

FTIR-Mobile

Portable Fourier Transform Infrared Spectrometer



Instrument Overview:

The FTIR-Mobile is a domestically developed Fourier Transform Infrared (FTIR) spectrometer featuring proprietary intellectual property rights from Shanghai Yuke. Equipped with a lithium battery and a tablet computer, the entire unit and its accessories are housed in a rugged, portable case designed to withstand high temperatures, humidity, corrosion, and impact, meeting the IP67 waterproof standard. Highly portable, it is suitable for use in various settings—including vehicle-mounted, outdoor, and public-space inspections—and is widely utilized in fields such as public security, the chemical industry, and environmental protection.

Product Features:

(1) High-precision optical system

Light source: A high-efficiency, air-cooled infrared source paired with a U-shaped heat-dissipation bridge ensures uniform and stable infrared radiation; efficient heat dissipation guarantees optical path stability, with a background spectral energy distribution exceeding 30%.

Laser: Employs a semiconductor laser with an integrated automatic temperature control system, featuring long service life and high stability.

Beam splitter: Outdoor-grade, moisture-resistant zinc selenide (ZnSe) beam splitter.



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Detector: Imported, moisture-resistant, and highly stable KRS-5 encapsulated DLATGS detector designed for outdoor use.

Interferometer: Utilizes imported low-damping slide rails and gold-plated corner-cube mirrors to achieve high-throughput optical transmission, ensuring the integrity and stability of spectral data acquisition.

Optical bench: Integrated design with precision molded construction; key components are positioned in a single step without the need for subsequent adjustment, significantly enhancing the instrument's mechanical stability and long-term reliability.

(2) High-performance electronic system

Signal acquisition system: Features a high-speed DSP and a 24-bit high-speed A/D converter, combined with an automatic gain signal acquisition circuit, to achieve high-speed, precise, and fully automated signal acquisition.

Equipped with an EMC module: Prevents interference from external electromagnetic environments and other electronic devices, ensuring the capability to detect weak signals and providing robust, high-speed, anti-interference performance. Optimized for outdoor testing applications;

(3) Comprehensive outdoor support system

Carrying case: High-strength engineering-grade PP material; resistant to high temperatures, moisture, corrosion, and impact; IP67 waterproof rating;

Power supply: Dual power system (external power + high-performance lithium battery) ensuring over 4 hours of continuous outdoor operation;

Computing system: Includes a 12.3-inch tablet for convenient, rapid outdoor operation;

(4) Powerful testing software

Features Chinese-language spectral annotation, spectral search and comparison, self-diagnosis, custom spectral addition, and spectral matching analysis; includes tools for peak marking, spectral arithmetic (e.g., difference spectra), and smoothing; includes tools for measuring peak height and area; uses standard file formats and offers free lifetime upgrades;

Includes a library of 200,000 common compound spectra; supports optional, customized quantitative analysis modules/algorithms;

Supports expansion with third-party spectral libraries and the creation of custom user libraries;

Database-driven software workstation; includes an audit trail system for access control and usage tracking;

(5) Diverse accessory options

Simple accessory replacement and setup; supports a wide range of infrared spectroscopy accessories, such as ATR units, solid-state pelletizing kits, liquid cells, etc.;

| Key Product Specifications:

Model: FTIR-Mobile

Spectral Range: 5500–520 cm^{-1}

Resolution: Better than 1.0 cm^{-1}

Detector: Imported, highly stable, moisture-resistant DLATGS detector (KRS-5 encapsulated, designed for outdoor use)



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Linearity: < 0.1% T

Beam Splitter: Imported moisture-resistant Zinc Selenide (ZnSe) beam splitter

Scan Speed: Selectable via computer control

Light Source: Long-life, high-intensity, air-cooled infrared source

Signal-to-Noise Ratio: 30,000:1

(Peak-to-Peak value; 4 cm⁻¹ resolution; 1-minute background and sample scans; measured at 2100 cm⁻¹)