



TeraXplor™

Versatile THz System

A customizable Terahertz Spectroscopy System for Pharma, Academic, and Research Institutes.



**Material
Characterization**

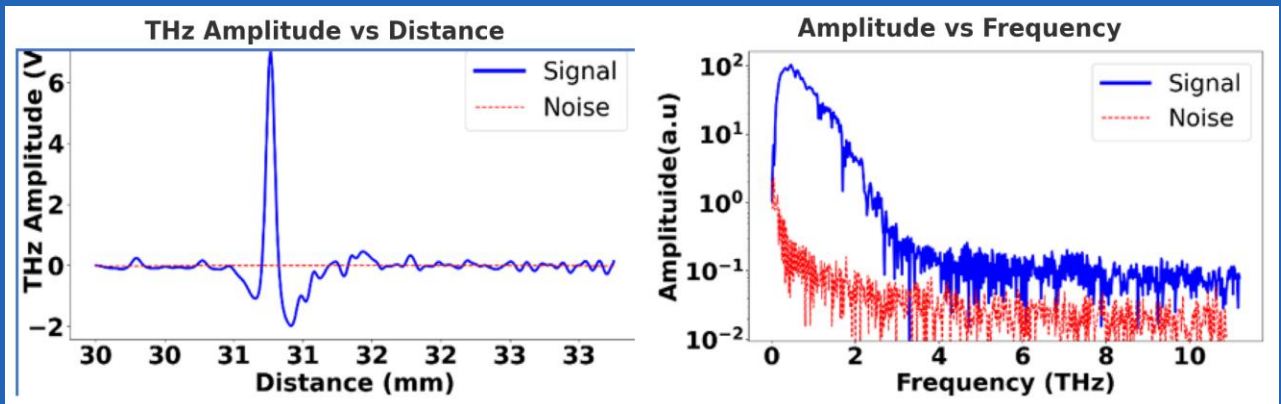


**Time Resolved
Spectroscopy**



**Pharmaceutical
Monitoring**

The TeraXplor™ is a powerful research-based terahertz spectroscopy system that's easy to set up and use. It can be configured to take all sorts of measurements with, including transmission, reflection, and scattering, at any angle configuration. Because it uses a fiber-optic transmitter and detector, you can easily make testing setup in short span of time. All you need to do is connect it to get started – no additional setup is required.



THz-Time-Domain Spectroscopy Applications

- Liquids and gases analysis
- Distinguishing various isomers
- Amplitude and phase information
- Analysing chemicals in tablet form
- Dielectric material characterization
- Determining polymers dielectric properties
- Distinguishing crystalline and amorphous structures

Non-destructive testing (NDT) R&D Applications

- Paint protection coating R&D
- Pharmaceutical drug analysis like PAT
- Composites & Textile quality improvement
- Identifying substances even through plastic pipes and tubes and other packaging
- Determining the layer thicknesses of multi-layer coatings

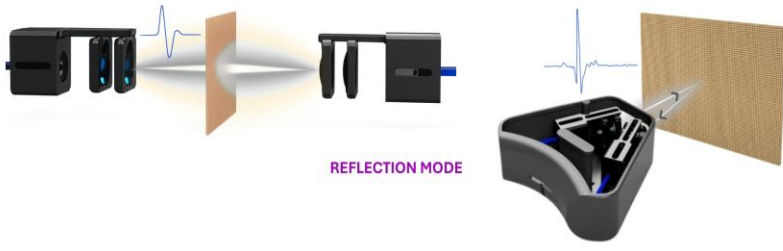
Key Features

- > 4 THz Bandwidth
- > 50 dB Dynamic Range
- 8MP Camera for alignment
- 330 ps, 600 ps, 1000 ps, and 2000 ps*
- Cloud data storage (optional)
- < 16 Hrs support response time
- Reflection & Thru-Transmission Mode
- One GUI for automation and THz measurements.

Lumen lite Basic Features

- System controls
- Pulse & FFT Plot
- File management
- Data saving & Report Generation
- Refractive index & absorption co-efficient

TRANSMISSION MODE



REFLECTION MODE

TeraXplor utilizes transmission and reflection modes to analyze material characteristics such as layer thickness, density, and defects. Its non-destructive Terahertz inspection is ideal for research and quality control of **dielectric materials** for material understanding.

TeraXplor System Specifications

Laser Source	1550 ± 10 nm femtosecond laser
Laser Repetition Rate	100 MHz
THz Technology Type	Time Domain Signal
Spectral Range	0.1 to > 4 THz
THz Emitter / Receiver	InGaAs photoconductive emitter and receiver
Standard Probe Setup	Transmission
THz Focus Type	Collimated, Focused
THz Focal Spot	6 mm, 2 mm
Working Mode	Transmission and Reflection
Dynamic Range	> 50 dB
Average Power	100 μW
Standard Scan Range	330 ps, 600 ps, 1000 ps, and 2000 ps
Scan Speed	5 ps/s
Fast Scan Range	5 ps, 10 ps, 20 ps, 50 ps and 100 ps
Scan Speed	20 Hz
THz Frequency Resolution	< 1.2 GHz
Computer Interface	USB
Integrated Camera	8MP Camera on THz sensor
Compatible Software	Lumen Lite
Optional Accessories	<ul style="list-style-type: none"> • 45° Reflection Probe setup • 2-axis Motorized Stage for Imaging • 180° semi-circular manual stage • Nitrogen Purging Setup • 300 mm x 150 mm Bread board • THz Polarizer • Optical Fiber Cleaning kit • TPX Terahertz Lenses

Power and Dimensions

Operating Voltage	230 VAC, 10 A
Power Consumption	< 500 W
Ambient Atmosphere	< 25 °C, 80% RH
Operating Temperature	18 ° – 40 °C
Controller (L x W x H)	40 cm x 30 cm x 15 cm
Controller Weight	18 Kg
THz Sensor Weight	< 500 Grams

Lumen Lite Imaging Specifications

Travel Range	75 mm x 75mm x 75mm
Resolution X-Axis	< 250 μm*
Resolution Y-Axis	< 250 μm*
Axis Resolution Stage	< 10 μm
Load Capacity	< 3 kg
Actuator	Stepper motor
Sensor Integration	Camera/Depth Sensor/ Laser

*Note: Turnkey system is customizable based on requirements.



INDIA'S FIRST TERAHERTZ ISO 9001 : 2015 CERTIFIED COMPANY. TeraLumen Solutions, with its roots firmly planted in Indian soil, is a beacon of global excellence as a provider of medical-grade Terahertz diagnostic products, industrial-grade Terahertz testing solutions, and research-grade THz systems for a diverse array of markets.

Our mission is to design, develop, and deliver state-of-the-art Terahertz Imaging products and solutions that meet the exacting demands of Non-invasive Inspection across sectors such as Bio-Medical, Aerospace, Automotive, Defense, Energy, Pharma, Semiconductor, and Electronics.

-----MAKING TERAHERTZ ACCESSIBLE AND AFFORDABLE-----

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