Laser-ultrasonics from your lab to on-site demonstration
3 steps:

lus discovery
lus advance
lus ultimate
Get the Lus discovery advantage:

Discover the simplicity of laser-ultrasonics

The Lus discovery is the perfect starting point for your academic studies with laser-ultrasonics. The affordable, plug-and-play, non-contact ultrasonic detection unit gives operators quick results on targets with reflective and low-scattering surfaces. The Lus discovery includes an optical probe that is linked to the detection module via optical fibers. Users can choose any Tecnar probes or designs to meet specific research conditions. When the project advances to the next step, the Lus discovery can easily be upgraded to the Lus advance.

The Lus discovery combines:

1. Detection interferometer: Robust laser-ultrasonic detection unit based on a fast-response photorefractive crystal
2. CW detection laser: Frequency-stabilized continuous mid-power laser
3. Optical probe
Move from the lab to the real world

The Lus advance is a breakthrough technology that makes the industrial use of laser-ultrasonics routine. Tecnar’s proprietary detection laser is the key to the Lus advance’s easy and robust non-contact ultrasonic detection: the target’s surface condition, distance or angle is no longer a limiting factor for laser-ultrasonic applications. Researchers can then extend the use of laser-ultrasonics, while maintaining the flexibility of the Lus discovery set-up.

The Lus advance combines:

1. Pulsed detection laser: Proprietary long-pulsed high-power frequency stabilized laser
2. Detection interferometer: Robust laser-ultrasonic detection unit based on a fast-response photorefractive crystal
3. Optical probe
Better together

The Lus ultimate is a customizable, turnkey, laser-ultrasonic inspection station. With the Lus ultimate and Tecnar’s knowhow and support, you don’t need to be an expert to get the benefits of laser-ultrasonics.

The Lus ultimate, based on Tecnar’s breakthrough technologies, includes everything required for easy laser generation and detection of ultrasounds. All laser beams reach the target via optical fibers for unequalled flexibility in optical probe design, scanning scheme and target applications. With its rugged architecture, the Lus ultimate can be used everywhere from laboratory settings to on-site industrial demonstrations.

The Lus ultimate combines:

1. Pulsed detection laser: Proprietary long-pulse high-power frequency stabilized laser
2. Control unit: Adapted, computer-controlled data acquisition, processing and storage
3. Detection interferometer: Robust laser-ultrasonic detection unit based on a fast-response photorefractive crystal
4. Generation laser: Short-pulse laser for non-contact ultrasound generation
5. Optical probe
Tecnar’s Lus system was our “Enabler” to realize laser-ultrasonics projects with high impact for industry. We were not only able to realize measurements on industrial samples which are oxidized, rusty, dirty,… – but more importantly, we could perform measurements in industrial production sites, directly in the aluminum and steel producing plants. Doing on-site measurements made the industrial partner gain trust and believe in the measurement results! By this we were able to more than triple our business and acquire a second Lus system.

Bernhard Reitinger
Head of Laser Ultrasonics
RECENDT GmbH

References
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GE, USA
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