Datasheet

Thermo Scientific Nicolet Apex FTIR Spectrometer

Innovation redefined. Built to inspire.

From routine quality control to research and development, the Thermo Scientific™ Nicolet™ Apex FTIR Spectrometer is built to meet the diverse needs of laboratories. Whether it's improving productivity, ensuring precision, or complying with extensive regulations, the Apex spectrometer provides comprehensive support in all aspects.

With the Nicolet Apex FTIR Spectrometer, users can benefit from

- Simple and intuitive Thermo Scientific™ OMNIC™ Paradigm Software.
- Analyze data from anywhere, enhancing convenience and flexibility with Thermo Scientific™ OMNIC™ Anywhere Software.
- Worry-free ownership experience by constantly monitoring the performance of critical hardware components instrument health monitoring service.
- Access to the largest and most advanced FTIR library collection.

Designed for maximum productivity

- A 10-year warranty on the interferometer, laser, and IR source ensures peace of mind—for a decade to come.
- Multi-component analysis software identifies principal ingredients in mixtures, allowing laboratories to troubleshoot contamination problems or conduct failure analysis.
- Simplified validation workflows equips users with an audit manager and streamlined pharmacopeia compliant methods (Ph. Eur., USP, JP, and CP).
- Cloud-based Thermo Scientific OMNIC Anywhere Software gives students and scientists the ability to analyze their data anywhere, anytime, on any device.
- Thermo Scientific™ Nicolet™ Smart™ Accessory technology provides simple accessory exchange, automatic experimental conditions setup, and convenient accessory purge.



The Nicolet Apex FTIR Spectrometer is specifically designed for laboratories with analytical services, quality control, pharmaceutical, forensic or research applications, providing the highest level of confidence in material verification and identification. It is equipped with the Thermo Scientific™ LightDrive™ Optical Engine, offering next-generation performance. The spectrometer also comes with a standard 10-year warranty on all critical optical components, ensuring long-term reliability.

With its advanced features, the Nicolet Apex FTIR Spectrometer enables users to validate instrument performance, quickly verify material quality, create and execute workflows, identify unknowns or mixtures, and quantify mixture ingredients. The system is user-friendly and can be operated by users of any skill level, with many tasks being completed in just one step. This streamlined operation enhances efficiency and productivity in the laboratory.

Specifications we guarantee

Spectral Range	• 7,800–350 cm^{-1} mid-infrared KBr configuration • 6,000-600 cm^{-1} mid-infrared ZnSe configuration • 11,000-375 cm^{-1} near-infrared to mid infrared XT-KBr configuration
Spectral Resolution	Better than 0.25 cm^{-1}
Signal-to-noise	• 50,000:1 (guaranteed) • 60,000:1 (typical)
Wavenumber Precision	0.0008 cm^{-1} at 2,000 cm^{-1}
Wavenumber Accuracy	0.02 cm^{-1} at 2,000 cm^{-1}
Collection speed	Selectable from 0.16 cm/sec to 3.1 cm/sec; suitable to slow responsivity (PAS) and high-sensitivity (liquid nitrogen cooled MCT) and TE cooled MCT detectors
Maximum speed	40 spectra per second at 16 cm^{-1} resolution
Infrared Source (LightDrive)	Non-migrating hotspot, single-point source for unmatched data reproducibility
Laser (LightDrive)	Solid-state, temperature-controlled diode laser with long lifetime
Interferometer (LightDrive)	Dynamically aligned interferometer with (KBr/Ge or ZnSe or XT-KBr) based beamsplitter optimized for highest spectral throughput.
Detector options	DLaTGS-KBr, DLaTGS-ZnSe, TE-MCT, LN2-MCT
Size (W x H x D)	550 x 570 x 250 mm; 21.6 x 22.4 x 9.8 inches
Weight	32 Kg (70 lbs)
Power Consumption	100-240 VAC, 47-63 Hz, 110 W
User Interface/Connection	USB connection to laptop computer
Background collection	• Standard background collection (i.e., user initiated) • Smart background collection (background collected while instrument is idle)
Sampling Accessories	• Open sample compartment provides compatibility with Nicolet smart accessories and hundreds of other third-party accessories.
Serviceability	• User-replaceable components (without opening cover): desiccant, power supply, sample compartment windows, infrared source • No manual alignment required • Service contracts available from Unity™ Lab Services or qualified dealer network
Humidity and Vapor Protection	• Desiccated optical compartment with protective KBr windows in KBr and XT-KBr configuration • ZnSe configuration available for environments with excessive humidity • Rechargeable desiccant cartridges with humidity indicator
Diagnostics	Continuous electronic monitoring of multiple spectrometer components with temperature and humidity sensors
Warranty	• 1 year on complete system • 5 years on Thermo Scientific™ iTX™ Diamond ATR • 10 years on interferometer, laser and light source
Training and Help	• Free online training videos and help articles, including unpacking, getting started, and advanced applications • Operating Systems Microsoft Windows 10/11 (64-bit)

The Nicolet Apex FTIR Spectrometer is meticulously designed to foster a profound sense of trust and satisfaction among customers. Every unit undergoes thorough factory verification of instrument specifications to guarantee adherence to our stringent quality standards. Our specifications are certified on each instrument before leaving the manufacturing floor.

Thermo Scientific OMNIC Paradigm Software

Desktop Software

The Nicolet Apex FTIR Spectrometers are powered by OMNIC Paradigm Software. Desktop software features include these capabilities:

- Dashboard/home screen for quick access of recent work
- Visual, drag and drop workflow creator with example templates
- Live displays of data collection and spectral data preview
- Connectivity to OMNIC Anywhere cloud-based application
- Smart Background feature which can cut measurement time by 50%
- Advanced instrument health information tracking (optional)
- Flexible, one-click library creation
- Pre-defined reporting templates exportable to Microsoft Office Suite
- Multi-component search and contamination analysis functionality
- Full spectral processing and analysis tools (baseline correction, smoothing, Kramers-Kronig, Normalize, spectral math, peak area, peak height, and more
- Quantification prediction for Beer's Law, PLS, CLS, and more
- Automated workflow creator based on spectral processing history
- Data compatibility with Thermo Nicolet OMNIC file formats .spa and .srs files

OMNIC Security Suite Software

- Full security administration software with permission and access rights validation
- Digital signature and electronic data security compliant
- Database infrastructure for advanced tracking and complete audit trail
- Audit manager software with spectral process and system audit trail viewer

Performance Verification and Regulatory Compliance

- Automated performance verification tests (ASTM E1421) to meet customer GLP requirements
- System performance verification workflows tests for complete, customizable system performance assurance
- Internal NIST-traceable 1.5 mil polystyrene film (serialized)
- Compliance with latest pharmacopeia methods (Ph. Eur, USP, JP, and CP)
- 21 CFR Part 11 compliance available, including installation and operation qualification (IQ/OQ)

Learn more at
thermofisher.com/paradigm



Find out more at **thermofisher.com/NicoletApex**

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