

# Thermal imaging technology for surveillance and security



# Thermal imaging technology the ideal solution for camera manufacturers

Video surveillance is an important part of providing security to protect people and assets. Daytime security cameras do not operate well during the night when monitoring is most important. The use of additional illumination is often impractical because of the additional expense of light sources, light pollution to surrounding areas, as well as the need to continuously service and replace defective lights. Low-light cameras require some ambient illumination and often do not operate well during the day.

Thermal imaging offers a very desirable alternative. The technology of thermal imaging has significantly matured and today enables the manufacture of security cameras that have impressive performance, are highly reliable and relatively low cost. A camera equipped with an infrared imaging sensor does not require external lighting. Video images are produced as a result of the thermal emissions from objects in the scene. Excellent imaging performance is assured under many different ambient conditions during day or night, as well as in fog, rain or snow.

Infrared security cameras are often configured to have an alarm to detect when a certain movement occurs. Such automatic processing can be used to signal an operator about a possible intrusion. Because of their high temperature sensitivity, they are very difficult to fool. As a result, infrared technology is important for Security Camera Manufacturers enabling them to offer their customers cameras having ideal performance for night-time security and surveillance.



## ULIS, your partner in thermal imaging for higher efficiency in surveillance and security applications

Since its inception in 2002, ULIS has been developing silicon microbolometers for use in a wide range of applications. As a result of ongoing product development work, ULIS offers high-performance solutions, backed by the guarantee of mutually-beneficial long-term partnerships with Original Equipment Manufacturers (OEMs).

As a component provider, ULIS today is uniquely positioned to meet the growing demand for surveillance and security applications by delivering high performance, cost-effective thermal imaging sensors.

### Benefits

- High sensitivity and high quality image during daytime and night-time
- Visibility in any harsh condition: smoke, fog, haze,...
- Alternative or complementary solution to existing surveillance networks



▶ Visible



▶ FIR



▶ Visible



▶ FIR

## The silicon microbolometer: the key component

At the heart of the thermal imaging system is a silicon sensor based on microbolometer technology that converts infrared radiation into visible images. Even tiny temperature differences can be easily detected, resulting in excellent night vision performance for surveillance and security in low light or night conditions.

First developed over twenty years ago, silicon microbolometers have significantly matured and are now found in many commercial products such as thermal imaging cameras for night vision or temperature measurement, for fire-fighters to see through smoke, for search and rescue, for home energy loss inspection as well as many other strategic applications

### High-performance solutions

- High sensitivity sensors available in various array sizes
- High uniformity to offer high accuracy level
- Fast response time for high frame rate
- Field-tested robustness in harsh mechanical environments (MIL-STD-883/810)

### Cost-effective solutions

- Low-cost, high yield silicon processing
  - Easy integration and fast calibration capability
- ### A unique business model
- Infrared sensor provider to OEMs
  - The guarantee of long-term partnerships with infrared system manufacturers

### Best-in-class customer support

- Dedicated customer support from development to production
  - Solid experience working with technology business units
- ### Access to state-of-the-art technology
- Continuous technology improvement
  - Benefit from the latest technologies on the market
  - Get proven technology based on established semiconductor manufacturing processes

### ▶ ULIS infrared imaging sensor performance specifications

- High sensitivity
- Fast response time (capable of producing image at high frame rate)
- Small pixel size (compactness and lowest cost)
- Several array sizes available (VGA/4, VGA, XGA)
- Designed for use in harsh environments (MIL-STD-810/883)

## Performance you can count on

ULIS is the world's leading provider of infrared imaging sensors using amorphous silicon microbolometer technology. MEMS-based amorphous silicon microbolometers deliver all the advantages of silicon processing, including low cost and high yield.

In addition, because they are highly sensitive to infrared radiation, they are ideal for use in thermal imaging cameras. Designed in a compact, high-reliability package, amorphous silicon offers cost-effective performance.

## Night Vision Enhancement

Silicon infrared imaging sensors for surveillance & security applications

### About ULIS

ULIS, a subsidiary of Sofradir and GE Equity, specializes in the design and manufacture of high quality infrared imaging sensors for thermography, surveillance & security, automotive and military applications. It enables makers of consumer electronics and infrared equipment to produce low weight, low power consumption and cost-effective thermal cameras in large volume.

ULIS ranks among the top three for uncooled infrared (IR) sensors delivered. It is the only company out of the top three to use amorphous silicon-based technology that provides unusually high uniformity, a key parameter for high-resolution imaging. Due to its amorphous silicon technology, a robust and reliable semiconductor material proven for its industrial production capacity, the company also achieves large-scale production, which is enabling it to meet the growing demand from existing commercial and emerging markets.

ULIS is located in Veurey-Voroize, near Grenoble, and employs 140 people.



ZI Les Iles Cordées  
BP 27 - 38113 Veurey-Voroize - FRANCE  
Phone: +33 4 76 53 74 70 - Fax: +33 4 76 53 74 80  
www.ulis-ir.com - ulis@ulis-ir.com



"ULIS IR videos" on  


