

HIGH-PERFORMANCE  
FT-NIR THAT GOES  
WHERE YOU GO



**Spectrum Two N™**  
FT-NIR Spectrometer

For research use only. Not for use in diagnostic procedures.

  
**PerkinElmer®**  
*For the Better*

# HIGH-END ANALYTICAL CAPABILITIES THAT EVERYONE CAN USE



SPECTRUM TWO N

## From field to lab to the loading dock, it's the perfect FT-NIR for samples of all shapes and sizes

From pharmaceuticals to food, polymers to petroleum, analysts like you who perform both QA/QC and more advanced chemometric assays often need to do testing wherever the samples are – onsite, and on the fly. But are you willing to sacrifice high performance for portability? The truth is, an FT-NIR *can* deliver the same levels of sensitivity, resolution, and throughput, inside and outside the lab. And that's the whole idea behind the Spectrum Two N™ FT-NIR system.

It's the perfect system for labs that need to combine high-end performance with the ease-of-use features of a portable instrument, so every scientist in your organization, from novice to seasoned professional, can be proficient with it in no time. And you can choose from a wide range of software,

including packages that combine touchscreen simplicity with rock-solid security – perfect for highly regulated environments.

But what really sets the Spectrum Two N system apart are its state-of-the-art, plug-and-play accessories.

It delivers an NIR Reflectance Module, a triple-vial Heatable Transmission Module for liquids and oils, and a through-container, triggered Remote Sampling Module. And it can accommodate third-party accessories as well. Plus, it's all based on the most highly acclaimed IR platform in the business.

The Spectrum Two N system: It's high-performance FT-NIR, wherever you want it.



# The Spectrum Two N Is Wherever You Are



## Food

The Spectrum Two N system helps ensure the safety and authenticity of your spices, edible oils, and more, with on-the-spot screening for nutritional parameters as well as potential contaminants or adulterants. Our wide range of software options combined with our switchable accessories – the Heatable Transmission Module (HTM) for edible oil and our easy-clean NIR Reflectance Module (NIRM) – mean you can measure many ingredient types on one system.



## Pharmaceuticals

Ideal for highly regulated environments, the Spectrum Two N system can be deployed using a simple workflow approach, perfect for raw material identification and quantification challenges while delivering audit trails, e-signatures, and permission control that help you meet the stringent requirements of 21 CFR Part 11. Plus, the Remote Sampling Module (RSM) allows for through-container and point-and-shoot analyses, eliminating the need to open samples.



## Petroleum and Energy

For manufacturers of construction equipment and diesel and gas engines, the rugged Spectrum Two N system delivers high-performance measurements for fuels and biofuels. For refineries, distribution centers, and testing labs, the high-performance liquids analysis systems provide sensitive, cost-effective solutions by enabling ASTM or custom methods.



## Polymers and Recycling

The Spectrum Two N system is great technology for both qualitative and quantitative analysis of a wide range of chemical compounds of interest in industrial/polymer applications – the perfect nondestructive way to determine physical and chemical properties. And with sampling accessories such as NIRM for polymer pellets, HTM for monomer solutions, and RSM for polymer identification, the Spectrum Two N system enables polymer analysis wherever you are in the manufacturing chain.

# THE SMALL FT-NIR THAT'S REALLY BIG ON PERFORMANCE

## We're taking "plug and play" to the limit

Compact and sensitive, the Spectrum Two N system is built to accommodate the widest range of sampling options. It provides a plug-and-play NIR reflectance accessory, a heated oil accessory, and a triggered probe for through-container sampling, making it the most versatile FT-NIR available today, right out of the box. And you can easily switch between accessories for onboard solids reflectance, liquids transmission, or remote sample analysis.

## Reflectance that's second to none

The Spectrum Two N system features the NIR Reflectance Module (NIRM), designed from the ground up for sensitivity, transferability, and cleanliness. It delivers fast, simple measurement that's ideal for detecting and quantifying ingredients in raw material analysis for pharmaceuticals and adulterants in milk products, nuts, spices, and other foods.

Our NIRM technology accommodates disposable glass vials and plastic Petri dishes, and surfaces are easy to clean. The overlapping cover design stops material ingress into the system. And a magnetically detachable spinner system allows the top surface and the spinner to be cleaned easily, so you don't waste precious time between scans.

Plus, the NIRM's proprietary mirror-based approach delivers state-of-the-art method transferability. And the choice of 60- and 100-mm Petri dish spinners and a brand new stationary vial holder deliver unparalleled flexibility, too.

## A solid solution for edible oils

Our Heatable Transmission Module (HTM) is purpose-designed to meet the needs of edible oil producers worldwide. As with all components for the Spectrum Two N system, the HTM is clean technology: The 5-, 8-, and 12-mm glass vials are disposable, yet they're still heatable to accommodate solid fraction oils such as coconut and palm. And you can heat three vials at a time, so two can be preheated while the other is being analyzed, which translates to better throughput.

## Convenient through-container analysis

One of the most useful features for on-the-go testing, our Remote Sampling Module (RSM) enables through-packaging analysis wherever you are. Its trigger-based probe delivers simple, error-free operation with no sample prep and no need to open samples – perfect for novice users in receiving bays. What's more, the RSM has a fastening bracket that makes it safe to use the system on a moveable trolley or cart.



# The Smallest Detail Says Quality

## TECHNOLOGY THAT BUILDS ON WHAT WORKS

Based on tested, proven IR technology, our Spectrum Two N system delivers all the features and functionality you've come to expect from the industry leader in IR. It provides exceptional spectra for a variety of everyday applications, superior signal-to-noise ratio, and advanced electronics and sensitivity. And with its robust, portable design and incomparable ease-of-use features, it can be deployed wherever it's needed most.

### Innovative rotary interferometer

Eliminating dynamic alignment for reliable service over time

With our **Dynascan™** fixed-mirror-pair interferometer design, the system doesn't need to perform dynamic alignment to compensate for errors found in linear-mirror-movement systems. Our field-tested and proven interferometer technology incorporates a simple, noncritical bearing for reliable service over the life of the instrument.

### Advanced data-processing algorithms

Reduced interference for better, more consistent results

Spectrum Two N systems contain **Atmospheric Vapor Compensation™** technology, an advanced digital filtering algorithm that compensates for water absorption automatically, in real time. This feature delivers better, more consistent results for everyday use.

### Compact, robust enclosure

Protecting your optics to ensure maximum instrument uptime

Our **OpticsGuard™** technology provides a protective humidity barrier that shields the Spectrum Two N system from environmental effects and enables the system to be used under inhospitable working environments. And the long-life desiccant allows for maximum instrument uptime – even under the harshest conditions.

### Unique standardization technology

Data accuracy from instrument to instrument

With our **Absolute Virtual Instrument™** technology, standardization using gas-phase spectra ensures your instruments are accurately calibrated, while an instrument's wavenumber and line shape are standardized more precisely than with conventional methods. With AVI, data can be transferred accurately among instruments, wherever they reside.

### Glass vials

Our glass vials are completely disposable, helping keep your Spectrum Two N instrument clean and always ready for the next big challenge. And these vials come in three different sizes – 5 mm, 8 mm, and 12 mm – so you'll find the right vial size for any sample.



### Petri dishes

The Spectrum Two N system can accommodate two sizes of Petri dish – 60 mm and 100 mm – depending on the sample type you're testing.



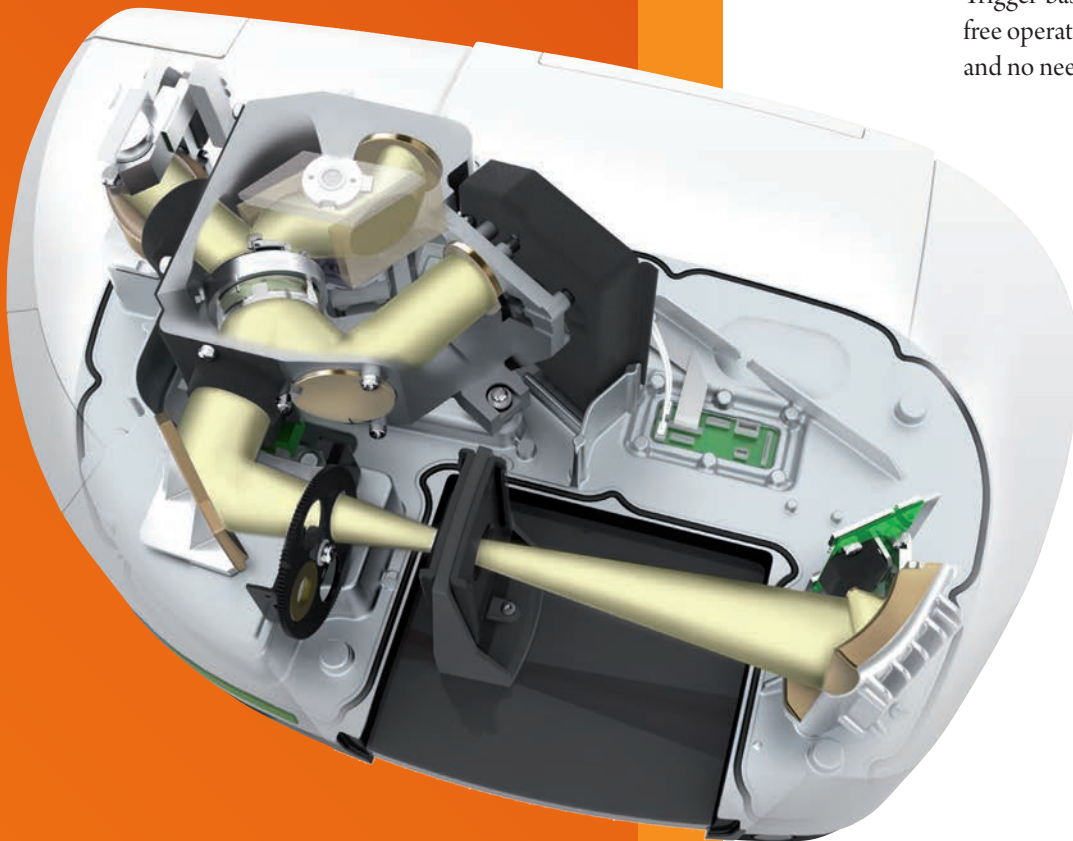
### Optional travel carrying case

The Wi-Fi-enabled Spectrum Two N system can be powered by a car battery for up to six hours – so if you're going to take it on the road, you'll want this smart black carrying case for easy, safe transport.



# MORE REASONS TO LOVE THIS FT-NIR

## Spectrum Two N: The Inside Story



### **NIR Reflectance Module**

Fast, simple measurements, perfect for detection and quantification of raw materials in pharmaceuticals, food, and more.

### **Heatable Transmission Module**

The perfect solution for solid fraction oils such as coconut and palm – with capability to heat three vials at a time for improved throughput.

### **Remote Sampling Module**

Trigger-based technology for error-free operation, with no sample prep and no need to open packaging.

### **OpticsGuard**

Shields the system from harsh environmental effects for increased productivity and instrument uptime.

### **Automated Self-Check Module**

Contains test samples to enable specific system self-testing.

### **Dynascan Interferometer**

Fixed-mirror-pair design, so there's no need to perform dynamic alignment to compensate for errors.





## Focus on what matters most: your results

Powerful and intuitive, Spectrum 10™ software combines efficient operation with a wide range of FT-NIR capabilities. It enables your scientists at all levels of experience to generate NIR spectra from a sample and validate them against reference spectra in a matter of moments. Quick identification and quantification not only helps you maintain the highest possible quality, it also lets you spend more time performing other QA/QC procedures. And the combination of one-click simplicity and powerful data and results management makes it the ideal software package for novice and advanced spectroscopists.

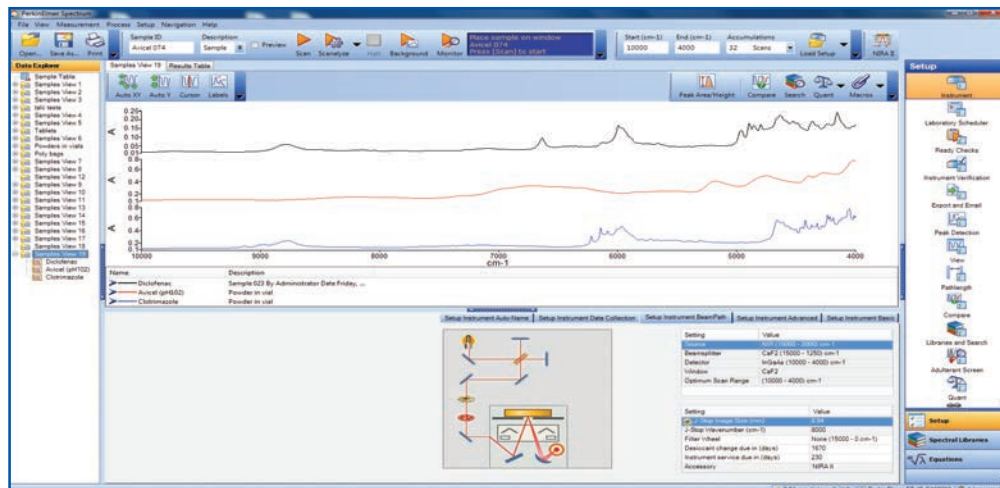
At the same time, Spectrum 10 ES software provides additional security and data integrity features for compliance with 21 CFR Part 11. The software delivers enhanced access control features, and it automatically stores data, experimental parameters, and audit trail information in a secure SQL database for later retrieval. Plus, you get full electronic signature capability and comprehensive software validation documentation – perfect for regulated environments.

### Solutions for your application challenges

You can choose specialized software modules, including:

- **Spectrum Touch™** for simplified workflows, prebuilt methods, and starter calibrations for trans-fats, lubricants, dairy powder, and hydrocarbons
- **Spectrum Adulterant Screen** for simple, yet sensitive detection of economic adulterants
- **Spectrum Quant™ Advanced Algorithms Pack** for development of multivariate quantitative methods
- **Spectrum AssureID** for development of SIMCA product verification methods for Spectrum 10, macros, or AssureID workflows

What's more, the Spectrum Two N system embraces cloud technology with support for remote diagnostics and method development and calibration, making it easy for you to upload and download all FT-NIR methods, wherever and whenever you need them. And we're now introducing method development services to turn your investment into a dedicated analyzer.



Spectrum 10 software has a powerful, intuitive interface allowing users to easily acquire data

## The path to lab efficiency starts here

In today's complex laboratory environments, every function has to work in sync toward the common goal: lab efficiency in the service of scientific discovery and progress. And that's the overarching goal of OneSource®

**OneSource**  
Laboratory Services

Laboratory Services, too. We deliver solutions that cover all aspects of scientific lab operations and can be customized for the scientific workflows – and business outcomes – you're driving toward.

Simply put, OneSource is the one service organization with the requisite understanding of lab and R&D needs, delivering a customized systems approach to your success. With a full measure of insight and expertise, our consultants can pinpoint the issues and inefficiencies and engineer the right solutions to solve your scientific and business challenges.

From everyday instrument repair and service to compliance and validation, from laboratory IT service to method development services and scientific staffing, OneSource Laboratory Services can help streamline your lab routines and get your scientists back to their main order of business – science.

## A LONG HISTORY OF IR LEADERSHIP

Since 1944, when we introduced the first IR spectrometer, we've been at the vanguard of IR innovation. Now, we bring that deep-seated experience to a new generation of IR systems that's up to any challenge. So whatever your industry – pharmaceuticals, food, polymers, fuels, lubricants, nutraceuticals – we have a system that meets or exceeds your exacting standards.



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