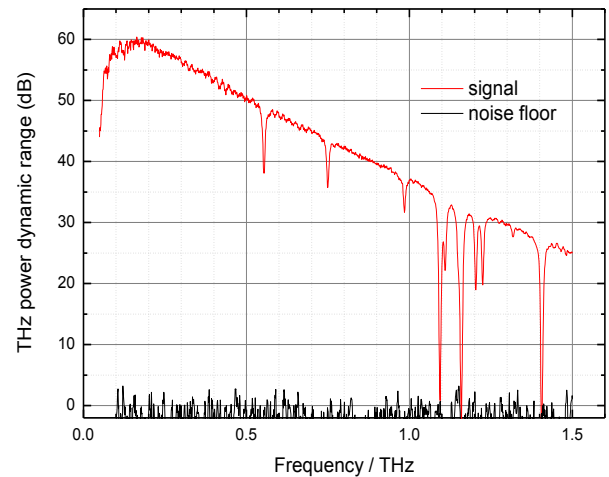


CW Spectra 400

Continuous Wave (CW) terahertz spectrometer with imaging capability



Product features

- This system utilizes TeraView's proprietary GaAs-based photomixers and optical fibres to provide a robust and flexible system
- Fully tuneable CW terahertz source
- Turn-key system, ready to use for spectroscopy and imaging
- Avoids instabilities and need for constant alignment which plague component based 'kit' systems and open optical breadboard systems
- No safety concerns from open near infrared beam paths
- Proven imaging and spectral analysis software supplied
- Option for terahertz imaging at user-selectable frequency ranges
- Fibre fed emitter and detector can be used in transmission or reflection modes
- Cartridge housings come with a 50 mm focal length lens and are designed to be used on external optical benches
- Spectral Range 50 GHz to 1500 GHz Option to extend to 2000 GHz
- Ambient temperature operation
- Option to add a gantry for imaging of large objects

Applications of the CW terahertz system include

- High resolution gas analysis
- High frequency dielectric measurements of electronic, meta-materials
- Characterisation of tissue and biological materials
- Solid state materials characterisation – hydrates, crystalline states of materials
- Airborne agent detection
- Non destructive testing and imaging for industrial applications - cracks, delaminations, inclusions and defects
- Security and Defence applications

TeraView

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Continuous Wave (CW) terahertz spectrometer with imaging capability

Product Description

The CW Spectra 400 is the latest terahertz spectrometer from TeraView. This standalone unit generates a continuous terahertz wave (CW), tunable in frequency, which is emitted and detected via an appropriate set of proprietary, fibre-fed terahertz photomixers. By the addition of suitable supports, gantries or other units this CW Spectra 400 is capable of performing spectroscopy and imaging on a range of objects and materials.



Technical Specification

Feature	Specification	Comment
Frequency Range	50 GHz to 1500 GHz (1.6 cm ⁻¹ - 50 cm ⁻¹)	Option to extend to 300 GHz to 2000 GHz
Frequency Resolution*	100 MHz	Option to improve to 4 MHz
Spectroscopic Scan time	Typical 8 min	2 min – 20 min
Output Power in 100 – 500 GHz range	700 nW @ 100 GHz 400 nW @ 500 GHz 200 nW @ 1000 GHz	Indicative numbers
Signal to noise in 100 – 1000 GHz range	60 dB @ 100 GHz 50 dB @ 500 GHz 30 dB @ 1000 GHz	
Beam Profile	Gaussian	
6dB beam size at 1000 GHz with F=50mm lens	3.6mm	Other options also available
Beam Polarisation	95% Linear	
Electric Power	110 or 240 V AC	

*Frequency resolution: spacing between two nearest frequency data points (non-interpolated) must be 100MHz or smaller throughout the entire frequency range.

Environmental

Dimensions	767 mm high, 533 mm wide, 600 mm deep
Weight	Circa 100 kg
Operating Temperature**	18 °C(64F) to 30 °C(86F)
Operating Humidity	20-80% non-condensing

**For best performance during long-term measurements, ambient temperature variations must not exceed 1 °C (0.8 °F) in a 1-hour period and 2 °C (3.6 °F) over an 8-hour period.



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