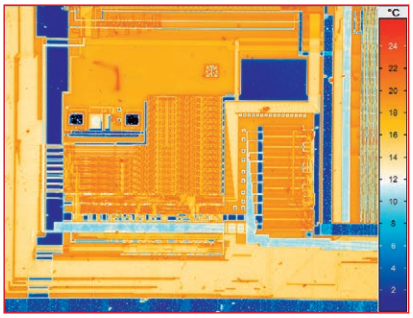
MADE IN GERMANY

InfraTec.
Infrarotsensorik und Messtechnik

Thermographic software IRBIS® 3



Thermal image of a circuit board

ImageIR® 9500

High-end Thermography Camera in HD Image Quality with MCT Detectors

1,280 × 720 Detector
Detector Format
Efficient measurement of smallest details on large-scale objects

3.7 MegaPixel
MicroScan
(2,560 × 1,440) IR pixels by genuine camera hardware

1,280 × 720 120 Hz
IR-Frame Rate
Analysis of extreme temperature changes and gradients in full frame

±1 %
Measurement Accuracy
Highly accurate and repeatable measurements

≤ 25 mK
Thermal Resolution
Precise detection of smallest temperature differences

10 GigE
10 GigE Interface
High-speed, long-distance interference proof data transmission

Focus
Motor Focus
Precise, fast and remotely controllable; including multiple autofocus functions

In regard to InfraTec's wide range of products the ImageIR® 9500 thermographic camera is designed for the international market. Its highly sensitive cooled focal-plane array photon detector is based on mercury cadmium telluride (MCT) and provides (1,280 × 720) IR pixels. The geometrical resolution can even be increased to (2,560 × 1,440) IR pixels with the MicroScan function. With its outstanding thermal sensitivity up to 0.025 K, users can create low-noise, fine-resolution images using the quadruplication of the image formats due to the innovative, opto-mechanical MicroScan technology. In addition: This model of the high-end ImageIR® camera series impresses with extremely short integration times in the microsecond range and very high frame rates of 120 Hz, which increase to 1,517 Hz in sub-frame with (320 × 180) IR pixels.

The ImageIR® 9500 is suitable for highly demanding applications in science and industry, object monitoring and microthermographic analysis of extremely small structures. It is equipped with an integrated 10 GigE interface that enables data exchange between camera and computer at a speed of 10 Gbps. Due to the modular concept consisting of optics, detector and interface modules, the camera can be individually configured and optimally adapted to the respective task. The same purpose is served by the range of high-quality, radiometric precision optics, which ranges from telephoto lenses, standard and wide-angle lenses to macro- and microscopic lenses.

Technical Specifications

Spectral range	(3.5 … 4.8) µm
Pitch	12 µm
Detector	MCT
Detector format (IR pixels)	(1,280 × 720)
Image format with opto-mechanical MicroScan (IR pixels)	(2,560 × 1,440)
Image acquisition	Snapshot
Readout mode	ITR / IWR
Aperture ratio	f/2.0
Detector cooling	Stirling cooler
Temperature measuring range	(-20 … 1,200) °C, up to 3,000 °C*
Measurement accuracy	± 1 °C or ± 1 %
Temperature resolution @ 30 °C	Better than 0.025 K
Frame rate (full / half / quarter / sub frame)*	Up to 120 Hz / 446 Hz / 1,517 Hz / 16,053 Hz
Window mode	Yes
Focus	Manually, motorised or automatic*
Dynamic range	14 bit
Integration time	(1 … 20,000) µs
Rotating aperture wheel and filter wheel*	Up to 7 positions
Interfaces	10 GigE, GigE*, 2 × CAMLink*, HDMI*
Trigger	4 IN / 2 OUT, TTL
Analogue signals*, IRIG-B*	2 IN / 2 OUT, yes
Tripod adapter	1/4" and 3/8" photo thread, 2 ×M5
Power supply	24 V DC, wide-range power supply (100 … 240) V AC
Storage and operation temperature	(-40 … 70) °C, (-20 … 50) °C
Protection degree	IP54, IEC 60529
Dimensions; weight	(241 × 123 × 160) mm; 4.7 kg (without lens)
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	25	(34.2 × 19.6)	0.48
Telephoto lens	50	(17.5 × 9.9)	0.24
Telephoto lens	100	(8.8 × 4.9)	0.12
Supertelephoto lens	200	(4.4 × 2.5)	0.06

Macro and microscopic lenses	Object distance (mm)	Object size (mm)	Pixel size (µm)
Close-up for telephoto lens 50 mm	300	(92 × 52)	72
Close-up for telephoto lens 100 mm	500	(77 × 43)	60
Microscopic lens M=1.0×	40	(15 × 9)	12
Microscopic lens M=8.0×	14	(1.9 × 1.1)	1.5

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