



FTIR SPECTROMETER

QualiFTIR-5000

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The QualiFTIR-5000 FTIR Spectrometer is a cutting-edge instrument **designed for high-resolution infrared spectral analysis** of solids, liquids, and gases. Utilizing **Fourier-transform infrared spectroscopy (FTIR)**, it captures and processes a broad spectral range with superior accuracy compared to dispersive spectrometers.

Built on a solid modular optical system, the QualiFTIR-5000 features a cube-corner Michelson interferometer with fixed mirror alignment, ensuring long-term stability and high sensitivity. The instrument's compact structure, cast aluminum base, and partitioned heat dissipation enhance mechanical robustness, minimizing thermal and vibrational interference for reliable performance.

With its high-performance infrared source, precise electronic system, and superior interference resistance, the QualiFTIR-5000 is an ideal choice for pharmaceutical, polymer, chemical, and industrial material analysis.



FEATURES/ADVANTAGES



High Sensitivity & Long-Term Stability:

The cube-corner Michelson interferometer with fixed mirror alignment ensures long-term optical stability and high sensitivity. Gold-coated reflecting mirrors maximize light throughput for precise spectral detection.



Modular Optical Design:

The cast aluminum base and compact modular structure improve mechanical robustness and heat dissipation. This reduces deformation, ensuring consistent spectral accuracy even in varying environmental conditions.



Multi-Detector Compatibility:

Supports pyroelectric, temperature-stabilized pyroelectric, and MCT semiconductor refrigeration detectors, providing flexibility for different material analysis requirements.



Intelligent Real-Time Monitoring:

Built-in real-time diagnostics continuously track performance and communication status, allowing early issue detection and reducing downtime for uninterrupted operation.



Advanced Infrared Source System:

A high-intensity IR source module with a reflex sphere design provides stable and uniform infrared radiation. The isolated IR source and efficient heat dissipation system enhance thermal stability and minimize optical interference.



Comprehensive Software & Compliance:

The FTOS Software Suite features powerful data processing, 21 IR libraries, and automated reporting. Optional FDA CFR 21 Part 11 Compliance ensures secure data management for regulated industries.



Flexible Connectivity:

Equipped with Ethernet and Wi-Fi dual-mode connectivity, allowing remote operation, cloud computing, and network-based control for seamless laboratory integration.



Electromagnetic Interference Protection & OS Compatibility:

Designed to minimize electromagnetic interference, ensuring accurate results. Fully compatible with all Windows OS versions, including Windows 11, 10, 8, and 7.

TECHNICAL SPECIFICATIONS

Specifications	Details
Interferometer	Cube-corner Michelson interferometer
Beam Splitter	Multilayer Ge coated KBr
Detector	High sensitivity pyroelectric module (standard)
	Temperature-stabilized, MCT detector (optional)
IR Source	High intensity, long lifetime, air-cooled IR source
Wavenumber Range	7800 cm ⁻¹ ~ 350 cm ⁻¹
Resolution	0.85 cm ⁻¹
Signal to Noise Ratio	Better than 20,000:1 (RMS value, at 2100 cm ⁻¹ ~ 2000 cm ⁻¹ or 2100 cm ⁻¹ ~ 2200 cm ⁻¹ , resolution: 4 cm ⁻¹ , detector: pyroelectric, 1 minute data collection)
Wavenumber Accuracy	±0.01 cm ⁻¹
Scanning Speed	Microprocessor control, different scanning speed selectable
Software	MainFTOS Suite software workstation, compatible with all Windows OS versions
	Various specialized functional software modules (optional)
Communication	Ethernet interface & WiFi wireless communication
Data Output	Standard data format, report generation, and output
Status Diagnosis	Power-on self-check, real-time temperature and humidity monitoring and reminders
Certification	FDA 21 CFR Part 11 compliance, IQ/OQ/PQ (Optional)
Environment Conditions	Temperature: 10°C ~ 30°C, Humidity: less than 60%
Voltage	Universal between 110V ~ 220V
Dimensions & Weight	490 × 420 × 240 mm, 23.2 kg (51.14 lbs)
Accessories	Transmission sample holder (Standard); Optional accessories such as gas cell, liquid cell, Diffused/Specular Reflection, single/multi reflection ATR, etc.



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