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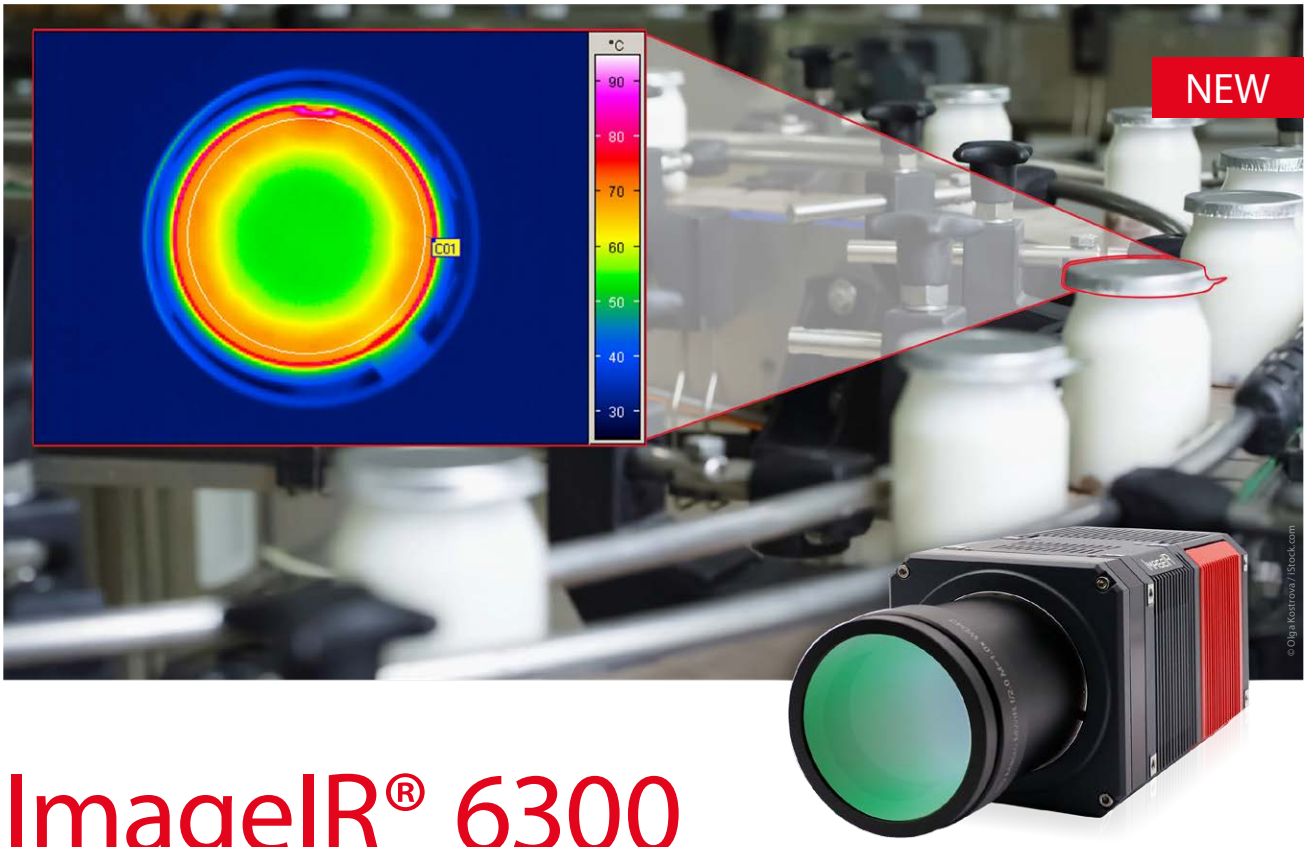
InfraTec.
Infrarotsensorik und Messtechnik



ImageIR® 6300

High-performance MWIR System Camera for Continuous Industrial Operation

640 × 512 Detector

Detector Format
Large detector enables highest sensitivity

≥ 30 mK

Thermal Resolution
Precise detection of smallest temperature differences

640 × 512 180 Hz

IR-Frame Rate
Analysis of extreme temperature changes and gradients in full frame

Integrated Camera Intelligence
Control via web interface

High-speed Mode

High-speed Mode
Increase frame rates up to 620 Hz and thermal resolution at the same time using binning technology

Calibration

HighSense
Flexible setting of temperature measurement ranges and integration times beyond factory calibration ranges

The radiometrically calibrated system camera ImageIR® 6300 is equipped with a cooled focal-plane-array photon detector of the latest generation. By combining the detector format of (640 × 512) IR pixels with the very small pixel pitch of 10 µm, the camera delivers razor-sharp images. Due to its snapshot mode, moving objects can also be displayed without distortion. The innovative XBn detector technology allows the detector to be operated at a significantly higher working temperature than the usual approximately 80 K. This allows the size, weight and power (SWaP) of the integrated detector/cooler unit to be minimised. The service life of the implemented cooler can thus be significantly increased to about 18,000 hours. Using this technology, the power consumption, dimensions and weight of the ImageIR® 6300 have been significantly reduced and its maintenance-free service life has been considerably extended. These are key features that qualify the camera for use in OEM and continuous operation applications.

Its pixel pitch of only 10 µm gives the system camera a comparatively small pixel size. This allows for a compact optical design while maintaining high image quality. In combination with radiometric calibration, most precise measurement results can be achieved. With an optionally available integrated solid state drive (SSD), large amounts of data can be stored directly on the camera.

Technical Specifications

Spectral range	(3.7 … 4.15) µm
Pitch	10 µm
Detector	XBn
Detector format (IR pixels)	(640 × 512)
Image acquisition	Snapshot
Readout mode	ITR / IWR
Aperture ratio	f/3.6
Detector cooling	Stirling cooler
Temperature measuring range	(-10 … 1,700) °C, up to 3,000 °C*
Measurement accuracy	± 2 °C or ± 2 %
Temperature resolution @ 30 °C	Better than 0.03 K / 0.02 K in high-speed mode
Frame rate (full / half / quarter / sub frame)*	Up to 180/344/619/2.760 Hz; High-speed mode: 620/1,030/1,500/2,150
Focus	Manually
Dynamic range	14 bit
Integration time	(1 … 60,000) µs
Interfaces	GigE, HDMI*
Analogue signals*, IRIG-B*	IRIG-B
Trigger	4 IN / 3 OUT
Tripod adapter	1/4" photo thread, 18 × M4
Power supply	24 V DC
Storage and operation temperature	(-40 … 70) °C, (-20 … 50) °C
Protection degree	IP54, IP65*
Dimensions; weight	(185 × 100 × 100) mm; 2 kg
Further functions	Integrated image processing and acquisition, control via web interface, high-speed mode*, HighSense*, Multi Integration Time*
Analysis and evaluation software	IRBIS® 3, IRBIS® 3 view, IRBIS® 3 plus*, IRBIS® 3 professional*, IRBIS® 3 control*, IRBIS® 3 online*, IRBIS® 3 process*, IRBIS® 3 active*, IRBIS® 3 mosaic*, IRBIS® 3 vision*

* Depending on model

Lenses	Focal length (mm)	FOV (°)	IFOV (mrad)
Standard lens	12	(29.9 × 24.1)	0.8
Telephoto lens	25	(14.6 × 11.7)	0.4
Telephoto lens	50	(7.0 × 5.9)	0.2

Macro and microscopic lenses	Minimum object distance (mm)	Object size (mm)	Pixel size (µm)
Close-up for telephoto lens 50 mm	300	(39 × 31)	60
Microscopic lens M=1.0×	40	(6.4 × 5.1)	10

Technical Refinements of the ImageIR® 6300

The ImageIR® 6300 is the first model in the ImageIR® series to feature a new integrated operating system. This opens up a wide range of new functions, such as fully autonomous camera operation without the need for an additional control PC. The camera can also be controlled via a web interface using a smartphone or tablet. In addition, users can run their own software directly on the camera and access the data stream directly via the integrated SDK. Together with the option of power supply via a wide-range input (9 – 36 V) or Power over Ethernet (PoE), these features make the the infrared camera much easier to use. This is particularly true for plant-integrated applications and in hard-to-reach places.

Fields of Application

- Universal use for demanding thermographic measurement tasks
- Continuous operation applications
- Core component for OEM solutions
- Micro-thermography
- Use in hard-to-reach and/or confined installation locations

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