PiCUS Sonic Tomograph 3

High-resolution sound measurement for the graphic representation of wood defects

IML
With Passion and Precision

SoT in 3 measuring levels
- High sound velocity
- Decreasing sound velocity
- Low sound velocity

A picture of the invisible wood defect

With the PiCUS Sonic Tomograph 3, you can detect damaged areas at an early stage and graphically display the extent of a defect.

Identify damaged areas at an early stage

The PiCUS Sonic Tomograph 3 is a device for detecting damaged areas on trees. It achieves this by precisely measuring the sound's transit time through the wood, which varies based on the wood's properties. In the case of a defect, the transit time is longer than in intact wood.

A 2-dimensional image is calculated from the measured speeds and including geometric information on the measuring plane.

In the graphical representation, the areas with different transit times are shown in different colours. From this, the trained user can interpret where defective and healthy areas might be located or how much decomposition might have progressed.

The included IML Tree Inspection Software/App also enables the creation of a 3D graphic from different measurement planes.
This enables the visualization of potential damage spread, which can then be overlaid on a photo of the tree.

A closer look into the tree

The imaging method for diagnosing trees.
Detect damaged areas safely and easily.

Accuracy
The acoustic speed timing is measured with an accuracy of 1 µs. The sound signals are generated using an electronic hammer.

Vertical Gradient
The tomography planes can be merged into a 3D graphic that shows the possible vertical gradient of the damage in the tree.

Compatibility
Compatible with PiCUS Calliper 3 and PiCUS TreeTronic 3 for easy geometry measurement and measuring point transfer.

Crack Detection
The crack detection feature detects cracks in the wood that could distort the tomogram.

Software (included)
The IML Tree Inspection Software (PC) and App (Android and iOS) offer extensive features for measuring and evaluating the tree, as well as managing a large number of measurements.

IML Cloud
The cloud enables seamless data exchange between different devices at various locations.

PiCUS Sonic Tomograph 3 functionality:

Sensors:	6 or 12 sensors, depending on the version
Measuring points:	Standalone operation up to 24 measuring points, with Software/App up to 99 measuring points
Display:	Tomogram preview on integrated display, full tomogram calculation in the IML Tree Inspection Software/App
Connectivity:	Communication with tablet or smartphone via Bluetooth, with PC via Bluetooth or USB
GPS-Module:	GPS for time and location determination
Tilt Sensor:	Used to determine the height of the tree
Battery life:	6h to 15h, depending on usage

More information
via QR code!

High sound velocity
Decreasing sound velocity
Low sound velocity
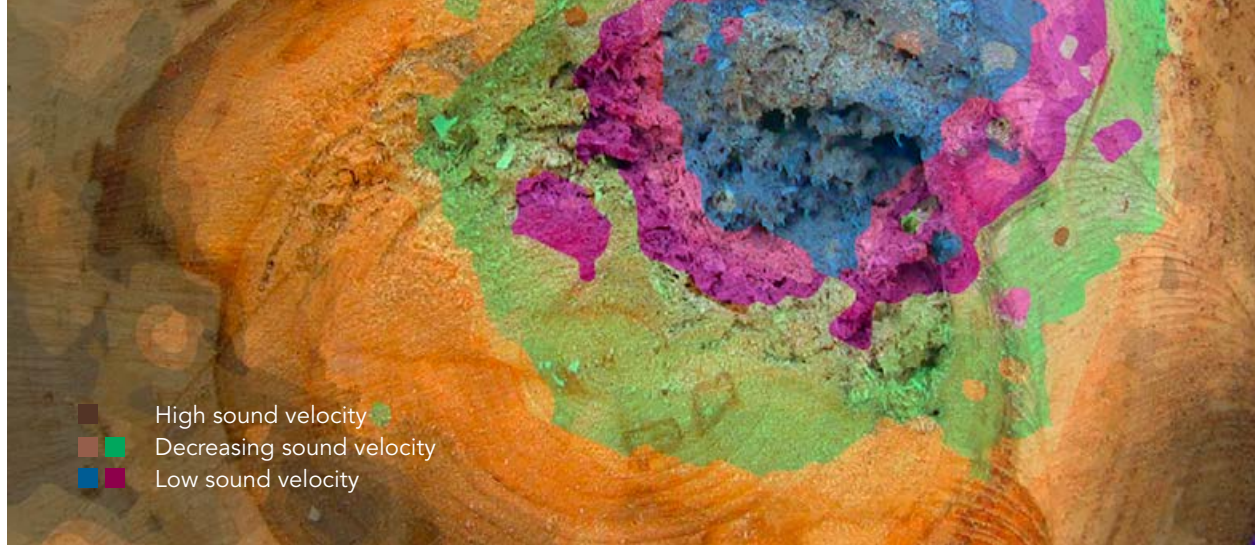
# Estimate the development of a defect

Use the PiCUS Sonic Tomograph 3 to monitor the course of the defect over time in order to make a prognosis about further development.

Long-term study

With the Sonic Tomograph 3 you can create sonic tomograms of the same wood damage over several years and compare them over time. This clarifies the path of the defect and the timeframe over which it has developed. Since the Sonic Tomograph 3 also detects different degrees of rot, it is easy to estimate how the defect might develop in the future. The prognosis of the tree's condition gives you a decisive advantage in the long-term planning of maintenance measures.

The perfect combination

The Sonic Tomograph 3 can easily be combined with the PiCUS TreeTronic 3. Both devices use the same measuring points and the same software. The TreeTronic 3 measures electrical resistance in the wood to determine the condition of the interior of the wood. Using both types of measurement provides information about the type of defect and the residual wall thickness.
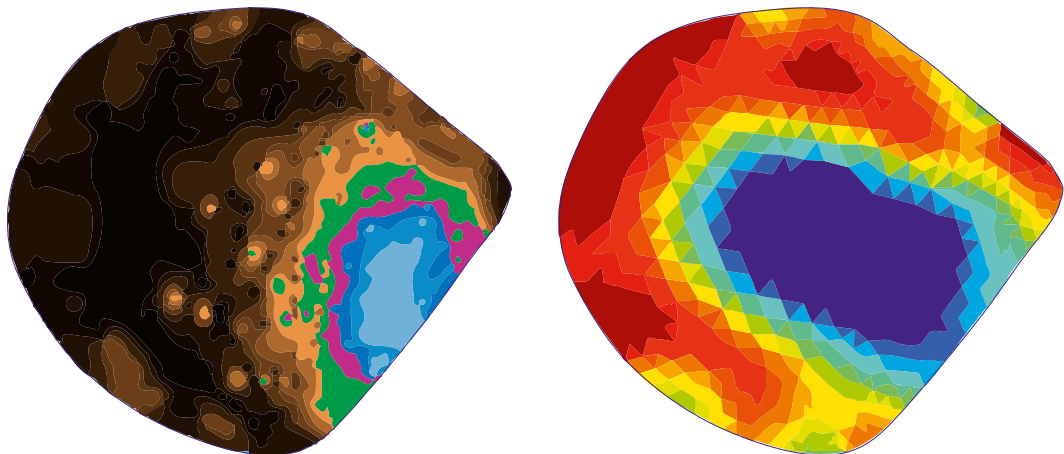
Sonic tomogram (left) and electrical resistance tomogram (right) of a lime tree with cavity and rot

# The PiCUS Calliper - Capture geometry quickly

The triangulation method is an accurate and at the same time fast method to determine the geometry of the measuring plane for sonic tomography.

Before the measurement with the PiCUS Sonic Tomograph can be carried out, the geometry of the tree in the measurement plane must be determined. The PiCUS Calliper enables easy handling and precise implementation of the triangulation method, even for complicated shapes of the tree's cross-section.

The more precisely the geometry was determined, the more accurate the tomogram is. The PiCUS TreeTronic 3 and the PiCUS Sonic Tomograph 3 are both compatible with the PiCUS Calliper 3. Optionally, the PiCUS Calliper can be integrated directly into the transport case of the tomograph. This way you have everything you need for the measurement compactly at hand.

The features of the PiCUS Calliper:

- Mountable in 2 sizes: the arms can be extended if required
- Large working range: up to 1600 mm or up to 2150 mm
- Automatic, fast and precise detection of all measuring point positions
- High ease of use: good readability of the displays, handy buttons and easy handling
- Light weight: Tubes made of carbon
- Control and measurement data transmission via Bluetooth, additionally via Bluetooth and cable in standalone mode
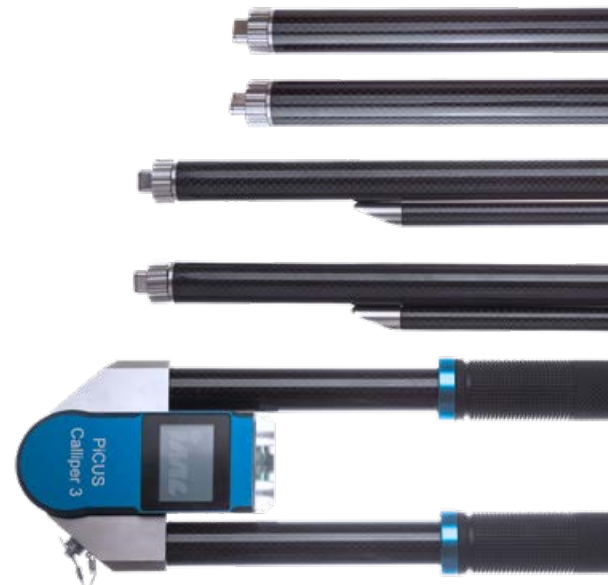
Do you have any questions?
We are happy to
assist you personally

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Product
information
via QR code!