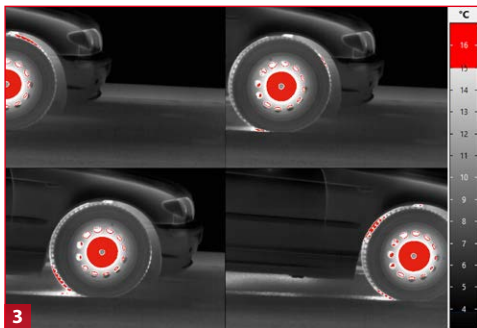
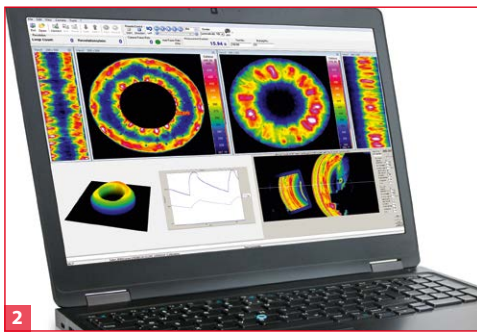


ImageIR® 5300

High-speed Thermography Camera

INFRA^{TEC}.

Europe's leading specialist for infrared sensors and measurement technology



- 1) ImageIR® 5300
- 2) Software IRBIS® 3 rotate for rotation test bench
- 3) Heat development during the ABS brake process



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Made in Germany



| | |
|--|--|
| Spectral range | (2.0 ... 5.7) μm |
| Pitch | 30 μm |
| Detector | MCT or InSb |
| Detector format (IR pixels) | (320 \times 256) |
| Image acquisition | Snapshot |
| Readout mode | ITR |
| Aperture ratio | f/3.0 or f/2.0 |
| Detector cooling | Stirling cooler |
| Temperature measuring range | (-40 ... 1,500) $^{\circ}\text{C}$, up to 3,000 $^{\circ}\text{C}^*$ |
| Measurement accuracy | $\pm 1^{\circ}\text{C}$ or $\pm 1\%$ |
| Temperature resolution @ 30 $^{\circ}\text{C}$ | Up to 0.015 K |
| Frame rate (full / half / quarter / sub frame / line scan mode)* | Up to 450 / 1,500 / 4,500 / 25,000 Hz / 12,690 Hz |
| Window mode | Yes |
| Focus | Manual, motorised or automatically* |
| Dynamic range | Up to 16 bit* |
| Integration time | (1 ... 20,000) μs |
| Rotating filter wheel* | Up to 5 positions |
| Rotating aperture wheel* | Up to 5 positions |
| Interfaces | GigE, CAMLink*, HDMI* |
| Trigger | 3 IN / 2 OUT, TTL |
| Analogue signals*, IRIG-B* | 1 IN, no |
| Tripod adapter | 1/4" and 3/8" photo thread, 2 \times M5 |
| Power supply | 24 V DC, wide-range power supply (100 ... 240) V AC |
| Storage and operation temperature | (-40 ... 70) $^{\circ}\text{C}$, (-20 ... 50) $^{\circ}\text{C}$ |
| Protection degree | IP54, IEC 60529 |
| Dimensions, weight | (244 \times 120 \times 160) mm*, 3.3 kg (without lens) |
| Further functions | High-speed mode*, Multi Integration Time* |
| Analysis and evaluation software | IRBIS [®] 3, IRBIS [®] 3 view, IRBIS [®] 3 rotate, 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

The **ImageIR[®] 5300** has been designed specifically for **capturing and recording extremely fast running thermal processes**. The MWIR focal-plane array photon detector in **the format of (320 \times 256) IR pixels** allows users to capture thermal images in full frame **at frequencies up to 450 Hz**. **When using the line scan mode, the value even increases to 12,690 Hz**.

The ImageIR[®] 5300 demonstrates the strength of its design as an **integral part of the automated IR rotation test bench solution Thermal Rotate Check (TRC)** from InfraTec. This allows rapidly rotating components, such as tyres, brakes and clutches, to be analysed precisely. The results provide information on how well the test objects withstand continuous operation, which signs of wear are present and how serious they are.

The potential of the camera goes far beyond such applications in automotive and rail technology. Thanks to its extensive single pixels (detector pitch 30 μm) the ImageIR[®] 5300 achieves an outstanding **thermal resolution up to 0.015 K**. **Modularly designed with an optics, detector and interface module and equipped with an integrated trigger interface**, the camera proves itself to be a versatile measuring and testing instrument for application in industry and science.

| Lenses | Focal length (mm) | FOV ($^{\circ}$) | IFOV (mrad) |
|-----------------|-------------------|----------------------|-------------|
| Wide-angle lens | 12 | (43.6 \times 35.5) | 2.5 |
| Standard lens | 25 | (21.7 \times 17.5) | 1.2 |
| Telephoto lens | 50 | (11.0 \times 8.8) | 0.6 |
| Telephoto lens | 100 | (5.5 \times 4.4) | 0.3 |
| Telephoto lens | 200 | (2.7 \times 2.2) | 0.15 |

| Macro and microscopic lenses | Object distance (mm) | Object size (mm) | Pixel size (μm) |
|------------------------------------|----------------------|--------------------|------------------------------|
| Close-up for telephoto lens 50 mm | 300 | (58 \times 46) | 180 |
| Close-up for telephoto lens 100 mm | 500 | (48 \times 38) | 150 |
| Microscopic lens M=1.0 \times | 195 | (9.6 \times 7.7) | 30 |
| Microscopic lens M=1.0 \times | 300 | (9.6 \times 7.7) | 30 |
| Microscopic lens M=3.0 \times | 22 | (3.2 \times 2.6) | 10 |

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