



Thermo Scientific Nicolet iS10
FT-IR Spectrometer

Complete infrared spectroscopy system

for routine analytical needs

Thermo
SCIENTIFIC

Your process, our answer



Load



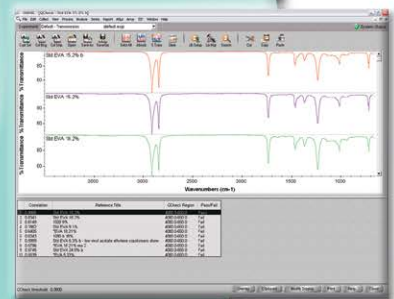
Ensure



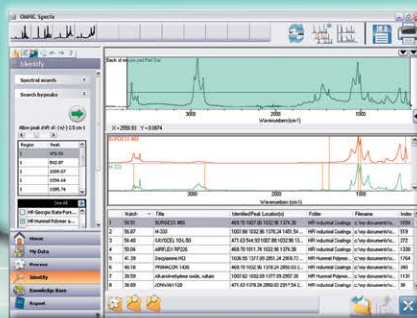
Measure



Comply



Verify



Identify



Textiles



Chemicals



Pharmaceuticals



Lubricants



Rubbers/Polymers

The first FT-IR spectrometer designed for you

Owning a Thermo Scientific™ Nicolet™ iS™10 FT-IR spectrometer means you are up and ready as soon as your instrument is turned on. You do not need to be a spectroscopy expert to get good data from your Nicolet iS10 spectrometer – the expertise is already built into the instrument.

Materials verification

Validation, data integrity and push-button operation are important requirements, but no longer sufficient in today's fast-paced, continuous-improvement business environment. Your job requires you to manage cost of ownership of your equipment, enhance productivity, save time, and ensure that human errors are at a minimum. You demand unambiguous answers. The Nicolet iS10, with award-winning Thermo Scientific™ OMNIC™ software, creates the most effective tool to achieve all your objectives without compromise.

Materials identification

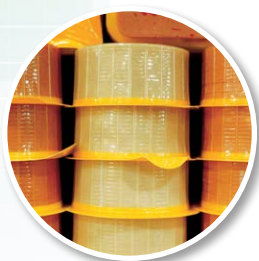
Your challenges walk through your lab door every day. Handling last-minute demands from manufacturing, quality control and product development – troubleshooting is your daily “routine.” Your answers determine not only your customers' satisfaction but also your company's image and profitability. Performance, ease-of-use, and reliability are of paramount importance. The Nicolet iS10 spectrometer goes the distance with you – risk free.



These are only a few of the materials that can be monitored for consistent quality using the Nicolet iS10 FT-IR spectrometer.



Biofuels/Fuels



Packaging



Inks/Pigments/
Paints



Cement



Cosmetics

QC analysis – sample in...

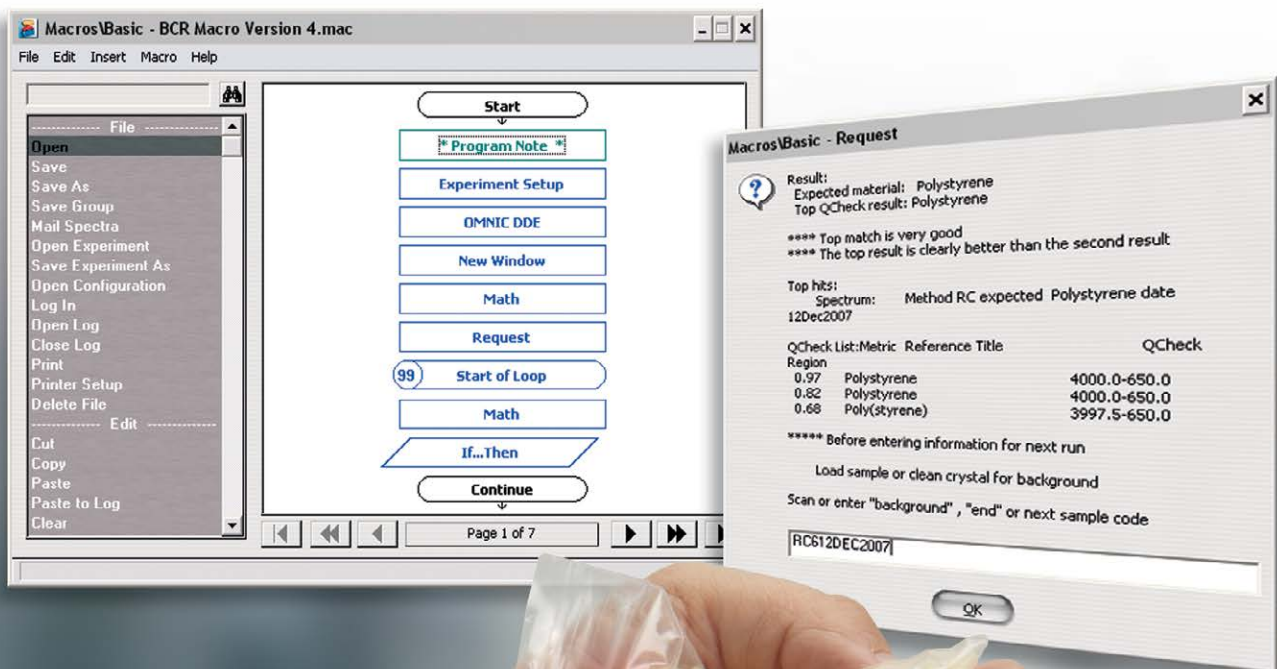


System is always qualified

- Save valuable time and optimize laboratory throughput by running system performance qualification overnight, every night with System Performance Verification (SPV)
- Qualify the spectrometer and the accessory
- System suitability testing complements performance verification
- Constant system monitoring

Sample information loading and preparation

- Minimize user interaction by loading sample information through bar codes
- Standardize sample preparation and quality of results by using the Thermo Scientific™ Smart iTX™ ATR sampling accessory
- Even method selection can be automated, for error-free operation



Running the Nicolet iS10 FT-IR spectrometer means no typing sample numbers, no printing SOPs, and no manual selection of methods. You don't even need to touch the computer.

What you get is:

- Speed
- Consistency
- Security
- Confidence

QC analysis – answers out



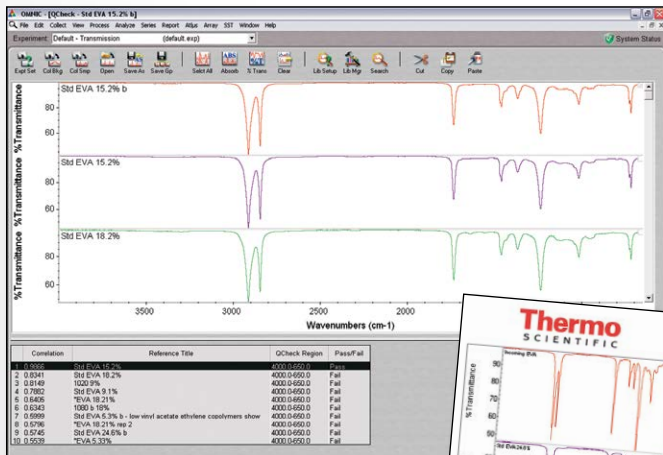
Sample verification

- Verify raw materials, intermediates and finished products for consistency, purity and concentration
- Regardless of your sample – be absolutely confident in your pass/fail results, thanks to the new and unique compare tools in the Thermo Scientific™ QCheck™ feature
- Quantify your compounds with classic and chemometric tools in Thermo Scientific™ TQ Analyst™ software

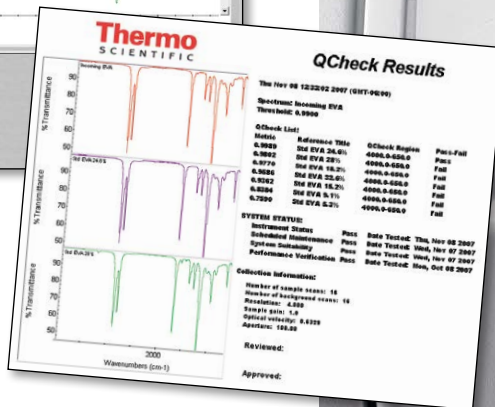
Comprehensive reports, quick and easy

- System validation status and date
- Sampling accessory validation status and date
- Method verification (suitability) status and date
- Sample verification status (pass or fail)
- User ID and digital signature (where applicable)
- Generated and digitally stored for convenient review throughout your organization

Standard on every Nicolet iS10 spectrometer is an integrated scan button pad that incorporates LED status and humidity indicator.



Clear and simple answers for smooth quality control and assurance



Universal sampling – reality



Attenuated Total Reflectance (ATR) is a powerful sampling technique that virtually eliminates sample preparation. The Thermo Scientific Smart iTX ATR sampling accessory for the Nicolet iS10 spectrometer offers outstanding performance and universal sampling.

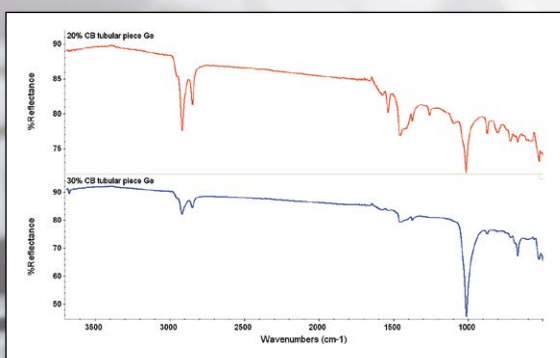
- Multiple crystal options make it possible to sample virtually any liquid or solid
- Automatic recognition, collection parameters, spectral quality check
- Factory-calibrated pressure tower ensures spectral uniformity
- Easy to clean and quickly load your next sample
- Maximum durability; withstands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

Smart iTX Universal ATR Sampling Accessory Reference Chart

MATERIAL TO BE SAMPLED	CRYSTAL TYPE		
	Diamond	ZnSe	Germanium
Soft solids, powders	Best	Best	Good
Rigid samples	Best	Weak	Weak
Harsh chemicals	Best	Weak	Good
Coatings on metal	Good	Weak	Weak
Liquid samples, gels	Best	Good	Good
Carbon black filled samples	Weak	Medium	Best

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

Carbon black filled samples can be effectively characterized with the Smart iTX universal sampling module by using the germanium crystal.



Productivity and efficiency

Double your lab's throughput without doubling your budget. The Thermo Scientific™ Nicolet™ iZ™10 adds a second sampling module while sharing your Nicolet iS10 spectrometer's analytical engine.

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

Simplify Sampling

The Thermo Scientific Near-IR Integrating Sphere samples directly through glass, allowing you to rapidly analyze materials for both qualitative and quantitative assessment.

Use the Near-IR Integrating Sphere to:

- Eliminate sample preparation
- Speed up analysis
- Analyze bulk samples
- Get pass/fail or quantitative results



The Nicolet iZ10 module doubles your sampling capabilities with one spectrometer.



Analytical support – *problem in, answer out*

When defects occur in your manufacturing process, when suspected counterfeit goods threaten your brand, or when your quality control laboratory rejects a product – your analytical services day has begun.

Tough questions...

- Q** Why was the material rejected?
- Q** Why did the failure occur?
- Q** Is the customer correct, or did they not use the product properly?
- Q** What is the root cause?
- Q** What possible actions can we take?

Getting to the core of these questions requires an investment in spectral libraries, ability to identify mixtures and a justification of your results – just a good quality infrared spectrum is not enough!

Meet Thermo Scientific™ OMNIC™ Specta™ software, a unique combination of spectral identification tools, interpretation algorithms, and a knowledge-base of scientific documentation that guides you in identifying and certifying assumptions. Combined with a standard collection of several thousand spectra, you now have the capability for:

- Automated qualitative and semi-quantitative analysis of pure compounds and mixtures
- Comprehensive search and interpretation tools
- Expert knowledge base
- An all encompassing database that includes every spectrum on your computer

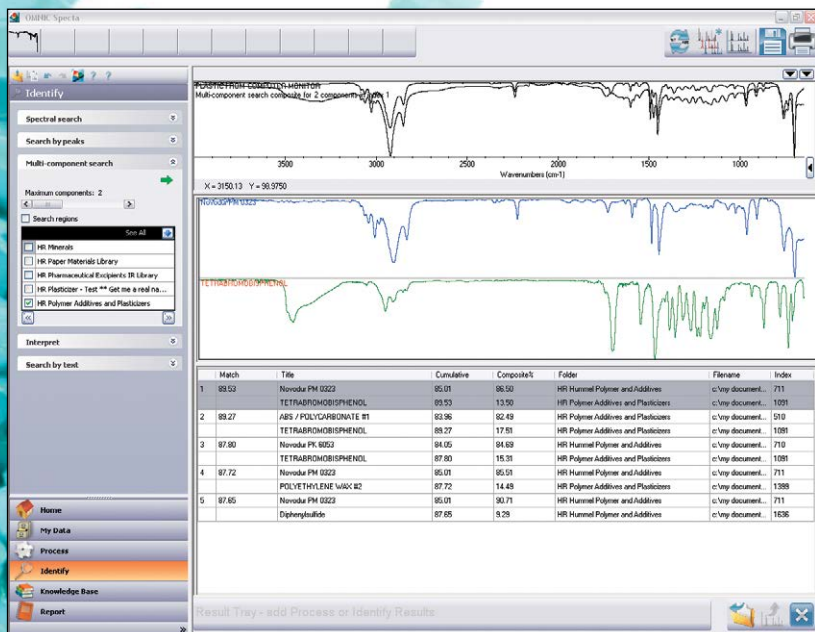
...Require definitive answers

- A** OMNIC Specta improves your lab's problem-solving skills – minimizing the cost of external contract lab services.
- A** OMNIC Specta protects and improves your customer satisfaction.
- A** OMNIC Specta reduces inconsistent product quality and product recalls.
- A** Ideal for the analytical services lab, OMNIC Specta also empowers QC laboratories wanting to minimize costs of external contract lab-services.

Get the highest confidence from infrared spectroscopy materials identification.

OMNIC Specta provides innovative identification and interpretation tools and a unique expert knowledge base. It converts all of the spectral data on your hard disk into an always-ready database and includes a standard collection of thousands of spectra enabling you to efficiently and effectively identify pure materials and mixtures.

OMNIC Specta can identify multiple compounds in mixtures, simultaneously with a click of the mouse. This example shows a polymer material made of ABS, and a brominated flame retardant as the second component.

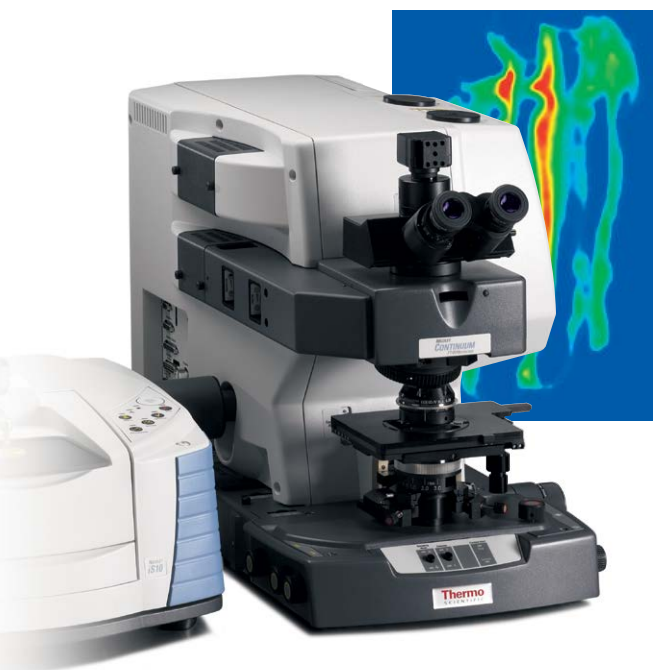
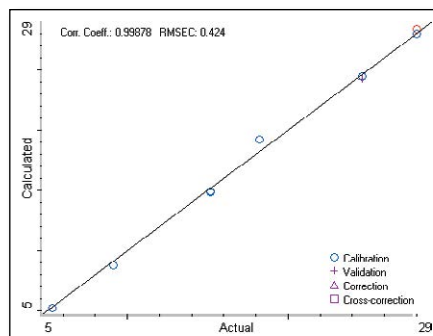


Analytical support – see, study, report

Quantitative method development

- Provide better tools to QC laboratories to monitor finished products quality
- Measure the concentration of your ingredients after mixing or before product shipment
- Verify product specifications for quality assurance

OMNIC software includes TQ Analyst quantitative analysis for multiple compounds in simple mixtures. For more complex mixtures and diluted ingredients, chemometric tools such as PLS, PCA and PCR are optionally available.



Contamination and failure analysis by infrared microscopy

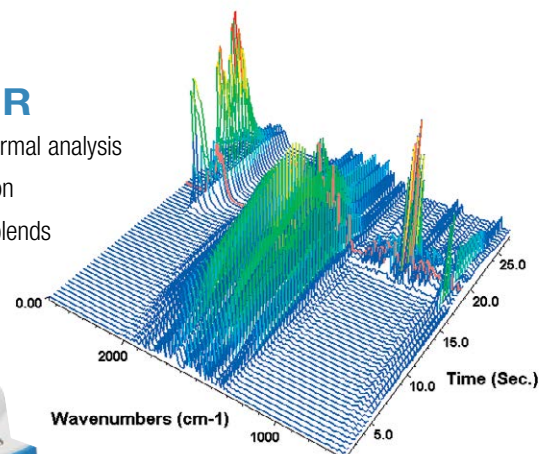
- Measure particles, filtrates and contaminants down to a few microns
- Identify composition of small particles by OMNIC Spectra
- Find the possible cause/source of the failure

The Nicolet iS10 is compatible with the award-winning Thermo Scientific Nicolet Continuum microscope. The Nicolet iS10 spectrometer is also the ideal companion to the fully-integrated Nicolet iN™10 Infrared microscope, another innovative solution from Thermo Scientific.

Ensure the quality of your products and identify microscopic contaminants.

Materials analysis by TGA-IR

- Learn more about materials by linking infrared to thermal analysis
- Identify species evolved during thermal decomposition
- Elucidate composition of mixtures, copolymers and blends



OMNIC Series software, with unique Mercury TGA routine and 3-D displays, allows you to quickly and efficiently extract useful information from TGA-IR and other time-based experiments.

Auditing made easy

Quality-driven businesses, pharmaceutical manufacturers, and other regulated laboratories must have absolute confidence in the answers they provide – with supporting documentation. The Nicolet iS10 FT-IR spectrometer is the perfect partner for any regulated and quality driven environment. The standard qualification package includes software, hardware and documentation based on industry-standard validation methods, traceable standards, and automated overnight qualification.



System Performance Verification *(standard)*

- Fully automated ASTM E-1421 method for FT-IR spectrometer testing, includes report printout for reference purposes
- Fully automated validation wheel with 1.5-MIL (38-micron) serialized NIST traceable polystyrene film, and NG-11 Schott glass
- SPV software for spectrometer, sampling accessory, method performance verification and system suitability testing
- Overnight system verification, user programmable

ValPro System Qualification

(optional)

- Fully automated ASTM methods for FT-IR spectrometers testing, includes printed copy for reference purposes
- European and Japanese pharmacopoeia methods
- ASTM, EP and JP sampling accessory validation
- Fully automated validation wheel with 1.5-MIL (38-micron) serialized NIST traceable polystyrene film, and NG-11 Schott glass
- ValPro software for spectrometer, sampling module and method performance verification
- Design Qualification documentation (DQ)
- OQ, PQ protocols and documentation
- Installation Qualification (IQ) also available



Digital signature and electronic data security *(optional)*

- Complete 21 CFR Part 11 compliance tools
- Digital signatures for the most secure data
- Audit trails for data and system use
- Server-based security administrator

Every Nicolet iS10 includes software and tools for ASTM method FT-IR validation protocol with capability for comprehensive overnight fully-automated testing, NIST traceable and serialized standard testing, and NIST traceable standard mounted on serialized wheel. ValPro advanced validation package is optionally available for more demanding regulated environments and pharmaceutical industry.



Don't take risks.
Empower your laboratory with a reliable, high-performing and warranty protected FT-IR.

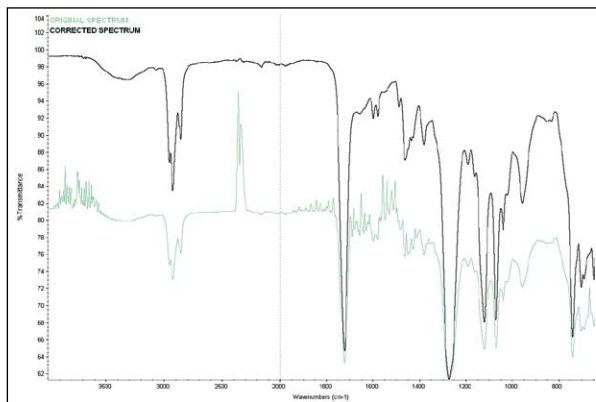
Quality, performance and support

Built to last and backed by the Thermo Scientific global customer service network, the Nicolet iS10 spectrometer is designed to be the workhorse of your laboratory.

Sealed and desiccated optics lowers maintenance costs

Standard KBr/BaF₂ anti-hygroscopic coating, protective windows

- User rechargeable desiccant canister and humidity inspection window
- High-sealing gaskets to protect system from chemical vapors
- Standard integrated multi-level positive pressure purge circuit



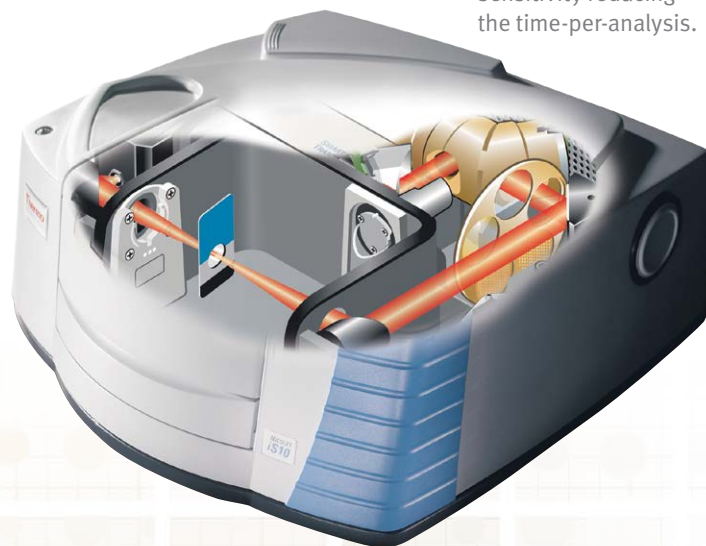
Automatic atmospheric suppression removes water and carbon dioxide from spectra, with no need to select a reference spectrum.

Proven technology for low cost, state-of-the-art operation

- Diamond-turned mirrors and pinned-in-place optics provide excellent wavelength accuracy with no need for spectral correction by software
- Dynamic alignment provides superior performance and scan velocities
- IR and halogen sources accessible from the sample compartment are replaceable and interchangeable by the user further extending your capabilities and lowering maintenance costs

Speed and sensitivity: increase your laboratory throughput

- High spectral resolution standard
- Exceptional band-shape and sensitivity
- Exceptional signal to noise ratio
- High scan rate for kinetic studies



The simple optical layout of the Nicolet iS10 spectrometer delivers exceptional sensitivity reducing the time-per-analysis.



Worldwide Service and Support

Thermo Scientific FT-IR spectrometers are backed up by the support staff of the largest analytical instrumentation company in the world. Service and support are available almost everywhere. We have more FTIR-trained field service engineers and applications people to support you than any other company. Meeting all of your support needs is our highest priority.

Comprehensive Support for Your Needs

- On-site visits from factory-trained field service engineers
- Technical phone support
- Internet-based technical support
- Performance maintenance programs
- Classroom and on-site training programs
- Contract method and application development programs

Nicolet iS10 FT-IR spectrometer

Beyond one-click operation, performance and ease-of-use

- Highest confidence when identifying impurities and mixtures
- Continuous performance verification
- Error-free sample information loading
- Highest confidence in QC pass/fail results
- Full set of tools for passing audits
- Consistent sample preparation
- Universal sampling tools
- Electronic SOP authoring

You are responsible for providing answers. You require the highest confidence in your results, efficient laboratory operation and low cost of ownership. The Thermo Scientific Nicolet iS10 FT-IR spectrometer has been designed for you. Discover how the Nicolet iS10 system provides the performance, reliability, and simplicity you require. Then discover the added value you may not expect from FT-IR.



www.thermoscientific.com/is10

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Austria +43 810 282 206	Finland/Norway/Sweden +46 8 556 468 00	Japan +81 45 453 9100	Spain +34 914 845 965
Belgium +32 53 73 42 41	France +33 1 60 92 48 00	Latin America +1 561 688 8700	Switzerland +41 61 716 77 00
Canada +1 800 530 8447	Germany +49 6103 408 1014	Middle East +43 1 333 50 34 0	UK +44 1442 233555
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