



APPLICATION STORY



A FLIR FC-309 is mounted on a Pan-Tilt-Zoom (PTZ) system that allows for 360° continuous rotation.

FLIR thermal security cameras to prevent outdoor fires in Spain

FLIR FC-Series security cameras offer reliable and cost-effective solution for outdoor fire detection.

Every year again, stories about wildfires in Spain and other southern European countries make newspaper headlines. In the summer of 2012 for example, much of Spain's countryside was left tinder-dry by a prolonged heat wave, resulting in major wildfires in northern Catalonia - near the Pyrenees - and on La Gomera, in the Canary Islands. Be it because of human negligence or malicious intent, forest wildfires result in a major cost for society, the loss of valuable forest areas, and the risk of human casualties.

In order to offer a solution for this ever returning problem, Spanish company SR7, a provider of surveillance and security systems, has built up extensive experience in developing fire detection systems based on thermal imaging technology that are able to detect fires in an early stage and over a long range.

SR7, based in Llanera in the north of Spain, offers surveillance and security solutions for the industry, the environment, military infrastructures, public and private

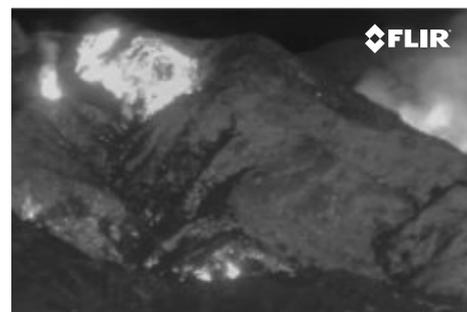
administrations, ports, airports, etc. The company has a worldwide install base and range from new installations to customizations of existing systems. SR7 is specialized in the use of thermal imaging cameras and the analysis of thermal and conventional images, radars, sensors, and communication systems.

Thermal imaging for outdoor fire protection

Thermal imaging cameras for fire detection are not new. They have been used for



Mr. Jesús Angel del Campo Martínez: "With the integration of FLIR's FC-Series security cameras, we believe we have developed an extremely cost-effective fire detection system that will provide reliable results and that is able to cover large areas."



Although a forest fire application is the origin of this system, it is also suitable for use on any outdoor fire detection environment, or indoor long range areas.



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example for indoor detection in waste plants, which often contain thousands of tons of solid waste. This waste is potentially flammable when stored, due to self-combustion, spontaneous chemical reactions between the disposals or methane gas-building. Cameras like the FLIR A-Series for example detect fires based on temperature changes and actually measure the temperature. When a certain, unwanted temperature level is reached, the registered camera images can trigger an alarm.

“We know the application of indoor fire detection with FLIR’s A-Series,” comments Mr. Jesús Angel del Campo Martínez, Technical Director at SR7. “However, fire detection for outdoor use and for detection over a long range distances, requires additional complex detection algorithms. Therefore, we developed a solution that could meet both these requirements.”

Pan-Tilt-Zoom system

SR7 decided to use FLIR’s FC-Series Security thermal imaging camera to build a proprietary system. With the FC-309 model, the system is able to detect a fire overheating area of 1m² in a range of 2,500 meters. FC Series Security cameras are combined with SR7 propriety video analytics software, which will trigger alarms in case flame detection, and mounted on a Pan-Tilt-Zoom (PTZ) system that allows for 360° continuous rotation.

And although a forest fire application is the origin of this system, it is also suitable for use on any outdoor fire detection environment, or indoor long range areas. It can be applied for a wide variety of installations, like industrial premises, solar fields, electrical stations, flammable outdoor deposits, nuclear plants, airports, ports and many others.



The SR7 system is providing reliable detection results during various weather conditions, sunlight or rain, and significantly reduces the number of unwanted alarms.



Sunlight reflections

Another drawback of using typical indoor thermal imaging camera systems is sunlight reflection causing unwanted alarms. “Sunlight reflection can come from a wide variety of sources,” comments Mr. Martínez. “Any metallic structure, like cars or machines, or even the nearby presence of water can cause reflections and unwanted alarms.”

The detection by the SR7 video analytics solution however looks for movement in the thermal imaging picture, and neglects the sunlight reflections. This way, the system is providing reliable detection results during various weather conditions, sunlight or rain, and significantly reduces the number of unwanted alarms.

Environmental protection

The FC-Series Security cameras have been designed in such a way that the survivability of the camera in electrically adverse environments is guaranteed. “Power sources in forest areas are generally not the most stable ones, due to the remoteness and vastness of those areas,” comments Mr. Martínez. “Voltage dips or interruptions can cause a normal camera to break. Also, lightning strikes can be fatal for a security camera system.”

The FC-Series Security cameras have been engineered with propriety FLIR circuitry to provide a high degree of protection against a variety of problematic power conditions that have been shown to cause problems for typical cameras. The benefits of this added protection include: uninterrupted operation in a wide range of conditions, a high degree of protection against electrical storms and immunity to electrical noise in industrial environments.



FC-Series S is intended for outdoor applications and has protection circuitry that only allows the intended signaling to pass through.



With the FC-309 model, the system is able to detect a fire overheating area of 1m² in a range of 2,500 meters.

For more information about thermal imaging cameras or about this application, please contact:

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