Thermo Scientific Nicolet iS5
FT-IR Spectrometer

Focus on teaching
with reliable, affordable FT-IR spectroscopy

Fisher Scientific

Thermo SCIENTIFIC

Nicolet iS5 Spectrometer

Prepare Your Students with World-Class FT-IR

The Thermo Scientific™ Nicolet™ iS™5 FT-IR spectrometer is a perfect fit for classrooms and teaching laboratories. Affordable, reliable and rugged, the Nicolet iS5 FT-IR spectrometer offers worry-free operation for many semesters to come. The spectrometer's compact size allows you to easily move it from classroom to classroom. Its rugged design was created to withstand the rigors of the teaching environment. And it comes equipped with the same software and tools that your students will likely encounter in industry or R&D laboratories after graduation.


HCl spectrum from 10 cm gas cell

High resolution FT-IR spectrum of ammonia

Assist Students in Understanding Spectroscopic Concepts

To assist you with your curriculum, your spectrometer includes well-tested experiments developed by educators. Basic experiments that demonstrate FT-IR spectroscopy, examples of how to identify functional groups, and quantitative analysis are prepared for use in the classroom. We include classic physical chemistry experiments that are written in such a way that students can quickly grasp spectroscopic concepts while gaining valuable experience with FT-IR instrumentation.

Premier Performance

The Nicolet iS5 spectrometer put our high-performance, field-tested FT-IR optics in a compact chassis. This no-compromise design features:

- High signal-to-noise for high quality spectral collection in a short period of time
- Diamond-turned mirrors that maintain excellent alignment throughout the lifetime of the instrument
- Dynamically-aligned interferometer for exceptional stability and performance
- Auto-Align maintains optimal performance under changing environmental conditions
- Real-time diagnostics to verify performance and ensure consistent results
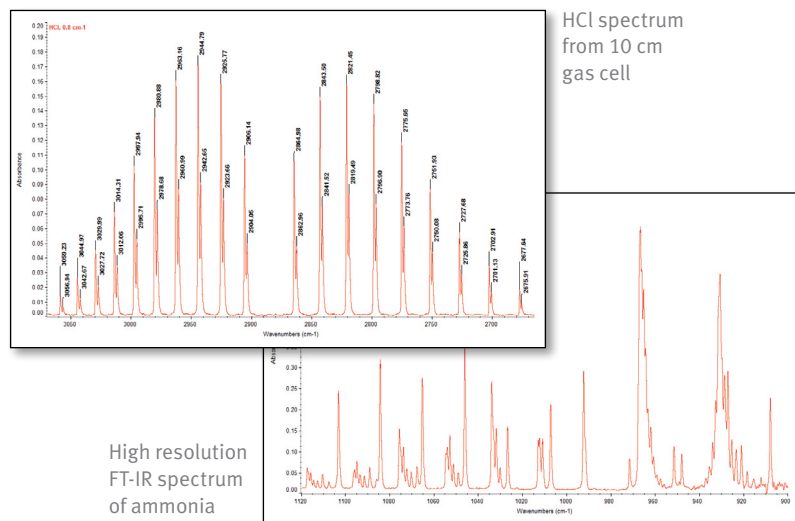
QUANTITATIVE ANALYSIS USING BEER'S LAW
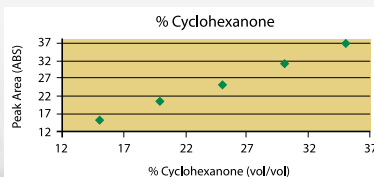
% CYCLO	15	20	25	30	35
ABS	15.06	20.56	25.34	31.15	37.07

CorrCoeff	0.99929
Slope	1.0922
Intercept	-1.469

Write the equation for the calibration equation as:
Abs = (Slope)(% Cyclo) + Intercept

Compact Design

Small and light enough to move around easily, the Nicolet iS5 spectrometer is similar in size to a laptop computer.

- Magnesium-alloy chassis
- Light weight allows nearly anyone to move the instrument
- Rugged design means you can move the instrument where it's needed or store it when not in use
- User-replaceable source and desiccants reduces service calls
- Long-lasting diode laser for years of worry-free operation
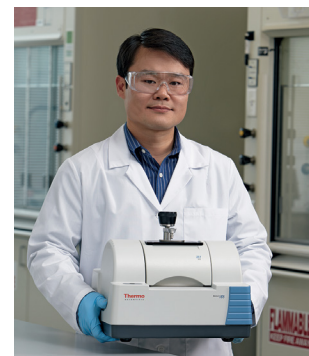
Configurable with iD Accessories, Foundation Series or Standard Accessories

Our iD sampling accessories provide optimized results for solid, liquid, film, gas, and gel samples. Choose from transmission accessories or high-performance ATR sampling. An adapter baseplate supports almost all standard accessories, including those you already own.

The **iD1 Transmission accessory** is ideal when you need to make measurements of samples mounted in liquid cells, pellet holders, cuvettes or gas cells. The iD1 supports sampling cells up to 10 cm long.

The **iD5 ATR accessory** features a laminated diamond crystal plus other crystal options for sampling flexibility.

The **iD7 ATR accessory** offers an all diamond crystal and all-reflective optics to maximize the spectral range and energy throughput. Additional crystal types are also available.

Both the iD5 and iD7 ATR accessories provide a calibrated slip-clutch pressure tower to maintain repeatable pressure for sample reproducibility, with multiple anvil pressure tips provided to adapt to different sample shapes and textures.

The **ID Base accessory** provides a baseplate adapter that accommodates full-sized or customized sampling accessories that you may already own or may need for additional experiments.

iD Base Adapter

Foundation iD Base converter

The **iD Foundation** family of accessories provides an economical approach to sampling by enabling you to easily adapt existing Foundation accessories such as multi-bounce ATR and diffuse reflectance for use with the Nicolet iS5 spectrometer.

OMNIC Software
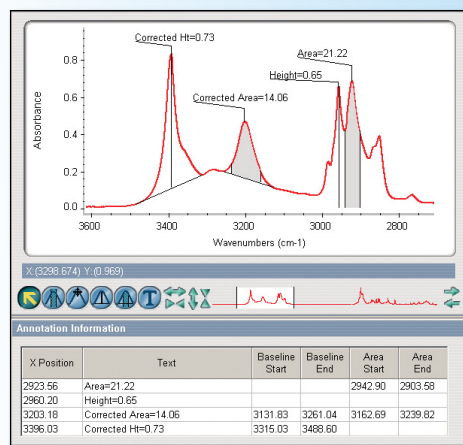
Infrared Software

Industry-leading Thermo Scientific™ OMNIC™ software is used in R&D and manufacturing facilities around the world. Students experienced with OMNIC software see first hand how FT-IR spectroscopy solves real-world problems and builds knowledge.

The OMNIC Software Experience Includes:

- Flexible display tools, such as stack/overlay, %T vs Abs, zoom, peak height/area tools, peakpicking, one-touch print-outs to standardized report templates, and real-time preview
- Powerful spectral processing tools, such as baseline correction and smoothing, advanced ATR correction, and spectral interpretation tools
- Spectral subtraction, including spectral library management tools, and a wide selection of spectral libraries for common solvents, coatings, additives, or biochemical materials
- OMNIC software allows students to easily collect their sample and perform a task in seconds, making your class fast and effective
- Customizable menus provide unique feature sets for different users. For example, restrict beginning students to simple "point and click" data collection, while allowing upperclassmen access to more sophisticated quantitative or spectral interpretation features
- Multi-user licensing available

Performance, value and fit

The Thermo Scientific Nicolet iS5 FT-IR spectrometer integrates high-performance optics into a small, rugged package, offering premium spectral performance in a reliable, compact size. Award-winning OMNIC software makes FT-IR easy to master. Instruments can be set up for standardized, step-by-step procedures that streamline lab procedures or customized for specific experiments.
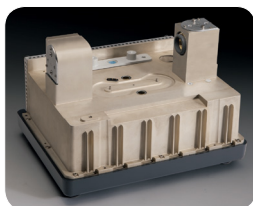
Specifications

Mechanical
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 Approvals: CE, ETL
RoHS and China RoHS compliant

Built tough – rugged magnesium-alloy construction

Optical
High sensitivity DLA-TGS detector
Diode laser
Anti-fog BaF_2 coated KBr windows (ZnSe available)

Electronics
24-bit analog to digital converter
Optimized analog amplifier
USB 2.0 high-speed bidirectional communication to PC

Diagnostics
Heat, humidity diagnostics
Internal polystyrene, NIST-traceable
Performance Verification ASTM E1421
User-serviceable parts include source, desiccant, sample compartment windows, power supply

Performance Specifications
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

* Room temperature, KBr optics, DTGS detector, 4 cm^{-1} spectral resolution

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

Designed for Long Life with Minimal Operating Costs

Designed to operate with minimal maintenance in tough non-laboratory conditions, the Nicolet iS5 spectrometer offers several features that provide excellent performance over many years of service while providing low operating and maintenance costs.

- Temperature-controlled diode reference laser, providing stable performance over the lifetime of the spectrometer
- Dynamically-aligned interferometer provides exceptional stability and performance, while Auto-Align optimizes performance
- Anti-vibration interferometer mount to maintain high sensitivity while protecting the bench from shock and vibration
- Electronic humidity sensor protects the optics by warning user when long-life desiccant package requires recharge or replacement
- Internal temperature sensor and accelerometer optimize electronics and optical performance if bench is used in demanding environments
- ZnSe sample compartment window option for extremely humid environments

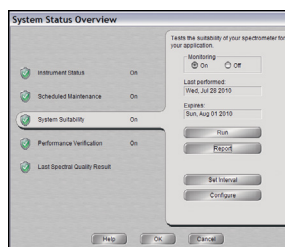Easily exchanged, automatically recognized accessories

Source replacement without opening the instrument or calling service

Easy desiccant replacement for maximum instrument protection

System Performance Verification (SPV)

- Automatic hardware status recognition makes sure the instrument components are working
- Built-in instrument tests with traceable polystyrene verify proper system operation
- Customizable performance tests that prove system suitability for your analyses

Fisher Scientific

In the United States:
For customer service, call 1-800-766-7000
To fax an order, use 1-800-926-1166
To order online: www.fishersci.com

In Canada:
For customer service, call 1-800-234-7437
To fax an order, use 1-800-463-2996
To order online: www.fishersci.ca

Thermo Electron Scientific Instruments LLC, Madison, WI USA is ISO Certified.
ISO 9001

Thermo
SCIENTIFIC
Part of Thermo Fisher Scientific