

C-CheckIR

The Portable Solution for Non-Destructive Testing with Active Thermography

- Suitable for Aerospace, Automotive, Wind Energy Plants, Maritime, etc.
- Ideal for Inspection of Composite Materials like GRP/CFRP
- Contactless Non-Destructive Testing (NDT)
- Large Inspection Area
- Compact Design for Mobile Use
- Touch-Screen with Intuitive User-Interface
- Vacuum Fixture Tool for Easy Mounting, even on Vertical Surfaces

MOVITHERM
advanced thermography solutions

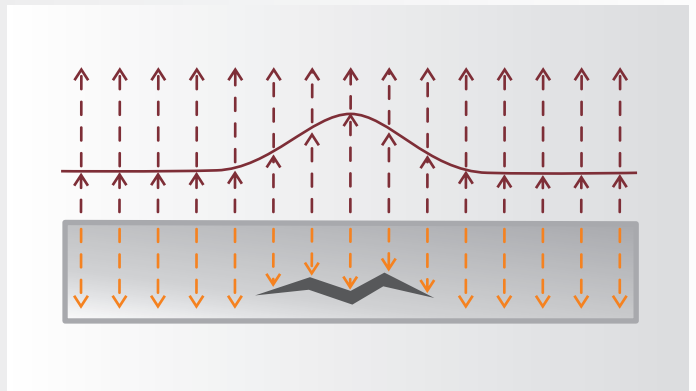
Portable Thermography Systems for Non-Destructive Testing

The portable C-CheckIR system enables you to inspect a wide range of materials with active thermography. The system achieves precise and reliable measurements and is ideal for inspecting composite materials like glass- or carbon-fiber reinforced plastics (GRP/CFRP). C-CheckIR is easy to handle and requires minimal training. The entire inspection head is mounted on a lightweight support frame equipped with vacuum suction feet. This design permits positioning of the system over a wide variety of surfaces.



Active Thermography

The system includes a heat source to provide thermal excitation to the inspected material. The flow of thermal energy through the material has a direct influence on the material's surface temperature topology. An infrared camera records the material's surface temperature over a specified period of time. The chronological temperature data is processed, analyzed, and displayed as an image. The resulting image provides information about the internal structure of the material and possible defects present within it.



Main Features at a Glance



Non-Destructive Inspection Process



Fast Cycle Time



Optimized for Portability



Lightweight & Easy to Use



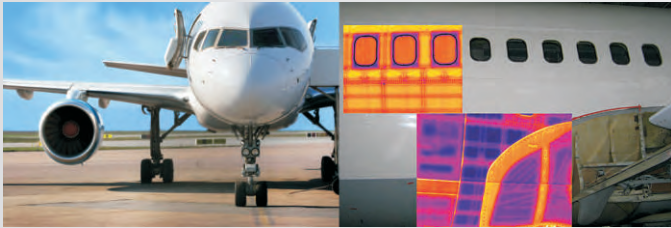
Robust Setup



Industry Specific Solutions

Active thermography is an effective inspection method for a wide variety of materials. C-CheckIR is the ideal solution for performing efficient and reliable onsite NDT inspections.

Aerospace



Modern aircraft are primarily constructed from composite materials like GRP/CFRP. Until recently, inspection equipment for these materials has been very complex. Onsite measurements have been difficult and time-consuming, requiring expert oversight. C-CheckIR, with its very simple compact design and intuitive user interface enables quick and easy detection of defects. The system easily detects water inclusions, delaminations, and bonding flaws on the aircraft fuselage, rudders, tailplane, etc. A measurement with C-CheckIR covers a surface area of 430 x 340 mm (17 x 13 in). Inspections can be performed in just a few seconds, optimizing staff costs and reducing aircraft downtimes.

Automotive



Carbon-fiber reinforced plastics have become an indispensable part of Formula 1 cars. New passenger car designs are starting to include CFRPs as well. C-CheckIR is a powerful inspection system for detecting and locating defects in composite plastics like cracks, delaminations, surface wear, and signs of previous repairs. The compact design of C-CheckIR provides high mobility for onsite measurements. Whether for inspection of race cars or research on composite performance in passenger cars, C-CheckIR is the optimal solution for active thermography inspections.

Maritime



Yacht and boat hulls are under heavy stress even under normal circumstances. Eventually the stress will cause surface wear and this will allow water to penetrate beyond the protective gel coat to the composite material beneath. If water molecules reach a void in the composite, such as a pocket of unreacted resin, the water droplets will dissolve the soluble substances into a dense liquid. Osmosis will then draw more water molecules through the compromised gel coat. As the void fills, pressure builds and forms a blister that can lead to delaminations in the composite material. C-CheckIR can detect defects like delaminations and water inclusions before the structural integrity of the hull is compromised.

Wind Energy



As an energy source with a promising future, wind turbines must be able to guarantee failsafe operation. Rotor blades are exposed to enormous forces during high speed winds. Extreme bending in a blade can lead to damaged bonds and delaminations. Maintenance work must be performed at regular intervals to be able to detect possible defects at an early state, before they are critical. C-CheckIR, as a compact and portable NDT system, is a perfect solution for detecting delaminations, cracks, and damaged bonds directly onsite.

C-CheckIR

Testing Unit

| General | |
|--|--------------------------------------|
| Inspection Area | 430 x 340 mm / 17 x 13 in |
| Operating Distance | 400 mm / 16 in |
| Power Requirements | 230 V AC, 2.3kW / 115 V AC, 1.9kW |
| Length of the Connecting Cable | 7 m / 23 ft |
| Weight (Testing device only) | 6 kg / 13.2 lbs |
| Weight (Instrument with Transport Case) | 20.5 kg / 45 lbs |
| Infrared Camera IRSmartEye | |
| Resolution | 320 x 256 Pixels or 640 x 512 Pixels |
| Image Rate | 30 Hz / 60 Hz |
| Thermal Sensitivity | < 30mK |
| Excitation Source | |
| 2.2 kW @ 230 V / 1.8 kW @ 115 V (Extendable with Second Excitation Source) | |
| Fixture Tool | |
| Operating Pressure | 5-8 bar / 72.5-116 psi |

Control Unit

| Tablet PC | |
|--|------------------------|
| Display | 13" Multi-Touch Screen |
| Operating System | Windows 7 |
| Data Storage | 128 GB |
| Software IRNDT-Mobile | |
| Analysis Software for Pulse/Transient Measurements, optional with Lock-In Evaluation | |
| Synchronization of Infrared Camera and Excitation Source | |
| Graphical User-Interface with Touch-Screen for Intuitive Handling | |

Options

| Available Test Kit Versions | |
|--|--|
| C-CheckIR professional | |
| C-CheckIR Airbus-Kit for NTM 55-40-50 | |
| Additional Equipment | |
| Universal Tripod Mount | |
| Second Excitation Source | |
| Various Software Analysis Modules for Non-Destructive Evaluation (NDE) | |

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