Issue 01/2012

Infrared-Reflexions

The Infrared Measurement Thermography Newsletter by InfraTec GmbH

Dear readers and
valued business partners,

InfraTec's 20th anniversary, which we celebrated last year, presented a great occasion to look back on an exciting and eventful time period: In 1991, with only a fistful of colleagues, we founders started into the world of infrared, from which we and our 200 employees now view into the future with optimism. We will consequently stay on our course of producing and offering customised and innovative infrared-thermography and sensor products. As a symbol of this, we can present you the next generation of high-resolution infrared cameras today.

In this issue of Infrared Reflexions, we introduce numerous products of this future-oriented technology, which allows for razor-sharp thermal images along with highest precision and efficiency in thermographic applications. More than 5,000 users worldwide rely on innovative quality products made by InfraTec. See for yourself on the following pages.

Thank you for your interest and have fun reading this issue of Infrared Reflexions.

With kind regards from Dresden

Dr. Matthias Krauß
Managing Director

In this edition:

- World's first VarioCAM® High Definition – First mobile thermographic camera with 3.1 Megapixels
- ImageIR® 9300 – High-speed thermography with Megapixel resolution
- Accurate temperature measurements on fast-rotating objects
- Report on thermography practice
- Road shows, exhibitions dates, user trainings

NEWS

Expansion of Training Offers

InfraTec has expanded its range of training and consulting offers. In addition to basic, building thermography and certified thermographic trainings, we now offer user seminars which cover photovoltaic thermography. During this seminar, the participants will get first-hand expert knowledge from experienced specialists.
Please see the attached list for seminar dates.

Review on the Hanover Tradeshow and SPIE Defense, Security and Sensing 2012

For the first time, we introduced the next generation of high-resolution thermographic cameras – ImageIR® 9300 and VarioCAM® High Definition. The visitors of our booths, who came from numerous research- and industrial branches, were impressed by the extreme achievement potential of this technology. The new thermographic cameras with Megapixel resolutions are unique in geometric resolution, frame rates and precision.

InfraTec's Fabry-Perot Detector gets "Best of Show" Gold Award

SENSOR e-Magazine and SENSOR EXPO employees honour InfraTec GmbH with the gold award in the category "Sensor Component" for outstanding design innovations and user-friendliness.

VarioCAM® HD head – Industrial Edition for Stationary Applications

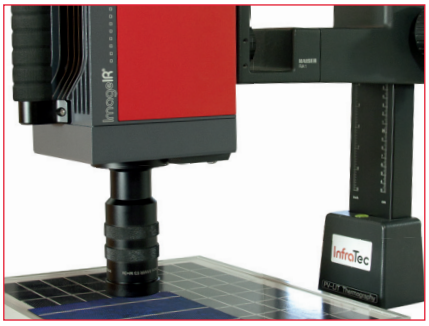
Solid, Compact and Flexibly Applicable

The stationary industrial models VarioCAM® HD head are based on the same core cameras as the mobile editions and are equipped with GigE-Vision interfaces and digital in- and outputs. Because of their light metal housing, which is available with the protection degree IP67, they are perfectly suited for stationary industrial applications under harsh conditions and also for computer-assisted laboratory tasks. The very extensive modular thermography software series IRBIS® 3 by InfraTec has been extended for the new camera generation. In combination with the VarioCAM® HD head, professional thermographers now have a high-power and robust tool at their disposal, which is perfectly suited for almost every measurement task.

ImageIR® 9300 – Best Performance for Highest Demands

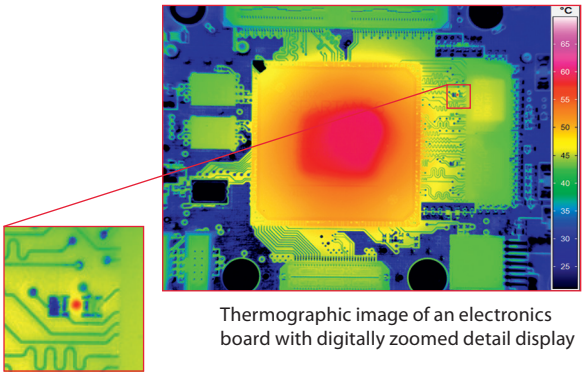
High-speed Thermography with Megapixel Format

The new high-resolution thermographic camera ImageIR® 9300 by InfraTec is another top model of the high-end camera series ImageIR®. For the first time, a cooled Focal-Plane-Array photon detector of the latest generation with (1,280 x 1,024) IR pixels is used, which offers a four times higher resolution than previous high-class models. In combination with the outstanding thermal resolution of down to 0.02 K, the very high fullframe rate of up to 106 Hz and extremely short integration times of only a few microseconds, this systems opens up completely new fields of application. ImageIR® 9300 was designed for users with highest demands in the fields of research and development, object monitoring as well as microthermography and the analysis of extremely small structures.



Outstanding camera characteristics set new standards

- Cooled FPA photon detector (1,280 x 1,024) IR pixels
- Frame rate of up to 390 Hz, GigE-Vision interface
- Snapshot detector, internal trigger interface
- Extremely short integration times of only a few microseconds
- Pixel resolution of 2 µm
- Thermal resolution of down to 0.02 K
- Quality from Germany



Thermographic image of an electronics board with digitally zoomed detail display

VarioCAM® High Definition – Thermal Images with Photographic Quality

The Next Generation of High-resolution Microbolometer Thermographic Cameras

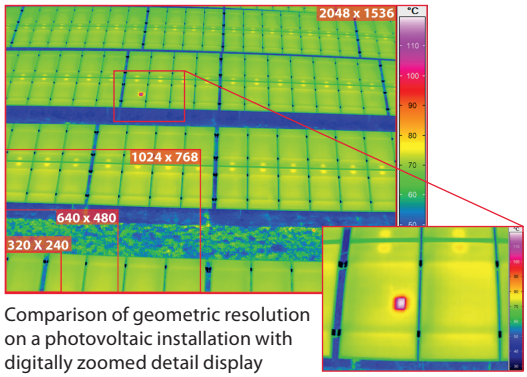
World's first mobile thermographic camera with 3.1 Megapixels and integrated laser rangefinder

For the first time, mobile thermographic microbolometer cameras with a detector format of (1,024 x 768) IR pixels and therefore a 2.5 times higher resolution than previous high-class models are available with the VarioCAM® High Definition, which is manufactured by the German manufacturer Jenoptik. This is the first application of the continuously operating optomechanical real-time Microscan-feature for the acquisition of dynamic thermal image sequences with a resolution of (2,048 x 1,536) IR pixels. In connection with the outstanding thermal resolution and high-luminosity precision optics, crystal clear high-precision thermal images can be taken. Large test objects can be captured thermographically with unprecedented efficiency.

A real all-rounder with frame rates of up to 240 Hz

The new VarioCAM® High Definition by Jenoptik follows the deep seated city of Jena lens tradition of always striving for highest perfection and quality. Numerous features, such as a high-luminosity digital 8 Megapixel camera, HD video camera or the GPS sensor, can be linked with each other. Another world novelty is the thermographic application of eye-safe laser rangefinders.

This camera can also be operated in window mode, which has only been known of cooled photon detectors. Thus, the VarioCAM® High Definition reaches a maximum frame rate of 240 Hz and is therefore perfectly suited for captures of very fast temperature changes.



Comparison of geometric resolution on a photovoltaic installation with digitally zoomed detail display

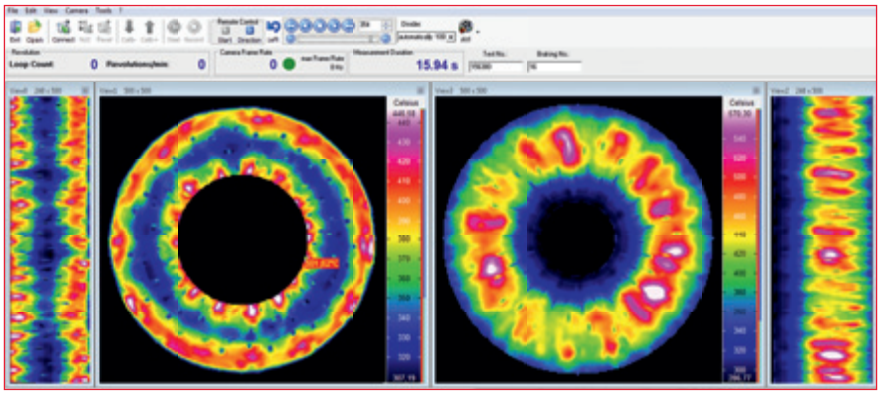
The perfect camera for almost every application

The extensive assortment of lenses and optics rounds out the range of possible test objects from microthermography to telephoto applications for objects in large distances. In accordance with Jenoptik's quality guidelines, the optics of the VarioCAM® High Definition camera series are designed for uncompromising full lenses with a f-number of 1.0, highest transmission quality and lowest distortion. Therefore, the VarioCAM® High Definition can be used in almost every field of application, such as building thermography, preventive maintenance and quality assurance or complex tasks in research and development.

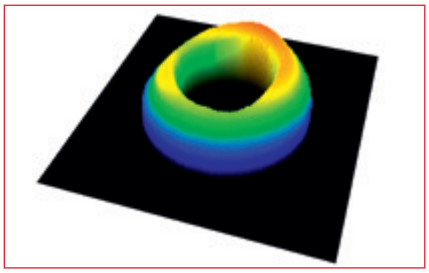
Thermal Analysis of Fast-rotating Objects

High-speed Thermography with IRBIS® 3 rotate

In the automotive sector increasing requirements of lifetime and quality properties of wearing parts demand for thorough investigations of the respective modules and components. InfraTec has developed innovative thermographic solutions for the analysis of rotating parts of brakes, clutches and undercarriages. The measurement object is captured with scan rates of some Kilohertz. The data acquisition is triggered automatically by the testing system. To better display, evaluate and archive the captured time-dependent temperature data, several specially adjusted transformations are applied.



Software IRBIS® 3 rotate



3D display

Investigations on wearing parts

System characteristics

- Synchronised crude data acquisition on both sides
- Contact-free thermal online state-recognition, automatic hotspot detection
- Alarm release on violation of critical temperature limits
- Recording of system parameters (contact pressure, speed, etc.) and statistical data preparation
- Flexible parameter setting and saving of all acquisition parameters

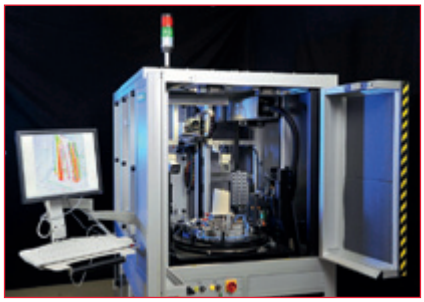
APPLICATION REPORT

The SIEMENS AG uses ceramic coatings in the production of turbine blades for thermal power plants, since it makes higher turbine infeed temperatures possible, which lead to higher efficiency.

During this process, it is necessary to ensure the accurate fabrication of the coatings without impact on the flow passages.

Mr. Sczepurek and his team are in charge of the required test methods and processes. He chose infrared thermography as a non-destructive testing method, since it delivers the capability to measure large turbine parts very quickly and reliably.

InfraTec supports this project by delivering reliable high-power thermal cameras of the series ImageIR®, which is produced in Dresden. With the high geometric resolution and frame rate as well as the precise trigger ability, ImageIR® makes it possible to test every turbine reliably in an economically acceptable time frame.



Thermographic test station
(Picture: SIEMENS AG)

Imprint

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