



lus

Laser-ultrasonics
from your lab
to on-site
demonstration

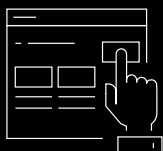
tecnar

Innovate to differentiate.

Get the
Lus Discovery
advantages:



Plug and play



Easy to operate



Non-contact



Affordable



Large-detection
bandwidth

Discover the simplicity of laser-ultrasonics

The *Lus Discovery* offers an ideal entry point for your academic investigations into laser-ultrasonics. This cost-effective, plug-and-play, non-contact ultrasonic detection unit delivers rapid results on both reflective and low-scattering surfaces, streamlining your research process from the start. Equipped with an optical probe connected to the detection module through optical fibres, the *Lus Discovery* allows for flexible configuration. Choose from a variety of Tecnar probes and designs to tailor your set-up to the specific demands of your research. With the *Lus Discovery*, initiating your studies in laser-ultrasonics is both straightforward and adaptable.



The *Lus Discovery* combines:

1. **TWM laser UT receiver:** fast-response detection unit based on two waves mixing in a GaAs photo-refractive crystal
2. **CW detection laser:** frequency-stabilized continuous mid-power laser
3. **Optical probe:** LAB - Laboratory research probe

lus explorer

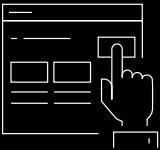
Get the
Lus Explorer
advantages:



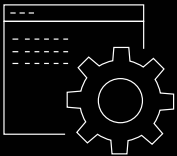
Research
ready



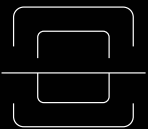
Non-contact



Easy to use



Turnkey



Scanning
system

Step into the lab, ready to explore

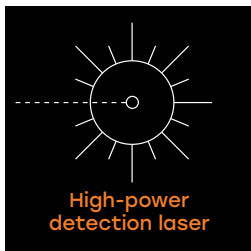
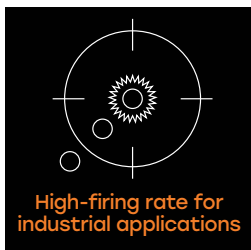
Embark on a seamless research journey with the *Lus Explorer*, a complete, turnkey laser-ultrasonic system designed for your laboratory studies from the outset. Tailored for the intricacies of laboratory use, this robust system combines our state-of-the-art *Lus Discovery* detection unit, a powerful short-pulse laser for non-contact ultrasound generation, and an optical beam delivery system designed for unmatched flexibility of use. Complemented by a comprehensive data acquisition and processing unit and a flexible two-axis scanning unit, the *Lus Explorer* ensures immediate operational readiness and superior efficiency. Built with Tecnar's renowned expertise and cutting-edge technology, the *Lus Explorer* empowers you to advance your research capabilities efficiently and effectively. Start your journey with the *Lus Explorer* and expand the horizons of your scientific exploration.



The *Lus Explorer* combines:

1. **Control unit:** integrated data acquisition and control computer
2. **TWM laser UT receiver:** fast-response detection unit based on two waves mixing in a GaAs photo-refractive crystal
3. **CW detection laser:** frequency-stabilized continuous mid-power laser
4. **Generation laser:** short-pulse laser for non-contact ultrasound generation, with optical beam delivery system
5. **Scanning unit mounted on an optical breadboard**
6. **Optical probe:** LAB - Laboratory research probe

Get the
Lus Advance
advantages:



Move from the lab to the real world

The *Lus Advance* represents a significant leap in technology that normalizes the industrial application of laser-ultrasonics. At the heart of the *Lus Advance* is Tecnar's proprietary detection laser, which facilitates easy and reliable non-contact ultrasonic detection. With this advanced system, variations in the target's surface condition, distance or angle cease to be constraints, broadening the scope of possible applications. This innovation allows researchers to expand their use of laser-ultrasonics while preserving the adaptable framework of the *Lus Discovery* set-up. The *Lus Advance* is designed to enhance your operational capabilities and propel your research into new realms of possibility.

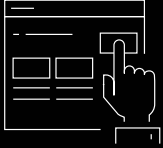


The *Lus Advance* combines:

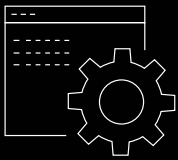
1. **PDL:** proprietary long-pulsed high-power frequency stabilized laser
2. **TWM laser UT receiver:** fast response detection unit based on two waves mixing in a GaAs photo-refractive crystal
3. **Optical probe:** HEP – Harsh Environment Probe

lus ultimate

Get the
Lus Ultimate
advantages:



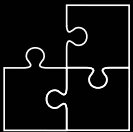
Easy to use



Fully integrated



High performance



Flexible



Plus all the *Lus Advance*
advantages

Better together

The *Lus Ultimate* is a customizable, turnkey, laser-ultrasonic inspection station. With the *Lus Ultimate* and Tecnar's know-how 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 ultrasound detection. All laser beams reach the target via optical fibres 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. **PDL:** proprietary long-pulse, high-power, frequency-stabilized laser
2. **Control unit:** integrated data acquisition and control computer
3. **TWM laser UT receiver:** fast-response detection unit based on two waves mixing in a GaAs photo-refractive crystal
4. **Generation laser:** short-pulse laser for non-contact ultrasound generation
5. **Optical probe:** HEPg – Harsh Environment Probe

earlier insight changes everything

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References

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Posco, Korea
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Toshiba, Japan
University of British Columbia, Canada
ArcelorMittal R&D, France
CEA-List, France
Boeing, USA



Learn more
about the
Lus systems



“Tecnar's Lus system was our “enabler” to produce industrial high-impact laser-ultrasonics. 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 doing this, we were able to more than triple our business and aquired a second Lus system.”

Bernhard Reitingner
Head of Laser Ultrasound Technology
RECENDT GmbH