

TeraGauge™

A Revolutionary Measurement Gauge Platform Powered by Terahertz Waves

TeTechS' TeraGauge™ is a non-destructive testing measurement gauge powered by terahertz waves. TeraGauge is proven to be perfectly suited for non-contact and precise thickness measurement of opaque and transparent materials such as plastic bottles, preforms, rubber, ceramics, composites, glass, wood, and plastic web and sheet. Specially designed for industrial use, TeraGauge is used by OEMs as an off-line, at-line and in-line measurement gauge. Multi-layer thickness measurement is just one of its many applications and is most pertinent to the plastics manufacturing industry.

Application Examples:

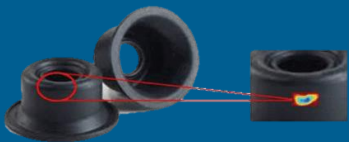
Multi-layer Thickness Measurement of Opaque and Transparent Plastic Bottles and Preforms



Thickness Measurement of Plastic / Foam Web & Sheet



Hidden Void Detection



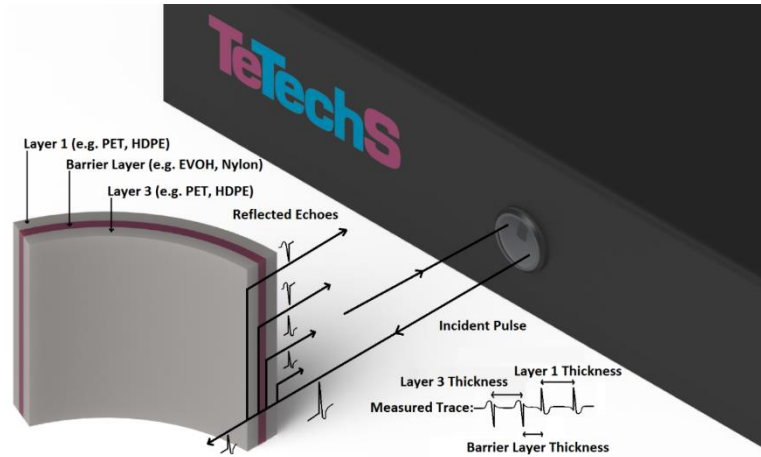
TeraGauge 1000: An all-in-one non-destructive testing measurement gauge powered by terahertz waves



TeraGauge 5000: A compact terahertz powered measurement gauge for in-line applications

Key Features:

- Multi-layer True Thickness Measurement
- Sub-surface Void Detection
- Non-destructive Test
- Measures Opaque and Transparent Materials
- Non-contact, High-speed Measurement
- Non-ionizing Radiation



**TeraGauge Thickness Measurement Principle:
Terahertz Pulse Time-of-Flight**

System Specifications

Parameter	TeraGauge™ 1000	TeraGauge™ 5000
Measurable thickness range	0.02 mm (min)- 5 mm (max) fast scan 0.02 mm (min)- 30 mm (max) slow scan	0.02 mm (min)- 5 mm (max) fast scan 0.02 mm (min)- 30 mm (max) slow scan
Number of layers to be measured	Up to 10 layers (1-3 layers typical)	Up to 10 layers (1-3 layers typical)
Measurement resolution	0.008 mm	0.008 mm
Measurement accuracy	Better than 0.010 mm	Better than 0.010 mm
Measurement repeatability	Better than ±0.005 mm	Better than ±0.010 mm
Measurement speed	300 ms (fast scan mode)	500 ms (fast scan mode)
Scanning speed	25 ms plus (fast scan mode) 4s for 10 mm (slow scan mode)	100 ms plus (fast scan mode) 4s for 10 mm (slow scan mode)
Terahertz spectrum range	0.1 THz – 5 THz	0.1 THz – 3 THz
Terahertz pulse width	0.3 ps	0.6 ps
Beam spot size diameter	2-5 mm	2-5 mm
Sample working distance	76.2 mm ± 5 mm (can be customized)	76.2 mm ± 5 mm (can be customized)
Angular tolerance	± 5 degree	± 5 degree
Data communication interface	Ethernet (standard)	Ethernet (standard)
Data output format	.csv (standard, other formats available) PC with Intel Chipset, OS Microsoft	.csv (standard, other formats available) PC with Intel Chipset, OS Microsoft
System requirement	Windows® 7/10 Professional – 64bits LAN port x1, USB port x1	Windows® 7/10 Professional – 64bits LAN port x1, USB port x1
Cable length	3 m (can be customized)	7.5 m (can be customized)
Power supply	100/120/220/240VAC 50/60Hz	100/120/220/240VAC 50/60Hz
Sensor head dimensions & Weight	432 mm x 381 mm x 127 mm (20.4 kg)	150 mm x 95 mm x 50 mm (1.5kg)
Control box dimensions & Weight	400 mm x 300 mm x 210 mm (14 kg)	500 mm x 157 mm x 562 mm (25kg)