

TeraPulse 4000

Terahertz (THz) spectrometer and imaging system with modular sample compartment



Key Features

- Turn-key operation based on proven technology operated in over 30 countries
- Market leading signal-to-noise within a smaller, lighter, portable unit
- THz spectroscopy and imaging within a single desk top unit
- Modular design for ease of maintenance
- Spectral range 0.06 – 4 THz. Option to extend to 7 THz
- Option for fibre based units to plug into an off-core sample compartment
- Option for IP65 and IP67 compliance
- Option to control from tablet or PC

Product Description

With units installed in over 30 countries the TeraPulse 4000 builds on TeraView's World leading success. This portable bench top unit features both imaging and spectroscopy within a single box.

TeraView's proprietary semiconductor technology gives the TeraPulse 4000 a market leading signal-to-noise specification. As standard, the TeraPulse offers a bandwidth of 60 GHz to 4 THz; with an option to extend this up to 7 THz.

The unit's modular design simplifies any maintenance and is compatible with TeraView's extensive and unique range of accessories. Optionally, the unit may be housed in an industrial casing for IP65 and IP67 compliance.

Ordering Information

Basic Instrument

P/N 030-9400

TeraPulse 4000 system. THz spectrometer with modular sample compartment for transmission spectroscopy

P/N 030-9403

TeraPulse 4000 system with external fibre fed cartridge devices

Modules

P/N 030-9419

35" Attenuated Total Reflectance (ATR) Module.

P/N 030-9420

Specular Reflection Module

P/N 030-9421

Heated Cell Module

P/N 030-9425

Variable Temperature Cell Module

P/N 030-9428

Cryostat Transmission Module

P/N 030-9429

Cryostat Reflection Module

P/N 030-9430

Reflectance Imaging Module (RIM)

P/N 030-9431

XY Scanner Module

P/N 030-9433

Large Format Gantry Scanner
(Requires system with external fibre)

Technical Specifications

THz Pulsed Spectrometer

Terahertz source	Laser gated photo-conductive semiconductor emitter
Terahertz detector	Laser gated photo-conductive semiconductor receiver
Laser	Ultra short pulse fibre laser
Spectral range	0.06 THz –4 THz (2 cm^{-1} – 133 cm^{-1})
Dynamic range	> 4 OD @ 0.9 THz (30 cm^{-1}) in transmission
Scan range	1600 ps
RapidScan	30 scans/second with 1.2 cm^{-1} spectral resolution

Signal-to-noise	THz	Signal/dB
Transmission	0.15	65
	0.3	70
	0.91	70
	1.52	60
	2.58	43
ATR	3.2	30
	3.5	19
	0.15	50
	0.3	58
	0.91	57
	1.52	49
	2.58	30

Sample modules

Purge	Nitrogen (N_2) purged (or evacuated) sample compartment
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ATR modules (Optional)

Purge	Nitrogen (N_2) purged
Optics	Silicon: 35° incident angle
Sample size	As little as 1 mg solid sample

Integrated computer

Computer	On board control PC
Network/data transfer	External USB port

Environmental

Dimensions	702mm (w) 645 (d) 468 (h)
Weight	45 kg
Power requirements	90 VAC to 250 VAC, 47 to 63Hz single phase
Power consumption	300 VA
Operating temperature	18°C (64°F) - 30°C (86°F)
Operating humidity (non condensing)	20-80%

