

PACKAGE
from **17,900 €** **
Thermographic Camera
+ Special Software
IRBIS® 3 active

Lock-in Thermography-Package for Electronics Development

Using Handheld VarioCAM® HDx or Stationary VarioCAM® HDx head

INFRAtec.

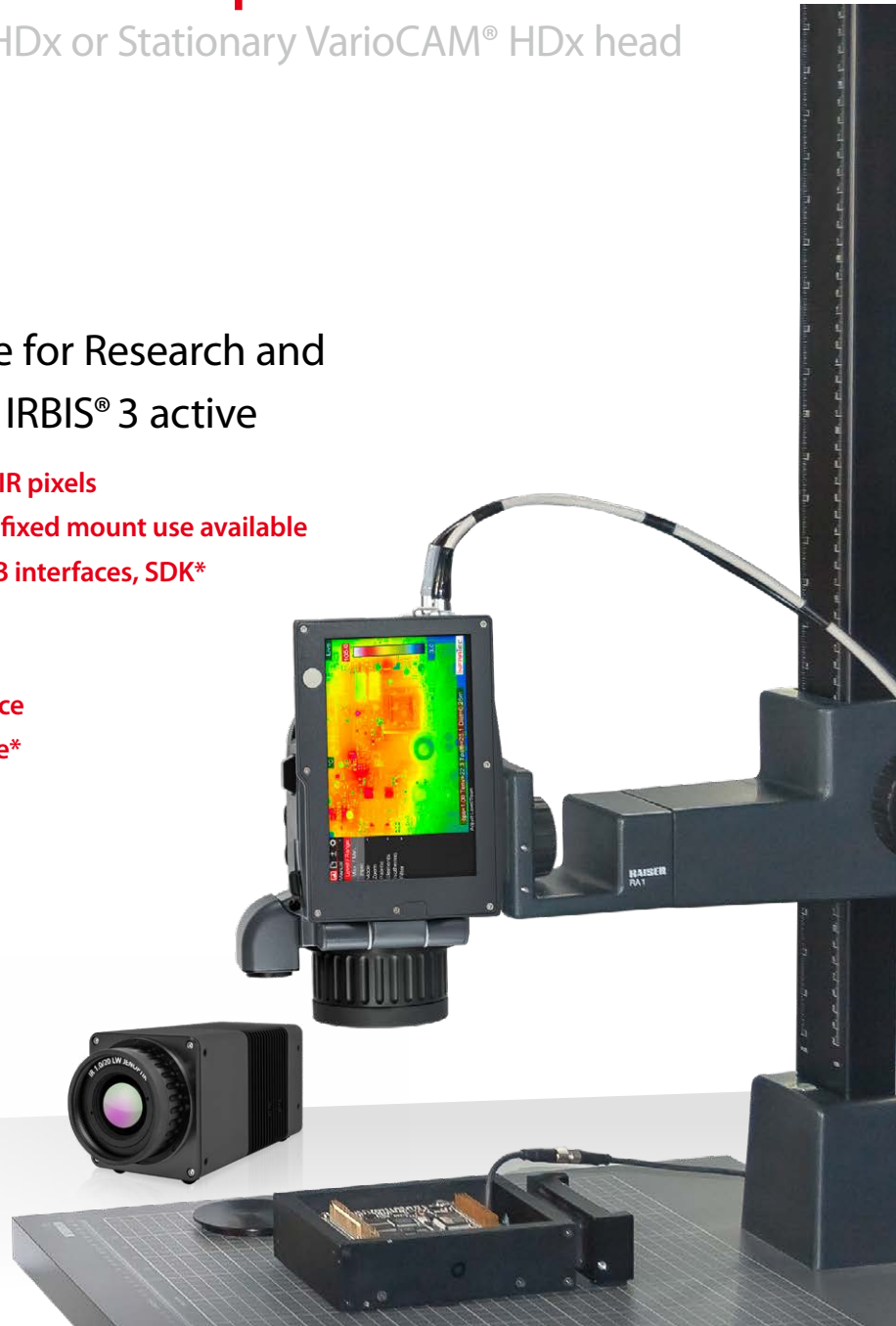
Your InfraTec Expert Package for Research and
Development incl. Software IRBIS® 3 active

- Microbolometer detector with (640 × 480) IR pixels
- Thermographic cameras for handheld and fixed mount use available
- System integration via LabVIEW or MATLAB interfaces, SDK*
- Special software IRBIS® 3 active
- Automatic processing of data quantities
- Real-time data connection via GigE-Interface
- Microscopic lens with up to 17 µm pixel size*



Lock-in Thermography Package:

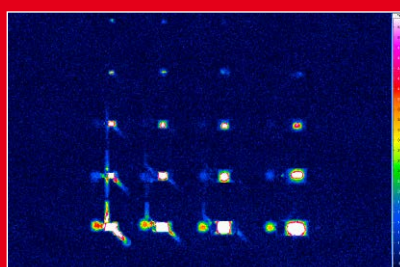
VarioCAM® HDx oder
VarioCAM® HDx head
+ **IRBIS® 3 active**



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Numerous interchangeable lenses are available



Thermogram of a demonstrator



Perform Lock-in Method using a demonstrator



Spectral range	(7.5 ... 14) μm
Detector	Uncooled microbolometer focal-plane array
Detector format (IR pixels)	(640 \times 480)
Temperature measuring range	(-40 ... 600) $^{\circ}\text{C}$, up to 1,200 $^{\circ}\text{C}^*$
Measurement accuracy	± 2 $^{\circ}\text{C}$ or $\pm 2\%$
Temperature resolution @ 30 $^{\circ}\text{C}$	Up to 0.03 K*
Frame rate	Full-frame: 30 Hz (640 \times 480), sub-frame: 60 Hz (384 \times 288)
Window mode*	Yes
Storage media	SDHC Card, external control computer for camera control and data acquisition*
Image storage	Time-, trigger- and temperature controlled recording of 16 bit single frames or image sequences with timestamp, video streaming in MPEG format
Lens mount	Automatic objective detection
Focus	Motor-driven, automatic or manual, accurately adjustable, laser-supported autofocus**
EverSharp function**	Multifocal recording allows for maximum extend of sharp focus
Zoom*	Up to 32 \times digital, stepless
Digital colour video camera ¹	8 Megapixels, LED video light, vision mixer and cross-fade feature
Dynamic range	16 bit
Interfaces*	GigE Vision*, DVI-D (HDMI), C-Video, RS232, USB 2.01, WLAN*, Bluetooth**, Process interface**
Trigger*	2 \times digital I/O, 2 \times analogue I/O
Tripod adapter	1/4" photo thread
Power supply	Standard Lithium-Ion battery ¹ , energy save mode ¹ , AC adapter, (12 ... 24) V DC, PoE ^{2*}
Integrated microphone and speaker ¹	Voice annotation feature, replay and audio dubbing
Laser range finder ^{1*}	Semiconductor laser red, laser protection class 2, range up to 70 m
Integrated GPS sensor ^{1*}	Image integrated storage of position data
Display ¹	5.6" colour TFT display (1,280 \times 800) pixel, 170 $^{\circ}$ rotatable and 280 $^{\circ}$ revolvable, daylight suited, incl. flip mirror feature
Colour viewfinder ^{1*}	Tilttable colour viewfinder with diopter compensation
Single-handed operation ¹	Intuitive operation with ergonomically arranged function keys and multifunctional joystick, programmable keys
Protection degree; storage and operation temperature	IP54 ^{1,2} respectively IP67 with screw-on interface ^{2*} , IEC 60529; (-40 ... 70) $^{\circ}\text{C}$, (-25 ... 55) $^{\circ}\text{C}$
Impact strength, vibration resistance in operation	25 G (IEC 68 - 2 - 29), 2 G (IEC 68 - 2 - 6)
Dimensions; weight	VarioCAM [®] HDx: (210 \times 125 \times 155) mm; 1.6 kg (basic configuration with standard lens) VarioCAM [®] HDx head: (221 \times 90 \times 94) mm; 1.15 kg (basic configuration with standard lens)
Automatic functions [†]	Autofocus, permanent autofocus, automatic distance indicator ¹ , distance-dependent display of pixel size to avoid geometrically related measurement errors ¹ , autoimage, autolevel, min. / max. temperature alarm: visual / acoustic ¹ , alarm triggered image storage ¹
Measurement functions ^{1*}	8 freely selectable, movable measurement fields / -points, automatic hot / cold spot display, globally and internally defined measurement fields, differential temperature measurement, temperature profile, histogram, differential image, isotherms display
Further functions*	Shutter-free operation, temperature alarm, image merging ¹ , synchronous display of thermal and visual image in real-time ¹ , camera internal emissivity correction ²
Analysis and evaluation software	IRBIS [®] 3 active
Further software packages*	IRBIS [®] 3, IRBIS [®] 3 plus, IRBIS [®] 3 professional, IRBIS [®] 3 view, IRBIS [®] 3 remote HD, IRBIS [®] 3 online, IRBIS [®] 3 process, IRBIS [®] 3 vision, IRBIS [®] 3 active, IRBIS [®] 3 mosaic

* Optional /// ¹ only VarioCAM[®] HDx /// ² only VarioCAM[®] HDx head

For professional measuring tasks using Lock-in Thermography in electronics development, InfraTec offers a complete package with thermographic cameras of the premium range together with efficient software. Both the handheld **VarioCAM[®] HDx** as well as the stationary **VarioCAM[®] HDx head** are equipped with a large microbolometer detector. In combination with light-sensitive precision, interchangeable lenses that offer maximum flexibility for different sized measurement objects and variable operating distances, users can record thermographic images with high measurement accuracy and superb image quality. The package is rounded off by the **software IRBIS[®] 3 active**, a modern and universally usable tool for active thermography. Through the focused introduction or generation of a heat flow, test objects are examined non-destructively for concealed material defects, cavities, cracks, joint flaws or delamination. This method suits ideally detecting faults and anomalies in the development of electronics, since a focused input of heat can normally be attained easily by means of electrical excitation. Lock-in Thermography enables defects to be detected and localised reliably even in the case of the slightest power losses.

Lens	Focal lens (mm)	FOV (°)
Wide-angle lens	10	(57.1 \times 44.4)
Standard lens	20	(30.4 \times 23.1)
Telephoto lens	40	(15.5 \times 11.6)
Macro and microscopic lenses	Min. object distance (mm)	Pixel (μm)
Close-Up 0.2 \times for lens: 40 mm / 20 mm	137	60 / 121
Close-Up 0.5 \times for lens: 40 mm / 20 mm	47 / 47	24 / 49
Microscopic lens M=1.0 \times	50	17

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