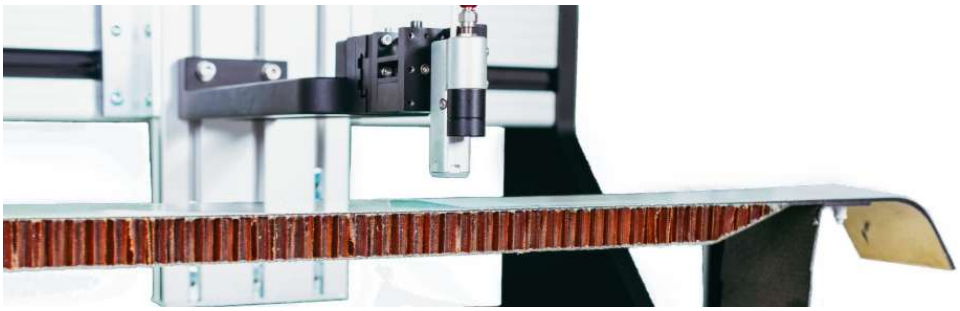
Water-free Ultrasonic Inspection of Composite Materials with Laser Microphone

The Laser-Excited Acoustics (LEA) technology is a game-changing new method of NDT for composites and composite material testing. The Laser Microphone technology allows for high-resolution imaging of internal defects, such as delamination or porosity. LEA is easy to integrate into robotic or scanning inspection systems and is also available as a turnkey LEAsys scanner solution. The turnkey station enables composite NDT in R&D laboratories in industry and academic institutions. For high-throughput industrial production settings, customized solutions are offered that utilize the same technology and take composite material testing to a new level!.



Laser-based NDT for composites: How Laser Microphones LEA works

With LEA, a pulsed laser generates an ultrasound wave directly in the part and that wave is detected with the ultrasound detector, delivering sensitivity and resolution to match today's standard liquid-coupled UT. The technology eliminates the need for water or coupling gel, allowing for seamless integration into production environments. The compact LEA probe is fully fiber-coupled and designed for robotic integration. Its robustness against misalignment and surface variations ensures a high signal-to-noise ratio across the entire inspection area and minimizes the need for costly manual testing.

Benefits of contactless composite testing in production

- No water, no coupling gel needed
- Sub-mm resolution of internal defects and delamination
- High-speed inspection with up to 2000 mm/s
- Robust against misalignment in stand-off and angle
- Single-sided and through-transmission arrangement possible
- Compatible with monolithic carbon fiber and honeycomb sandwich structures

Dr. Müller Instruments GmbH & Co. KG Hasengarten 35 61440 Oberursel Germany
Tel.: +49 6172 380 3727 info@Mueller-Instruments.de www.Mueller-Instruments.de