

# TERA K8

## Time-Domain THz Spectrometer

### Based on 780 nm Femtosecond Fiber Laser

**MenloSystems**

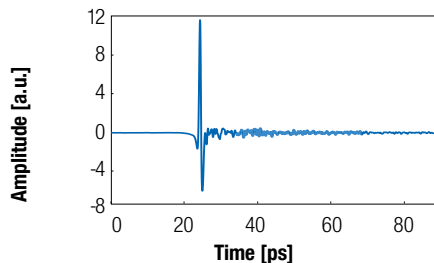


Our assembled terahertz spectrometer TERA K8 provides a complete solution for broadband time-domain THz spectroscopy. The open configuration uses free space optics for laser pulses at around 780 nm and is therefore a flexible approach for scientific applications. The TERA K8 includes the femtosecond laser source, optical light path with delay line, THz wave path with THz emitter, THz detector and THz optics, lock-in-detection electronics, and PC with data acquisition and evaluation software for FFT spectrum,  $n$  and  $\alpha$  extraction.

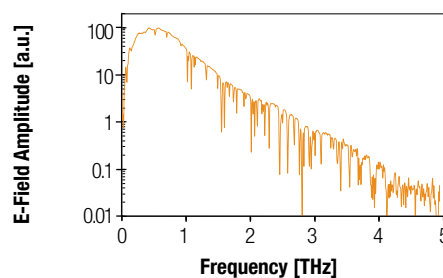
For THz imaging applications our automated extension unit TERA Image can be integrated.

#### PERFORMANCE DATA

**Measured THz pulse**  
(in ambient atmosphere)



**Calculated THz spectrum**



#### KEY SPECIFICATIONS

- Scientific Platform
- Scan Range >300 ps
- Scan Mode: Rapid / Step Scan
- Flexible Setting of Scanning Range and Speed

#### APPLICATIONS

- Time Resolved THz Spectroscopy
- Chemical Fingerprinting
- Material Characterization
- THz Imaging
- THz-TDS with Optical Excitation

#### FEATURES

- Broadband Application
- Open Configuration for Customer Specific Solutions
- Supports Stand-Alone fs Laser Applications

#### OPTIONS

- **TERA Image**  
Automated XY Translation Stage for THz Imaging
- **THz Pump-Probe**  
for Time-Resolved Optical Pump-THz-Probe Spectroscopy
- **Specific Delay Line Length**  
Wide Range of Delay Line Length
- **TeraLyzer**  
Advanced Software for Thin Sample Analysis and Parameter Extraction
- **Parabolic Mirrors**  
Off-Axis for Highest Bandwidth

# TERA K8



## Time-Domain THz Spectrometer

### THZ SPECIFICATIONS

THz Antenna Model	TERA 8-1*
Spectral Range	>3.5 THz, for higher bandwidth ask for metal mirror option
Dynamic Range	>65 dB
Total Scan Range	>300 ps, flexible setting of scanning range and speed
THz Frequency Resolution	<3 GHz
Laser Output Port for THz	Free space, 780 nm, <120 fs
Laser System Repetition Rate	100 MHz

\*See product data sheet for detailed specifications.

### SYSTEM DIMENSIONS AND WEIGHT

Optomechanical Setup	920 x 460 x 190 mm <sup>3</sup> , 44 kg
THz Control Electronics	448 x 132 x 550 mm <sup>3</sup> , 10 kg

### SYSTEM COMPONENTS

Optical Breadboard	Femtosecond laser source C-Fiber 780
	Optomechanical delay line
	THz emitter and receiver antennas
	THz TPX polymer lenses
TERA-C Control Electronics	Electrical chopper for emitter antenna, 0.1 - 100 kHz sine wave or square (typical: 75 kHz)
	Controller for delay line
	Integrated transimpedance amplifier
	Data acquisition platform, 16 Bit, 250 kS/s
	PC and software package for measurement and data analysis

### ORDERING INFORMATION

Product Code	TERA K8	TERA K8-NL
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Please call for pricing. Specifications are subject to change without notice. Custom modifications are available, please inquire.



Invisible laser radiation  
avoid exposure to beam  
Class 3B laser

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