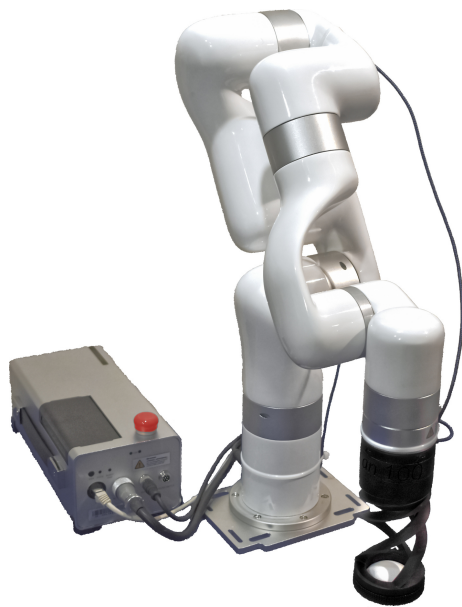


Inspection Product Line

# TeraScan

The non-contact, non-invasive, in-depth 3D scanner



*TeraScan Arm Long Range*



*TeraScan Frame*



*TeraScan Arm*

# TeraScan: an all-included solution

For an optimal user experience

Sensors : Radar

120 GHz, 240 GHz & 300 GHz  
interchangeable FMCW radar sensor  
for optimized imaging

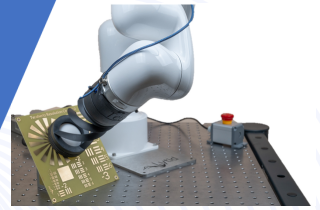


X-Y-Z Plotter or 6 Axis

Fast and precise automated scanner for  
enhanced sample inspection

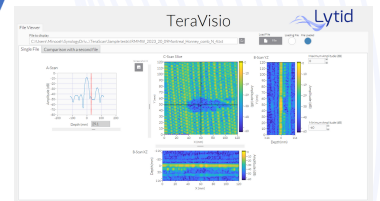
Software : TeraVisio ® 3D

The only dedicated FMCW radar data explorer and  
visualization software suite on the market



Algorithms : High-End Signal Processing

High reliability radar signals processing algorithms for an enhances and  
simplified user experience

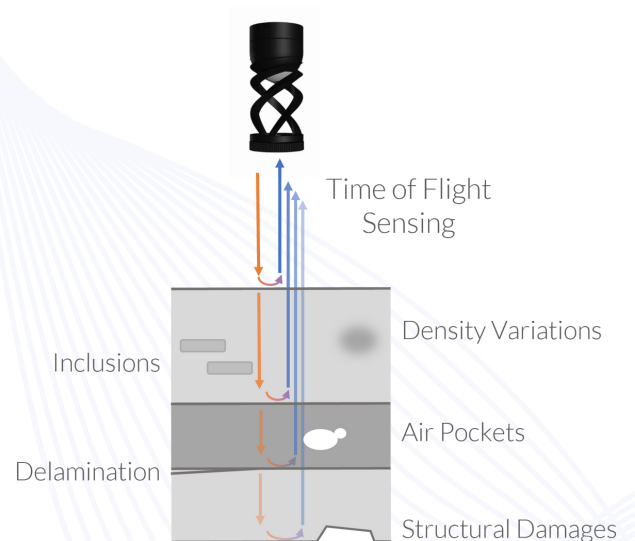


## Non-Destructive Testing with Terahertz

Using our expertise in THz, we have pushed the boundaries of Non-Destructive Testing (NDT), a groundbreaking technology that redefines material inspection without compromise. With benefits inherited from IR and millimeter-waves, THz electromagnetic waves can provide in-depth inspection in a non destructive manner of a wide range of materials ranging from polymers and ceramics, to fibered-based composites featuring complexes geometries such as honeycomb structures.

The advantages of THz combined with the capabilities of Frequency Modulation Continuous Wave (FMCW) radar sensors enable 3D inspection and sensing capabilities.

The principle is based on time of flight (ToF) sensing: the emitted THz waves from radar are directed at the materials being inspected, these waves interact with the material. By measuring the time it takes for the reflected waves and echoes, a 3D image of the material's internal structure is created. This image is then analyzed to detect a wide variety of defects such as density variations, inclusions, delaminations, air pockets and structural damages.



## Highly suitable materials

Polymers - Composites -Foams - Ceramics -Elastomers - Woods...

# Typical samples and applications fields

## Complex Polymer Structures

**Type of defects:** Watertightness of a glue seal & defects within polymer plates structure.

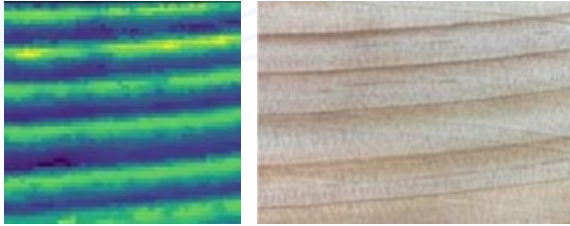
**Additional:** Sample integrity, defect detection, health monitoring & volumetric metrology.



## Wooden Materials and Composites

**Sensing capability:** Density mapping, water content & structural inspection.

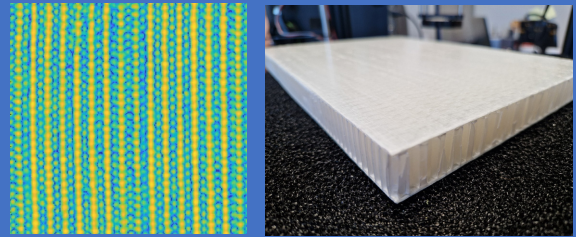
**Additional:** Inhomogeneities detection, fieldbus node dimensioning & inner structure inspection.



## Honeycomb GFRP Composite Structures

**Sensing capability:** Honeycomb structural integrity & GFRP delamination.

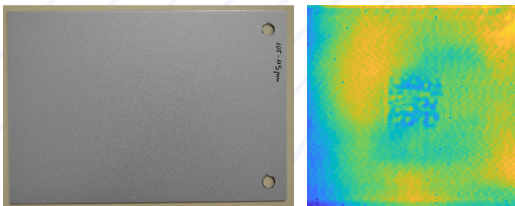
**Additional:** Internal water content, foreign bodies detection & alveoli inspection.



## Corroded Protected Metallic Plate

**Type of defects:** Corrosion marks under protective coating

**Additional:** Coatings delamination, impacts marks & metallic surface quality through protective layers



# TeraScan: your solution for Non-Destructive Testing



THz Radar  
trceiver system



Fully Automated



3D THz scanning  
property



User-friendly

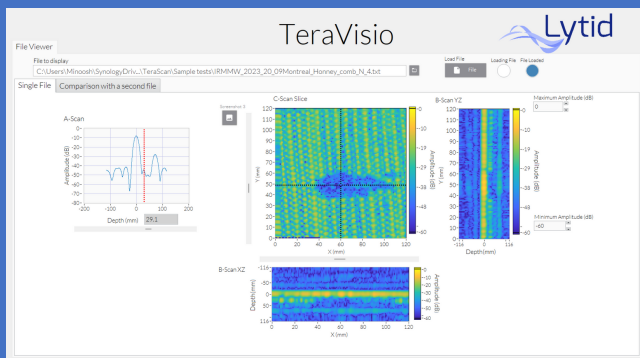
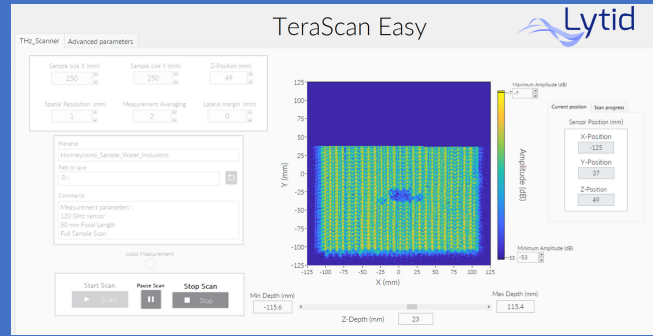


# Plug and play with dedicated software suite

**TeraScan Easy** is a dedicated control software for an optimized TeraScan unit handling and configuration. Its simplified interface ensures a quick evaluation of test samples.

## Features:

Scan size, spatial resolution, sensor automated detection, images pre-visualization, positioning.



**TeraVisio 3D** is design as an intuitive tool to explore, visualize and exploit your 3D THz Radar data in order to perfect new evaluation methods and test procedures.

## Features:

Real time 3D data visualization, A, B and C-scans display, integrated data pre-processing, contrast adjustment.

## Technical specifications

Models/Specs	TeraScan Frame	TeraScan Arm	TeraScan Arm Long Range
Type	x-y-z plotter	Automated 6-axis robotic arm max reach 400 mm	Automated 6-axis robotic arm max reach 700 mm
Imaging area (mm)	Max 300x300	Typ 400x400	Typ 600x600
Minimal step (mm)	0.5	0.25	0.25
Max footprint (H x W x L) (mm)	650x650x650	500x800x800	800x1500x1500

Models/Specs	TeraScan 100	TeraScan 200	TeraScan 300
Frequency (THz)	0.12	0.24	0.3
Minimal lateral resolution (mm)	1.8	0.9	0.7
Working distance (mm)	50, 75, 100, 150	50, 75, 100, 150	50, 75, 100, 150
Acquisition rate (Pixels/s)	40	12.5	12.5
Typ. dynamic range (dB)	>50	>50	>40