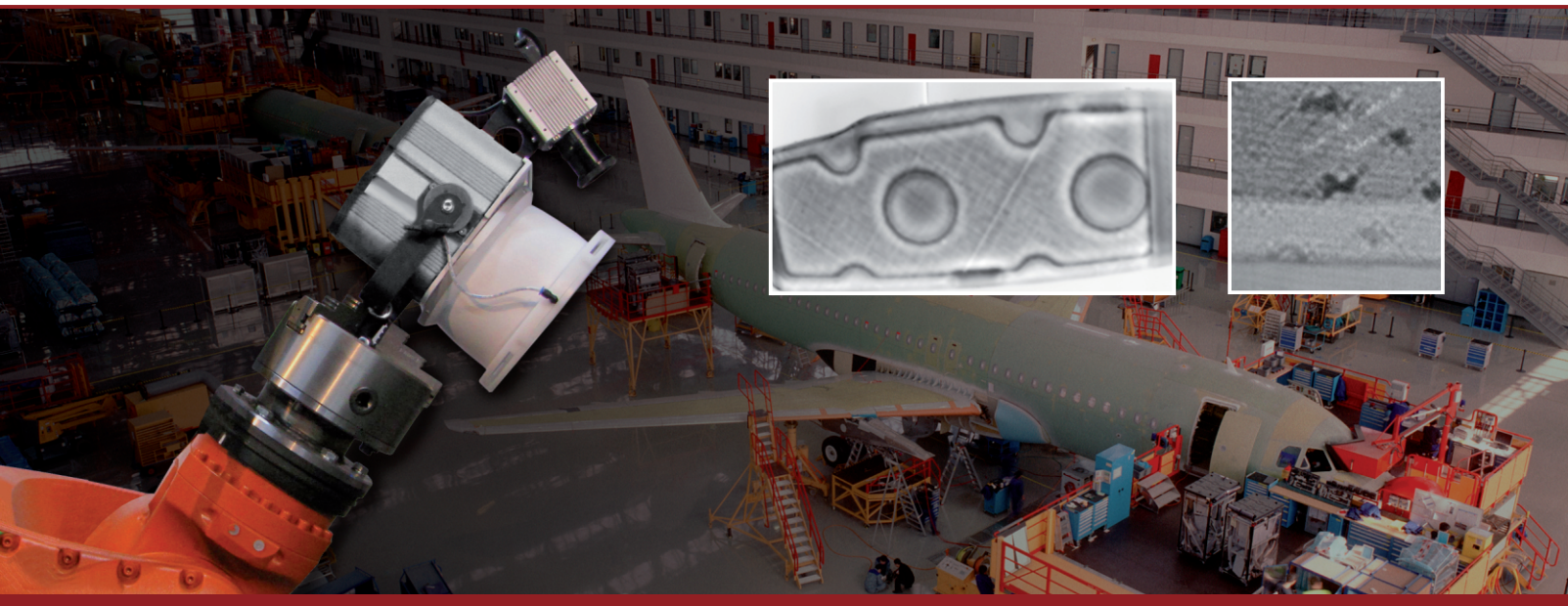


C-CheckIR Sensor

The Solution for Thermal NDT in Production Lines

The C-CheckIR Sensor is the first real industrial Sensor-Head for the NDT inspection of composites and other materials in production lines. The system is equipped with a Smart camera built by Automation Technology specially for NDT applications. Therefore, the camera has been designed for optimal thermal sensitivity and includes Smart features, such as image pre-processing algorithms or excitation-source control. Furthermore, to optimally adapt the Sensor-Head to most application requirements, a wide variety of camera detectors and lenses are available. The inspection area can also be enlarged by adding additional excitation sources. The C-CheckIR Sensor Software has been also designed for an easy integration of the system into automated processes. So, the combination of all these features makes the system an ideal solution for the online detection of defects like delaminations, debondings, missing adhesive, etc. in aerospace, automotive, maritime or other industries.

System Advantages:

- Ideal Solution for Real-Time Inspection of Composites and other Materials
- Designed for Integration into Production Lines
- Large Area Scanning (Typically 0.5 x 0.4 m per Measurement, can be increased and reduced)
- Short Measurement Times for Increased Productivity (Typically < 15s)
- Contact-Free NDT Inspection
- No Surface Preparation Required (Typically)
- High Pobability of Defect Detection
- Easy Documentation of Inspection Results (as Images) for Good Traceability

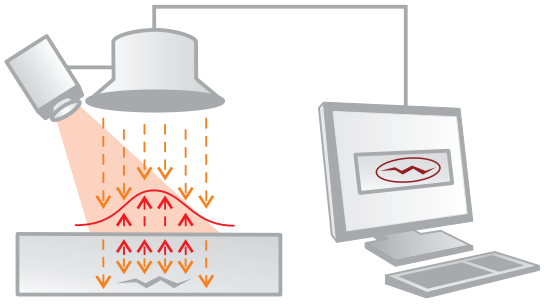
System Features:

- Smart Infrared Camera with High Thermal Sensitivity
- Industrial Grade Compact Sensor
- Integrated Electronics to ensure a very acurate Thermal Excitation of the Inspected Parts
- Easy System Configuration and Maintenance
- Automatic Loading of Inspection Parameters
- Automatic Performance of NDT Inspections
- Automatic Analysis and Storing of Inspection Results

C-CheckIR Sensor - Thermal NDT for Production Lines

How does it work?

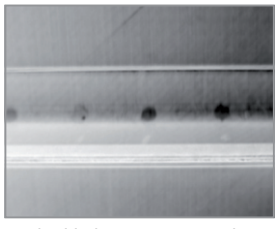
C-CheckIR Sensor works by means of active thermography. The Sensor-Head stimulates the tested area with an optical excitation source (halogen lamp). Then, the system's software analyses, from a sequence of thermal images, the heat-flow over time, generating a result image that shows the internal structure of the material. It is like a kind of "thermal X-Rays".



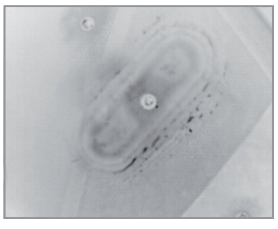
Suitable for the Detection of many Defects:

- Delaminations
- Debondings
- Impact Damage
- Missing Adhesive
- Cracks
- Air Cavities
- Water Inclusions
- Material Structure
- Embedded Foreign Materials
- Corrosion
- Porosity
- etc.

Examples of Measuring Results:



Embedded Foreign Material



Air Cavities

Measuring Procedure	
Typical Inspection Area	Typically 0.5m x 0.4mm (with following System Configuration: 1 Excitation Source and a Camera with 336 x 256 Pixel and a 12mm Lens, positioned at a Measuring Distance of around 0.5m) **The Inspected Area can be enlarged with a 2nd Excitation Source**
Inspection Time	Typically 10 – 25 sec.
Temperature Increment during a Measurement (ΔT)	Typically around +8 °C
Infrared Camera	
Available Resolutions:	168 x 128, 336 x 256 or 640 x 480 Pixel
Thermal Sensitivity	< 20 mK (@ 30°C)
Detector	Uncooled LWIR
Available NDT Lenses	6mm, 10mm, 12mm, 18mm, 25mm (for optimizing the Field-of-View between 13° x 10° and 84.5° x 72°)
Software	
the C-CheckIR Sensor Software features advanced Analysis Algorithms for the Measurement Data, as well as Tools for automatically controlling the System's Hardware.	
Excitation source	
Halogen Lamp Power	1.7 / 2.0 kW
Genaral	
Power supply	110VAC 1.7kW / 230VAC 2.0kW
Weight (Sensor Head)	Approx. 3.0 Kg (depending on the system configuration)

Polytec

POLYTEC GmbH
T: +49 (7243) 604-4540

Polytec-Platz 1 - 7
Fax: +49 (7243) 699 44

D-76337 Waldbronn
E-Mail: wl@polytec.de

GERMANY
www.polytec.de