ADPRO® PRO

Passive-Infrared Perimeter Intrusion Detection Systems (PIR PIDS)

System Design and Planning Manual

December 2014

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ADPRO® by xtralis

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Document Conventions

The following typographic conventions are used in this document:

Convention	Description
Bold	**Used to denote:** emphasis Used for names of menus, menu options, toolbar buttons
Italics	**Used to denote:** references to other parts of this document or other documents. Used for the result of an action.

The following abbreviations are used in this document.

Abbreviation	Description
AA	Aperture Angle
CZ	Creep Zone
PID	Perimeter Intrusion Detector
PIDS	Perimeter Intrusion Detection System
PIR	Passive-Infrared

The following icons are used in this document:

Convention	Description
	**Caution:** This icon is used to indicate that there is a danger to equipment. The danger could be loss of data, physical damage, or permanent corruption of configuration details.
	**Note!** This icon is used to highlight useful advice and recommendations as well as information for an efficient and trouble-free operation.

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1 General Notes

1.1 Information about this manual

Use of the manual	This manual is meant to be a planning guide to allow you to effectively mix-and-match “ADPRO by Xtralis” products tailored to your individual needs without losing sight of costs.
Diagrams in this manual	The diagrams in this manual are for a basic understanding only and may differ depending on the version of your device.
Loss of manual	A replacement copy can be ordered from Xtralis if this manual is lost.

1.2 Personnel requirements and qualifications

This manual assumes the following qualifications for the various tasks described in the manual:

System Integrators	Skilled system integrators having the educational background, experience and knowledge of standards, regulations and procedures which qualify them for work on alarm/IT systems and risk detection.
Electricians	Electricians having the educational background, experience and knowledge of standards, regulations and procedures that qualify them to work on electrical systems and risk detection.

1.3 Purpose and objective of these instructions

This non-binding planning manual serves as a guide and decision support for insurers, consultants, planning engineers, installers and integrators. As a component of an integrated overall concept for property protection, the manual aims to provide a clear picture of how a carefully planned system can prevent risks before threats can materialize.

On account of the variety of properties to be protected and the uniqueness of each property and its individual surroundings, only the basics can be discussed. Sample solutions and concepts are depicted with the help of typical cases found in common practice.

1.4 Intended use

Xtralis ADPRO detectors are designed to detect the presence of persons without access authorization in sensitive areas (termed as “intruder”, “offender” or “unauthorized person” in this manual) and to initiate intervention measures quickly or switch on a camera so that the event can be analysed further.

These planning instructions discuss protection from theft, tamper and unauthorized individuals on commercial properties or infrastructural facilities on the basis of an assessment of the risk situation. High risk properties such as (nuclear) power plants, properties in military zones or jail properties are not discussed. This planning manual does not elaborate on individual personal safety measures. We would be glad to go over these personally with you.

1.5 Applicable documents

1.5.1 Manuals

- ADPRO PRO E Introduction to PIR Technology Manual, document no. (27385)
- ADPRO PRO E PIR Installation Manual, document no. (27386)
- ADPRO PRO E PIR System Setup Manual, document no. (26571)
- VdS Directive System Components for Perimeter Monitoring VdS3456
- VdS Perimeter Security Guide VdS 3143
- prEN50606 External Perimeter Security Systems (in development)

1.5.2 Xtralis Websites

www.xtralis.com

Xtralis Security Solutions Support Site

www.xtralissecurity.com

Data sheets and commercial information are available in the public area of the website. You can register free of cost on the site, where other detailed information is available to our partners free of charge, including manuals, Xtralis white papers, presentations, images, videos, certificates, as well as software and drivers.

Landing page ADPRO PRO E Passive-Infrared Detectors

www.xtralis.com/adpro_pro_e_detectors

Xtralis Product Videos

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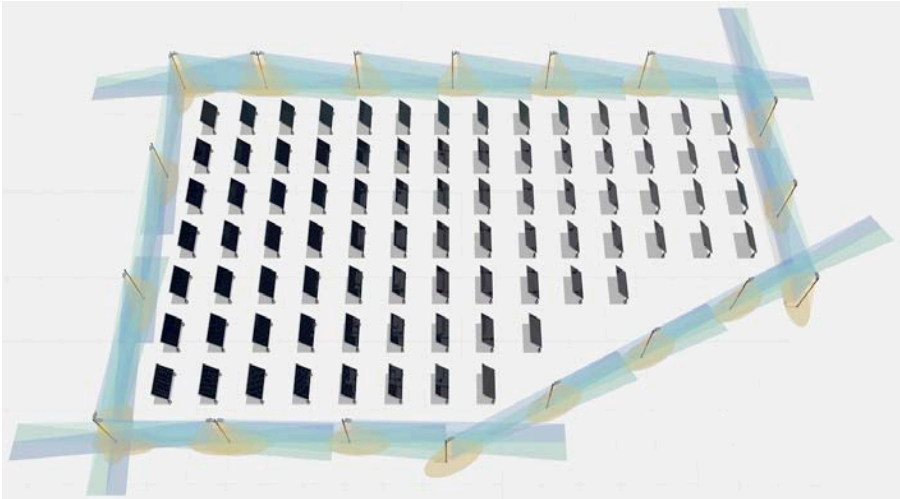
2 Planning focus



2.1 Threat situation

Without monitoring systems, many commercial facilities and industrial buildings and their associated exteriors, such as logistics centers, auto companies with large open spaces, goods and machine warehouses or scrap yards, pose no great challenge to potential offenders.

In times of economic crisis, these external areas present a considerable incentive for criminal action and become risk areas if unauthorized individuals gain admission unnoticed. Due to increasing dependencies on commercial processes, even minor disruptions can cause substantial economic damage.

Thus building protection to safeguard building interiors and/or to protect against tamper forms the focus of an integrated security concept. The use of mechanical perimeter security systems, increasingly in conjunction with electronic security systems, is now generally recognized and accepted. Accordingly, an integrated security concept starts at the very boundary of a property.

2.1.1 Threat analysis

The process of threat analysis includes determining potential threats and offender profiles, assessing potential damage and estimating the likelihood of occurrence of a damage event. The owner of the property, the lessee, the lender, the police, the fire brigade and the (future) insurance company must all compulsorily be included in the planning.

2.1.2 Threat scenarios

These planning instructions cover the following conceivable scenarios:

- Theft of goods on commercial premises
- Break-in into buildings
- Sabotage and vandalism to operating equipment
- Espionage
- Arson

2.1.3 Offender profiles and Security Grading

There are different offender profiles possible for the above threats:

Infrequent offender

Takes advantage of a favourable opportunity to acquire cash or items of value (drug-related crime) or indulge in vandalism (e.g., graffiti, arson, tamper).

Professionals

A lone operator or a gang marked by a targeted approach (e.g., bulk procurement of special (auto) spare parts, targeted theft of valuable substances, tamper or spying)

The following are an offender's "qualification" or capability level in the context of a security system according to EN50131-1:

- **Level 1: Low risk**
  An intruder or robber with minimal knowledge of security systems. In addition, he is restricted to a limited number of easily available tools.
- **Level 2: Low to medium risk**
  An intruder or robber with limited knowledge of security systems. He possesses generally available tools as well as portable instruments such as a multimeter.
- **Level 3: Medium to high risk**
  An intruder or robber known to be acquainted with security systems and who has an extensive inventory of tools and portable electronic devices.
- **Level 4: High risk**
  This level is used if security takes priority over all other factors. A high-risk intruder or robber is capable of planning a burglary or robbery in detail and possesses a full set of tools, including resources to replace system components in a security system.

2.1.4 Types of attack in a perimeter protection system

- **Walking/running in upright position**
  An intruder tries to cross the boundary walking or running. This is primarily the case where systems are not restricted by barriers (no fencing erected).
- **Climbing over a barrier**
  An intruder tries to penetrate the system by climbing over a barrier. This applies only to systems restricted by barriers. In zones monitored by these systems, it is not possible to climb over barriers without aids. A downstream detection system "assumes" that the burglar has broken in by climbing over a barrier. However, the break-in may also have been caused by cutting through a barrier.
- **Cutting through a barrier**
  Like "Climbing over a barrier", a mechanical barrier is a prerequisite for this type of attack. Due to technological reasons, a PIR detector cannot itself detect if a barrier is cut. However, the system can be designed so that manipulations at the fence, especially the subsequent intrusion, are detected reliably. Of particular importance is the right choice and placement of detectors.
- **Ladders**
  By ladders are generally taken to mean all aids to climbing over (even a tall truck parked next to barriers). There are different way to climb over a mechanical barrier using a ladder:
  - contact-based use of ladders (leaning)
  - contactless use of ladders (step ladders)

  For technological reasons, PIR detectors cannot themselves detect if someone climbs over a barrier using a ladder. However, the system can be designed and detectors chosen such that this type of attack and subsequent intrusion are detected reliably. Here again, careful system design has a significant effect on event detection and the rate of false alarms. In contrast to other detection technologies, PIR technology detects not just leaning ladders but contactless ladders and other tools for climbing over as well.
- **Crawling**
  In general it is assumed that crawling under a monitored barrier can be detected only by so-called ground detection systems. For technological reasons, PIR detectors cannot themselves detect if someone

crawls under a barrier. Because the intruder must come up again, however, to carry out his plans, the system can be designed such that this type of attack and subsequent traversal of the monitored area is detected reliably. Here too, the right choice of detector is particularly important. For example, volume detectors should be used for detecting area intrusions.

- **Driving through**
  Comparable to walking/running, though at a higher speed and with greater mass and therefore greater energy. Unlike in the case of walking and running, one can also break through a mechanical barrier by driving. For technological reasons, PIR detectors cannot accurately detect if someone drives through the barrier, due to the speeds involved. Because the intruder must come to a standstill, however, to carry out his plans, the system can be designed such that this type of attack and particularly the subsequent traversal of the monitored area is detected reliably. Here, the right choice and number of detectors and their strategic placement is of particular importance.

2.2 Environmental effects

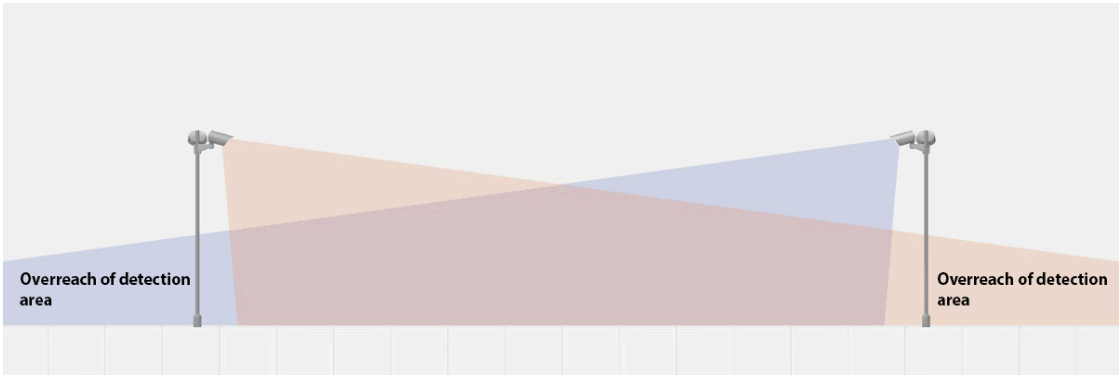
Note: For easier comprehension, all views are not shown to scale. Some dimensions and spaces such as mount height, relative sizes of human/pole/detector or creep zones may therefore seem exaggerated.

2.2.1 Nature (Lawns – Trees – Animals)

In planning perimeter monitoring using Xtralis ADPRO PRO PIR detectors, it is extremely important to consider the following points.

- There should be no objects likely to be moved in the wind such as trees/branches/shrubs/meadows with tall grass, or fences and stretches of water in the detection range.
- When inspecting the property, look for animal holes (fox, badger, rabbit warrens etc.) near the barriers. Ask the user about this.

2.2.2 Traffic (Vehicles – Devices – People)



In principle, ranges are specified based on the detection of a person or object at a distance of 1.50 m or more. The region beyond is the so-called overshoot of the detection range, provided this is not limited by natural (tree, mountain etc.) or artificial (fence, wall etc.) entities.

- Wide-bodied, heat-radiating vehicles (truck, tractors, harvesting machines etc.) or devices (diesel generators of standby generator units, refrigerated containers, etc.) are strong heat sources. During planning, therefore, ensure that these heat sources cannot affect a detector's detection range.
- Do not align a detector directly along a wire or metal fence.
- Plan to acquire alignment telescope AD 851 for precise alignment.
- To avoid false alarms due to passers-by outside the barrier, restrict the field of view through structural measures.

2.2.3 Climatic conditions

Depending on climatic conditions, parts of the perimeter monitoring system may be subject to constant extreme environmental influences. These natural influences cannot be prevented but can be largely counteracted through precise planning:

- PIR detectors should be positioned such that they do not ever directly face the sun, if possible. This can be achieved by intelligent alignment and placement.
- Individual detectors should never be aligned directly along a wire fence as far as possible. In a sunlight-rich environment, these can become significantly warm and generate warm air turbulence in the detection range. This moving heat build-up may trigger false alarms or cause sensitivity settings to be incorrectly configured at the time of commissioning itself.
- Ascertain whether persistent and intense fog is expected at the planned location. Because fog consists of very small water droplets in the micrometer range (20... 40 µm), radiation emitted from a body is attenuated by the time it is received at a PIR detector. Infrared radiation gets reflected and partially absorbed in water droplets. Hence experience shows that the distance between individual detectors should not be be more than 50 m. Alternatively, intelligent systems can be designed if the perimeter is of an appropriate size. This will ensure reliable operations with a detection rate that meets requirements.
- Rain, hail and snowfall also influence the detection rate due to attenuation. Since these particles have a larger diameter, though, sufficient radiation can still pass through in between the particles. Normally, such environmental conditions do not persist. Especially in areas near the coast and near large lakes, these factors must be taken into account in the design.
- In agricultural settings (e.g., cultivated fields) or deserts, there can be strong wind and therefore continuous, strong pollen drifts (grain fields), falling of leaves (near forests) and sandstorms. These too should be adequately taken into consideration in the planning. In particular, ensure that the barrier itself is able to resist wear and the poles for fixing PIR detectors can withstand wind and swaying as much as possible. Due to changing climatic conditions, extreme weather effects can be increasingly expected even in Continental Europe.

2.2.4 Topography

Where there are uneven ground structures such as hills or trees, areas in the shadow of these structures are not covered and this can lead to detection gaps. Given the broad choice of detectors and options for combining them intelligently, a holistic solution can be found for virtually every scenario. Modern services such as Google Earth or Google Maps also provide a good platform for a preliminary alignment or environmental analysis.

Standard minimum distances must be maintained in the vicinity of high-tension lines because otherwise, cable signals can get affected and may lead to inaccurate measurements and false alarms.

2.3 Design and choice of detectors

2.3.1 The more thorough the design, the more difficult the offence

The more a perimeter protection design is attuned to factors on the ground, the greater the effort offenders must make in order to intrude: money spent on tools, know-how, time to penetrate the protection system in place.

2.3.2 Time modeling: Detection through to intervention

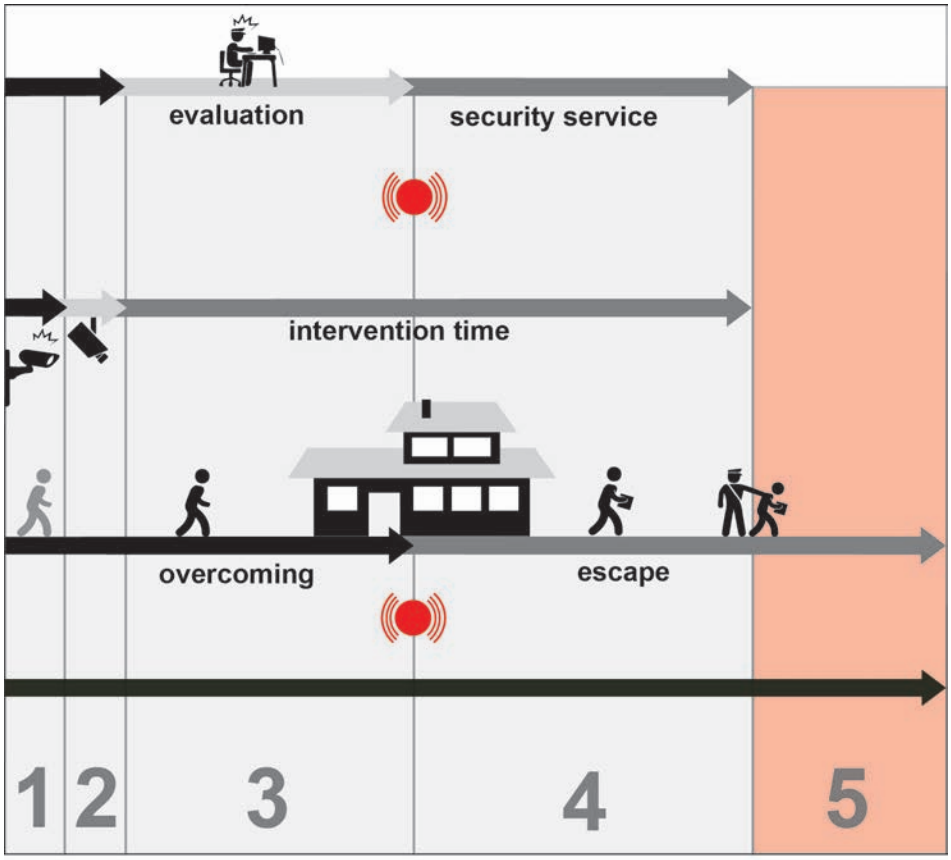
In the optimal case, an alarm is triggered at the external boundary, namely on the perimeter, and not on the property itself. An optimal detection rate with simultaneous prevention of nuisance alarms facilitates the rapid verification of alarms and saves valuable minutes and seconds. A time model should be a planning accessory.

The goal is to shorten intervention time and increase the effort, risk and know-how required by the offender for committing the offence. Intervention time is the time required by forces providing assistance after detection to analyze the danger, raise an alarm and reach the protected property. Intervention time can vary greatly based

on local, time-related or other conditions. Increased traffic volumes or extreme weather conditions at frequent intervals lead to a clear increase in intervention time. It is quite possible that only a few security staff are looking after a large or multiple areas and may need to move around in a vehicle.

The design of the perimeter protection system must include a forecast of intervention time requirements under realistic conditions. Optimally, these time requirements should be assessed in a test. Localizing the intrusion and precise information about the penetration point can lead to quick and effective intervention.

The following flow diagram depicts concurrent processes distributed over five time windows (see next page):



1: Detection

The offender enters the perimeter and is immediately detected by an ADPRO detector.

2: Camera switch-on

Immediately upon detection, a camera is switched on.

3: Penetration, assessment and start of intervention

As part of an assessment phase, operators (or the video analysis software) check to see whether an alarm (internal or external) should be raised while the intruder is busy penetrating the physical barriers.

4: Escape and intervention

At this point, intervention forces (e.g., security services) are notified of the alarm, the offender may be scared off/repelled through a well-directed counter-attack, or the forces move in and apprehend the unauthorized person before the latter can flee. Intervention times can be shortened through accurate detection and processing, reducing the time the offender has to attempt to penetrate the system and escape.

5: This time window becomes relevant if the offender acts fast before the alarm management process alerts intervention forces and these arrive on the scene. An early detection, that is, at the start of the mechanical resistance phase, provides significantly more time to initiate intervention measures. If the alarm triggers only when the offender has reached the property (here, building), the offender may manage to flee.

2.4 Advantages of PRO E detectors as compared to other technologies

As compared to other technologies, Xtralis ADPRO® PRO E detectors offer a very favorable price-performance ratio for the stretches or areas monitored. PIR detectors are a multi-faceted solution that can be used across the most varied of topographical features. Be it an asphalted, paved or graveled surface, a grassy plain, (flower) beds or roof construction.

- Volumetric Xtralis ADPRO PRO E detectors cover a large volume of area.
- By contrast, long range detectors cover narrow regions and can detect objects even at a great distance.
- The areas most commonly covered by PIR detectors are the perimeter and outer periphery. However, detectors can be also used to monitor inner spaces, such as in large workshops.
- Only minor preliminary work is required on the property for areas to be protected because most existing camera/light poles can be used for installation.
- Operating expenses and maintenance costs are also relatively low, because the systems require very little maintenance if planned and placed into operation properly.
- Any seasonal adjustments or adjustments based on change of use can be conveniently configured remotely if the detectors are interconnected over a data bus, such as on an Xtralis management system or VideoGateway.
- The ADPRO PRO E-detector housing is tamper-proof, UV-stable and impact-resistant.
- As compared to an active-infrared detector with transmitter and receiver, sunrise and sunset do not play a major role if the detector is correctly positioned, since the detector tilt can be adjusted.
- Xtralis ADPRO PRO E curtain detectors can be also attached at a physical boundary such as a fence or wall at a maximum distance of 1.5 m even if they have a large nominal range. When designing space-intensive photovoltaic systems in particular, PRO E detectors with the considerable range they offer stand out due to their significant cost advantage over microwave or active infrared systems.
- PIR PID detection ranges are particularly beneficial when there are geometrical constraints such as hilly terrain. Due to technology constraints, active infrared detectors are restricted to linear radiation. Passive detectors can easily handle creeping or even undermining across uneven surfaces.

Note: You can find detailed information with diagrams in the ADPRO PRO E customer presentation at www.xtralissecurity.com

2.5 Commissioning planning: Personnel requirements

Depending on the scope, one employee may be able to handle mounting, installation and commissioning. There are many variations and combinations available to setup a detector or an intelligent system, depending on requirements. In addition to alignment by eye, telescope, PC software, remote tester or WLAN connection, all detectors can be conveniently aligned using iCommission (one-man commissioning tool) on a smartphone. Alignment can also be optimized conveniently after a test phase.

2.6 Types of Protection

Under especially demanding environmental conditions, such as along the coast or in sandy/dusty surroundings, detectors must be cleaned at regular intervals. Pressure washing devices are often used.

On a very hot, sunny day, if detectors cool due to the use of a pressure washer or due to a sudden storm with heavy rain, there can be heavy condensation. The mirror may mist up as a result. An integrated membrane is provided to prevent water penetration and especially condensation in the housing.

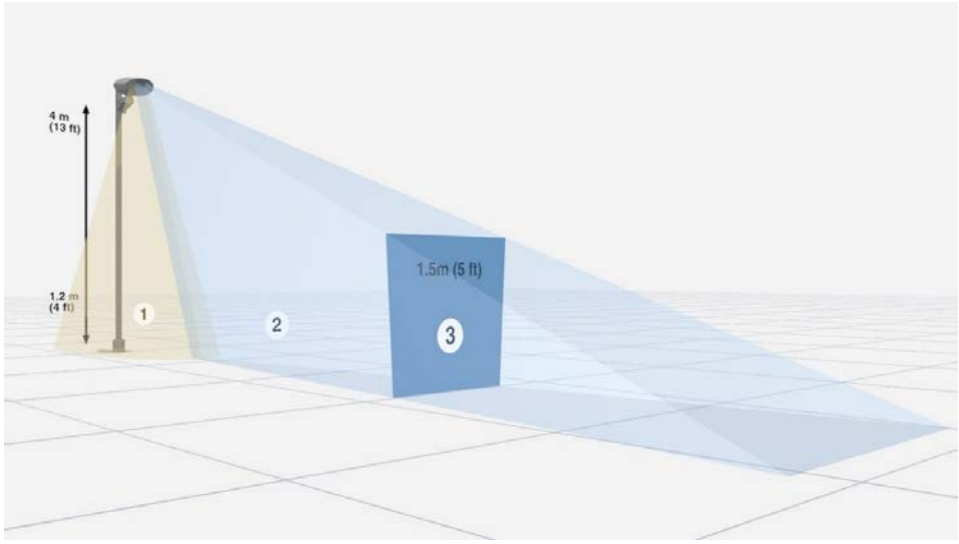
All detectors offer IP 65 rated protection.

2.7 Placement of detectors – case studies

Please refer to chapter Product Overview / Technical Data for a summary of the lengths, angles of aperture etc. for the various ADPRO by Xtralis products, depending on your application.

Note: In the following examples, overshoots are prevented by using IR-nontransmissive sheeting. These must be regularly maintained, so that they do not swing loosely or flutter in the wind (it is recommended that panels be used instead of sheeting as far as possible).

The diagram shows the overshoot of individual zones (1) and (2), as well as those of the detector and its boundary. Boundary (3) protects against thermal agitation behind this zone, which can produce nuisance alarms.



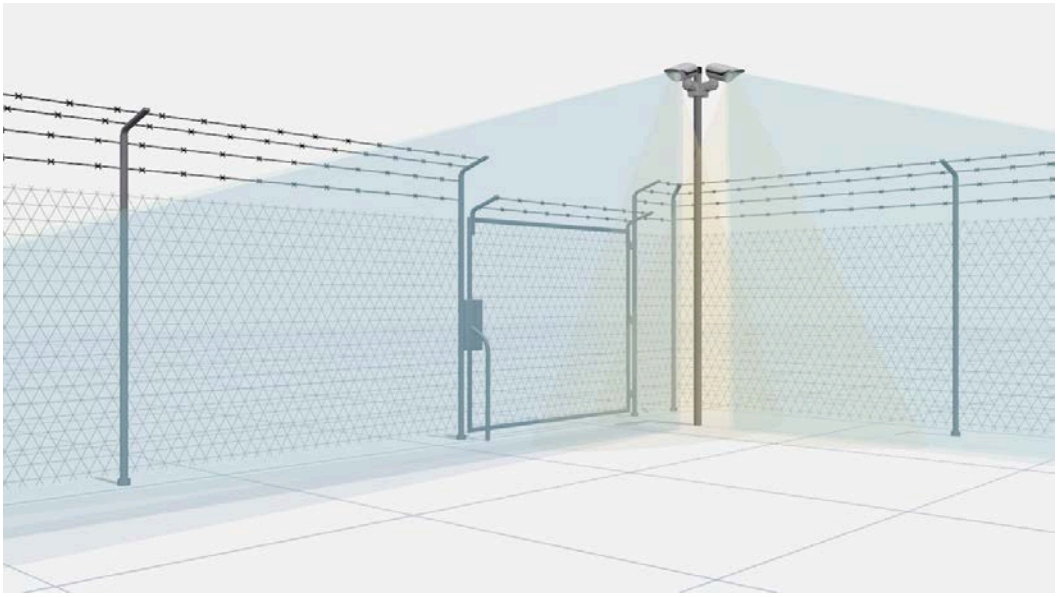
1: Creep Zone
2: Continuous curtain – no gaps in detection
3: End of nominal range

2.7.1 Simple enclosure

Requirement

A high enclosure with barbed wire top assembly needs to be monitored. The inner area should not be monitored to avoid false alarms due to the presence of authorized individuals (employees). However, every detection outside or on the boundary should trigger an alarm or cause a camera to switch on.

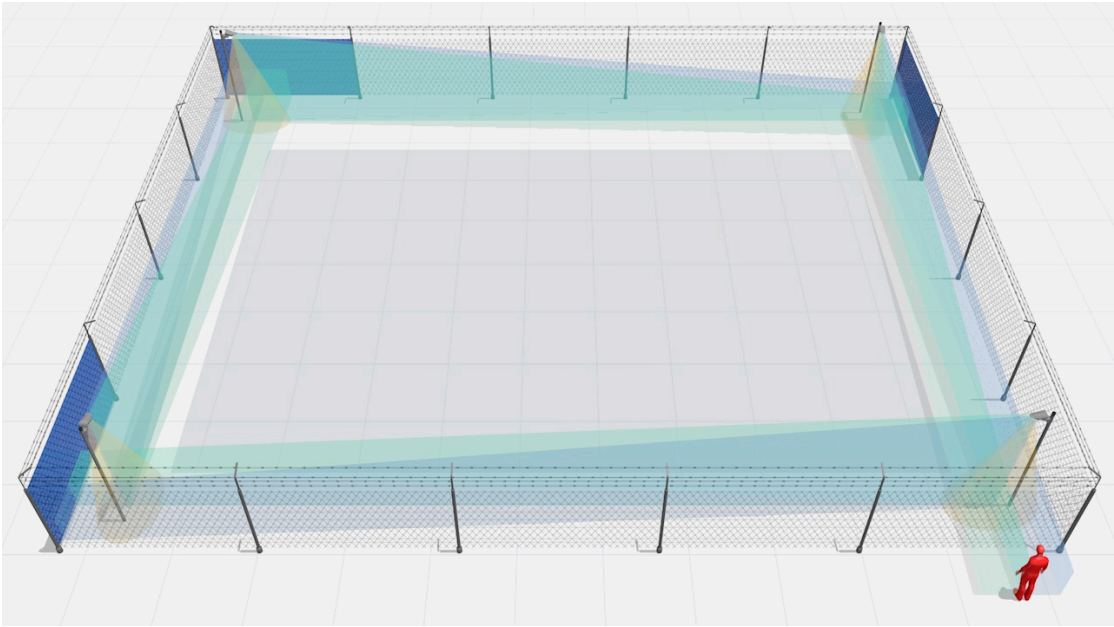
Planning



The following curtain detectors can be deployed, depending on the size of the perimeter:

- PRO E-45, PRO-45H, PRO E-45D, PRO E-45DH, PRO E-45RFe, PRO E-45RFn
- PRO E-100, PRO E-100H, PRO E-30, PRO E-100RFn
- PRO E-400H

Creep zones are monitored by each preceding detector respectively. IR-nontransmissive sheeting can be used to prevent the detection of targets beyond the desired range. Without IR-nontransmissive sheeting at the corresponding overshoots, a person beyond the perimeter could trigger a false alarm.



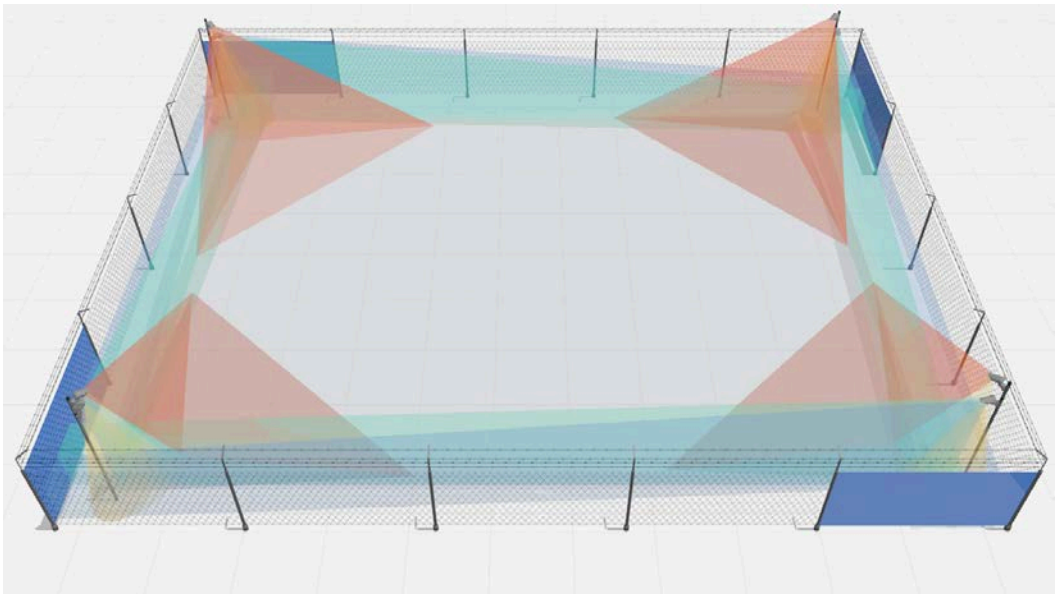
2.7.2 Enclosure with a focus on monitoring corners

Requirement

All four sides of a medium-high enclosure with barbed wire top-assembly directed inward. Special attention must be paid to corner areas, because pole pedestals are easy to climb and may attract intruders. The inner area remains unmonitored as far as possible. Every alarm from a detector triggers an alarm or causes a camera to switch on.

Planning

Given the conditions on the ground, curtain detectors or volumetric detectors can be used. The following detectors can be used, depending on the dimensions of the area to be monitored:



For monitoring the long sides:

- PRO E-45, PRO E-45H, PRO E-45D, PRO E-45DH, PRO E-45RFe, PRO E-45RFn
- PRO E-100, PRO E-100H, PRO E-100RFn
- PRO E-400H

For monitoring corners, the following detectors can be used:

- PRO E-18, PRO E-18H
- PRO E-18W, PRO E-18WH
- PRO E-18WRFe
- PRO E-18WRFn
- PRO E-30

In the present case, a wide-angle ADPRO PRO E-18WH was used.

2.7.3 Trap monitoring

Requirement

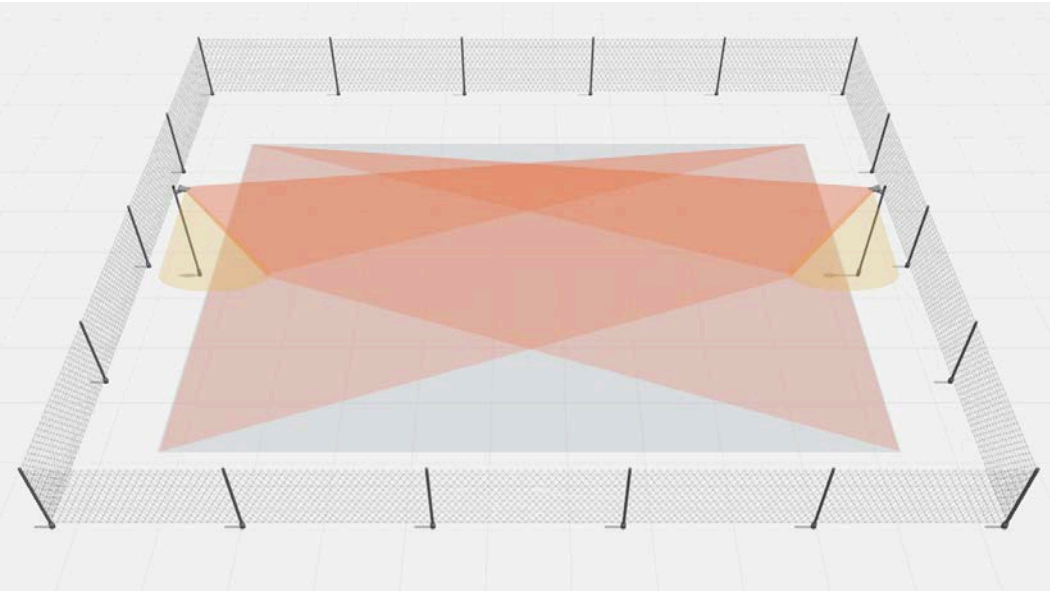
Monitoring of the area should be as complete as possible, but there may be gaps. This is a trap security strategy. To reach the intrusion point, the offender must penetrate into the middle of the grounds. The side from which the intrusion attempt is made is irrelevant.

Planning

Given the conditions on the ground, only volumetric surface detectors should ideally be used. Depending on the size of the property, the following detectors can be used:

- PRO E-18W
- PRO E-18WH
- PRO E-18WRFe
- PRO E-18WRFn
- PRO E-30

In this case study, a very narrow-range ADPRO PRO E-30 was chosen. Creep zones are monitored by the respective facing detector.



2.7.4 Monitoring of expansive sites (including national borders)

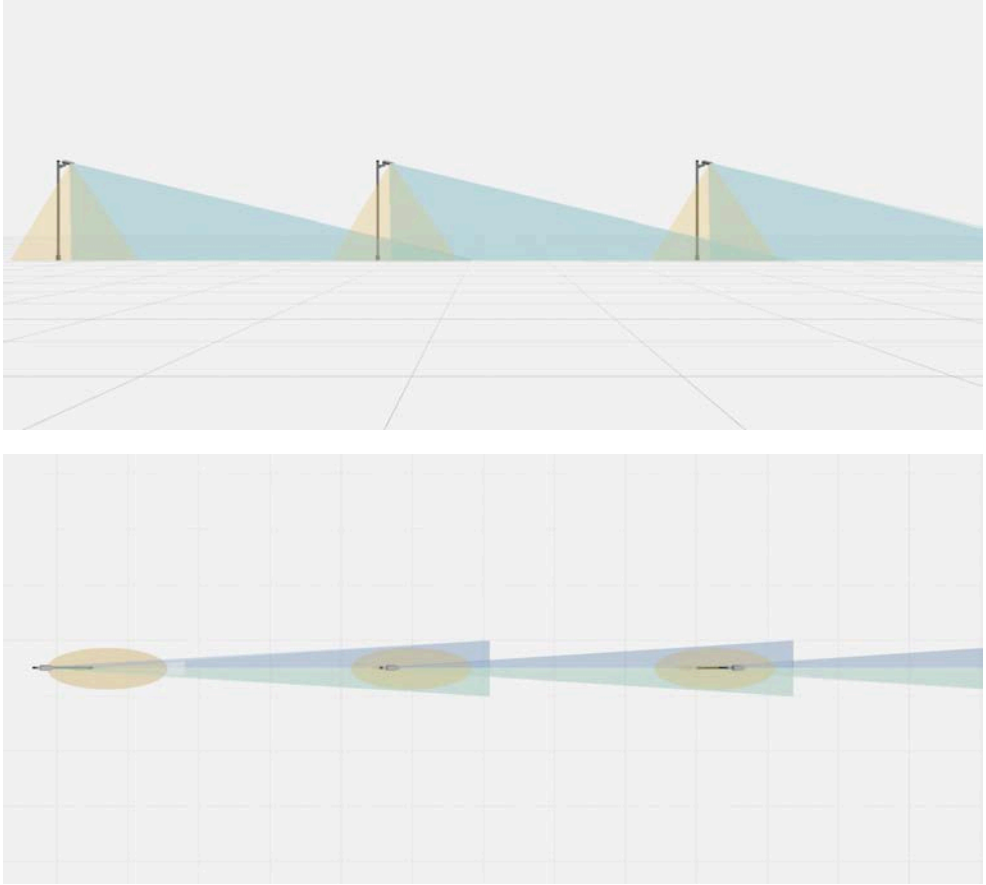
Requirement

High reliability monitoring with absolutely no gaps for expansive sites with long stretches, as also along national borders to support security forces.

The detection rate should be as high as possible. The nuisance alarm rate should remain within organizational limits (border monitoring: ~10-12%).

Planning

Due to the conditions on the ground, curtain detectors with a very large nominal range are usually used in such cases.



In this case study, a PRO E-100H was chosen (see Product Overview / Technical Data page. 19) because both the homogeneous, gapless curtain as well as the zonal classification (near, medium, far) are impressive and enable the location of the offence to be accurately determined.

Note: In climatic areas where very thick fog or snowfall is expected, the maximum distance between detectors should be 50 m in all cases.
If a video monitoring system with image analysis is used for verification, lenses with fixed focal length are a prerequisite. This is also why the distance of 50 m should be viewed as ideal for high assessment quality.
If an intrusion attempt is likely from one side alone, a detector type with directional detection can be chosen to reduce nuisance alarms.

2.7.5 Monitoring a building with dedicated camera monitoring

Requirement

Absolutely gapless, high-reliability monitoring of the polygonal external face of a building.

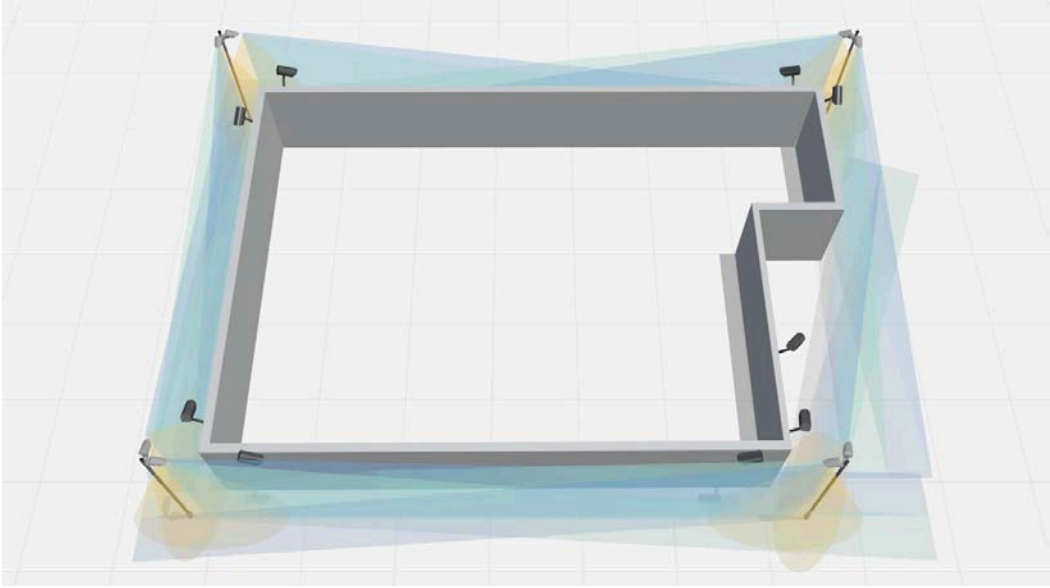
Planning

Due to the unfenced plot boundary nearby, only curtain detectors with a narrow aperture angle can be used. Depending on the length of the building, the following detectors are recommended:

- PRO E-45, PRO E-45H
- PRO E-45D, PRO E-45DH *)
- PRO E-100, PRO E-100H
- PRO E-400H

*) certain applications can detect an escape instead of a break-in.

In this case study, a PRO E-45DH was chosen.



Note: Since there is no range limit, an umbrella management system must provide a logical connection to the camera so that each situation can be assessed quickly and correctly. Here, detectors with directional detection (D versions) can also be used to prevent nuisance alarms.

2.7.6 Remote monitoring of unmanned areas

Requirement

In the case of photovoltaic systems, insurance companies demand absolutely gapless high-reliability monitoring. The detection rate should be as high as possible with as few nuisance alarms as possible. The position of the intruder should be detected quickly, allowing the offender to be located very rapidly.

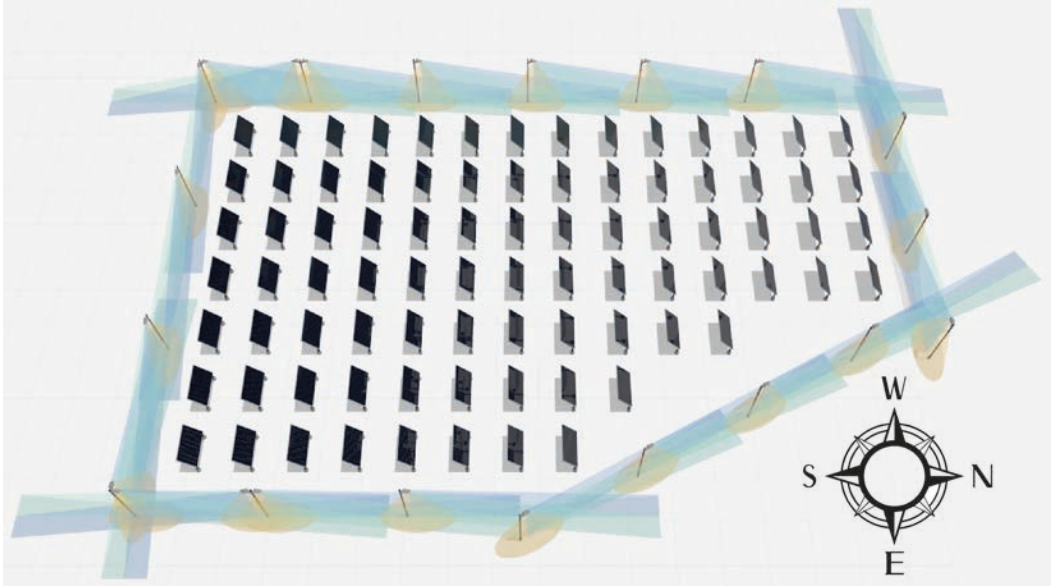
Planning

Usually, only simple mesh wire fences of low height are used in such facilities as a perimeter boundary out of cost considerations.

Depending on the length of the area, the following ADPRO PRO detectors are recommended:

- PRO E-45, PRO E-45H, PRO E-45D, PRO E-45DH
- PRO E-100, PRO E-100H
- PRO E-400H

In the following system design, a variety of detectors were used.



The distance between the poles on which the video cameras are mounted should be short (<45-60m), so that detection can occur even in dense fog.

Special attention was paid to the alignment of the detectors so that unwanted alarms would not be triggered, particularly at sunrise or sunset. For this reason, no detector should be aligned directly towards the east or west, as far as possible.

If the course of the boundary bends at places, the choice of detector becomes very important in order to ensure that the respective creep zones can be monitored 100% without a gap. In addition, if detectors are connected to a control center via an RS-485 link, the intruder can be accurately located.

2.8 Interfaces

2.8.1 Contacts

For purposes of alarm transmission, all PRO E detectors can by default be connected via the zero-potential contacts of semiconductor relay outputs to other systems such as

- video monitoring systems
- burglar alarm systems or
- risk management systems

Standard detectors have 3 relay outputs, H detectors have 5 relay outputs and RF detectors have 1 relay output.

Proprietary systems can also be used with these universal outputs. Within the detectors themselves, there is sufficient space to accommodate connector modules for the respective bus system.

2.8.2 Permanent connection RS-485

A special feature is RS-485 communications during live operations – even if the housing is open – which allows for very efficient service and alarm management. If detectors need to be permanently connected, to a control center for example, a connection to a PC via interface module IFM-485-ST is required.

A permanent connection offers the following advantages:

- Demonstrable savings in operator-related expenditure and cost
- No costs due to interruption of operations
- Remote access to configuration settings (no work on ladders, no inadvertent false setting)
- Signal monitoring/examination
- Management of up to 16 detectors with a maximum bus length of up to 1000 m

2.8.3 ADPRO PRO E IP module

Enables the PRO E detector to be directly connected to an IP network.

2.8.4 W-LAN

In the one-man configuration, the ADPRO PRO E series allows commissioning, including walk test, by one person alone using the iCommission tool on a mobile device such as a tablet or smartphone. This facilitates and speeds up the commissioning process considerably.

2.8.5 Self-diagnosis

Some detectors are capable of detecting errors and transmitting these via different interfaces, such as the bus or WLAN, to the control unit. This simplifies medium-term maintenance plans and lowers ongoing operating expenses.

2.8.6 Integration with alarm management systems

PRO E detectors are ideally suited for wireless integration with the ADPRO range of products such as central multi-service-management gateways (RMG) FastTrace 2E, IntrusionTrace™, Xchange™, VideoCentral Platinum and iTrace™. And of course wireless integration with the HeiTel range of VideoGateway products - the next generation, including CamDisc HNVR, CamDisc VG and CamServer VG - is also possible.

Note: You can find detailed information on the Xtralis homepage at: www.xtralis.com

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3 Product Overview / Technical Data

3.1 Product Overview in summary

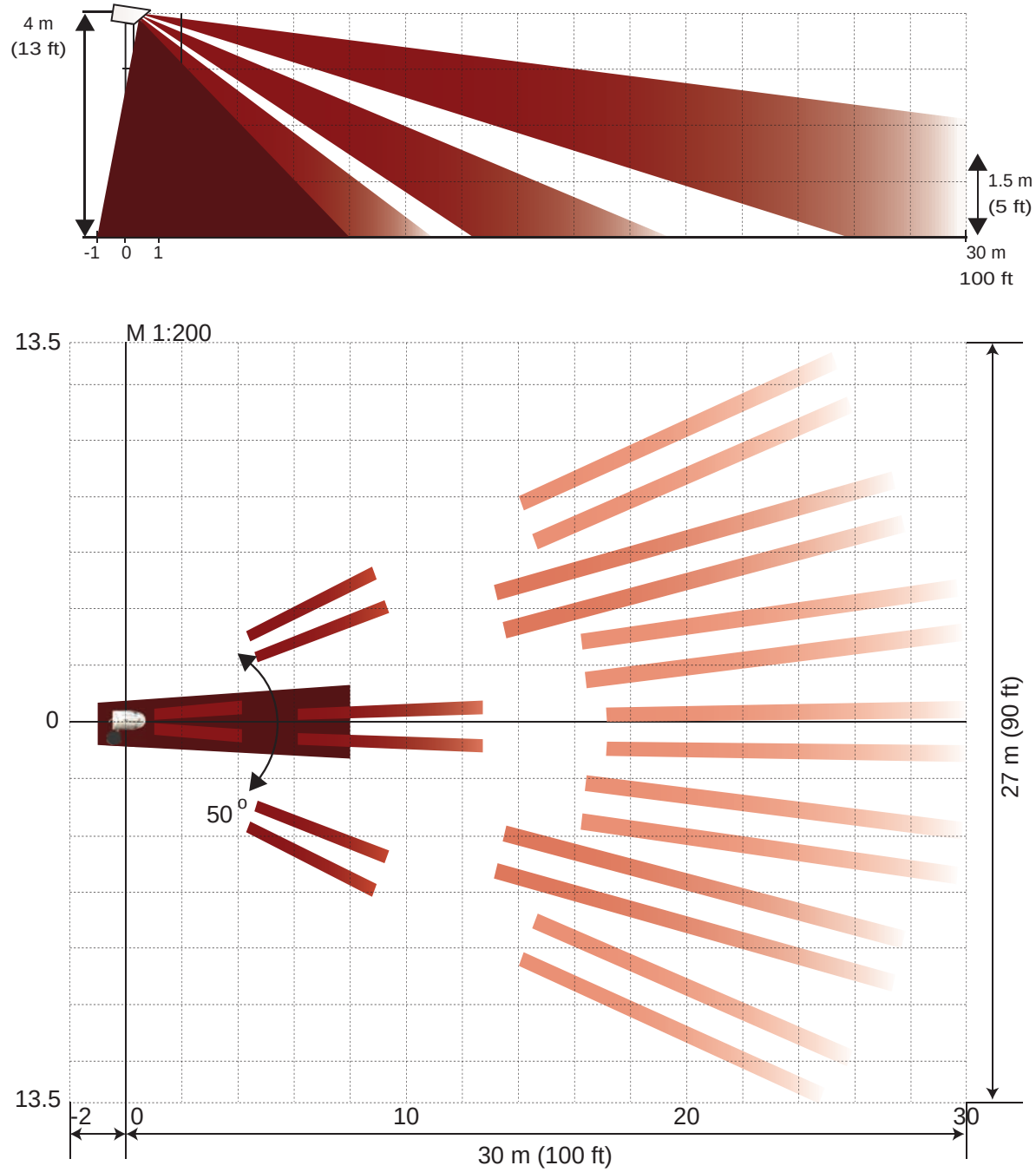
Detection principle	Model/Type:	Item no.	Nominal range		Angle (AA)
			Length	Width	
Volumetric, medium range	PRO E-18	CH10055001	24 m (80 ft)	21 m (70 ft)	50°
	PRO E-18H	CH10055101	30 m (100 ft)	27 m (90 ft)	
Volumetric, wide-angle	PRO E-18W	CH10053001	21 m (70 ft)	24 m (80 ft)	90°
	PRO E-18WH	CH10053101	27 m (90 ft)	30 m (100 ft)	
	PRO E-18WRFe	CH10054301	21 m (70 ft)	24 m (80 ft)	
	PRO E-18WRFn	CH10054401	21 m (90 ft)	24 m (100 ft)	
Volumetric, medium range	PRO E-30	CH10063001	30 m (100 ft)	20 m (65 ft)	50°
	PRO E-40	CH10073001	40 m (130 ft)	10 m (33 ft)	15°
Curtain, medium range	PRO E-45	CH10023001	50 m (165 ft)	3.3 m (11 ft)	3.8°
	PRO E-45H	CH10023101	60 m (200 ft)	3.9 m (13 ft)	
	PRO E-45D	CH10023201	50 m (165 ft)	3.6 m (12 ft)	
	PRO E-45DH	CH10023301	60 m (200 ft)	4.2 m (14 ft)	
	PRO E-45RFe	CH10024301	50 m (165 ft)	3.3 m (11 ft)	
	PRO E-45RFn	CH10024401	50 m (165 ft)	3.3 m (11 ft)	
Curtain, long-range	PRO E-100	CH10033001	120 m (400 ft)	2.9 m (9 ft)	1.3°
	PRO E-100H	CH10033101	150 m (500 ft)	3.3 m (11 ft)	
	PRO E-100RFe	CH10034301	120 m (400 ft)	2.9 m (9 ft)	
	PRO E-100RFn	CH10034401	120 m (400 ft)	2.9 m (9 ft)	
	PRO E-400	CH10100001	220 m (722 ft)	5.1 (17 ft)	
Accessories					
IP module	PRO E-IPM	CH12005001			
Interface module, RS-485 Bus	IFM-485-ST	CH19000301			
Alignment telescope (telescope)	AD 851	242600			
Wireless walk-tester	CT PRO 2	202483			
Configuration tool for vertical calibration	Mobile App iCommission	CH12003001			

3.2 Specifications: Volumetric detectors

3.2.1 ADPRO PRO E-18(H), PRO E-18W(H), PRO E-18WRFe, PRO E-18WRFn

Technical data	ADPRO PRO E-18 and PRO E-18H
Model/Type: Item no.	PRO E-18: CH10055001 PRO E-18H: CH10055101 PRO E-18W: CH10053001 PRO E-18WH: CH10053101 PRO E-18WRFe: CH10054301 PRO E-18WRFn: CH10054401
Max. nominal length	PRO E-18: 24 m (80 ft) PRO E-18H: 30 m (100 ft) PRO E-18W: 21 m (70 ft) PRO E-18WH: 27 m (90 ft) PRO E-18WRFe: 21 m (70 ft) PRO E-18WRFn: 21 m (70 ft)
Nominal width	PRO E-18: 21 m (70 ft) PRO E-18H: 27 m (90 ft) PRO E-18W: 24 m (80 ft) PRO E-18WH: 30 m (100 ft) PRO E-18WRFe: 24 m (80 ft) PRO E-18WRFn: 24 m (80 ft)
Nominal aperture angle (AA)	50°
Sensitivity setting (% of base setting)	20 - 140%

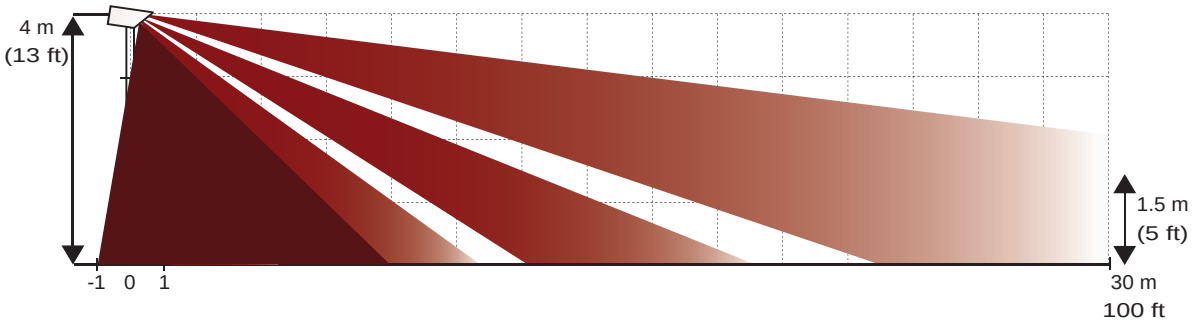
Nominal sensing areas PRO E-18H

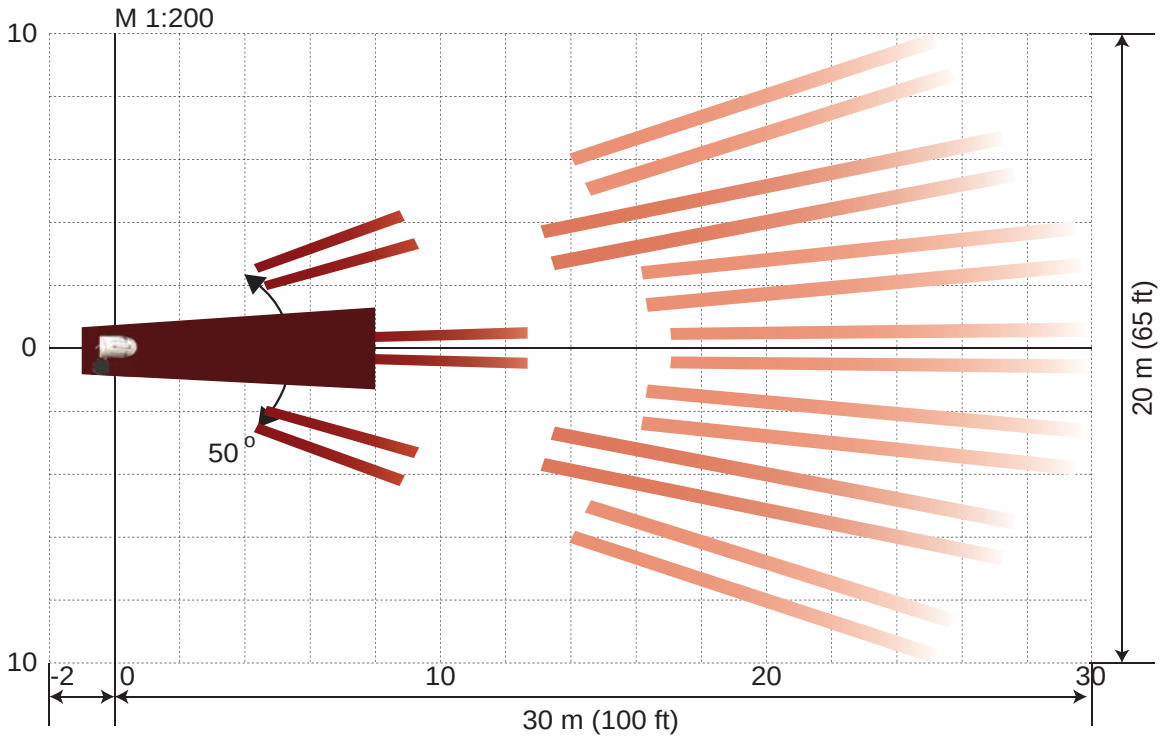


3.2.2 ADPRO PRO E-30

Technical data	ADPRO PRO E-30
Model/Type: Item no.	PRO E-30: CH10063001
Max. nominal length	30 m (100 ft)
Nominal width	20 m (65 ft)
Nominal aperture angle (AA)	50°
Sensitivity setting (% of base setting)	20 - 140%

Nominal sensing areas PRO E-30

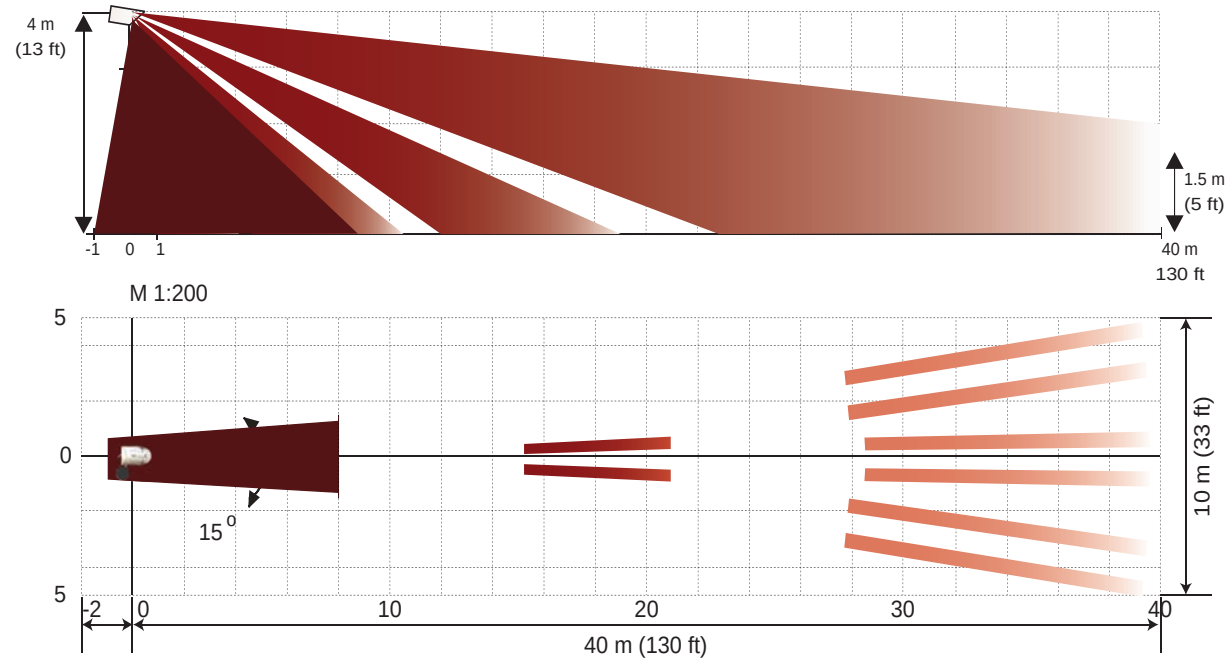




3.2.3 ADPRO Passive IR Detector (PIR) PRO E-40

Technical data	ADPRO PRO E-40
Model/Type: Item no.	PRO E-40: CH10073001
Max. nominal length	40 m
Nominal width	10 m
Nominal aperture angle (AA)	15°
Sensitivity setting (% of base setting)	20 - 140%

Nominal sensing areas PRO E-40

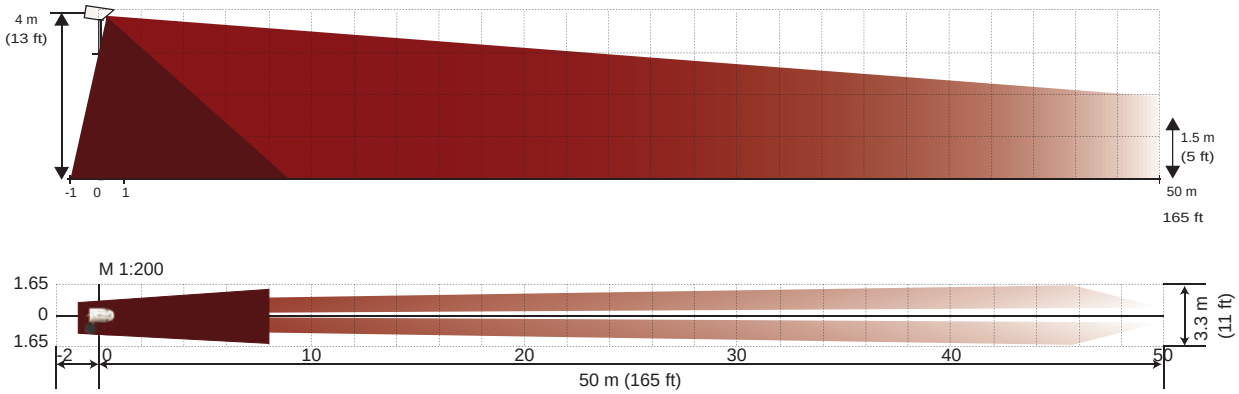


3.3 Specifications: Curtain detector (barrier detector)

3.3.1 ADPRO PRO E-45, PRO E-45H and PRO E-45D

Technical data	ADPRO PRO E-45/H/D
Model/Type: Item no.	PRO E-45: CH10023001 PRO E-45H: CH10023101 PRO E-45D: CH10023201 PRO-45DH: CH10023301 PRO E-45RFe: CH10024301 PRO E-45RFn: CH10024401
Max. nominal length	PRO E-45: 50 m (165 ft) PRO E-45H: 60 m (200 ft) PRO E-45D: 50 m (165 ft) PRO-45DH: 60 m (200 ft) PRO E-45RFe: 50 m (165 ft) PRO E-45RFn: 50 m (165 ft)
Nominal width	PRO E-45: 3.3 m (11 ft) PRO E-45H: 3.9 m (13 ft) PRO E-45D: 3.3 m (12 ft) PRO-45DH: 4.2 m (14 ft) PRO E-45RFe: 3.3 m (11 ft) PRO E-45RFn: 3.3 m (11 ft)
Nominal aperture angle (AA)	3.8° PRO-45DH: 4°
Sensitivity and range setting	PRO Software: 20 - 140%

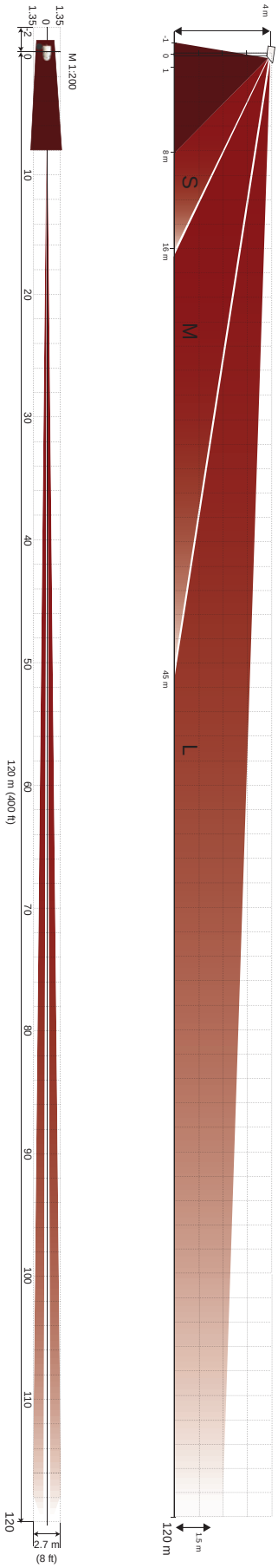
Nominal sensing areas PRO E-45



3.3.2 ADPRO PRO E-100, PRO E-100H, PRO E-100RFe and PRO E-100RFn

Technical data	ADPRO PRO E-100/H/RFe/RFn
Model/Type: Item no.	PRO E-100: CH10033001 PRO E-100H: CH10033101 PRO E-100RFe: CH10034301 PRO E-100RFn: CH10034401
Max. nominal length	PRO E-100: 120 m (400 ft) PRO E-100H: 150 m (500 ft) PRO E-100RFe: 120 m (400 ft) PRO E-100RFn: 150 m (500 ft)
Nominal width	PRO E-100: 2.9 m (9 ft) PRO E-100H: 3.3 m (11 ft) PRO E-100RFe: 2.9 m (9 ft) PRO E-100RFn: 3.3 m (11 ft)
Nominal aperture angle (AA)	1.3°
Sensitivity and range setting	PRO E-100, -RFe, -RFn: Length: 60, 72, 84, 84, 96, 108, 120 m Sensitivity: 50 - 150% PRO E-100H: Length: 75, 90, 105, 120, 135, 150 m Sensitivity: 50 - 150%

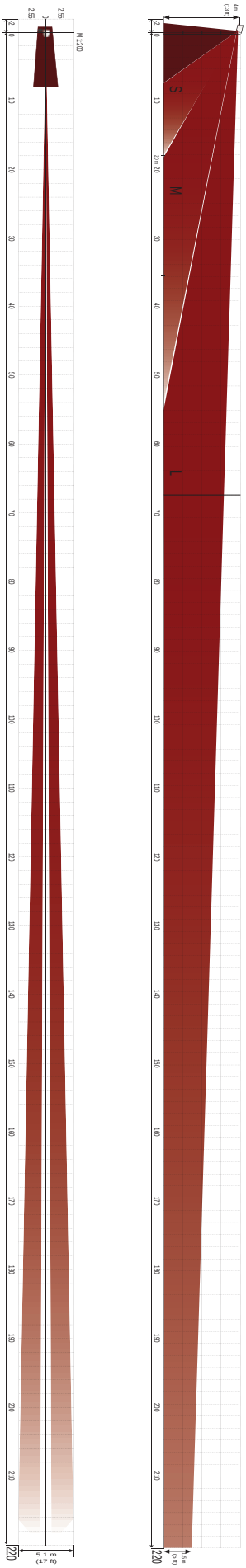
Nominal sensing areas PRO E-100/100RFe



3.3.3 ADPRO PRO E-400H

Technical data	ADPRO PRO E-400H
Model/Type: Item no.	PRO E-400H: CH10100001
Max. nominal length	220 m (722 ft)
Nominal width	5.1 m (17 ft)
Nominal aperture angle (AA)	1.3°
Sensitivity and range setting	Length: 70, 100, 130, 160, 190, 220 m Sensitivity: 50 - 150%

Nominal sensing areas PRO E-400H



Notes

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