thermo scientific



Precision performance for advanced analysis

Thermo Scientific Evolution 350 UV-Vis Spectrophotometer

ThermoFisher
SCIENTIFIC

Reliable, high-performance UV-Visible spectroscopy

For over 60 years, customers in world-renowned research, QA/QC and educational laboratories have relied on the high-performance and exceptional value provided by Thermo Scientific™ UV-Visible spectrophotometers. The Thermo Scientific™ Evolution™ 350 UV-Visible Spectrophotometer delivers the precision and operational flexibility needed for your advanced applications. Thermo Scientific solutions are designed to simplify the sophisticated, moving you from samples to answers fast.

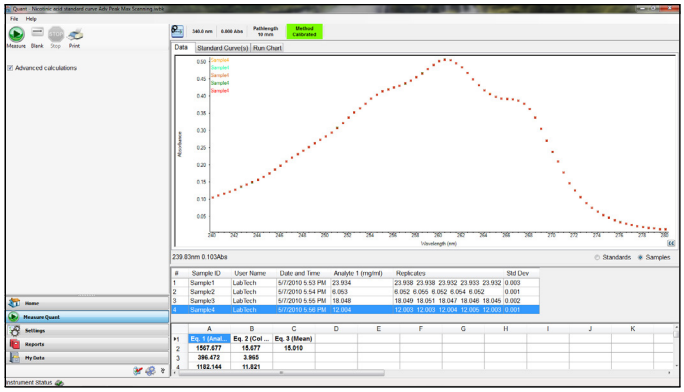
Pharmaceuticals
Industrial QA/QC
Chemicals
Environmental
Materials Science
Academic
Life Science
Food & Beverage



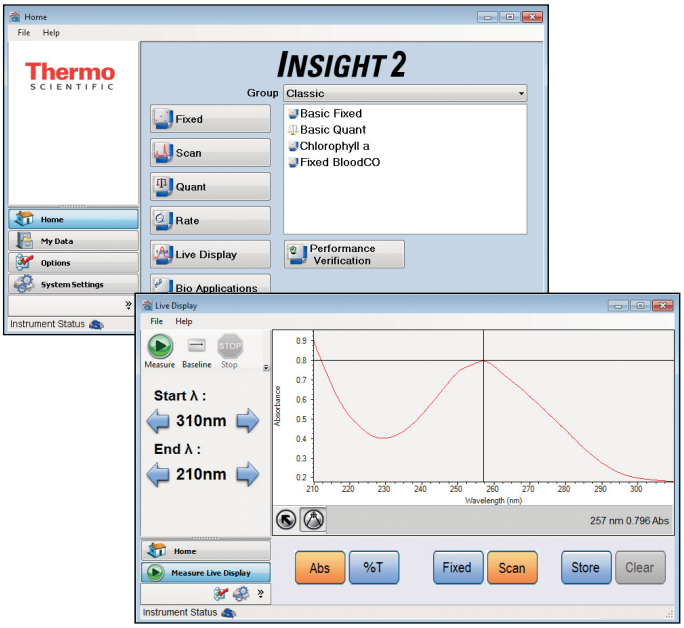
Reliable precision

Designed for laboratories requiring higher performance, the Evolution 350 UV-Vis spectrophotometer's double beam optical design delivers outstanding reliability, precision performance and minimal downtime.

- Get more done each day. The instant-on xenon flash lamp requires no warm-up time and is guaranteed for three years of continuous use.
- Enjoy long-term stability during data acquisition with double-beam optics and a reference position detector for monitoring control samples
- Optimize performance for advanced testing requirements and peak resolution capabilities with selectable bandwidths of 0.5, 1.0, 1.5, 2.0 and 4.0 nm
- Meets all performance requirements for US, European, Japanese and Chinese pharmacopoeias



Advanced software tools for quantitative analysis



Unique quick scan feature in Live Display finds your peak maxima in seconds

Powerful software options

From sample to final report, Thermo Scientific™ INSIGHT™ software quickly guides you through each step of your analysis. Comprehensive tools for data collection, processing and reporting deliver the results you need for quantitative analysis, scanning and kinetics applications.

- Get answers faster using our Live Display Mode with walk-up simplicity for real-time single wavelength measurements or simplified scans for the identification of sample peaks
- Customize even complex methods with ease using our workflow oriented application modules
- Enforce data security with optional INSIGHT Security software tools to assist you in achieving 21 CFR Part 11 compliance in your pharmaceutical laboratory
- Increase efficiency in high-throughput environments with optional INSIGHT Auto software for seamless integration of supported autosamplers



Automated cell changers make your laboratory more efficient

Expansive sampling options

A complete line of Thermo Scientific spectrophotometer accessories, extra large sample compartment and parallel beam design offers increased flexibility for unique accessories and advanced applications.

- Speed up your analysis with fully integrated Thermo Scientific™ Smart Accessories featuring cable-free snap-in designs for convenience and consistency
- Eliminate manual set-up requirements with auto recognition and seamless software integration of sippers, cell changers and autosampler accessories
- Take advantage of the Evolution 350 spectrophotometer's wide beam separation and extra large sample compartment to enable expanded accessory support for unique applications including a 7 × 7 dual cell changer configuration, Praying Mantis™ Diffuse Reflectance Accessory and compatible third party accessories

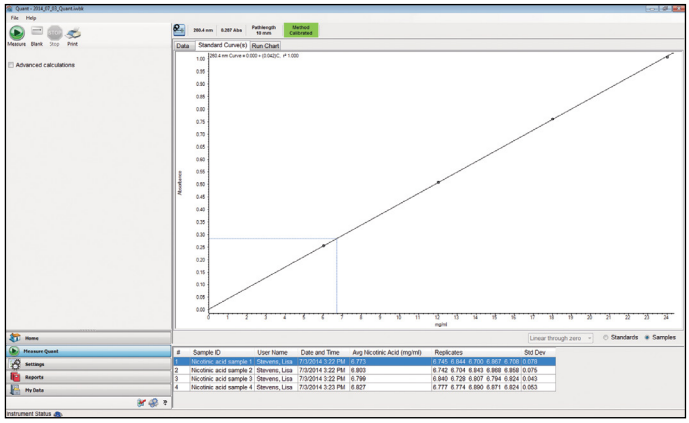
Tool for pharmaceuticals and high-value QA/QC testing

Quantitative analysis made simple

Reliable results are an essential component of quality control analyses. From simple, single-standard comparisons to standard curves based on peak area, we have the tools to get the answers you need every time.

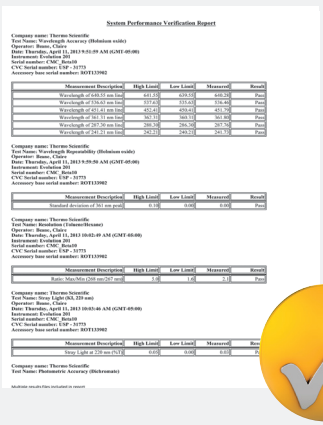
- Choose to perform your analysis in fixed or scan mode
- Select a curve fit and standard averaging as desired
- Set minimum correlation coefficients or use concentration limits to define the requirements for your standards and samples

After measurements are complete, a run chart neatly displays the data and error bars, indicating whether or not each sample measurement falls within the defined concentration range.



Automated data processing and visual cues accelerate result analysis

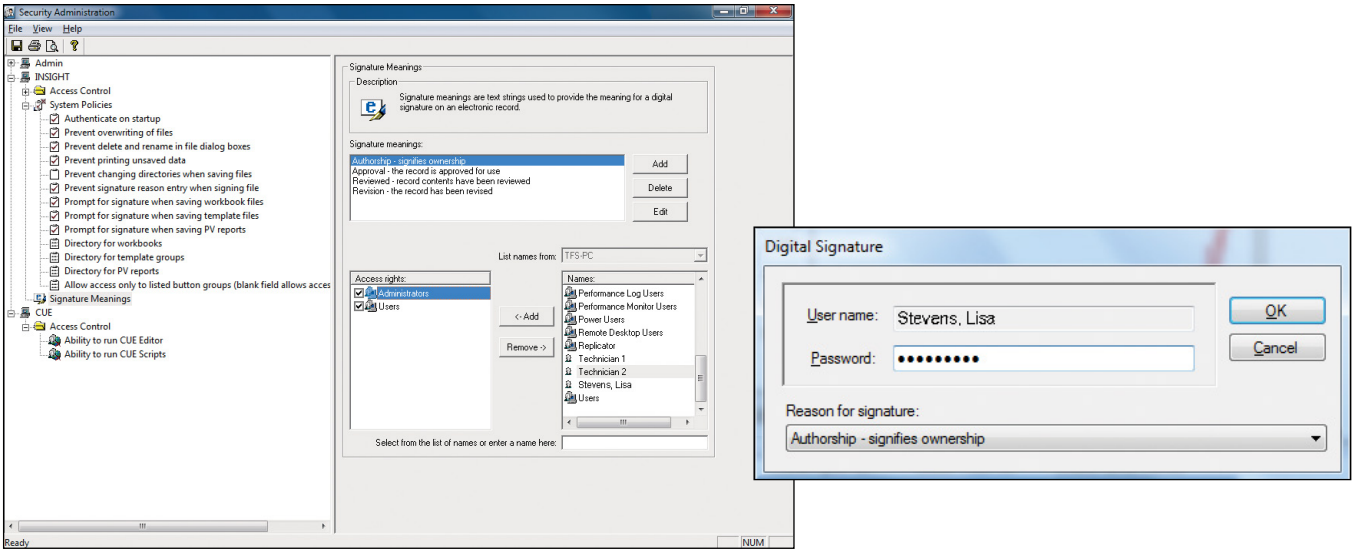




Automated performance verification

Ensure the accuracy and reliability of QA/QC data while improving the efficiency of your laboratory with automated performance verification.

- Save your analyst's time, improving the productivity of your laboratory, with automated PV testing
- Eliminate transcription activities and return results that are ready for sign-off when tests are complete
- Ensure compliance to industry guidelines and regulations for industrial and pharmaceutical laboratories with traceable standards and your choice of configuration options



INSIGHT Security software provides traceability and assures data integrity

Reliable data security for your electronic records

If your laboratory requires 21 CFR Part 11 compliance, INSIGHT Security software is here to make your life easier. Using the same easy-to-use interface, INSIGHT Security software combines security and data integrity assurance with the versatility required for your multi-user laboratory.

- Achieve clear traceability with sample history and electronic signature details that are stored directly within your protected data files
- Ensure that any changes to files associated with INSIGHT Security are monitored and logged, even when the software is not running, with software that is seamlessly integrated with Microsoft® Windows® security features
- Manage your users' access and privileges quickly and easily from one central server location with our cross-platform Thermo Scientific Security Administration (TSA) software

Complete IQ/OQ Validation package

Thermo Scientific Validator packages provide support for system qualification and validation activities for instruments, software and accessories. All of the documentation and reference materials needed to facilitate compliance of your Thermo Scientific spectrophotometer system with the requirements of FDA, GxP, ISO 9001:2008 and ISPE 2001 guidelines and regulations are included for your convenience. Validator packages streamline Installation Qualification (IQ), Operational Qualification (OQ) and assist in Performance Qualification (PQ) procedures and development for simple and efficient use.



Thermo Scientific CONNECTS™ for the Paperless Lab

Integrated informatics solutions

Laboratory informatics are a critical part of any laboratory, facilitating end-to-end traceability of samples and associated laboratory processes, providing a central repository for data and test results and ensuring regulatory compliance. Thermo Scientific Lab Information Management Systems (LIMS) deliver a complete informatics solution for method execution, laboratory and data management.

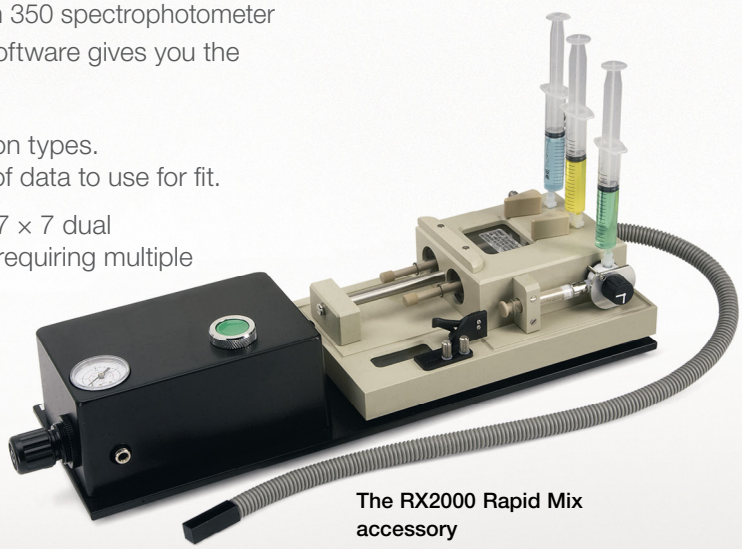
In combination with our Laboratory Execution System (LES), Scientific Data Management System (SDMS) and Integration Manager (IM), Thermo Scientific LIMS deliver the most comprehensive paperless lab solution available today. Now lab managers and scientists across all industries can achieve full instrument integration, manage methods and workflow, retrieve and archive any kind of raw scientific data, and export results across the organization.

thermofisher.com/lims

Time-course and kinetics studies

When biochemical studies get complicated, the Evolution 350 spectrophotometer with its wide range of accessories along with INSIGHT software gives you the analysis features you need.

- Find rates with a comprehensive set of best fit equation types. Use the visual interface to manually adjust the range of data to use for fit.
- Employ up to seven active reference positions with a 7 × 7 dual rotary cell changer configuration for complex studies requiring multiple reference samples
- Analyze fast reactions that take place in milliseconds to seconds with a Rapid Mix accessory featuring automatic triggering and a dead time of only 8 ms



The RX2000 Rapid Mix accessory

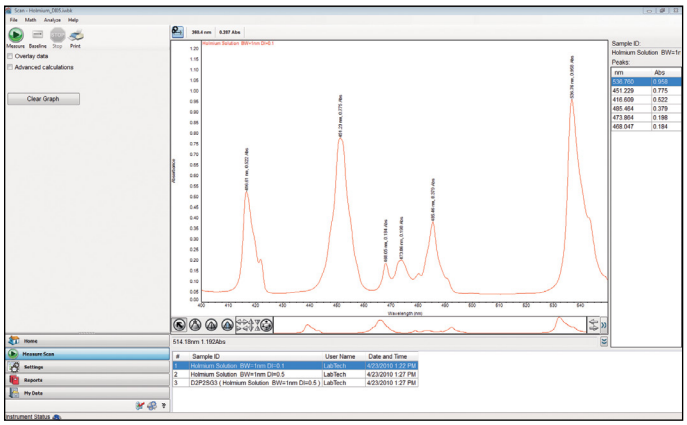
Versatility for materials research

From mirrors to powders, you can take advantage of the Evolution 350 spectrophotometer's precision performance, large sample compartment and flexible software options to make light work of your materials research. A selectable bandwidth enables you to optimize resolution versus energy throughput to match your application needs.

Versatile spectral analysis

Full spectrum analysis provides additional insight into your samples to aid in identification and troubleshooting activities. The Evolution 350 spectrophotometers with INSIGHT software allow you to analyze spectral data your way.

- Find up to 100 peaks and valleys automatically and sort them by height or location or manually choose them post-analysis
- Calculate the area under your peak or use value level crossing features to solve complex problems
- Eliminate manual data manipulation requirements with automated, user defined calculations and a comprehensive selection of post-processing math functions



Full-spectrum data and customizable graphical displays deliver greater clarity for complex problems

Sophisticated data processing options

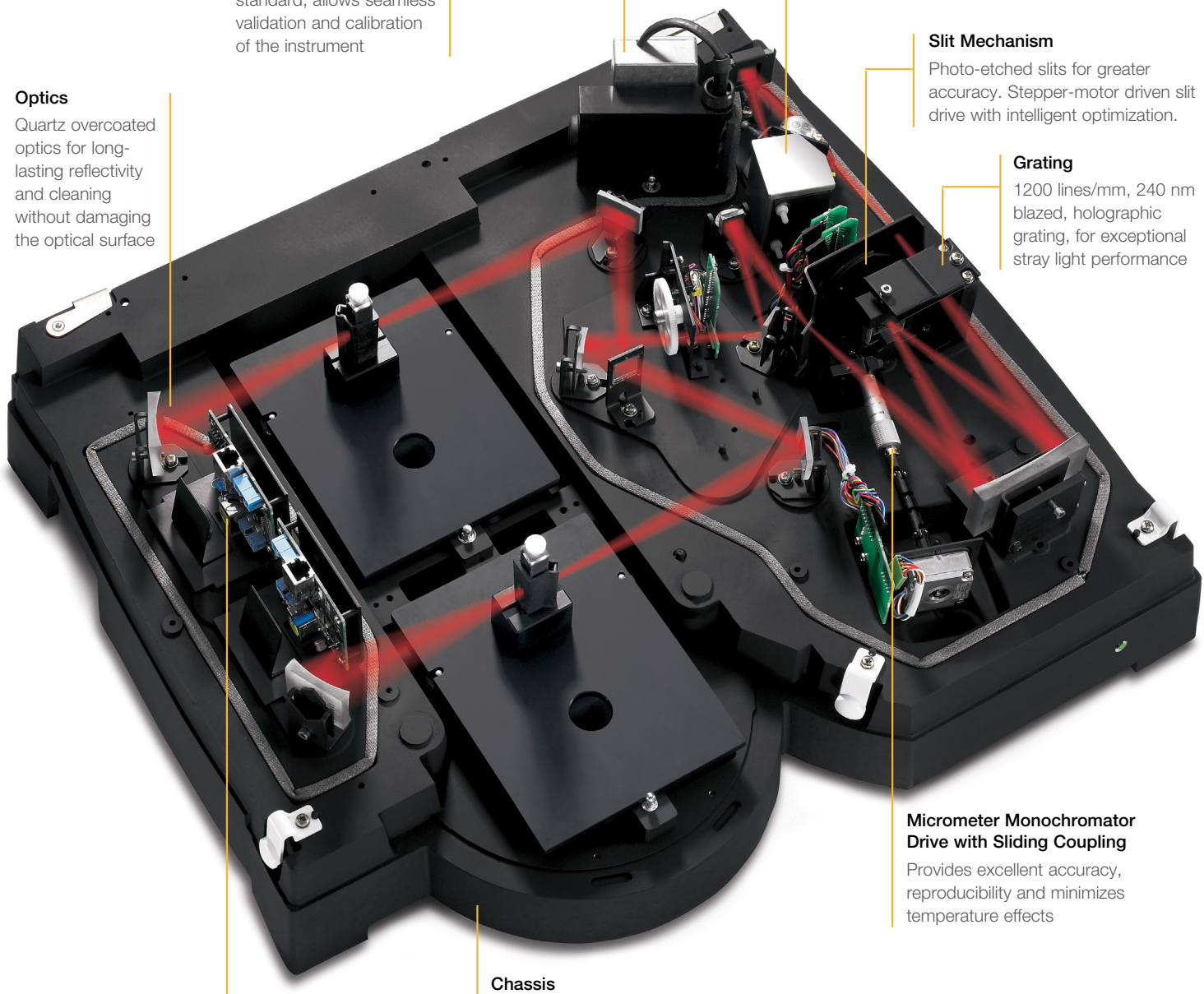
Powerful analytical tools embedded in INSIGHT software empower users to interpret analytical information quickly. Special display options let you view results the way you want for more effective data analysis and interpretation.

- Automatically pick peaks and valleys, apply smoothing or calculate derivatives as sample data is collected
- Convert data into the format you need post-analysis with sophisticated math features, including spectral addition and subtraction, ratios and normalizing functions
- Compare data from multiple experiments quickly and conveniently with the Merge Workbooks feature
- Export spectral or result data in a portable format (XML, CSV, or TSV) or e-mail it to a chosen account for further off-line data processing and compatibility with other software programs



Double-beam optical design for reliable results

The Evolution 350 spectrophotometer incorporates a high-performance optical design, versatile INSIGHT software packages, and the highest quality accessories for the most demanding applications.



Mercury Lamp
Primary reference standard, allows seamless validation and calibration of the instrument

Light Source
Xenon flash lamp is only on when taking measurements extending its lifetime

Slit Mechanism
Photo-etched slits for greater accuracy. Stepper-motor driven slit drive with intelligent optimization.

Grating
1200 lines/mm, 240 nm blazed, holographic grating, for exceptional stray light performance

Optics
Quartz overcoated optics for long-lasting reflectivity and cleaning without damaging the optical surface

Micrometer Monochromator Drive with Sliding Coupling
Provides excellent accuracy, reproducibility and minimizes temperature effects

Detectors
Silicon photodiodes for extended wavelength range to 1100 nm

Chassis
Rigid, cast-aluminum base with optical mounts bolted directly onto the base provides superior system stability and reliable results

The Evolution 350 spectrophotometer optical design includes a long lifetime xenon flash lamp and extended wavelength-range silicon photodiode detectors. This system is an excellent choice for routine and research laboratories in the Life Science and Pharmaceutical markets.



Mercury lamp accessory—the preferred method for testing wavelength and bandwidth accuracy

- Both US and European Pharmacopoeias call out low pressure mercury emission lamps as the preferred choice for establishing wavelength accuracy.
- The mercury lamp is also the ideal means of determining spectral bandwidth. The United States Pharmacopoeia states “a suitable atomic line can be scanned in single-beam mode, and the peak width at half peak height can be determined. This peak width at half peak height equates to the bandwidth of the spectrophotometer.”
- Choosing the mercury lamp accessory frees customers who perform routine performance verification tests from the burden or purchasing and re-certifying standard solutions for measuring these parameters. As a fundamental physical standard, a mercury lamp never needs calibration.



The xenon lamp—an economical solution for your laboratory

The xenon flash lamp in the Evolution 350 spectrophotometer is on only when collecting a measurement. Providing excellent performance over the entire wavelength range of 190–1100 nm, the intense light of the xenon lamp in the UV region of the spectrum delivers added sensitivity for life science, environmental, and organic chemistry applications. Additional benefits of the xenon lamp include:

- Instant measurements with **no warm-up time required**
- **Eliminates the effort and down-time** associated with re-qualification of a conventional instrument after changing the lamps
- Seven or more years of **maintenance-free operation**
- Guaranteed for **three years of continuous use**
- **Minimized photobleaching** due to UV exposure. Lamp is only on while recording data.

Smart Accessories for enhanced productivity



The Evolution 350 UV-Vis spectrophotometer supports Smart Accessories with auto-intelligence. All configurations allow hot-swapping of powered accessories and automatically recognize and initialize each accessory upon installation. Snap the accessory into place and the appropriate software menu for that accessory appears on the screen. Unused accessory software menus are hidden, eliminating possible confusion.

Kinematic mounts allow easy interchange of accessories and ensure reproducible alignment each time reflectance accessories, such as the Praying Mantis Accessory, are removed and re-installed.



Smart Thermostatted Rotary 7-Cell Changer



Smart Sipper Accessory



8-Cell Peltier System



Smart Thermostatted Linear 8-Cell Changer



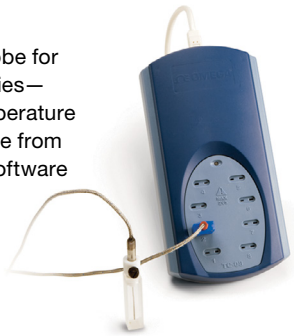
Thermostatted Single Cuvette Holder



Single Cell Peltier System

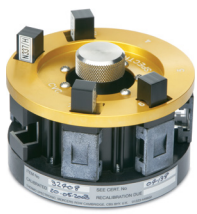
Temperature Probe Hub and Temperature Probes

Temperature probe for Smart Accessories—monitor the temperature inside the cuvette from within INSIGHT software





RX2000 Rapid Mix Accessory



Smart Calibrated Validation Carousel (CVC)



VeeMAX™ Variable Angle 30°– 80° Specular Reflectance Accessory



15°, 20°, 30°, 45°, and 60° Specular Reflectance Accessories



8° Specular Reflectance Accessory



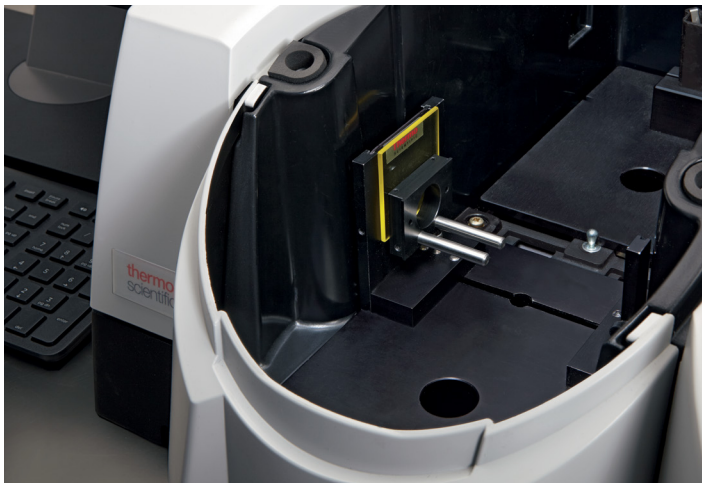
Praying Mantis Accessory



Test Tube and Vial Holder



Long Pathlength Rectangular Cell Holder



The Solid Sample Slide Holder positions accessories supplied on standard 2 × 3 inch slides. Instrument shown with a Universal Sample Holder and optional second slide holder.

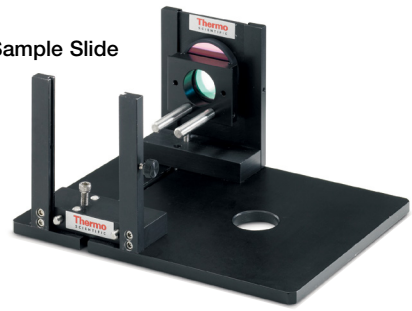


1 Inch Square Vial Holder



Combination Cuvette and Test Tube Holder

Solid Sample Slide Holder





Adjustable Microcell Holder



CETAC® ASX-280 Autosampler

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Laboratory solutions backed by worldwide service and support

Tap into our expertise throughout the life of your instrument. Thermo Fisher Scientific offers professional support through our worldwide network of highly trained and certified engineers. In many nations, Unity™ Lab Services, part of Thermo Fisher Scientific, offers direct support. Elsewhere, our partner companies' engineers receive the same factory training as our Unity engineers and stand ready to provide you with the same high level of service and support. Put our experts to work for you to provide the services you need from system installation and training to technical support. Ask your Thermo Scientific sales representative about available product support services designed to keep your instrument in peak operating condition.



Find out more at **thermofisher.com/evolution350**

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