

When Detection Matters

The SightLogix Difference

Most security professionals agree: When you need to detect intruders in the outdoors, thermal is the best choice.

But not all thermal cameras are the same.

SightLogix has a long and successful history solving outdoor detection problems for sites where **detection matters**. Our company was founded on a single premise: To create the most reliable intruder detection system for the outdoors, while being easy to use and affordable for all businesses.



Since our inception in 2004, SightSensor thermal cameras have been used to detect intrusions at sites throughout the world – whether that means preventing sabotage at airports, refineries or substations, or stopping theft at car lots, cannabis farms, construction sites or small businesses. Our customers continue to choose SightLogix systems for one overarching reason: They need to know the instant an intruder breaks into their perimeter, and they need to trust their security camera to do the job. Every time.

The SightLogix SightSensor is intended for businesses that need to prevent incursions leading to losses of high economic value. This document addresses the following subjects:

- The differences between detection and surveillance
- Why you should use thermal outdoors
- The value of combining thermal with visible color assessment
- How SightSensor enhanced processing maintains detection performance at night and bad weather
- How geo-registration and electronic stabilization reduce nuisances from animals and debris
- How extended ranges reduce infrastructure and cost
- The value of combining thermal detection with fence-mounted systems for layered security
- A selection of prestigious SightLogix customers using SightSensors to solve outdoor security challenges

Do You Need Surveillance or Security?

You may be thinking, “what’s the difference?” But it’s the most important question to ask when choosing an outdoor security system.

Video **surveillance** means people watching video screens hoping to catch someone in the act.

Video **security** means smart cameras automatically detecting intruders and sending alerts when a violation occurs.



Whether you’re protecting critical assets like airports, refineries, bridges, or chemical plants, or commercial sites like car lots or maintenance yards, you need to know in real time – and with great reliability - when an intrusion is taking place. For these applications, “smart” cameras combine the strengths of machines and people, using video analytics to watch the scene automatically, and alerting people with video when a response is needed. This lets you tie the two applications together – detection and surveillance – to create a video detection solution.

Why Thermal for Detection?

Since security starts with detection, the alert must be accurate. Because thermal cameras “see” heat rather than light, they are great human detectors in the outdoors, from zero light to bright sun, in rain, snow or humidity. They ignore things that cause nuisance alerts with visible cameras, like headlights and reflections. Thermal cameras also eliminate the expense, power and difficulty of lighting large outdoor areas. And they cover huge areas with a single device.

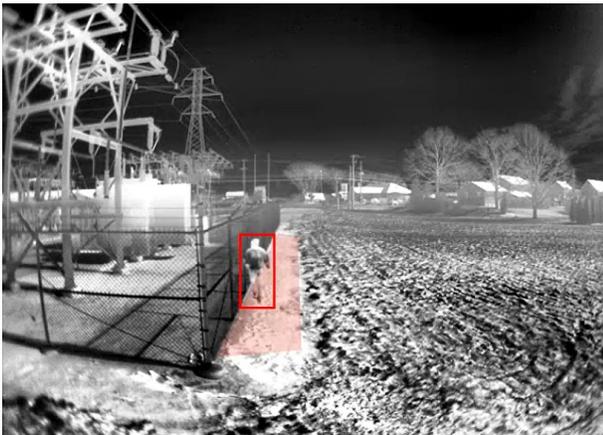
What About Visible Cameras?

Conventional wisdom suggests that color visible cameras combined with video analytics might be useful for intrusion detection, but practically speaking, these cameras are better suited for **assessment**. Visible cameras create images from reflected light, so any interference such as the sun shining off puddles or car headlights moving through the camera’s field of view at night will trigger false alerts. Worse yet, in night situations where you don’t have enough lighting, you would end up with a much more serious problem - missing intruders entirely.

Combining Thermal Detection with Visible Color

Once a person is detected, visible cameras can play an important role. SightLogix combines thermal detection with visible in two ways:

- The **SightTracker** is a device that automatically positions a PTZ camera onto the location of an alarm detected by the SightSensor, making the target large enough to reliably identify for assessment and response.
- **Dual Sensor Analytics** are unique capability available on dual-video SightSensors (SightSensor TC and HD) that detect, reject and validate thermal and visible activity in real-time, delivering a highly trusted detection result with a great reduction in false alarms. By combining two video cameras in one, you also reduce the cost and complexity of mounting multiple devices.



SightSensor HD or TC detects with thermal....

...and uses visible for assessment and analytic decisions.

How Video Processing Gives You Great Detection at Night and Bad Weather

SightSensors detect intruders with high reliability in darkness, heavy rain, fog, and snow due to their unprecedented level of built-in video processing. This lets SightSensors maximize the full dynamic range of the thermal imager to determine temperature differences down to 1/20th of degree, represented by over 16,000 shades of gray.

This is important, because by detecting very small temperature differences, SightSensors can recognize potential threats over very large areas and perimeters, even under difficult weather conditions.

This reliability is born out in real-world applications. A nine-month, multi-season SightSensor test conducted by the TSA at wintry Buffalo-Niagara International Airport concluding that after 900 attempts to defeat the system,

“every alarm instance was accurately reported.” (<https://www.sightlogix.com/airport-perimeter-security-systems/>).

At another site, SightLogix partner National Video Monitoring concluded: “The impact SightLogix has had on weather or environmental-related alarms has been enormous....The false alarms have all but disappeared, but we are still able to detect even something as brief as a head poking around a corner in heavy rain, allowing us to mitigate risk immediately. Now we can confidently detect and deter in any condition and keep our customers protected at all times.”



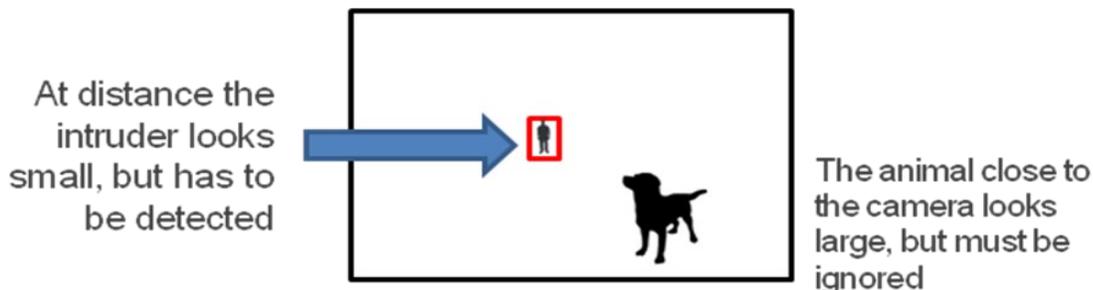
SightSensor (at left) detects the intruder accurately at night in heavy rain (at right).

Reducing False Alarms from Animals

Smart cameras are designed to detect movement, but outside, everything moves. While this can trigger excessive nuisance alerts for some systems, SightSensors are able to achieve a high level of detection reliability through automatic geo-registration.

This functionality provides the actual location and true size of all pixels in the camera’s field of view. From this information, video analytic size rules ignore movement which do not represent a security concern – like small animals or blowing debris – while still detecting human-sized intruders, even in difficult conditions.

For example, an animal near the camera will look much larger than a man at 300 meters away, as you can see in the figure below.



Because of geo-registration, SightSensors ignore the animal at right while alerting on the distant person, even though the animal will cover more of the camera's field of view, increasing accuracy and lowering false alerts.

Auto-Stabilization to Ignore Camera Movement from Wind

Video stabilization is another attribute to increase detection accuracy. Outdoor cameras are often deployed along open areas that are naturally impacted by high winds or vibrations. It is difficult for smart cameras to detect movement in a scene when the whole field of view is also moving from camera shake. Without stabilization, these applications can be overwhelmed by nuisance alarms or worse, outright missed intrusions.

For this reason, all SightSensors automatically stabilize the video before analytic rules are applied, greatly reducing nuisance alerts caused by camera motion.

Extended Range Lowers Cost

The same processing used for accurate detection also gives SightLogix cameras extended range and coverage, detecting human-sized targets at ranges that can exceed hundreds of meters.



Longer-range SightSensors (at right) Lower Costs

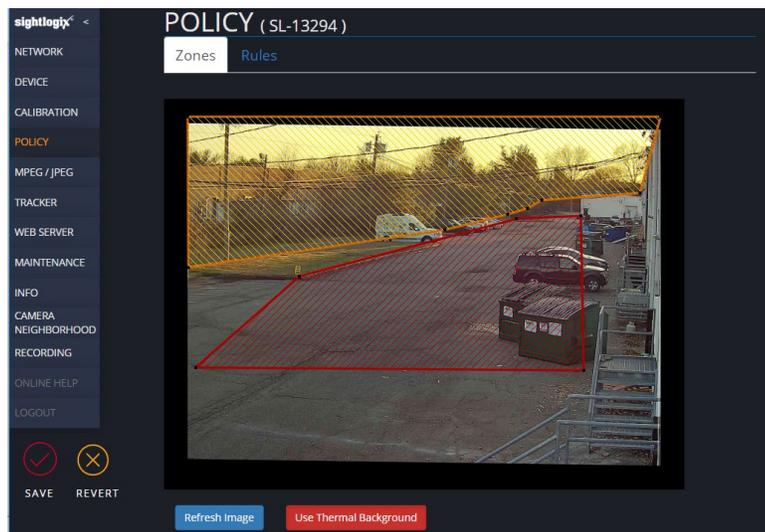
As a result, SightLogix systems reduce the number of cameras typically required for large areas, eliminating camera poles and supporting infrastructure (trenching, networking, power, etc.), which lowers overall project costs.

Working with Fence Detection Systems for the Highest Levels of Security

Long-range SightSensors excel in the role of early-warning detectors, triggering alarms when intruders approach a facility, creating ample warning of the threat and giving security personal time to intervene. Their wider coverage gives thermal cameras an advantage in anticipating the approach of an intruder.

In some high-risk situations it is desirable to add a second layer of protection by choosing to deploy a fence-mounted sensor system as a supplement to a smart thermal security system. Fence sensors can be an excellent way to augment the security posture by triggering a second alarm when someone has physically breached the perimeter fence. This lets you create zones of protection that extend outside the fence line, at the fence line, and even inside the fence using thermal buffer zones around internal assets where physical or man-made boundaries are unlikely to exist.

Easy Installation and Use



SightSensors are designed for high performance while being easy to use and deploy. We've developed an intuitive "point and click" interface that reduces the time and complexity needed for setup.

SightLogix configuration tools include a range of innovations to streamline the setup process, allowing you to calibrate cameras, configure key parameters and create accurate video analytic detection rules in minutes.

Features include pre-built, single-click video

analytic detection rules, automatic size calibration, guided setup steps, and streamlined connectivity to VMS and other third-party systems.

SightLogix Customers

SightSensors are used to help stop theft and vandalism problems for electrical utilities, airports, rail yards, refineries, datacenters, government facilities, bridges correctional facilities, and cultural institutions, as well as commercial/industrial facilities like cannabis farms, auto dealers, distribution centers, and other businesses suffering outdoor area losses.

A list of published SightLogix customers can be found at <https://www.sightlogix.com/customers/>.

In Summary: How Does the SightSensor Solve Your Detection Challenges?

- SightSensors use a high amount of on-board video processing. This gives you accurate detection, manageable nuisance alarms and extended range, meaning fewer cameras and less costs.
- SightSensor video analytics are embedded in the camera and analyze the raw video right off the imager. This gives you detection reliability even in difficult weather.
- SightSensors are geo-registered, which means you get fewer nuisance alerts from animals, trash, etc.
- SightSensors stabilize the image before video analytic rules are applied, which means you get fewer alerts from wind and vibrations.
- SightSensors reduce your bandwidth consumption by applying analytics at the edge and only reporting alarms and video when an intrusion occurs

About SightLogix

SightLogix makes smart thermal cameras that detect outdoor intruders with great accuracy, low nuisance alarms and low costs. Unlike visible surveillance cameras, SightLogix SightSensors automatically analyze the scene for security threats, communicating alarms and video of an event in real time – to help stop theft and vandalism problems for critical sites like substations, airports, rail yards, refineries, and datacenters, as well as commercial/industrial facilities like car lots, cannabis farms, distribution centers, and other businesses suffering outdoor area losses. Learn more at <https://www.sightlogix.com>.

Information and Resources

- To perform an online perimeter security design of your facility in minutes, visit: <http://www.sightlogix.com/sightsurvey-tool/>.
- To read more about SightLogix SightSensor technology, visit: www.sightlogix.com. To request a meeting with a solution specialist, email info@sightlogix.com or call +1 609.951.0008.