



# FLIR Thermal Fence: the perfect security solution

*All over the world the perimeters of industrial parks, airports, harbors, petro-chemical and nuclear facilities are being protected with the help of thermal imaging cameras from FLIR Systems. Not only are thermal imaging cameras extremely affordable, maintenance free and environmentally friendly, FLIR thermal imaging cameras can also be combined with FLIR Sensor Manager Software to form a FLIR Thermal Fence, the perfect security solution.*



Featuring the industry-leading line of IP thermal security cameras, the FLIR Thermal Fence gives you instant, automated threat detection and visual threat assessment capability around the clock in one easy-to-use package. By combining FLIR's thermal security cameras and the FLIR Sensors Manager (FSM) control and management software, the FLIR Thermal Fence provides automated perimeter surveillance for every single perimeter security application possible, including petro-chemical facilities, nuclear facilities, commercial campuses, and residential installations, to name just a few examples.

### Integrating all sensors in one security network

FLIR Sensors Manager is a comprehensive sensor management software package that not only allows you to manage your FLIR thermal imaging cameras, but also integrates a large range of third-party security tools, including fence sensors, ground sensors, radars, seismic sensors, fiber nets and similar sensors into one security network.

The biggest advantage of the FLIR Sensors Manager software, however, is the fact that it contains advanced video analytics

algorithms that enable you to automatically detect intruders. The software allows you to set up virtual trip wires and other advanced spatial rules like exit or enter-triggered alarms. Combined with thermal imaging cameras from FLIR this powerful software can help protect your perimeter 24 hours a day, 7 days a week with accurate intrusion detection and instant visual alarm assessment capability, while minimizing false alarms.

### Creating the FLIR Thermal Fence

To set up the FLIR Thermal Fence you need several fixed thermal imaging cameras that monitor the entire perimeter and one or more thermal imaging cameras mounted



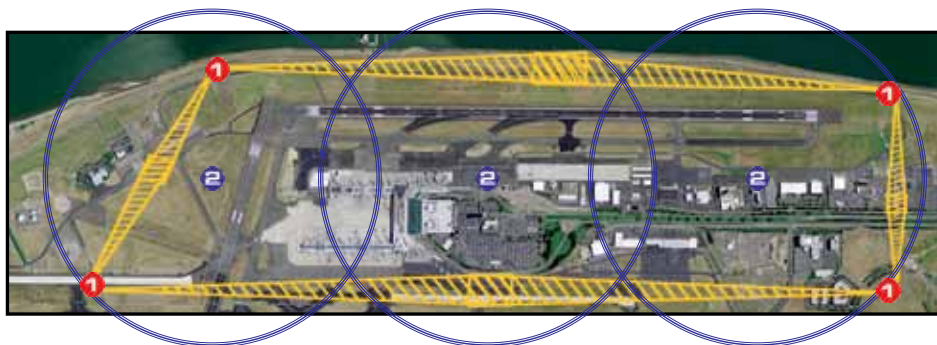
*The FLIR Sensors Manager video analytics software has detected an intruder on the thermal image*



*An intruder is approaching a virtual trip wire alarm zone at a distance of over 300 meters.*

on pan and tilt platforms that can cover the entire premises.

The fixed FLIR thermal imaging cameras will continually send live thermal footage to the video analysis software. FLIR Sensors Manager contains advanced video analysis algorithms that are specially designed for the analysis of thermal video footage. It will detect and follow all types of movement and compare it with previously determined parameters. The user friendly interface allows you to create customized rules for trip wires, exclusion zones, temperature alarms, and directional alarms. If the Sensors Manager software detects unauthorized movement an alarm will go off.



*Aerial view of the FLIR Thermal Fence in action, showing the fixed FLIR thermal imaging cameras (1) and the pan and tilt mounted FLIR thermal imaging cameras (2) and the area they cover.*



## Quick visual conformation, enabling a swift human response

The operator can immediately see what is happening on the thermal video footage from the fixed thermal imaging cameras. If additional visual confirmation is required the pan and tilt mounted thermal imaging cameras come into play.



With the built in geo-mapping feature of the FLIR Sensors Manager software geo-calibrated sensors can be displayed on the map so that the operator can quickly assess the situation.

FLIR Sensors Manager has a built in geo-referenced mapping feature that allows for FLIR's unique slew-to-cue function. That means that FLIR pan and tilt mounted thermal imaging camera will automatically be pointed at the precise coordinates of any alarm generated by any sensor on your FLIR Thermal Fence network. This allows the operator to quickly perform a visual inspection of the alarm, which in turn enables a swift response to the event.



Thermal energy passes through many obscurants including smoke, dust, modest foliage and light fog. In this case the fog obscures this person from the regular CCTV camera, but on the thermal image the person shows up quite clearly.



In most cases, thermal energy travels through the atmosphere more effectively than visible light. As a result, thermal imaging security cameras can spot intruders at extreme ranges while CCTV cameras, which rely on color contrast, will fail.

## The advantages of the FLIR Thermal Fence

- **Easy to integrate with existing security network:**

FLIR Sensors Manager software can effortlessly integrate the FLIR thermal imaging security cameras with other IP compatible sensors or CCTV cameras.

- **Cost effective:**

The FLIR Thermal Fence is less expensive than installing an actual physical barrier. If compared with a CCTV network the FLIR Thermal Fence needs fewer cameras due to the excellent range performance of FLIR thermal imaging security cameras.

- **Non intrusive:**

This way of securing your perimeter is much less intrusive than a physical barrier or wildlife disturbing lighting infrastructures.

- **Secures inaccessible areas:**

Areas that cannot be fenced due to economic, environmental or logistical reasons can usually be secured quite easily using the FLIR thermal Fence.

- **Low total cost of ownership:**

The cameras require no maintenance whatsoever and because no lighting is required the cost of ownership is kept very low.

- **Fewer unwanted alarms**

Due to the high contrast of the thermal video footage and the special video analytics algorithms in the FLIR Sensors Manager software the FLIR Thermal Fence has a lower rate of unwanted alarms than other security packages.

- **Easy to modify and expand:**

Due to the flexibility if the FLIR Thermal Fence you can easily modify and expand your security system as your needs evolve.

## The advantages of thermal imaging cameras

The real power of the thermal fence lies in the thermal imaging security cameras. Unlike all other nighttime vision systems thermal imaging cameras need no light whatsoever to function, because they rely on minute differences in thermal radiation to produce high contrast thermal images. Not only does this mean that thermal imaging cameras can see in complete darkness, they also allow you to see clearly when obscurants smoke, dust, and light fog render your normal vision useless.

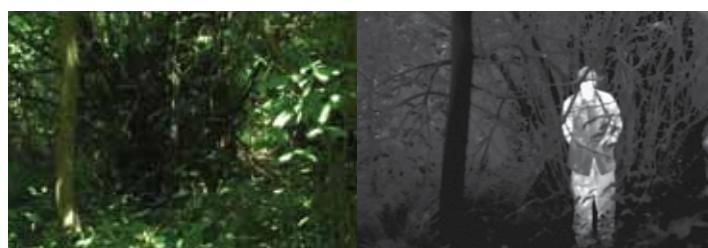
Thermal imaging security cameras allow you to see farther than any other night vision technology on the market today, but in certain situations they also function better than CCTV cameras during the day. One daylight advantage thermal imaging cameras have over regular CCTV cameras is that the latter can be blinded by direct or reflected sunlight. Thermal imaging cameras don't have that problem. But there's more.

### Better contrast

Regular CCTV cameras depend on visual contrast to provide enough information for the video analysis software or the human viewer to detect an intruder. Even at moderate ranges, weak color contrast can render these cameras useless. Thermal cameras don't have this limitation. Human beings always emit much more thermal radiation than their surroundings. That means that it is much easier for video analysis software or human viewers to spot trespassers on the footage from a thermal imaging camera than on the footage from a CCTV camera.

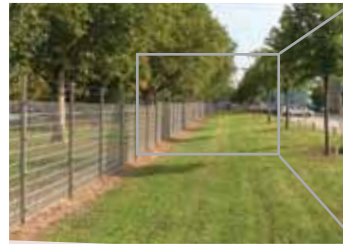
### Low total cost of ownership

The total cost of ownership of a security system with thermal imaging cameras is



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The fixed mounted FLIR thermal imaging security camera covers this entire fence.

In a similar situation nearby, four CCTV cameras are needed to cover an area of the same size.

generally much lower than a CCTV security system. First of all you need fewer thermal imaging cameras than you would need CCTV cameras due to the excellent range performance. Each camera needs a mast to be mounted on, a power line and a video feedback connection, so needing fewer cameras means that you can keep the infrastructure simple, keeping maintenance costs to a minimum. Given the fact that thermal imaging cameras work perfectly in complete darkness, you don't need to install any lighting. Not only does lighting cost a lot of money to install, but it also requires a lot of electricity to keep the lights burning every night.

**Fewer unwanted alarms**

Thermal imaging cameras produce fewer unwanted alarms than CCTV cameras. A spider crawling across the camera's lens, branches of a tree moving in the wind, there are numerous possible causes for unwanted alarms. Thermal imaging cameras trigger fewer unwanted alarms for the same reason as why they have a better range performance than CCTV cameras. The thermal contrast is usually bigger than the visual contrast so the video analysis software can much more accurately distinguish between a branch moving in the wind, to name just one example, and a trespasser trying to enter the premises.



Branches moving in the wind caused many unwanted alarms in this location, so the head of security decided to replace the CCTV camera with a thermal imaging camera. Not one unwanted alarm has occurred since.

Not only do thermal imaging cameras cause fewer unwanted alarms than CCTV cameras, the FLIR Sensors Manager video analytics software further lowers the rate of unwanted alarms. The advanced video analytics algorithms included in the FLIR Sensors Manager software are specially designed for the analysis of thermal video footage. That means that FLIR Sensors

Manager software – if combined with FLIR thermal imaging cameras – will provide a much lower rate of unwanted alarms than any other analytics package.

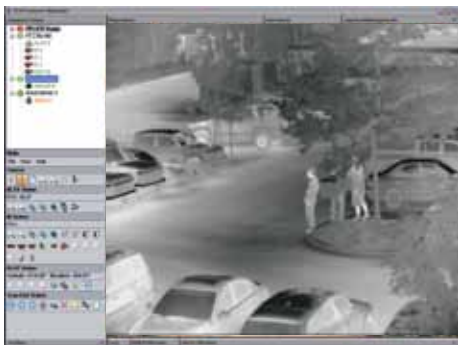
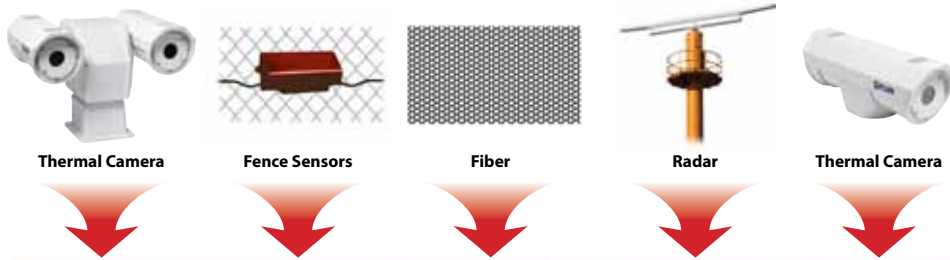
To learn more about the full range of FLIR thermal imaging security cameras, visit [www.flir.com](http://www.flir.com).

**Example : nuclear facility**

This illustration of a sample FLIR Thermal Fence installation at a nuclear power generation facility shows a graphical schematic of how FLIR's thermal security cameras and FLIR Sensors Manager software can be used to create a FLIR Thermal Fence.



1. Fixed thermal security cameras
2. Pan and tilt mounted multi-sensor thermal security cameras geo-referenced with slew-to-cue capability
3. Exclusion zones



With FLIR Sensors Manager installing and managing FLIR Systems thermal imaging cameras and other sensors in a geo-located network becomes extremely easy.

### The advantages of FLIR Sensors Manager

FLIR Sensors Manager offers powerful and efficient management capabilities for any security installation with FLIR Systems thermal imaging cameras. FLIR Sensors Manager allows to automatically locate FLIR Systems thermal imaging cameras in the network and to easily control them. Just connect the thermal imaging camera to the network, install FLIR Sensors Manager and hit the "discover" button and you will be able to manage and control the camera. Thanks to FLIR

Sensors Manager, the management of FLIR Systems thermal imaging cameras over a network will become extremely easy.

FLIR Sensors Manager is a commercial "Out of the Box" software. Fully designed and supported by FLIR Systems, this application guarantees an intuitive and simple user experience. Just install the software and you will be ready to use it immediately.

### Integrate all your security sensors

The flexibility of the FLIR Sensors Manager software makes the FLIR Thermal Fence the only solution on the market today that brings the control and monitoring of all of your perimeter security sensors together in one place. It operates over the same IP network as your existing CCTV camera network, but displays all of your thermal camera video and other sensor outputs on a single convenient display.

All of your thermal cameras and other perimeter security sensors are fully integrated and geo-referenced on a map of your facility for rapid detection and threat assessment, allowing you to deploy your assets efficiently, effectively, and to their full advantage.

Because FLIR Sensors Manager operates in parallel with your existing security video network, there's no disruption to that network while you implement the Thermal Fence, and no expense incurred for re-training on a new CCTV sensor networking solution.

For more information about FLIR Sensors Manager, visit [www.flir.com](http://www.flir.com).



More information about thermal imaging cameras can be obtained from:

**FLIR Commercial Systems B.V.**  
 Charles Petitweg 21  
 4847 NW Breda  
 Netherlands  
 Phone : +31 (0) 765 79 41 94  
 Fax : +31 (0) 765 79 41 99  
 e-mail : [flir@flir.com](mailto:flir@flir.com)  
[www.flir.com](http://www.flir.com)