Fast, reliable answers

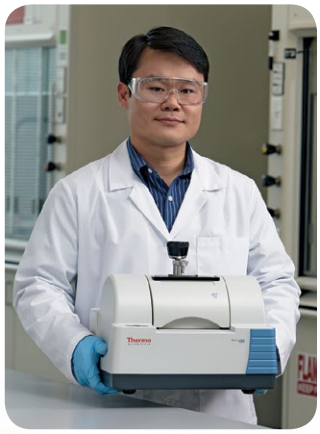
for QA testing and material ID

Thermo SCIENTIFIC

The Nicolet iS5 FT-IR Spectrometer

FT-IR you can trust

The Thermo Scientific™ Nicolet™ iS™5 FT-IR spectrometer provides the ideal performance and fit for product assurance testing and material identification. Whether you choose the Mid-IR or Near-IR version, this spectrometer delivers maximum confidence and reliability by implementing the same field-proven FT-IR technology found on other Thermo Scientific Nicolet FT-IR models. Driven by award-winning Thermo Scientific™ OMNIC™ software, the Nicolet iS5 spectrometer provides innovative FT-IR solutions and simplicity for businesses large and small.



Compact and lightweight

The lightweight design and small footprint of the Nicolet iS5 FT-IR system enables you to bring the spectrometer where you need answers most: from your busy laboratory to the production floor or in the warehouse. Additionally, the spectrometer's form factor and low cost-of-ownership make it a perfect match for analytical laboratories seeking to deploy multiple units across manufacturing facilities worldwide.

Premier Performance In A Compact Size

Small and light, the Nicolet iS5 spectrometer features a footprint similar in size to a laptop computer.

- Rugged enough to move around the plant or across campus
- 10 kg (22 lb) weight makes it extremely transportable

Durable Design

The Nicolet iS5 spectrometer is designed to provide trouble-free operation even in challenging environments.

- Field-proven optics encased in a sturdy magnesium-alloy frame
- A thermally-controlled diode laser provides many years of worry-free use
- User-accessible parts minimize service costs

Easy Maintenance

Replacing the IR source or desiccant in your spectrometer does not require a service call, or even opening up the instrument. We provide easy access to the source from underneath the instrument.

Infrared source replacement

READY TO HANDLE ANY ENVIRONMENT

The Nicolet iS5 spectrometer withstands a wider range of temperature and humidity conditions than those found in a typical laboratory. Vibration, electromagnetic interference (EMI), dust, and even tilt were all considered in the design of this instrument.

- Magnesium-alloy construction provides excellent mechanical characteristics for stiffness, thermal properties, vibrational dampening and reduced weight
- Tightly sealed and desiccated optical bench protects internal components from high humidity and aggressive chemicals
- Internal diagnostics with electronic humidity and heat sensors warn of excessive humidity or temperature
- Isolation of the interferometer and other optics protect against external sources of vibration
- User-replaceable IR source, power supply, desiccants and sample compartment windows can be quickly replaced without exposing internal components
- Optional non-hygroscopic ZnSe optics are available on the Mid-IR version for extremely humid environments

Built tough – rugged magnesium-alloy construction

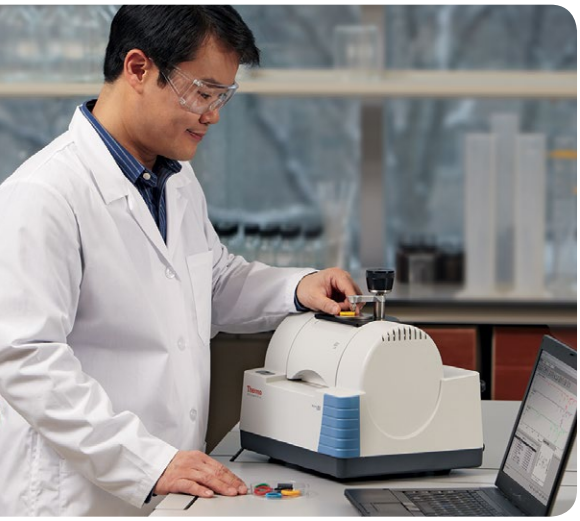
Protect your brand and reputation

The Best Value for Your Budget

From materials identification to final product testing, the Nicolet iS5 spectrometer is your reliable partner

The Nicolet iS5 spectrometer delivers outstanding performance in raw materials inspection and in the identification of unknowns. From “sample-in” to “answer-out”, the spectrometer provides answers you can trust, while helping your business be successful.

- **High signal-to-noise for premium-quality results**
- **Intuitive user interface for fast productivity**
- **Tools for raw material inspection that provide maximum confidence**
- **Identification of contaminants and mixtures with no need for spectroscopy expertise**



Raw Materials

Inspecting raw materials is a simple task, while obtaining reliable answers from your instrumentation can be a challenge. Natural materials and other raw ingredients can reveal small, yet still acceptable variations, while synthetic materials are highly consistent. Even a small variation, if not caught in time, may cause a product failure in your production. That’s why the Nicolet iS5 FT-IR spectrometer includes a complete set of tools for reliable raw material inspection, giving you the highest confidence, no matter the nature of the sample.

- Normal sensitivity QCheck for high confidence PASS/FAIL material inspection of natural and other small variation products
- High sensitivity QCheck for high confidence PASS/FAIL material inspection of synthetic and other high consistency products

Contaminants and Mixtures

When PASS/FAIL does not provide sufficient information and you need to further understand what failed to take the next action, or when the sample includes several ingredients, the Nicolet iS5 spectrometer is ready to assist. Our optional Thermo Scientific™ OMNIC Specta™ software includes a patented* algorithm that greatly improves the way FT-IR finds contaminants and identifies all compounds in a multiple-ingredient material. With OMNIC Specta software there is no need for specialized spectroscopy skills or the manipulation of the spectral data most FT-IR software requires.

Our patented* algorithm reliably, consistently, and simply:

- Identifies contaminants
- Identifies multiple components in mixtures
- Eliminates the need for spectral subtractions or manipulations

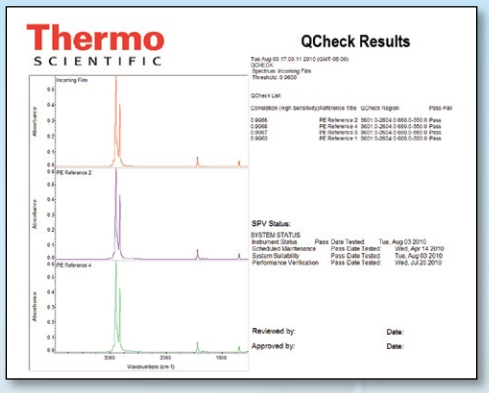
OMNIC Specta software for your Nicolet iS5 spectrometer is available in packages tailored for polymers, forensics, or for more generic applications. Each package includes a collection of at least 9000 high-quality FT-IR spectra. Ask your sales representative about the version that best fits your requirements.

** U.S. Patent # 7,698,098*

Bring Your Instrument to the Sample

Sometimes solving a manufacturing failure from your laboratory can be difficult or inconvenient. The Nicolet iS5 spectrometer has the size, weight, and, most importantly, all the processing power you need to bring FT-IR performance and troubleshooting capabilities directly to the sample.

- Compact and lightweight
- All the performance you need, where you need it



OMNIC SOFTWARE

The industry's leading software, no compromises

- Simplifies PASS/FAIL testing
- Standardizes operation for consistent results
- Identifies the unexpected
- Extracts quantitative data

Nicolet iS5 FT-IR: Premium performance made affordable

Power & Flexibility to Meet Your Needs

The open-access sampling compartment of the Nicolet iS5 FT-IR spectrometer provides the freedom to choose the accessory you need

The iD family of accessories offers optimized analysis of solids, liquids, and gases. Options include the iD1 Transmission module, versatile iD5 ATR accessory and high performing iD7 ATR accessory. Both iD5 and iD7 ATR accessories offer diamond crystal options.

The iD Base and iD Foundation adapters take advantage of the open architecture of the Nicolet iS5 spectrometer sample compartment, providing maximum flexibility to use many commercially available accessories. Use standard sample compartment accessories that you already own or may purchase, including Foundation Series Swap-Top modules.

iD1 Transmission Accessory

- Ideal for fast, accurate measurements of liquids, solids or gases
- Accepts most slide-mounted cell holders and gas cells up to 10 cm long

iD5 and iD7 Single-Bounce ATR Accessories

- High energy throughput for high quality spectra
- Interchangeable crystal plates offer good sampling versatility
- Slip-clutch pressure device yields reproducible results
- Specular reluctance plates provide direct analysis of surfaces

iD5 ATR offers a high-energy throughput, laminate-diamond crystal, plus heated and multi-bounce crystal plates for special applications

iD7 ATR features all-reflective optics with monolithic diamond crystal for the widest spectral range and best durability

iD Base and iD Foundation

The iD Base adapter fits slide-mounted accessories that cannot be accommodated in the iD1 Transmission accessory. It also allows you to use most full-size sampling accessories available from third party vendors.

The iD Foundation adapter allows customers who own Foundation Swap-Top modules to use them with the Nicolet iS5 spectrometer. Any Foundation Swap-Top modules can be accommodated including multi-bounce ATR, diffuse reflectance, and the Thunderdome single-bounce ATR accessories

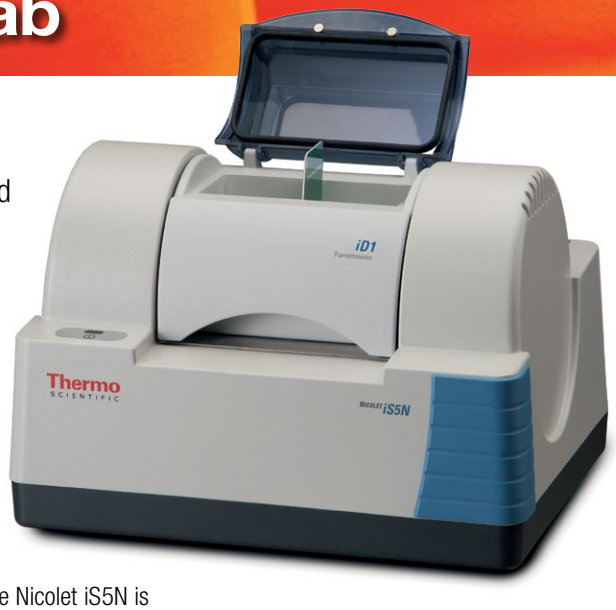
Handle Changes Effortlessly

The Nicolet iS5 features automatic accessory recognition with pre-set analysis parameters. This ensures consistent results contributing to high productivity in busy laboratories.

Near-Infrared for Today's Lab

The Nicolet iS5N FT-NIR spectrometer

The Nicolet iS5N FT-NIR spectrometer system brings the power of near-infrared to analytical laboratories with minimum hassle and maximum confidence. Method development is made simple by the popular and powerful OMNIC software suite, a familiar environment to thousands of chemists across the globe. Built on the same rugged platform as the iS5, the Nicolet iS5N provides FT-NIR capability in a compact, cost-effective package designed to meet the needs of today's quality assurance laboratory.

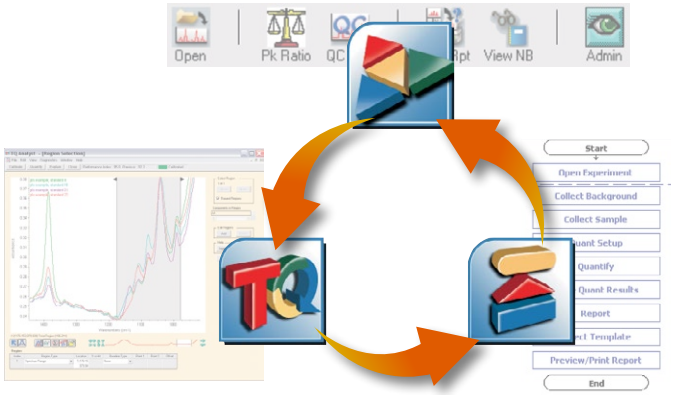


Sampling Flexibility

The large, open sample compartment of the Nicolet iS5N is designed to accommodate a wide range of samples and sampling accessories. The iD1H Heated Transmission accessory is a perfect fit, providing temperature control of vials and cuvettes for precise quantitative analysis. The Nicolet iS5N sample compartment is also designed to accommodate many third-party accessories, enabling analysis of a broad range of samples.

Software that Simplifies Analysis

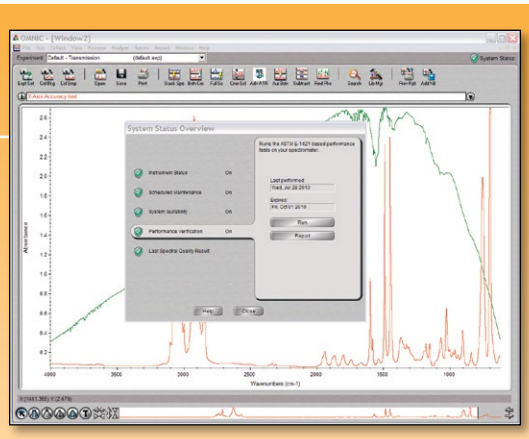
The Nicolet iS5N is empowered by the popular OMNIC software suite. Quantitative methods can be built simply using Thermo Scientific™ TQ Analyst and workflows developed in Thermo Scientific™ OMNIC™ Macros\Basic™. These tools are fully integrated in the OMNIC software suite, making method development and deployment straightforward.



COMPLETE SAMPLING ASSURANCE

System Performance Verification (SPV) monitors and provides status indications for Nicolet iS5 spectrometer models.

- On-board diagnostics and built-in performance tests ensure the system is working properly
- Automatic accessory recognition guarantees consistent analysis conditions, so you get the best possible data
- System suitability tests with user-defined QC samples verify method performance, giving you confidence in your results



System Performance Verification

Nicolet iS5N: Near-IR that fits your lab

The Thermo Scientific Nicolet FT-IR Spectrometer Family

Nicolet iS5 FT-IR Spectrometer

No-compromise performance, fit and affordability

The perfect fit for outstanding performance in the laboratory or anywhere you need to quickly analyze materials.

- Rugged, lightweight and sized to fit most spaces
- Affordable and easy to maintain
- Built-in performance verification
- Extensive sampling capabilities
- Flexible methodology with Mid-IR and Near-IR versions
- Easy analysis of raw materials, contaminants and compound mixtures

Nicolet iS10 FT-IR Spectrometer

Workhorse FT-IR for regulated, fast-paced QC, and analytical support laboratories

The ideal spectrometer where FT-IR is critical to monitoring product consistency, troubleshooting or deformulating complex materials. If your industry requires compliance to stringent regulations, the Nicolet iS10 is there for you at every step.

- Highest confidence for raw materials, impurities and compound identification
- Continuous performance verification
- Complete regulatory compliance tool set
- Electronic SOP authoring
- Expanded sampling capabilities (TGA/IR, Near-IR, microscopy)
- Award-winning OMNIC software

Nicolet iS50 FT-IR Spectrometer

Highest flexibility, productivity and performance for world-class analytical services and research laboratories

One-touch simplicity, flexibility and integration in a compact, cost-effective workstation. Fully automated, the multi-spectral range iS50 FT-IR spectrometer system dramatically improves productivity in analytical laboratories focused on understanding complex materials.

- Touch Point operation simplifies instrument setup and operation
- ATR, Raman, TGA and NIR modules at the touch of button
- Integrated modules provide flexibility to analyze multiple sample types
- Automation allows unattended multi-range operation
- Powerful OMNIC software ideal for method development, analytical support, and research

www.thermoscientific.com/iS5

Thermo Electron Scientific Instruments LLC, Madison, WI USA is ISO Certified.

Africa +43 1 333 50 34 0
Australia +61 3 9757 4300
Austria +43 810 282 206
Belgium +32 53 73 42 41
Canada +1 800 530 8447
China +86 21 6865 4588
Denmark +45 70 23 62 60
Europe-Other +43 1 333 50 34 0
Finland/Norway/Sweden +46 8 556 468 00
France +33 1 60 92 48 00
Germany +49 6103 408 1014
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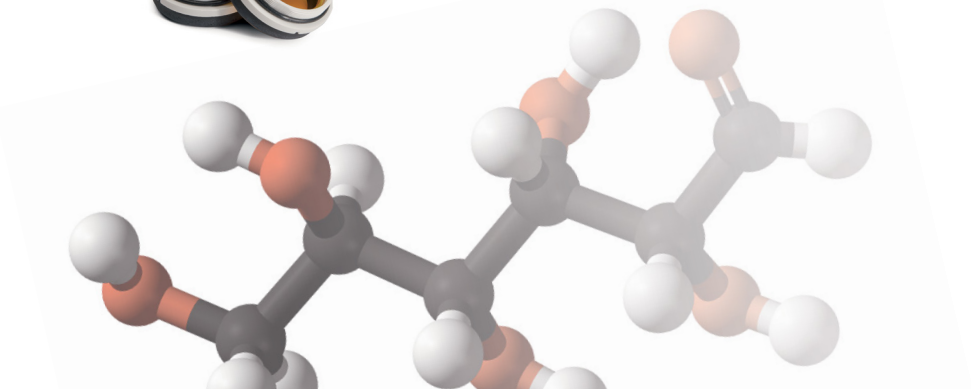
Thermo Scientific Nicolet iS5 FT-IR Spectrometer

Premium performance in a compact package

The Thermo Scientific™ Nicolet™ iS™5 FT-IR spectrometer provides superior performance in a compact size at an affordable price. Combining flexible sample handling and leading Thermo™ Scientific™ OMNIC™ software, the Nicolet iS5 spectrometer sets the benchmark in its class of FT-IR instrumentation.



The Thermo Scientific Nicolet iS5 FT-IR spectrometer integrates high-performance optics into a small, rugged package. This spectrometer is perfect for use in teaching laboratories, small industrial facilities, or dedicated use in global manufacturing facilities.

The Nicolet iS5 spectrometer withstands hot, humid environments while its user-serviceable components greatly reduce service visits and lower maintenance costs.

The Nicolet iS5 FT-IR Spectrometer

- Affordable price
- Superior performance
- Small footprint
- Flexible sampling

Unique 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 adjustment-free optics guarantee long life system performance with minimum maintenance.

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Performance

- Spectral range
  - *– 7800–350 cm^{-1} optimized, mid-infrared KBr beamsplitter*
- Signal-to-noise*
  - *– Guaranteed: 5 seconds: 8000:1 (peak to peak) 1 minute: 22,000:1 (peak to peak)*
  - *– Typical: 1 minute: 28,000:1 (peak to peak)*
- Spectral resolution: better than 0.8 cm^{-1}; better than 0.5 cm^{-1} using aperture
- Wavelength precision: 0.01 cm^{-1} at 2000 cm^{-1}

** KBr optics, 4 cm^{-1} spectral resolution*

Easy, user-accessible source replacement

Optics

- **Detector:** Fast recovery deuterated triglycine sulfate (DTGS) detector
- **Source:** Mid-infrared Ever-Glo; user replaceable from bottom plate
- **Beamsplitter:** KBr/Ge mid infrared optimized
- **Laser:** Temperature controlled solid-state Near-IR diode laser

Electronics

- USB 2.0 high-speed bidirectional communication to PC

Dimensions

Size: 35 cm W × 28 cm D × 26 cm H
(13.5" W × 10.9" D × 10.2" H)

Weight: 10 kg (22 lbs)

Regulatory

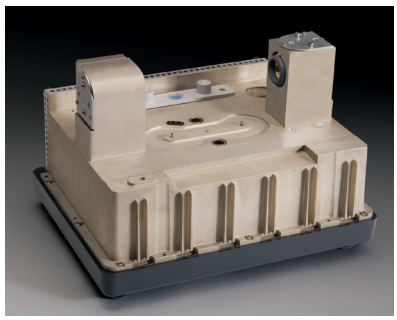
Regulatory Approvals: CE, ETL

Performance Verification

- Automated performance verification as per ASTM E1421 to meet customer ISO/GLP requirements
- Internal NIST-traceable 1.5 MIL polystyrene film (serialized)
- Automatic accessory detection and performance verification
- System Suitability tests for complete system performance assurance

Humidity and Vapor Protection

- Tightly sealed and desiccated optical bench with protective KBr windows
- Optional ZnSe windows available for environments with excessive humidity
- Rechargeable desiccant cartridges with humidity indicator
- Internal diagnostics with electronic humidity and heat sensors



High performance optics in a rugged, lightweight package

Diagnostics

- Automatic accessory recognition
- Temperature
- Humidity

Serviceability

- User-replaceable components (without opening cover):
  - *– Source*
  - *– Desiccant*
  - *– Power supply*
  - *– Sample compartment windows*

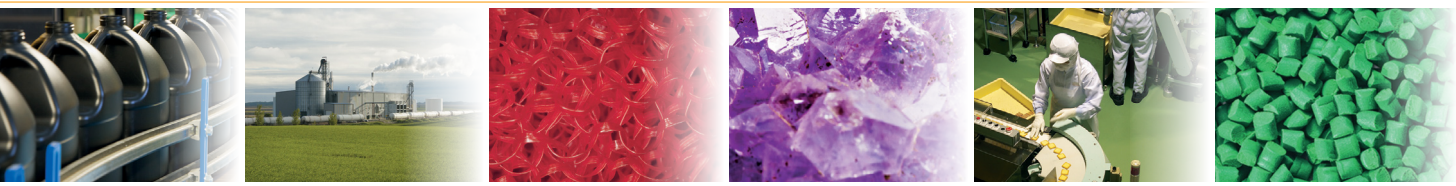
OMNIC Software

OMNIC software for the Nicolet iS5 spectrometer includes these standard features:

- Complete collection of spectral processing and analysis tools
- QCheck correlation for material verification
- Live display of data collection, and spectral data preview
- Customizable toolbar and menu options
- User logins and password protection
- Peak analysis tools: peak area, peak height
- Data processing, conversions and corrections
- Spectral Search and Library Manager
- Infrared spectral interpretation with online interpretation guide
- Automatic atmospheric suppression
- Full-featured report generator
- Quant prediction for PLS, PCR, Beer's Law, CLS, peak ratio, and Discriminant Analysis
- Windows® XP, Vista®, Windows 7 and Windows 8 compatible

Minimum PC Requirements

Microsoft® Windows XP OS, 1 GB RAM, 16 GB HDD, USB 2.0, 800 × 600 CRT/LCD display, accel graphics card



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Australia +61 3 9757 4300
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Spain +34 914 845 965
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UK +44 1442 233555
USA +1 800 532 4752

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PRODUCT SPECIFICATIONS

Thermo Scientific Nicolet iS5 FTIR spectrometer

Premium performance in a compact package

The Thermo Scientific™ Nicolet™ iS™5 FTIR spectrometer provides superior performance in a compact size at an affordable price. Combining flexible sample handling and leading Thermo™ Scientific™ OMNIC™ software, the Nicolet iS5 spectrometer sets the benchmark in its class of FTIR instrumentation.

The Thermo Scientific Nicolet iS5 FTIR spectrometer integrates high-performance optics into a small, rugged package. This spectrometer is perfect for use in teaching laboratories, small industrial facilities, or dedicated use in global manufacturing facilities.

The Nicolet iS5 spectrometer withstands hot, humid environments while its user-serviceable components greatly reduce service visits and lower maintenance costs.

Specifications you can trust

The Nicolet iS5 FTIR 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:

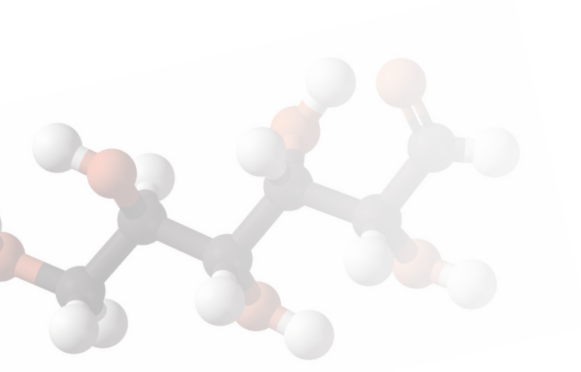
- Certified on each instrument before leaving the manufacturing floor
- Representative of actual instrument performance, not “typical” or “achievable”
- Not reliant on artificial data processing or manipulations

The Nicolet iS5 FTIR spectrometer

- Affordable price
- Superior performance
- Small footprint
- Flexible sampling

Unique 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 adjustment-free optics guarantee long life system performance with minimum maintenance.



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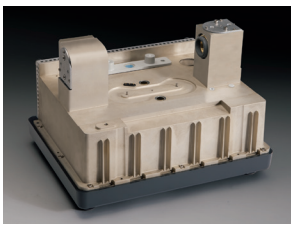
Nicolet iS5 FTIR spectrometer specifications

Performance* *Factory verified: Specifications are certified on every instrument before it leaves the manufacturing facility.	Spectral range: 7800–350 cm^{-1} optimized, mid-infrared KBr beamsplitter	
	Signal-to-noise: 1 minute: 35,000:1 (peak to peak)	
	Spectral resolution: better than 0.8 cm^{-1}; better than 0.5 cm^{-1} using aperture	
	Wavenumber precision: 0.001 cm^{-1} at 2000 cm^{-1}	
	Wavenumber accuracy: 0.05 cm^{-1} at 2000 cm^{-1}	
	Ordinate linearity (ASTM E1421): <0.15% T deviation from 0.0% T	
Optics	Detector: Fast recovery deuterated triglycine sulfate (DTGS) detector	
	Source: Mid-infrared Ever-Glo; user replaceable from bottom plate	
	Beamsplitter: KBr/Ge mid infrared optimized	
	Laser: Temperature controlled solid-state Near-IR diode laser	
Electronics	USB 2.0 high-speed bidirectional communication to PC	
Dimensions (W × D × H)	35 × 28 × 26 cm (13.5 × 10.9 × 10.2 in.)	
Weight	10 kg (22 lb)	
Regulatory	Regulatory Approvals: CE, ETL	
Performance Verification	Automated performance verification as per ASTM E1421 to meet customer GLP requirements	
	Internal NIST-traceable 1.5 MIL polystyrene film (serialized)	
	Automatic accessory detection and performance verification	
	System Suitability tests for complete system performance assurance	
Humidity and Vapor Protection	Tightly sealed and desiccated optical bench with protective KBr windows	
	Optional ZnSe windows available for environments with excessive humidity	
	Rechargeable desiccant cartridges with humidity indicator	
	Internal diagnostics with electronic humidity and heat sensors	
Diagnostics	Automatic accessory recognition; Humidity; Temperature	
Serviceability	User-replaceable components (without opening cover): – Source – Desiccant – Power supply – Sample compartment windows	
Warranty	1 year on complete system; 2 years on source; 10 years on laser; 10 years on modulator	
OMNIC Software OMNIC software for the Nicolet iS5 spectrometer includes these standard features	Complete collection of spectral processing and analysis tools	Quant prediction for PLS, PCR, Beer's Law, CLS, peak ratio, and Discriminant Analysis
	Thermo Scientific™ QCheck™ correlation for material verification	Infrared spectral interpretation with online interpretation guide
	Customizable toolbar and menu options	Spectral Search and Library Manager
	User logins and password protection	Automatic atmospheric suppression
	Live display of data collection, and spectral data preview	Full-featured report generator
	Peak analysis tools: peak area, peak height	Windows® 7, 8 and 10 compatible
	Data processing, conversions and corrections	
Minimum PC Requirements	Microsoft® Windows 10 (64-bit), Windows 8.1 (64-bit) or Windows 7 (32-bit or 64-bit) Professional	



High performance optics in a rugged, lightweight package

User-accessible source replacement

Easy desiccant replacement for maximum instrument protection

Find out more at **www.thermofisher.com/iS5**

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