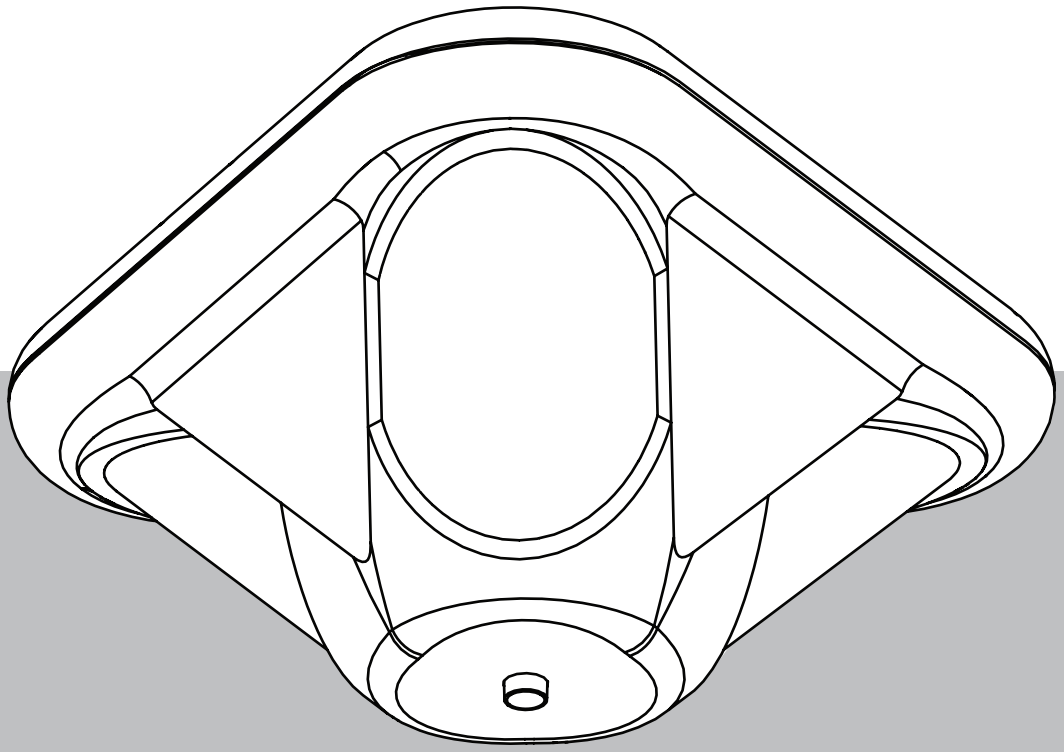
Classic Line TriTech CM Ceiling Passive Infrared Detector

DS9370 | DS9371 | DS9370E | DS9371E | DS9370E-C



en Installation manual

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1 Safety

Caution!
Remove all power (AC and battery) before making any connections. Failure to do so might result in personal injury and/or equipment damage.

Notice!
Do not mount on removable ceiling tiles unless a sandwich is made of the base, ceiling tile, and a back plate behind the tile.

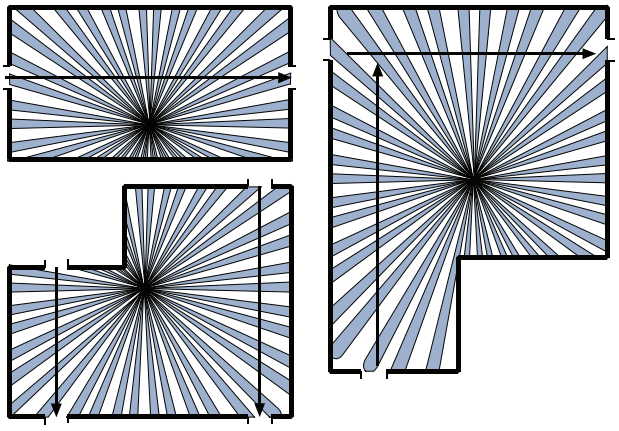
Notice!
Make sure all wiring is de-energized before routing.

2 Installation considerations

Never install the detector in an environment that causes an alarm condition. Good installations start with the LED OFF when there is no target motion. It should never be left to operate with the LED in a constant or intermittent alarm (blue) condition.
Avoid installations where rotating machines (e.g. ceiling fans) are normally in operation within the coverage pattern. Point the unit away from glass exposed to the outdoors and objects that may change temperature rapidly.

Notice!
The PIR detector reacts to objects rapidly changing temperature within its field-of-view.

For optimum detection, select a location likely to intercept an intruder moving across the coverage pattern.



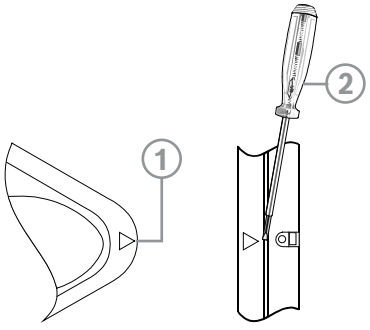
3 Installation

Notice!
Make sure all wiring is de-energized before routing.

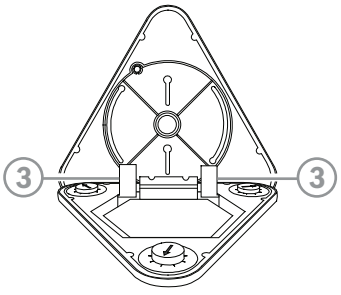
Notice!
Installing to removable ceiling tiles is not recommended unless a sandwich is made of the base, ceiling tile and a back plate behind the tile.

– Install the detector 8 ft to 20 ft (2,4 m to 6.1 m) above the floor, 12 ft (3.7 m) recommended (5-2).
– The surface should be solid and vibration-free (i.e. drop tiles should be secured if the area above the tiles is used as an air return for HVAC systems).

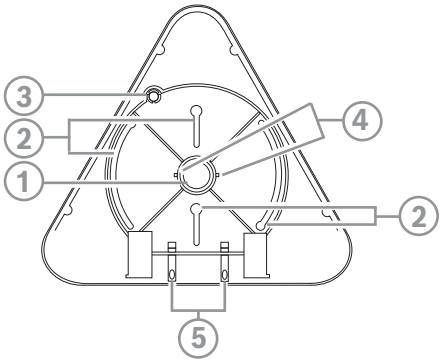
1. Locate the arrow on the cover of the detector to open (callout (1).
2. Turn a screwdriver in the recess between the cover and the base (callout (2). One side of the cover remains attached to the base of the detector.



3. Remove base from the cover if necessary by pressing the two cover release tabs inward while listing the base away from the cover (callout 3).

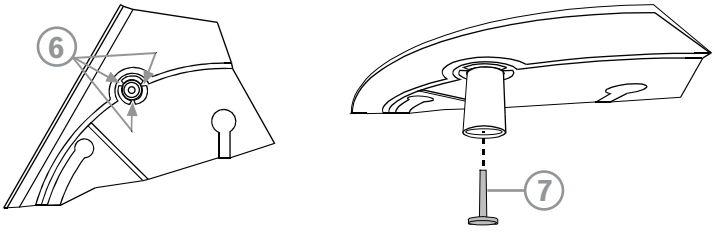


4. Route wiring as necessary to the rear of the base and through the center hole.
5. Install the base. Depending on local regulations, the base may be directly surface installed using anchors, mollies, or wing-nuts. It may also be installed to standard 3.5 in. octagonal electrical box. The detector may also be connected directly to short lengths (short enough to avoid movement of the detector) of 1.27 cm (½ in) EMT.

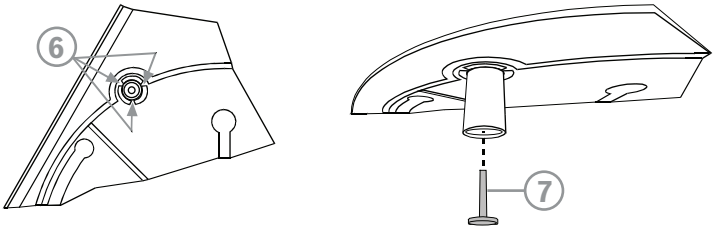


1	Wire entrance and/or EMT mounting	2	Mounting holes
3	Tamper post	4	Holes for cable ties
5	Wire entrance for surface mounting		

6. If ceiling tamper is desired, loosen the tamper post by cutting the 3 tabs (callout 6) and install the post to the ceiling using a #8 screw (callout 7).



7. If ceiling tamper is desired, loosen the tamper post by cutting the 3 tabs (callout 6) and install the post to the ceiling using a #8 screw (callout 7).

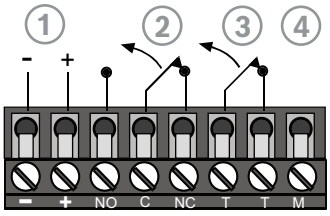


Notice!
Use the curved mounting slots allows the detector to be rotated up to 60° to establish the best coverage.

4 Wiring

Caution!
Only apply power after all connections have been made and inspected. Do not coil excess wiring inside detector. AWG (0.8 mm) wire in the terminal strip.

Notice!
Input power must use only a Listed Limited Power Source. Some countries require that the Alarm and Tamper Contacts be connected to a SELV (Safety Extra-Low Voltage) circuit only.



1	Power	2	Alarm
3	Tamper	4	Memory

Terminals 1 (-) & 2 (+):
Power. Use no smaller than 0.8 mm (#22 AWG) wire pair between the unit and the power source.

Terminals 3 (NO), 4 (C), & 5 (NC):
Use terminals 4 & 5 for Normally Closed circuits. Do not use with capacitive or inductive loads.

Terminals 6 (T) & 7 (T):
Normally Closed tamper contacts rated at 28 VDC, 125 mA.

Terminal 8 (M):
The memory mode requires a supply voltage on Terminal 8 to be activated. Refer to Memory, Day Mode, Night Mode and Remote Walk Test for operation and wiring information.

5 Feature selection

PIR sensitivity selection pins

For selection, place the plug across the appropriate pins (1). No jumper across the “HIGH/ LOW” pins puts the detector in a “High” setting. Low Sensitivity (LO): The recommended setting for most installations. This setting tolerates environment extremes. The detector is shipped in **Low Sensitivity mode. High Sensitivity (Hi):** Use in locations where adequate catch performance is not achieved in the **Low Sensitivity** mode. This setting is for minor environmental changes.

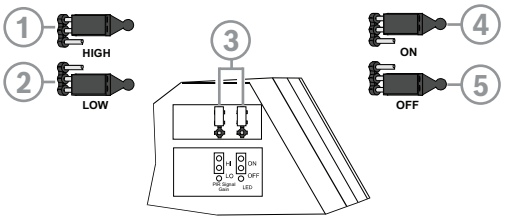


Figure 5.1:

1	High plug setting	2	Low plug setting
3	Jumper pins	4	ON plug setting
5	OFF plug setting		

Notice!

For UL Listed Requirements, set the PIR sensitivity to HIGH when installing the detector at heights of 3.7 m (12 ft) or higher. For EN50131 applications, set the PIR sensitivity to HIGH.

6 LED operations

The detector uses a blue LED to indicate a current or stored alarm condition.

LED On/Off pins

The ON position allows operation of the LED. If LED indication is not desired after setup and walk tests are completed, place in the OFF position. No jumper across the “ON/OFF” pins disables the LED.

Walk test the unit from all directions to determine all the detection pattern boundaries.

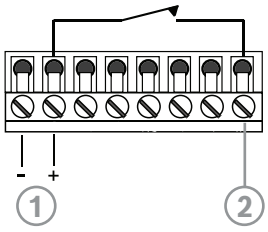
Notice!

Wait at least 2 min after power up before walk testing.

7 Other information

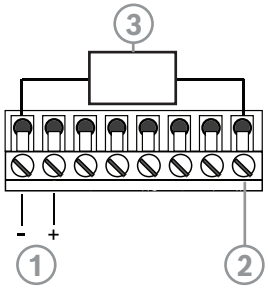
7.1 Memory, Day Mode, Night Mode and Remote Walk Test

Notice!
Memory, Night Mode and Remote Walk Test require a supply voltage on Terminal 8 to activate these features. This supply voltage must be between 6 and 18 VDC. You may use a switch as shown is the following illustration:



1	Power	2	MEMORY

Or use an external power supply as shown in the following illustration:



1	Power	2	MEMORY
3	Control panel or external power supply		

Notice!
Control voltage:
+6 to +18 VDC = ON (Switch Closed)
0 VDC = OFF (Switch Open)

Day Mode: The Day Mode disables the alarm memory and allows the LED (if activated) to operate normally.
Memory: When the detector is in the Night Mode the memory is activated. This allows the detector to store an alarm for display at a later time.

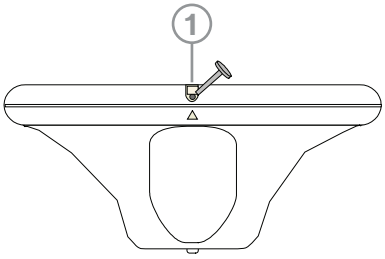
Notice!
Memory mode requires that the LED jumper be in the ON position.

Night Mode: Enables the alarm memory and disables the LED operation.
Remote Walk Test: Allows the LED operation to be remotely enabled through M for walk testing. This feature is used when the LED operation is disabled by having the LED jumper in the OFF position.

Desired action	Control voltage (Terminal M)	LED jumper
Turn ON Night Mode	ON (for more than 20 sec)	ON
Turn OFF Night Mode Display Stored Alarm	OFF (from Night Mode)	ON
To RESET Stored Alarm	ON (for more than 5 sec or enter Night Mode)	ON
Turn ON Remote Walk Test (if OFF)	ON (for more than 5 sec but less than 20 sec)	OFF
Turn OFF Remote Walk Test (if ON)	ON (for more than 1 sec but less than 20 sec)	OFF

7.2 Anti-vandal screw

After the cover has been closed, the entire assembly can be secured together using the supplied anti-vandal screw (callout 1).



7.3 Maintenance

At least once a year, the range and coverage should be verified. To ensure continual daily operation, the end user should be instructed to walk through the far end of the coverage pattern. This ensures an alarm output prior to arming the system.

8 Technical data

Input Power	9 to 15 VDC, 28 mA maximum current
Standby power	There is no internal standby battery. An external standby battery capacity of 29 mAh is required for each hour of standby time needed. For UL, 4 h (116 mAh) must be provided by the control unit. The products are intended to be powered by a power-limited output of a UL/cUL Listed Burglar Alarm control unit, or via a Listed UL603/ULC-S318 Class 2 power limited power supply, capable of 4 hours of standby power. Check standby battery annually
Coverage	360° by up to 16.5 m (54 ft) diameter coverage.
Sensitivity	Low/High
Alarm relay	Silent-operating Form “C” relay. Contacts rated 100 mA, 28 VDC, 2.8 W maximum for DC-resistive loads. The contacts transfer on alarm for a period of 4 sec. Note: Do not use with capacitive or inductive loads.
Tamper	Normally closed (NC), 28 VDC, 100 mA, 3 W maximum
Supervision features	**Microwave**: The complete circuit operation of this subsystem is checked approximately every 4 h. **PIR**: The detector defaults to PIR technology protection if the microwave subsystem fails. The detector indicates an alarm using the green LED only and activates the alarm relay.
Microwave frequencies	DS9370/DS9371: 10.525 GHz (UL Listed) DS9370E/DS9371 E: 10.510 to 10.580 GHz DS9370E-C: 10.570 to 10.610 GHz
	FCC: +5°C to +50°C (41°F to 122°F) CE (excluding France, UK): -10°C to +55°C (14°F to 131°F). CE France: +5°C to +40°C (41°F to 104°F), UL: 0°C to +49°C (32°F to 120°F)
	0- 93% Relative humidity non-condensing
Dimensions	17.8 cm x 17.8 cm x 8.9 cm (7 in x 7 in x 3.5 in)
Weight	286g

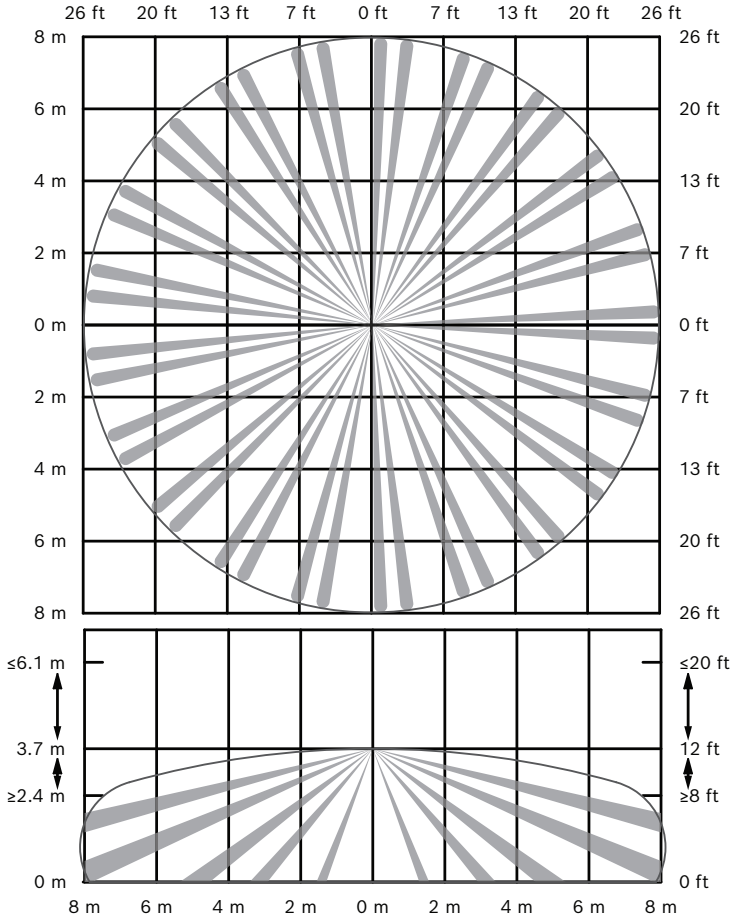
FCC/ ISED	This device complies with part 15 of the FCC Rules and Industry Canada license-exempt RSS standard(s). Operation is subject to the following two conditions: (1) this device may not cause interference, and (2) this device must accept any interference, including interference that may cause undesired operation of the device

	Le présent appareil est conforme aux CNR d'Industrie Canada applicables aux appareils radio exempts de licence. L'exploitation est autorisée aux deux conditions suivantes : 1) l'appareil ne doit pas produire de brouillage, et (2) l'utilisateur de l'appareil doit accepter tout brouillage radioélectrique subi, même si le brouillage est susceptible d'en compromettre le fonctionnement.

Product must be tested at least once each year. All wiring must be in accordance with: the National Electrical Code (ANSI/NFPA70); the Canadian Electrical Code, Part I (where applicable), local codes and the authorities having jurisdiction.

Region	**Agency**	**Certification**
USA and CA		UL / CUL, FCC ISED: DS9370, DS9371, CE: DS9370E, DS9370E-C, NF&A2P: Env. Class II Grade 2 EN 50131-2-4 (DS9370E, DS9371E), NF&A2P: Env. Class I Grade 2 EN 50131-2-4 (DS9370E-C).
EU	CE	CE-2014/53/EU (RED), 2011/65/EU and 2015/863 (RoHS) (DS9370E, DS9370E-C, DS9371E)
	EN	EN 50131-2-4 Grade 2 (DS9370E, DS9371E) EN 50130-5 Environmental Class II (DS9370E, DS9371E) EN 50130-5 Environmental Class I (DS9370E-C) EN 60529, EN 62262: IP41/IK04 (DS9370E-C, DS9371E)
FR	CNPP	 NF&A2P, DS9370E-C Certificate # 282020009A, Grade 2 NF324-H58, RTC 50131-2-4 NF (AFNOR) NF EN 50131-2-4 www.marque-nf.com, A2P (CNPP): www.cnpp.com DS9370E Certificate # 2800200010A DS9371E Certificate # 2800200011A Autosurveillance à l'ouverture Immunité champ magnétique. Test sans masque de vision vertical et sans immunité aux animaux
BR	ANATEL	Modelo: DS9370: 0871-03-1855 Modelo: DS9371: 0871-03-1855 Este equipamento não tem direito à proteção contra interferência prejudicial e não pode causar interferência em sistemas devidamente autorizados

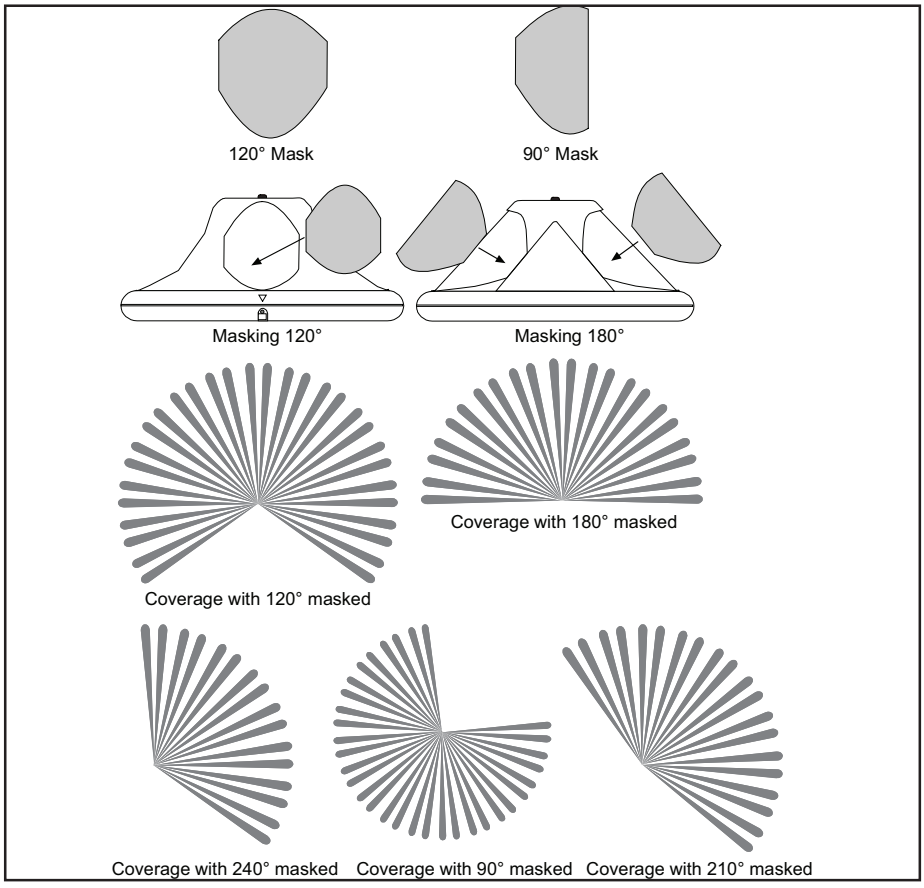
8.1 Coverage pattern



Notice!
For UL Listed Requirements, set the PIR sensitivity to HIGH when installing the detector at heights of 3.7 m (12 ft) or higher. For EN50131 applications, set the PIR sensitivity to HIGH.

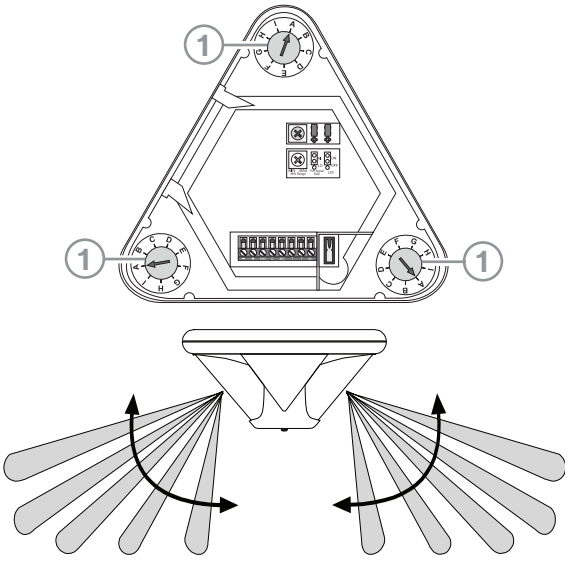
8.2 Coverage pattern masking

This detector is provided with a set of masks to allow masking undesired areas. The masking kit contains two 120° and two 90° masks. The masks are designed to go on the outside of the detector. Do not attempt to open the detector to place the masks on the inside.
With the supplied masks, you can mask 90°, 120°, 180°, 210° 240° or 330°. Some examples are shown below.



8.3 Optical module adjustment

The PIR zones of the detector are divided into three groups. Each of these 3 groups can be independently adjusted vertically (callout 1) to provide the best coverage within a room. Only two coverage patterns are shown for clarity.

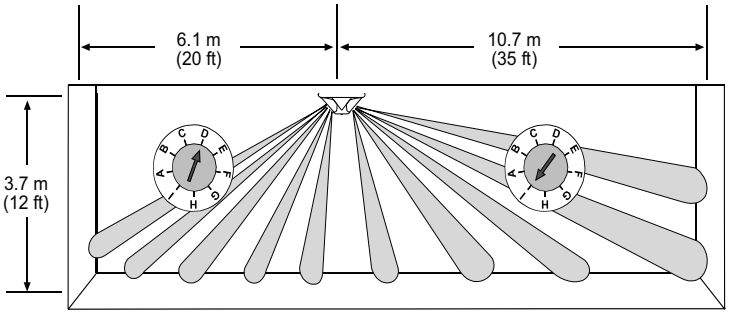


Refer to the table to adjust the optical modules based on the mounting height of the detector. The range shown is the distance from the detector to the outside edge of the coverage pattern.

Mounting height	Maximum range (radius)				
	3.0 m (10 ft)	4.6 m (15 ft)	6.1 m (20 ft)	7.0 m (23 ft)	8.2 m 27 ft)
2.4 m (8 ft)	C	G	I		
3.0 m (10 ft)	A	D	G	H	
3.7 m (12 ft)		A	D	F	G
4.3 m (14 ft)		A	B	D	E
4.9 m (16 ft)			A	B	D
5.2 m (17 ft)			A	A	
5.5 m (18 ft)				A	
6.1 m (20 ft)				A	

Regulation	Max MTG height	Max range
UL, ULC	6.1 m (20 ft)	7.0 m (23 ft)
EN50131	5.2 m (17 ft)	7.0 m (23 ft)
CCC	4.9 m (16 ft)	8.2 m (27 ft)

With installations where a targeted coverage is required for part of the area, the optical modules must be adjusted for the correct coverage. The following figure shows the detector mounted 3.7 m (12 ft) above the floor. The distance to one wall is 6.1 m (20 ft) and 10.7 m (35 ft) to the opposite wall. Referencing the table, the optical module for the 6.1 m (20 ft) range was set to “D” and the optical module for the 10.7 m (35 ft) was set to “I”.



8.4 Walk test

1. Make sure that the LED jumper is ON.
2. Wait at least 2 min after power-up before starting the Walk Test. The blue LED flashes until the detector stabilizes.
3. Watch the LED as you walk toward the edge of the detector’s coverage pattern. The LED lights when you reach the outside edge of the coverage pattern. The blue LED indicates an alarm.
4. Repeat Step 3 from different directions until you have adequately verified the coverage pattern.

Notice!
If you cannot obtain the required coverage by performing Steps 1-3 of the walk test, set the PIR sensitivity to HIGH to obtain maximum range. Adjust the optical module accordingly. Repeat Steps 2-4 for proper coverage.

Bosch Security Systems B.V.
Torenallee 49
5617 BA Eindhoven
Netherlands
www.boschsecurity.com

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