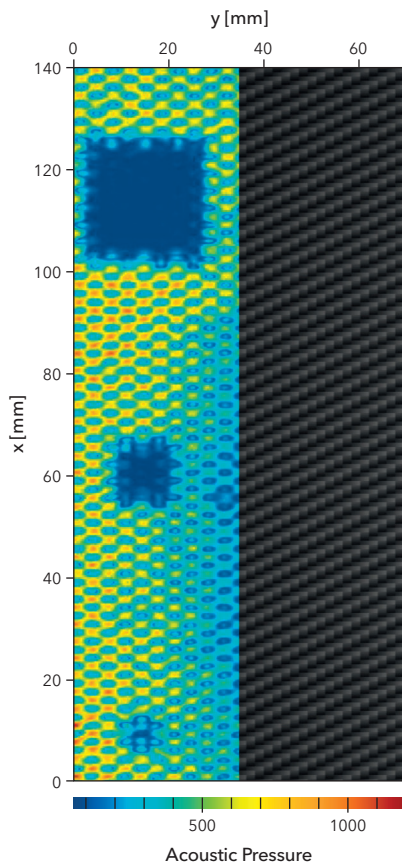


Non-Destructive Testing

using laser-based ultrasound sensor technology



CFRP Sandwich composite scanned with optical microphone

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Contact-free ultrasound testing

XARION's optical microphones are able to detect air-coupled ultrasound using unique bandwidth and exceptional sensitivity. These advantages lead the way for contact-free ultrasound testing. Non-destructive ultrasound testing no longer requires coupling-fluids anymore. XARION's testing method is fully automated and enables 100% in-line quality inspection.

Compatibility in excitation

The optical microphone can be combined with several methods for ultrasonic signal excitation.

Laser-Ultrasound enables a completely contact-free inspection method at superior-signal-to-noise ratio. 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. Detection can be realized in a single-sided or through-transmission setup.

In addition to Laser-Ultrasound, XARION uses a Thermoacoustic Emitter (TAE) 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

- ✓ Weld spot inspection
- ✓ Quality control of CFRP
- ✓ Impact detection of composite structures
- ✓ Joint testing of multilayer composites
- ✓ Delamination detection in adhesive joints

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