Press Release

InfraTec GmbH Infrarotsensorik und Messtechnik

Dresden, 2026-11-03

ImageIR® z6300: Zoom Camera for Long-term Use in Thermography

The Long-life Cooler Provides up to 30,000 Hours of Operation Without Requiring Maintenance

Small, lightweight, compact: The ImageIR® z6300 radiometric zoom camera from InfraTec can be used for thermographic temperature measurements in a wide variety of applications. However, the camera truly shines when it comes to endurance: A long-lasting SWaP detector cooling unit ensures consistently reliable operation.

The term SWaP stands for the three parameters size, weight, and power consumption of the cooler. These parameters can be minimized because the XBn photon detector operates at a comparatively high temperature of 150 K, reducing the cooling power required. Conventionally cooled detectors operate at significantly lower temperatures and therefore require larger coolers with higher power output and greater weight. The small detector, with a pixel pitch of just 10 µm, also contributes to the compact dimensions of the ImageIR® z6300.

Thanks to SWaP technology, the cooler's service life is also extended – to approximately 30,000 hours in the case of the ImageIR® z6300. For users, this means long, maintenance-free operating times, high system availability, and more predictable service intervals. The camera is therefore particularly well-suited for continuous use in industrial monitoring and inspection systems, for OEM integration, and measurement tasks in hard-to-reach locations. The compact light-metal housing, low weight, and reduced power consumption also facilitate integration into existing systems and mobile use, such as in gimbal systems for aerial thermography.

Flexible Fields of View Without Changing Lenses

With its permanently integrated 7.5x zoom lens, the ImageIR® z6300 is suitable for a wide variety of applications and changing measurement requirements. In combination with the motorized focus, the field of view can be quickly adjusted via remote control to accommodate different measurement distances and object sizes, eliminating the need for time-consuming manual lens changes. The camera is radiometrically calibrated across the entire zoom range, enabling precise temperature measurements even when focal lengths change.

The 15–115 mm motorized zoom lens used in the standard version, in combination with an MWIR detector, enables the detection of people at distances of over 6.1 km. By extending the focal length to 170 mm with a teleextender, the detection range for people can be increased to 8.2 km.

Uninterrupted Data Acquisition for High-Speed Processes

The cooled focal-plane array detector, featuring (640 × 512) IR pixels and a pixel pitch of 10 µm, operates in snapshot mode. This ensures that fast-moving objects are captured with high-quality, geometrically accurate images. No mechanical shutter is required for precise temperature measurements, allowing process data to be recorded continuously without interruption. In full-frame mode, the ImageIR® z6300 achieves frame rates of up to 180 Hz. High-speed mode with binning increases the frame rate to 620 Hz while also improving thermal resolution. Even higher frame rates are possible when using sub frames.

The integrated image-processing electronics enable autonomous operation without the need for an additional control PC. Measurement data can be output in real time via various video and data interfaces or stored on an internal SSD. The camera can also be controlled via a web interface using a smartphone or tablet. An SDK is available for custom integrations.

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With its combination of a long-life cooler, shutterless continuous operation, radiometric zoom, and compact design, the ImageIR® z6300 offers a reliable and cost-effective solution for demanding thermographic measurement tasks – from research and development to quality assurance and materials testing, as well as to automated inspection and monitoring applications.

Information: **3,893 characters (incl. spaces)**

About InfraTec

The InfraTec infrared sensor and measurement technology company was founded in 1991 and has its headquarters in Dresden, Germany. The privately held company employs more than 240 employees and has its own design, manufacturing and distribution capabilities.

With its infrared measurement business unit, InfraTec is one of the leading suppliers of commercial thermal imaging technology. In addition to the camera series ImageIR® and the camera series TarisIR® and VarioCAM® High Definition, InfraTec offers turnkey thermographic automation solutions e.g. for industry processes, non-destructive testing and fire detection and prevention.

The Infrared Sensor division produces custom-made components – especially pyroelectrical infrared detectors – for clients worldwide. The product range includes analogue single and multi-channel detectors as well as digital multi-channel detectors (PyrIQ®) and high-performance detectors (PYRONEER®) for analytical instruments. The detectors are used in gas analysis, fire and flame sensors and spectroscopy.

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Picture:



ImageIR® z6300 – Long-distance inspection, Picture credit: © InfraTec + © iStock / onlyyouqj + TARIK KIZILKAYA

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