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.

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 exclusive range.

See back cover for an overview of our infrared spectrometers, or visit www.perkinelmer.com/ftir

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.

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 H2O and CO2, 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
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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

**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

**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

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

### Reproducibility
- Zero alignment interferometer design reduces complex electronic optical adjustments
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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

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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 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

**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

**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

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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.

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

1. Dynascantm interferometer
2. Electronically, temperature stablized 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

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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

<table>
<thead>
<tr>
<th>FEATURE</th>
<th>BENEFIT</th>
<th>PERKINELMER EXCLUSIVE</th>
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<tbody>
<tr>
<td>AVC Atmospheric</td>
<td>AVC features an advanced digital filtering algorithm designed to</td>
<td>YES</td>
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<tr>
<td>Vapor Compensation</td>
<td>subtract CO2 and H2O absorptions in real time. AVC effectively</td>
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<tr>
<td></td>
<td>eliminates interference from these atmospheric constituents, allowing</td>
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<td>your lab to achieve the most accurate and reproducible results.</td>
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<tr>
<td>AVI Absolute</td>
<td>Our AVI approach to calibration allows the same standardization used on</td>
<td>YES</td>
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<tr>
<td>Virtual</td>
<td>individual measurements to be applied to measurements collected over</td>
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<tr>
<td>Instrument 2000</td>
<td>time. AVI standardizes the instrument’s wavenumber scale to a far</td>
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<td></td>
<td>higher accuracy than can be achieved with conventional calibration</td>
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<td>methods, resulting in transmission spectra that can be related easily</td>
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<td>and directly to theory. AVI’s internal, traceable protocol allows data</td>
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<td>to be transferred quickly and accurately between instruments – whether</td>
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<td></td>
<td>they are side-by-side or across the world.</td>
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<tr>
<td>Sigma-Delta</td>
<td>Our use of Sigma-Delta modulators in the digitization of the FT-IR</td>
<td>YES</td>
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<tr>
<td>Conversion</td>
<td>interferogram with the Spectrum 100 improves dynamic range, reduces</td>
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<tr>
<td></td>
<td>spectral artifacts and increases ordinate linearity producing more</td>
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<td>accurate, reproducible results.</td>
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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—series is the premier model of mid-range and near infrared range instruments. Unmatched flexibility, upgradability, 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.