



Thermal imaging for Security & Surveillance

Discover a wide variety of applications



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Introduction



FLIR Systems: the world leader in thermal imaging cameras

FLIR Systems is the world leader in the design, manufacturing and marketing of thermal imaging systems for a wide variety of commercial and government applications.

Rapidly emerging markets and organization

Interest for thermal imaging has grown considerably over the last few years in a large variety of markets. To face this increased demand, FLIR Systems has expanded its organization drastically. Today we employ more than 3,000 people. Together, these infrared specialists realize a consolidated annual turnover of more than 1 billion US dollars. This makes FLIR Systems the largest manufacturer of commercial thermal imaging cameras in the world.

Manufacturing capabilities

FLIR currently operates 6 manufacturing plants: three in the USA (Portland, Boston and Santa Barbara, California) one in Stockholm, Sweden, one in Estonia and one near Paris, France.



FLIR, Sweden



FLIR ATS, France



FLIR, Boston, USA



FLIR Santa Barbara, USA

All markets and all applications

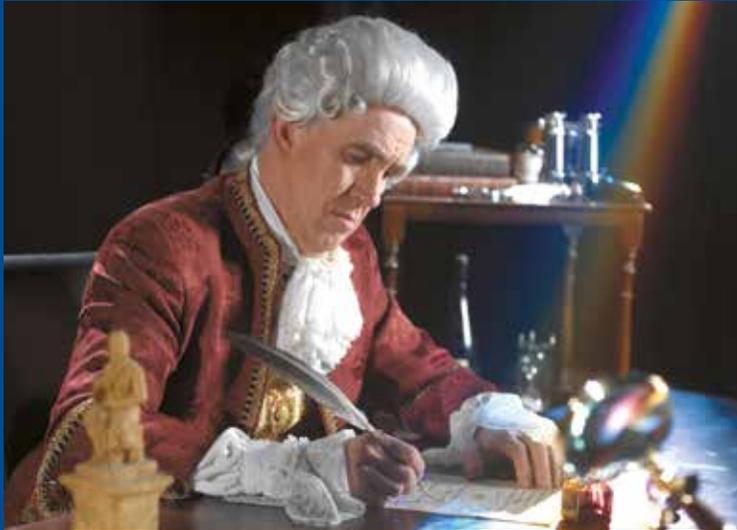
FLIR Systems is totally focused on thermal imaging cameras. No other manufacturer produces more thermal imaging cameras than FLIR Systems.

FLIR Systems is active in all markets where thermal imaging cameras are being used: security, maritime, automation, process control are just a few markets in which FLIR Systems thermal imaging cameras have proven their worth.



2 The thermal imaging camera and how it works

A thermal imaging camera records the intensity of radiation in the infrared part of the electromagnetic spectrum and converts it to a visible image.



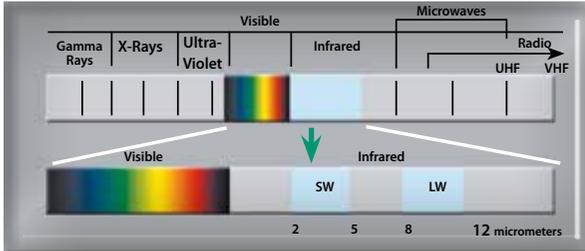
What is infrared?

Our eyes are detectors that are designed to detect electromagnetic radiation in the visible light spectrum. All other forms of electromagnetic radiation, such as infrared, are invisible to the human eye.

The existence of infrared was discovered in 1800 by astronomer Sir Frederick William Herschel. Curious to the thermal difference between different light colors, he directed sunlight through a glass prism to create a spectrum and then measured the temperature of each color. He found that the temperatures of the colors increased from the violet to the red part of the spectrum.

After noticing this pattern Herschel decided to measure the temperature just beyond the red portion of the spectrum in a region where no sunlight was visible. To his surprise, he found that this region had the highest temperature of all.

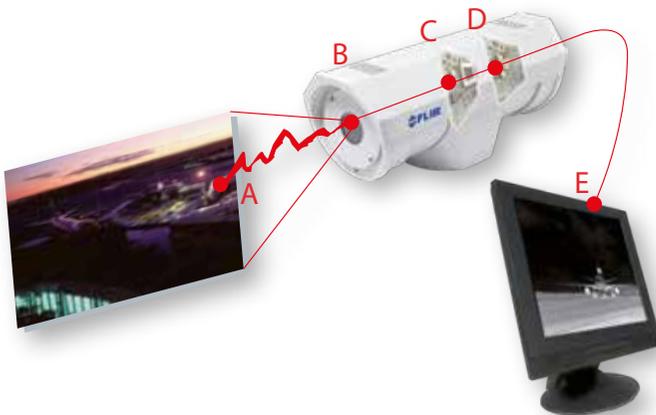
Infrared radiation lies between the visible and microwave portions of the electromagnetic spectrum. The primary source of infrared radiation is heat or thermal radiation. Any object that has a temperature above absolute zero (-273.15 degrees Celsius or 0 Kelvin) emits radiation in the infrared region. Even objects that we think of as being very cold, such as ice cubes, emit infrared radiation.



We experience infrared radiation every day. The heat that we feel from sunlight, a fire or a radiator is all infrared. Although our eyes cannot see it, the nerves in our skin can feel it as heat. The warmer the object, the more infrared radiation it emits.

The thermal imaging camera

Infrared energy (A) coming from an object is focused by the optics (B) onto an infrared detector (C). The detector sends the information to sensor electronics (D) for image processing. The electronics translate the data coming from the detector into an image (E) that can be viewed in the viewfinder or on a standard video monitor or LCD screen.



3 Thermal imaging cameras: a cost effective solution for perimeter protection

Today, the challenge to CCTV professionals is to make sure that video footage is effective on a 24/7 basis, 365 days a year. Securing an area during the daytime is one thing. But what can be detected if CCTV cameras are blinded by the sun? And in weather conditions like fog, rain and snow? And what happens during the night, in total darkness?

A number of tools are available to help detect potential intruders in the dark. Often different technologies are being combined to create a secure perimeter. Fences can be complemented with Closed-Circuit Television (CCTV) systems with or without active infrared illumination or old fashioned light bulbs, Radio Frequency Intruder Detection (RAFID) systems, thermal imaging cameras and/or walking patrols. Every technology has advantages and disadvantages and some are more expensive than others. To get a full picture of the Total Cost of Ownership (TCO) for a certain solution, not only the initial installation cost but also the maintenance cost needs to be taken into account.



Normal vision

Thermal vision

An excellent tool for detecting potential intruders in total darkness is thermal imaging cameras. They need no light whatsoever to operate. Based on subtle differences in temperature, called heat signatures, thermal imaging cameras create a crisp image. A thermal imaging camera can also see through light fog and smoke.

Thermal imaging cameras are also extremely useful during daylight. Thermal contrast is extremely difficult to mask. Someone trying to hide in shadows or bushes and people that are trying to camouflage themselves, will become clearly visible on a thermal image. Thermal imaging cameras are also not blinded by the glare from the sun. They produce a crisp image in practically all weather conditions.

Thermal imaging for security and surveillance applications



Normal vision: camouflage



Thermal image



Normal vision: total darkness



Thermal image



Normal vision: total darkness



Thermal image



Normal vision: fog



Thermal image

Thermal imaging cameras and video analytics

Thermal imaging cameras work seamlessly together with video analytics. One of the advantages of thermal imaging cameras is that they are always producing a high-contrast image. Not only during the night. Also in difficult light conditions where CCTV cameras are giving hardly any contrast. Thermal imaging cameras are generating fewer unwanted alarms than CCTV cameras. This makes thermal imaging perfect to work together with video analytics.

Thermal imaging: an affordable technology

Demand for thermal imaging cameras has increased drastically over the last few years. Thanks to this increase in demand, production volumes have gone up and prices for thermal imaging cameras have come down.

Although a thermal imaging camera is still more expensive than a CCTV camera, fewer cameras need to be deployed to cover the same area. The civil works that need to be carried out are minimal. Furthermore, since thermal imaging cameras produce a clear image in the darkest of nights, no complimentary technologies like light or infrared illuminators need to be installed. Not only is this limiting the amount of civil works that needs to be carried out but it is also reducing the maintenance cost.

Total Cost of Ownership (TCO) for thermal imaging is extremely low

Although the initial price for a thermal imaging camera is still a bit higher, they do not require any maintenance. Most FLIR Systems thermal imaging cameras contain an uncooled Vanadium Oxide detector. Not only produces it excellent quality thermal images, since it is not containing any moving parts, it needs no maintenance.

Furthermore, compared to the power needed for lighting up an entire area or the power that is being consumed by infrared illuminators, certainly if at least some range performance is required, the power consumption of thermal imaging cameras is minimal.

Finally there is no need to replace lamps or infrared illuminators. CCTVs with infrared illuminators require lamp replacement every 2000 to 4000 hours or about every 8 months.



4 Our customers testify

FLIR Systems has many customers that are active in a wide variety of markets. FLIR Systems thermal imaging cameras are being used by a wide variety of people.

All of them have discovered the benefits that thermal imaging has to offer. They know that thermal imaging cameras are helping them to save time and money on a daily basis.

Many have chosen for a FLIR Systems thermal imaging camera. They have acknowledged that FLIR Systems produces the most advanced, the most ergonomic and the most user friendly systems.

On the following pages you will find a couple of short testimonies of users of FLIR thermal imaging cameras. It are these users that are the best promotion for thermal imaging technology and for FLIR Systems.

Do not take it from us. Read what the users of FLIR thermal imaging cameras have to say.



French solar park protected with 110 FLIR thermal imaging cameras

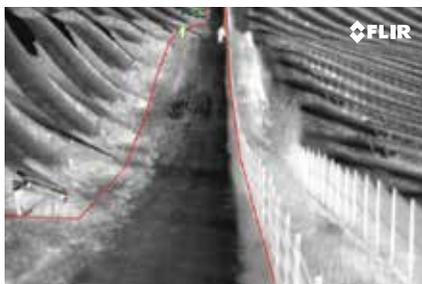
Solar power is becoming increasingly popular and solar panels are a costly and vulnerable commodity. Good security is therefore a must. To protect their investment many solar park owners opt for a security system based on thermal imaging cameras.



Fences can be climbed quite easily. Thermal imaging cameras will help detect intruders before any property is damaged.



All along the perimeter a combination of fencing and thermal imaging cameras protects against intruders.



The thermal contrast between a person and his surroundings is generally much bigger than the color contrast, even during the day.



Due to the hilly terrain several cameras with different focal lengths were needed to cover the entire perimeter of the solar park.

"This is a difficult environment for perimeter protection systems", says Reza Righi, security surveillance expert at Telem - ONET SECURITE. "Out here in this isolated location there is no lighting and installing such lighting would not only be costly, it would also require the use of a lot of electricity in order to keep the lights burning every night. Thermal imaging is the perfect solution."

Solar farm surveillance enhanced with thermal imaging cameras

Many solar parks are in remote locations, so protecting them properly can be a challenge. One of the security companies that have come up with an answer to this challenge is Reading, UK, based Westronics Fire & Security Ltd.

"Thermal imaging cameras are sensitive to electromagnetic radiation in the infrared spectrum, which is emitted by all matter as a function of its temperature. They need no light whatsoever to function, making them perfect for nighttime surveillance," explains Westronics' Managing Director Graham Miller.



The FLIR PT-313 camera system contains both a lowlight color CCD camera and a thermal imaging camera for continuous surveillance, day and night, in all weather conditions.



When the microwave intruder detection system is triggered the nearest FLIR PT-313 thermal imaging camera is automatically pointed towards the location where the alarm was triggered to verify the alarm.



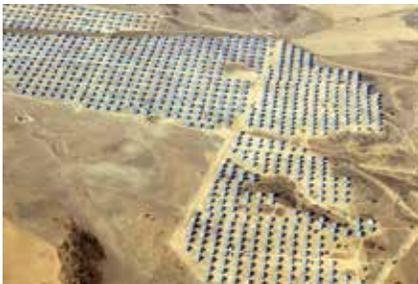
The FLIR PT-313 thermal imaging camera can be used to detect a man-sized target from a distance of up to 880 meters, ensuring that no intruder will go unseen.

Abertura Photovoltaic solar plant chooses thermal imaging to protect the perimeter.

One of the main solar plants in Spain is the Abertura Solar Park. It represents an investment of over 225 Million Euro. To protect the 9 kilometer long perimeter, 27 FLIR Systems thermal imaging cameras have been installed.



FLIR Sensors Manager contains video analytics algorithms like Trip Wire. An alarm will go off if someone crosses the line set by the operator.



Abertura Photovoltaic Solar Plant spans a surface of over 200 hectares. More than 132,000 solar panels on 2,112 solar trackers.

"We looked at several possibilities. Conventional CCTV with lighting or infrared illuminators, walking patrols, passive IR barriers and thermal imaging cameras. We have chosen for thermal imaging cameras for multiple reasons," explains Mr. Borja Escalada, Managing Partner of the Vector Cuatro Group.



A part of the Abertura Solar Power plant.

Thermal imaging cameras protect electrical substation in Stavanger, Norway

With hospitals and other emergency services depending on electricity an extended power failure might cost lives. That is why the Norwegian government and energy companies like Lyse Energy have started enhancing the security at critical points in the electricity network with thermal imaging cameras.



The FLIR SR-Series thermal imaging cameras installed at the Lyse Energy electrical substation can be used to detect man sized targets from hundreds of meters.



FLIR SR-Series thermal imaging cameras need no light whatsoever to spot intruders and will operate in all weather conditions.

"We investigated a number of different security solutions and thermal imaging is the only solution that works", says Torje Knag, CEO of Noralarm AS.

FLIR thermal imaging cameras help secure the perimeter at BASF

The BASF headquarters in Ludwigshafen, Germany, is the largest integrated industrial complex in Europe, covering an area of over 10 square kilometers. With numerous highly classified chemical processes going on.

"I am very happy with the overall performance of the FLIR Systems thermal imaging cameras," says Klaus Altmeyer, Head of Technical Security at BASF Ludwigshafen. "I am convinced that thermal imaging might also be a solution for the security issues that some other BASF sites are facing."



FLIR SR-Series thermal imaging cameras have been placed at strategic locations along the area's perimeter.



Potential intruders show up clearly on the high contrast thermal images produced by the FLIR SR-Series thermal imaging cameras.



The red line represents the perimeter of the BASF plant in Ludwigshafen.



The BASF control room is the hub of the security network, where all footage is analyzed.

FLIR thermal imaging cameras help secure Fossil Europe headquarters

FLIR thermal imaging cameras have proven to be a premium security solution for companies throughout the world. One company that utilizes thermal imaging cameras from FLIR to secure its premises is the well known watchmaker Fossil.



Intruders will clearly show up on these high contrast thermal images.



The red brackets indicate an alarm is triggered. On the left a person moving too close to the building causes the alarm to go off. On the right it is a car that breaches the digital parameters set in the video analytics software.

"In fact, thermal imaging was the most cost-effective option in this situation," adds Helmut Schmid, director of Emtec Chieming. "A solution with other sensors such as window sensors would be very expensive, for this building simply has too many doors and windows. With just a handful of thermal imaging cameras we can cover the entire building and since thermal imaging cameras need no light whatsoever to produce crisp thermal images we do not need to install lighting."

Copenhagen Airport installs thermal imaging cameras

With the threat of intruders, or even worse, terrorist attacks, making sure that all passengers are safe within an airport is of the utmost importance to commercial airlines and airport authorities. But not only passengers, also personnel and valuable equipment need to be protected. FLIR Systems SR-Series thermal imaging cameras help to make Copenhagen Airport an even safer airport than before.



Top left and right: Images from the SR-Series thermal imaging cameras displayed on an LCD screen



Thermal imaging produces a clear image in the darkest of nights.

"We were extremely enthusiastic during the first demonstrations of the FLIR Systems thermal imaging cameras. It became immediately clear that they would be a huge asset to our security infrastructure. We were amazed to see them produce a clear image in the darkest of nights, from unlighted areas, so that we could track and follow objects without effort.," explains Mr. Frank Christensen, Dept. Head of Department of the Copenhagen Airport Security Operations Center.



A part of the control room of the Security Operations Center at Copenhagen Airport.



Mr. Christensen: Dept. Head of department of the Copenhagen Airport Security Operations Center.

Development Bank of South Africa installs thermal imaging

FLIR Systems SR-Series thermal imaging cameras help to protect the perimeter night and day.



The control room at DBSA. Note the big screen on top that displays the thermal images of the 4 SR-Series cameras.

"I found out that although the initial investment in thermal imaging cameras might be a bit higher, they would pay for themselves in the long run. Thermal imaging cameras do not consume a lot of power and since they contain an uncooled Vanadium Oxide detector which does not contain any moving parts at all, they are maintenance free. Once in operation they are good for several years, hassle free, continuous operation.", explains Mr. Jaques du Plessis, Regional Manager Gauteng of Holbert Boikanyo Technologies.



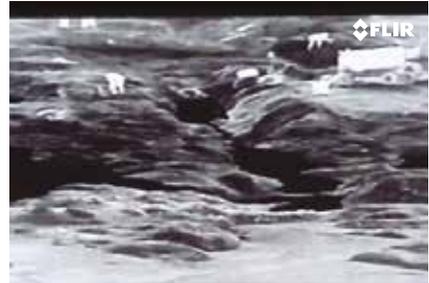
The thermal image of the 4 SR-Series thermal imaging cameras are displayed on one screen.



One of the FLIR SR-Series thermal imaging cameras at the DBSA.

FLIR Systems thermal imaging cameras help to prevent diamond theft in Namibia

“Diamond theft hurts us all – Don’t do it”, is one of the first things visitors see when they arrive at the small airport of Oranjemund, Namibia. FLIR thermal imaging cameras are helping to prevent diamond theft.



Thermal images produced by the SR-Series thermal imaging cameras installed along the bedrock.



A moveable trailer with solar panel. The FLIR Systems SR-Series thermal imaging camera is mounted in a stainless steel protective housing which protects it against the harsh weather conditions alongside the Namibian coast.

"Sometimes workers hide diamonds in a remote area of the bedrock area. Once it is dark, they will try to come back and pick up the diamonds. In order to avoid this we have installed thermal imaging cameras," explains Mr. Freddie Groenewald, Security Chief Technician at Namdeb, Oranjemund.

Thermal imaging cameras for home security

All over the world the perimeters of industrial parks, airports and harbors are being protected with the help of thermal imaging cameras from FLIR Systems, but the security solution big companies choose to protect their assets can be used for home security as well.



The thermal images of the six FLIR SR-Series thermal imaging cameras can be shown on any of the screens inside the house.



The FLIR Sensors Manager software includes an advanced video analytics module. The user can place virtual trip wires and other triggers.



Six FLIR SR-313 thermal imaging cameras cover the back of the estate

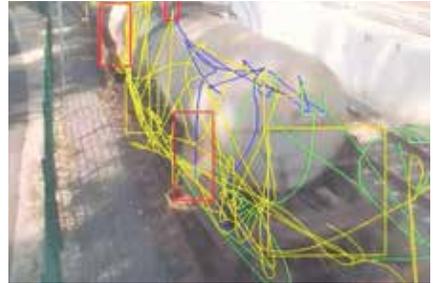
Andrew Herridge, Operations Director at Case Security, explains why he opted for thermal imaging cameras. "FLIR thermal imaging cameras need no light to function and are incredibly dependable."



From their high vantage point these FLIR SR-313 thermal cameras can make the most of their excellent range performance.

FLIR thermal imaging cameras secure the perimeter of Industriepark Höchst

Given the importance and in some cases sensitivity of the chemical and pharmaceutical production facilities and related process industries located at Industriepark Höchst, security is a major priority. FLIR thermal imaging cameras provide a solution.



Infraserv uses advanced video analysis software (Aimetis Symphony) to pick up unauthorized movement.

"Sometimes I wish that I had this technology at my disposal when we started installing our security network. I probably would have installed many more thermal imaging cameras than we have now, for in most situations they're much better than CCTV cameras," explains Thomas Krüger, head of the control center at Infraserv.



The thermal imaging cameras from the FLIR SR-Series provide perfect nighttime vision, even in complete darkness.

FLIR thermal imaging cameras improve security at Munich Airport

Travelers consider it to be obvious that an airport is a site where all necessary safety and security precautions are taken. Thanks to FLIR thermal imaging cameras, Munich Airport has become even safer than before.



Thermal imaging produces crisp images in total darkness. It needs no light to operate.



A part of the control room at Munich Airport.

“FLIR Systems thermal imaging cameras presented themselves as a good solution for our problem. They present an excellent combination of range performance, image quality and price. In order to make sure that no threat goes undetected we decided to install FLIR cameras at each side of the airport.” Says Mr. Dominik Edlbauer, Product Manager Video Surveillance at Munich Airport.

Oubaii Golf Estate, in the heart of the famous South African Garden Route

Oubaii Golf Estate wants all residents, their guests, and all people that come to enjoy a round of golf at their magnificent course, to feel safe and secure. Therefore they have taken all the necessary security measurements and installed state-of-the-art security equipment.



One of the FLIR Systems thermal imaging cameras overlooking Oubaii.



The FLIR Systems PTZ-35x140 MS. It contains 2 thermal imaging cameras and one daylight/lowlight camera. It overlooks a big part of the Oubaii estate.

“For detecting intruders in total darkness, in practically all weather conditions, there is no better technology than thermal imaging. Different estates have come to Oubaii already to look at the performance of the FLIR Systems thermal imaging cameras and they were amazed when they saw the clear images they produce.”, says Andre Steenkamp Regional Manager of Holbert Boikanyo Technologies, initiator and co-designer of the Oubaii Security System.

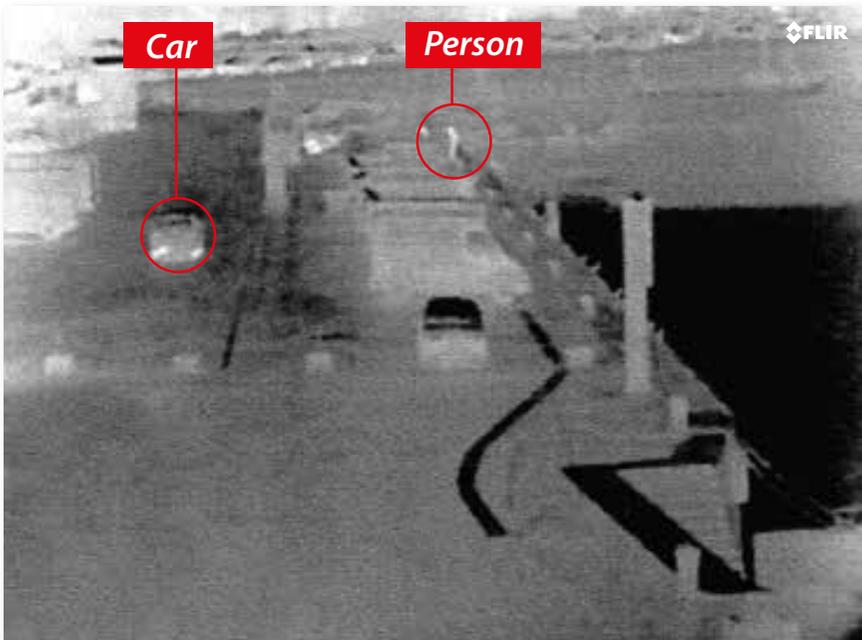
Port of Calais installs thermal imaging cameras for security and surveillance

Making sure that the port is a secure area and that not only the passengers but also the vessels and their cargo are safe, is one of the task of "The Calais Chamber of Commerce and Industry" which is the concessionary of the Port of Calais. They also have the task to prevent illegal Channel crossings.



One of the FLIR Systems SR-50 cameras in the Port of Calais.

"Thermal imaging cameras give us a clear image at night, also during daylight, in light fog and rain." explains Mr. Hervé Couret, Port Facility Security officer and Manager of the Security Department.



Thermal image taken by one of the FLIR Systems SR-50 thermal imaging cameras. Cars and people can clearly be detected, in total darkness, from a distance of more than 400 meters.

Port Authority of Ravenna installs FLIR Systems FLIR HRC-S Multi-Sensor

The Port Authority of Ravenna has decided to install a FLIR Systems HRC-S thermal imaging camera. This thermal imaging camera intends to raise the level of security at the port of Ravenna from the harbour front to the adjacent coast. This is yet another step taken by the Port Authority to raise the standards of security at the port of Ravenna.



The HRC-S MS is equipped with a continuous optical zoom on the thermal image. It allows to have a closer look at objects which are far away.



The HRC-S MS in the port of Ravenna is installed on a 14 meter high mast, located at the end of a 3 kilometer long pier.



Claudio Fuzzi, one of the HRC-S MS operators at the Ports Pilot Organization in Ravenna.

“The thermal imaging camera also helps us to comply with the International Ship and Port Facility Security code (ISPS) regulations. A comprehensive set of measures to enhance the security of ships and ports developed in response to the perceived threats to ship and port facilities in the wake of the 9/11 attacks in the United States.,” adds Captain Francesco Frisone of the Ravenna Coast Guard.

FLIR Systems thermal imaging cameras enhance security at Turin Airport

SAGAT Turin airport in Italy decided to increase its security even further by installing FLIR Systems thermal imagers. The airfield lies next to a military facility and the problem had been to detect intrusion along the 9 km long perimeter fence in darkness, haze and fog.



FLIR thermal imaging camera



Thermal image of a plane landing at the airport.



Images from the FLIR thermal imaging camera in TV mode. Control commands are well visible.

“We already had a lot of different cameras and sensors in our security network. What made us consider thermal imaging cameras was the fact that with the thermal imaging technology and a pan-tilt solution we can ensure surveillance over a rather big area during day and night with only a few cameras.”, says Marco Morriale, Turin Airport General Manager

Solarpack protects its perimeter of 41 acres with FLIR thermal imaging cameras

Solarpack is continuously investigating new security solutions to have a pragmatic security system to protect its installations, considering the complexity that involves a solar plant.



Human targets are being tracked and will trigger the alarm when crossing the virtual fence.



Animals are considered as authorized intruders and will not trigger the alarm.



Part of the Solarpack installation in Spain.



Thermal image of the perimeter.

"Integrating the FLIR F-Series cameras with Aimetis software was a great solution.," says Pablo Campos from CCTV CENTER, in charge of this project. "We used FLIR thermal imaging cameras before with Aimetis Symphony and the FLIR F-Series are included in the list of compatible devices. Once calibrated, analytics performance is outstanding."



FLIR thermal imaging cameras are excellent tools for protecting any perimeter, night and day. They do not need any light whatsoever to produce a crisp thermal image in the darkest of nights.

5 FLIR Systems, the world leader for thermal imaging cameras

FLIR manufactures the most advanced thermal imaging cameras on the market today. We offer a wide variety of models so that you can choose the thermal imaging camera that is perfectly suited for your specific security & surveillance needs.

FC-Series S

Extremely affordable, network-ready fixed mount cameras

FC-Series S thermal security cameras let you see intruders and other threats to your facility clearly in total darkness and in bad weather. Fully enabled for control and operation over digital and analog networks, FC-Series S thermal imaging cameras are available in high-resolution 640 × 480, and 320 × 240 formats.



SR-Series

Extremely affordable, analog thermal security cameras with excellent range performance

The SR-Series feature the same thermal imaging technology found in many of FLIR's most sophisticated security and surveillance systems, but are packaged for users who have mid-range security and surveillance as their primary application. The SR-Series are excellent tools to install in new or existing security installations. They just need power and connection to a screen.



F-Series

Network-Ready Fixed mount Cameras

F-Series thermal security cameras let you see intruders and other threats to your facility clearly in total darkness and in bad weather. Fully enabled for control and operation over digital and analog networks, F-Series thermal imaging cameras are available in 160 × 120, 320 × 240, and high-resolution 640 × 480 formats, providing up to sixteen times the image clarity and longer threat detection range performance than lower resolution cameras.



PT-Series

Network-Ready Pan-Tilt, Multi-Sensor Thermal Security Cameras

PT-Series thermal security cameras let you see intruders and other threats to your facility's security clearly in total darkness and in bad weather. The PT-Series precision pan/tilt mechanism gives operators accurate pointing control while providing fully programmable scan patterns, radar slew-to-cue, and slew-to-alarm functionality.



D-Series

Multi-Sensor Thermal Security Cameras In Networked, Outdoor Dome Enclosures

The D-Series outdoor dome enclosure provides precision pan/tilt control while providing fully programmable scan patterns, radar slew-to-cue, and slew-to-alarm functionality. Fully enabled for control and operation over IP and serial networks.



FLIR A f-/A pt-Series

Thermal imaging cameras able to measure temperatures.

Monitor critical equipment and protect your perimeter with the same camera. FLIR A-Series can be installed almost anywhere to monitor your critical equipment and other valuable assets. They will safeguard your plant and measure temperature differences to assess the criticality of the situation. This allows you to see problems before they become costly failures, preventing downtime and enhancing worker safety. They can also be used for Security & Surveillance.



6 Thermal imaging: a wide variety of applications

As more and more people are discovering the benefits that thermal imaging cameras have to offer, volumes have gone up and prices are coming down. This means that thermal imaging cameras are finding their way to more and more markets. FLIR Systems has the correct camera for every application.

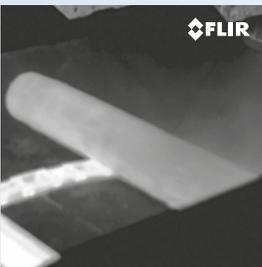


Security

Our security customers benefit from thermal imaging cameras because they help them to secure facilities like ports, airports, nuclear facilities, warehouses, estates and many more against intruders.

Electrical / Mechanical

In industrial environments thermal imaging is used to find hot-spots that can lead to failures in electrical and mechanical installations. By detecting anomalies at an early stage production breakdowns can be avoided and money can be saved.

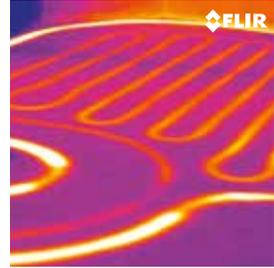


Cores & components

FLIR Systems also markets a wide variety of thermal imaging cores that other manufacturers integrate in their own products.

Building diagnostics

Building professionals look for insulation losses and other building related defects with a thermal imaging camera. Finding insulation losses and repairing them can mean huge energy savings.



Border security

Border security specialists protect their country's border against smugglers and other intruders. With a thermal imaging camera they are able to see a man at a distance of 20 kilometers away in total darkness.

Science / R&D

Thermal imaging also plays a pivotal role in both applied and fundamental R&D. It can speed up the design cycle so that products can go to market faster. For these demanding applications FLIR Systems markets extremely high performance thermal imaging cameras.



Maritime

On both yachts and commercial vessels, FLIR thermal imaging cameras are being used for night time navigation, shipboard security, man-overboard situations and anti-piracy.

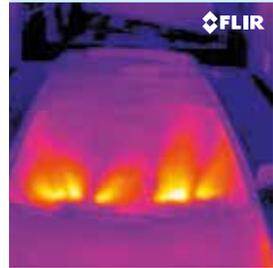


Transportation

FLIR thermal imaging cameras are installed in cars for driver vision enhancement. They help the driver to see up to 4 times further than headlights. They are also installed in specialty vehicles such as fire-trucks, mining and military vehicles.

Automation / process control

Thermal imaging cameras are also installed to continuously monitor production processes and to avoid fires.

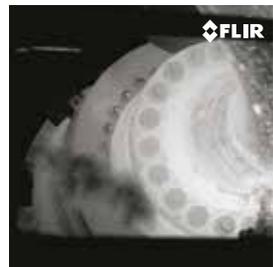


Law enforcement

Police officers use the power of thermal imaging to see without being seen. They can easily find suspects in total darkness without giving away their position.

Optical gas imaging

Gas leaks can also be detected seamlessly with a thermal imaging camera.





Personal vision systems

Outdoor enthusiasts can see clearly at night with the help of a thermal imaging camera.

Firefighting

Firefighters are able to see through smoke. It helps them to find victims in a smoke filled room and also to see if fires are well extinguished. It helps them to save lives.



Extech

Under the Extech brand, FLIR systems is marketing a full line of test and measurement equipment.

7 Selecting the correct thermal imaging camera manufacturer

Since thermal imaging cameras have become increasingly popular over the last few years more and more manufacturers are starting to produce thermal imaging cameras.

Regardless of your application, there are some considerations to take when investing in a thermal imaging camera.

The correct camera for the correct application

Choose a thermal imaging camera manufacturer that offers you a choice. Different applications require different types of thermal imaging cameras. First time users have different needs than those that have already discovered the benefits of thermal imaging. Different image qualities are available. A reliable manufacturer offers you a thermal imaging camera that is completely suited for your application.



Choose a system that can grow with your needs

As you start to discover the benefits thermal imaging has to offer your needs will undoubtedly change. Go for a manufacturer that is able to take your first camera back and offer you a more advanced model. Make sure that accessories are available. Lenses are important. Some applications require a wide angle lens, others are better served with a telephoto lens.



Software is important

With FLIR Sensors Manager FLIR offers you the software you need for your security applications.



Service

Once in operation a thermal imaging camera rapidly becomes a vital piece of equipment. Make sure that the manufacturer can service your camera in the shortest period of time if a problem should occur.

Training

Using a thermal imaging camera is as easy as using a camcorder. There are however some things you need to take into account. A reliable thermal imaging camera will be able to give you initial or extensive training so that you can get the most out of your thermal imaging camera.





Send us your application

On the previous pages you could read how some of our users are using FLIR thermal imaging cameras.

We are always looking for new application stories and new customer testimonies. If you have an interesting application please contact us. We will be happy to include you in the next edition of this booklet.

Please fill out the following form, scan it and send it to flir@flir.com or fax this form to +32 3 303 56 24

Company : _____

Name : _____

Address : _____

Postal Code : _____

City : _____

Country : _____

Tel : _____

Application : _____

Short Description : _____





To speak to a thermal imaging camera expert, please contact:

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