Nicolet 840-070200

MCTA Detector

$795.00

In Stock

Qty Available: 1

Used and in Excellent Condition

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- Full-service, independent repair center

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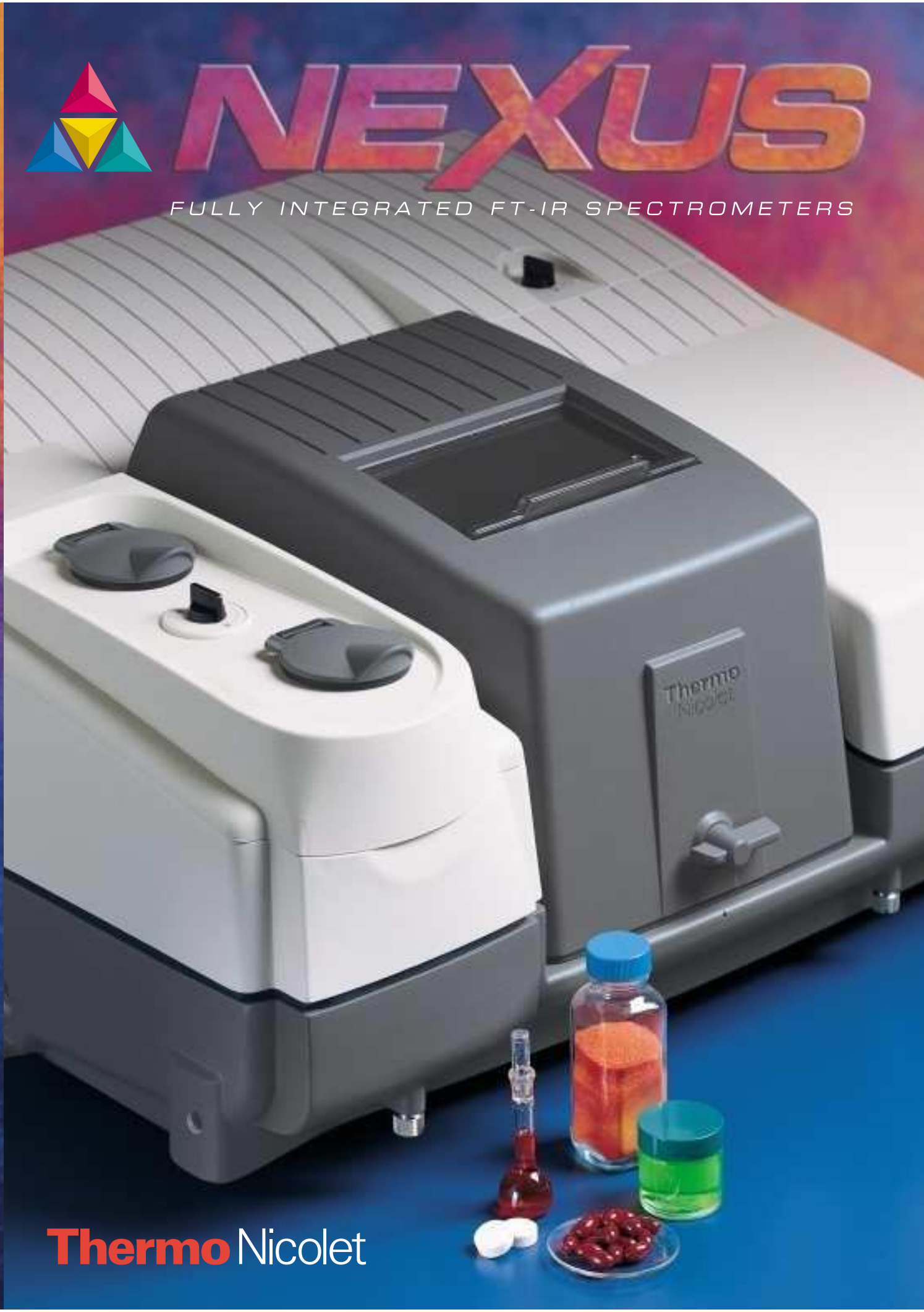

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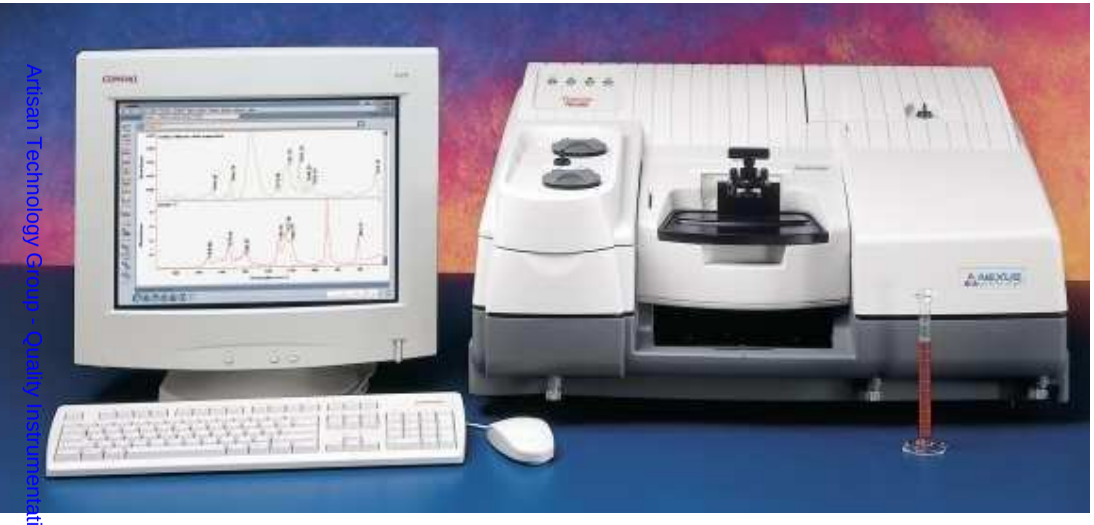
The Truly Smart System



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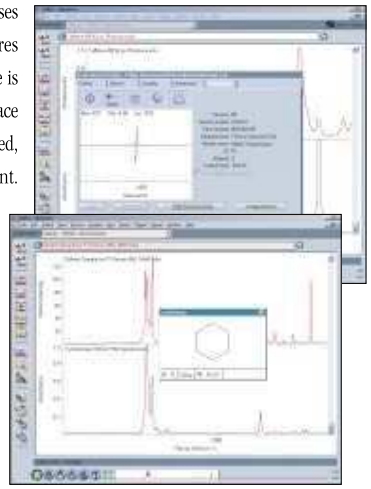
NEXUS

The Thermo Nicolet Nexus® spectrometers are the highest performance Fourier transform infrared (FT-IR) systems available. Design excellence and smart system components are the keys. Thermo Nicolet has paid special attention to every detail of the Nexus spectrometer to make all of your analyses as hassle-free as possible. Nexus ensures reproducible results because the baseplate is precision cast, the optics are pinned in place and the major components are optimized, user-replaceable and always in alignment. Nexus provides real-time feedback on all aspects of sample analysis with Thermo Nicolet's exclusive Enhanced Synchronization Protocol (E.S.P.) technology.



These Nexus advantages allow the system to achieve amazing levels of stability and reproducibility over time, while maintaining flexibility and upgradeability.

Superior Optics

All Nexus spectrometers can be configured for multiple spectral ranges, giving you complete experimental flexibility:

- *Far-IR*
- *Mid-IR*
- *Near-IR*
- *UV-Visible*

Plus, Nexus uses computer-based expertise to recognize when you change an optical component. It automatically updates spectral ranges, sensitivity and experimental parameters, providing fast turnaround time between experiments.

Smart Beamsplitters

The Nexus spectrometer automatically recognizes which beamsplitter is installed as soon as it is inserted into the interferometer. The Nexus system aligns it for optimum performance and sets the instrument parameters for the correct spectral range. Thermo Nicolet's unique beamsplitter options allow you to sample from the near-infrared to the far-infrared using just two beamsplitters – the exclusive XT-KBr™ beamsplitter from 11000 - 375 cm^{-1} and the patented far-infrared Solid Substrate beamsplitter down to 20 cm^{-1}. Measuring across multiple spectral ranges has never been easier!

Smart Detectors

The Nexus smart system also recognizes which detectors have been installed and where they are located. Electrical connection is made as soon as the detector is plugged into the pinned detector position, and the correct beam path is set automatically. There are no switches, adjustments or changes required to the hardware or software for the detector to be ready to use. Plus, Thermo Nicolet offers the widest range of standard and custom detectors for any FT-IR application. Changing, adding or moving detectors is a snap!

External Beam Options

Up to five external beams are available on every Nexus spectrometer allowing for left-, right- and front-mounted accessories and detectors, along with an emission port. All external beam mirrors are motorized and controlled through the software allowing for rapid reconfiguration of the system.

Environmental Options

The Nexus offers a purge option and a sealed and desiccated option to meet the needs of your climate, laboratory environment and sample type. The unique Nexus Smart Purge option optimizes and speeds up purge recovery without requiring you to close off manual purge ports. Smart Purge senses when you are changing samples and automatically turns up the purge. This ensures more rapid recovery of purge – in a few seconds!

Smart Accessories™

Snap a Smart Accessory into your Nexus and you will find uncompromising sampling performance. Using innovative technology unique to Thermo Nicolet spectrometers, Smart Accessories provide the highest optical throughput and sampling flexibility. Smart Accessories are pinned in place and permanently aligned, ensuring your results are reliable and reproducible. The smart system automatically recognizes the accessory and loads the correct operating parameters for your unique experiment. It then performs a set of quality checks to verify that the accessory and system are working optimally. There is a Smart Accessory for almost any sampling need:

- *Transmission*
- *Diffuse reflectance*
- *Single bounce ATR*
- *Multiple bounce ATR*
- *Mid-IR fiber optics*
- *Near-IR fiber optics*
- *Corrosive-resistant HATR*
- *Research-grade HATR*
- *Research-grade diffuse reflectance*
- *Near-IR diffuse reflectance*
- *Diamond crystal HATR*
- *Specular reflectance*

Smart Accessories are the cornerstones to successful sample handling. Thermo Nicolet's Smart Accessory standard is supported by major accessory vendors including Thermo Spectra-Tech.

Intuitive Interaction

Sampling Ergonomics

Thermo Nicolet takes great pride in showing you what's under the cover of the finest FT-IR spectrometer available.

Form and Function

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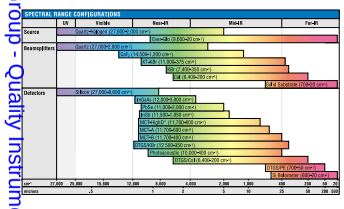
Superior Performance By Design



HIGH PERFORMANCE ELECTRONICS

- High speed, digital signal processing (DSP)-controlled
- Fully upgradeable
- Energy efficient

SYSTEM VALIDATION

- Automated and manual system validation using ASTM standards
- IQ, OQ, PQ, DQ
- Non-editable spectral history files, log files and report notebooks

SMART ACCESSORIES

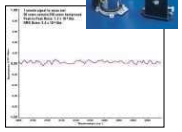
- Snap-in installation and pinned, permanent alignment
- Automatic accessory recognition and experiment setup
- High throughput, high performance
- Spectral quality checks
- Fast, automatic purge (on purged systems)
- Multimedia tutorials and training

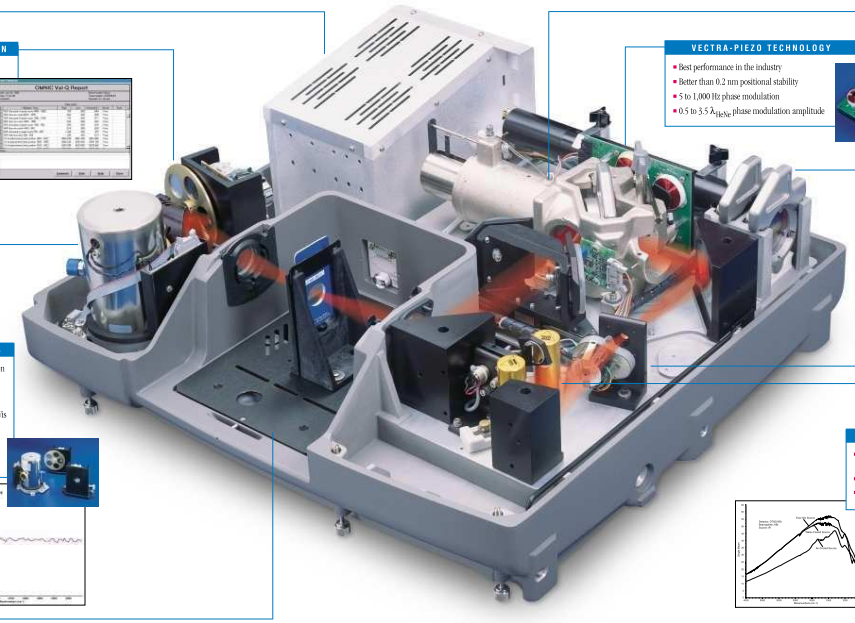
STANDARD ACCESSORIES

- Accommodates all commercially available accessories
- Smart Purge keeps sample environment stable during sample or accessory changes
- Compatible with Thermo Spectra-Tech accessories for the added benefit of accessory recognition
- Multimedia tutorials and training

SMART DETECTORS

- Automatic detector recognition and beam path setup in any position
- Detectors for all applications: Mid-IR, Near-IR, Far-IR, UV/Vis
- Rugged, high-performance, cooled detectors – patented stainless steel dewar, No-Ice™ design, 18-hour hold time



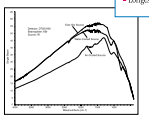


VECTRA-PIEZO TECHNOLOGY

- Best performance in the industry
- Better than 0.2 nm positional stability
- 5 to 1,000 Hz phase modulation
- 0.5 to 5.5 λ_{HeNe} phase modulation amplitude

SMART BEAMSPLITTERS

- Beamsplitter auto-recognition and setup of the spectral range
- Instant alignment
- A variety of beamsplitter options for full spectral range coverage
- Swap beamsplitters in less than 10 seconds

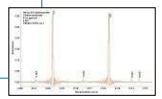


SMART SOURCES

- More efficient than water-cooled sources
- Highest optical throughput
- Longest lifetime (five- year warranty)

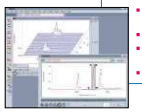
HIGH PERFORMANCE INTERFEROMETER – DYNAMIC ALIGNMENT

- Dynamic alignment – a MUST for research FT-IR
- Exceptional high-resolution line shapes
- Superior long-term and short-term stability
- Easy beamsplitter interchange mechanism
- Automated diagnostics for peak performance



SYSTEM SOFTWARE

- Pentium® computer driver
- Windows® 98, ME, NT and 2000
- Network compatible
- Powerful and flexible OMNIC® software
- Intuitive interface



PRECISION CAST OPTICS

- Pinned in place – no adjustments or glue
- Automatic optimization of optical signal
- Installation, testing and optimization of any component in under 15 seconds
- Reproducible results
- Up to five external beam ports

MANUFACTURING EXCELLENCE

- ISO 9001 certified design and manufactured hardware and software
- Certified Product Development Process (PDP)
- More than 10,000 installed FT-IR systems worldwide

CONTINUING SUPPORT

- Maintenance contracts
- Validation programs
- A variety of training options
- Internet support
- Continuously trained field service experts

Exceptional Sensitivity

Flexibility & Upgradeability

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Nexus 870 with Bolometer

Nexus with TGA Interface

Every Nexus spectrometer can take advantage of all advanced capabilities available, whether part of the original system configuration or added at a later date

The Nexus spectrometer has full upgrade potential. Thermo Nicolet is the only FT-IR spectrometer manufacturer who can offer you true upgradeability from the basic unit to a fully loaded advanced research system at any time as your needs change.

This is possible because all Nexus spectrometers share a common optics and electronics platform. Start with the basic Nexus spectrometer, and when your needs grow, you can add multiple beamsplitters, detectors and sources for expanded spectral range. You can add microscopy, gas chromatography/FT-IR (GC/FT-IR), thermogravimetric analysis/FT-IR (TGA/FT-IR), FT-Raman and polarization modulation (PEM module) capability. You can even add step scan capabilities to your system for advanced applications such as time resolved spectroscopy (TRS), dynamic polymer rheology and phase modulation photoacoustic spectral (PAS) depth profiling.

External and Advanced Experiment Options

- *Infrared Microscopy*
- *FT-Raman*
- *GC/FT-IR*
- *TGA/FT-IR*
- *PEM module (IRRAS, VCD, VLD)*
- *Step Scan*
- *ns TRS*
- *Phase modulation PAS*
- *Sample modulation (polymer stretching)*

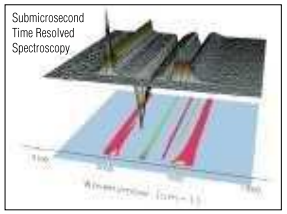
Nexus with GC Module

Advanced Applications

The Nexus 870 incorporates the highest performance interferometer available in the industry. The new enhanced Vectra-Piezo™ interferometer is a unique design that is superior for both linear scan and step scan experiments. For kinetics applications, the Nexus 870 spectrometer can reach speeds up to 75 spectra/sec at 16 cm^{-1}.

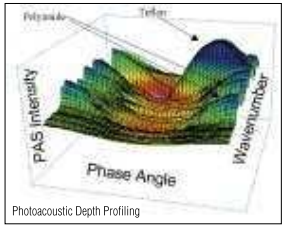
The design of the Vectra-Piezo interferometer is optimized for both time-resolved and phase-resolved step scan experiments. The piezoelectric transducer driven phase modulation provides optimal performance for photoacoustic depth profiling and dynamic polymer rheology experiments. Integrated DSP demodulation provides up to six channels of information from a single experiment without requiring any expensive lock-in amplifiers.

During step scan, the Vectra-Piezo moving mirror has the best positional accuracy in the industry. This accuracy is critical for time-resolved, amplitude modulation, phase modulation and sample modulation step scan experiments where precise positioning of the moving mirror is critical to the ultimate signal-to-noise ratio of the experiment. Unlike traditional air-bearing interferometers that are highly sensitive to external vibrations, the Vectra-Piezo is nearly immune to normal laboratory vibrations and acoustic noise. Thus, the Vectra-Piezo can be used for the most sensitive step scan experiments without requiring an expensive optical table.



Best Performance in the Industry

- *Unrivaled mirror position stability*
- *Piezo-driven phase modulation*
- *Multi-channel integrated DSP demodulation*
- *Rapid scanning to 75 spectra/sec*
- *Time-resolved to <10 nsec*
- *Photoacoustic depth profiling*
- *Dynamic polymer rheology*



Photoacoustic Depth Profiling

Components, such as the laser, source and detectors, are user-changeable and pre-aligned. This maximizes flexibility, reduces the cost of system maintenance and eliminates complicated alignment.

86% of the S&P 500 companies that use FT-IR have chosen Thermo Nicolet.

"Thermo Nicolet's FT-IR technology has allowed us to use infrared spectroscopy for quantitative analysis for the very first time. This largely came about because of the incredible reproducibility of the data."

"Instrument flexibility is very important to me. I view accessories as tools in my toolbox. Since I never know what new problems I am going to be faced with each day, I value the ability to choose whatever tool I need to get the job done."

"The Thermo Nicolet TQ Analyst™ software is by far the best quantitative analysis tool in the industry."

"I have been a Thermo Nicolet customer for more than 17 years. Thermo Nicolet has always provided me with the best equipment available to solve my problems."

"My company has more than 75 standard IR methods that are used on a daily basis for quality control. The advanced macro writing capability of OMNIC software allows us to program complete methods with ease and total control."

"Last year we upgraded our spectroscopic capabilities to include step scan for photoacoustic depth profiling, PM-IRRAS and the Continuμm™ microscope."

More Sampling Options

For over 30 years, Thermo Nicolet has led the way in providing high-performance, high-quality FT-IR spectrometers for analytical and research laboratories. With more than 10,000 installed FT-IR spectrometers and an unparalleled reputation, it is no surprise that Thermo Nicolet is rated the best FT-IR company for –

- *High quality*
- *Trusted service and support*
- *Reliability and durability*
- *Ease of use of its instruments*
- *Design innovation*
- *Superior instrument performance*

The Nexus combines Thermo Nicolet's expertise in FT-IR with our innovative smart system approach to help you be faster and more productive, and to provide you with the best answers to your analysis questions.

Nexus \'nek-ses\ n., **1**. A means of connection, link or tie. **2.** A connected series or group. [Lat. nectere, to bind]

Thermo Nicolet

Thermo Nicolet has direct subsidiary offices in North America, Europe and Japan.
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