

# DS720i Series Long-Range TriTech<sup>®</sup> Detectors



## Security Systems



The wall or ceiling mount DS720i Series TriTech detectors provide installation flexibility using field-replaceable mirror arrays with three different coverage patterns:

- 300 ft by 15 ft (91 m by 4.6 m),
- 120 ft by 25 ft (37 m by 8 m), or
- 90 ft by 70 ft (27 m by 21 m).

The combination of passive-infrared (PIR) detection, microwave detection, and advanced signal processing techniques allows TriTech detectors to rapidly respond to human targets without triggering false alarms from other sources. Motion monitor supervision and anti-masking protection ensure that the detector's view of the coverage area remains clear and unobstructed.

### Series Features

- Supervised microwave and PIR
- Anti-masking with spray detect
- Motion monitor supervision
- Motion Analyzer II
- Field-replaceable mirror arrays

### Functions

#### Alarm memory

In multiple unit applications, the control panel switches voltage to the unit that first sent an alarm signal which latches the alarm LED on that unit.

#### Signal processing

These detectors use passive infrared (PIR) and microwave technologies to signal an alarm when the fields of protection of

both technologies are activated at the same time. The PIR and microwave sensitivities are adjustable.

Motion Analyzer II PIR signal processing uses multiple thresholds and timing windows to analyze timing, amplitude, duration, and polarity of signals to make an alarm decision. Extreme levels of thermal and illumination disturbances caused by hot and cold drafts, sunlight, or lightning do not cause an alarm. Two sensitivity settings are provided. Microwave signal processing uses pattern recognition circuitry to identify and ignore repetitive false alarm sources. Adaptive processing adjusts to background disturbances to reduce false alarms without sacrificing the ability to respond to an intruder.

### Test features

The LED flashes to indicate a trouble condition.

A standard analog meter connects to dual-channel test pins within the detector to provide precise pattern location and to measure noise voltage for background disturbance evaluation. The walk test LED can be activated remotely by a control panel command.

### Supervised microwave and PIR

The microwave circuit is fully supervised. If the microwave subsystem fails, the PIR subsystem provides single technology

coverage. The memory circuit can be used to force a self-test at anytime.

**Anti-masking with spray detect**

The PIR anti-masking feature detects objects placed to block the detector's field of view or materials sprayed on the detector's lens area. The size of the anti-mask feature's field of view can be selected as either standard or large. The anti-mask activation time can be delayed to reduce false alarms caused by objects moving across the front of the detector but not remaining in front of the detector. Such objects would tend to trigger an alarm, but not a trouble signal.

**Motion monitor supervision**

Switch-selectable, 1-, 4- or 30-day motion monitor supervision timers allow verification that the detector's field of view is not blocked.

**Series Application Information**

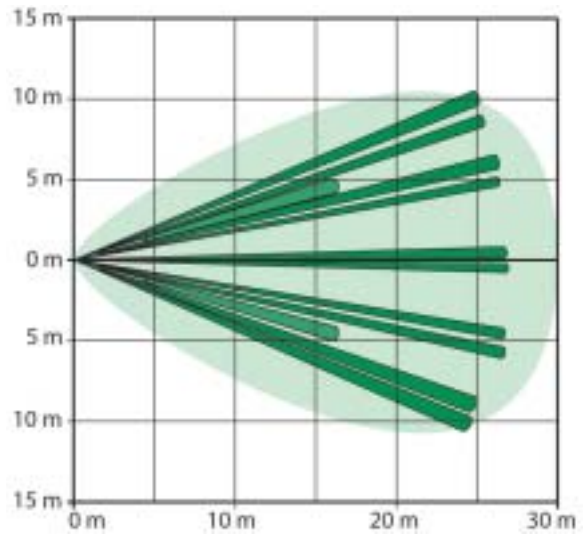
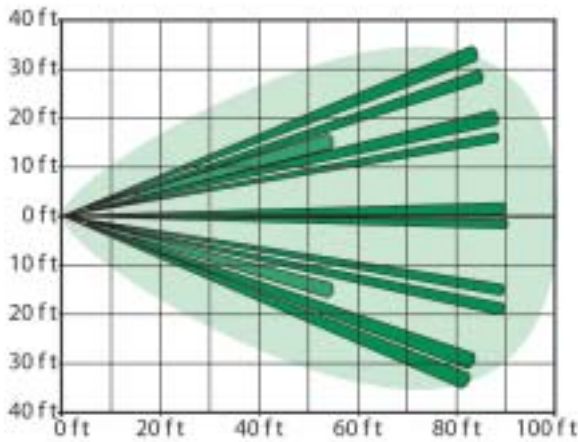
**Standard Coverage**

Coverage Pattern Legend

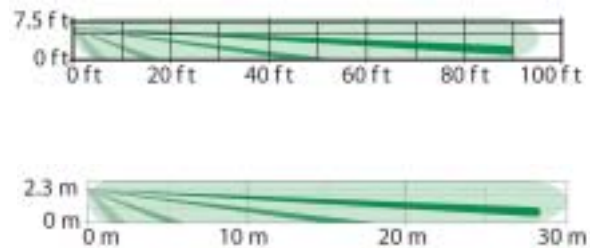
- PIR pattern
- Microwave pattern

**Broad (OA90): 90 ft x 70 ft (27 m x 21 m)**

*Top View*

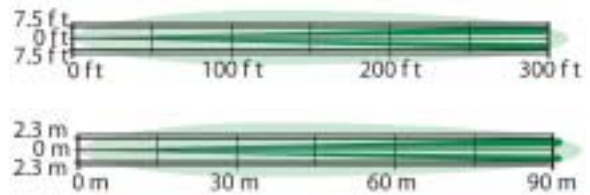


*Side View*

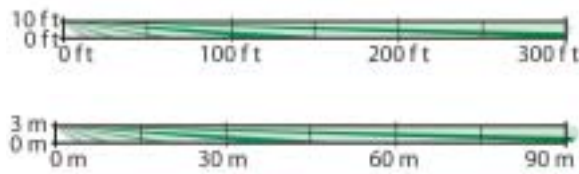


**Long Range (OA300): 300 ft x 15 ft (91 m x 4.6 m)**

*Top View*



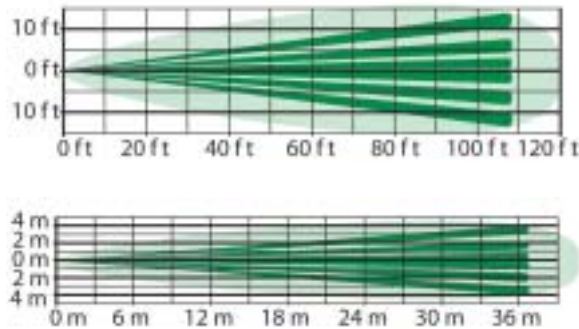
### Side View



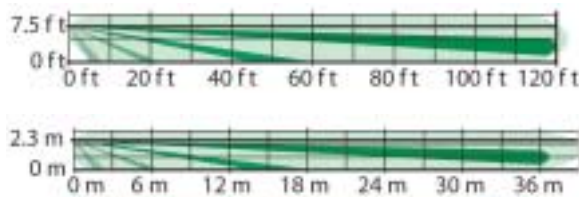
### Optional Coverage

**Long Range (OA120): 120 ft x 25 ft (37 m x 8 m)**

#### Top View



#### Side View



### Mounting Considerations

#### Mounting Height:

The detectors can be mounted up to 15 ft (4.6 m) high.

#### Wall Mounting:

The detectors can be mounted directly on a wall; however, use of the supplied B334 Swivel Mount Bracket is recommended.

### Power Considerations

#### Power Limits

Input power must be provided by an Approved Limited Power Source. All outputs must be connected to SELV (Safety Extra-Low Voltage) circuits only.

### Standby Power

This detector has no internal standby battery. For UL Listed product installations, 4 hr (128 mAh nominal; 240 mAh for stored alarm or trouble conditions) of standby power must be supplied by the control unit or by a UL Listed burglary power supply.

### Replaceable Mirrors

An OA90 Standard Broad Coverage Mirror and an OA300 Long Range Mirror are included. The OA120 Long Range Mirror can be purchased in packages of two.

### Series Technical Specifications

#### DS720i Series Specifications

##### Enclosure

Dimensions (LxWxD): 8 in. x 7.5 in. x 5 in.  
(20.8 cm x 19.5 cm x 13 cm)

Material: High impact ABS plastic enclosure

Properties: A steel grid encloses a removable circuit board and the mirror holder assembly.

##### Environmental Considerations

Temperature (Operating): -20°F to +120°F (-29°C to +49°C)  
*For UL Certified installations, +32°F to +120°F (0°C to +49°C)*

Microwave Frequency: 10.525 GHz

##### Outputs

Alarm: Form C reed relay rated at 3.0 W, 125 mA at 28 VDC for resistive loads and protected by a 4.7 Ω, ½ W resistor in the common C leg.

Tamper: Normally-closed tamper switch with contacts rated at 28 VDC, 125 mA maximum.

Trouble: Normally-closed dry contacts rated at 28 VDC, 125 mA maximum. Open during trouble.

##### Power Requirements

Current Draw: 32 mA nominal at 12 VDC; up to 60 mA during walk test, stored alarm, or trouble conditions.

Voltage (Input): 9 VDC to 15 VDC

Radio Frequency Interference (RFI) Immunity: No alarm or setup on frequencies in the range from 26 MHz to 950 MHz at 50 v/m.

### Trademarks

TriTech® is a registered trademark of Bosch Security Systems in the United States.

### Series Hardware Accessories

#### OA120-2 Long Range Mirror



An optical array module with a 120 ft by 25 ft (37 m by 8 m) coverage area. Shipped in packages of two.

#### TC6000 Test Cord



Test cord for connecting detector's test pins to a voltmeter. It is 15 ft (4.6 m) long.

### DS720i Long-Range TriTech Detector

Order Number DS720i

The DS720i is intended for use in North America.

### Listings, Certifications, and Approvals

Country	Certificate/Listing Number
USA	ANSR: Intrusion Detection Units (UL639) FCC (ESVDS720I)

### DS720i-CHI Long-Range TriTech Detector for China

Order Number DS720i-CHI

The DS720i-CHI is intended for use in the Asia/Pacific region.

Bosch Security Systems  
130 Perinton Parkway  
Fairport NY 14450  
USA

For more information, visit:  
[www.boschsecuritysystems.com](http://www.boschsecuritysystems.com)

# BOSCH