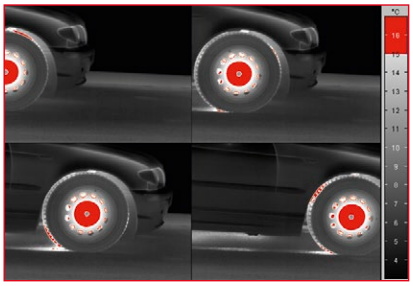
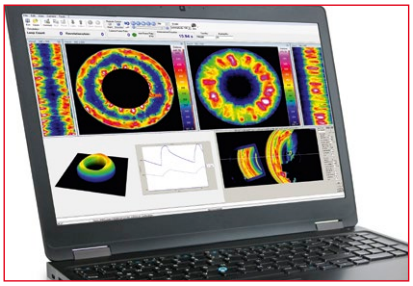
MADE IN GERMANY

INSTRUMENTS TECHNO TEST

INFRATEC
INFRAROTSENSORIK UND MESSTECHNIK



Heat development during the ABS brake process



Software IRBIS® 3 rotate for rotation test bench

ImageIR® 5300

High-speed Thermography Camera with Large Pitch

320 × 256 Detector

Detector Format
Large detector enables highest sensivity

105 kHz

IR-Frame Rate
Analysis of extreme temperature changes and gradients

±1 %

Measurement Accuracy
Highly accurate and repeatable measurements

≤ 15 mK

Thermal Resolution
Precise detection of smallest temperature differences

Tint

Shortest Integration Time
Accurate temperature measurements of fast processes

30 µm Pitch

Pitch Dimension
Precise measurement of low temperatures and very fast integration times

GigE

GigE Vision Compatible
Standard interface for easy integration into existing process environment

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 × 256) IR pixels allows users to capture thermal images in full frame at frequencies up to 481 Hz. When using the sub frame mode, the value even increases to 105,000 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 better than 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 applications in industry and science.

Technical Specifications

Spectral range	(3.7 … 4.8) µm
Pitch	30 µm
Detector	MCT
Detector format (IR pixels)	(320 × 256)
Image acquisition	Snapshot
Readout mode	ITR
Aperture ratio	f/2.0
Detector cooling	Stirling cooler
Temperature measuring range	(-40 … 1,200) °C, up to 3,000 °C*
Measurement accuracy	± 1 °C or ± 1%
Temperature resolution @ 30 °C	Better than 0.015 K
Frame rate (full / half / quarter / sub frame)*	Up to 481 / 1,906 / 7,229 / 105,000 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, HDMI*
Trigger	4 IN / 2 OUT, TTL
Analogue signals*, IRIG-B*	2 IN / 2 OUT, yes
Tripod adapter	1/4" and 3/8" photo thread, 2 × M5
Power supply	24 V DC, wide-range power supply (100 … 240) V AC
Storage and operation temperature	(-40 … 70) °C, (-20 … 50) °C
Protection degree	IP54, IEC 60529
Dimensions; weight	(241 × 120 × 160) mm*; 3.3 kg (without lens)
Further functions	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

Lenses	Focal length (mm)	FOV (°)	IFOV (mrad)
Wide-angle lens	12	(43.6 × 35.5)	2.5
Standard lens	25	(21.7 × 17.5)	1.2
Telephoto lens	50	(11.0 × 8.8)	0.6
Telephoto lens	100	(5.5 × 4.4)	0.3
Telephoto lens	200	(2.7 × 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 × 46)	180
Close-up for telephoto lens 100 mm	500	(48 × 38)	150
Microscopic lens M=1.0× (2 versions)	195 / 300	(9.6 × 7.7)	30
Microscopic lens M=3.0×	22	(3.2 × 2.6)	10

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