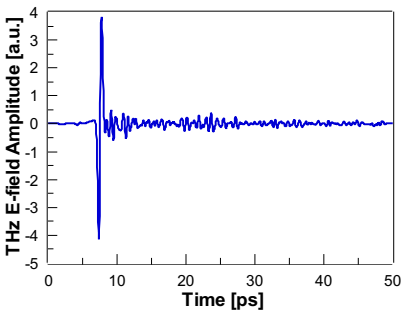
TeraSmart

Compact Industry-Proven THz-TDS System

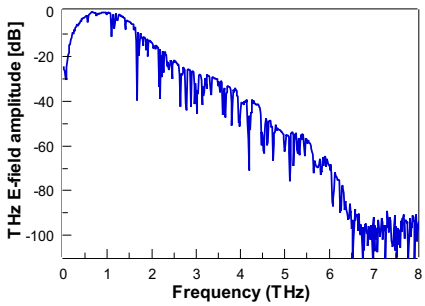
The new compact terahertz spectrometer TeraSmart integrates the latest achievements in broadband Terahertz Time Domain Spectroscopy (THz-TDS) into an easy-to use turnkey solution. It combines Menlo Systems' latest fiber-based femtosecond laser sources featuring our figure 9® mode locking technology with our industry-proven THz components. The modular design based on our OEM laser plattform ELMO ensures a flexible configuration of the system to meet the needs for integration in any industrial or scientific environment. Custom fiber lengths to THz emitter and THz detector are available upon request. Moreover, multibranch configurations are possible, enabling simultaneaous measurements of several emitter/detector pairs using only one fs fiber laser oscillator.
Rounding off the product, a smart TCP socket interface allows platform-independent remote control over ethernet connections for seemles integration in existing experiments or in industrial nondestructive testing (NDT) environments. In short: A turnkey, OEM integrable THz spectrometer engineered for 24/7 operation.

PERFORMANCE DATA

THz pulse measured in ambient air*



THz spectrum showing absorption lines of atmospheric water vapor



THz Bandwidth	>4 THz	in 0.1 sec.
	>6 THz	in 20 sec.
Peak Dynamic Range	>60 dB	in 0.1 sec.
(Spectrum)	>80 dB	in 20 sec.
	>95 dB	in 300 sec.

*Settings: 50 ps scan window measured at 11 Hz scan speed to achieve >6 THz and >95 dB

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HIGHLIGHTS

- All-Integrated Turnkey System
- Compact 19" Rack Solution
- Industry-Proven Delay Unit
- Industry-Proven fs Fiber Laser
- figure 9® Mode Locking
- Multi-Channel Option
- All-Fiber Flexibility
- Ethernet Based Remote Control Engine

KEY SPECIFICATIONS

- >6 THz Bandwidth
- >95 dB Dynamic Range
- Large Scan Range >850 ps, Flexible Setting of Range and Speed
- High Spectral Resolution <1.2 GHz

APPLICATIONS

- Inline Thickness Measurements
- Time Resolved THz Spectroscopy
- Material Characterization
- Non-Destructive Testing (NDT)
- Pharmaceutical Monitoring

FEATURES

- Turnkey Operation
- Broadband Application
- Transmission and Reflection Geometry
- Fiber Coupled THz Antennas for Arrangement Outside the Spectrometer Housing
- Real-Time Measurements
- OEM Integration-Capable
- Modular Platform

OPTIONS

- **Dual-Detection/Multi-Channel**
- **TERA Image**
  Hyperspectral Imaging & Analysis Platform
- **Reflection Head**
  Compact Sensor Unit with Integrated THz optics
- **TeraLyzer**
  Advanced Software for THz Data Analysis
- **Polymer Lens Optics**
- **Custom Fiber Length**

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Compact Industry-Proven THz-TDS System

THZ SPECIFICATIONS

Spectral Range	>6 THz
Dynamic Range	>95 dB
Total Scan Range	>850 ps, flexible scan range and speed, adjustable THz path length
THz Frequency Resolution	<1.2 GHz
Laser Output Ports for THz*	2 fiber-coupled ports, 1560 nm, FC/APC, PM fiber, <90 fs after 2.5 m patch cord
Laser System Repetition Rate	100 MHz

*Allows for optional multichannel extension (up to 4 laser ports).

SYSTEM DIMENSIONS AND WEIGHT

Enclosure	19'' x 3U (448 x 132 x 495 mm^3), 30 kg

SYSTEM COMPONENTS

Optical Components	Integrated femtosecond laser source ELMO**
	Integrated fiber-coupled optomechanical delay line
	External fiber-coupled THz emitter and receiver modules TERA15-FC**
	Compact THz optics with parabolic mirrors
Control Electronics	Transimpedance amplifier
	Integrated PC and software package for measurement and data analysis
	19" screen, keyboard and mouse
	TCP Socket remote control interface

**See product data sheet for detailed specifications

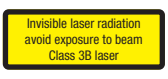
REQUIREMENTS

Operating Voltage	100/115/230 VAC
Frequency	50 to 60 Hz
Power Consumption	<200 W
Cooling Requirements	No water-cooling is required
Operating Temperature	15-35°C
Storage Temperature	0-40°C
Humidity	80% RH noncondensing

ORDERING INFORMATION

Product Code	TeraSmart

Please call for pricing. Specifications are subject to change without notice. Custom modifications are available, please inquire.



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