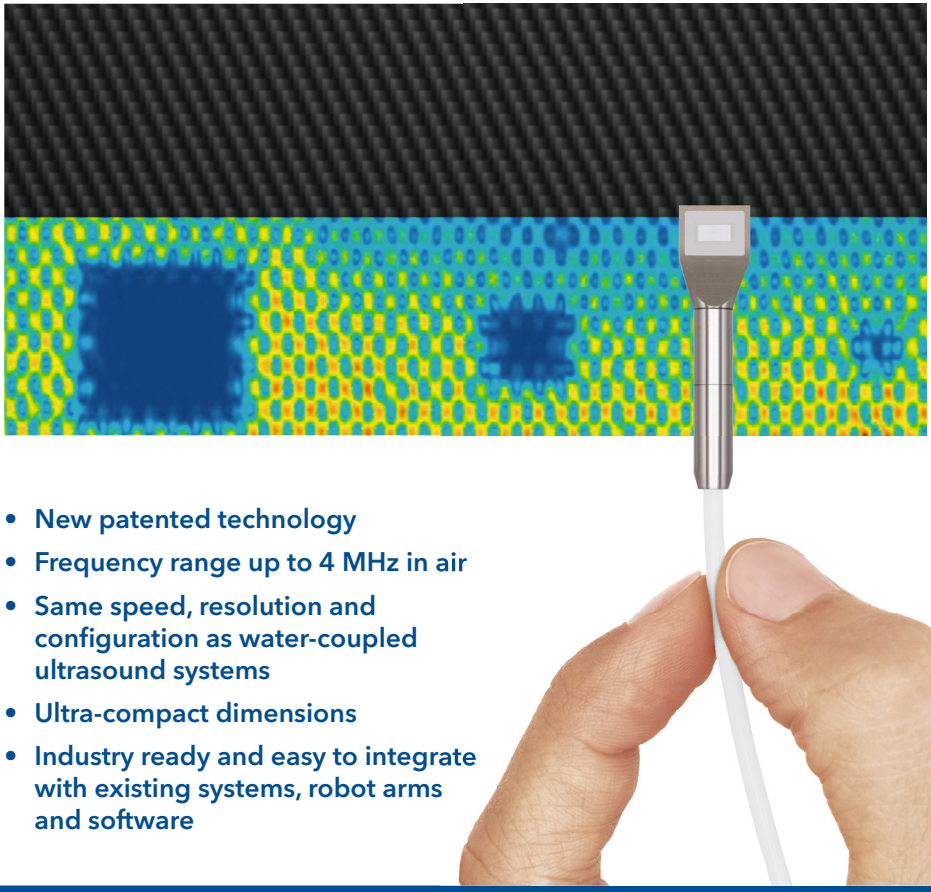
Water-free Non-Destructive Testing

using laser-based ultrasound sensor technology



- New patented technology
- Frequency range up to 4 MHz in air
- Same speed, resolution and configuration as water-coupled ultrasound systems
- Ultra-compact dimensions
- Industry ready and easy to integrate with existing systems, robot arms and software

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Contact-free ultrasound testing

XARION's optical microphones detect air-coupled ultrasound within an enormous frequency bandwidth with exceptional sensitivity.

Non-destructive ultrasound testing no longer requires coupling fluids! XARION's novel inspection method is suitable for robot-automated NDT inspection.

Compatibility in excitation

XARION uses fiber-coupled pulsed lasers to generate a broadband ultrasound signal within the sample. Internal structures and defects such as delamination or porosity affect the signal propagation. Available as a single-sided or through-transmission setup.

As an alternative ultrasound source, XARION uses a Thermoacoustic Emitter for contact-free ultrasound excitation. A fast current discharge generates a strongly focused ultrasonic shock wave. This method for broadband ultrasound generation is highly compatible with soft and transparent materials.

Applications

- Fully automated NDT ultrasound scans without coupling fluid
- Quality control of GFRP and CFRP in aerospace
- Robot-based spot-weld inspection in automotive
- Impact detection of composite structures
- Joint testing of multilayer composites
- Delamination detection in adhesive joints

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