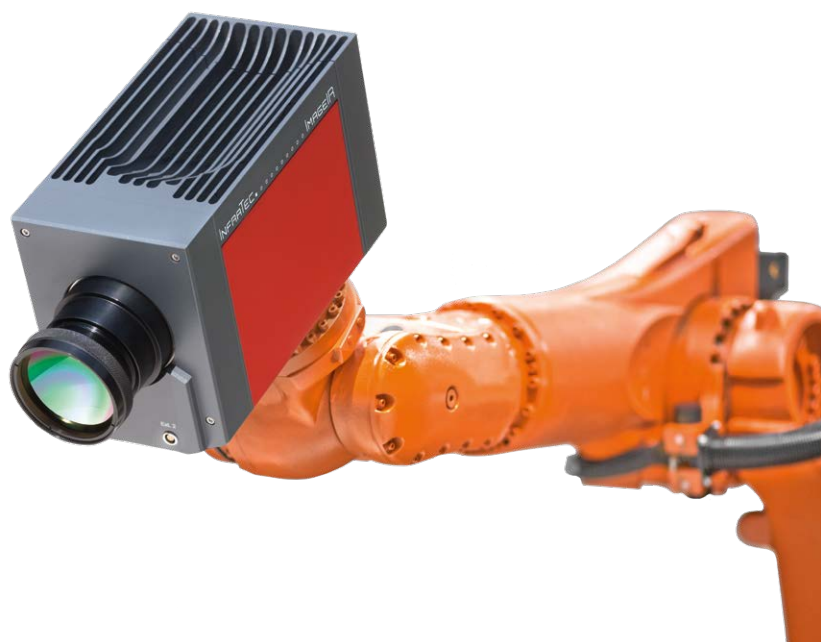
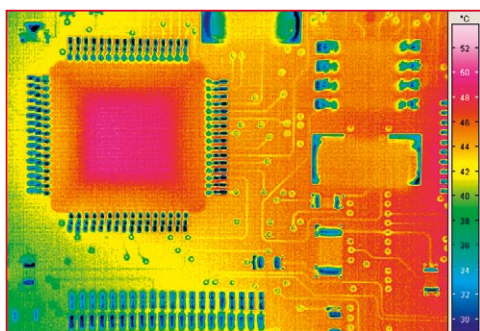


Automated Infrared Thermography

Complete Solutions from a Single Source

INFRA^{TEC}.

Temperature monitoring of processes
Automatic surveying of thermal marks
Early fire detection and site security



www.InfraTec.eu

Innovative Surveillance and Test Systems
with Latest Camera Technology



Turnkey Thermography Automation

InfraTec is specialised in products and services in the field of infrared thermography and today counts among the leading companies in this sector. The company's services range from selling state-of-the-art thermographic cameras to comprehensive automation solutions – starting from in-

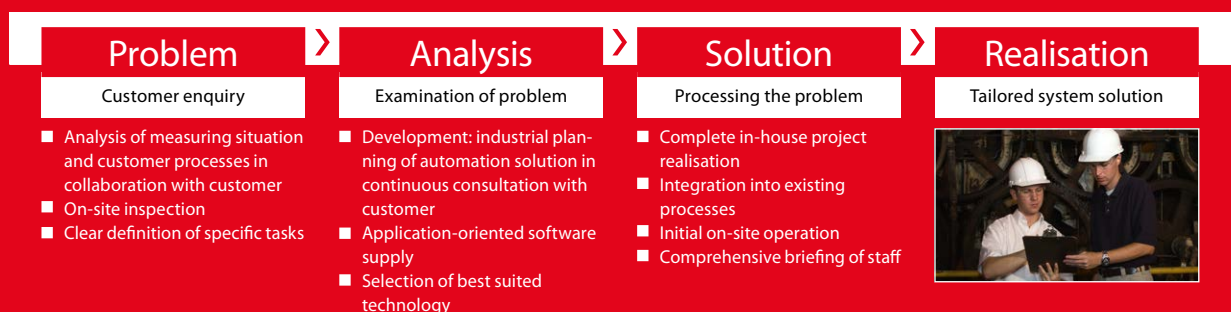
dividual problem analysis up to delivering turnkey projects as well as their maintenance and user trainings. Renowned companies from all industries rely on InfraTec's thermography know-how in development and production.

Our services at a glance

- Systems by InfraTec are intensively tested, robust and designed for continuous operation in industrial environments
- Professional thermography technology from Germany assures a maximum of system availability
- The product range includes very compact microbolometer cameras up to cooled high-end cameras with focal-plane-array photon detectors of highest detectivity from (320 × 240) up to (1,920 × 1,536) IR pixels and frame rates up to 25,000 Hz
- Modular system design allows high quality at an attractive price-performance ratio
- Realisation takes place in close collaboration with the customer and his requirements
- For variable use and superior solutions
- Comprehensive feasibility studies guarantee for flexibility and investment security
- Up-to-date interface concepts allow for reliable camera control, data acquisition and online analysis even at very large distances
- Professional installation and initial operation by skilled project engineers



Steps towards your Automation Solution



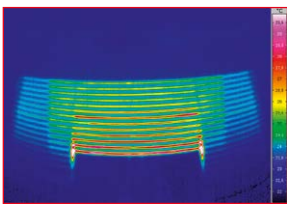


Quality Assurance of Vehicle Components

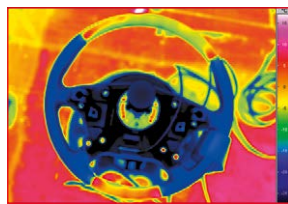
Modern combination of materials, future-oriented lightweight construction and continually optimised production quantities demand for new and alternative approaches towards con-

temporary testing. Here in particular, thermography as a comparatively recent but innovative testing method can contribute significantly by offering automated solutions.

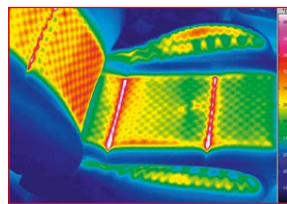
Inspection and performance test of components



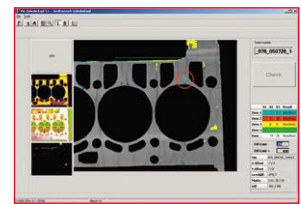
Rear window heating



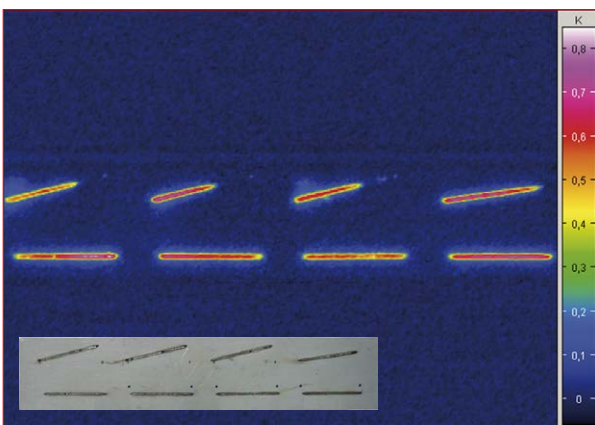
Vehicle interior components



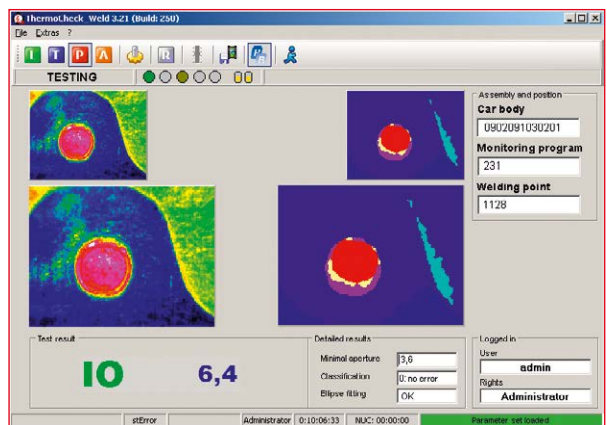
Seat heater



Engine block



Laser welding connection



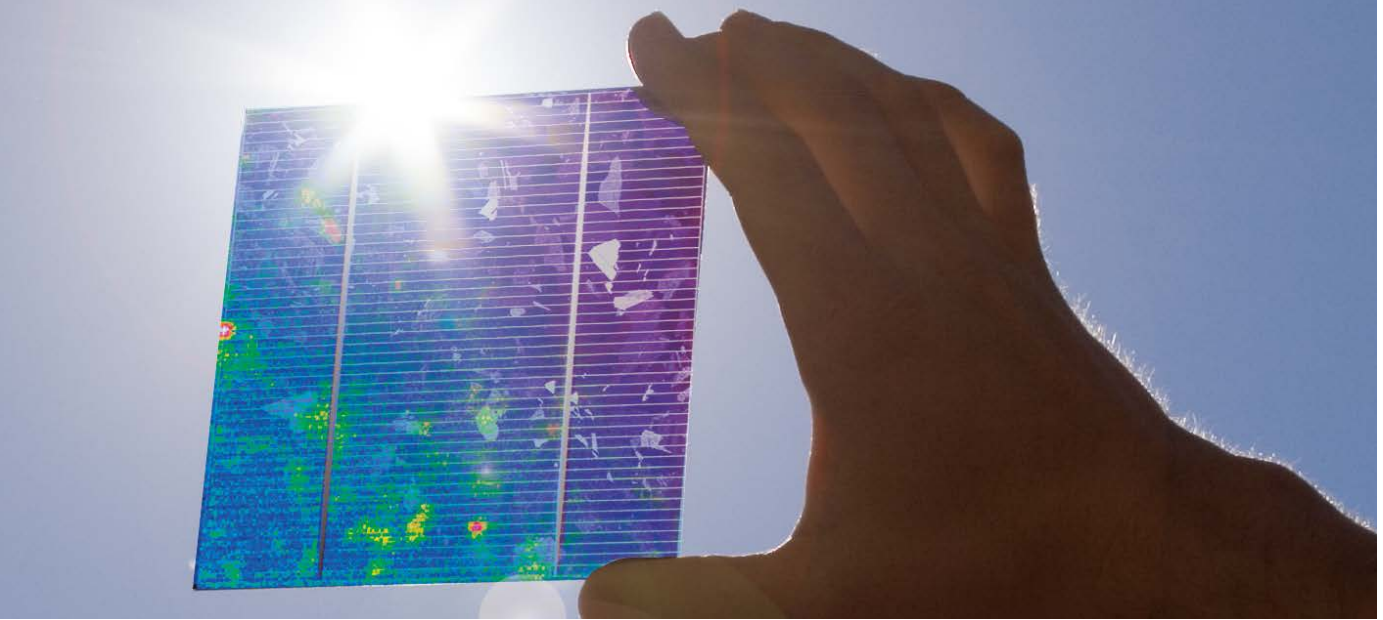
Automated spot weld inspection

Test system features

- Stationary and portable infrared testing systems for industrial application
- High flow-rate of components due to semi-automatic or full automatic operation
- Detection of smallest defects
- High-performance analysis software
- Final inspection up to 100 % of vehicle components

Our services

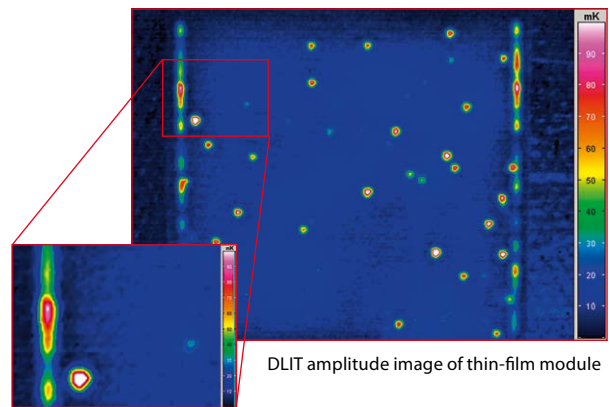
- Production integrated, flexible system solutions
- InfraTec-owned compensation methods for reducing ambient stray radiation on reflective surfaces
- Availability of evaluation models with different algorithms



Identifying Defects in Photovoltaics

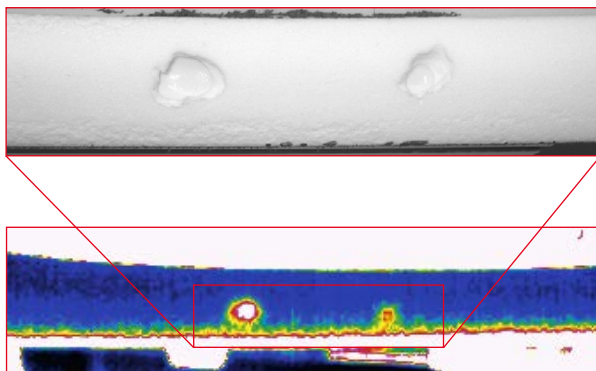
In order to make optimal use of materials in process the number of destructive testing methods is constantly being reduced. High-resolution thermographic cameras in connection with computer-based evaluation models today allow for state-of-the-art testing and characterisation systems.

- Automated measurement of solar cells and solar modules
- Automated classification of measured data
- Optimal adaption of lens to different cell sizes
- Inclusion of puls phase and lock-in algorithms

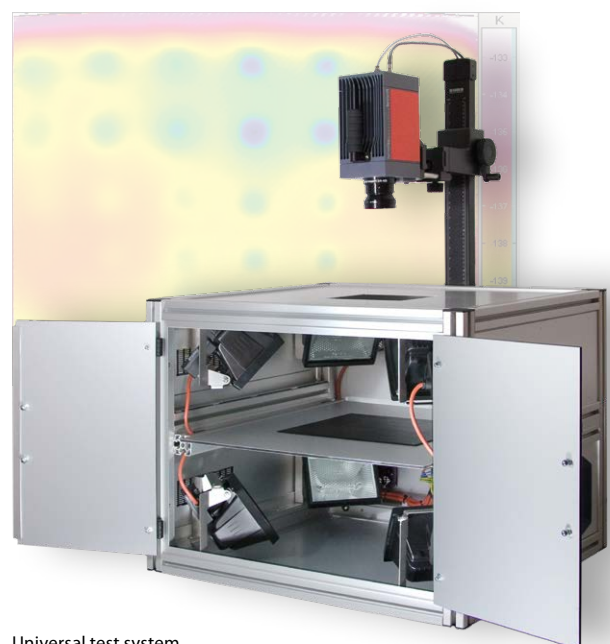


Non-destructive Testing of Parts and Components

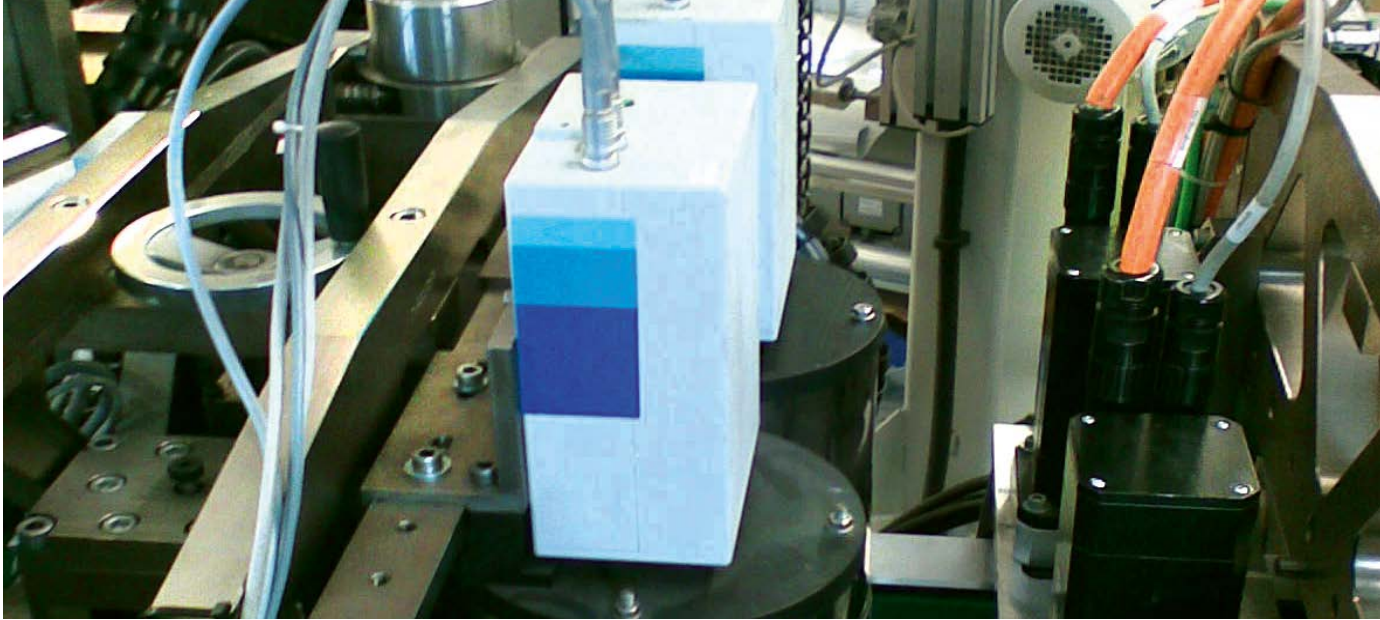
- Early detection of operational disruptions permits early and specifically-targeted intervention into production stages
- Quality assurance of intermediates (e.g. layered compounds)
- Automated testing of adhesive bonds and blowholes



IR inspection image

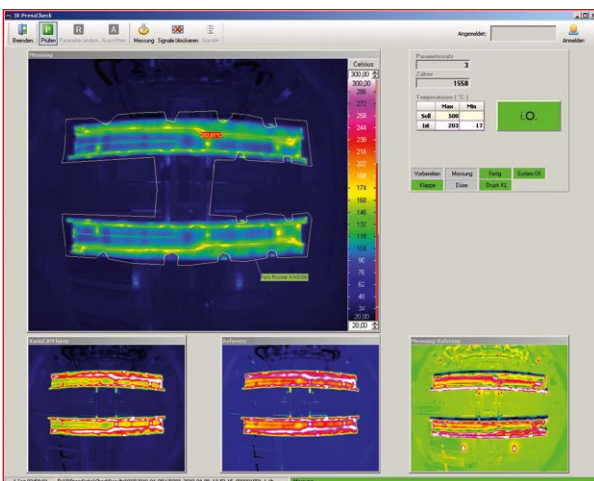


Universal test system



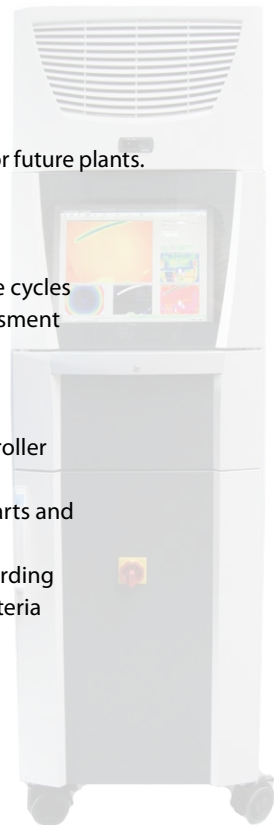
Inline Production Monitoring

There is an increasing demand for integrating highly intelligent measuring head systems into already existing or future plants. Vertical and horizontal data integration are a matter of course.



Surveillance of moulding press

- Inline measurement in sync with machine cycles
- Immediate automatic performance assessment
- Storage of measurement results
- Implementation of tailored solutions into production plant
- Online data transfer to the machine controller
- Immediate decision on OK or NOK
- Recognition of disturbances, defective parts and slow drift processes as well
- Simultaneous algorithmic detection according to diverse parameterisable evaluation criteria
- Self-diagnosis and self-monitoring

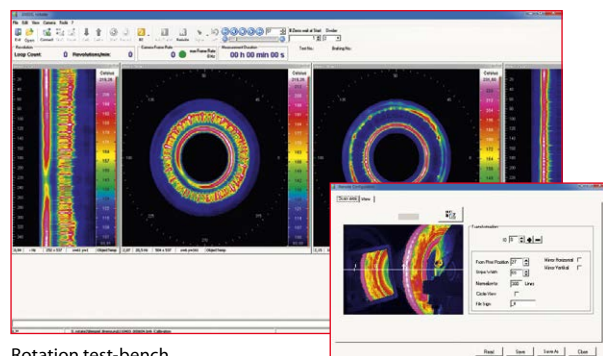


Load Test of Mechanical Components

Especially for fast running mechanical components the question for stability under continuous operation and for usage-depending wear ranks first. In this regard manufac-

turers run comprehensive tests according to certified procedures. Thermal measurements under stress can provide crucial support in this field.

- Rapid data acquisition by using high-end thermographic cameras
- Survey in different transformation views
- Synchronous raw data logging
- Online displaying during the test



Rotation test-bench



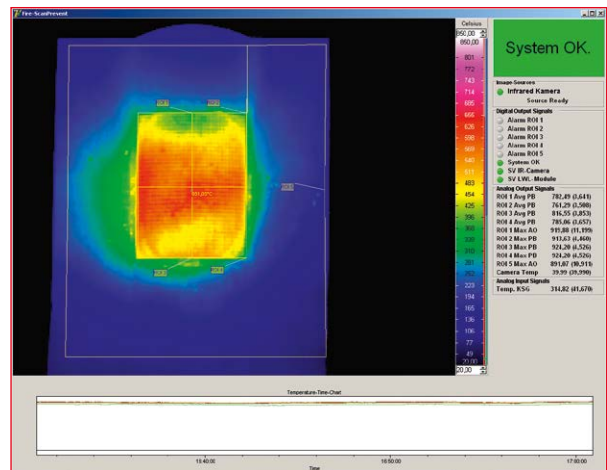
Thermal Process Monitoring in Rough Outdoor Use

Solar tower power plants, one pillar of renewable energies, are undergoing enormous thermal influences. Those should be recorded and controlled.

- Connection to power plant control system for data storage and archiving
- Weatherproof infrared acquisition unit



Protected acquisition unit



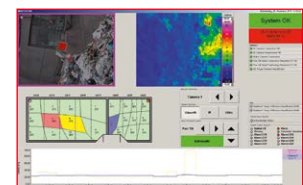
Receiver control

Fire Prevention

Unattended or low grade operator-controlled service even at complex or decentralised plants becomes increasingly important. This also includes increasing requirements with regard to fire protection, especially preventive fire protection.

Complete storage space monitoring

- Works even with one single thermographic camera by means of pan-tilt head
- Automated scanning of several inspection sections
- Switch to manual control for observing suspect spots and evacuating critical objects
- Expandable systems to multi-camera solutions



Multi-camera system





Steel Production and Steel Processing

Modern lightweight components as well as higher stress on assemblies demand for production and treatment of innovative steel alloys.

Technological treatment processes are significantly related to thermal developments. It therefore makes sense to control those in the cycle of production.

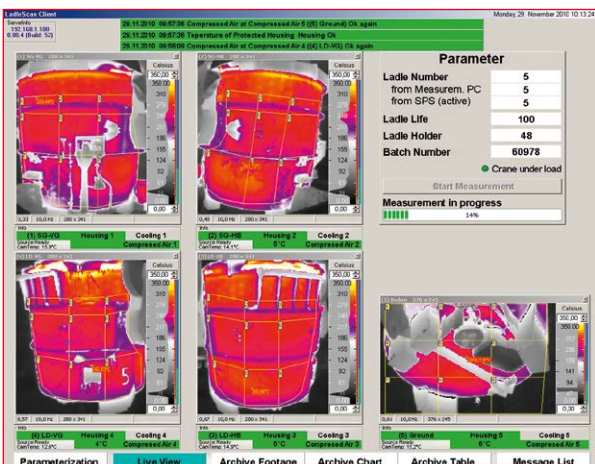
- Protective housing of stainless steel assures maintenance-free continuous system operation
- Works under harsh environmental conditions
- Permanent monitoring and process control
- Efficient quality assurance and minimisation of losses during the production of high-quality steels
- Availability of alarm and process data via web interface for corporate network



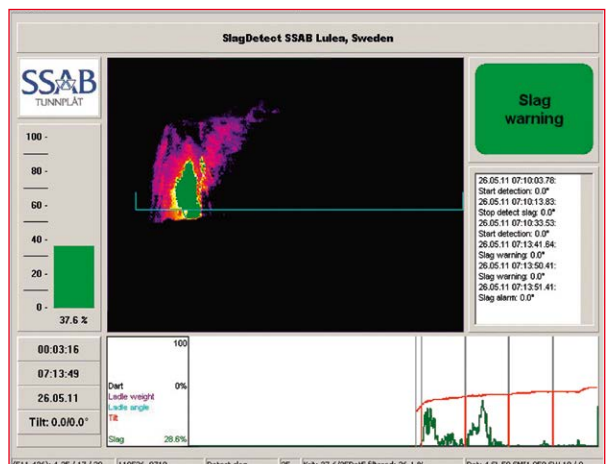
Professional system installation



Infrared acquisition unit



Ladle Hot Spot Detection with multi head solution



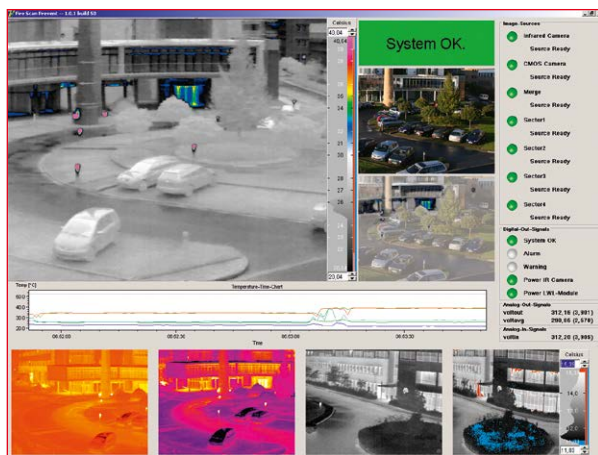
Testing and monitoring systems for slag detection



Property Security by Means of Thermal Control

Using InfraTec's surveillance systems, even in complete darkness nothing remains hidden. Thermal cameras with highest thermal sensitivity in connection with special digital analysis algorithms will support your specific task.

- Thermography for 24-hour-operation
- Surveillance of critical infrastructure
- Environmental protection and animal welfare
- Integration into video surveillance systems
- Dynamic persecution of objects and persons
- Host connection and secured data storage



Automated property surveillance

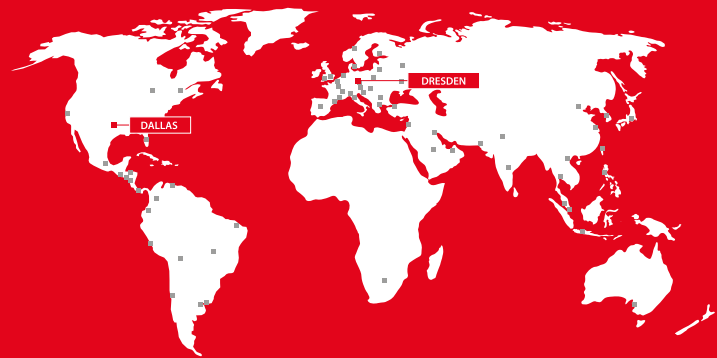


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