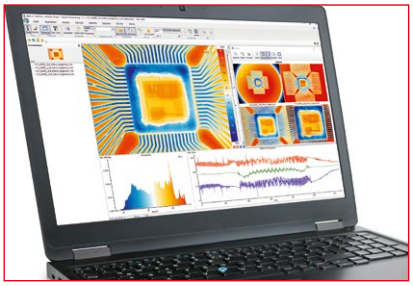
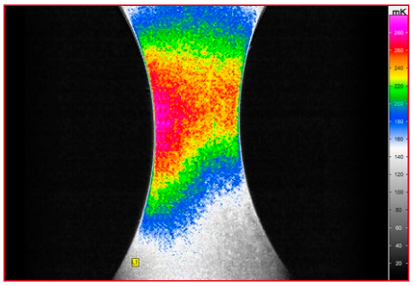
MADE
IN
GERMANY

InfraTec.
Infrarotsensorik und Messtechnik



Software IRBIS® 3



Thermal Stress Analysis with
Lock-in Thermography

ImageIR® 8300

Universal Thermography Camera for Continuous Operation Applications

640 × 512 Detector

Detector Format
Large detector enables highest sensivity

640 × 512 205 Hz

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

±1 %

Measurement Accuracy
Highly accurate and repeatable measurements

≤ 20 mK

Thermal Resolution
Precise detection of smallest temperature differences

Rotating Filter Wheel and Aperture Wheel
Enables measurement tasks with high object temperatures and spectral thermography

Focus

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

Trigger

Process and Trigger Interface
Highly precise repeatable data recording; time- and event-controlled

With its ImageIR® 8300, InfraTec introduces another thermographic camera model belonging to the ImageIR® high-end camera series. The implementation of a (640 × 512) IR pixel MWIR detector allows 205 Hz full-frame real-time imaging without compromising any thermal accuracy. The ImageIR® 8300 and its cooled focal-plane array photon detector reach an outstanding thermal resolution better than 0.02 K. The new version was developed for most demanding operations in research and development and process monitoring fields. Its modular structure consisting of the optical, detector and interface section, makes the camera easily compatible to the related applications and for tailored configurations. An integrated trigger interface guarantees a repeatable high-precision triggering of quick procedures. Multiple configurable digital inputs and outputs serve as control ports for the camera or as generator of digital control signals for external devices.

The optical channel consists of the exchangeable infrared lens as well as application-specific apertures, filters and reference elements. All exchangeable ImageIR® 8300 standard lenses can be combined with a motorised focus unit easily operable from the camera's application software. It allows precise, fast and remotely controlled motorised focusing and is part of the autofocus function.

Technical Specifications

Spectral range	MCT: (1.5 … 5.5) µm
	InSb: (1.5 … 5.7) µm
Pitch	15 µm
Detector	MCT or InSb
Detector format (IR pixels)	(640 × 512)
Image acquisition	Snapshot
Readout mode	ITR / IWR
Aperture ratio	f/3.0 or f/2.0
Detector cooling	Stirling cooler
Temperature measuring range	(-40 … 1,500) °C, up to 3,000 °C*
Measurement accuracy	± 1 °C or ± 1%
Temperature resolution @ 30 °C	MCT: Better than 0.02 K
	InSb: Better than 0.025 K
Frame rate (full / half / quarter / sub frame)*	MCT: Up to 151 / 540 / 1,520 / 2,807 Hz
	InSb: Up to 205 / 570 / 1,020 / 5,000 Hz
Window mode	Yes
Focus	Manual, motorised or automatic*
Dynamic range	Up to 16 bit*
Integration time	(0.6 … 20,000) µs
Rotating filter wheel*	Up to 7 positions
Rotating aperture wheel*	Up to 5 positions
Interfaces	GigE, 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	MCT: (241 × 120 × 160) mm*; InSb: (235 × 120 × 160) mm*
	3.3 kg (without lens)
Further functions	Multi Integration Time*, HighSense*
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)
Wide-angle lens	12	(43.6 × 35.5)	1.3
Standard lens	25	(21.7 × 17.5)	0.6
Telephoto lens	50	(11.0 × 8.8)	0.3
Telephoto lens	100	(5.5 × 4.4)	0.15
Telephoto lens	200	(2.7 × 2.2)	0.08

Macro and microscopic lenses	Minimum object distance (mm)	Object size (mm)	Pixel size (µm)
Close-up for telephoto lens 50 mm	300	(58 × 46)	90
Close-up for telephoto lens 100 mm	500	(48 × 38)	75
Microscopic lens M=1.0×	40 / 195 / 300	(9.6 × 7.7)	15
Microscopic lens M=3.0×	22	(3.2 × 2.6)	5
Microscopic lens M=8.0×	14	(1.2 × 0.96)	1.9

Headquarters

InfraTec GmbH
Infrarotsensorik und Messtechnik
Gostritzer Straße 61 – 63
01217 Dresden / GERMANY

Phone +49 351 82876-610
Fax +49 351 82876-543
E-mail thermo@InfraTec.de
www.InfraTec.eu

USA office

InfraTec infrared LLC
5048 Tennyson Pkwy.
Plano TX 75024 / USA

Phone +1 844-226-3722 (toll free)
E-mail thermo@InfraTec-infrared.com
www.InfraTec-infrared.com