



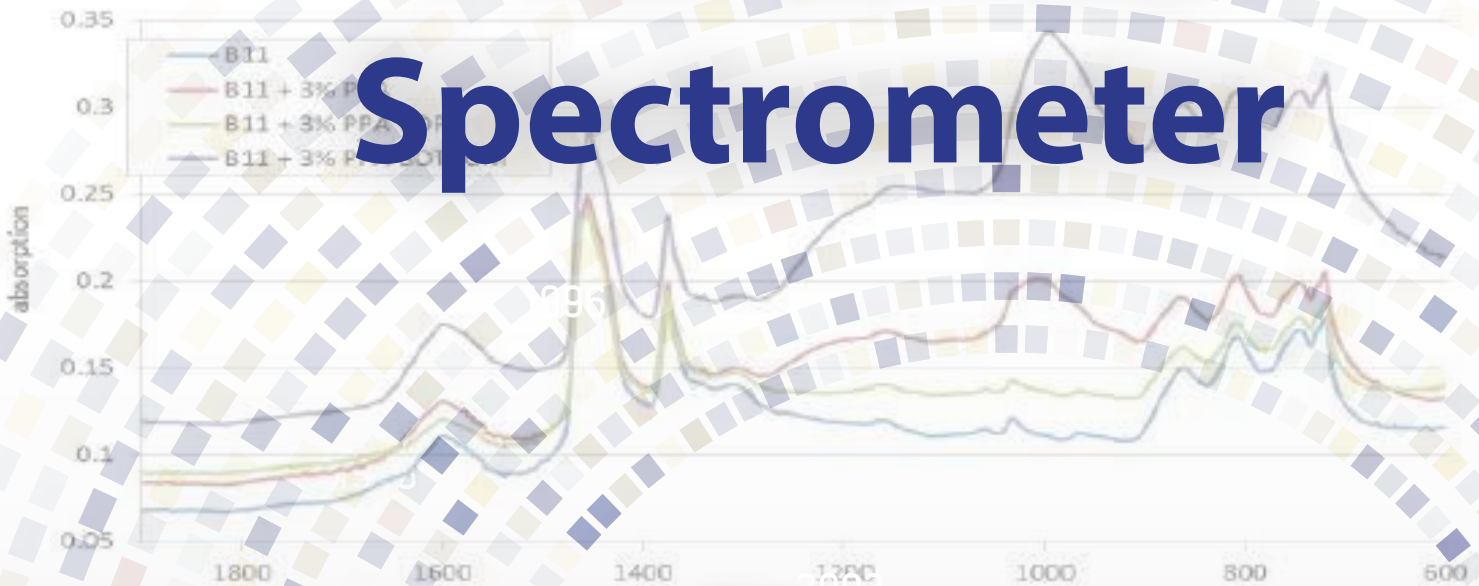
**Multiplelabs**<sup>™</sup>  
Turnkey Laboratories Solutions



**Analytical**<sup>®</sup>  
Technologies Limited

# FTIR 3010iS

# Spectrometer

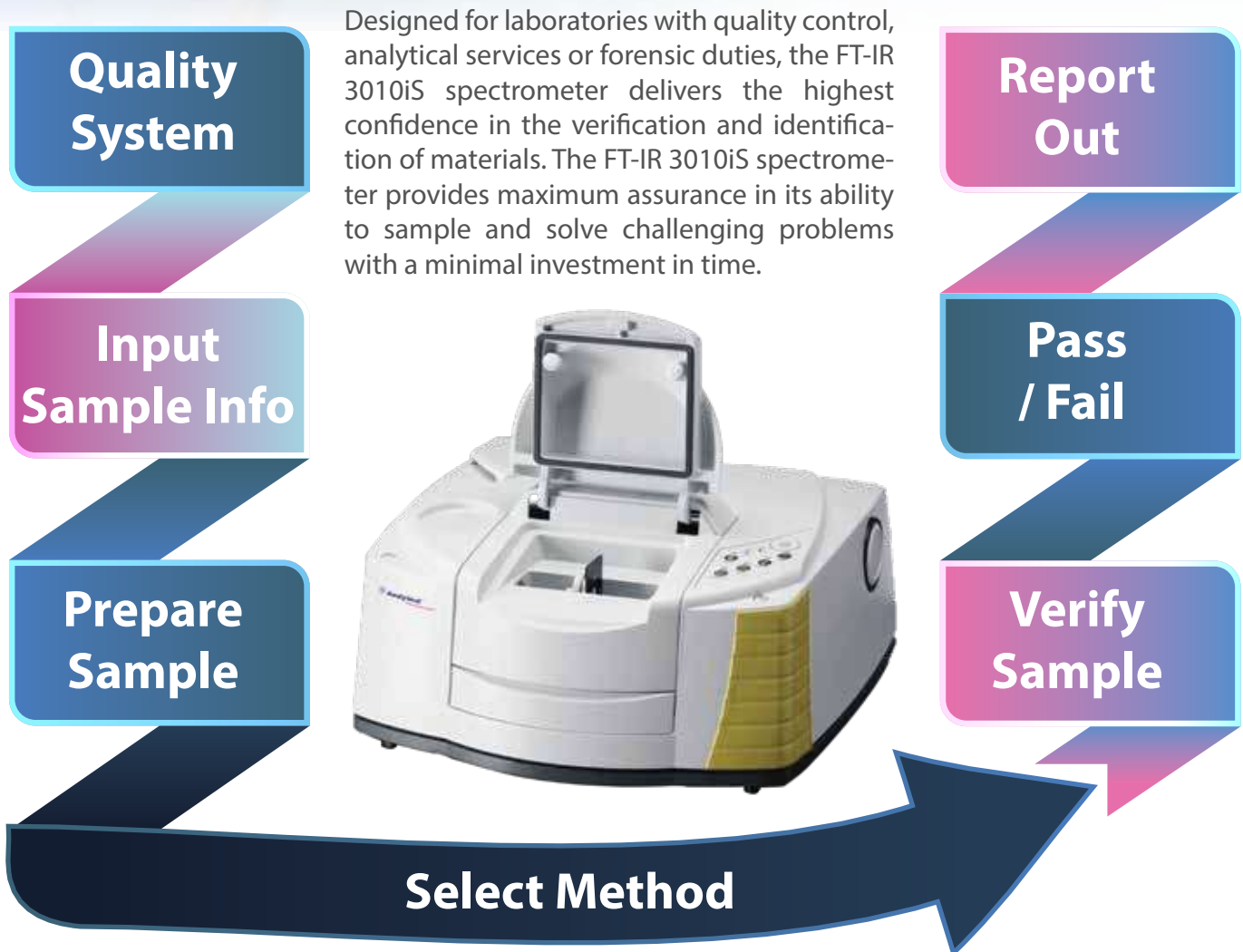


EPC / PRODUCTS / APPLICATION / SOFTWARE / ACCESSORIES / CONSUMABLES / SERVICES

**Analytical Technologies Limited**

An ISO 9001 Certified Company

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## Features

The FT-IR 3010iS spectrometer includes features that validate the instrumental performance, verify the quality of materials, create SOPs and suitability tests, identify unknowns or mixtures, and quantify mixture ingredients. The FT-IR 3010iS spectrometer has been developed especially for the material characterization process, from loading sample information to final report. Users of any skill level can operate the system, with many tasks completed with one click.

The FT-IR 3010iS spectrometer has been designed for the ease of use and reliability required by laboratories with heavy workloads.

The FT-IR 3010iS spectrometer is built to inspire a high level of customer confidence. All instrument specifications are factory verified to ensure each unit meets our rigorous quality standards. Specifications are:

- Certified on each instrument before leaving the manufacturing floor.
- Representative of actual instrument performance, not “typical” or “achievable”
- Not reliant on artificial data processing or manipulations

- Automate method selection for error-free operation
- Integrated scan button and SOP builder, for simple user interface, consistency and productivity
- FT-IR 3010iS technology for simple accessory exchange and experimental conditions setup
- Material verification package with standard and high sensitivity correlation algorithm, to fit variability of tested materials
- Innovative multi-component analysis allows identification of principal ingredients of mixtures, enabling every laboratory to troubleshoot contamination problems with confidence

## Optical system

The sealed and desiccated optical unit protects the instrument from humidity and solvent vapors. A self-compensating, dynamically aligned interferometer removes any tilt and shear scanning error, automatically tunes the instrument for best throughput and provides analysis speed for real time survey or screening. Diamond turned, pinned-in-place, alignment-free optics guarantee long life system performance with minimum maintenance.

### Detectors

- Fast recovery deuterated triglycine sulfate (DTGS) detector
- Liquid-nitrogen-cooled mercury cadmium telluride (MCT) detector

### Source

- Mid-infrared Ever-Glo; user replaceable from sample compartment
- Tungsten/halogen; user replaceable from sample compartment

### Beamsplitter

- KBr/Ge mid-infrared optimized
- XT-KBr/Ge extended range mid-infrared

### Humidity and vapor protection

- Sealed and desiccated optical bench with protective coating on KBr windows
- Rechargeable desiccant cartridges
- Humidity indicator
- Multi-zone pressure system for optional purge

### Frequency calibration

- HeNe laser tube
- Does not require software optimization or calibration



## Spectrometer performance verification

- Integrated validation wheel with NG-11 and NIST traceable polystyrene film standards, serialized
- System Performance Verification (SPV) software and programmable tasks interface

## External beam options

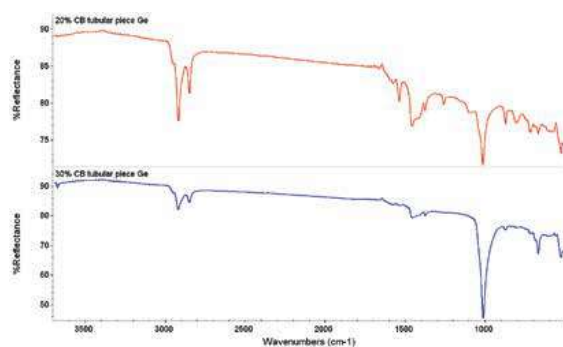
- Optional external beam for infrared microscopes or external FT-IR 3010iS module
- The FT-IR 3010iZ module can be used with the NIR integrating sphere (InGaAs detector), TGA interface or any other mid-infrared accessories, and can be equipped with a DTGS or MCT detector

## Electrical Features

- 24-bit analog to digital converter; digital signal processor for spectrometer monitoring and software integrated controls
- Integrated scan button panel including LED control status for source, laser and interferometer
- USB 2.0 high-speed bidirectional communication
- Smart Accessory automatic recognition, parameter setting and spectral quality monitoring
- Enhanced synchronization protocol continuously monitors power supply, laser, source and detector

## Software

- Collect, set-up parameters and spectral preview, customizable toolbar and menu options
- Display capabilities: Zoom, roll, stack, overlay, offset and interactive display mode tools
- Data processing: Baseline correction (automatic and manual), smooth, blank and straight line, first and second derivative, curve fitting, spectral math, subtract (manual and automatic)
- Data conversion and corrections: Kubelka Munk, Kramers Kronig, Photoacoustic, ATR correction including settings for crystal material, reflections, angle and sample refractive index
- Spectral Search: High-resolution library generation, customizable information fields, single or multi-region search, library management, standard libraries (1400 spectra)
- Spectral peak picking, audit trails history log, multi-format converters for J-camp DX other vendors' spectral files and user libraries
- Spectral groups statistical analysis: Variance, average, and range
- Peak analysis tools: Peak area, peak height, cursor, peak text annotation
- Automatic atmospheric suppression (no standards needed) to remove H<sub>2</sub>O and CO<sub>2</sub> interferences



- SOP builder (task-driven compiler) to execute through Integrated Scan Button panel (FT-IR 3010iS spectrometer compiler and reader)
- spectrum-to-spectrum or spectrum-to-multiple spectra QC/QA verification; includes correlation, high sensitivity compare, customizable pass/fail threshold
- Quantitative and discriminant analysis package including:
  - Beer-Lambert calibration and prediction (peak height or area integration)
  - Classical Least Squares calibration and prediction
  - Discriminant analysis, Partial Least Squares (PLS) and Principal Component Analysis (PCR) prediction
- Infrared spectral interpretation tool and online guide.

## Optical system

- The FT-IR 3010iS spectrometer is compatible with our extensive line of Smart Accessories specialized for quantitative analysis, reaction studies, surface and thin film measurements.
- Simple accessory exchange and experiment setup
- Maintain proper experimental conditions and pre-set parameters
- Automatic performance verification

## Technical specifications

Spectrometer	FT-IR 3010iS
Spectral range	7800–350 cm <sup>-1</sup> optimized, mid-infrared KBr beamsplitter 11000–375 cm <sup>-1</sup> XT KBr extended range mid-infrared optics
Signal-to-noise	1 minute: 50,000:1 (peak to peak)
Wavelength precision	0.0008 cm <sup>-1</sup> at 2000 cm <sup>-1</sup>
Wavelength accuracy	0.02 cm <sup>-1</sup> at 2000 cm <sup>-1</sup>
Collection speed	variable from 0.16 cm/sec to 2.5 cm/sec; suitable to slow responsivity (PAS) and high-sensitivity (MCT) detectors
Maximum speed	40 spectra per second at 16 cm <sup>-1</sup> resolution, individually collected and stored
Spectral resolution	better than 0.4 cm <sup>-1</sup>
Ordinate linearity (ASTM E1421)	<0.1 %T deviation from 0.0 %T
Dimensions (W × D × H)	550 × 570 × 250 mm (21.7 × 22.4 × 9.8 in.)
Weight	39 Kg (86 lb)



Attenuated Total Reflectance (ATR) is a powerful sampling technique that virtually eliminates sample preparation. The Thermo Scientific Smart iTX ATR sampling accessory for the FT-IR 3010iS spectrometer offers outstanding performance and universal sampling.

More than 60% of FTIR users get their results by using a single reflection ATR. The popular Smart iTX sampling accessory delivers exceptional energy throughput, which allows you to acquire high-quality spectra in seconds. The interchangeable crystals meet your needs for flexibility, ease of cleaning and reproducibility of data.

- Multiple crystal options make it possible to sample virtually any liquid or solid
- Automatic recognition, collection parameters, spectral quality check
- Factory-calibrated pressure tower ensures spectral uniformity
- Easy to clean and quickly load your next sample
- Maximum durability; withstand hard and harsh samples with diamond ATR
- OMNIC ATR correction allows spectral search without dedicated ATR libraries
- Qualification available for diamond crystals

## Maximize productivity

- Configure the spectrometer for routine daily use with the main sample compartment
- Eliminate accessory changeover delays and complete sample analysis faster

### Ensure quality results

- Optimized performance of dedicated accessories with the flexibility to meet changing needs quickly

### Easily comply

- Independently validate each module with our Thermo Scientific™ ValPro™ system qualification package



▶▶ **Servicing, Validation, Trainings and Preventive Maintenance :**

- Servicing : We have team of service engineers who can attend to any make of instrument promptly @the most affordable cost.
- Trainings :We also take up preventive maintenance to reduce downtime of instrument's Trainings.
- AMC's/CMC : We offer user training both in-House and at customer sites on instrument principles, operations, troubleshooting.
- Validations : We have protocols for carrying out periodic Validations as per GLP/ GMP/USFDA norms.
- Instruments : We offer instruments/Renting Services Modules like pumps, detector etc. on Rent.



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Analytical Technologies is synonymous for offering technologies for doing analysis and is the Fastest Growing Global Brand having presence in at least 96 countries across the globe. Analytical Technologies Limited is an ISO :9001 Certified Company engaged in Designing, Manufacturing, Marketing & providing Services for the Analytical, Chromatography, Spectroscopy, Bio Technology, Bio Medical, Clinical Diagnostics, Material Science & General Laboratory Instrumentation. Analytical Technologies, India has across the Country operations with at least 4 Regional Offices, 6 Branch Offices & Service Centers. Distributors & Channel partners worldwide.

▶▶ **Our Products & Technologies**



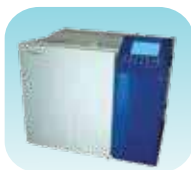
UV/VIS Spectro 2080+ Double Beam



Infra FTIR



Optima Gas Chromatograph 3007



Optima Gas Chromatograph 2979 Plus



Flash Chromatograph



Atomic Absorption Spectrophotometer



Liquid Partical Counter



Optical Emission Spectrophotometer



DSC/TGA



Semi Auto Bio Chemistry Analyzer



HEMA 2062 Hematology Analyzer



Micro Plate Reader/Washer



URINOVA 2800 Urine Analyzer



Total Organic Carbon 3800



Fully Automated CLIA



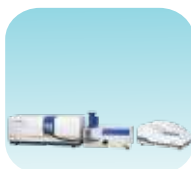
NOVA-2100 Chemistry Analyzer



PCR/Gradient PCR/ RTPCR



TOC Analyzer



Laser Particle Size Analyzer



Ion Chromatograph



Water purification system

▶▶ Regulatory compliances



▶▶ Corporate Social Responsibility

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1. Research & Innovation Scientist's awards / QC Professional Award : Quality life is possible by innovation only and the innovation is possible by research only, hence ANALYTICAL FOUNDATION is committed to identify such personalities for their contributions across various field of Science and Technology and awarding them yearly. To participate for award, send us your details of research / testing / publication at [info@analyticalfoundation.org](mailto:info@analyticalfoundation.org)

2. Improving quality of life by offering YOGA Training courses, Work shops / Seminars etc.

3. ANALYTICAL FOUNDATION aims to DETOXYFY human minds, souls and body by means of Yoga, Meditation, Ayurveda, Health Care, Awards, Media, Events, Camps etc.

▶▶ Reach us @



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