moviTHERM
advanced thermography solutions

irNDT

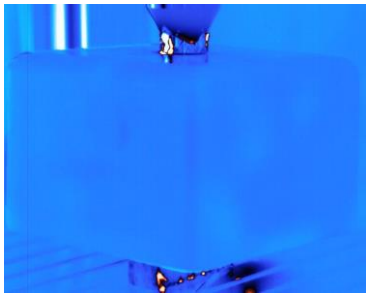
Crack-Check

Lock-in Vibro *ir*NDT Solution

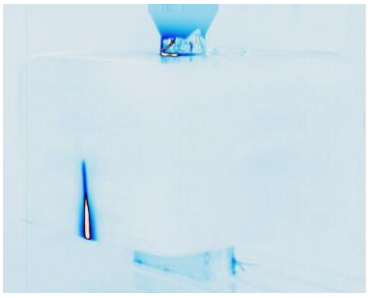
MoviTHERM Crack-Check uses infrared non-destructive testing (*ir*NDT) Vibro-Thermography to quickly identify cracks in metallic, ceramic, and composite materials. This turnkey Lock-in Thermography (LiT) system uses ultrasound excitation to induce friction at crack interfaces producing heat. The system works with cooled and uncooled IR cameras with multiple lens configurations to meet various application requirements. The Crack-Check system can be configured for mobile, lab, and robot guided in-line applications.

Features

- Non-contact *ir*NDT
- Works with cooled and uncooled IR Cameras
- Lock-In Thermography Analysis
- Ultrasound Excitation
- Multiple Lens Options for Wide Angle and Close-up imaging



Ceramic with no defects



Ceramic with defect

Key Benefits

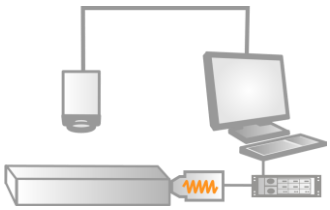
NON-CONTACT CRACK DETECTION
Active *ir*NDT thermography "sees" various crack types in metallic, ceramic, and composite materials.
- ✓ Surface Cracks
- ✓ Deep Cracks
- ✓ Micro Cracks

FLEXIBLE AND EXPANABLE
Upgrade a system by adding lenses, enclosures, stages, and IR cameras.
- ✓ Works with Cooled and Uncooled IR Cameras
- ✓ Add other excitation sources (Halogen, Xenon, etc.)
- ✓ Add other *ir*NDT Methods

***ir*NDT MADE EASY**
Complex analysis technology simplified for inspection.
- ✓ Effective measurement on low and varying emissivity targets
- ✓ No Surface Preparation Required
- ✓ Large and small area measurement
- ✓ Quick and reliable defect detection

How does it work?

Crack-Check uses ultrasonic frequencies to excite the specimen. The resulting friction between vibrating cracks creates heat signatures that are measured by the infrared camera. A computer captures multiple IR images and applies a processing algorithm to produce a surface map identifying localized hotspots.



Specifications

Uncooled Infrared Camera Options		**Cooled Infrared Camera Options**	
Available Resolutions	336 x 256 or 640 x 512	Available Resolutions	640 x 512 or 1280 x 1024
Image Rate	30 Hz / 60 Hz	Image Rate	60 Hz / 120 Hz / 181 Hz / 1000 Hz
Thermal Sensitivity	< 30 mK @ 30°C	Thermal Sensitivity	< 20 mK @ 30°C
PC			
PC Type	Office PC, Industrial PC, Laptop (for mobile use)		
Supported Operating Systems	Windows 10 Pro 64-bit		
Excitation Source			
Ultrasound	• Adjustment of Frequency from 15kHz to 25 kHz • Adjustment of Amplitude from 0 to 100%		
IRX-Box			
Modulation Box for Synchronization of all Hardware and Software Components			
Enables Easy and Compact Measuring Setups			
***ir*NDT-Software**			
Evaluation Modules for Lock-in, Lock-in Online, Lock-in Ref. Online			
Graphical User Interface for easy creation of customized solutions without programming skills			
Integrated MS Excel Report Generator for easy set-up of inspection reports, export of inspection data to Matlab, sorting of inspection parameters in workspaces, and storing of result images include measuring parameters			
Integrated VB Script-Engine for the creation of macros for solving automated inspection tasks			
Result Viewer App – Allows for calibrated spatial defect measurements, including depth			
Measuring and Analysis Properties			
Parameters for the Excitation Source	• Analysis Functions: Pulse, Sine, Trapezoid, Rectangle, Arbitrary Waveform • Rectangle Width at Rectangle Modulation: 0.1 – 0.9% • Excitation Frequency: 1µHz – 50kHz		
Parameters for the IR Camera	Recording Frequency, Integration Time, Temperature Range, Average Temperature, Detector Window, etc.		
Parameters for the Analysis	• Several Analysis Methods / Lock-In Thermography • Automatic Noise Reduction Functions and Compensation of exterior interferences in all analysis modules		

*Specifications subject to change without notice. 11/2021

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