

ImageIR® 8300 hp

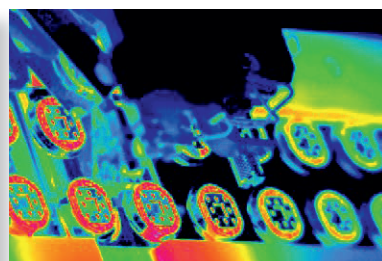
High-speed thermography camera

Benefits & Features

- Cooled FPA photon detector with (640×512) IR pixels
- Full-frame rate up to 355 Hz, GigE Vision compatible
- Snapshot detector, internal trigger interface
- Extremely short integration times in the microsecond range
- Pixel size with microscopic lens up to $2 \mu\text{m}$
- Thermal resolution better than 0.02 K



ImageIR® 8300 hp
with interchangeable lenses



Bonding of sensors



Bonding of sensors



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INFRA TEC.

ImagelR® 8300 hp

High-speed thermography camera

With its ImagelR® 8300 hp, InfraTec introduces another top level thermographic camera model belonging to the ImagelR® high-end camera series. The implementation of a digitally interfaced (640 × 512) pixel MWIR detector now allows 355 Hz full-frame real-time imaging without compromising any thermal accuracy. Like all camera models of this series the ImagelR® 8300 hp 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.

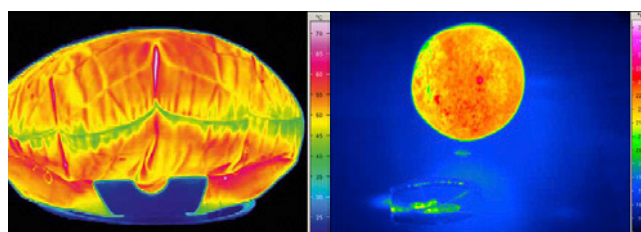
An integrated trigger interface guarantees a repeatable high-precision triggering of quick procedures. Two configurable digital inputs and outputs serve as control ports for the camera or as generator of digital control signals for external devices.

The optical channel consists of the exchangeable infrared lens as well as application-specific apertures, filters and reference elements. All exchangeable ImagelR® 8300 hp standard lenses can be equipped 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

Lens	Focal length	FOV (°)	IFOV (mrad)
Wide-angle lens	12 mm	(43.6 × 35.5)	1.3
Standard lens	25 mm	(21.7 × 17.5)	0.6
Telephoto lens	50 mm	(11.0 × 8.8)	0.3
Telephoto lens	100 mm	(5.5 × 4.4)	0.15
Telephoto lens	200 mm	(2.7 × 2.2)	0.08

Macro and microscopic lenses	Min. 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=1.0x	40/ 195/ 300	(9.6 × 7.7)	15
Microscopic lens M=3.0x	22	(3.2 × 2.6)	5
Microscopic lens M=8.0x	14	(1.2 × 0.96)	1.9

Model	ImagelR® 8300 hp
Spectral range	(2.0 ... 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
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	Better than 0.02 K
Frame rate (full screen mode/ half screen mode/quarter screen mode/sub-frame)*	Up to 355 / 670 / 1,200 / 5,000 Hz
Window mode	yes
Focus	Manually, motorised or automatically*
Dynamic range	Up to 16 bit
Integration time	(0.6 ... 20,000) µs
Rotating filter wheel*	Up to 5 positions
Rotating aperture wheel*	Up to 5 positions
Multi integration time*	yes
Interfaces	GigE, 10 GigE*, 2 × CAMLink*, USB, HDMI*
Trigger	2 IN, / 2 OUT, TTL
Analog signals*, IRIG B*	1 IN, / 2 OUT, yes
Tripod adapter	1/4" and 3/8" photo thread, 2 × M5
Storage temperature	(-40 ... 70) °C, (-20 ... 50) °C
Protection degree	IP54, IEC 60529
Dimensions	(244 × 120 × 160) mm*
Weight	3.3 kg (without lens)
* Depending on model	



Airbag test

Impact of a steel ball