



C-CheckIR

The Mobile 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



Automation Technology
Vision Systems for Automation

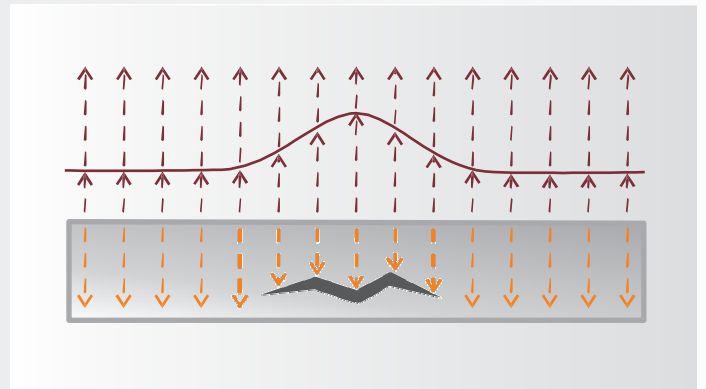
Mobile Thermography Systems for Non-Destructive Testing

The transportable testing system C-CheckIR enables you to inspect a wide range of materials with active thermography. C-CheckIR achieves precise and reliable measuring results and is especially suitable for inspections of composite materials like glass- or carbon-fiber reinforced plastics (GRP/CFRP). The measuring instrument is easy to handle and does not require any extensive training. The complete inspection head is mounted on a light support frame that only needs to be placed at the right position on the object to be inspected. It does not even matter if the surface is vertical, since the system's frame is equipped with vacuum-suction-feet.



Active Thermography

A heat source gives the inspected material a thermal excitation. The flow of thermal energy through the material has a direct influence on the temperature development on the object's surface. During a measurement, this temperature development is recorded over a certain period of time with an infrared camera and a mathematical analysis is applied to the acquired data. Then, the processed data is displayed as an image that provides us with information about the internal structure of the material or about possible defects in it.



Main Features at a Glance



Non-Destructive Inspection Process



Short Measuring Time



Optimized for mobile applications



Easy Handling



Robust Setup



Industry Specific Solutions

Active thermography is a powerful inspection method for a wide variety of materials. This is why C-CheckIR is the ideal solution for performing reliable and uncomplicated NDT inspections on site.

Aerospace



The body of modern aircrafts is made in a big percentage from composite materials like CRP/CFRP. To this date, inspection equipment for these materials tends to be built in a quite complex way, making on site measurements difficult and normally a task to be performed just by experts. C-CheckIR, with its very simple and compact design and it's very intuitive user-interface enables the easy detection of defects such as: water inclusions, delaminations or defect bondings on the aircraft fuselage, rudders, etc. A measurement with C-CheckIR covers an area of 430 x 340 mm² and is performed in a just few seconds. This makes it possible to complete NDT inspection fast, optimizing staff costs and reducing aircraft downtimes.

Automotive



Many vehicle manufacturers are increasingly using composite plastics for their car body design. For example, carbon-fiber reinforced plastics have become an indispensable material for Formula 1 cars and even the first models for passenger cars with CFRP bodies have been announced already. C-CheckIR is a powerful inspection system for this kind of car bodies as it helps to locate defects like cracks, delaminations, surface wear or previous repairs, among others. The testing device features a compact design that enables high mobility for on-site measurements. Independently if the task is to perform NDT inspections on racing cars or to do research on the material behavior on a passenger car, C-CheckIR will be the perfect solution for active thermography inspections.

Maritime



The hull of a yacht or of a boat is under normal circumstances heavily stressed by its surroundings. Sooner or later, this will cause surface wear which will allow the water to penetrate through the gel coat into the material. Should the incoming water molecules reach a void containing substances such as unreacted resins; then, the water droplets will dissolve out the soluble substances creating a dense liquid. At this point osmosis will take over and draw the water molecules through the gel coat at a much faster rate. When a void has been filled, the process continues and pressure builds up forming a blister that normally leads to delaminations in the composite material. C-CheckIR can help detect defects like delaminations or water inclusions at an earlier state and does not require extensive training for the performance of the NDT inspections.

Wind Energy



As an energy source with a promising future, wind turbines must to be capable to guarantee a failsafe operation. However, this is not an easy task, since rotor-blades are exposed to enormous forces during high speed winds. Should a rotor-blade bend too much, this could lead to damaged bondings or induce a delamination. Since defective composite materials are susceptible to consequential damages, maintenance works must be performed at regular intervals to be able to detect possible defects at an early state, when they are still not critical. C-CheckIR, as a compact and mobile NDT system, is a perfect solution for this, because it can help to easily locate delaminations, cracks or defect bondings directly on site.

C-CheckIR

Testing Unit

General	
Inspection Area	430 x 340 mm
Operating Distance	400 mm
Power Requirements	230 V AC, 2.3kW / 115 V AC, 1.9kW
Length of the Connecting Cable	7 m
Weight (Testing device only)	6 kg
Weight (Instrument with Transport Case)	20,5 kg
Infrared Camera IRSmartEye	
Resolution	320 x 256 Pixel / 640 x 512 Pixel
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

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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