Perimeter Protection and Intrusion Detection
For commercial and critical infrastructure sites

Updated 05/23
Detection is the cornerstone of the security system

Every security system needs to be triggered by an event and it is usually the fact that a person, object or vehicle is moving or entering into an area.

Why detection?
An intruder can gain entry to a site from many different ways and securing sites has become a more complex task. OPTEX® solutions are designed to detect physical intrusion and unauthorised access which still account for a huge proportion of threats. They are a key element of the security system to alert at the right time and prevent damages or theft.

Why OPTEX?
OPTEX has been a leading sensor manufacturer for over 40 years, providing high performance detection and video analytics systems for security, safety and business applications. Its multi-layered intrusion detection systems are deployed in thousands of installations worldwide, from military and government facilities to transportation and utilities sites and other critical infrastructure.
The power of sensor-led visual verification

Outdoor environment brings constant changes in lighting conditions, weather, and wild life activity. It requires a real technology expertise to deal with the elements and deliver a system with no missed alarms and a minimum of nuisance alarms. OPTEX intelligent sensors are dedicated to one function: detection and have been designed to be accurate whatever the lighting and whatever conditions and changes in the environment. They work in conjunction with video systems to provide visual verification. Because vision can’t do it all, it makes sense to have combined sensing and vision and rely on sensor-led visual verification.

Integration with VMS for better security

OPTEX’s wide range of solutions can be fully-integrated with IP cameras, Network Video Recorders and other security devices, providing users a complete security system where local or remote monitoring stations will be alerted in the event of an unwanted intrusion; cameras will start tracking the object providing an accurate and fast visual verification, the incident events can be monitored in real-time, the images recorded, and an appropriate response determined.

Some deeper integration with VMS platforms delivers unique tracking and point location capabilities.

Effective perimeter protection

Detection is often the first step in an event-driven security system, triggering a number of actions or responses. As each site is unique in terms of environment, topology and security requirements, it is important to define what needs to be detected, where and when. The definition of the potential threats and the analysis of the site layers help design an efficient perimeter protection and security system. Different sensing technologies suit different types of applications and environmental conditions, and it is common to see that a combination of technologies is needed to achieve best result.
Layers of detection to suit the site requirement

Perimeter protection

Perimeter security is the first line of defence against intrusion and unauthorised access, and it should provide an efficient way to quickly identify threats or suspicious activities.

Outer perimeter
For sites surrounded by a sterile zone or an area with no public access, it is useful to be alerted if people or vehicles are approaching or loitering around the site perimeter. It provides pre-warning so the situation can be monitored and escalated if necessary.

Perimeter line
If a site is surrounded by a perimeter fence or wall, constant monitoring is needed as no one should intrude on the perimeter line during or after working hours. A number of sensing technologies can be deployed to remain armed at all times while not affecting the day to day operations.

When there is no physical perimeter and the access to the site is open, such as a car dealership or industrial park, a virtual perimeter can be created and activated to protect the premises out-of-hours. This can be achieved with Laser walls (LiDAR technology) or point-to-point Active Infrared (AIR) technology.
Approach detection and tracking

Once intruders have penetrated an area it is critical to track their whereabouts and follow them using PTZ cameras.

It is common to have a number of intruders, each aiming at different areas; hence the intrusion system needs to be intelligent enough to detect and track several intruders concurrently, guiding cameras and remote monitoring staff to assess the situation.

Building and asset protection

Expensive machinery, valuable material, fuel tanks or chemical containers stored outdoors require the highest level of security to avoid theft, misuse and disruption to the business.

Banks, government or corporate buildings need to protect any access to their building including roofs, windows, balconies and fire exits while not disrupting flexible working hours and possible maintenance work.

Indoor restricted areas, such as bonded areas in warehouses, IT server rooms etc. require accurate detection integrated with access control to check credentials and video surveillance for verification and case management reports.

In museums, galleries, bars or boutiques, there is a need to protect artwork, valuables and expensive or licensed goods while allowing free movement of people. Here customised and precise sensing technologies can be used to detect hands approaching/touching specific items. Additionally, for restricted areas, the detection technology can be combined with access control to validate the credentials of the person entering the zone.
Sensing technologies to protect each layer

Fence intrusion detection with fibre optics sensors
When a security fence is in place, fibre optic technology is a very accurate way to detect if someone has cut through, climbed over or crawled under it. Fiber Sensys PISS are ideal to protect large fence perimeters.

Creating virtual perimeter with active infrared
Active Infrared (AIR) detection consists of a transmitter emitting constant infrared beams to a receiver, creating a virtual perimeter. If a person or vehicle crosses the beams it interrupts the reception and creates an alarm.

Outer perimeter for pre-warning
Suspicious activities in sterile zones, such as loitering or approaching people or vehicles should be monitored as a pre-warning to a potential threat.

Building and roof protection
The building itself should be protected against intrusion, detecting people standing near doors and windows, climbing onto the facade, drilling into walls or accessing the roof.

Perimeter line
Any breach of the perimeter wall or fence should be notified immediately.
Sites with no physical barrier can still monitor intrusion within the site boundaries by using virtual perimeter technologies.
Asset protection indoor or outdoor

The theft of, or damage done to, certain equipment or assets can be critical to a company’s operations. It is essential to protect them wherever they are stored, inside or outside.

Infield or Approach protection

Using sensors with cameras helps locate and track intruders in alleyways around buildings or in wide open areas on site and give precise information to the response team.

LiDAR virtual wall or plane

Laser technology (LiDAR) enables an indoor or outdoor virtual wall or plane to be created. The laser wall can be used as virtual perimeter or as an additional protection layer above and along the wall or fence to detect intrusion. The laser plane generates a horizontal detection layer to protect the roof, ceiling or the in-field area.

Entry points: Gates and turnstiles

Gates and turnstiles need to be secured out-of-hours against intrusion but also during business operations to detect tailgating or unauthorised access.

Volumetric thermal detection

To cover wide open areas, or alleyway between the perimeter and the building, OPTEX long range thermal sensors are designed to work in conjunction with CCTV cameras to track across detection zones.
Fibre optic sensors

Our Fiber SenSys, fibre optic sensors

Our fibre optic sensors use advanced signal processing to detect intruders attempting to climb over, crawl under or cut through fenced perimeters ranging from 50 meters up to over 100km.

Beyond fence detection, our latest sensors can also be buried allowing them to detect people walking or vehicles approaching the perimeter. In addition to perimeter protection, several of our fibre optic sensors can be mounted on walls or ceilings to detect drilling.

The detection principle consists of a laser pulse sent through fibre optic sensing cable where disturbances to the fibre cable change the characteristics of the light monitored by the Alarm Processing Unit (APU). The APU algorithms intelligently analyse these disturbances and categorise them. All of our APUs can be tuned to distinguish disturbances created by wind, vibrations generated by nearby traffic, and small animals from those caused by genuine intrusions, such as climbing over or cutting the fence.

Designed for harsh and hazardous environments

Fibre optic sensors are ideal for high-security/harsh environment applications. Solutions can be designed for remote deployment with no power or communications needed in the field, reducing the infrastructure requirements and allowing the sensor to operate in locations prone to lightning and RF interference, corrosive environments including chemicals and salty sea air, and explosive environments.

Locating the intrusion

All sites have different characteristics and security requirements. To meet these needs, we offer a full line of perimeter sensors which includes both zone sensors and point location sensors.

Independent zones

For smaller systems or sites that require high-fault tolerance, zone sensors are the ideal choice. Although site-specific, an average zone is approximately 100m. We have sensors that can support one zone up to 25 zones. Whether your site is a simple commercial storage area, an industrial facility, or a high-security military site, we have a system that will fit your needs.

Point detection

As the size of the site increases, responding to intrusion alarms becomes more difficult. Knowing exactly where the intruder is located becomes more and more of a necessity for timely alarm response. Our point locating fibre optic sensors are ideal key components for larger sites or sites that require point detection. Benefits include full integration with video systems to provide video verification.

Durable and cost-competitive

APUs have a projected life of 20 years and offer excellent performance and low ongoing system maintenance costs making them very durable and giving them a low cost of ownership.
Fiber Defender® 300 Series
Models: FD322, FD331/2, FD341/2, and FD348R
The Fiber Defender 300 Series offers cost-effective, packaged one and two-zone fibre-optic detection solutions to provide an easy deployment to protect small to medium-sized perimeters.

Fiber Defender® 500 Series
Models: FD504, FD508, FD525, FD525R, and FD525-HALO™
The Fiber Defender 500 Series Alarm Processors are the superior choice for medium to large projects with multiple-zone requirements, from 4 up to 25 individual sensor cables/ zones that detect simultaneous intrusion attempts. In addition, the FD525-HALO utilizes its own custom hybrid cable which eliminates the need for conduit.

Fiber Defender® 7000 Series
Model: FD7104
The PoE compliant Fiber Defender 7000 APU Series features a new generation algorithm and a web interface with built-in tuning and calibration software that provides remote tuning.

EchoPoint™ Series
Point Locating Distributed Acoustic Sensors for large perimeters
The EchoPoint™ Distributed Acoustic Sensors (DAS) use the latest technologies in fibre optic sensing and classification algorithms to provide the most advanced solution for site requiring long-range, point location intrusion detection. EchoPoint can pinpoint the location of a disturbance to plus or minus 6m in a range of up to 100km and can identify the differences in intrusion attempts, making them a key part of the solution where precise intrusion location is needed.

Select the right fibre optic model for your application

<table>
<thead>
<tr>
<th>Fibre optic series</th>
<th>Fiber Defender (FD) 300 series</th>
<th>FD 500 series</th>
<th>FD 7000 series</th>
<th>EchoPoint</th>
</tr>
</thead>
<tbody>
<tr>
<td>Model</td>
<td>FD322</td>
<td>FD504/8</td>
<td>FD7104</td>
<td>EP9301/2</td>
</tr>
<tr>
<td></td>
<td>FD331/2</td>
<td>FD525-Halo</td>
<td></td>
<td>EP9311/12</td>
</tr>
<tr>
<td></td>
<td>FD341/2</td>
<td>FD525</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Fence application</td>
<td>●</td>
<td>●</td>
<td>●</td>
<td></td>
</tr>
<tr>
<td>Wall application</td>
<td>–</td>
<td>●</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Buried</td>
<td>–</td>
<td>●</td>
<td></td>
<td></td>
</tr>
<tr>
<td>High security sites</td>
<td>–</td>
<td>●</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Point location</td>
<td>–</td>
<td>●</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Remote capable</td>
<td>–</td>
<td>–</td>
<td></td>
<td></td>
</tr>
<tr>
<td>insensitive lead</td>
<td>–</td>
<td>–</td>
<td></td>
<td>+/- 6m</td>
</tr>
<tr>
<td>Number of SW tuning parameters</td>
<td>6</td>
<td>30</td>
<td>30</td>
<td>&gt;30</td>
</tr>
<tr>
<td>IP-enabled</td>
<td>● Opt.</td>
<td>●</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Number of channels (zones)</td>
<td>2</td>
<td>1/2</td>
<td>1/2</td>
<td>8/Ind. Rack card</td>
</tr>
<tr>
<td>Max. sensing cable per zone</td>
<td>500m</td>
<td>5km</td>
<td>5km</td>
<td>5km</td>
</tr>
</tbody>
</table>

(1) The EP9301 and EP9302 provide a detection range of 10km per processor, 5km per channel. EP9302 offers an event classification feature.
(2) The EP9311 and EP9312 provide a detection range of 100km per processor, 50km per channel. EP9312 offers an event classification feature.
Active Infrared beams for perimeter intrusion detection

For industrial or critical infrastructure applications, Active Infrared beams (AIR) provide a detection line similar to a trip wire or a virtual wall.

Active infrared beams consist of a pair of transmitter and receiver units, where the transmitter unit constantly emits infrared beams to the receiver and will trigger an alarm if the transmission is broken by an intruder. The detection is accurate even in warm countries where human temperature is similar to ambient.

The beams can be mounted on poles next to the fence to detect intruders crossing the fence line or on top of a wall or fence to detect anyone climbing. Some models can be stacked in beam towers which offer extra flexibility in terms of system design.

Reliable detection in harsh environments

Our SmartLine AIR sensors feature Quad beams which significantly reduces false alarms caused by wildlife or falling leaves.

Most of our Quad sensors are equipped with four selectable frequency channels making it easy to stack in beam towers as well as providing a highly reliable signal transmission between receiver and transmitter even when exposed to strong sunlight or harsh weather conditions.

Simple installation

The quality of the signal transmission relies on a good alignment between the transmitter and receiver beam. To make the optical alignment as easy as possible, OPTEX active beams are equipped with a telescopic magnifying lens, a sound gauge to validate the signal level sent and received, complemented, for some models, by five LEDs rating the signal from poor to excellent.

Durable and weather resistant

IP65 rated, the Smart Line series has been designed to resist against both water and dust. The two hoods featured on the front cover are positioned over the upper and lower beam to prevent frost from attaching to the cover and potentially affecting the signal power. The housing is made of UV resistant polycarbonate material to avoid deterioration caused by ultraviolet rays and maintain the good transparency for the infrared beams over time. Several models are also equipped with sunshine protection technology to give better performance against external light sources such as sunlight, mercury-vapour lamps, and fluorescent lights. In addition, for the coldest climates a heater accessory is available for all hardwired beam models to allow them to work consistently.
Smart-Line SL-QDM, SL-QDP (wired)

SL-200/350/650QDM, SL-200/350/650QDP

The SL-QDM and SL-QDP series is a range of high specification wired active infrared beams, designed to sustain harsh environmental conditions and ensure optimal communication between transmitter and receiver. They offer double modulation beams that differ in pulse patterns enhancing the discrimination of potential sources of false alarms such as sunlight and severe weather. They can be stacked in towers to create a virtual perimeter. When used in conjunction with our PiE-1 encoder, they can transmit alarm events via the network to many VMS and PSIM platforms that have an integrated OPTEX Redwall event code.

Pre-built beam towers

QDM, QDP and QFR models can be stacked into pre-assembled beam towers

When using active infrared beams for perimeter protection it is good practice to mount them into towers rather than on to walls or poles. This enhances the security level as the housing protects them from possible vandalism and conceals the mounting location making it very difficult for potential intruders to determine the number and height of beams installed. Another key benefit of using towers is the ability to host several supplementary components into a weatherproof enclosure, which can be mounted in a tidy and organised way. Towers can be single-sided or double-sided, wall mounted or ground mounted, and are available in 2 or 3m housing.

Smart Line QFR and QNR series (wireless)

SL-350QFR, SL-350QNR

Ideally suited to protect remote locations or areas difficult to wire, the Smart Line TNR series provides up to 60m and SL-QFR and SL-QNR series up to 100m perimeter protection that is completely wirefree, reducing the installation time and cost to a minimum. The battery operated sensors can accommodate most wireless transmitters available on the market, or OPTEX can provide beams with pre-fitted wireless transmitters.

Select the right IR beam model for your application

<table>
<thead>
<tr>
<th>Smart Line Series</th>
<th>SL-QDM, SL-QDP Series</th>
<th>QFR and QNR Series</th>
</tr>
</thead>
<tbody>
<tr>
<td>Reach</td>
<td>60m / 100m / 200m</td>
<td>100 m</td>
</tr>
<tr>
<td>Connectivity</td>
<td>Wired</td>
<td>Wireless</td>
</tr>
<tr>
<td>Beam frequency</td>
<td>4 channels selectable</td>
<td>4 channels selectable</td>
</tr>
<tr>
<td>Fog resistant</td>
<td>***</td>
<td>**</td>
</tr>
<tr>
<td>Lightning resistant</td>
<td>*</td>
<td>*</td>
</tr>
<tr>
<td>Frost resistant</td>
<td>***</td>
<td>**</td>
</tr>
<tr>
<td>Sunshine protection technology</td>
<td>–</td>
<td>–</td>
</tr>
<tr>
<td>Beam power control selector</td>
<td>–</td>
<td>–</td>
</tr>
<tr>
<td>Automatic transmit power control</td>
<td>–</td>
<td>–</td>
</tr>
<tr>
<td>Re-transmission</td>
<td>–</td>
<td>–</td>
</tr>
<tr>
<td>LED indicator and sound assist</td>
<td>–</td>
<td>(receiver)</td>
</tr>
<tr>
<td>IP/ PoE option</td>
<td>(with PiE-1 encoder)</td>
<td>(with PiE-1 encoder)</td>
</tr>
<tr>
<td>Can be stacked into Beam towers</td>
<td>*up to 2</td>
<td>*up to 2</td>
</tr>
</tbody>
</table>

* Specifications can be subject to change without prior notice.
REDSCAN Series

Sophisticated and precise LiDAR detector

REDSCAN is an award-winning laser detector that identifies the size, speed and distance of a moving object and can function in effect like an invisible wall or plane. Using LiDAR technology, the sensors are unaffected by light or heat sources making it a very reliable detection system.

Intelligent high resolution detection

The REDSCAN sensor constantly scans the detection area, emitting a laser beam which returns to the sensor after hitting an object. This allows the very quick and precise detection of any object calculating its size, speed and distance from the sensor. The sensor can therefore be configured to trigger an event or alarm only for a certain size of object such as a car, a person or even a hand approaching a valuable object (indoor mode) and ignore the others, making it very versatile.

The algorithms built into the sensor define the distance and size of the object so the perspective will always be correct, regardless if the object is located right next to the sensor or at the furthest point of its detection range.

Versatile sensor for endless applications

The REDSCAN sensors can be mounted in horizontal mode creating a virtual plane to protect open areas, ceiling and roofs or in vertical mode creating a virtual wall for perimeter, façade, gate and asset protection. The virtual wall can be tilted by 30 or 45 degree allowing it to detect a low target such as a crawling person or an object traveling fast such as a running person. It can work in conjunction with an access control system to detect unauthorised access, such a jumping over a turnstile, detecting a person entered a restricted area without the right credentials.

Independent detection zones and point location

All REDSCAN LiDARs provide a number of detection zones with between four and eight independent alarm outputs, maximizing the chances of detecting where an intrusion has occurred and directing pre-set cameras to verify the event. The REDSCAN Pro also provides the ability to set independently the target size and sensitivity for each zone. Different profiles can be set to match the security requirement such as day/night settings. The LiDARs provide live X&Y coordinates and when integrated with a video management platform it allows the very precise mapping and tracking of the detected objects.

Easy installation and configuration

The REDSCAN LiDARs are IP devices that can be powered over Ethernet as PoE (RLS-2020) or PoE+ (Redscan pro) and easily added onto any networked security system. They are integrated with most Video Management Software platforms. The detection area can be easily and precisely customized. Configuration and settings are completed using the Redscan Manager for the RLS-2020 and web browser for the REDSCAN Pro.
RLS-2020 series
Models: RLS-2020I and RLS-2020S
The REDSCAN Mini series includes an indoor only model, RLS-2020I and a high resolution indoor and outdoor model RLS-2020S. The latter can be used to detect objects being thrown inside a building from a controlled area to a public area or vice versa. It can also detect very small objects such as fingers.

The detection area of maximum 20x20m, is fully customisable and the device can be custom painted to blend with its environment.

The RLS-2020 series is Grade 3 compliant.

### REDSCAN PRO series
Models: RLS-3060V and RLS-50100V
The REDSCAN Pro is an advanced LiDAR series accurately and reliably detecting moving objects up to 100m away and providing eight detection zones with independent settings for each. The built-in assistance camera enables alarm logs to be recorded with images for visual verification. It is also a very useful set-up and maintenance tool. The laser scanners are ONVIF Profile S compliant making integration easy with any ONVIF platform and provide a high level of network security: https and IEEE 802.1x. Ideal for perimeter protection, roof protection and high security applications.

### Select the right model for your application

<table>
<thead>
<tr>
<th>REDSCAN series</th>
<th>RLS-2020 series</th>
<th>REDSCAN Pro series</th>
</tr>
</thead>
<tbody>
<tr>
<td>Models</td>
<td>RLS-2020I</td>
<td>RLS-2020S</td>
</tr>
<tr>
<td>Installation location</td>
<td>Indoor</td>
<td>Indoor/Outdoor</td>
</tr>
<tr>
<td>Detection range</td>
<td>20x20m 95°</td>
<td>20x20m 95° (expansion mode 30m radius)</td>
</tr>
<tr>
<td>Independent detection zones</td>
<td>4</td>
<td>4</td>
</tr>
<tr>
<td>Alarm outputs</td>
<td>3 outputs, 28 VDC 0.2A max. N.O./N.C. Selectable</td>
<td>6 outputs, 28 VDC 0.2A max. N.O./N.C. Selectable</td>
</tr>
<tr>
<td>Detection resolution response time</td>
<td>0.25 degree / within 75msec to 15 min.</td>
<td>0.25 degree / within 75msec to 15 min. (for indoor and outdoor mode)</td>
</tr>
<tr>
<td>Auto area adjustment</td>
<td>–</td>
<td>–</td>
</tr>
<tr>
<td>Indoor throw-in mode</td>
<td>–</td>
<td>–</td>
</tr>
<tr>
<td>Loitering detection</td>
<td>–</td>
<td>–</td>
</tr>
<tr>
<td>Wall/ fence top protection mode</td>
<td>–</td>
<td>–</td>
</tr>
<tr>
<td>Configuration</td>
<td>REDSCAN Manager software</td>
<td>Intuitive Web User Interface (via web browser)</td>
</tr>
<tr>
<td>Integrated camera</td>
<td>–</td>
<td>–</td>
</tr>
<tr>
<td>Recording of events and images on sensor</td>
<td>–</td>
<td>–</td>
</tr>
<tr>
<td>Operating temperature</td>
<td>-40°C to +50°C</td>
<td>-40°C to +60°C</td>
</tr>
<tr>
<td>Built-in bracket</td>
<td>–</td>
<td>–</td>
</tr>
</tbody>
</table>

* ONVIF is a trademark of Onvif, Inc.
** Specifications can be subject to change without prior notice.
REDWALL SIP Sensor series

Volumetric detection for approach and alleyway protection

The long-range and high-mount REDWALL SIP outdoor detection systems provide volumetric detection for wide open areas and long alleyways. Working in conjunction with a CCTV system, they will detect and track intruders across detection zones and guide cameras to visually verify the alarm activation.

Detecting and Tracking in open area

Once intruders are on site, especially on large sites, it is a challenging task to track their whereabouts. The OPTEX SIP series sensors can be mounted up to 4m height and provides a wide coverage up to 50mx30m or long narrow range up to 100m by 3m and connect to cameras to detect where the targets are and trigger camera pre-sets. Multiple SIPs can be connected to a single PTZ camera.

Two in one sensor with the Creep zone

SIP-3020/5-404/5-4010/5, SIP-5030 and SIP-100 analogue and IP models.

The creep zone is the area located under the sensor to detect anyone walking underneath the PIR or trying to tamper with the sensor. The SIP models with creep zone functionality features an independent sensor looking down, providing 5m 90 degree arc detection, which can be rotated by 270 degrees. When used with PTZ camera it allows to see if anyone is there, waiting to strike.

Catch performance

Detection is the cornerstone of all event-driven security systems, and it is crucial to ensure no intrusion is missed. To provide best catch performance throughout the detection range, the REDWALL outdoor sensors are equipped with a near and far sensing area, featuring independent sensitivity settings that automatically adjust to the ambient temperature and light conditions to ensure no detection is missed.

Precise detection using the Area View Finder

The SIP sensor’s lens features many sections to detect moving objects. Using the Area View Finder accessory, those sections can be identified on the field of view of the sensor to identify sections outside the detection area that should be masked to avoid any risk of overspill or nuisance alarms created by vegetation.

Anti-vandalism features

All REDWALL SIP sensors are made of reinforced polycarbonate housing and feature anti-vandalism functions to notify the system if they have been tampered with. This consists of an Active Infrared anti-masking detection and anti-rotation function with accelerometer.
Flexibility of Wireless SIPs

Our battery powered SIP-3020WF/ 404WF/ 4010WF work with most universal transmitters enabling quick deployment for temporary sites such as construction sites or events, being used for CCTV Towers or simply when the access to main power is challenging.

Added functionalities with the IP series

Models: SIP-3020/404/4010/ 5030/100-IP-BOX
SIP-3020/5-404/5-4010/ 5-IP-BOX

The SIP-IP_BOX series feature our IP encoder PiE-1 which is integrated with many VMS platforms. A number of additional alarm event codes can be transmitted allowing the system to be more dynamic, creating rules for different events. For instance, if two detection zones are simultaneously activated (Creep and Near for instance) a COMBI code is generated to trigger a specific camera view to see both areas rather than juggling back and forth with two pre-sets. Another benefit of the IP integration is to monitor devices and alert the management software if any Redwall SIP is not working or dropped off the network.

Select the right model for your application

All sensors can be mounted between 2.3 to 4m height.

<table>
<thead>
<tr>
<th>Model</th>
<th>Detection range</th>
<th>Auto sensitivity adjustment</th>
<th>Creep Zone</th>
<th>Alarm output</th>
<th>Connectivity</th>
<th>Device monitoring / combi codes</th>
<th>Operating temperature</th>
<th>Anti-vandalism</th>
</tr>
</thead>
<tbody>
<tr>
<td>SIP-3020/ SIP-404/SIP-4010</td>
<td>30x20m/40x4m/40x10m</td>
<td>●</td>
<td>–</td>
<td>1</td>
<td>Hardwired</td>
<td>–</td>
<td>-25°C +60°C or -40°C +60°C</td>
<td>●</td>
</tr>
<tr>
<td>SIP-3020/5-404/SIP-4010/SIP-5030</td>
<td>30x20m/40x4m/40x10m</td>
<td>●</td>
<td>–</td>
<td>1</td>
<td>IP/PoE</td>
<td>●</td>
<td>-25°C +60°C or -40°C +60°C</td>
<td>●</td>
</tr>
<tr>
<td>SIP-3020/404/4010/IP-BOX</td>
<td>30x20m/40x4m/40x10m</td>
<td>●</td>
<td>–</td>
<td>1</td>
<td>IP/PoE</td>
<td>●</td>
<td>-25°C +60°C or -40°C +60°C</td>
<td>●</td>
</tr>
<tr>
<td>SIP-3020/5-404/5-4010/5-IP-BOX</td>
<td>50x30m</td>
<td>●</td>
<td>●</td>
<td>2</td>
<td>IP/PoE</td>
<td>●</td>
<td>-25°C +60°C or -40°C +60°C</td>
<td>●</td>
</tr>
<tr>
<td>SIP-5030</td>
<td>100x3m</td>
<td>●</td>
<td>●</td>
<td>3</td>
<td>Hardwired</td>
<td>–</td>
<td>-25°C +60°C or -40°C +60°C</td>
<td>●</td>
</tr>
<tr>
<td>SIP-100-IP-BOX</td>
<td>30x20m/40x4m/40x10m</td>
<td>●</td>
<td>–</td>
<td>1</td>
<td>Battery operated*</td>
<td>–</td>
<td>-25°C +60°C or -40°C +60°C</td>
<td>●</td>
</tr>
</tbody>
</table>

* Batteries and wireless transmitter not provided
** Specifications can be subject to change without prior notice.
Additional OPTEX solutions

Sensor-lead visual verification
To facilitate the efficient video verification of alarm events, sensors and cameras should work together, matching the detection coverage with the camera’s field of view and the detection zones with the pre-sets. OPTEX IP sensors are integrated with the key Video Management Software platforms to enable a direct alarm communication with security platforms and the device monitoring, ensuring that all equipment is working as it should.

Visual verification for monitored alarm systems
Another part of OPTEX offering is the Cloud based Intelligent Visual Verification solution, which consists of an IP gateway on site and a Cloud portal accessible to the participating monitoring stations. On site, the OPTEX Bridge connects and pairs indoor and outdoor intrusion sensors and/or panic buttons with IP cameras and transmits the event video securely to the Cloud. The monitoring station accesses the footage immediately within the Monitoring software in place and can share it with the site owner/carer to confirm the alarm or dismiss it.

Access Security
To protect buildings against unauthorised access, OPTEX provides tailgating detection systems. The OV-102 is designed to detect when a person has followed another through an open door or someone has exited via the same door without using his/her access credentials. Tailgating prevention in airlocks or revolving doors are also part of OPTEX's portfolio.

Vehicle sensors
Vehicle detection is mainly used for gate or barrier activation but also for many other applications such as alert for drive through and sign activation. OPTEX offers microwave-based single lane vehicle sensors. The OVS series is installed above ground, as opposed to ground loop systems that require costly and unsightly civil works, and can detect vehicles of all types.

Some solutions and products featured in this brochure are not available in every countries, please contact your local OPTEX representative for further details.