



D-1201-0

English

SRN-2000

SUPER-RED SERIES



Installation instructions

1. INTRODUCTION

The SRN-2000 series of passive infrared detectors presents a technological break-through that is revolutionizing the PIR industry.

The SRN-2000 employs an innovative approach by combining several different design techniques to **solve the industry's biggest problem - false alarms.**

By incorporating programmable pulse counter, coverage range control adjustment RF protection up to 1000 MHz, visible light rejection filter, maskable lens patterns, background noise test point and dual-element low-noise pyroelectric detector, the SRN-2000 does more than give lip service - **it truly masters the false alarm problem.**

As the only PIR manufacturer in the world to produce its own Fresnel lens assemblies Visonic Ltd. offers an outstanding variety of **40 easy-to-change lenses** - more than the entire combined industry competition.

Illustrated in the "**Super Red Lens Library**": • 9 wide-angle lenses up to 140°. • 3 long-range corridors up to 120 ft. • 6 pet alleys. • 3 finger curtains. • 8 lenses for combined ceiling and room coverage. • 10 unique lenses for multiple 2-3 room and corridor coverage. • 6 solid curtains. The 'Super-Red Lens Library' provides the most extensive and effective coverage that **saves you time and money in every installation.**

Flexibility takes on new meaning with the SRN-2000 series. With **40** interchangeable lenses, 30° vertical and horizontal adjustments, and surface, corner or flush mounting installation - you know **SRN-2000 is the only universal PIR you can truly standardize on ... without compromising!!!**

Other features include LED selector, anti-tamper switch, silent relay and a broad power supply range. A special material allows masking of specific beams to eliminate potential false alarm sources.

Visonic Ltd., a leader in the field of passive infrared detection devices, continues to develop lens technology to satisfy the expanding needs and demands of the security industry.

2. FEATURES

SUPER-RED SRN-2000 series offers the following features:

Incomparable flexibility:

- 30° vertical and horizontal adjustments
- Visible pattern locator
- Surface, corner and flush mounting
- Switchable walk-test indicator
- N.C. silent relay
- Tamper switch
- Low current drain 17mA
- 9-16 VDC supply voltage

False alarm immunity:

- **Programmable pulse counter** - to virtually eliminate environmental disturbances.
- **Adjustable coverage range**
- **Unprecedented RF immunity** - rejects RF interference up to 2000 MHz.
- **Light rejection filter** - rejects visible light variations.
- **Maskable lens patterns** - to block thermal disturbances.
- **Test point** - to identify and eliminate background disturbances.
- **Dual-element low-noise pyroelectric detector** - rejects thermal variations with maximum signal to noise ratio.

Special features are available with other models. See Section 3.

3. SUPER-RED SRN-2000 MODELS

SRN-2000: Standard model, with pulse counter.

SRN-2000 C/PC: Same as SRN-2000 but with a change-over relay contact (Form-1C).

SRN-2000 UL: Same as SRN-2000 but with UL compliance.

4. LENS SELECTION

Coverage

Lens No. 100 is the standard pattern supplied with SUPER-RED SRN-2000.

Printed Circuit Board elevation scale is factory preset at -5°. For application of PCB elevation scale, see Table 1.

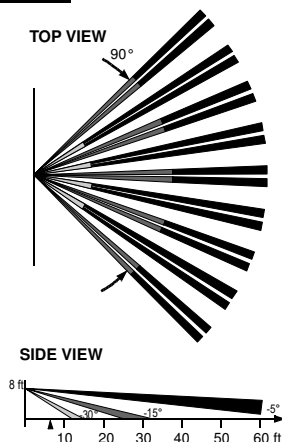


Figure 1. Coverage Pattern - Lens No. 100

Lens No. 100 Specifications

Total Number of Beams: 36

3 layers: Upper, Intermediate and Downward.

- Upper Layer - 9 twin beams, optically split to 18 beams.
- Intermediate Layer - 5 twin beams (split), angled 10° below Upper Layer.
- Downward Layer - 4 twin beams (split), angled 25° below Upper Layer.

Angle span: 90° Wide Angle.

Coverage range: Maximum 60 ft (18 m) radius.

If the standard No. 100 lens does not meet your coverage requirements, refer to the SUPER-RED LENS LIBRARY and select the pattern you need. Your nearest Visonic Ltd. distributor will be glad to supply you with any lens that suits your particular requirements.

For UL installations, use only UL approved lenses listed at the end of Section 4.

LENS LIBRARY

SUPER-RED offers a selection of more than 40 lens patterns to provide the best coverage pattern for any installation. The SUPER-RED LENS LIBRARY is divided into the following nine sections:

Section 1: Corner Mounting Wide-Angle 90° -100°.

This section comprises six lenses which provide the maximum room coverage, when the PIR is installed in the corner.

Section 2: Ultra-Wide-Angle 120° - 140°.

This section comprises three lenses which provide the largest and widest room coverage in applications where the PIR is wall mounted or flush mounted.

Section 3: Pet-Alleys.

This section comprises six lenses featuring a single horizontal beam layer which allows pets to move under the coverage pattern, undetected.

Section 4: Long-Range Corridors up to 120 ft.

This section comprises three lenses specially designed for long range and narrow areas such as corridors, aisles and long walls.

Section 5: Multiple Room and Corridor Coverage.

This section comprises ten lenses, each providing a combination coverage of one or two Long-Range corridors and one or two Wide-Angle rooms simultaneously, using a single PIR.

Section 6: Combined Ceiling, Stair and Room Coverage

This section comprises eight lenses providing multiple coverage of ceiling and stairs in addition to the normal room area coverage.

Section 7: Finger Curtains.

This section comprises three lenses providing coverage of multiple vertical Finger Curtains which may be used to prevent access from two walls simultaneously and detect movement through curtains located in the area between the walls.

Section 8: Lenses for Energy Management PIRs.

This section comprises four high density lenses specially designed for use with models SRN-2000E, ET and EF in Energy Management applications.

Section 9: Solid Curtain PIRs.

This section comprises five lenses specially designed for models SRN-2000H and SRN-2000CH, providing various types of Solid Curtain coverages.

Lenses to be used for UL installations.

Lenses No. 30, 34, 41, 43, 45, 47, 76, 100, 102, 104. For coverage patterns, see Section 16 – "UL Lens Library".

5. CHANGING LENSES

To change or adjust a lens, release and remove the lens-locking devices located on both sides of the lens by pushing them from the inside of the cover.

Insert new lens with the grooved surface outside and lens number held on the upper right corner. From inside the cover, carefully center the lens by sliding it to the right or left; the lens is centered when the distance from its side edge to the edge of the cover is the same on each side of the cover. Holding firmly in place, insert locking devices from the outside (ridges pointed outward) and firmly push into place until a click is heard.

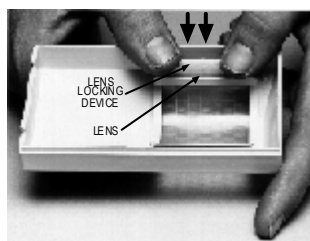


Figure 2. Removing Lens-Locking Devices

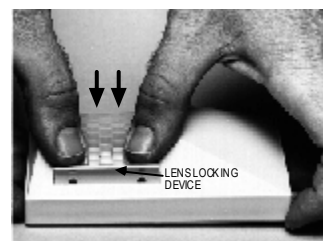


Figure 3. Locking the Lens in Position

6. SELECTING MOUNTING LOCATION

The SUPER-RED passive infrared detector can be mounted directly onto the wall (surface mounted), or in a corner. It may also be flush mounted using the optional flush mounting bracket SRF-201 (see Fig. 4). An optional PIR mounting bracket BR-1 is also available; see Section 8 and Fig. 7. Always mount the unit on a firm and stable surface.

A. Select the mounting location so that the expected motion of an intruder will cross the beams of the selected pattern.

Remember: Passive infrared detectors are sensitive to changes in infrared energy caused by an object moving across the unit's field of view. Since the changes in infrared energy, detected by a PIR, depend on the amount of infrared energy transmitted by the moving object and the temperature difference between the object and the background, the PIR may fail to respond under certain temperature and background conditions, in which the temperature difference is too small. It is therefore recommended that

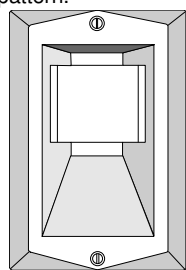


Figure 4. Flush-Mounting Bracket SRF-201

the PIR be aimed towards the coolest place in the protected area, in order to obtain the maximum sensitivity in installations where high ambient temperatures are expected.

- B. Select the most convenient mounting height. An accurate adjustment table determines the recommended angle for any combination of range and mounting height (see Table 1). Take into consideration that unprotected areas exist directly above and below the detector and increases when covered area is increased.
- C. Where a single-layer pattern has been selected because pets are present, it is recommended that the sensor be installed at the lowest possible height allowing the beams to be directed above the level of the pet's activity.
- D. SUPER-RED is extremely immune to air turbulence and RFI interference. However, to minimize any possible false alarms it is highly recommended to avoid aiming the detector at heaters, sources of bright light, or windows subjected to direct sunlight. Also avoid running wiring close to high-power electrical cables.

7. MOUNTING

A. To open the cover, insert a small screwdriver into the slot on top of the unit and press down lightly. The cover (equipped with the lens) hinges outward and removes easily.

B. Mount the base (equipped with the printed circuit board) in the location and height selected for optimum coverage. For surface mounting use the two knockout holes at the back of the base; for corner mounting, use the knockouts on the angled sides. The unit must be fastened tightly to the mounting surface to avoid possible vibrations.

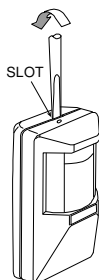


Figure 5. Removing the Cover

C. To close the front cover (after wiring), insert the legs located on the bottom of the base into their respective slots in the bottom of the cover and close by exerting slight upward pressure.

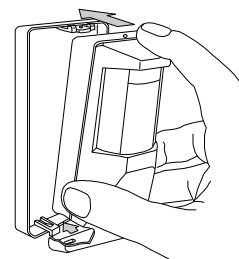


Figure 6. Replacing the Cover

8. BR-1 PIR MOUNTING BRACKET

The BR-1 is a general purpose, adjustable mounting bracket which accommodates the SRN-2000.

The BR-1 is installed on a wall. It is vertically adjustable 30° downward and horizontally adjustable 45° left, 45° right (see Figure 7).

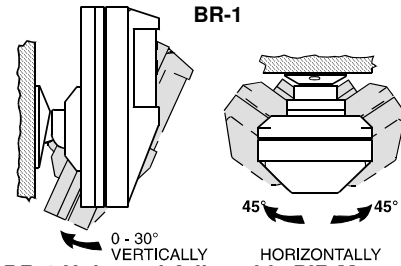


Figure 7. BR-1 Universal Adjustable PIR Mounting Bracket

9. WIRING

A. For wiring the system use # 22 AWG or larger wire. The maximum wiring length between the unit and its power source depends on the number of units connected in parallel and the wire gauge. The following table provides the maximum wiring length for a single unit, using different gauge numbers.

Wiring Gauge	22	20	18	16
Wiring Length (ft)	750	1100	1800	3000

If two or more units are connected in parallel, the maximum wiring length described in the table should be divided by the number of units.

- B. To route the wires into the sensor use either the wiring knockouts or one of the lower mounting holes.
- C. Make no splices within the unit and avoid contact between uninsulated conductors and the printed board.
- D. Connect wires to the terminal block in the following order. (Refer to Figure 8).

- Connect Tamper N.C. terminals to a normally closed 24-hour protection zone of the control panel. Tamper contact will open when cover is removed.
 - Connect Relay N.C. terminals to a normally closed burglar protection zone of the control panel. Relay contacts will open when an intruder is detected or during power loss. The relay contacts are rated at 100 mA, 24 VDC maximum (resistive load only). An 18 ohm resistor is internally connected in series to the relay contacts.
- Note:** Model SRN-2000 C/PC provides changeover Form – 1C relay contacts (i.e. N.C + N.O).
- Connect the 12VDC (+) and (-) terminals to a 9 to 16 Volt DC power source and check for correct polarity.

E. Seal all openings in the base with tape or RTV to prevent insects from entering the unit.

The UL listed control unit or power source should have a back-up battery that is capable of supplying power for at least four hours of

operation, during power failure. The maximum current drain of each sensor in standby is approximately 20mA.

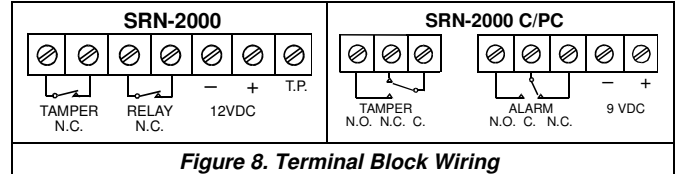


Figure 8. Terminal Block Wiring

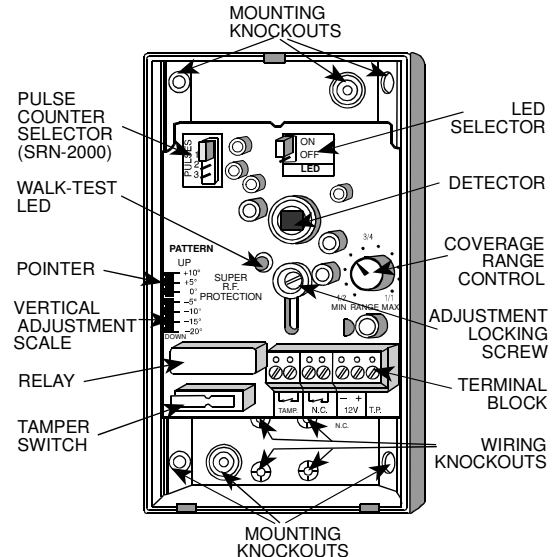


Figure 9. Printed Circuit Board

10. ADJUSTING THE COVERAGE AREA

SUPER-RED provides you with the most powerful tools for quick, easy and accurate pattern adjustments.

The coverage-range control adjustment, LED selector, horizontal adjustment, vertical calibrated scale adjustment, vertical adjustment table and beam masking material are all unique features which enable precise pattern positioning both vertically and horizontally.

LED selector

The LED selector consists of a pin connector and jumper to switch the walk-test LED either ON or OFF.

Horizontal Adjustment

SUPER-RED coverage pattern can be adjusted horizontally approximately $\pm 15^\circ$ by rotating the lens to the left or right.

To adjust the lens, remove the lens-locking devices (see Section 5), rotate the lens carefully to the desired position and lock the lens.

Vertical Adjusting Scale

The vertical scale adjustment (printed on left side of the P.C. board) and the plastic pointer on the base indicate (in degrees) the vertical angle between the upper layer of the coverage pattern and the horizontal line of the unit.

Table 1 gives the optimum scale adjustment for various combinations of mounting height and coverage range (indicated in feet and meters). The table should be used only to the maximum coverage range of the selected lens, as indicated in the Lens Library.

The scale enables pattern adjustment from $+10^\circ$ upward to -20° downward, according to the installation height and the required coverage range.

All SUPER-RED sensors are shipped from our factory pre-set to -5° (downward).

To change the vertical-pattern adjustment, loosen the screw which fastens the printed circuit board to the base. Slide the P.C. board up or down to the desired angle and tighten the screw firmly.

Caution! With swivel brackets in use, the effective detection ranges may differ from those indicated in Figure 1.

Table 1 – Vertical Adjustment Scale

Mounting Height	Coverage Range												
	ft	7	10	13	17	20	23	26	30	33	40	50	60
m	2	3	4	5	6	7	8	9	10	12	15	18	
2.5	0.8	+6°	+4°	+3°	+2°	+2°	+2°	+2°	+1°	+1°	+1°	+1°	+1°
3	1	0°	0°	0°	0°	0°	0°	0°	0°	0°	0°	0°	0°
4	1.2	-6°	-4°	-3°	-2°	-2°	-2°	-1°	-1°	-1°	-1°	-1°	-1°
4.5	1.4	-11°	-7°	-5°	-4°	-4°	-3°	-3°	-2°	-2°	-2°	-1°	-1°
5	1.5	-15°	-10°	-8°	-6°	-5°	-4°	-4°	-3°	-3°	-3°	-2°	-2°
6	1.8	-19°	-13°	-10°	-8°	-6°	-6°	-5°	-4°	-4°	-3°	-2°	-2°
7	2	—	-15°	-11°	-9°	-8°	-6°	-6°	-5°	-5°	-4°	-3°	-3°
8	2.5	—	-19°	-14°	-11°	-9°	-8°	-7°	-6°	-6°	-5°	-4°	-4°

Example: If you require coverage range of 40 ft (12 m) and wish to install the sensor at a height of 6 ft (1.8 m) from the ground, set the Vertical Adjustment Scale to -3° .

Coverage Range-Control

The coverage range control - marked RANGE may be used to eliminate false alarms in special harsh environments. For optimal detection sensitivity it is recommended that the range control always be set to maximum (1/1). The range should only be reduced when a false alarm problem cannot be corrected by lens masking or repositioning the unit and only when the coverage range is less than 1/2 of the maximum range. After changing the coverage range, walk test the entire coverage area.

Beam Masking Material

A special beam-masking material supplied with each SUPER-RED sensor can be used to mask individual segments in the lens array which are exposed to potential sources of false alarm (heaters, blowers, pets, etc). The material is transparent to visible light but blocks any infrared energy. To block individual beam(s), locate the corresponding segment(s) in the array. Cut the masking material to the exact dimensions of the segment(s) to be blocked, remove the backing paper and apply the masking material accurately to the inside (smooth) surface of the appropriate segment(s). In some cases, more than one layer of the lens masking material may be required to completely block the infrared energy.

11. SETTING THE PULSE COUNTER

Model SRN-2000 is equipped with a programmable pulse counter which can be set to count 1, 2, or 3 pulses, before activating the alarm relay. To set the pulse counter, place the jumper on the desired setting (1,2 or 3).

3 Pulses. This setting provides the maximum protection against false alarms caused by all types of environmental disturbances.

Three pulses may be selected for all applications where wide-angle, multi-beam lenses are used such as illustrated in Sections 1, 2, 3, 6 and 7 of the SUPER-RED Lens Library (except lens No. 53). When the pulse counter is set to 3, no alarm will sound unless the unit registers three pulses within approximately two minutes. This ordinarily requires crossing more than one beam. (Each dual-beam produces two pulses. One additional beam element is needed to provide the third pulse.)

Note: Three pulses should never be used with lens No. 53 or with the long-range lenses in Sections 4 and 5 of the Lens Library.

Warning: For UL certificated installation, a pulse count of 3 may be used only with lens No. 100. With pulse count setting of 3, a 5 to 7 step movement may be required to trigger the PIR at a range of more than 40ft.

2 Pulses. This setting can be used to increase the sensor's immunity to false alarms when long-range or low-density lenses (which normally require one pulse setting) are used. Two pulses should be used only in cold or temperature-controlled locations and when the actual room size is much less than the range specified for the lens in use. Otherwise, one pulse should be selected.

1 Pulse. This setting actually disables the pulse counter. It should be used when it is necessary to activate an alarm on the first detected pulse, such as with long-range lenses. One pulse should be selected when using the long-range lenses illustrated in Sections 4 and 5 of the Lens Library, lens No. 53 or in high-security installation when fast 'catch' performance is of highest importance.

Self-Adjusting Walk-Test Override

The unique pulse counter incorporated in the SRN-2000 features an automatic override to single-pulse mode during walk-testing. After alarm signaling, the pulse counter converts automatically to single-pulse setting for several seconds. During this time period each detection pulse will activate an immediate alarm. This feature enables convenient walk-testing of each beam in the coverage pattern - exactly as for a unit without a pulse counter: Approximately six minutes after the end of walk-testing, the pulse counter returns automatically to its original setting and is ready for a new counting sequence.

12. FINAL TESTING

- A. Apply 12 VDC power and allow five minutes for the unit to stabilize before testing.
- B. Adjust the vertical-pattern angle according to Table 1.
- C. Set the LED selector to ON and replace the cover.
- D. Set the pulse counter (SRN-2000) according to Section 11.
- E. Walk-test the entire protected area by walking slowly across the coverage-pattern beams while observing the LED. The LED lights

up whenever you cross a protective beam. Allow two seconds between each test for the unit to restabilize.

- F. Mask beams which face potential sources of false alarms (see Section 10).

Warning: After walk testing, disable the LED by setting the LED selector to OFF.

13. TEST POINT (T.P.)

The test point T.P. terminal provides a good means for analyzing the sensor in the event of an environmental problem or suspicion of a faulty sensor. Using a DC voltmeter (20 k ohms per volt), connect its positive lead to the T.P. terminal and the negative lead to the (-) 12 VDC terminal. See Fig. 8.

For easy testing, temporarily connect two wires to these terminals and route them out of the unit. The meter can then be connected to the wires. Set the meter to 5 VDC range and completely cover the lens array, using a piece of cardboard so that motion cannot be detected.

The meter should indicate approximately 2.0 VDC. If the meter indicates more than 2.3 VDC or less than 1.7 VDC, the unit should be replaced.

Uncover the lens and allow the meter to stabilize; do not move. Any motion into or out of a detection beam or an environmental disturbance which affects the PIR will cause the meter to deflect above or below the 2.0 volt level. Meter variations of ± 1 volt (i.e. above 3.0 volt or below 1.0 volt) will trigger an alarm.

14. MAINTENANCE

The proper operation, range and the coverage pattern of the unit should be checked at least once a year according to Section 12 Final Testing.

To assure proper continuous operation, the end user should be instructed to walk through the entire coverage pattern and to assure an alarm output, each time, before the alarm system is armed.

15. SPECIFICATIONS

OPTICAL

Standard Lenses: SRN-2000 lens No. 100

Interchangeable Lenses: -see SUPER-RED Lens Library

Lens to be used for UL installations: Lens No. 100

Adjustment: Vertical $+10^{\circ}$ to -20° calibrated scale. Horizontal up to 30° .

ELECTRICAL:

Voltage: 9 to 16 VDC

Current: 20 mA

Relay output: Normally closed (fail safe) contacts. 18 ohm resistor in series with contacts. Rating -0.1A resistive/24 VDC.

Model SRN-2000 C/PC provides Form-1C contacts.

Alarm period: 2-3 seconds

Tamper contacts: Normally closed. Rating 0.5A resistive/24 VDC.

LED: Walk test - (switchable)

Testing: Background noise Test Point.

Detector: Dual-element low-noise pyro-electric detector.

Pulse counter: (model SRN-2000) Programmable to 1, 2, or 3 pulses with self-adjusting walk-test override.

Note: For UL certified installation, a pulse count of 3 may be used only with lens No. 100 – see Section 11.

MOUNTING

Wall or corner mounting. Optional bracket model SRF-201 for flush mounting.

BR-1 PIR Mounting Bracket

Vertically adjustable 30° downward.
Horizontally adjustable 45° left, 45° right.

ENVIRONMENTAL

Operating temperature: 0°C to 49°C (32°F to 120°F)

Storage temperature: -20°C to 60°C (-4°F to 140°F)

PHYSICAL

Dimensions: 2.7x4.7x1.9 inch (7x12x4.8 cm)

Weight: 4.5 ounces (0.14 Kg)

Color: White

16. UL LENS LIBRARY

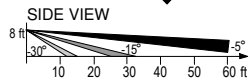
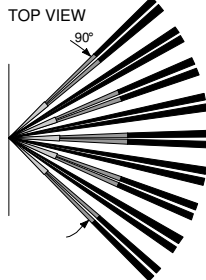
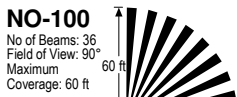
The following lenses may be used for UL certified installation.

Note: The arrow ▲ on the pattern graph indicates the dead zone of the detector which extends from the mounting surface to the location indicated by the arrow.

Section 1: Corner mounting Wide-Angle 90°

Lens No. 100 is the standard lens supplied with model SRN-2000. It provides maximum room coverage in applications where the PIR is installed in the corner.

Lens No. 100 may be used for general purpose applications providing 90° field of view with maximum coverage of 60 ft.

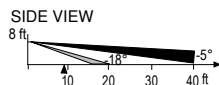
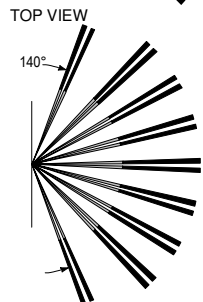


Section 2: Ultra-Wide-Angle

140°

Lens No. 76 provides the largest and widest room coverage in applications where the PIR is wall mounted or flush mounted.

Lens No. 76 provides 140° Ultra-Wide-Angle field of view and maximum coverage area of 40x80 ft.

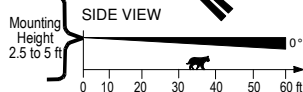
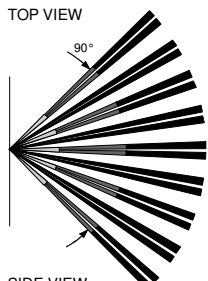
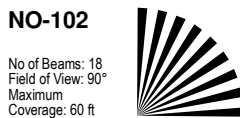


Section 3: Pet-Alley

Lens No. 102 consists of a single horizontal beam layer which allows pets to move under the coverage pattern undetected.

For optimum coverage throughout the protected area and for minimum dead zones, this lens requires mounting the PIR from 2.5 to 5 ft height and adjusting the coverage pattern carefully above the maximum expected height of the pets activity.

Lens No. 102 can be used for corner mounting providing 90° field of view and maximum coverage range of 60 ft.



Section 4: Long Range 100 to 120 ft.

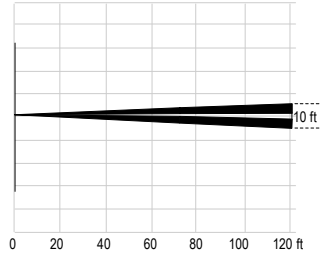
Lenses No. 30 and 34 are specially designed for long and narrow areas such as corridors, aisles and long walls.

Lens No. 30 provides long corridor coverage up to 120 ft. For optimum coverage, this lens requires a mounting height of 2.5 to 4 ft.

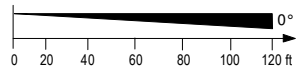
NO-30

No of Beams: 4
Field of View: 6°
Maximum Coverage: 10 x 120 ft

TOP VIEW



SIDE VIEW

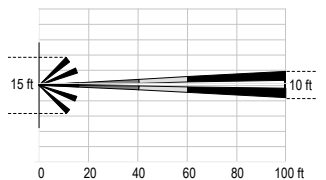


Lens No. 34 provides a long-range barrier coverage of maximum 100 ft. with 6 fill-in-beams and a 90° short range field of view. This unique coverage allows mounting the PIR higher than with lens No. 30.

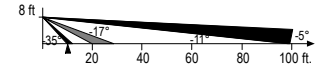
NO-34

No of Beams: 16
Field of View: 90°
Maximum Coverage: 10 x 100 ft

TOP VIEW



SIDE VIEW



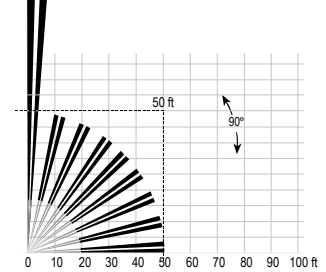
Section 5: Multiple Room and Corridor Coverage.

This group of lenses provide maximum economy in installation costs by producing unique coverage patterns which otherwise can be achieved only with 2 or 3 PIRs. Each lens in this group provides a combination coverage of Long-Range corridors and Wide-Angle rooms simultaneously – using a single PIR.

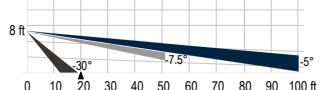
NO-41

No of Beams: 28
Field of View: 90°
Maximum Coverage: 50 ft/90°
10 x 100 ft Beam

TOP VIEW



SIDE VIEW



A. One Corridor and One Room

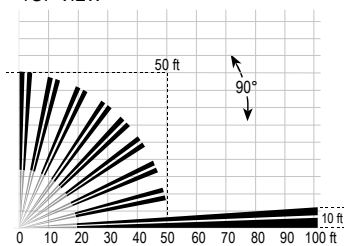
Lenses No. 41 and 43 provide a long-range 100 ft corridor coverage combined with a 90° wide-angle field of view and maximum room coverage of 50 ft.

In lens No. 41 the long-range beam is located at the left side of the wide-angle pattern while in lens No. 43 the long-range beam is at the right side.

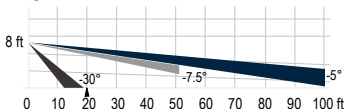
NO-43

No of Beams: 28
Field of View: 90°
Maximum Coverage: 50 ft/90°
10 x 100 ft Beam

TOP VIEW



SIDE VIEW



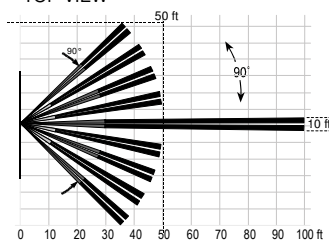
B. One Corridor and Two Rooms

Lens No. 45 provides a long-range 100 ft corridor coverage beam located at the center of a 90° wide-angle field of view with maximum coverage of 50 ft.

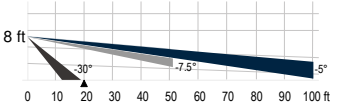
NO-45

No of Beams: 28
Field of View: 90°
Maximum Coverage: 50 ft/90°
10 x 100 ft Beam

TOP VIEW



SIDE VIEW



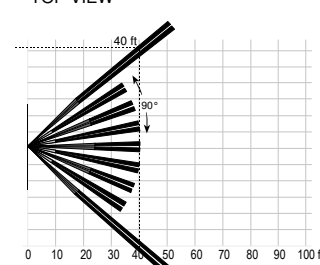
C. Two Corridors and One Room

Lens No. 47 provides two long-range corridor beams and a 90° wide-angle field of view with maximum room coverage of 50 ft located between the 2 corridor beams.

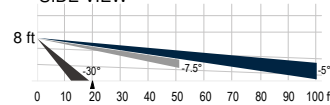
NO-47

No of Beams: 28
Field of View: 90°
Maximum Coverage: 10 x 100 ft

TOP VIEW



SIDE VIEW



Section 6: Combined Ceiling and Room Coverage

Lens No. 104 is a unique lens providing an "Upward looking" ceiling coverage in addition to the "down-looking" room coverage.

The "upward looking" pattern is directed approximately 20° above the main layer providing a 90° field of view with maximum coverage of 30 ft.

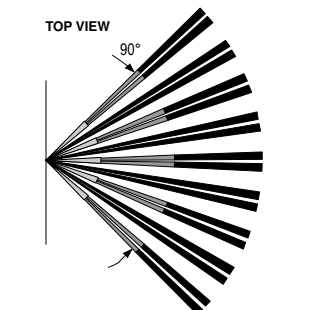
For optimum coverage, lens No. 104 may be used for corner mounting providing a 90° field of view with maximum room coverage of 45 ft.

To avoid possible false alarms, lenses with Upward-Looking beams are recommended not to be used where air conditioning vents, ducts, or other potential sources that may produce rapid temperature changes, are located in the ceiling.

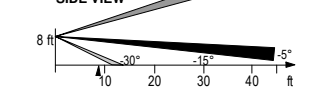
NO-104

No of Beams: 54
Field of View: 90°
Maximum Coverage: 45 ft

TOP VIEW



SIDE VIEW



WARRANTY

Visonic Limited (the "Manufacturer") warrants this product only (the "Product") to the original purchaser only (the "Purchaser") against defective workmanship and materials under normal use of the Product for a period of twelve (12) months from the date of shipment by the Manufacturer.

This Warranty is absolutely conditional upon the Product having been properly installed, maintained and operated under conditions of normal use in accordance with the Manufacturers recommended installation and operation instructions. Products which have become defective for any other reason, according to the Manufacturers discretion, such as improper installation, failure to follow recommended installation and operational instructions, neglect, willful damage, misuse or vandalism, accidental damage, alteration or tampering, or repair by anyone other than the manufacturer, are not covered by this Warranty.

The Manufacturer does not represent that this Product may not be compromised and/or circumvented or that the Product will prevent any death and/or personal injury and/or damage to property resulting from burglary, robbery, fire or otherwise, or that the Product will in all cases provide adequate warning or protection. The Product, properly installed and maintained, only reduces the risk of such events without warning and it is not a guarantee or insurance that such events will not occur.

THIS WARRANTY IS EXCLUSIVE AND EXPRESSLY IN LIEU OF ALL OTHER WARRANTIES, OBLIGATIONS OR LIABILITIES, WHETHER WRITTEN, ORAL, EXPRESS OR IMPLIED, INCLUDING ANY WARRANTY OF MERCHANTABILITY OR FITNESS FOR A PARTICULAR PURPOSE, OR OTHERWISE. IN NO CASE SHALL THE MANUFACTURER BE LIABLE TO ANYONE FOR ANY CONSEQUENTIAL OR INCIDENTAL DAMAGES FOR BREACH OF THIS WARRANTY OR ANY OTHER WARRANTIES WHATSOEVER, AS AFORESAID.

THE MANUFACTURER SHALL IN NO EVENT BE LIABLE FOR ANY SPECIAL, INDIRECT, INCIDENTAL, CONSEQUENTIAL OR PUNITIVE DAMAGES OR FOR LOSS, DAMAGE, OR EXPENSE, INCLUDING LOSS OF USE, PROFITS, REVENUE, OR GOODWILL, DIRECTLY OR INDIRECTLY ARISING FROM PURCHASER'S USE OR INABILITY TO USE THE PRODUCT, OR FOR LOSS OR DESTRUCTION OF OTHER PROPERTY OR FROM ANY OTHER CAUSE, EVEN IF MANUFACTURER HAS BEEN ADVISED OF THE POSSIBILITY OF SUCH DAMAGE.

THE MANUFACTURER SHALL HAVE NO LIABILITY FOR ANY DEATH, PERSONAL AND/OR BODILY INJURY AND/OR DAMAGE TO PROPERTY OR OTHER LOSS WHETHER DIRECT, INDIRECT, INCIDENTAL, CONSEQUENTIAL OR OTHERWISE, BASED ON A CLAIM THAT THE PRODUCT FAILED TO FUNCTION.

However, if the Manufacturer is held liable, whether directly or indirectly, for any loss or damage arising under this limited warranty, **THE MANUFACTURER'S MAXIMUM LIABILITY (IF ANY) SHALL NOT IN ANY CASE EXCEED THE PURCHASE PRICE OF THE PRODUCT**, which shall be fixed as liquidated damages and not as a penalty, and shall be the complete and exclusive remedy against the Manufacturer.

When accepting the delivery of the Product, the Purchaser agrees to the said conditions of sale and warranty and he recognizes having been informed of.

Some jurisdictions do not allow the exclusion or limitation of incidental or consequential damages, so these limitations may not apply under certain circumstances.

The Manufacturer shall be under no liability whatsoever arising out of the corruption and/or malfunctioning of any telecommunication or electronic equipment or any programs.

The Manufacturers obligations under this Warranty are limited solely to repair and/or replace at the Manufacturer's discretion any Product or part thereof that may prove defective. Any repair and/or replacement shall not extend the original Warranty period. The Manufacturer shall not be responsible for dismantling and/or reinstallation costs. To exercise this Warranty the Product must be returned to the Manufacturer freight prepaid and insured. All freight and insurance costs are the responsibility of the Purchaser and are not included in this Warranty.

This warranty shall not be modified, varied or extended, and the Manufacturer does not authorize any person to act on its behalf in the modification, variation or extension of this warranty. This warranty shall apply to the Product only. All products, accessories or attachments of others used in conjunction with the Product, including batteries, shall be covered solely by their own warranty, if any. The Manufacturer shall not be liable for any damage or loss whatsoever, whether directly, indirectly, incidentally, consequentially or otherwise, caused by the malfunction of the Product due to products, accessories, or attachments of others, including batteries, used in conjunction with the Products. This Warranty is exclusive to the original Purchaser and is not assignable.

This Warranty is in addition to and does not affect your legal rights. Any provision in this warranty which is contrary to the Law in the state or country where the Product is supplied shall not apply.

Warning: The user must follow the Manufacturer's installation and operational instructions including testing the Product and its whole system at least once a week and to take all necessary precautions for his/her safety and the protection of his/her property.

1/08



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D-1201-0 (Rev. 3, 10/14)



D-1201-0

