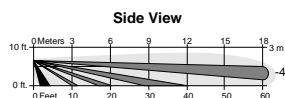
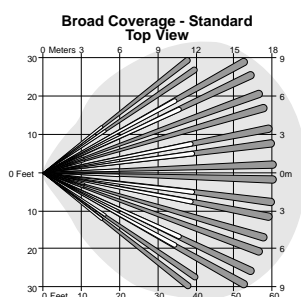
\*Patented



## SPECIFICATIONS

<b>COVERAGE</b>	<i>Standard</i> - Broad 60 ft. by 60 ft. (18.3 m by 18.3 m) <i>Optional</i> - Long Range 100 ft. by 10 ft. (31 m by 3 m)
<b>SIGNAL PROCESSING</b>	Uses passive infrared and microwave technologies to provide an alarm condition upon simultaneous activation of both fields of protection. Alarm signals must meet the signaling requirements of both technologies to activate an alarm.
<b>PIR SIGNAL PROCESSING</b>	Motion Analyzer II uses multiple thresholds and timing windows to analyze timing, amplitude, duration, and polarity of signals to make an alarm decision. Won't alarm on extreme levels of thermal and illumination disturbances caused by heaters and air conditioners, hot and cold drafts, sunlight, lightning, and moving headlights. Motion Analyzer II Processing provides three sensitivity settings.
<b>MICROWAVE SIGNAL PROCESSING</b>	Pattern recognition circuitry identifies and ignores repetitive false alarm sources. Adaptive Processing adjusts to background disturbances. This helps to reduce false activations while maintaining catch performance.
<b>POWER REQUIREMENTS</b>	9 to 15 VDC, 16 mA nominal @ 12 VDC
<b>ALARM OUTPUT</b>	Normally Closed reed relay rated at 3.0 watts, 125 mA @ 28 VDC for resistive loads and protected by a 4.7 ohm resistor in the common "C" leg.
<b>TAMPER OUTPUT</b>	Normally Closed tamper switch. Contacts rated at 28 VDC, 0.125 amp maximum.
<b>RADIO FREQUENCY INTERFERENCE (RF) IMMUNITY</b>	No alarm or setup on critical frequencies in the range from 26 to 950 Megahertz at 50 v/m.
<b>MICROWAVE FREQUENCIES</b>	DS860 10.525 Ghz DS860-A 10.687 Ghz (Export Only) DS860-B 9.9 Ghz (Export Only)
<b>STORAGE &amp; OPERATING TEMPERATURE</b>	-40° to +120°F (-40° to +49°C). <i>For U.L. Certificated installations +32° to +120°F (0° to +49° C)</i>
<b>TEST FEATURES</b>	Externally visible alarm LED flashes to indicate a trouble condition.
<b>SUPERVISION FEATURES</b>	<i>Microwave and PIR Supervision</i> - Patented fully supervised microwave and PIR circuitry provides single technology coverage in the event the microwave subsystem fails.
<b>ENCLOSURE DESIGN</b>	High impact ABS plastic enclosure. Measures 5" H., by 2.8" W., by 2.2" D. (12.7 cm H., 7.1 cm W., 5.6 cm D.).
<b>MOUNTING</b>	<i>Standard</i> - Surface or corner mount. Recommended mounting height is 7.5 ft. (2.3 m). Mounts to standard single gang electrical box. <i>Optional</i> - B335 Swivel Mount Bracket or B328 Gimbal Mount Bracket.
<b>INTERNAL POINTABILITY</b>	+2° to -10° vertical, ±10° horizontal
<b>ORDERING INFORMATION</b>	To order specify DS860 for installations in the U.S., DS860-A or DS860-B for units with different frequencies for specific country requirements and optional accessories.
<b>OPTIONAL ACCESSORIES</b>	OLR92-3* Long Range Lens, B335-3* Low Profile Swivel Mount Bracket, B328 Gimbal Mount Bracket. * <i>Shipped in packages of 3.</i>
<b>U.S. PATENTS</b>	#4,660,024; #4,764,755; #5,077,548; #5,208,567; #5,262,783; #5,450,062. Other patents pending.
<b>LISTINGS</b>	U.L. Listing BP1448

## COVERAGE



### Detection Systems, Inc.

130 Perinton Parkway, Fairport, New York 14450-9199  
(716) 223-4060 • (800) 289-0096 • Fax: (716) 223-9180

## **TriTECH™ PIR/MICROWAVE**



*The DS950 and DS970 are microprocessor-based Tri-Technology Passive Infrared/Microwave Intrusion Detectors. Several unique supervision features, including Anti-Masking protection and Motion Monitor, provide coverage integrity. Patented Passive Infrared and Microwave processing provides excellent catch performance with freedom from false alarms.*

### ***DS950 & DS970 High Performance TriTech™ PIR/Microwave***

**FEATURING . . . . .**

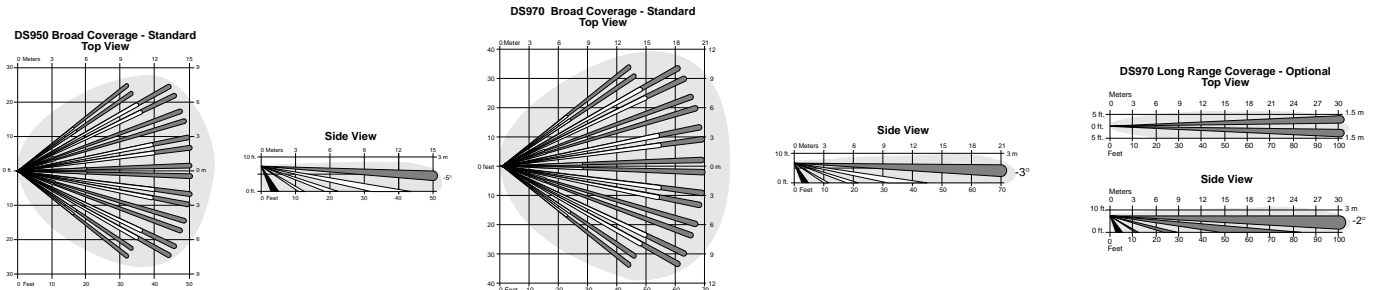
- **Artificial Intelligence**
- **Supervised Microwave and PIR\***
- **Motion Monitor**
- **Anti-Masking Feature**
- **Selectable PIR Sensitivity\***
- **Alarm Memory**
- **4 Mounting Options**
- **U.L. Listed, FCC Certified**

\*Patented

**SPECIFICATIONS**

<b>COVERAGE</b>	<i>Standard</i> DS950 Broad 50 ft. by 50 ft. (15.3 m by 15.3 m) DS970 Broad 70 ft. by 70 ft. (21.4 m by 21.4 m) <i>Optional</i> DS970 Long Range 100 ft. by 10 ft. (30.5 m by 3.1 m)
<b>SIGNAL PROCESSING</b>	Uses passive infrared and microwave technologies to provide an alarm condition upon simultaneous activation of both fields of protection. Alarm signals must meet the signaling requirements of both technologies to activate an alarm.
<b>PIR SIGNAL PROCESSING</b>	Motion Analyzer II uses multiple thresholds and timing windows to analyze timing, amplitude, duration, and polarity of signals to make an alarm decision. Won't alarm on extreme levels of thermal and illumination disturbances caused by heaters and air conditioners, hot and cold drafts, sunlight, lightning, and moving headlights. Motion Analyzer II Processing provides two sensitivity settings.
<b>MICROWAVE SIGNAL PROCESSING</b>	Pattern recognition circuitry identifies and ignores repetitive false alarm sources. Adaptive Processing adjusts to background disturbances. This helps to reduce false activations while maintaining catch performance.
<b>POWER REQUIREMENTS</b>	9 to 15 VDC, 22 mA nominal @ 12 VDC
<b>ALARM OUTPUT</b>	Form "C" reed relay. Contacts rated at 3.0 watts, 125 mA @ 28 VDC for resistive loads.
<b>TAMPER OUTPUT</b>	Normally Closed (with cover in place) tamper switch. Contacts rated at 28 VDC, 125 mA maximum.
<b>TROUBLE OUTPUT</b>	Solid state output, shorts to ground (-) when the detector is in a supervision trouble condition. Maximum current load is 25 mA, Vsat @ 10 mA = 0.5 VDC.
<b>RADIO FREQUENCY INTERFERENCE (RFI) IMMUNITY</b>	No alarm or setup on critical frequencies in the range from 26 to 950 Megahertz at 50 v/m.
<b>MICROWAVE FREQUENCIES</b>	DS950 or DS970 10.525 Ghz DS950-A or DS970-A 10.687 Ghz (Export Only) DS950-B or DS970-B 9.9 Ghz (Export Only)
<b>STORAGE &amp; OPERATING TEMPERATURE</b>	-40° to +120°F (-40° to +49°C). <i>For U.L. Certificated installations, +32° to 120°F (0° to +49°C).</i>
<b>TEST FEATURES</b>	Three color alarm LED. Separate LED color for alarm, PIR, and microwave activation. Internal Noise Voltage Test Pins provide precise pattern location and background disturbance evaluation using a standard analog meter. Trouble Memory feature recalls trouble conditions.
<b>SUPERVISION FEATURES</b>	<i>Microwave and PIR Supervision</i> - Patented fully supervised microwave and PIR circuitry provides single technology coverage in the event the microwave subsystem fails. <i>Microwave Anti-Masking</i> - Provides supervision trouble signal if microwave reflective material (i.e. metal, wood, some plastics, etc.) is placed within one foot of the detector. <i>Motion Monitor</i> - Switch selectable 4 and 30 day Motion Monitor supervision timers provide the detector with the ability to verify that there is a clear view of the protection area and that is has not been blocked. The memory circuit can also be used to control this feature.
<b>ALARM MEMORY</b>	Provides indication of stored alarms for use in multiple unit applications by latching the alarm LED. Controlled by a switched voltage from the control panel.
<b>MICROWAVE INHIBIT</b>	When using the memory input, the microwave portion of the detector can be turned off during the disarm period.
<b>ENCLOSURE DESIGN</b>	High impact ABS plastic enclosure. Measures 5" H., by 2.8" W., by 2.2" D. (12.7 cm H., 7.1 cm W., 5.6 cm D.).
<b>MOUNTING</b>	<i>Standard</i> - Surface or corner mount. Recommended mounting height is 7.5 ft. (2.3 m). Mounts to standard single gang electrical box. <i>Optional</i> - B335 Swivel Mount Bracket or B328 Gimbal Mount Bracket.
<b>INTERNAL POINTABILITY</b>	+2° to -10° vertical, ±10° horizontal
<b>ORDERING INFORMATION</b>	To order specify DS950 or DS970 for installations in the U.S., DS950-A, DS950-B, DS970-A, DS970-B for units with different frequencies for specific country requirements and optional accessories.
<b>OPTIONAL ACCESSORIES</b>	OLR92-3* Long Range Lens, B335-3* Low Profile Swivel Mount Bracket, B328 Gimbal Mount Bracket, TC6000 Test Cord. * Shipped in packages of 3.
<b>U.S. PATENTS</b>	#4,660,024; #4,764,755; #5,077,548; #5,083,106; #5,208,567; #5,262,783; #5,450,062. Other patents pending.
<b>LISTINGS</b>	U.L. Listing BP1448

**COVERAGE**



**Detection Systems, Inc.**  
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# *PHOTOELECTRIC DETECTORS REFERENCE GUIDE*



REFERENCE GUIDE

MODEL	RANGE		POINTABILITY		ENVIRONMENTAL DISCRIMINATION	VOLTAGE INPUT	CURRENT DRAW	RETRANSMIT	INHIBIT WIRING	PAGE #
	INDOOR	OUTDOOR	HORIZONTAL	VERTICAL						
DS415i	500 ft. (150 m)	N/R	±90	±20		8 to 14.5 VDC 12 VAC	41 mA @ 12 VDC	•		46
DS422	130 ft. (40 m)	65 ft. (20 m)	±90	±10		9.8 to 28 VDC	40 mA			48
DS424	260 ft. (79 m)	130 ft. (40 m)	±90	±10		9.8 to 28 VDC	40 mA			48
DS426	395 ft. (120 m)	200 ft. (61 m)	±90	±10		9.8 to 28 VDC	40 mA			48
DS435i	500 ft. (150 m)	N/R	±90	±20		8 to 14.5 VDC	28 mA @ 12 VDC	•	•	46
DS452	400 ft. (122 m)	200 ft. (61 m)	±90	±10		10.5 to 28 VDC	70 mA			50
DS453	620 ft. (189 m)	360 ft. (110 m)	±90	±10		10.5 to 28 VDC	75 mA			50
DS455	800 ft. (244 m)	530 ft. (162 m)	±90	±10		10.5 to 28 VDC	80 mA			50
DS462	400 ft. (122 m)	200 ft. (61 m)	±90	±10	•	10.5 to 28 VDC	80 mA			50
DS463	620 ft. (189 m)	360 ft. (110 m)	±90	±10	•	10.5 to 28 VDC	85 mA			50
DS465	800 ft. (244 m)	530 ft. (162 m)	±90	±10	•	10.5 to 28 VDC	90 mA			50
DS474		400 ft. (122 m)	±90	±10	•	9.5 to 28.8 VDC	110 mA			52
DS476		660 ft. (201 m)	±90	±10	•	9.5 to 28.8 VDC	110 mA			52

## ***PHOTOELECTRIC DETECTORS***



*The DS415i/DS435i are Photoelectric Intrusion Detectors which consist of separate transmitters and receivers. The transmitter emits an invisible infrared beam to the receiver. If the beam is broken, the receiver signals an alarm.*

### ***DS415i/DS435i Indoor Photoelectric Detectors***

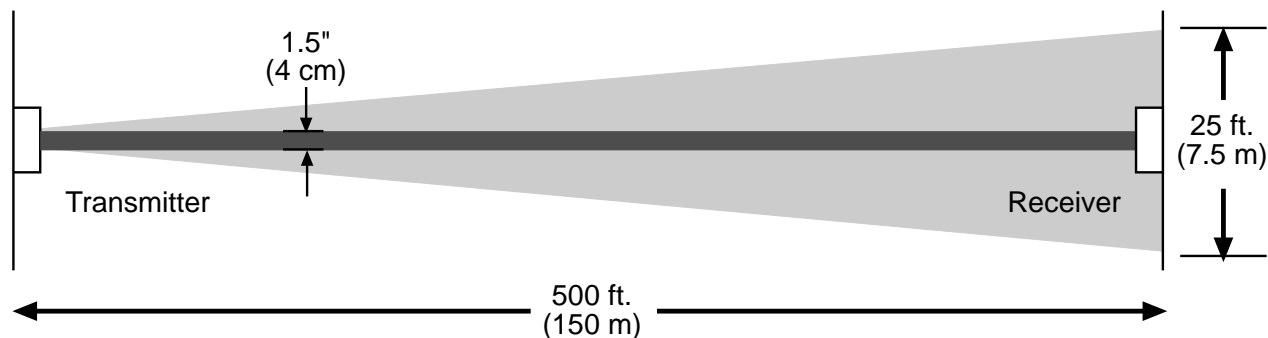
***FEATURING . . . . .***

- ***500 ft. (150 m) Range***
- ***Friction Lock Optics***
- ***Retransmission Circuitry***
- ***U.L. Listed, U.L.C. Listed***

**SPECIFICATIONS**

<b>COVERAGE</b>	500 ft. (150 m)
<b>POWER REQUIREMENTS</b>	DS415 8 to 14.5 VDC or 12 VAC, 41 mA @ 12 VDC DS435 8 to 14.5 VDC, 28 mA @ 12 VDC
<b>ALARM OUTPUT</b>	Form "C" contacts rated 3 watts, 125 mA @ 28 VDC for resistive loads.
<b>TAMPER OUTPUT</b>	Normally Closed contact rated 125 mA @ 28 VDC.
<b>RADIO FREQUENCY INTERFERENCE (RFI) IMMUNITY</b>	No alarm or setup on critical frequencies in the range from 26 to 950 Megahertz at 50 v/m.
<b>ALARM RETRANSMISSION</b>	Supervised alarm circuit transmitter which allows connection of Normally Open or Normally Closed devices such as magnetic contacts or relays from other detectors. Their condition is relayed to the receiver by transmitter shutdown.
<b>ALARM MEMORY</b>	<i>DS435i only.</i> Provides indication of stored alarms for use in multiple unit applications by latching the alarm LED at the receiver. Controlled by a switched voltage from the control panel.
<b>INHIBIT WIRING</b>	<i>DS435i only.</i> Optional signal synchronization wire between transmitter and receiver. Prevents receiver from being set-up by other sources such as another receiver. Units must have a common ground connection.
<b>STORAGE &amp; OPERATING TEMPERATURE</b>	-20° to +120°F (-29° to +49°C). <i>For U.L. Certificated installations, +32° to +120°F (0° to +49°C).</i>
<b>TEST FEATURES</b>	Alarm LED. Margin test switch to assist with alignment.
<b>PATTERN POINTABILITY</b>	±90° horizontal, ±20° vertical
<b>ENCLOSURE DESIGN</b>	High impact lexan cover with die cast zinc base. Measures 6" H., by 3" W., by 2.6" D. (15.4 cm H., by 7.7 cm W., by 6.6 cm D.).
<b>MOUNTING</b>	Surface mount.
<b>LISTINGS</b>	U.L. Listing BP1448; U.L.C. Listing CBP196
<b>ORDERING INFORMATION</b>	To order specify DS415i for AC operation (including backup battery), DS415iDC for DC operation (not including battery), DS435i for DC only operation.
<b>STANDARD ACCESSORIES</b>	P333 Standby Battery (DS415i only)
<b>OPTIONAL ACCESSORIES</b>	TR12 Transformer, TC6000 Test Cord, AL402 Alignment Light.

**COVERAGE**



**Detection Systems, Inc.**

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## ***PHOTOELECTRIC DETECTORS***



*The DS420 Series are dual beam indoor/outdoor Photoelectric Intrusion Detectors that consist of separate transmitters and receivers. The transmitters emit invisible infrared beams to the receivers. If the beams are broken, the receivers signal an alarm.*

### ***DS420 Series Dual Beam Photoelectric Detectors***

***FEATURING . . . . .***

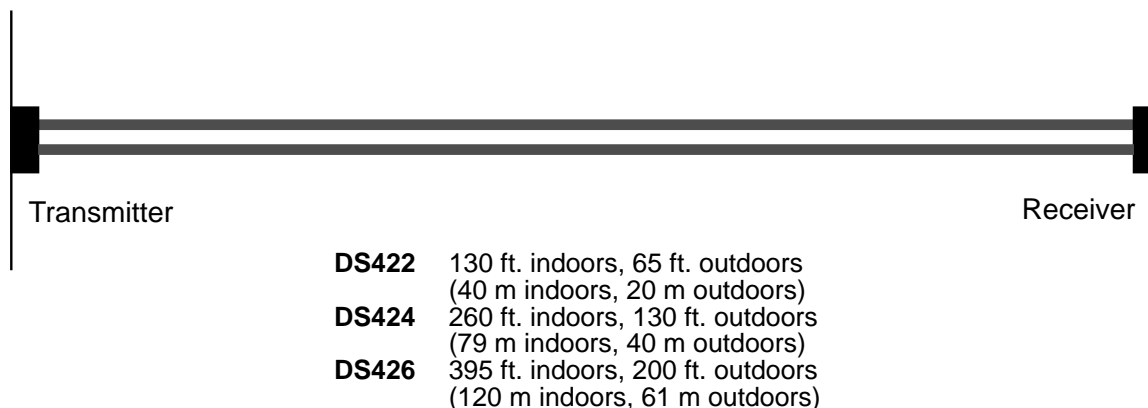
- *Dual Beam Detection*
- *3 Coverage Ranges*
- *2 Mounting Options*
- *Adjustable Trigger Response Time*
- *U.L. Listed*



## SPECIFICATIONS

<b>COVERAGE</b>	DS422 130 ft. indoors, 65 ft. outdoors (40 m indoors, 20 m outdoors) DS424 260 ft. indoors, 130 ft. outdoors (79 m indoors, 40 m outdoors) DS426 395 ft. indoors, 200 ft. outdoors (120 m indoors, 61 m outdoors)
<b>POWER REQUIREMENTS</b>	9.8 to 28 VDC. Each transmitter draws 15 mA DC. Each receiver draws 25 mA DC.
<b>STANDBY CURRENT</b>	Intended for connection to DC power supplies capable of supplying power if primary power fails. <i>Four hours (100 mA-H) minimum are required for Underwriters Laboratories' Certificated installations.</i>
<b>ALARM OUTPUT</b>	Form "C" contacts rated 0.2 Amps; 24 VDC.
<b>TAMPER OUTPUT</b>	Normally Closed cover activated tamper switch.
<b>BEAM INTERRUPT TIME</b>	35 to 500 milliseconds, selectable.
<b>RADIO FREQUENCY INTERFERENCE (RFI) IMMUNITY</b>	No alarm or setup on critical frequencies in the range from 26 to 950 Megahertz at 50 v/m.
<b>STORAGE &amp; OPERATING TEMPERATURE</b>	-22° to 140°F (-30° to +60°C). 0 to 95% relative humidity (non-condensing).
<b>TEST FEATURES</b>	Externally visible alarm LED. Internal transmitter operation LEDs. Voltage output at receivers for alignment purposes. The LED flashes at different rates during alignment to assist in installation.
<b>PATTERN POINTABILITY</b>	±90° horizontal, ±10° vertical
<b>ENCLOSURE DESIGN</b>	High impact acrylic enclosure. Measures 6.75" H., by 2.6" W., by 2.6" D. (17.1 cm H., by 6.5 cm W., by 6.5 cm D.).
<b>MOUNTING</b>	Surface or pole mount. Mounts to standard single gang box.
<b>LISTINGS</b>	U.L. Listing S3019
<b>ORDERING INFORMATION</b>	To order specify DS422, DS424, or DS426 and optional accessories. Each set includes a transmitter and receiver.
<b>OPTIONAL ACCESSORIES</b>	MP-1 3 ft. Metal Pole (2), MP-2 4 ft. Metal Pole (2), MP-3 L-Curved Metal Pole (2), AL402 Alignment Light. <i>All options provide enough equipment for one beam pair.</i>

## COVERAGE



### Detection Systems, Inc.

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## ***PHOTOELECTRIC DETECTORS***



*The DS450 and DS460 Series are dual beam indoor/outdoor Photoelectric Intrusion Detectors that consist of separate transmitters and receivers. The transmitters emit invisible infrared beams to the receivers. If the beams are broken, the receivers signal an alarm.*

### ***DS450/DS460 Series Dual Beam Photoelectric Detectors***

***FEATURING . . . . .***

- *Dual Beam Detection*
- *3 Coverage Ranges*
- *3 Mounting Options*
- *Environmental Discrimination Circuit*  
*(available on DS462, DS463, and DS465)*
- *U.L. Listed*

**SPECIFICATIONS**

<b>COVERAGE</b>	DS452 and DS462 400 ft. indoors, 200 ft. outdoors (122 m indoors, 61 m outdoors) DS453 and DS463 620 ft. indoors, 360 ft. outdoors (189 m indoors, 110 m outdoors) DS455 and DS465 800 ft. indoors, 530 ft. outdoors (244 m indoors, 162 m outdoors)
<b>POWER REQUIREMENTS</b>	10.5 to 28 VDC. DS452 draws 70 mA @ 12 VDC DS453 draws 75 mA @ 12 VDC DS455 and DS462 draw 80 mA @ 12 VDC DS463 draws 85 mA @ 12 VDC DS465 draws 90 mA @ 12 VDC
<b>STANDBY CURRENT</b>	Intended for connection to DC power supplies capable of supplying power if primary power fails. <i>Four hours (100 mA-H) minimum are required for Underwriters Laboratories' Certified installations.</i>
<b>ALARM OUTPUT</b>	Form "C" rated 1 Amp @ 24 VDC, 500 mA @ 120 VAC for resistive loads.
<b>TAMPER OUTPUT</b>	Normally Closed cover activated tamper switch.
<b>RADIO FREQUENCY INTERFERENCE (RFI) IMMUNITY</b>	No alarm or setup on critical frequencies in the range from 26 to 950 Megahertz at 50 v/m.
<b>ENVIRONMENTAL DISCRIMINATION CIRCUITRY</b>	<i>DS462, DS463, and DS465 only.</i> Monitors gradual loss of signal due to dust, fog, rain, snow, etc. Provides Normally Closed output when signal loss reaches 90%. May be field configured to bypass alarm relay when activated.
<b>STORAGE &amp; OPERATING TEMPERATURE</b>	-31° to +151°F (-35° to +66°C) with optional PEH-1 heater. -4° to +151°F (-20° to +66°C) without heater.
<b>TEST FEATURES</b>	Externally visible alarm LED. Internal transmitter operation LEDs. Voltage output at receivers for alignment purposes.
<b>PATTERN POINTABILITY</b>	±90° horizontal, ±10° vertical
<b>ENCLOSURE DESIGN</b>	High impact acrylic enclosure. Measures 15.5" H., by 3.6" W., by 3.3" D. (39.4 cm H., 9.1 cm W., 8.4 cm D.).
<b>MOUNTING</b>	Surface or pole mount.
<b>LISTINGS</b>	U.L. Listing BP1448.
<b>ORDERING INFORMATION</b>	To order specify DS452, DS453, DS455, DS462, DS463, or DS465 and optional accessories.
<b>OPTIONAL ACCESSORIES</b>	MP-1 3 ft. Metal Pole (2), MP-2 4 ft. Metal Pole (2), MP-3 L-Curved Metal Pole (2), WE452 Weather Enclosure, WM452 Wall Enclosure, PEH-1 Heater, AL402 Alignment Light. <i>All options provide enough equipment for one beam pair.</i>

**COVERAGE**

**Transmitter**

**Receiver**



- DS452 and DS462** 400 ft. indoors, 200 ft. outdoors (122 m indoors, 61 m outdoors)
- DS453 and DS463** 620 ft. indoors, 360 ft. outdoors (189 m indoors, 110 m outdoors)
- DS455 and DS465** 800 ft. indoors, 530 ft. outdoors (244 m indoors, 162 m outdoors)

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## ***PHOTOELECTRIC DETECTORS***



*The DS474 and DS476 are quad beam indoor/outdoor Photoelectric Intrusion Detectors that consist of a separate transmitter and receiver. The transmitter emits invisible infrared beams to the receiver. If these beams are broken, the receiver signals an alarm. Multiple channel operation is provided to increase system flexibility.*

### ***DS470 Series Quad Beam Indoor/Outdoor Photoelectric Detectors***

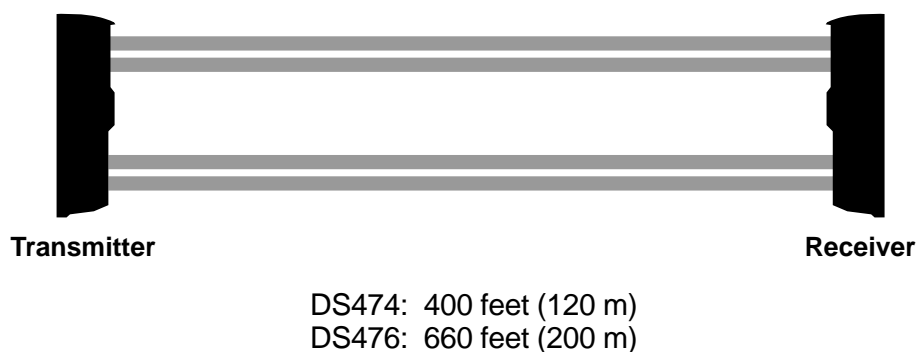
***FEATURING . . . . .***

- ***Quad Beam Detection***
- ***2 Coverage Ranges***
- ***4 Mounting Options***
- ***Environmental Discrimination Circuit***
- ***Multiple Channel Operation***
- ***And/Or Mode Selection***
- ***U.L. Listed***

## SPECIFICATIONS

<b>COVERAGE</b>	DS474 400 ft. (120 m) DS476 660 ft. (200 m)
<b>POWER REQUIREMENTS</b>	9.5 to 28.8 VDC, non-polarized.
<b>ALARM OUTPUT</b>	Form "C" contacts rated 0.2 A @ 30 VDC.
<b>TAMPER OUTPUT</b>	Normally Closed tamper switch rated at 0.2 A @ 30 VDC.
<b>CURRENT DRAW</b>	Transmitter 43 mA Receiver 67 mA Standby, 50 mA Alarm
<b>BEAM INTERRUPT TIME</b>	Adjustable from 50 to 200 milli-seconds.
<b>RADIO FREQUENCY INTERFERENCE (RFI) IMMUNITY</b>	No alarm or setup on critical frequencies in the range from 26 to 950 Megahertz at 50 v/m.
<b>ENVIRONMENTAL DISCRIMINATION CIRCUITRY</b>	Monitors gradual loss of signal due to dust, fog, rain, snow, etc. Normally Closed output opens when signal loss reaches 90%. May be field configured to bypass alarm relay when activated.
<b>MULTIPLE CHANNEL OPERATION</b>	The detectors can be configured for up to 8 different channels. This allows multiple units to be used in close proximity to one another without the possibility of receiver cross-talk. This is particularly useful when stacking multiple beam sets.
<b>AND/OR MODE SELECTION</b>	The detectors can be configured to cause an alarm either when all four beams are blocked, or when either the upper or lower beams are blocked. This allows for detection of smaller objects and eliminates the possibility of crawl through.
<b>STORAGE &amp; OPERATING TEMPERATURE</b>	-13° to +140°F (-25° to +60°C).
<b>TEST FEATURES</b>	Externally visible alarm LED. Internal transmitter operation LEDs. Flashing LED and voltage output at receiver for alignment purposes.
<b>PATTERN POINTABILITY</b>	±90° horizontal, ±10 vertical
<b>ENCLOSURE DESIGN</b>	High impact acrylic enclosure. Measures 15.5" H., by 4.25" W., by 4.25" D. (39.4 cm H., by 10.8 cm W., by 10.8 cm D.).
<b>MOUNTING</b>	Surface or pole mount to 1 5/8" - 1 3/4" (4.11 - 4.45 cm) O.D. pole.
<b>ORDERING INFORMATION</b>	To order specify DS474 or DS476 and optional accessories.
<b>STANDARD ACCESSORIES</b>	Alignment Telescope.
<b>OPTIONAL ACCESSORIES</b>	MP-1 3 ft. Metal Pole (2), MP-2 4 ft. Metal Pole (2), MP-3 L-Curved Metal Pole (2), WE470 Splash Resistant Enclosure, BE470 Back to Back Enclosure. <i>All options provide enough equipment for one beam pair.</i>
<b>LISTINGS</b>	U.L. Listing BP1448

## COVERAGE



### Detection Systems, Inc.

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# ***SMOKE DETECTORS REFERENCE GUIDE***



REFERENCE GUIDE

DETECTORS

MODEL	HEAT DETECTOR	SEPARATE BASE	4-WIRE	2-WIRE	VOLTAGE INPUT	CURRENT DRAW		PAGE #
						STANDBY	ALARM	
DS240 350 ft. Beam Smoke			•		18 to 32 VDC	Rcvr: 45 mA @ 24 VDC Trans: 20 mA @ 24 VDC	Receiver: 60 mA	56
DS241 350 ft. Beam Smoke			•		10.2 to 15 VDC	Rcvr: 50 mA @ 12 VDC Trans: 20 mA @ 12 VDC	Receiver: 60 mA	56
DS250		•	Requires MB4W Series Base	Requires MB2W Series Base	Dependent upon base	80 µA @ 12 VDC 90 µA @ 24 VDC	Dependent upon base	58
DS250TH	135°F Thermistor	•	Requires MB4W Series Base	Requires MB2W Series Base	Dependent upon base	80 µA @ 12 VDC 90 µA @ 24 VDC	Dependent upon base	58
DS282				•	8.5 to 33 VDC	80 µA @ 12 VDC 90 µA @ 24 VDC	Dependent upon Control Panel	60
DS282TH	135°F Thermistor			•	8.5 to 33 VDC	80 µA @ 12 VDC 90 µA @ 24 VDC	Dependent upon Control Panel	60
DS284			•		10 to 30 VDC	80 µA @ 12 VDC 90 µA @ 24 VDC	16 mA @ 12 VDC 17 mA @ 24 VDC	60
DS284TH	135°F Thermistor		•		10 to 30 VDC	80 µA @ 12 VDC 90 µA @ 24 VDC	16 mA @ 12 VDC 17 mA @ 24 VDC	60

BASES (DS250 Series only)

BASE	DESCRIPTION	OUTPUT	DIAMETER
MB2W	2-wire	2-wire	5.5" (14 cm)
MB2WL	2-wire w/large diameter	2-wire	6.375" (16.2 cm)
MB4W	4-wire	Normally Open alarm contact. Rated 10 Watts, 0.5 Amps @ 100 VDC	6.375" (16.2 cm)
MB4WA	4-wire w/aux. relay	Normally Open alarm contact and Form "C" auxiliary contact. Contacts rated 62.5 VA, 0.5 A @ 125 VAC, 30 W, 1.0 A @ 20 VDC for resistive loads.	6.375" (16.2 cm)
MB4WE	4-wire w/Normally Open aux. relay and power supervision	Normally Open alarm contact and Normally Open auxiliary contact. Built-in Normally Closed power supervision relay opens on power loss. Contacts rated 62.5 VA, 0.5 A @ 125 VAC, 30 W, 1.0 A @ 30 VDC for resistive loads.	6.375" (16.2 cm)
MB4WS	4-wire w/externally powered 85 dB sounder	Normally Open alarm contact. Rated 10 Watts, 0.5 Amps @ 100 VDC. Built-in Sounder.	6.375" (16.2 cm)

## ***SMOKE DETECTORS***



*The DS240 and DS241 are long range projected beam type smoke detectors which consist of a separate transmitter and receiver. Internal pointability provides coverage flexibility without the need for brackets. Automatic Signal Synchronization and Range Adjustment reduce installation costs. Selectable sensitivity and alarm response time provide installation flexibility.*

### ***DS240 & DS241 Beam Smoke Detectors***

***FEATURING . . . . .***

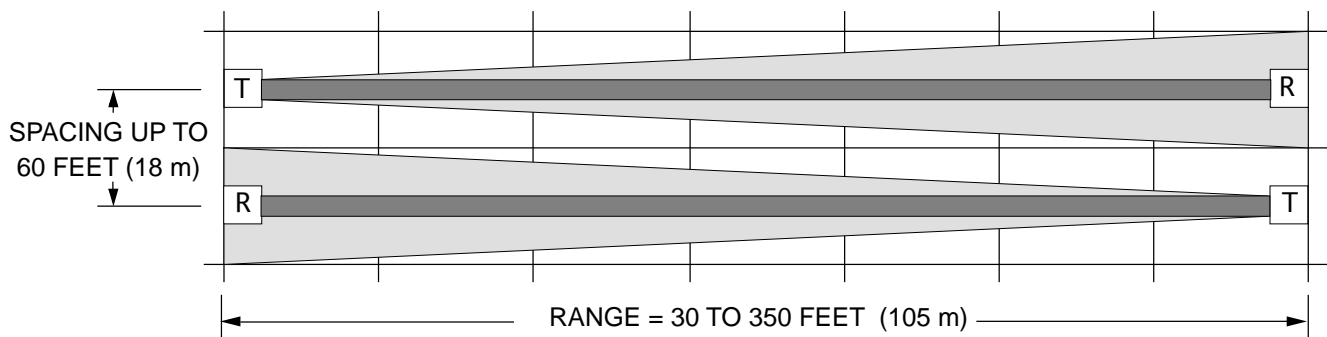
- ***Easy Bore Sight Alignment***
- ***30 ft. to 350 ft. (9 m to 107 m) Range***
- ***6 Sensitivity Levels***
- ***Internal Vertical & Horizontal Pointability***
- ***Automatic Signal Synchronization***
- ***Automatic Environment Compensation***
- ***Automatic Range Adjustment***
- ***U.L. Listed, U.L.C. Listed***



**SPECIFICATIONS**

<b>POWER REQUIREMENTS</b>	DS240 18 to 32 VDC DS241 10.2 to 15 VDC	Receiver: 45 mA @ 24 VDC Transmitter: 20 mA @ 24 VDC Receiver: 50 mA @ 12 VDC Transmitter: 20 mA @ 12 VDC
<b>ALARM OUTPUT</b>	One Normally Open contact rated 1 Amp, 60 VDC maximum for resistive loads. One Auxiliary Form "C" contact rated 1 Amp, 60 VDC maximum for resistive loads.	
<b>TAMPER/TROUBLE OUTPUT</b>	One Normally Closed contact rated 1 Amp, 60 VDC maximum for resistive loads and open when cover is removed, power is lost to receiver, or beam is blocked.	
<b>SIGNAL PROCESSING</b>	Automatic Signal Synchronization eliminates the need for a synchronization wire. Self-compensating circuitry compensates for signal loss due to dust or dirt buildup on lens and signals a trouble condition upon signal loss of 50%.	
<b>OPERATION</b>	The transmitter emits an invisible pulsed infrared beam to the receiver. If the beam is obscured beyond the selected threshold by smoke, the receiver signals an alarm. If the beam is completely blocked, the receiver signals a trouble.	
<b>ALARM RESPONSE SELECTIVITY</b>	Six (6) sensitivity settings are available. Selectable response time of 5 or 30 seconds.	
<b>STORAGE &amp; OPERATING TEMPERATURE</b>	-22° to +130°F (-30° to +54°C)	
<b>TEST FEATURES</b>	Externally visible LEDs on transmitter and receiver give indication of signal, alarm, and supervision conditions. Signal voltage output on receiver assists in alignment and troubleshooting. DIS2000 Indicator Plate (included) provides LED indication of the detector's status/condition, and provides a point to read/test the signal voltage.	
<b>DIMENSIONS</b>	7" H., by 5.5" W., by 5.5" D. (17.8 cm H., 13.9 cm W., 13.9 cm D.)	
<b>COVERAGE (Dependent on mounting height and pattern angle)</b>	30 to 350 foot (9 m to 107 m) range, up to 60 foot (18 m) spacing on smooth, flat ceilings.	
<b>MOUNTING</b>	Surface or ceiling mount to standard 4" (10.2 cm) square or octagonal electrical boxes.	
<b>PATTERN POINTABILITY</b>	Internally pointable ±90° horizontal, ±10° vertical.	
<b>RADIO FREQUENCY INTERFERENCE (RFI) IMMUNITY</b>	No alarm or setup on critical frequencies in the range from 26 to 950 Megahertz @ 50 v/m.	
<b>LISTINGS</b>	U.L. Listing S3019, U.L.C. Listing CS692, MSFM Permit #1943, NY City MEA Acceptance #MEA274-93-E, CSFM #7260-1062:106, and FM Job #0X2A9.AY	
<b>ORDERING INFORMATION</b>	To order specify DS240 for 24 volt operation, DS241 for 12 volt operation, DS240CAN for ULC installation, 24 volt operation, DS241CAN for ULC installation, 12 volt operation.	
<b>STANDARD ACCESSORIES</b>	DIS2000 Indicator Plate.	
<b>OPTIONAL ACCESSORIES</b>	DIS240 Remote Test/Indicator Plate, TK240 Field Test Kit, AL240 Alignment Strobe, and TC2000 Test Cord.	

**COVERAGE**



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## ***SMOKE DETECTORS***



*The DS250 Series are low profile, Photoelectric System type smoke detectors. They incorporate a separate detector and base design that permits use with both 2-wire and 4-wire bases. The patented chamber design provides superior immunity to false alarms caused by dust. Chamber Check™ self diagnostics allow the sensitivity to be verified by simply looking at the detector LED.*

### ***DS250 Series Photoelectric Smoke Detectors***

***FEATURING . . . . .***

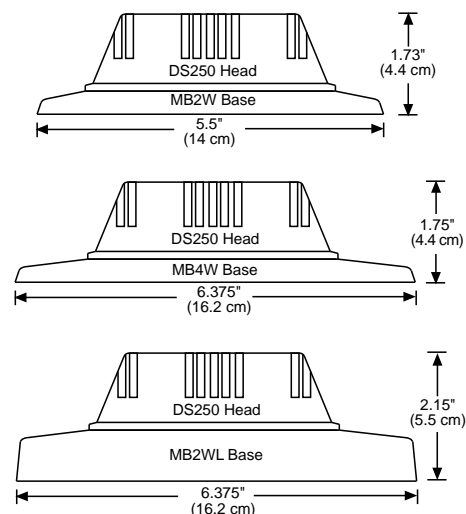
- ***Diagnostic/Sensitivity Test Features***
- ***Chamber Check™ Self Diagnostics***
- ***Field Replaceable Smoke Chamber***
- ***Easy Disassembly for Cleaning***
- ***Sensitivity Voltage Output***
- ***Interchangeable 2-Wire and 4-Wire Bases***
- ***12 or 24 VDC Operation***
- ***135°F Heat Sensor Option***
- ***U.L. Listed, U.L.C. Listed***

## SPECIFICATIONS

<b>POWER REQUIREMENTS</b>	2-wire 8.5 to 33 VDC 4-wire 10 to 30 VDC
<b>ALARM OUTPUT</b>	Signal output is dependent on base selection. See Base Selection Guide below.
<b>STANDBY CURRENT</b>	80 micro-amps @ 12 VDC; 90 micro-amps @ 24 VDC.
<b>ALARM CURRENT</b>	2-wire: Dependent on control panel. Panel must limit the Alarm Current to 100 mA maximum. 4-wire: MB4W - 48 mA @ 12 VDC MB4WA - 56 mA @ 12 & 24 VDC MB4WE - 80 mA @ 12 & 24 VDC MB4WS - Smoke detector: 48 mA @ 12 VDC Sounder: 15 mA @ 12 VDC, 25 mA @ 24 VDC
<b>RADIO FREQUENCY INTERFERENCE (RFI) IMMUNITY</b>	No alarm or setup on critical frequencies in the range from 26 to 950 Megahertz at 50 v/m.
<b>STORAGE &amp; OPERATING TEMPERATURE</b>	+32° to 100°F (0° to 38°C). 0 to 95% relative humidity (non-condensing).
<b>TEST FEATURES</b>	LED automatically flashes to indicate out of calibration level. Magnet operation/sensitivity test function meets the NFPA 72 testing recommendations. Voltage output allows direct reading of the sensitivity level using a standard DVM.
<b>CHAMBER CHECK™</b>	This feature allows the detector to automatically indicate if its calibration is out of the factory listed range. This allows NFPA guidelines for sensitivity testing to be met by visually inspecting the detector and checking the flash rate of the LED. If the calibration is out of range for more than 24 hours, the alarm LED on the detector will begin to flash once per second. This is an indication that the detector needs to be cleaned following the instructions provided with the detector. The LED will flash once every 3 seconds when the detector is operating normally.
<b>ENCLOSURE DESIGN</b>	High impact fire retardant ABS plastic enclosure and separate twist-lock bases.
<b>MOUNTING</b>	Compatible with 2-wire or 4-wire bases. Bases can be mounted to 4" octagon, single gang, wiremold #5738 and 4" square boxes. <b>NOTE:</b> The MB2W base cannot be mounted to a 4" square box.
<b>HEAT SENSOR TEMPERATURE (DS250TH ONLY)</b>	135°F (57°C)
<b>LISTINGS</b>	HEADS U.L. Listing S3019, U.L.C. Listing S3019, NY City MEA Acceptance #MEA274-93-E, CSFM #727-1062:108, and FM Job #0X8A6.AY. BASES U.L. Listing S3019, U.L.C. Listing S3019, NY City MEA Acceptance #MEA274-93-E, CSFM #7300-1062:107, and FM Job #0X8A6.AY.
<b>ORDERING INFORMATION</b>	To order specify DS250 detector (requires a base) or DS250TH detector with 135° heat sensing thermistor (requires a base).
<b>OPTIONAL ACCESSORIES</b>	RC1-10* Replacement Smoke Chamber, DT-1 Removal/Test tool (provides a means of accessing the detector without the use of a ladder by connecting to 1/2" EMT or standard broom handle). EOL200 End-of-Line Supervision Module for use with 4-wire systems. TC2000 Test Cord. * Shipped in packages of 10.

## BASE SELECTION GUIDE

Base	Description	Output	Diameter
MB2W	2-wire	2-wire	5.5" (14 cm)
MB2WL	2-wire w/large diameter	2-wire	6.375" (16.2 cm)
MB4W	4-wire	Normally Open alarm contact. Rated 10 Watts, 0.5 Amps @ 100 VDC	6.375" (16.2 cm)
MB4WA	4-wire w/aux. relay	Normally Open alarm contact and Form "C" auxiliary contact.  Contacts rated 62.5 VA, 0.5 A @ 125 VAC, 30 W, 1.0 A @ 30 VDC for resistive loads.	6.375" (16.2 cm)
MB4WE	4-wire w/Normally Open aux. relay and power supervision	Normally Open alarm contact and Normally Open auxiliary contact. Built-in Normally Closed power supervision relay opens on power loss.  Contacts rated 62.5 VA, 0.5 A @ 125 VAC, 30 W, 1.0 A @ 30 VDC for resistive loads.	6.375" (16.2 cm)
MB4WS	4-wire w/externally powered 85dB sounder	Normally Open alarm contact. Rated 10 Watts, 0.5 Amps @ 100 VDC. Built in sounder.	6.375" (16.2 cm)



### Detection Systems, Inc.

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## ***SMOKE DETECTORS***



*The DS280 Series are low profile, Photoelectric System type smoke detectors. The patented chamber design provides superior immunity to false alarms caused by dust. Chamber Check™ self diagnostics allow the sensitivity to be verified by simply looking at the detector LED.*

### ***DS280 Series Photoelectric Smoke Detectors***

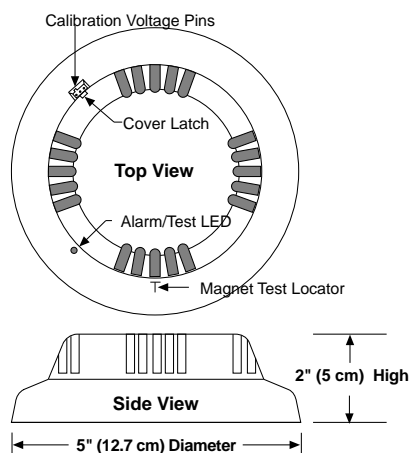
***FEATURING . . . . .***

- ***Direct Wire Design***
- ***Diagnostic/Sensitivity Test Features***
- ***Chamber Check™ Self Diagnostics***
- ***Field Replaceable Smoke Chamber***
- ***Easy Disassembly for Cleaning***
- ***Sensitivity Voltage Output***
- ***12 or 24 VDC Operation***
- ***135°F Heat Sensor Option***
- ***U.L. Listed***

## SPECIFICATIONS

<b>POWER REQUIREMENTS</b>	DS282 - 2-wire 8.5 to 33 VDC DS284 - 4-wire 10 to 30 VDC
<b>STANDBY CURRENT</b>	80 micro-amps @ 12 VDC; 90 micro-amps @ 24 VDC.
<b>ALARM CURRENT</b>	2-wire: Dependent on control panel. Panel must limit the Alarm Current to 100 mA maximum. 4-wire: 16 mA @ 12 VDC 17 mA @ 24 VDC
<b>RADIO FREQUENCY INTERFERENCE (RFI) IMMUNITY</b>	No alarm or setup on critical frequencies in the range from 26 to 950 Megahertz at 50 v/m.
<b>MAXIMUM RMS RIPPLE</b>	25 percent of DC input.
<b>STORAGE &amp; OPERATING TEMPERATURE</b>	+32° to 100°F (0° to 38°C). 0 to 95% relative humidity (non-condensing).
<b>TEST FEATURES</b>	LED automatically flashes to indicate out of calibration level. Magnet operation/sensitivity test function meets the NFPA 72 testing recommendations. Voltage output allows direct reading of the sensitivity level using a standard DVM.
<b>CHAMBER CHECK</b>	This feature allows the detector to automatically indicate if its calibration is out of the factory listed range. This allows NFPA guidelines for sensitivity testing to be met by visually inspecting the detector and checking the flash rate of the LED. If the calibration is out of range for more than 24 hours, the alarm LED on the detector will begin to flash once per second. This is an indication that the detector needs to be cleaned following the instructions provided with the detector. The LED will flash once every 3 seconds when the detector is operating normally.
<b>ENCLOSURE DESIGN</b>	High impact fire retardant ABS plastic enclosure and separate twist-lock mounting plate.
<b>MOUNTING</b>	A separate mounting plate may be mounted directly to 4-inch octagonal electrical boxes, single gang switch boxes, and wiremold surface box #5738. A removable terminal strip allows for quick installation.
<b>HEAT SENSOR TEMPERATURE (DS282TH AND DS284TH ONLY)</b>	135°F (57°C)
<b>LISTINGS</b>	U.L. Listing S3019, CSFM #7272-1062:108
<b>ORDERING INFORMATION</b>	To order specify DS282 for 2-wire applications, DS282TH for 2-wire applications with 135°F heat sensor, DS284 for 4-wire applications, or DS284TH for 4-wire applications with 135°F heat sensor.
<b>OPTIONAL ACCESSORIES</b>	RC1-10* Replacement Smoke Chamber, EOL200 End-of-Line Supervision Module, TC2000 Test Cord, DT-1 Removal/Test Tool (suitable for testing only, not for installation/removal). * Shipped in packages of 10.

## DIMENSIONS



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# *SPECIAL APPLICATIONS REFERENCE GUIDE*



**REFERENCE GUIDE**

<b>MODEL</b>	<b>PRODUCT TYPE</b>	<b>VOLTAGE</b>	<b>CONTACTS</b>	<b>COLOR/STYLE</b>	<b>PAGE #</b>
DS130	Request-to-Exit Sensor	12 or 24 VAC or VDC 35 mA @ 12 VDC	Form "C"	Gray	64
DS131	Request-to-Exit Sensor	12 or 24 VAC or VDC 35 mA @ 12 VDC	Form "C"	Black	64
DS150i	Request-to-Exit Sensor	12 or 24 VAC or VDC 26 mA @ 12 VDC	Two Form "C"	Gray	66
DS151i	Request-to-Exit Sensor	12 or 24 VAC or VDC 26 mA @ 12 VDC	Two Form "C"	Black	66
DS1101i	Glass Break Detector	6 to 15 VDC 23 mA @ 12 VDC	Form "C"	Round	68
DS1102i	Glass Break Detector	6 to 15 VDC 23 mA @ 12 VDC	Form "C"	Square	68
DS1103i	Glass Break Detector	9 to 15 VDC 21 mA @ 12 VDC	Normally Closed	Flush Mount	68
DS1108i	Glass Break Detector	9 to 15 VDC 21 mA @ 12 VDC	Normally Closed	Round	68
DS1520	Vibration/Shock Detector	9 to 15 VDC 10 mA max. @ 12 VDC ripple 2 Vp-p max.	Form "C"	Lt. Gray	70
DS1530	Vibration/Shock Detector	9 to 15 VDC 10 mA max. @ 12 VDC ripple 2 Vp-p max.	Form "C"	Lt. Gray	70

## *ACCESS CONTROL*



*The DS130 Series Exit Sensors are Passive Infrared Detectors specifically designed for “request-to-exit” applications. They detect motion in their coverage area and signal an access control system or door control device.*

### *DS130 Series Exit Sensors*

***FEATURING . . . . .***

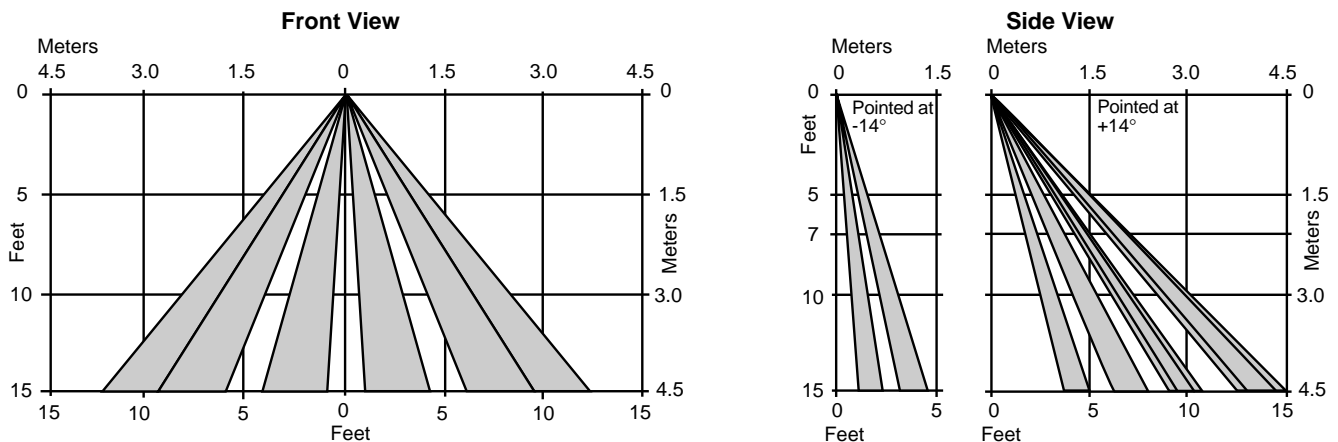
- *Single or Double Door Use*
- *Wall and Ceiling Mountable*
- *Internal Vertical Pointability*
- *Wrap-Around Coverage Pattern*
- *12 or 24 AC or DC Operation*



**SPECIFICATIONS**

<b>POWER REQUIREMENTS</b>	12 or 24 VAC or VDC, 35 mA @ 12 VDC
<b>RELAY OUTPUT</b>	One Form "C" Contact
<b>RELAY LATCH TIME</b>	Fixed, approximately 1 second after motion stops.
<b>RELAY MODE</b>	Retrigger mode only.
<b>POWER LOSS DEFAULT</b>	Fail Safe mode only.
<b>STORAGE &amp; OPERATING TEMPERATURE</b>	-20° to +120°F (-29° to +49°C)
<b>TEST FEATURES</b>	Externally visible activation LED
<b>DIMENSIONS</b>	1.5" H., by 6.25" W., by 1.5" D. (3.8 cm H., 15.8 cm W., 3.8 cm D.)
<b>COVERAGE</b>	8 ft. by 10 ft. (2.4 m by 3 m)
<b>MOUNTING</b>	Surface Mount
<b>PATTERN POINTABILITY</b>	±14° Vertical
<b>RADIO FREQUENCY INTERFERENCE (RFI) IMMUNITY</b>	No alarm or setup on critical frequencies in the range from 26 to 1000 Megahertz at 50 v/m.
<b>COLOR</b>	Light Gray (DS130) or Black (DS131)
<b>ORDERING INFORMATION</b>	DS130 - Light Gray DS131 - Black

**COVERAGE**



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## *ACCESS CONTROL*



*The DS150i Series Exit Sensors are Passive Infrared Detectors specifically designed for “request-to-exit” applications. They detect motion in their coverage area and signal an access control system or door control device.*

### *DS150i Series Exit Sensors*

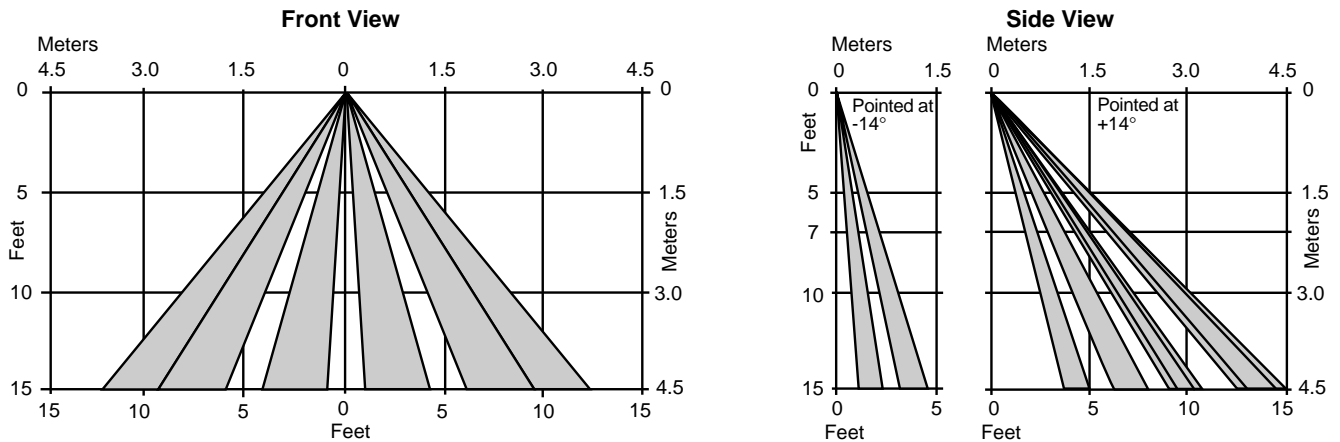
**FEATURING . . . . .**

- *Single or Double Door Use*
- *Wall and Ceiling Mountable*
- *Internal Vertical Pointability*
- *Wrap-Around Coverage Pattern*
- *12 or 24 AC or DC Operation*
- *Up to 60 Second Adjustable Latch Time*
- *Selectable Relay Trigger Mode*
- *Selectable Fail Safe/Fail Secure*
- *U.L. Listed*

**SPECIFICATIONS**

<b>POWER REQUIREMENTS</b>	12 or 24 VAC or VDC, 26 mA @ 12 VDC
<b>RELAY OUTPUT</b>	Two Form "C" Contacts
<b>RELAY LATCH TIME</b>	Adjustable to 60 seconds
<b>RELAY MODE</b>	Programmable retrigger or non-retrigger mode
<b>POWER LOSS DEFAULT</b>	Programmable Fail Safe or Fail Secure modes
<b>STORAGE &amp; OPERATING TEMPERATURE</b>	-20° to +120°F (-29° to +49°C)
<b>TEST FEATURES</b>	Externally visible activation LED
<b>DIMENSIONS</b>	1.5" H., by 6.25" W., by 1.5" D. (3.8 cm H., 15.8 cm W., 3.8 cm D.)
<b>COVERAGE</b>	8 ft. by 10 ft. (2.4 m by 3 m)
<b>MOUNTING</b>	Surface Mount
<b>PATTERN POINTABILITY</b>	±14° Vertical
<b>RADIO FREQUENCY INTERFERENCE (RFI) IMMUNITY</b>	No alarm or setup on critical frequencies in the range from 26 to 1000 Megahertz at 50 v/m.
<b>LISTINGS</b>	U.L. Listing BP6245
<b>COLOR</b>	Light Gray (DS150i) or Black (DS151i)
<b>ORDERING INFORMATION</b>	DS150i - Light Gray DS151i - Black

**COVERAGE**



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## ***GLASS BREAK DETECTORS***



*The DS1100i Series are Glass Breakage Detectors which use microprocessor-based Sound Analysis Technology (SAT) to listen for the specific frequencies associated with breaking glass. They can be used to detect breakage of Plate, Tempered, Laminated and Wired glass types. A built-in environmental test feature alerts the installer of false alarm hazards in harsh environments. Several cover designs are available.*

### ***DS1100i Series Glass Breakage Detectors***

***FEATURING . . . . .***

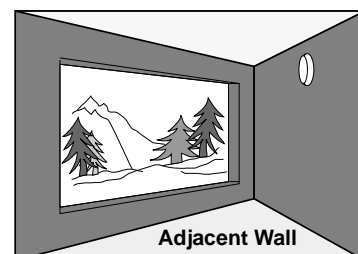
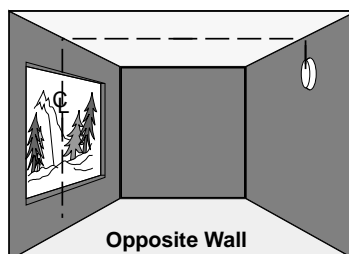
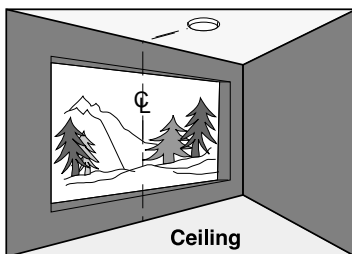
- ***Microprocessor-based Sound Analysis Technology (SAT)***
- ***Automatic Environmental Test Circuitry***
- ***Multiple Enclosure Designs***
- ***U.L. Listed***

**SPECIFICATIONS**

<b>POWER REQUIREMENTS</b>	DS1101i and DS1102i DS1103i and DS1108i	6 to 15 VDC, 23 mA nominal @ 12 VDC 9 to 15 VDC, 21 mA nominal @ 12 VDC
<b>ALARM OUTPUT</b>	DS1101i and DS1102i DS1103i and DS1108i	Form "C" reed relay rated 3.5 watts, 125 mA @ 28 VDC for resistive loads. Normally Closed reed relay rated at 3.5 watts, 125 mA @ 28 VDC for resistive loads.
<b>TAMPER OUTPUT</b>		Normally Closed cover activated tamper switch with separate terminals. Contacts rated at 28 VDC, 125 mA max.
<b>RADIO FREQUENCY INTERFERENCE (RFI) IMMUNITY</b>		No alarm or setup on critical frequencies in the range from 26 to 950 Megahertz at 50 v/m.
<b>STORAGE &amp; OPERATING TEMPERATURE</b>		-20° to +120°F (-29° to +49°C). For U.L. Certificated installations, +32° to +120°F (0° to +49°C).
<b>TEST FEATURES</b>		Magnet operated test mode provides a location verification and operational test when using the optional DS1110i glass break tester. Test mode also includes an environmental test which alerts the installer to possible false alarm sources caused by ambient noise. Automatic sound check feature allows the end user to verify that the detector is powered and functioning by clapping his hands. Externally visible alarm LED indicates an alarm or test condition and may be programmed to latch if desired.
<b>SIGNAL PROCESSING</b>		Audio signals are analyzed using microprocessor-based Sound Analysis Technology (SAT) and must produce specific frequency, signature, and timing relationships to cause an alarm. The sophistication of this processing technique insures proper catch performance while eliminating false alarms.
<b>ENCLOSURE DESIGN</b>		ABS high impact plastic cover. DS1101i and DS1108i 0.83" D., by 3.4"Ø (2.1 cm D., 8.6 cm Ø) DS1102i 3.4" H., by 3.4" W., by 0.83" D. (8.6 cm H., 8.6 cm W., 2.1 cm D.). DS1103i 4.8" H., by 3.25" W., by 0.5" D. (12 cm H., 8.3 cm W., 1.3 cm D.). DS1103i (flush mounted) 4.8" H., by 3.25" W., by 0.25" D. (12 cm H., 8.3 cm W., 0.625 cm D.).
<b>COVERAGE</b>		25 ft. (7.6 m) for glass sizes over 12" by 12" (30.5 cm by 30.5 cm).
<b>MOUNTING</b>		Designed to be mounted on the ceiling, opposite wall, or adjacent wall. Coverage is dependent on room acoustics and window size.
<b>ORDERING INFORMATION</b>		For unit in round cover, specify DS1101i or DS1108i. For unit in square cover, specify DS1102i. For flush mount applications order DS1103i.
<b>OPTIONAL ACCESSORIES</b>		DS1110i Series Glass Break Tester
<b>LISTINGS</b>		U.L. Listing BP1448

MODEL	POWER REQUIREMENTS	ALARM OUTPUT	TAMPER
DS1101i	6 to 15 VDC, 23 mA nominal @ 12 VDC	Form "C"	X
DS1102i	6 to 15 VDC, 23 mA nominal @ 12 VDC	Form "C"	X
DS1103i	9 to 15 VDC, 21 mA nominal @ 12 VDC	Normally Closed	
DS1108i	9 to 15 VDC, 21 mA nominal @ 12 VDC	Normally Closed	X

**MOUNTING OPTIONS**



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## VIBRATION DETECTORS



*The DS1520 and DS1530 are Vibration Detectors which use three distinct detection systems to protect against attack from heavy objects, drilling, or explosion. They are designed specifically for protection of vaults, safes, ATM machines, and also can be used to protect other reinforced areas such as night deposit boxes, data storage cabinets, and filing cabinets.*

### *DS1500 Series Vault/Safe and ATM Sensors*

#### **FEATURING . . . . .**

- *Three Distinct Detection Systems*
- *Solid State Relay Output*
- *Adjustable Sensitivity*
- *Multi-Point Tamper Protection*
- *Remote Test Capability*
- *Surface or Recess Mountable*
- *U.L. Listed, U.L.C. Listed*

**SPECIFICATIONS**

<b>POWER REQUIREMENTS</b>	9 to 15 VDC, 10 mA maximum @ 12 VDC ripple 2 Vp-p max.
<b>ALARM OUTPUT</b>	Form "C" solid state alarm relay. Rated 100 mA @ 28 VDC.
<b>TAMPER OUTPUT</b>	Normally Closed tamper contacts rated 100 mA, 28 VDC. Multi-point tamper sensing system detects removal of cover, removal of unit from mounting surface, and attempts to burn detector.
<b>RADIO FREQUENCY INTERFERENCE (RFI) IMMUNITY</b>	No alarm or setup on critical frequencies in the range from 26 to 950 Megahertz at 50 v/m.
<b>STORAGE &amp; OPERATING TEMPERATURE</b>	-4° to +131°F (-20° to +55°C). For U.L. Certificated installations, +32° to +120°F (0° to +49°C).
<b>SIGNAL PROCESSING</b>	The DS1520 and DS1530 detectors use three distinct detection systems. 1) A threshold detector responds to high amplitude signals with short durations such as those caused by explosions. 2) A window counter measures the duration, quantity and amplitude of intermittent knock signals, such as those caused by a hammer and chisel. 3) A frequency analyzation circuit responds to low amplitude long duration signals such as those caused by drilling or by thermic lance. The sensitivity is field adjustable, allowing the installer to customize the protection for each application. The DS1530 has additional filtering specially designed for ATM and night deposit applications.
<b>ENCLOSURE DESIGN</b>	Low profile, high impact cast aluminum enclosure; light gray color. DS1520 and DS1530 measures 3.9" H., by 3.1" W., by 1.2" D. (10 cm H., 7.8 cm W., 3 cm D.).
<b>ORDERING INFORMATION</b>	For protection of safes and vaults, specify DS1520. For protection of ATM machines and night deposit boxes, specify DS1530.
<b>OPTIONAL MOUNTING ACCESSORIES</b>	VSA1 Mounting plate for use when mounting to concrete walls. VSA2 Recess mounting box for use when mounting to concrete walls. VSA3 Weather resistant mounting box. VSA4 Steel mounting plate for use when mounting to concrete walls. VSA5 Floor mounting recess box. VSA6 Movable mounting kit with day and night position plates. VSA7 Key-hole protection kit. VSA8 5 mm Spacer kit for use with the key-hole protection kit. VSA9 Armored cable kit. Flexible stainless steel conduit and 8 conductor cable. VSA10 Metal junction box, sabotage protected. VSA11 Plastic insert for square conduit. VSA12 Plastic insert for round conduit. VSA13 Plastic insert for cables.
<b>OPTIONAL TESTING ACCESSORIES</b>	VSA14 Self-contained test transmitter mounts inside the unit for control panel driven tests. VSA15 Hand-held test transmitter used to verify detection range. VSA16 Movable test detector used in conjunction with VSA15 to help select a mounting location before installation.
<b>LISTINGS</b>	U.L. Listing BP1448; U.L.C. Listing CBP196

**RANGE GUIDELINES**

**VAULTS**

The following chart shows the coverage radius of the detectors based upon the type of material to be protected, the sensitivity setting, and the method of attack.

Coverage radius listed in feet (meters).

MATERIAL *	SENSITIVITY SETTING	THERMIC LANCE	DIAMOND DISK	DRILLING
Concrete	G max	13 (4)	46 (14)	46 (14)
	G max	26 (8)	46 (14)	46 (14)
	G max	10 (3)	26 (8)	26 (8)
Concrete	G ref	10 (3)	29 (9)	29 (9)
	G ref	13 (4)	29 (9)	29 (9)
	G ref	3 (1)	19 (6)	19 (6)
Concrete	G min	6 (2)	19 (6)	19 (6)
	G min	6 (2)	13 (4)	13 (4)
	G min	--	13 (4)	13 (4)
Concrete	4	3 (1)	16 (5)	16 (5)
	4	3 (1)	16 (5)	16 (5)
	4	--	10 (3)	10 (3)
Concrete	5	--	13 (4)	13 (4)
	5	--	13 (4)	13 (4)
	5	--	6 (2)	6 (2)

\* NOTE: Concrete is type K-350 (or equivalent).  
The above ratings apply to the following minimum material thicknesses:  
Concrete: 10", Steel: 1/4"; Brick 8"

**SAFES & ATMs**

A single detector may be used to protect a safe or ATM if the detection radius shown in the following chart provides sufficient coverage of the entire unit to be protected. The chart shows the maximum protection radius for torch, drilling, and mechanical attack methods at the various mounting locations on the unit to be protected. The ranges shown are guidelines only - it is important that the operation of the detectors be verified by testing after installation.

Range listed in feet (meters).

SENSITIVITY SETTING	BODY/ EXTERIOR	BODY/ INTERIOR	DOOR/ EXTERIOR	DOOR/ INTERIOR
G min	8.8 (2.7)	8.8 (2.7)	N/R	N/R
G ref	8.8 (2.7)	8.8 (2.7)	N/R	N/R
G max (DS1520)	8.8 (2.7)	8.8 (2.7)	6 (1.8)	6 (1.8)
G max (DS1530)	8.8 (2.7)	8.8 (2.7)	4.5 (1.4)	4.5 (1.4)



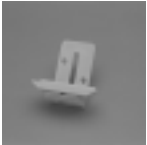


N/R = Not recommended

**Detection Systems, Inc.**





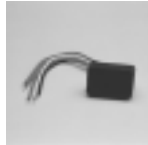
130 Perinton Parkway, Fairport, New York 14450-9199  
(716) 223-4060 • (800) 289-0096 • Fax: (716) 223-9180

**ACCESSORIES**

**PIR/DUAL BRACKETS**

					
	<b>B328 Gimbal Mount Bracket</b>	<b>B330-3* Low Profile Bracket</b>	<b>B332-3* Low Profile Bracket</b>	<b>B333 Swivel Mount Bracket</b>	<b>B335-3* Swivel Mount Bracket</b>
<b>DS720</b>					
<b>DS774i</b>	O	O		O	O
<b>DS774Ti</b>	O	O		O	O
<b>DS774Z</b>	O	O		O	O
<b>DS775</b>	O				O
<b>DS776Z</b>	O				O
<b>DS777Z</b>	O				O
<b>DS794Z</b>					
<b>DS820</b>	O				O
<b>DS835</b>	O				O
<b>DS860</b>	O				O
<b>DS932Z</b>	O		O	O	O
<b>DS934</b>					O
<b>DS935Z</b>					O
<b>DS950</b>	O				O
<b>DS970</b>	O				O

**FIRE PRODUCTS**

					
	<b>DIS240 Remote Test/ Indicator Plate</b>	<b>TK240 Field Test Kit</b>	<b>AL240 Alignment Strobe</b>	<b>DT-1 Removal/ Test Tool</b>	<b>EOL200 End-of-Line Supervision Module</b>
<b>DS240/DS241</b>	O	O	O		
<b>DS250</b>				O	O
<b>DS280</b>				O	O

**S = Standard**

**O = Optional**

**\* = shipped in packages of 2 or 3**



MIRRORS/LENSES

	AR8-13-3* Mirror	AR-13-18-3* Mirror	OMLR/T-3* Mirror (Long Range & Trap)	OMPET-3* Mirror (Pet)	OMB77-3* Mirror (Barrier)	OMLR77-3* Mirror (Long Range)	OA80-2* Mirror (Broad)	OA120-2* Mirror (Long Range)	OA200-2* Mirror (Long Range)	OMB93-3* Mirror (Barrier)	OMLR93-3* Mirror (Long Range)	OMP93-3* Mirror (Pet)	OLP91-3* Lens (Pet)	OLW91-3* Lens (Dense Wide)	OLC91-3* Lens (Dual Corridor)	OLB91-3* Lens (Barrier)	OLR91-3* Lens (Long Range)	OLP92-3* Lens (Pet)	OLW92-3* Lens (Wide Angle)	OLC92-3* Lens (Dual Corridor)	OLB92-3* Lens (Barrier)	OLR92-3* Lens (Long Range)	TC6000 Test Cord
DS720							O	O	O														O
DS774i			O	O																			O
DS774Ti			O	O																			O
DS774Z			O	O																			O
DS775					O	O																	O
DS776Z					O	O																	O
DS777Z					O	O																	O
DS794Z							O	O	O														O
DS860																							O
DS915													O	O	O	O	O						O
DS918i/928i																							O
DS920i																		O	O	O	O	O	O
DS932Z			O	O																			O
DS934										O	O	O											O
DS935Z										O	O	O											O
DS936																							O
DS938Z	S	S																					O
DS950/970																							O

S = Standard

O = Optional

\* = shipped in packages of 2 or 3