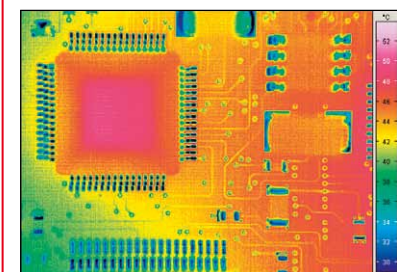


VarioCAM[®] hr head

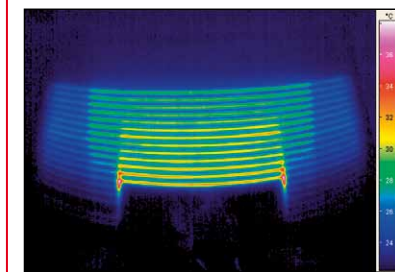
Thermographic Solution for Use in Industry and Research

< 0.03 K Thermal Resolution

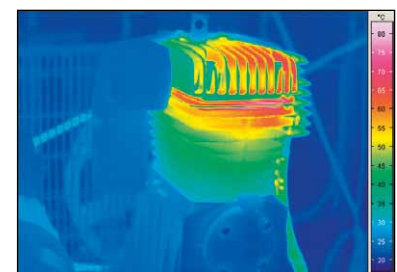
PCB, close-up image



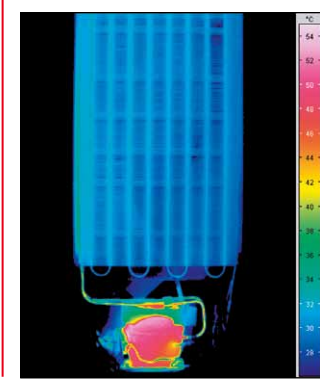
Fault in heating of rear window



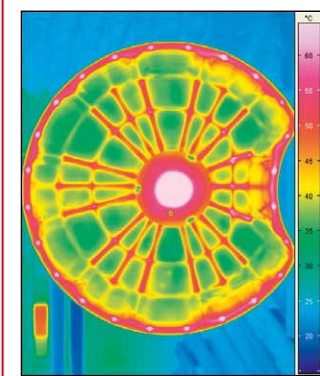
Compressor



Refrigerator



Die casting component



**up to
1,280 x 960
infrared pixels**

Features

- Uncooled FPA Detector with (384 x 288) or (640 x 480) IR pixels
- Optomechanic microscan function provides up to (1,280 x 960) IR pixels*
- Spectral range (7.5 ... 14) μm
- Real-time thermography with up to 50/60 Hz
- Optional real-time digital interface via FireWire (IEEE 1394)* or Gigabit Ethernet*
- External triggering, temperature trigger*
- Wide standard temperature measuring range
- Compact design, low weight
- Rugged lightweight metal housing (IP65) for use in tough industrial environment
- Available in different versions, wide range of accessories

* Depending on the particular camera configuration.

VarioCAM[®] hr head

Thermographic Solution for Use in Industry and Research

Technical specifications

| | |
|--------------------------------------|--|
| Spectral range | (7.5 ... 14) μm |
| Detector, Detector format (pixel) | Microbolometer Focal Plane Array, uncooled (384 x 288), "Resolution Enhancement" to (768 x 576)* (640 x 480), "Resolution Enhancement" to (1,280 x 960)* |
| Temperature measurement range* | (-40 ... 1,200) °C, optional > 2,000 °C |
| Measurement accuracy | ± 1 °C or ± 1 % (for selected models and areas), otherwise ± 2 °C or ± 2 % |
| Temperature resolution @ 30 °C | Better than 0.03 K (depending on the model); otherwise better than 0.04 K |
| IR-frame rate | 50/60 Hz |
| Standard lens (object field) | 1.0/25 mm (30 x 23)° with a detector of (384 x 288) pixels 1.0/30 mm (30 x 23)° with a detector of (640 x 480) pixels |
| Image storage | SD card, optional FireWire (IEEE 1394)*, Gigabit Ethernet* |
| Dynamic range | 16 Bit |
| Interfaces* | PAL/NTSC-FBAS, S-Video, RS232, FireWire (IEEE 1394)*, Gigabit Ethernet* |
| Power supply | Power adapter, FireWire (IEEE 1394)* |
| Operation temperature, encapsulation | (-15 ... 50) °C, IP65 |
| Dimensions | (133 x 91 x 110) mm |
| Weight | 1.3 kg with standard lens |

The radiometric thermographic system VarioCAM[®] hr head is based on an uncooled Microbolometer FPA detector with (384 x 288) or (640 x 480) IR pixels and has been designed for universal use. Due to the rugged metal housing (IP65) VarioCAM[®] hr head installations can be realised easily and inexpensively in manufacturing processes. The various versions allow for an optimal adjustment of VarioCAM[®] hr head to different measurement tasks. The scope of performance reaches from automatic recognition and indication of threshold values via RS232 up to digital 60 Hz real-time IR data acquisition via IEEE 1394 or Gigabit Ethernet and online-processing at the PC.

VarioCAM[®] hr head is recommended for various applications in research and development environments based on its wide standard temperature measurement range, a multitude of available lenses as well as a wide range of accessories and a high-speed digital IR data acquisition and analysis software. Specifically customised this easy to handle thermographic system can also be used for monitoring tasks that require continuous and automatic operation.

Lenses and close-up-lenses

| Detector type (pixel) | (384 x 288) (640 x 480) | | |
|--|-------------------------|------------------------|------------------------|
| | Focal distance | FOV (°) | FOV (°) |
| Super wide-angle lens | 8 mm | (80 x 64) | (90 x 74) |
| Wide-angle lens | 12.5 mm | (57 x 44) | (65 x 51) |
| Standard lens | 25 mm | (30 x 23) | - |
| Standard lens | 30 mm | (25 x 19) | (30 x 23) |
| Telephoto lens | 50 mm | (15 x 12) | (18 x 14) |
| Telephoto lens | 75 mm | (10 x 7.5) | (12 x 9) |
| Telephoto lens | 130 mm | (6 x 4.5) | (7 x 5.5) |
| Close-up lenses | Pixel size** | FOV (mm ²) | FOV (mm ²) |
| Close-Up 0.17x/0.2x for Standard lens* | 209/125 μm | (80 x 60) | (80 x 60) |
| Close-Up 0.5x/0.6x for Standard lens* | 70/41 μm | (27 x 20) | (27 x 20) |
| Microscopic lens 1.0x | 35/25 μm | (13 x 10) | (16 x 12) |

Applications

- Process control and monitoring
- Monitoring of machines and installations
- Real-time thermography in research and development
- Security technology and early fire detection

* Depending on the particular camera configuration.
** Pixel size for detector format (384 x 288)/(640 x 480)

Design and specifications subject to change without prior notice.