

## Nicolet 380 FT-IR Spectrometer



### The Total Solutions Package



QA/QC



Forensic



Chemical

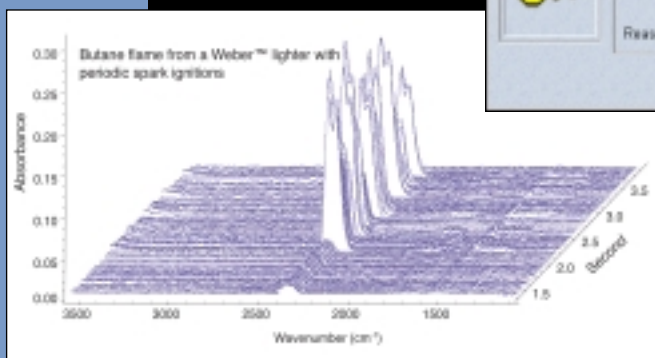


Pharmaceutical

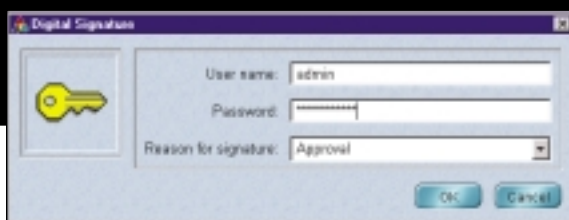
## The Complete Package

The Nicolet™ 380 FT-IR spectrometer is the standard for a total solutions package to address your infrared analysis needs. The system works with you throughout your process; from receiving the sample to collecting the data and reporting the results. The Nicolet 380 does more than provide a spectrum, it solves your problems.

The spectrometer is compatible with a variety of tools to keep your process compliant with GLP, cGMP, 21 CFR Part 11 and many other regulatory requirements. It is fully configured to assist you in meeting all of your system qualification and validation requirements. Throughout the spectrometer's lifetime, Thermo Electron Corporation supports you with total quality; from manufacturing to installation to customer support.



**Rapid Scanning**



**21 CFR Part 11  
Compliance Tools**

### Qualification Tools



### Nicolet 380 with a Nicolet Centaurus Microscope

*Identify inclusions, defects, contaminant particles.*



*Nicolet 380 FT-IR spectrometers are built to seamlessly integrate the spectrometer with accessories and software to provide answers and solutions.*



**Nicolet 380 with  
TGA Interface**



**Nicolet 380 with  
Integra™ Liquid  
Analysis System**

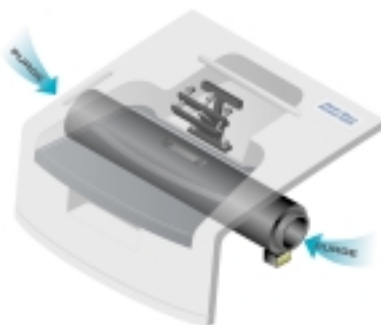
The Nicolet 380 spectrometer is your ideal FT-IR partner. As a total solutions package, it integrates the spectrometer, software, accessories, and expertise to provide the best results for all your infrared testing requirements in the laboratory.

## Easy Sampling

- Smart Accessories are recognized immediately
- Customized experiments provided for each sampling technique
- Permanently aligned to ensure optimized performance and eliminate drift
- Full-sized sample compartment for compatibility with any infrared accessory

## Easy Purge

- Sealed and desiccated for transmission analysis
- Small purge volume to stabilize quickly
- Smart Accessories purge automatically when inserted

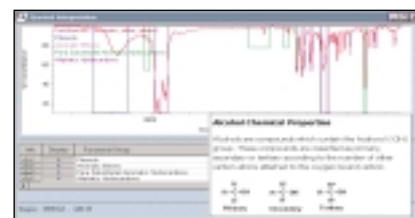


## Easy Software

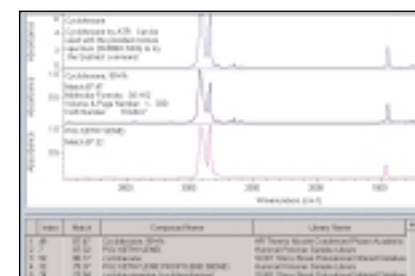
- Intuitive OMNIC™ software provides complete data collection, analysis, and reporting tools
- Customizable tool-bar keeps common functions available with a single mouse click
- Automated procedures minimize training and speed analysis
- File-embedded audit trail tracks data changes automatically

## Easy Identification

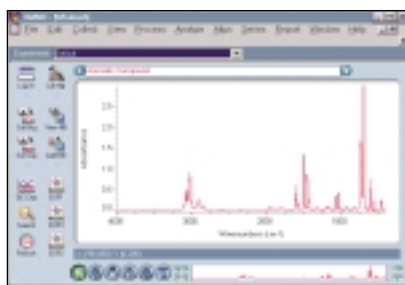
- Standard software includes detailed spectral interpretation information on over 100 common functional groups
- HTML format interpretation information can be included in reports and presentations
- Excellent tool for training new users or reference for non-spectroscopists



- Unparalleled collection of FT-IR databases for identification of unknown compounds
- User library creation is a standard feature



**Nicolet 380 with a Smart Collector™ Diffuse Reflectance Accessory**





Providing expert guidance at each step, the Nicolet 380 spectrometer enhances productivity with confidence and ease through continuous system checks and data monitoring. The spectrometer's intelligence takes raw spectral data and translates it into the answers needed.

## Smart Components

- **Dual-mode source** – in addition to normal operating mode, the source can be maintained in Rest mode during periods of inactivity, thereby increasing its life



- **Beamsplitters** – choose between KBr (7800-350  $\text{cm}^{-1}$ ), CsI (6400-200  $\text{cm}^{-1}$ ), or XT-KBr (11000-375  $\text{cm}^{-1}$ ) to enable mid-, far-, or near-IR spectroscopy



- **Integrated scan buttons** – execute common OMNIC software commands directly at the spectrometer, customize via macros for your specific application
- **Detectors** – a selection of DTGS, TE-cooled DTGS, or MCTA detectors for analysis flexibility
- **Electronics** – high-performance module with 24-bit ADC, 500 KHz A/D speed, and USB 2.0 interface

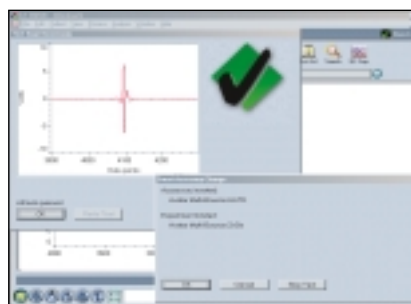
## Smart Sampling Modules

- Widest range of accessories for any sampling technique – transmission, single or multi-bounce ATR, specular or diffuse reflectance, gas analysis, etc.
- Automatic accessory recognition, performance checks, and experiment selection
- Data quality checks can identify potential problems, such as scratched or dirty crystals to ensure data quality



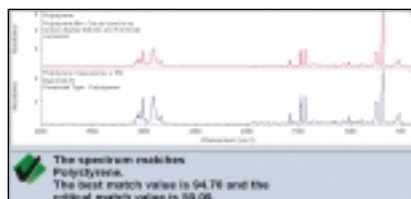
## Smart Checks

- Enhanced Synchronization Protocol (E.S.P.) monitors data as it is collected to ensure optimum performance
- System provides recommendations for performance improvement and troubleshooting procedures
- Continuous monitoring provides confidence in consistent results every day



## Smart Searching

- Proprietary Search Expert and QC Compare software features give expert advice
- Search Expert feature provides matches and interpretation of results
- QC Compare allows comparison of collected data with known standards for pass/fail confirmation



## Smart System Qualification

- Optional qualification package verification procedures to ensure GLP/cGMP compliance
- Optional data security software available for users concerned with electronic record integrity and digital signatures for 21 CFR Part 11 compliance
- Installation and operational qualification services to certify instrument set-up and performance

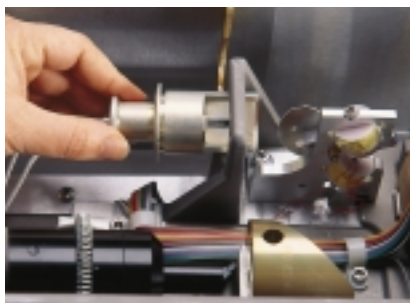


Nicolet 380 with a Smart SAGA™ Grazing Angle Accessory

Under the cover of the Nicolet 380 FT-IR spectrometer is an advanced optical instrument. Pinned-in-place optics provide a system with remarkable stability and reproducibility. The optical framework is a precision-cast single piece that guarantees incredible precision in component installation without alignment. This allows user-replaceability of many components, minimizing long-term maintenance costs, and ensuring that key optical components do not drift in alignment over time.

## Proven Optics

- Short pathlength from source to detector results in minimal atmospheric influences in spectral data
- Pinned-in-place design includes the source, laser, mirrors, detector, and other critical components for long-term stability
- High performance built into this compact instrument does not compromise valuable laboratory workspace

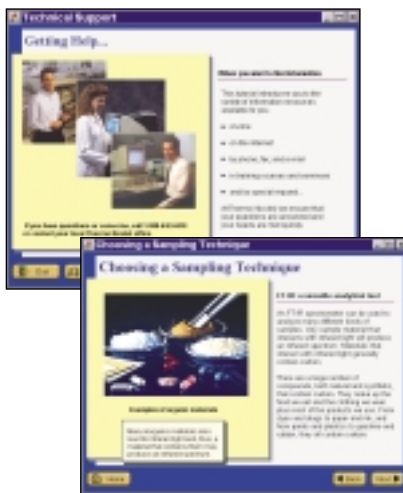


## Proven Performance

- Exceptionally stable interferometer with a rugged design
- Instrument provides excellent resolution capability (0.5  $\text{cm}^{-1}$  available)
- Compact spectrometer footprint size also minimizes environmental changes or vibration disturbances, producing higher quality data

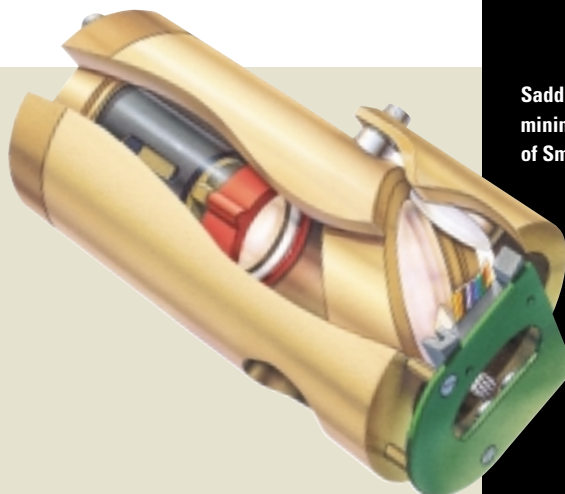
## Proven Service

- Provides built-in training course for busy laboratories
- Quality support from Thermo's customer service expertise; providing extensive and knowledgeable solutions throughout the life of the spectrometer
- Extensive multimedia tutorials on all subjects from FT-IR theory to sampling accessories
- Streamlined and consistent procedures provided through accessory checks and reporting tools
- Allows users to get answers to all FT-IR questions efficiently from Thermo, the leader in infrared spectroscopy



## Exceptional Alignment

- Dynamic alignment provides continual data optimization while scanning
- Excellent scan-to-scan reproducibility
- Consistent and high performance data available day after day
- Patented technology U.S. Patent 5,883,712



User-replaceable  
HeNe laser

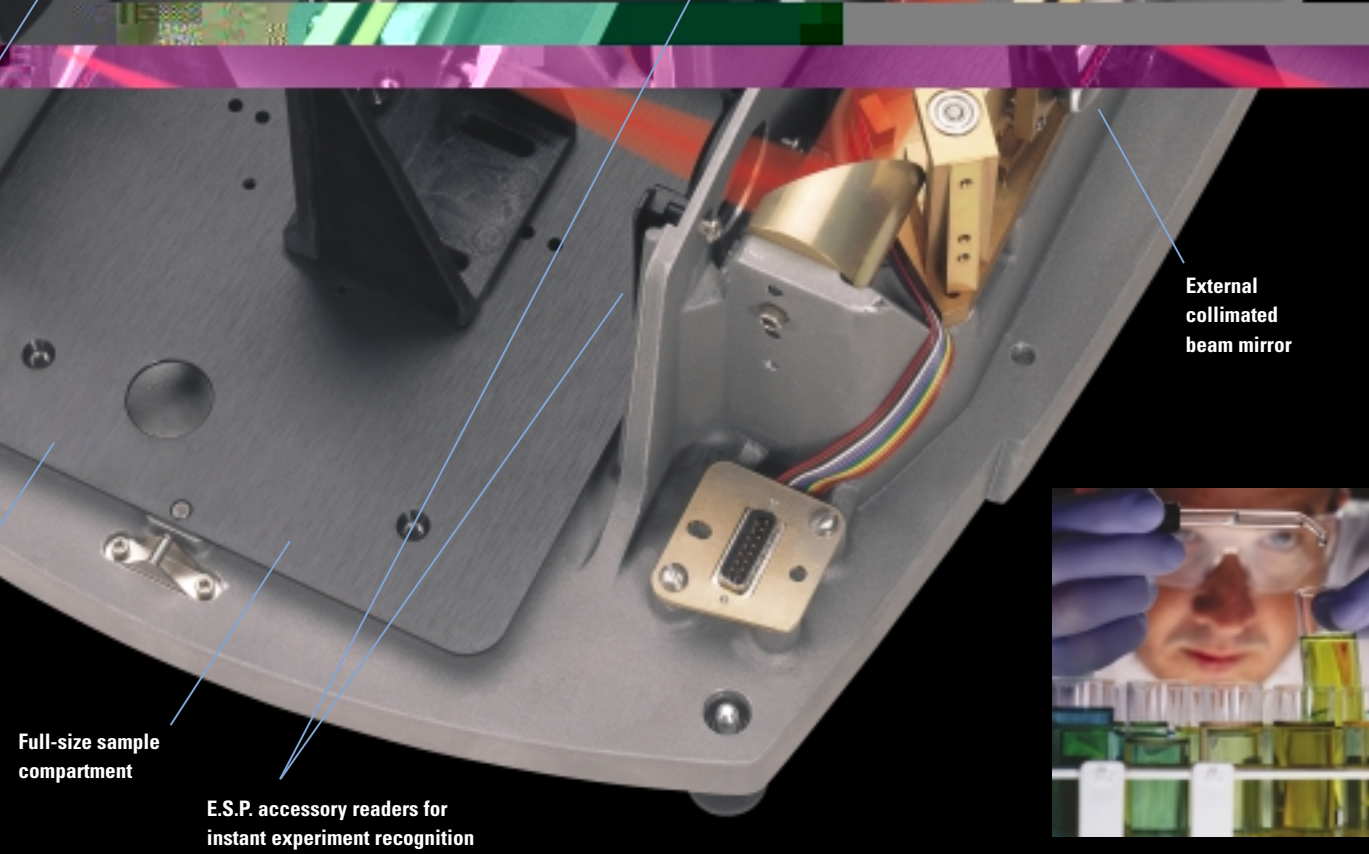
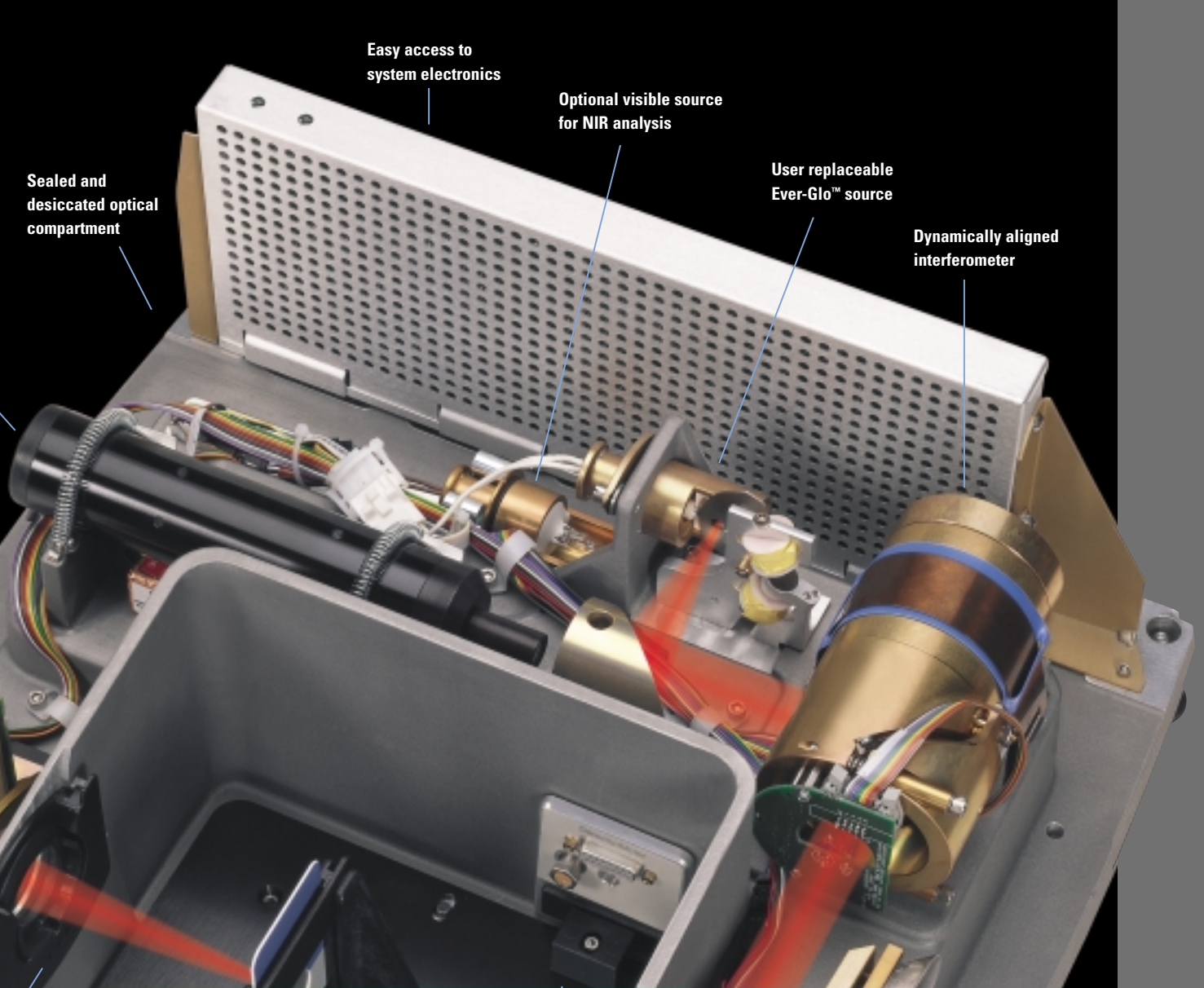
Pinned-in-place detector

Integrated  
system  
validation  
wheel

Saddle mount for  
minimal purge volume  
of Smart Accessories

Interchangeable  
Snap-In™ baseplate





# Thermo Electron Corporation's Family of FT-IR Technology

Thermo Electron Corporation is the worldwide leader in FT-IR instrumentation, delivering powerful solutions to scientists since the 1970's.

## Nicolet x700 FT-IR Series

- Unlimited upgradeability
- Superior optical throughput
- High resolution
- Multiple spectral ranges
- Rapid scanning/fast kinetics



## Nicolet 380 FT-IR Spectrometer

- Easy sampling
- Easy purge
- Easy interface
- Easy identification
- Easy presentation



## Nicolet Continuum™ Infrared Microscope

- Highest infrared resolving power
- DIC & fluorescence illumination
- Simultaneous view and collect
- Dual detectors
- View ATR contacting sample
- Full automation
- XL array imaging



## Nicolet Centaurus™ Infrared Microscope

- Simultaneous view and collect
- Flexible ATR options
- Binocular and video view
- Easy to use



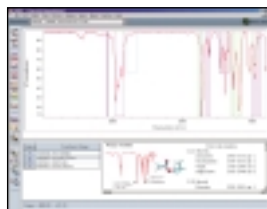
## Smart Accessory Sampling Modules

- Transmission, ATR, diffuse reflectance, specular reflectance
- Pinned-in-place design for quick analysis
- Permanently aligned robust systems
- Maintenance-free, protected optics



## Spectral Libraries

- Over 60 unique databases
- High-resolution format
- Wide range of applications including polymers, pharmaceuticals, chemicals, and more



*In addition to these offices, Thermo Electron Corporation maintains a network of representative organizations throughout the world.*

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