

Introducing the NEW PerkinElmer Spectrum 100  
FT-IR and FT-NIR Spectrometers



Upgrade to a  
better lab experience

In order to meet the requirements of today's demanding lab environments, the Spectrum 100 FT-IR and FT-NIR instruments are designed and manufactured to the highest quality standards to ensure quick and consistently superior results.

Available for both the mid-infrared range (Spectrum 100) and near infrared range (Spectrum 100N), the Spectrum 100 Series is engineered by the experienced and knowledgeable FT-IR experts at PerkinElmer.

## Defining the standards for FT-IR technology for over 60 years

PerkinElmer is an experienced and knowledgeable supplier of IR and NIR solutions for laboratories worldwide. By taking a comprehensive quality approach – from product design, development and manufacturing to customer service and support – PerkinElmer provides the highest quality lab experience, along with the most accurate and reproducible results in the industry.

Spectrum™ 100 FT-IR and FT-NIR Spectrometers:

**Reliability** – High-quality engineering, driven by customer requirements, the Spectrum 100 Series provides your lab with unmatched longevity and high dependability

**Quality of results** – Superior design, developed through a thorough knowledge of FT-IR and FT-NIR instrumentation, delivers the highest sensitivity and stability in its class, providing accurate data every time

**Increased productivity** – Exclusive sampling features and intelligent software offer quick, predictable and reproducible results



Inside the NEW Spectrum 100 Series





# Upgrade to the ease and precision of the new Spectrum 100

## **Provides the critical reliability your lab requires for consistent, reproducible results**

- Components critical to performance and stability are designed to be independent of mechanical movement, providing long-term reproducibility of results and extended instrument lifetime
- Integrated self-test diagnostics and real-time data testing deliver 100% confidence
- Exclusive accessory features eliminate measurement inconsistencies due to sampling or operator errors

## **Delivers industry-leading quality of results**

- High-precision, opto-mechanical engineering, combined with state-of-the-art digital signal processing electronics, delivers the highest sensitivity in its class
- Patented, advanced atmospheric compensation algorithm removes spectral interferences due to H<sub>2</sub>O and CO<sub>2</sub>, increases the reproducibility of spectral data and minimizes purge requirements
- Exclusive source design and electronically temperature stabilized detectors ensure highly consistent results, time after time

## **Ease of use equals increased productivity for your laboratory**

- LCD display and Go Button improve your lab's productivity by minimizing analysis steps
- Intuitive and easy-to-use interface provided by the Spectrum software suite minimizes analyst training and speeds operation
- Smart, zero-alignment modular accessories are quickly interchangeable

## **Knowledgeable, experienced and responsive global service and support keeps your lab running smoothly**

- Expert service ensures your lab is backed by the most highly qualified engineers in the industry
- Extensive support covers all of your lab's maintenance, validation and qualification needs
- A complete range of training and certification services is available and can be tailored to the specific needs of your laboratory



**PerkinElmer has a full range of FT-IR and FT-NIR instruments to meet the needs of today's demanding laboratories.**

Whether your lab requires an instrument for raw materials testing, an advanced multi-application research platform or instruments for microscopy and imaging, we have the solution for you.

See back cover for an overview of our infrared spectrometers, or visit [www.perkinelmer.com/ftir](http://www.perkinelmer.com/ftir)



Now, you can **experience**  
high **reliability** in your lab

## REPRODUCIBILITY

- Zero alignment interferometer design reduces complex electronic optical adjustments
- Kinematically mounted optics ensure perfect optical alignment, delivering consistent results
- Built-in intelligence controls and monitors measurements, alerting the user to potential analysis errors
- Lock-down feature prevents the sampling plate being removed and damaged due to mishandling
- Accessory vapor seal prevents dust or solvent contamination, reducing measurement variations
- Smart accessories, featuring integrated self-test routines, provide the highest confidence in the integrity and quality of data

## HIGH SENSITIVITY

- State-of-the-art digital signal processing reduces signal artifacts and improves response linearity, providing the highest level of spectroscopic performance
- Exclusive optics maximize source output, increasing the Spectrum 100's signal-to-noise ratio without sacrificing source lifetime
- High-quality, low-angle, off-axis optics minimize aberrations and provide the highest optical efficiency for the most demanding measurements

### UATR – A PerkinElmer Exclusive

## The Universal ATR (UATR) Accessory

PerkinElmer sets the industry standard in ATR functionality, with its exclusive Universal ATR Accessory (UATR) – allowing speedy analysis of a wide range of samples, from liquids to hard solids. With the NEW UATR, you will have the highest confidence in the reproducibility of your results and in the longevity of your system. You won't waste valuable time re-analyzing samples, waiting for replacement parts or servicing your critical sampling accessory.

- Permanently aligned kinematically mounted sampling ensures perfect measurement-to-measurement reproducibility
- Automatic pressure release eliminates accessory downtime due to cracked or broken accessories
- Smart, plug-and-go accessory recognition and integrated diagnostics warn of common sampling or analysis errors providing high confidence in results

UATR





The NEW Spectrum 100N  
with Autosampler accessory

## STABILITY

- Fixed, mirror-pair interferometer design is immune to the effects of tilt and shear present in commercial instruments that incorporate a linear moving mirror construction
- Downward facing source design eliminates signal variations due to temperature fluctuation
- Electronically-stabilized source hot spot increases long-term measurement stability and extends source lifetime

The Spectrum 100 Series provides a

**quality user experience**

and **improves productivity**

- Spectrum software provides an easy-to-use interface that minimizes training and ensures consistent operation day to day and user to user
- Instrument user display and Go Button features allow users to continually analyze multiple samples conveniently, directly at the instrument, improving productivity
- Smart, zero alignment plug-and-play modular accessories allow quick, predictable and reproducible sampling



Go Button designed to increase productivity, by eliminating analysis steps and simplifying operations



# Sampling options for the Spectrum 100 Series

## SPECTRUM 100 ACCESSORIES



### UATR

- Provides automatic recognition of top-plate crystal material, number of reflections and serial number
- Displays the force applied to sample, ensuring analysis reproducibility
- Multiple replaceable sample top-plates for the highest measurement flexibility



### HATR

- Delivers automatic recognition of top-plate crystal material, crystal angle and serial number
- Displays on-screen the force applied to sample, ensuring analysis reproducibility
- A wide range of optional top-plate materials and angles of incidence is available



### Diffuse Reflectance

- Simplifies analysis of powders and difficult solid materials
- Range of sampling tools enables the easiest sample preparation
- Automatic sample positioning, improves measurement sensitivity

Simple yet powerful, Spectrum software works the way you work.

From materials identification or qualification to the most advanced research and data analysis, our know-how in FT-IR and our broad portfolio of software guarantees you'll have the perfect solution for your lab's needs. With simple user controls, interactive multi-media tutorials and comprehensive, context sensitive help files, Spectrum products are both intuitive and easy to use. And because PerkinElmer is a Microsoft® Certified Partner, you can be confident in the quality of all our software offerings.



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# Maximum Flexibility, whatever your laboratory needs

## SPECTRUM 100N ACCESSORIES



### NIR Tablet Autosampler

- 30-position autosampler for powders or tablets
- Patented custom tablet mold system provides the highest reproducibility
- Transmission and reflectance modes enable full tablet characterization



### NIR Remote Solids Probe

- Allows sampling of solids or powders up to 10 meters from the instrument
- Handset user interface and LCD display increases productivity by allowing continuously remote operation
- Design facilitates easy and rapid decontamination and is electrically safe for use in hazardous environments



### NIR Remote Liquids Probe

- Allows remote transmission measurement of liquid samples providing the ability to measure directly in reaction vessels
- Includes a universal interface for compatibility with a wide range of probes

## SPECTRUM 100 & 100N ACCESSORIES



### Liquid Sipper

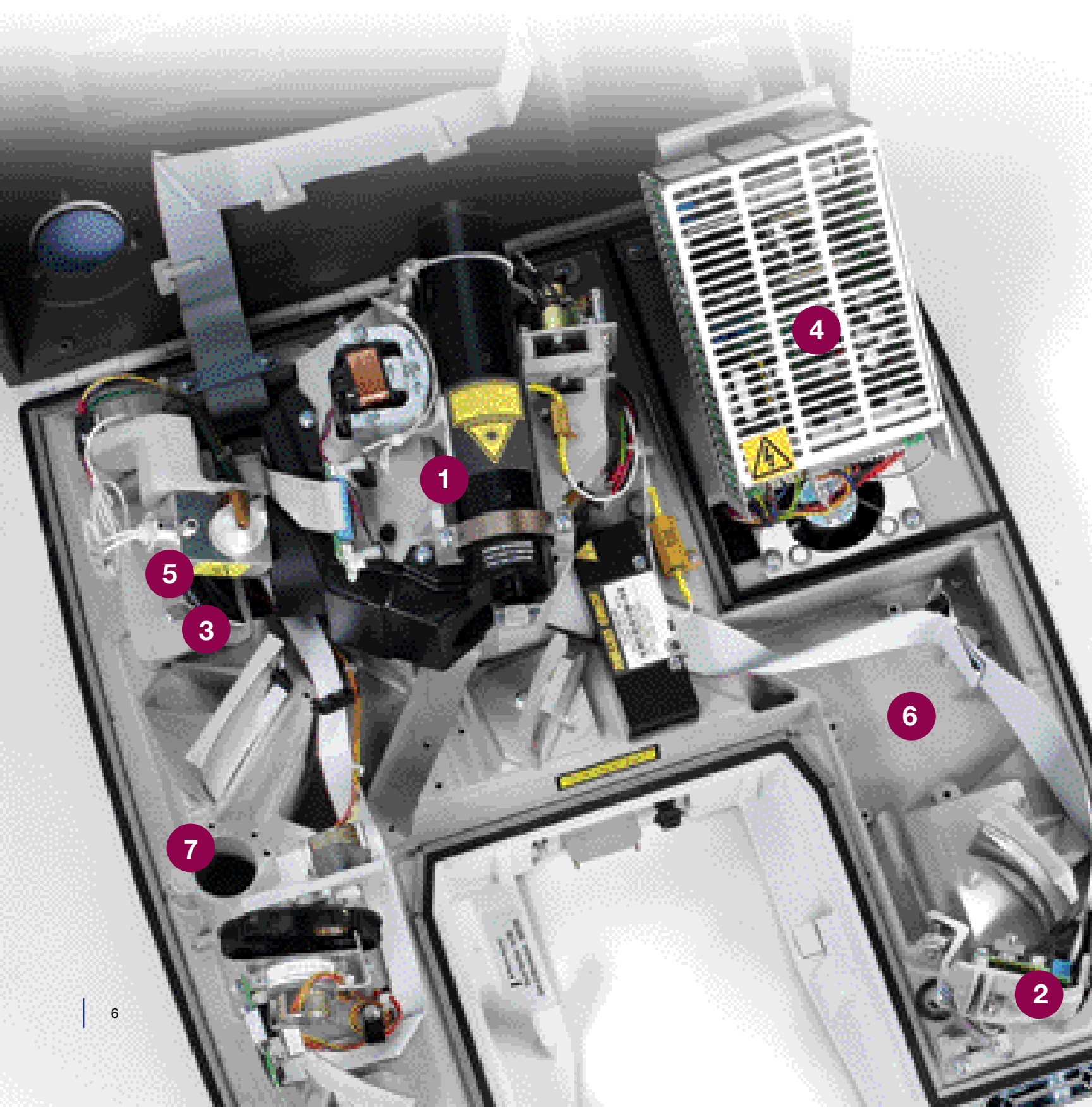
- Automated sampling removes the need for time-consuming, manual filling of cells
- Built in, software contamination check helps reduce errors in analysis
- Available with a range of cell window materials and pathlengths to allow measurements in the Near-IR or Mid-IR



### NIRA

- Measures solids, liquids, powders, gels and pastes within containers, such as blister packs, glass vials and polyethylene bags
- Self-referencing functionality increases reproducibility and ease of use
- Range of optional accessories available for optimized measurements of liquids or inhomogeneous solids

Inside the Spectrum 100/100N: Our designs in engineering  
**significantly improve your  
lab experience**







# PerkinElmer – The industry's finest service and support

Keeping your performance  
and productivity at optimum levels.

Think of us as quality local support with global reach. You're never far from our responsive, comprehensive service and support. Because when you require service, hardware or software upgrades, training and consulting, or validation services – we'll increase continuity by coming to you, wherever you are, and have your lab up and running in no time.

- 1** Dynascan™ interferometer
- 2** Electronically, temperature stabilized detector
- 3** Source doubling mirror
- 4** Sigma-Delta Conversion technology
- 5** User replaceable, electronically stabilized source
- 6** Second detector expandability
- 7** Upgrade to microscopy and imaging capabilities

**PerkinElmer service and support – assures ongoing performance and productivity. We'll be there when your lab changes – or anytime you need us.**

Global service capabilities

Preventive maintenance

On-site, on-demand repair

Software and hardware upgrades

Validation services

Training and consulting

Free technical and applications phone support

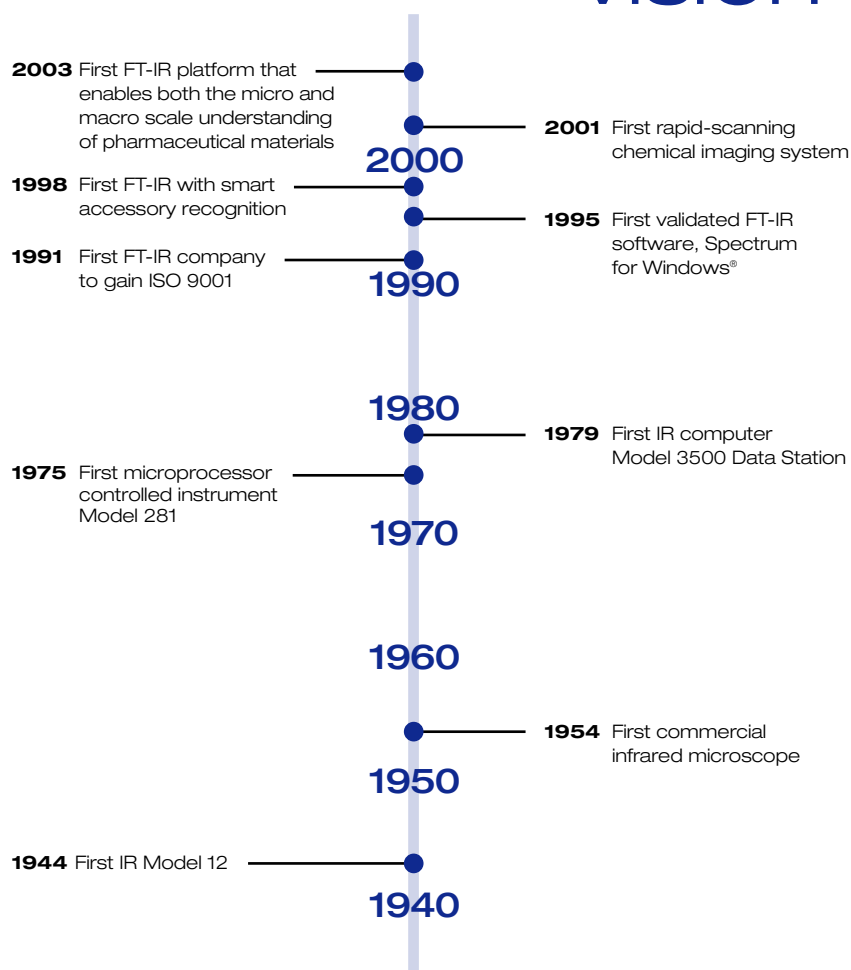
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a history of **innovation...**

a **vision** for the **future**



For more than 60 years, PerkinElmer has remained the world leader in infrared spectroscopy and has continually advanced the technology to help laboratories produce accurate and reliable results with ease. Through industry firsts and patented technologies such as Absolute Virtual Instrument™ (AVI) and Atmospheric Vapor Compensation™ (AVC) as well as an in-depth IR training and unmatched service, PerkinElmer continues to define the gold standard in FT-IR.

## PerkinElmer patented technology

FEATURE	BENEFIT	PERKINELMER EXCLUSIVE
<b>AVC Atmospheric Vapor Compensation</b>	AVC features an advanced digital filtering algorithm designed to subtract out CO <sub>2</sub> and H <sub>2</sub> O absorptions in real time. AVC effectively eliminates interference from these atmospheric constituents, allowing your lab to achieve the most accurate and reproducible results.	YES
<b>AVI Absolute Virtual Instrument</b>	Our AVI approach to calibration allows the same standardization used on individual measurements to be applied to measurements collected over time. AVI standardizes the instrument's wavenumber scale to a far higher accuracy than can be achieved with conventional calibration methods, resulting in transmission spectra that can be related easily and directly to theory. AVI's internal, traceable protocol allows data to be transferred quickly and accurately between instruments – whether they are side-by-side or across the world.	YES
<b>Sigma-Delta Conversion</b>	Our use of Sigma-Delta modulators in the digitization of the FT-IR interferogram with the Spectrum 100 improves dynamic range, reduces spectral artifacts and increases ordinate linearity producing more accurate, reproducible results.	YES

# Spectrum 100 spectrometers: powered by PerkinElmer

PerkinElmer, Inc. is a global technology leader focused in the following businesses – Life and Analytical Sciences, Optoelectronics and Fluid Sciences. A \$1 billion market leader, the Life and Analytical Sciences division serves a large number of industries, including the academic research, biotechnology, clinical screening, pharmaceutical, environmental, forensic, petrochemical and semiconductor segments.

Our instruments, related software and customer support programs – including our Customer Care team of over 1,000 factory-trained service professionals deployed in

over 125 countries – help our customers to enhance research productivity, meet strict regulatory requirements, improve time-to-market, and increase manufacturing efficiencies.

Preferred for years by laboratories worldwide, the Spectrum 100 S---eries is the premier model of mid-range and near infrared range instruments. Unmatched flexibility, upgradeability, ease-of-use and superior data quality, as well as superior service and support, make the PerkinElmer Spectrum 100 series the top choice in spectroscopy instruments.

## THE SPECTRUM SERIES ADVANTAGE

### SPECTRUM 100 AND 100N

**Built to the highest quality specifications to ensure quick, consistently superior results**

- Electronically stabilized source and detector for repeatable measurements
- Go Button and instrument LCD display increase productivity and deliver ease-of-use
- H<sub>2</sub>O/CO<sub>2</sub> removal enhances accuracy and reproducibility of data
- Wide range of smart, quickly interchangeable accessories for every sampling need
- Spectrum software provides intuitive user operation and helps ensure consistent results, day-to-day, user-to-user

### SPECTRUM BX11

**Workhorse FT-IR system delivering dependable results**

- Incorporates sealed and desiccated optics, including the patented Dynascan interferometer and thermo-electrically stabilized detection
- Integrated, fully automatic instrument validation materials enable one-touch testing of instrument performance
- Range of software customization options
- Wide range of accessories available

### SPECTRUM GX

**The Spectrum GX systems set high performance standards for sophisticated research and development work**

- Designed for applications demanding the very highest levels of spectroscopic performance
- Industry-leading, signal-to-noise performance makes it the highest performing, research grade FT-IR system available anywhere, offering the highest levels of sensitivity
- Four separate sampling and detector areas combined with a broad range of upgrades provides the highest level of advanced applications flexibility

### SPECTRUM RX11

**Fully integrated processing and instrument control ensuring robust, simple measurements at a very economical price**

- Spill resistant, integrated-membrane keypad and full color display
- One-touch scanning and macro-programming capabilities
- Sealed and desiccated optics, incorporating the patented Dynascan interferometer
- Wide range of accessories available

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