

VarioCAM® HD head

Thermographic solution for use in industry and research

Benefits & Features

- Microbolometer detector with up to (1,024 × 768) IR pixels
- Optomechanical MicroScan with up to (2,048 × 1,536) IR pixels
- Frame rate of up to 240 Hz, GigE Vision interface
- Process- and trigger interface
- Solid light metal housing (IP67)
- Pixel size with microscopic lens up to 17 µm



The thermographic high-resolution system VarioCAM® HD head was conceived for demanding stationary monitoring and measurement tasks. The VarioCAM® HD head produces brilliant high-quality thermographic images with 16 bits, which allows unprecedented efficiency, especially when capturing smallest details on large object surfaces. Because of the maximum frame rate of 240 Hz, very quick temperature changes can be recognised reliably.

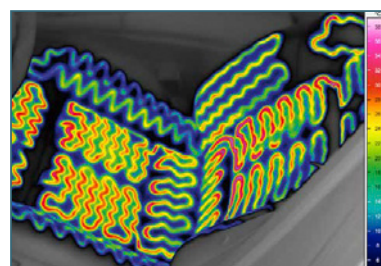
The various sets of equipment make it easy to adjust the setup to the respective measurement task: The application range includes automatic threshold recognition and signalling, digital real-time image acquisition via GigE, online processing of thermographic data and much more. The industrial light metal housing (IP67) allows easy and inexpensive installation in tough process environments.

Application examples

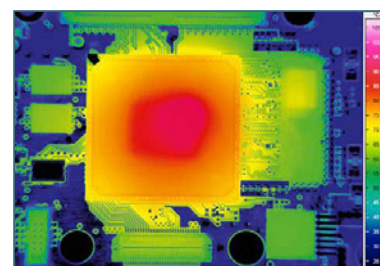
- High-resolution thermography in research and development
- Stationary micro-thermography
- Security engineering and early fire detection
- Monitoring and controlling of fast-running processes



VarioCAM® HD head



Seat heater



Assembled circuit board

VarioCAM® HD head

Thermographic solution for use in industry and research

Technical specifications	
Spectral range	(7.5 ... 14) µm
Detector	Uncooled microbolometer focal plane array
Detector format (IR pixel)	(1,024 × 768), with built-in opto-mechanical high-precision scan unit (2,048 × 1,536)* (640 × 480), with built-in opto-mechanical high-precision scan unit (1,280 × 960)*
Temperature measurement range	(-40 ... 2,000) °C
Measurement accuracy	± 1 °C or ± 1 %*
Temperature resolution @ 30 °C	up to 0.02 K
Frame rate	Full-frame: 30 Hz (1,024 × 768), sub-frame formats*: 60 Hz (640 × 480) / 120 Hz (384 × 288) / 240 Hz (1,024 × 96) Full-frame: 60 Hz (640 × 480), sub-frame formats*: 120 Hz (384 × 288) / 240 Hz (640 × 120)
Storage media	SDHC Card, external control computer for camera control and data acquisition*
Image storage	Time-, trigger- und temperature controlled recording of 16 bit single frames or image sequences with timestamp, video streaming in MPEG format
Realtime storage*	Computer-aided storage of radiometric sequences by GigE interface with up to 240 Hz
Lens mount	Bayonet to comfortably switch objectives, automatic objective detection and data transfer; screw-on interface*
Focus	Motor-driven, automatic or manual, accurately adjustable, laser-supported autofocus*
Zoom	Up to 32x digital, stepless
Digital colour video camera	8 Megapixels, with a LED video light, vision mixer and cross-fade feature
Dynamic range	16 bit
Interfaces; Trigger*	GigE Vision*, DVI-D (HDMI), C-Video, RS232, USB 2.0, WLAN*, Bluetooth*; 2 × digital I/O, 2 × analogue I/O
Tripod adapter	1/4" photo thread
Power supply	AC adapter, (12 ... 24) V DC, PoE*
Storage and operation temperature	(-40 ... 70) °C, (-25 ... 55) °C
Protection degree	IP54, IEC 529, IP67 with screw-on interface*
Impact strength / vibration resistance in operation	25 G (IEC 68 - 2 - 29), 2 G (IEC 68 - 2 - 6)
Dimensions; weight	(221 × 90 × 94) mm; 1.15 kg (basic configuration with standard lens)
Further functions	Camera internal emissivity correction, shutter free operation, use of various colour sets, contrast enhancement, user profile, language selection
Analysis and evaluation software*	IRBIS® 3, IRBIS® 3 report, IRBIS® 3 view, IRBIS® 3 plus*, IRBIS® 3 professional*, IRBIS® 3 remote HD, IRBIS® 3 control*, IRBIS® 3 online*, IRBIS® 3 process*, IRBIS® 3 active*, IRBIS® 3 mosaic*, IRBIS® 3 vision*, FORNAX 2*, FORNAX 2 plus*

* Depending on model

Detector format (IR pixels)		(640 × 480)	(1,024 × 768)
Lens	Focal length (mm)	FOV (°)	FOV (°)
Super wide-angle lens	7.5	(93.7 × 77.3)	(98.5 × 82.1)
Wide-angle lens	15	(56.1 × 43.6)	(60.3 × 47.0)
Standard lens	30	(29.9 × 22.6)	(32.4 × 24.6)
Telephoto lens	60	(15.2 × 11.4)	(16.5 × 12.4)
Telephoto lens	120	(7.6 × 5.7)	(8.3 × 6.2)

Macro and microscopic lenses	Minimum object distance (mm)	Pixel size (µm)	Pixel size (µm)
Close-up 0.2x for 30 mm	70	75	51
Close-up 0.5x for 30 mm	33	42	29
Close-up 0.5x for 60 mm	78	42	28
Microscopic lens M=1.0x	50	25	17
Telephoto lens	60	(15.2 × 11.4)	(16.5 × 12.4)
Telephoto lens	120	(7.6 × 5.7)	(8.3 × 6.2)