Basic hints for better system design for Redwall PIR detector

Location of installation

* Install the detector so that the majority of target activity is across the detection pattern.
* The mounting height should be between **2.3m to 4.0m (7.6 to 13ft.).**
* Mount the unit on a wall or other solid surface. An unstable installation could be a cause of false alarms. Do not install on poles or fences where it is unstable.
* Direct or reflected sunlight on the face of the detector can cause false alarms. Set the detection area so it is not effected by direct sunlight, or use the optional **Sun hood (SIP MINIHOOD or SIP MIDIHOOD)** to help avoid this problem.
* Install the REDWALL SIP series away from objects which can block the detection areas.

Confirm the detection area can be covered by a camera

* Mismatching the detection area and camera views means that operators can not see the crucial image on the monitor screen. The detection area should be within camera view.

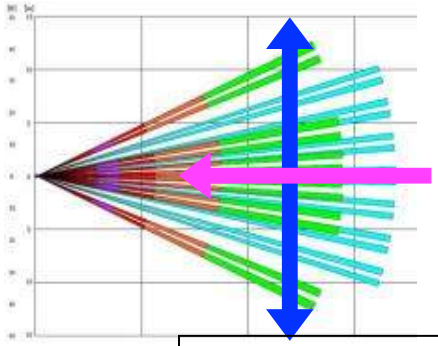
Basic hints for better system design for Redwall PIR detector 1

To reduce miss alarm

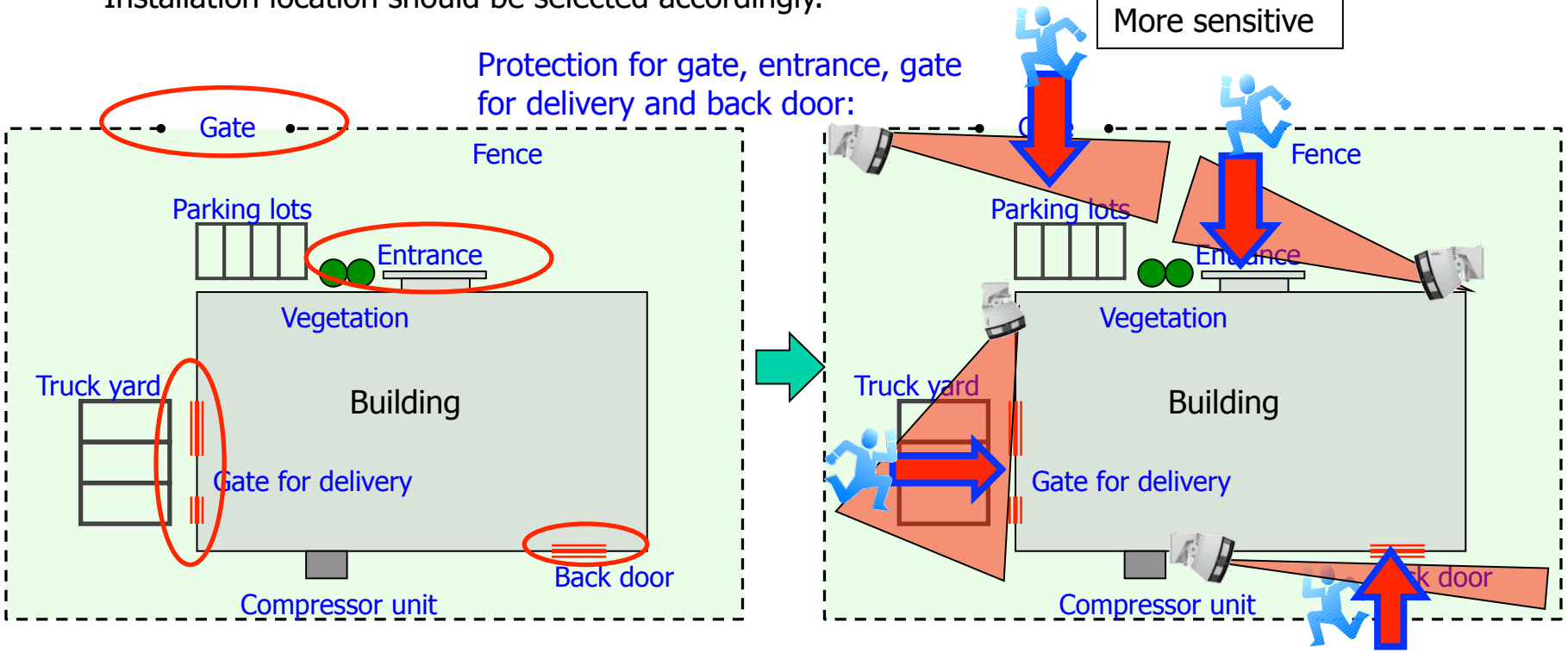
- **Select the installation location so that intruder may cross the detection area.**

PIR's are more sensitive to movement made across it's field of view, and is less sensitive to movement made toward or away from the detector/field of view. Installation location should be selected accordingly.

Detection area Top-view



Protection for gate, entrance, gate for delivery and back door:



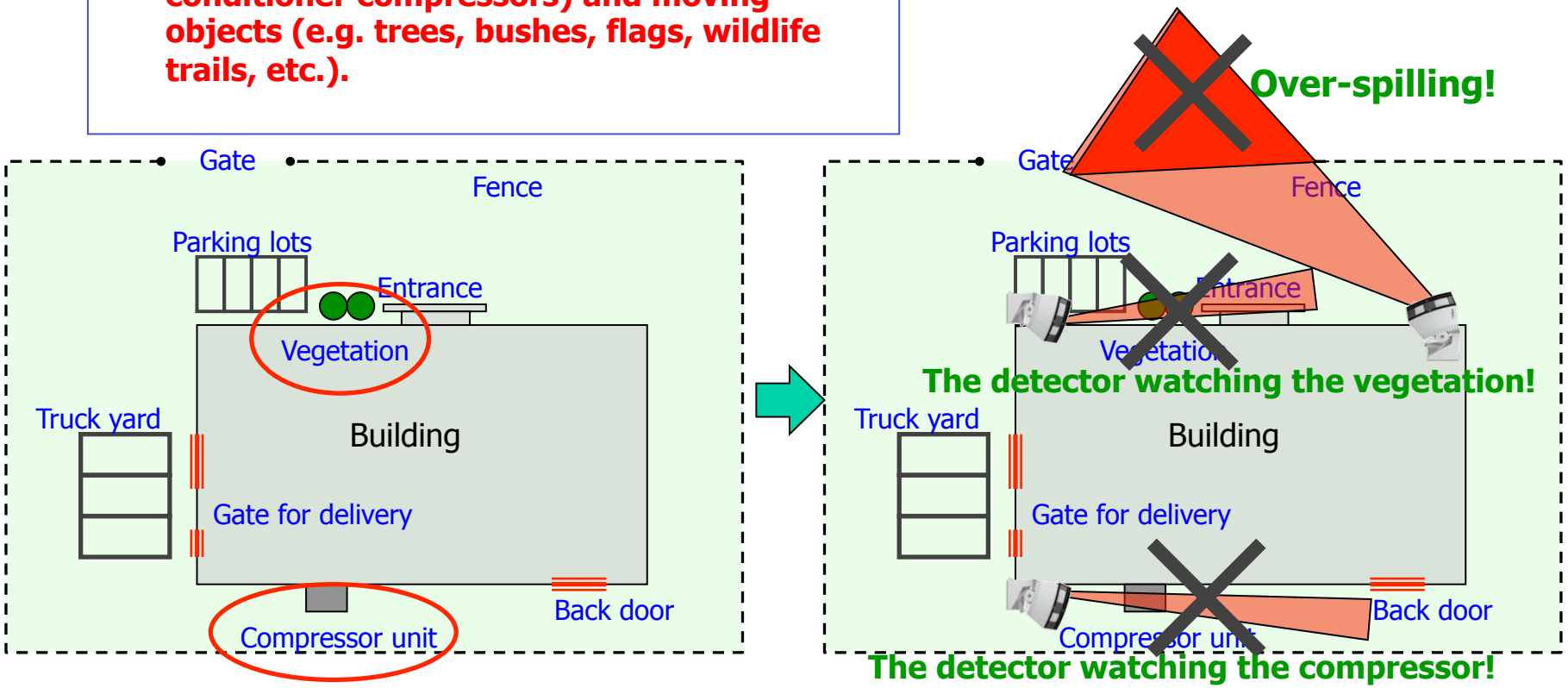
Basic hints for better system design for Redwall PIR detector 2

To reduce false alarms:

- **Select proper detector which has the same or less detection area to be protected area.**
- **Avoid locations where the detector looks towards the object which make extreme sudden temperature change (e.g air-conditioner compressors) and moving objects (e.g. trees, bushes, flags, wildlife trails, etc.).**

If the protection zone is too small for the detector selected, it may cause the unit to "overspill" the detection area. It will create unwanted false alarms.

If there is vegetation or objects which create temperature differences, it will result false alarm, too.



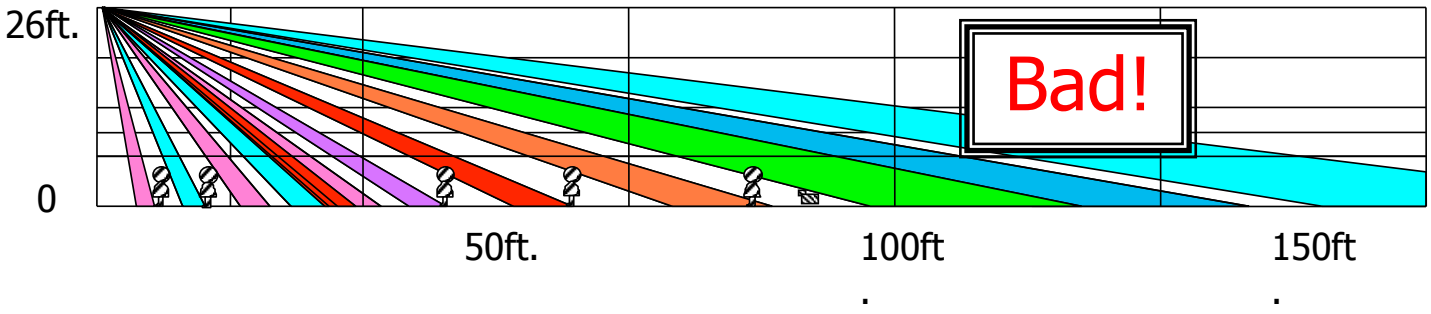
Basic hints for better system design for Redwall PIR detector 3

To reduce the risk of tampering or vandalism:

- **Do not install the detector so that the intruder can access the detector from outside its detection area.**
- **Install the detector at proper installation height.**

If the unit is installed too high, there will be dead spots which could result in missed alarms. For example, if the SIP-5030 is installed at 26ft. (8m), there will be some dead spots where the unit can not detect people.

Also, at a too low position, the detector will be too sensitive (objects appear larger to the detector) and will cause false alarms.



Do not install the unit too high!

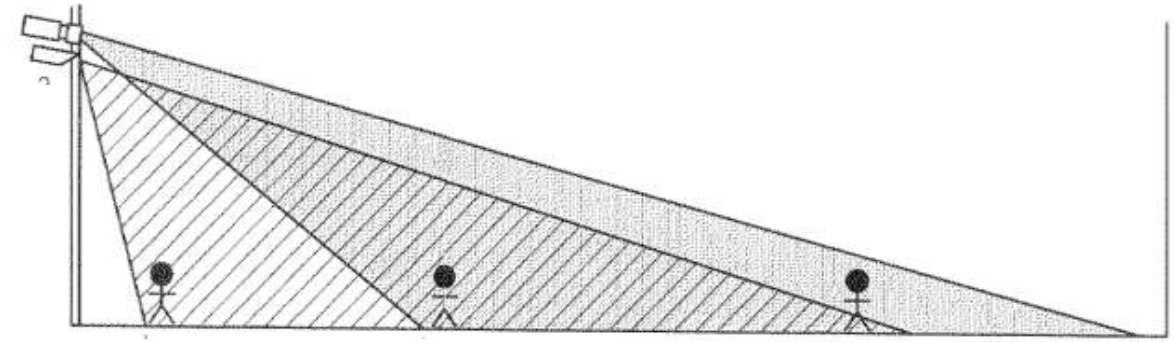
The detector should be installed at 7.6 to 13ft. (2.3 to 4m).

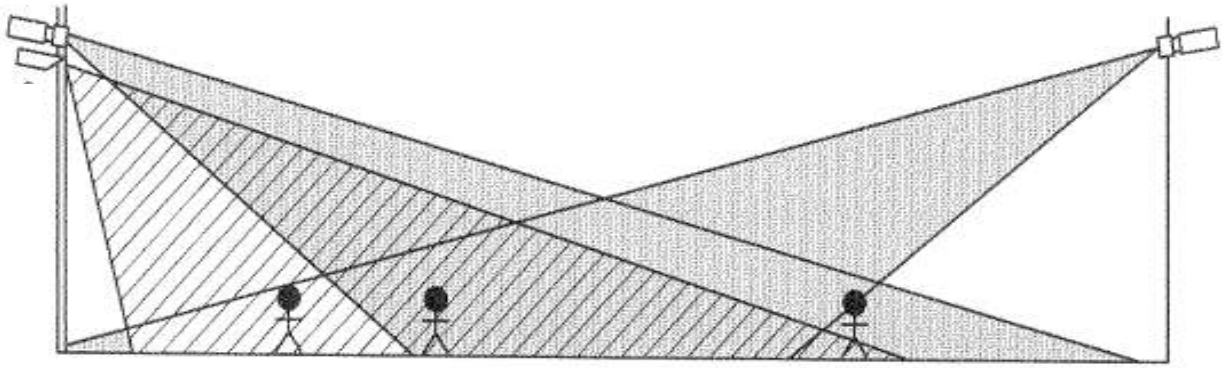
If the unit installed too low, an intruder can access the detector easily. When this exists, the unit should be installed at a higher position within the rated range.

Basic hints for better system design for Redwall PIR detector 4

Matching Camera Views

If the camera's field of view can not cover the whole detection area, add another camera to cover the complete zone.



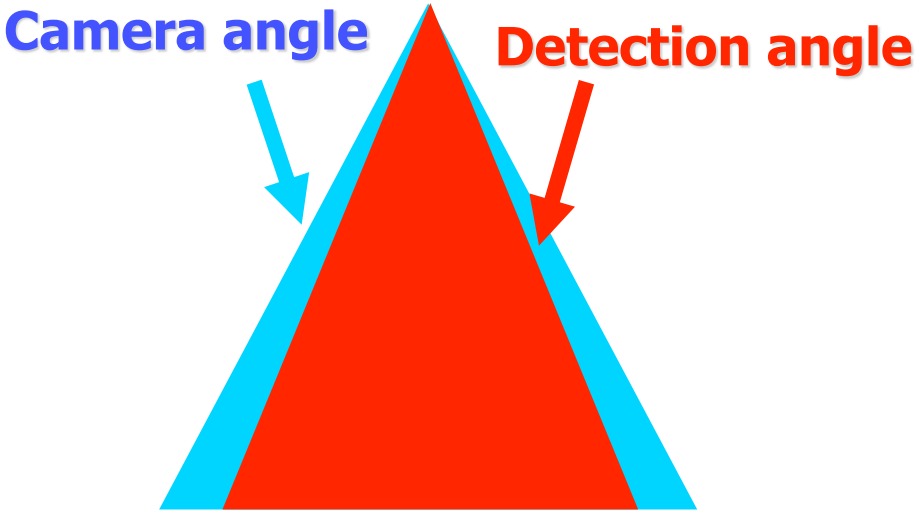


Basic hints for better system design for Redwall PIR detector 5

Camera Lens Guide

	Range	Width	Angle Approx	Object Target Height	Camera Image Sensor (CCD Size) Lens Focal Length and Angle			
	M (ft.)	M (ft.)	Degree	M (ft.)				
Redwall					1/4"	1/3"	1/2"	Degree
SIP-3020	30 (90)	20 (65)	37	1.6 (5.2)	5mm	7mm	9mm	37
SIP-4010	40 (130)	10 (33)	14	1.6 (5.2)	7mm	8mm	10.5mm	28
SIP-404	40 (130)	4 (13)	6	1.6 (5.2)	7mm	8mm	10.5mm	28
SIP-5030	50 (165)	30 (100)	33		9mm	14mm	18mm	33

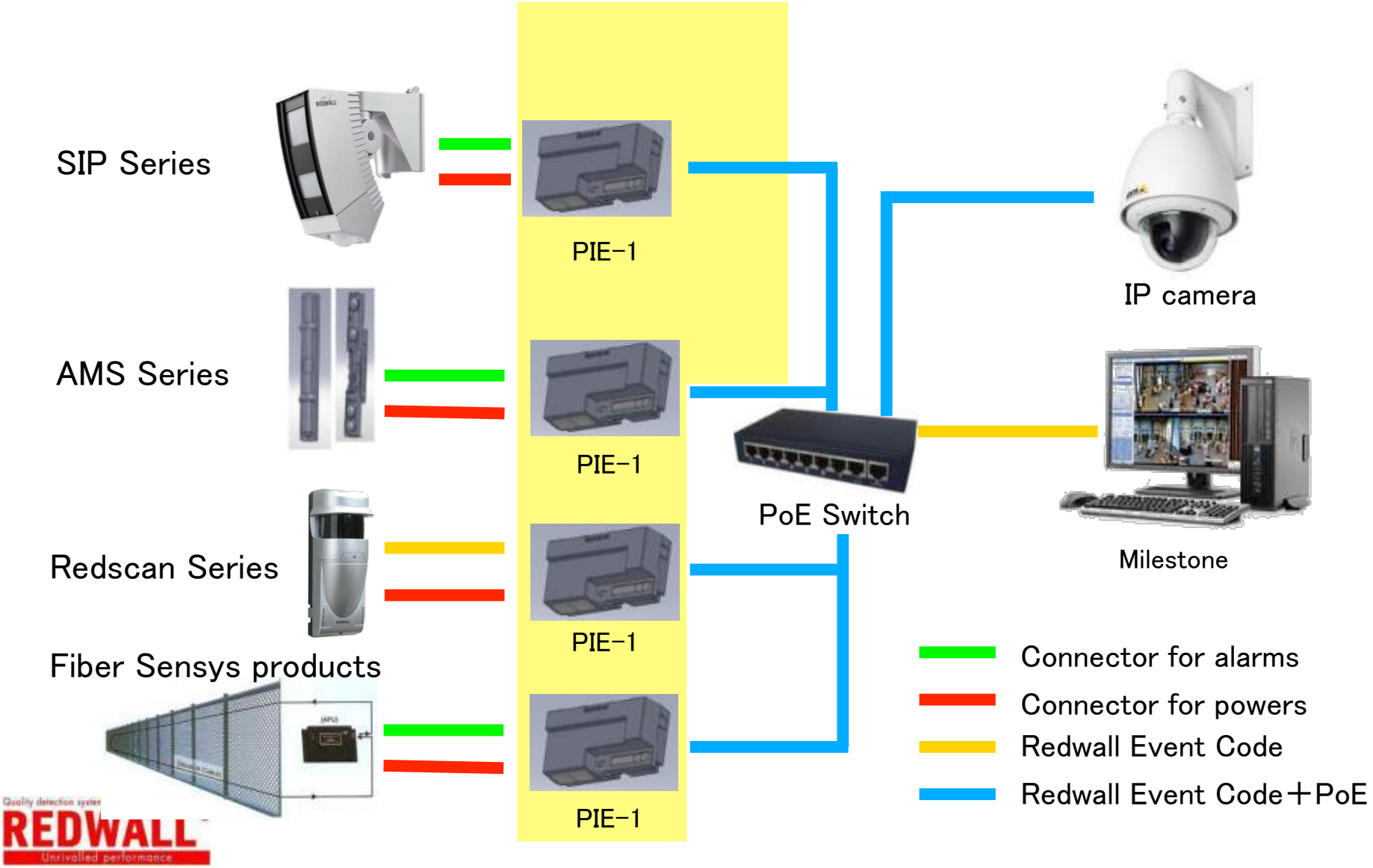
* SIP- 5030 The above lens selection can cover whole detection area, but the target height in screen will be 7%



Flexible and cost effective installation

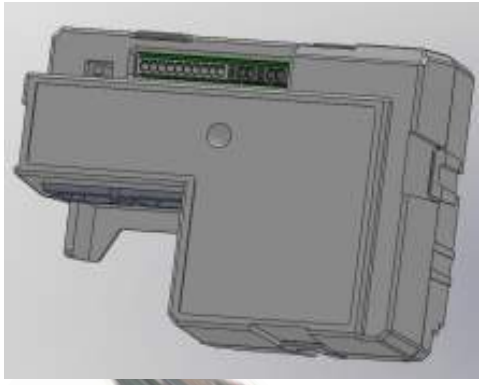
1.POE/IP connection
2.Alarm I/O connection with Pre-installed camera (either analog or IP)

System diagram 1 – POE/IP connection



Note: PoE Transceiver for non-IP Optex sensors

- PoE Plus splitter functions
  - IEEE 802.3at / IEEE 802.3af compliant
  - DC outputs (24vDC at 0.8A)
  - DC outputs (12vDC at 0.1A)
- Ethernet converter / Pass-through selectable
- Ethernet converter
  - Signals can be converted into Redwall Event Codes via TCP/IP or UDP
  - Programmable 5-input NC/NO
  - 10Base-T



System diagram 2 – Pre-installed camera connection

SIP detector

Power supply 12VDC/24VAC

or

Battery version

SIP-3020/4010/404 WF series

ALARM Output

Analog

Video Management Software or Network Video Recorder

IP camera

ALARM Input

TCP/IP

Switch

or
Analog camera

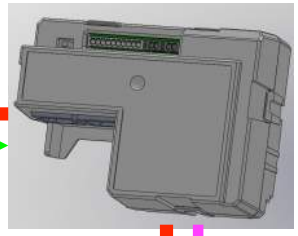
System diagram 3 – Wireless ready connection

SIP-3020/4010/404 WFi series

Wireless

Wire free receiver

PIE-1 or Adam / Barix (I/O converter)



Dry contact

REDWALL EVENT CODE

Wire Free transmitter

PoE Hub

Preset signal

IP camera

Video management software