

# Materials Characterization

Consumables and Supplies

Genuine PerkinElmer Products — Genuine Value

► VOLUME 2 2010

UV Visible, Thermal Analysis, Fluorescence, Infrared and Raman Spectroscopy



## ▼ NEW INSTRUMENTS

### Spectrum 65 FT-IR

See page 10.

**NEW!**

### Raman IdentiCheck

See page 38.



### SAVE on DSC Sample Pans and Covers!

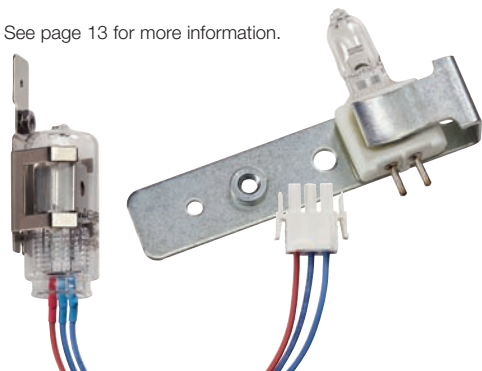
When you order two or more sets of DSC Sample Pans.

See pages 51–52 for more details.

### SAVE on UV Lamps!

Great deals when you buy 3 or more UV Lamps.

See page 13 for more information.



### SAVE on Disposable UV Cells

To qualify order two or more packs of Macro, Semi-micro or Micro Disposable UV Cells

See page 16 for more information.



### SAVE on Infrared Disposable Desiccant Kits!

Receive a discount when you order 4 or more IR Desiccant kits.

See page 25 for more information.



## New Investments – Local Support – Proven Quality!

For over 50 years, PerkinElmer has helped our global laboratory partners meet their most demanding application measurement challenges. Our experience in Chromatography, Spectroscopy and Material Characterization gives us a unique advantage in providing holistic and comprehensive solutions for laboratories in universities and key market segments like Environmental, Energy, and Food & Product Safety.

When you order our precision-designed, genuine PerkinElmer consumables and accessories, you can enjoy the peace of mind, ease of ordering, and best-in-class service. You'll get the results you need – accurately and on time. PerkinElmer selects only the highest quality products for our consumables portfolio and invests heavily to test and validate the quality of our products.

## Ordering Information

### Interchim

211 bis Avenue Kennedy - BP 1140  
03103 Montluçon Cedex

Tel 33 (0)4 70 03 88 55

Hotline 33 (0)4 70 03 73 09

email [interchrom@interchim.com](mailto:interchrom@interchim.com)

## Return Goods Policy

Before returning any item to PerkinElmer, please obtain a Return Authorization Number from a customer service representative. Call your local PerkinElmer office and please have the following information ready:

- Our Order Number or your Purchase Order Number
- The PerkinElmer part numbers of the items that you wish to return
- Reason for return

Our customer service representative will provide you with a Return Authorization Number and the return address. We cannot accept any returns without a Return Authorization Number. Policy may vary. Please contact your local PerkinElmer representative for details.

## Technical Support

For technical assistance, please contact your local PerkinElmer Customer Care Representative. See local office listings to the left.

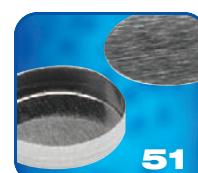
*Check with your local PerkinElmer Customer Care center for current pricing.*

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# LAMBDA Bio and Bio+ Systems Available

## Personal Life-Science UV/Vis Spectrophotometers – Speed, Stability and Confidence in Results

BUY  
ONLINE



- **LAMBDA Bio:** a personal spectrophotometer for nucleic acid and protein determinations, cell density measurements and more
- **LAMBDA Bio+:** a highly flexible personal life-science spectrophotometer for routine assays, kinetics, rapid scanning and concentration measurements

The LAMBDA Bio and Bio+ have been specially designed for life-science laboratories that require a dedicated instrument for the determination of nucleic acid purity and concentration, protein concentrations and cell density measurements. The LAMBDA Bio and Bio+ are compact, lightweight and convenient, and backed-up by PerkinElmer's 50+ years of experience in UV/Vis Spectroscopy, you will always generate results that you can trust.

- Novel, no moving-parts optics provide high sensitivity and the ultimate in reliability and robustness
- Ultra long-lifetime Xenon lamp for low maintenance and maximum uptime
- Split-beam scanning operation for high-stability and run-to-run reproducibility
- Scans full spectrum almost instantaneously
- Large, intuitive full graphics display
- Full suite of stored life-science methods
- Instant recall of stored methods from non-volatile memory
- Wavelength scanning, kinetics and concentration functionality with full graphics display
- Optional integrated printer
- Compatible with low volume cuvettes
- Multiple language operation as standard: English, French, German, Italian, Spanish, Japanese

## Full suite of Life-Science Methods

A full suite of stored methods includes DNA, RNA and Oligonucleotide calculations, protein assays such as direct UV measurement, BCA, Biuret, Bradford, Lowry and cell density measurement. Unlike many dedicated life-science spectrophotometers, the LAMBDA Bio and Bio+ can also measure absorbance or concentration at any wavelength, providing flexibility to address future applications. For example, a scan of an RNA sample may reveal impurities in the 230 nm region that may not have an adverse effect on the 260/280 nm absorbance ratio.

Additionally, the LAMBDA Bio+ features rapid scanning, kinetics and concentration modes of operation to broaden the range of available applications. In kinetics mode, absorbance vs time may be plotted, along with the  $\delta A/\text{min}$ , and the correlation coefficient is calculated for the assay. This slope can be converted directly to a rate of reaction by automatically multiplying by a factor.

# For Purchase Online

## Flexible reporting and data storage options

All results may be printed to an optional integrated high quality printer for a permanent record. Both the LAMBDA Bio and the LAMBDA Bio+ have a USB port for connection to a PC. Data may be rapidly transferred and printed out using the print utility software and cable, which are included with LAMBDA Bio+, and are available as an option for the LAMBDA Bio. Additional options are available with the LAMBDA Bio+; data may be transferred to the PC for storage or printing by using either an SD flash memory card, or by a Bluetooth connection module.

## Low Cost of Ownership

- No moving parts for the ultimate in reliability
- Xenon source - typical lifetime of 5 years
- Compact design uses minimal bench-space



LAMBDA Bio with printer

## Specifications

	LAMBDA Bio	LAMBDA Bio+
Wavelength Range	190 – 1100 nm	190 – 1100 nm
Absorbance Range	-0.3 to 2.5 A	-0.3 to 2.5 A
Bandwidth	5 nm	3 nm
Stray Light	0.5% T at 220 and 340 nm	0.5% T at 220 and 340 nm
Wavelength Accuracy	+/- 2nm	+/- 2nm
Photometric Reproducibility	+/- 0.002A at 0-0.5A, 546 nm	+/- 0.002A at 0-0.5A, 546 nm
Stored Methods	9	90
Outputs	USB, Printer (option)	USB, SD Card (option), Bluetooth (option), Printer (option)
Dimensions (W x D x H)	260 x 390 x 100 mm	260 x 390 x 100 mm
Weight	<4.5 kg	<4.5 kg

## Ordering Information

System	Part No.
LAMBDA Bio	L7110184
LAMBDA Bio with Printer	L7110185
LAMBDA Bio+	L7110186
LAMBDA Bio+ with Printer	L7110187
LAMBDA Bio+ with SD Card	L7110188
LAMBDA Bio with Traycell	L7110287
LAMBDA Bio+ with Traycell	L7110288

## Options and Consumables

Description	Part No.
Printer module	L7110230
Print utility and cable*	L7110231
Spare printer paper (20 rolls)	L7110232
Bluetooth accessory	L7110233

\* Included as standard with the LAMBDA Bio+

# LAMBDA XLS and XLS+ Systems Available

## Scanning **UV/Vis** **Spectrophotometers** – **Speed,** **Stability** and **Confidence** in **Results**



- **LAMBDA XLS:** a personal spectrophotometer for scanning and fixed wavelength studies, kinetics and concentration measurements
- **LAMBDA XLS+:** higher resolution (3nm bandwidth) version of the LAMBDA XLS

The LAMBDA XLS and XLS+ have been specially designed for academic and industrial laboratories that require a small-footprint, dedicated instrument for a wide-range of applications. The LAMBDA XLS and XLS+ are extremely reliable and sensitive instruments that provide a level of performance which is only normally found in more expensive systems. Backed-up by PerkinElmer's 50+ years of expertise in UV/Vis Spectroscopy, and with a global support network at your fingertips, you will always generate results that you can trust.

- Novel, no moving-parts optics provide high sensitivity and the ultimate in reliability and robustness
- Ultra long-lifetime Xenon lamp for low maintenance and maximum uptime
- Split-beam scanning operation for high-stability and run-to-run reproducibility
- Scans full spectrum almost instantaneously
- Large, intuitive full graphics display
- Ability to store up to 90 methods
- Instant recall of stored methods from non-volatile memory
- Wavelength scanning, fixed-wavelength measurements, kinetics and concentration functionality
- Optional integrated printer
- Multiple language operation as standard: English, French, German, Italian, Spanish, Japanese

## Full suite of Measurement Modes

The LAMBDA XLS and XLS+ include a large, easy to read screen display and a comprehensive suite of built-in applications software. Measurement modes include single and multi-wavelength modes, scanning, kinetics and concentration, with the ability to store up to 90 methods for easy access. Concentrations may be measured using a single-point calibration, a factor, multi-standard curves, or alternatively, in multi-wavelength mode, calculating ratios using absorbance values in equations. The LAMBDA XLS and XLS+ contain on-board storage of up to 90 methods, allowing several users to rapidly access frequently-used protocols.

For applications flexibility, samples may be measured using 10, 20 or 40 mm pathlength cells, including glass, quartz or disposable plastic versions. For small sample volumes, the excellent sensitivity of the LAMBDA XLS and XLS+ allows excellent results with micro and semi-micro cells.

# For Purchase Online



LAMBDA XLS display showing full-suite of applications modes

## Flexible reporting and data storage options

All results may be printed to an optional integrated high quality printer for a permanent record. Both the LAMBDA XLS and the LAMBDA XLS+ have a USB port for connection to a PC. Data may be rapidly transferred and printed out using the print utility software and cable, which is included as standard with the LAMBDA XLS and XLS+. Alternatively, data may be transferred to a PC for storage or printing by using either the optional SD Card or by an optional Bluetooth connection Expand module.

## Low Cost of Ownership

- No moving parts for the ultimate in reliability
- Xenon source - typical lifetime of 5 years
- Compact design uses minimal bench-space

## Specifications

	LAMBDA XLS	LAMBDA XLS+
Wavelength Range	190 – 1100 nm	190 – 1100 nm
Absorbance Range	-0.3 to 2.5 A	-0.3 to 2.5 A
Bandwidth	5 nm	3 nm
Stray Light	0.5% T at 220 and 340 nm	0.5% T at 220 and 340 nm
Wavelength Accuracy	+/- 2nm	+/- 2nm
Photometric Reproducibility	+/- 0.002A at 0-0.5A, 546 nm	+/- 0.002A at 0-0.5A, 546 nm
Stored Methods	90	90
Outputs	USB, SD Card (option), Bluetooth (option), Printer (option)	USB, SD Card (option), Bluetooth (option), Printer (option)
Dimensions (W x D x H)	260 x 390 x 100 mm	260 x 390 x 100 mm
Weight	<4.5 kg	<4.5 kg

## Ordering Information

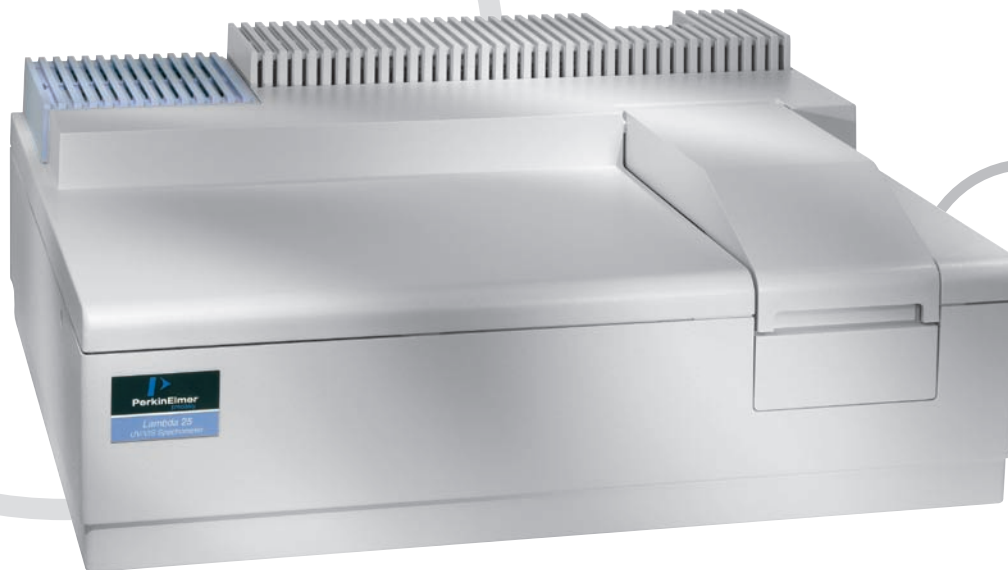
System	Part No.
LAMBDA XLS	L7110189
LAMBDA XLS with Printer	L7110190
LAMBDA XLS with SD Card	L7110191
LAMBDA XLS+	L7110192
LAMBDA XLS+ with Printer	L7110193
LAMBDA XLS+ with SD Card	L7110194

## Options and Consumables

Description	Part No.
Printer module	L7110230
Print utility and cable	L7110231
Spare printer paper (20 rolls)	L7110232
Bluetooth accessory	L7110233

# LAMBDA 25/35 Applications Systems

## LAMBDA 25/35 UV/Vis systems available for purchase online



### Superior Performance, Proven Technology

PerkinElmer's LAMBDA 25/35 UV/Vis systems are easy to operate and deliver trustworthy results with the minimum of operator training. With over 12,000 units installed worldwide, our superior technology and proven build quality has proven itself under the toughest conditions. Our extensive suite of Instrument Performance Verification (IPV) tests confirms high quality performance over the lifetime of the system, and for regulated industries the Enhanced Security (ES) version of UV WinLab integrates seamless 21CFR part 11 technical compliance.

- **Range:** 190 – 1,100 nm
- **LAMBDA 25 Bandwidth:** 1 nm (fixed)
- **LAMBDA 35 Bandwidth:** 0.5 – 4 nm (variable)
- **Modes of Operation:** scanning, wavelength program, time-drive, rate, quant, scanning quant
- All versions require, but do not include, a PC
- **Weight:** 26 kg, 57 lbs
- **Dimensions:** 560 x 650 x 233 mm (H x L x D)

### Features and Benefits

- True double-beam operation for the highest stability accuracy and reproducibility
- High-throughput, low stray-light optics – easily passes all pharmacopoeia and regulatory performance tests
- Pre-aligned deuterium and tungsten-halogen lamps – quickly replaced for minimum downtime
- Huge range of accessories and consumables allows virtually any sample to be analyzed

A range of LAMBDA 25/35 application-specific systems are available for purchase online. Each system is complete with the essential accessories and consumables that are needed to get you started, and a range of further accessories/consumables bundles are available to expand your capabilities.



## Consumables and Accessories Starter Packs

With each application system a range of consumables and accessories starter-packs is available to increase your sampling options and maintain high-levels of system performance.

### Consumables and Accessories Starter Packs

Starter Pack	Includes	Part No.
LAMBDA 25 Ultra-Micro Cell Basic Kit	Contains high-precision quartz and glass 10 mm cells for routine liquids work and replacement deuterium and tungsten lamps to ensure maximum instrument uptime. An ultra-micro cell enables easy and reproducible analysis of very small volumes, down to 30 $\mu\text{L}$ .	<b>L6000556</b>
LAMBDA 25 Ultra-Micro Cell Enhanced Kit with Cell Holder	Contains high-precision quartz and glass 10 mm cells for routine liquids work and replacement deuterium and tungsten lamps to ensure maximum instrument uptime. An ultra-micro cell enables easy and reproducible analysis of very small volumes, down to 30 $\mu\text{L}$ , the test-tube holder provides convenient in-situ measurement in tubes from 11 to 17 mm diameter	<b>L6000557</b>
LAMBDA 25 Ultra-Micro Cell Premium Kit with Cell Changer	Contains high-precision quartz and glass 10 mm cells for routine liquids work and replacement deuterium and tungsten lamps to ensure maximum instrument uptime. An ultra-micro cell enables easy and reproducible analysis of very small volumes down to 30 $\mu\text{L}$ . the test-tube holder provides convenient in-situ measurement in tubes from 11 to 17 mm diameter. The fully automated, water-thermostatted 8+1 cell-changer is ideal for kinetics and other bioscience studies	<b>L6000558</b>
LAMBDA 25 Ultra-Micro Cell Enhanced Kit with Reference Material	Contains high-precision quartz and glass 10 mm cells for routine liquids work and replacement deuterium and tungsten lamps to ensure maximum instrument uptime. An ultra-micro cell enables easy and reproducible analysis of very small volumes, down to 30 $\mu\text{L}$ . The reference material set provides verification of the ordinate and wavelength accuracy of your Lambda 25 for validation and regulatory compliance	<b>L6000559</b>
LAMBDA 25 Ultra-Micro Cell Premium Kit with Reference Material	Contains high-precision quartz and glass 10 mm cells for routine liquids work and replacement deuterium and tungsten lamps to ensure maximum instrument uptime. An ultra-micro cell enables easy and reproducible analysis of very small volumes, down to 30 $\mu\text{L}$ . The three reference material sets provide complete validation of the system performance of your Lambda 25, including compliance with pharmacopoeia protocols	<b>L6000561</b>
LAMBDA 25 Micro Cell Basic Kit	Contains high-precision quartz and glass 10 mm cells for routine liquids work and replacement deuterium and tungsten lamps to ensure maximum instrument uptime. A micro cell enables easy and reproducible analysis of smaller sample volumes, down to 700 $\mu\text{L}$ .	<b>L6000562</b>
LAMBDA 25 Micro Cell Enhanced Kit with Reference Material	Contains high-precision quartz and glass 10 mm cells for routine liquids work and replacement deuterium and tungsten lamps to ensure maximum instrument uptime. A micro cell enables easy and reproducible analysis of smaller sample volumes, down to 700 $\mu\text{L}$ . The reference material set provides verification of the ordinate and wavelength accuracy of your Lambda 25 for validation and regulatory compliance	<b>L6000563</b>
LAMBDA 25 Micro Cell Premium Kit with Sipper	Contains high-precision quartz and glass 10 mm cells for routine liquids work and replacement deuterium and tungsten lamps to ensure maximum instrument uptime. A micro cell enables easy and reproducible analysis of smaller sample volumes, down to 700 $\mu\text{L}$ . The reference material set provides verification of the ordinate and wavelength accuracy of your Lambda 25. The liquid sipper enables fast, in-situ liquid sampling directly from the container	<b>L6000564</b>
LAMBDA 25 Ultra-Micro Cell Premium Kit with PTA	Contains high-precision quartz and glass 10 mm cells for routine liquids work and replacement deuterium and tungsten lamps to ensure maximum instrument uptime. An ultra-micro cell enables easy and reproducible analysis of very small volumes, down to 30 $\mu\text{L}$ , and the reference material set provides validation of the ordinate and wavelength accuracy of your Lambda 25. The air-cooled PTP-A Peltier accessory provides rapid, programmable thermostating between 15 and 60 $^{\circ}\text{C}$ for a single 10 mm cell – ideal for bioscience work	<b>L6000565</b>
LAMBDA 25 Micro Cell Premium Kit with Sipper	Contains high-precision quartz and glass 10 mm cells for routine liquids work and replacement deuterium and tungsten lamps to ensure maximum instrument uptime. An ultra-micro cell enables easy and reproducible analysis of very small volumes, down to 30 $\mu\text{L}$ , and the reference material set provides validation of the ordinate and wavelength accuracy of your Lambda 25. The liquid sipper enables fast, in-situ liquid sampling directly from the container	<b>L6000566</b>
LAMBDA 35 Basic Kit	Contains high-precision quartz and glass 10 mm cells for routine liquids work and replacement deuterium and tungsten lamps to ensure maximum instrument uptime. A micro cell enables easy and reproducible analysis of smaller sample volumes, reproducible analysis of very small volumes, down to 700 $\mu\text{L}$ . For the integrating sphere, the calibrated white standard allows performance validation, and the powder sample holder extends sampling flexibility	<b>L6000567</b>
LAMBDA 35 Enhanced Kit	Contains high-precision quartz and glass 10 mm cells for routine liquids work and replacement deuterium and tungsten lamps to ensure maximum instrument uptime. A micro cell enables easy and reproducible analysis of smaller sample volumes, reproducible analysis of very small volumes, down to 700 $\mu\text{L}$ . For the integrating sphere, the calibrated white standard allows performance validation, and the powder sample holder extends sampling flexibility. The reference material set provides verification of the ordinate and wavelength accuracy of your Lambda 25 for validation and regulatory compliance	<b>L6000568</b>
LAMBDA 35 Premium Kit	Contains high-precision quartz and glass 10 mm cells for routine liquids work and replacement deuterium and tungsten lamps to ensure maximum instrument uptime. A micro cell enables easy and reproducible analysis of smaller sample volumes, reproducible analysis of very small volumes, down to 700 $\mu\text{L}$ . For the integrating sphere, the calibrated white standard allows performance validation, and the powder sample holder extends sampling flexibility. The reference material set provides verification of the ordinate and wavelength accuracy of your Lambda 25 for validation and regulatory compliance. The fully automated, water-thermostatted 8+1 cell-changer is ideal for kinetics and other multi-cell studies	<b>L6000569</b>
LAMBDA 25 Ultra-Micro Cell Premium Kit with Cell Changer	Contains high-precision quartz and glass 10 mm cells for routine liquids work and replacement deuterium and tungsten lamps to ensure maximum instrument uptime. A micro cell enables easy and reproducible analysis of smaller sample volumes, reproducible analysis of very small volumes, down to 700 $\mu\text{L}$ . The reference material set provides verification of the ordinate and wavelength accuracy of your Lambda 25 for validation and regulatory compliance. The fully automated, water-thermostatted 8+1 cell-changer is ideal for kinetics and other multi-cell studies	<b>L6000570</b>

# Spectrum 65 FT-IR with Spectrum 10

## Spectrum 65 FT-IR, Celebrating 65 Years of IR Excellence



### Versatile for today's sample diversity. Upgradeable for tomorrow's new challenges

- The system is designed to accommodate a range of PerkinElmer dedicated, zero-alignment sampling stations like the best-selling Universal ATR accessory. In addition, the sample compartment is large enough to accommodate common third party sampling accessories.
- IR microsampling and microscopy upgrades are also fully supported without performance compromise, enabling measurement of microsamples.



Large sample compartment accommodates a wide range of sampling accessories.

### Ideal for Academic and Learning Environments

- The simple operation design of the Spectrum 65 makes this system ideal for academic or teaching environments.

### Further upgrade pathways

- Additional MCT detector can be installed simultaneously
- Further external beam input and output optics options provide for emission experiments and a General Purpose Optical Bench (GPOB) for custom accessories.

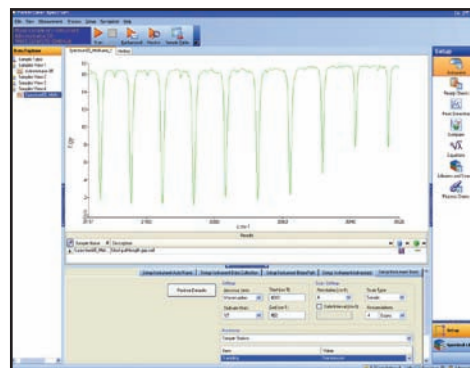
Since the commercialization of our first IR system in 1944, PerkinElmer® FT-IR spectrometers are the standard by which all others are judged. In celebration of this 65 year achievement, we are proud to introduce our special edition FT-IR – Spectrum™ 65.

Simplicity of operation is at the core of the instrument design. This is achieved through new, state of the art software, while the spectrometer contains performance and reliability features previously unseen in a spectrometer at this price.

The Spectrum 65 provides the perfect combination of performance, reliability and ease of use required for everyday applications. If you need the highest value from your IR system, you will find the Spectrum 65 is ideal for the job.

### Easily surmounts the challenges of everyday IR analysis

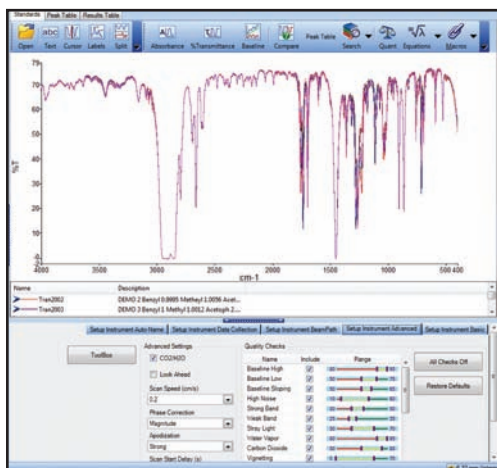
- New full-featured Spectrum 10 software platform designed for the busy operator who needs quality answers...fast.
- Consistent high performance ensures sensitivity in applications is achieved quickly and reliably – even when small spectral differences between materials need to be measured.



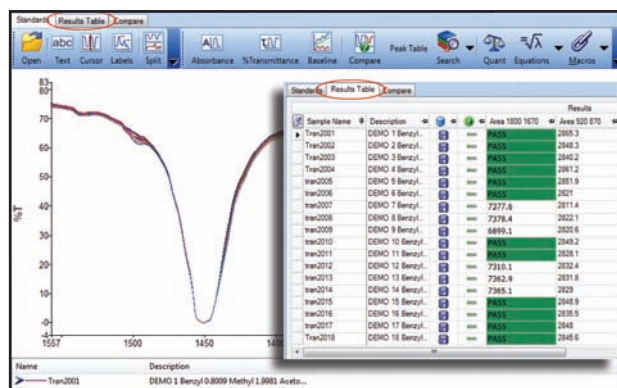
Simple screen layouts enable setting parameters without obscuring the important data.

# Software

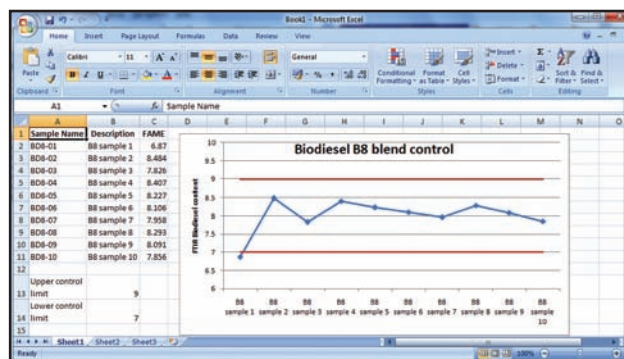
PerkinElmer® Spectrum™ 10 is the newly released 2010 software for the latest range of PerkinElmer FT-IR spectrometers. Designed for busy industrial or academic laboratories that require efficient operation combined with a wide-range of capabilities, this comprehensive package sets the standard in FT-IR software for simplicity and efficiency in data collection, processing and generating results.



Simplified layout means you can easily manage data, associated results and setup information.



Multiple results are laid out logically simplifying interpretation.



Easy transfer of results to other applications for further analysis.

## Make your everyday tasks faster and easier

- Common operations including fully automated procedures can be placed on the toolbar and reduced to a single-click or keyboard shortcut.
- Setups can be viewed and adjusted using a separate Setup panel in its own display area away from data.
- Operations which generate multiple results are automatically set up to order the results in a logical "layered" output avoiding the need to click through multiple windows.
- Spectrum 10 is fully customizable in both operator functions and software appearance.

## Workbench Layers help you manage your work

- Work with multiple spectra and see multiple results in a single table without navigating numerous results pages.
- Navigate multiple spectra and associated results using the Data Explorer tree – much simpler than using multiple windows.
- Activate other applications for further manipulation. The 'Send To' function places selected spectra and reports directly into new Word®, Wordpad documents or other software.
- View spectra, the Instrument toolbar, numeric results and their setups at the same level, just as you would tools on a normal workbench to minimize clutter and focus on live data or results.

## Comprehensive data processing to meet all your application needs

- Sample verification of known materials is performed using the highly popular and acclaimed Compare™ software
- Identification of unknown compounds and mixtures is accomplished with the standard Search function.
- High performance quantitative analysis of mixtures to suit the application, from simple peak height or area threshold measurement to full spectrum partial least squares predictions.

## Local language selection

- English, Spanish, Chinese, Japanese, German and French and Portuguese versions.

Bring your **FT-IR investment** up to date with latest **software architecture**

To upgrade online now to Spectrum 10 Spectroscopy Software, please visit:  
[www.perkinelmer.com/spectrum10](http://www.perkinelmer.com/spectrum10)

# Delivering superior data quality and sampling flexibility for materials characterization



LAMBDA 1050

PerkinElmer's LAMBDA™ Series UV/Vis/NIR and UV/Vis Spectrophotometers have consistently offered best-in-class accuracy, precision and reproducibility to scientists for nearly 50 years.

No matter what your industry – from optical coatings to chemicals to glass – and whether you need to analyze optics, flat-panel displays or semiconductors – our instruments have become the standard for sampling flexibility and superior data quality in thousands of laboratories globally. Building on this tradition of excellence, the innovative LAMBDA range confirms our leadership in high-performance UV/Vis/NIR and UV/Vis spectroscopy.

## The LAMBDA 1050

The innovative LAMBDA 1050 redefines material testing analysis as the only spectrophotometer to offer optimum sensitivity, flexibility and accuracy for the most difficult analysis across the entire operating range – from 175 to 3,300 nm.

### Features and Benefits

- An innovative 3-detector transmission module featuring photomultiplier, Indium Gallium Arsenide (InGaAs) and lead sulphide (PbS) detectors for ultra high-performance across the whole operating range
- High-performance 150 mm, 60 mm integrating spheres with PMT and InGaAs detectors, for higher performance diffuse transmittance and diffuse reflectance measurements
- High-performance Universal Reflectance Accessory (URA) with dual Si and InGaAs detectors for high-accuracy specular reflectance measurements
- A suite of performance improvements, including the highest available photometric range and linearity and lowest photometric noise

## The LAMBDA Series

The LAMBDA range offers a choice of state-of-the-art spectrophotometers featuring innovative, quick-change, intelligent accessories, along with the industry's broadest range of sampling tools and software solutions.

PerkinElmer's unique accessories, for example the URA and the range of integrating spheres, dramatically simplify a variety of challenging analyses.

Description	Wavelength Range
<b>LAMBDA 1050</b> Ultra High-performance UV/Vis/NIR	175 – 3,300 nm (3-detector)
<b>Target Applications:</b> Optics, Optical Coatings, Electronics, Displays, Glass and Filters	
<b>LAMBDA 950</b> High-performance UV/Vis/NIR	175 – 3,300 nm (2-detector)
<b>Target Applications:</b> Optics, Optical Coatings, Electronics, Displays, Glass, Academia, Non-optical Coatings and Materials Science	
<b>LAMBDA 850</b> High-performance UV/Vis	175 – 900 nm
<b>Target Applications:</b> Non-optical Coatings, Color, Pharmaceuticals and Materials Science	
<b>LAMBDA 750</b> UV/Vis/NIR	190 – 3,300 nm
<b>Target Applications:</b> Academia, Chemistry, Routine Materials Science Applications, Color, Paints, Coatings and Polymers	
<b>LAMBDA 650</b> UV/Vis	190 – 900 nm
<b>Target Applications:</b> Academia, Chemistry, Routine Materials Science Applications, Pharmaceuticals, Biosciences, Color and Textiles	



The LAMBDA Series features unique dual sample compartments for maximum flexibility.

# Deuterium and Tungsten Source Lamps

PerkinElmer's long-lifetime deuterium and tungsten source lamps provide the best wavelength coverage across the working range of the spectrometer for consistently high performance. All lamps are pre-aligned and can be easily changed by the user. Our extensive quality control and inspection process demands the very best quality sources to provide high sensitivity and stability for your key measurements.

## Calibration Reference Materials

PerkinElmer reference materials provide fast and accurate calibration verification for UV/Vis and UV/Vis/NIR spectrometers. A comprehensive range of certified traceable filters and sealed cells allow users to verify ordinate and abscissa accuracy, measure stray light and check spectral resolution. All reference materials are certified traceable to NIST primary reference material, and are supplied with a certificate detailing the calibration method and results.



Photometric and Wavelength Accuracy Reference Material Set

## Secondary Reference Material Sets

### Photometric and Wavelength Accuracy Set

The set includes three neutral density glass filters for checking ordinate accuracy and a holmium glass filter for verification of the wavelength accuracy. Each filter has a unique identification number and the ordinate and abscissa values of each filter are quoted in the accompanying Certificate of Calibration.

**Part No.**  
**B0507805**

### Stray Light Solutions Set

The set includes sealed sodium iodide, sodium nitrite and potassium chloride solutions, which act as cut-off filters with very precise wavelengths. Also included is a sealed water reference.

**Part No.**  
**B2500099**

### Pharmacopoeia Solutions Set

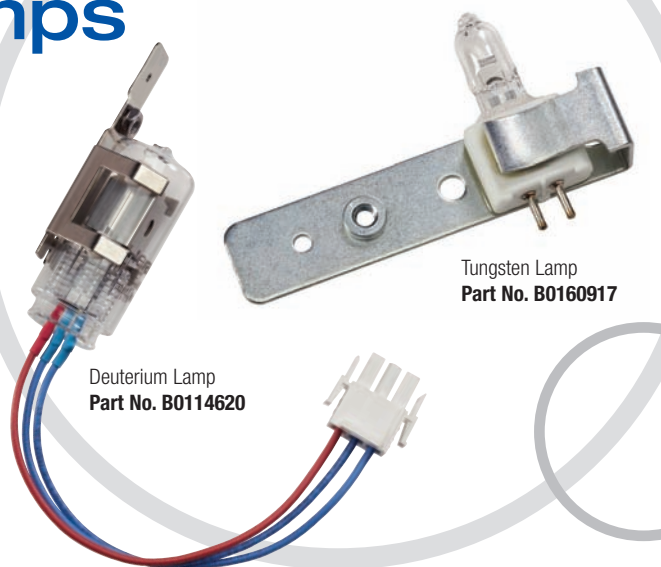
Set of sealed cells to verify calibration in accordance with Pharmacopoeia monographs.

- Ordinate (photometric) accuracy; potassium dichromate
- Abscissa (wavelength) accuracy; holmium perchlorate
- Level of stray radiation; potassium chloride
- Resolution; toluene in hexane

Also included are two sealed reference solutions.

**Part No.**  
**B2500100**

All Secondary Reference Materials are supplied in robust aluminum containers with an accompanying Certificate of Calibration. All cells are designed to fit into the standard 10 mm cuvette holders of most UV/Vis and UV/Vis/NIR spectrophotometers.



## Source Lamps for LAMBDA Spectrophotometers

### Deuterium Lamps

LAMBDA Model	Part No.
For LAMBDA 1/3	<b>C0550505</b>
For LAMBDA 1X/2X/3X/4X/5X/5XX/Bio/6XX/8XX/9XX	<b>B0160917</b>
For LAMBDA 4/6	<b>C6880055</b>

### Tungsten Lamps

LAMBDA Model	Part No.
For LAMBDA 1/3*	<b>C0550500</b>
For LAMBDA 1X/2X/3X/4X/Bio/6XX/8XX/9XX	<b>B0114620</b>
For LAMBDA 4/6*	<b>C6880054</b>
For 5X/5XX	<b>B0091906</b>

\*Prefocused and prealigned.

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# High Quality Precision Cells for Every

## Make full use of the **accuracy** and **sensitivity** of your **optical instrument**

### PerkinElmer Cells Ensure Top Optical Performance, with High Cell Transmission and Accurate Pathlength

No matter what type of cells your application requires – rectangular or cylindrical, standard or short path, micro, semi-micro or flowcells – choosing only high quality, precision cells allows you to make full use of the accuracy and sensitivity of your optical instrument.

The cell windows are fused to the bodies by a special process which avoids deformation of the windows. This assures that the full width of the cell is usable and the finished cell dimensions are maintained.

Our cells are manufactured from various types of glass. We offer three basic materials: Special Optical Glass, SUPRASIL® UV Quartz and SUPRASIL 300 NIR Quartz, in all the common sizes and types. The most important criterion for the choice of a particular type of glass is the spectral range for which the cell is intended. Color logos are fused onto each PerkinElmer cell, thus indicating the spectral range over which the cell can be used.

#### Special Optical Glass

Indicates that SCHOTT type UK 5 is used for cells referred to in the catalog as manufactured from “Special Optical Glass”. This crown glass is made from exceptionally pure raw materials, which gives an improved transmission in the near ultraviolet range. An empty cell will give a transmission of more than 80% over a spectral range of between 320 and 2,500 nm.

#### SUPRASIL UV Quartz

Indicates that quartz of the highest purity and homogeneity has been used for the window. Because it is produced from a silicon compound, it is also called synthetic quartz. SUPRASIL gives transmission values of more than 80% over a spectral range of between 200 and 2,500 nm for an empty cell.

#### SUPRASIL 300 NIR Quartz

Denotes a synthetic quartz that is free from OH absorption. Therefore it is suitable for applications in the near infrared range up to approximately 4,000 nm. SUPRASIL 300 gives a transmission of more than 80% over a spectral range of between 200 and 3,500 nm for an empty cell.

Standard rectangular macro cells are the most frequently-used type of spectroscopy cell for routine liquids analysis. Each cell has a standard inside width of 9.5 mm and a base thickness of 1.5 mm. All macro cells contain two clear windows.



NIR Quartz Macro with PTFE Lid

NIR Quartz Macro with PTFE Stopper

#### Macro with PTFE Lid

Lightpath	Outside Dim. H x W x D mm	Cell Volume	Qty.	Part No.
<b>NIR Quartz SUPRASIL® 300</b>				
1 mm*	45 x 12.5 x 3.5	350 µL	2	<b>B0631013</b>
5 mm	45 x 12.5 x 7.5	1.75 mL	2	<b>B0631014</b>
10 mm	45 x 12.5 x 12.5	3.5 mL	2	<b>B0631015</b>
20 mm	45 x 12.5 x 22.5	7.0 mL	2	<b>B0631016</b>
50 mm	45 x 12.5 x 52.5	17.5 mL	1	<b>B0631017</b>
100 mm	45 x 12.5 x 102.5	35.0 mL	1	<b>B0631018</b>
<b>Optical Glass 360-2,500 nm without lid</b>				
10 mm	45 x 12.5 x 12.5	3.5 mL	4	<b>B0631134</b>
<b>Quartz SUPRASIL</b>				
1 mm*	45 x 12.5 x 3.5	350 µL	2	<b>B0631007</b>
5 mm	45 x 12.5 x 7.5	1.75 mL	2	<b>B0631008</b>
10 mm	45 x 12.5 x 12.5	3.5 mL	2	<b>B0631009</b>
20 mm	45 x 12.5 x 22.5	7.0 mL	2	<b>B0631010</b>
50 mm	45 x 12.5 x 52.5	17.5 mL	1	<b>B0631011</b>
100 mm	45 x 12.5 x 102.5	35.0 mL	1	<b>B0631012</b>
<b>Special Optical Glass</b>				
1 mm*	45 x 12.5 x 3.5	350 µL	2	<b>B0631001</b>
5 mm	45 x 12.5 x 7.5	1.75 mL	2	<b>B0631002</b>
10 mm	45 x 12.5 x 12.5	3.5 mL	2	<b>B0631003</b>
20 mm	45 x 12.5 x 22.5	7.0 mL	2	<b>B0631004</b>
50 mm	45 x 12.5 x 52.5	17.5 mL	1	<b>B0631005</b>
100 mm	45 x 12.5 x 102.5	35.0 mL	1	<b>B0631006</b>

\*Glass lid.

# Application

## Macro with PTFE Stopper

Lightpath	Outside Dim. H x W x D mm	Cell Volume	Qty.	Part No.
<b>NIR Quartz SUPRASIL 300</b>				
1 mm	52 x 12.5 x 3.5	350 µL	2	<b>B0631031</b>
5 mm	46 x 12.5 x 7.5	1.75 mL	2	<b>B0631032</b>
10 mm	46 x 12.5 x 12.5	3.5 mL	2	<b>B0631033</b>
20 mm	46 x 12.5 x 22.5	7.0 mL	2	<b>B0631034</b>
50 mm	46 x 12.5 x 52.5	17.5 mL	1	<b>B0631035</b>
100 mm	46 x 12.5 x 102.5	35.0 mL	1	<b>B0631036</b>

### Quartz SUPRASIL

1 mm	52 x 12.5 x 3.5	350 µL	2	<b>B0631025</b>
5 mm	46 x 12.5 x 7.5	1.75 mL	2	<b>B0631026</b>
10 mm	46 x 12.5 x 12.5	3.5 mL	2	<b>B0631027</b>
20 mm	46 x 12.5 x 22.5	7.0 mL	2	<b>B0631028</b>
50 mm	46 x 12.5 x 52.5	17.5 mL	1	<b>B0631029</b>
100 mm	46 x 12.5 x 102.5	35.0 mL	1	<b>B0631030</b>

### Special Optical Glass

1 mm	48 x 12.5 x 3.5	350 µL	2	<b>B0631019</b>
5 mm	46 x 12.5 x 7.5	1.75 mL	2	<b>B0631020</b>
10 mm	46 x 12.5 x 12.5	3.5 mL	2	<b>B0631021</b>
50 mm	46 x 12.5 x 52.5	17.5 mL	1	<b>B0631023</b>

## Semi-micro Cells

Semi-micro cells have the same outside dimension as the Macro cells but the cell walls have been thickened slightly, limiting the interior sample chamber width to 4 mm. This reduces the sample requirements by 60%. Each cell has a base thickness of 3.2 mm and each package contains two cells with two clear windows each.



### Semi-micro with PTFE Lid – Black

Outside Dimensions (HxWxD)	Lightpath	Cell Volume	Part No.
<b>NIR Quartz SUPRASIL 300</b>			
45 x 12.5 x 7.5 mm	5 mm	700 µL	<b>B0631050</b>
45 x 12.5 x 12.5 mm	10 mm	1.4 mL	<b>B0631051</b>
<b>Quartz SUPRASIL</b>			
45 x 12.5 x 7.5 mm	5 mm	700 µL	<b>B0631048</b>
45 x 12.5 x 12.5 mm	10 mm	1.4 mL	<b>B0631049</b>
<b>Special Optical Glass</b>			
45 x 12.5 x 7.5 mm	5 mm	700 µL	<b>B0631046</b>
45 x 12.5 x 12.5 mm	10 mm	1.4 mL	<b>B0631047</b>

## Micro Cells

Micro cells have the same outside dimension as the Macro cells but the cell walls have been thickened, limiting the interior sample chamber width to 2 mm. This reduces the sample requirements by 80%. Each Micro cell has a standard light path of 10 mm and each package contains two cells with two clear windows each. All Micro cells listed have black sidewalls and base.



Quartz SUPRASIL  
Micro with PTFE Lid or Stopper

### Micro with PTFE Lid

Outside Dimensions (HxWxD)	Base Thickness	Cell Volume	Part No.
<b>Quartz SUPRASIL®</b>			
45 x 12.5 x 12.5 mm	3.2 mm	700 µL	<b>B0631071</b>
<b>Special Optical Glass</b>			
45 x 12.5 x 12.5 mm	3.2 mm	700 µL	<b>B0631070</b>

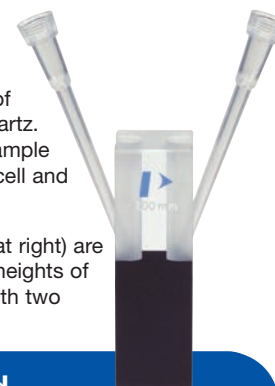
### Micro with PTFE Stopper

<b>NIR Quartz SUPRASIL 300</b>			
40 x 12.5 x 12.5 mm	1.5 mm	400 µL	<b>B0631078</b>
<b>Quartz SUPRASIL</b>			
40 x 12.5 x 12.5 mm	1.5 mm	400 µL	<b>B0631077</b>
<b>Special Optical Glass</b>			
40 x 12.5 x 12.5 mm	1.5 mm	400 µL	<b>B0631076</b>

## Ultra-micro Cells

Ultra-micro cells use a narrower sample chamber, raising it directly into the center of the light path and masking it with black quartz. This design optimizes the use of smaller sample volumes. All Ultra-micro cells contain one cell and two clear windows.

Ultra-micro cells with Pipette Tips (shown at right) are available in Quartz SUPRASIL with center heights of 15 mm. Each package contains one cell with two clear windows.



### Ultra-micro with PTFE Lid

Outside Dim. (HxWxD mm)	Lightpath	Aperture	Chamber Volume	Filling Volume	Part No.
<b>Quartz SUPRASIL</b>					
45 x 12.5 x 12.5	10 mm	2 x 1.5 mm	30 µL	50 µL	<b>B0631079</b>

### Ultra-micro with Pipette Tips

<b>Quartz SUPRASIL</b>					
40 x 12.5 x 12.5	0.1 mm	1 x 5 mm	0.5 µL	2 µL	<b>B0631082</b>
40 x 12.5 x 12.5	1 mm	1 x 5 mm	5 µL	10 µL	<b>B0631083</b>
45 x 12.5 x 12.5	5 mm	Ø 0.8 mm	2.5 µL	5 µL	<b>B0631080</b>
40 x 12.5 x 12.5	10 mm	Ø 0.8 mm	5 µL	10 µL	<b>B0631081</b>

# Macro, Semi-micro and Micro UV disposable cells for convenient, **cost effective spectroscopy**



Disposable cells greatly reduce the risk of contamination, remove the need for cleaning reagents and lower laboratory costs as compared to quartz or glass cells.

Disposable cells are available in polystyrene and polymethyl methacrylate either as macro or semi-micro cells. Additionally, disposable cells are available in a special UV transparent material in micro, semi-micro and micro cells. The useful spectral range for UV Material is between 220 and 900 nm, for polymethyl methacrylate it is 300 and 900 nm and for polystyrene it is 340 and 900 nm.

Each cell has a standard light path of 10 mm and is suitable for any UV/Vis Spectrophotometer which accommodates cells with a center height of 15 mm.

Color coded caps can be ordered for the micro UV transparent cells which allow samples to be stored down to -20 °C.

## Macro Cells

Description	Outside Dimensions	Cell Volume	Qty.	Part No.
UV Material	45 x 12.5 x 12.5 mm	2.5 – 4.5 mL	100	<b>L7110269</b>
Polystyrene	45 x 12.5 x 12.5 mm	2.5 – 4.5 mL	1000	<b>L7110271</b>
Polymethyl Methacrylate	45 x 12.5 x 12.5 mm	2.5 – 4.5 mL	1000	<b>L7110273</b>

## Micro Cells



Description	Outside Dimensions	Cell Volume	Qty.	Part No.
UV Material	45 x 12.5 x 12.5 mm	70 – 550 µL	100	<b>L7110260</b>
	45 x 12.5 x 12.5 mm	70 – 550 µL	500	<b>L7110261</b>
UV Material Individually Wrapped*	45 x 12.5 x 12.5 mm	70 – 550 µL	100	<b>L7110262</b>
Caps - Blue			100	<b>L7110264</b>
Caps - Yellow			100	<b>L7110265</b>
Caps - Green			100	<b>L7110266</b>
Caps - Orange			100	<b>L7110267</b>

\* Free of DNase, DNA and RNase

## Cell Rack

Also available is a cell rack for easy storage of samples. It is suitable for standard 10 mm light path cells and holds up to 16 cells in numbered positions to aid sample tracking. The cell rack can withstand temperatures up to 121 °C so it can be used in an Autoclave.

Description	Qty.	Part No.
Cell Rack, 16 cell capacity	1	<b>L7110275</b>



## Semi-micro Cells

Description	Outside Dimensions	Cell Volume	Qty.	Part No.
UV Material	45 x 12.5 x 12.5 mm	1.5 – 3.0 mL	100	<b>L7110268</b>
Polystyrene	45 x 12.5 x 12.5 mm	1.5 – 3.0 mL	1000	<b>L7110272</b>
Polymethyl Methacrylate	45 x 12.5 x 12.5 mm	1.5 – 3.0 mL	1000	<b>L7110274</b>

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# Versatile cell holders

to maximize sampling **flexibility**



Cylindrical Long-path Cell Holder



Solid Sample Holder

To extend the range of samples that you can analyze, we offer a wide range of sample holders.

The rectangular and cylindrical long-path cell holders are ideal for sensitive measurements on dilute samples where the extra pathlength is important. For the chemist, the test-tube holder provides a convenient method of sampling in-situ without having to decant the sample into standard cells.

Finally, extend your measurement capabilities to include solid materials with the solid and variable-angle sample holders.

## Solid Sample Holder

Minimum sample size 10 x 15 mm. Maximum sample thickness 5 mm.

**Part No.**  
**B0080822**

## Test Tube Holder

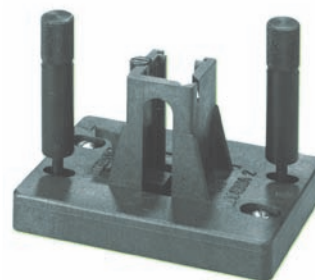
This holder accommodates test tubes from 11 to 17 mm diameter.

**Part No.**  
**B0500952**

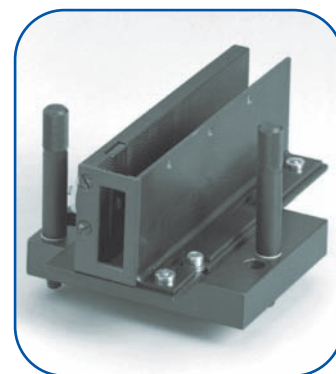
## Variable Angle Sample Holder

0° to 60° for sample position for measurement in transmission of filter glasses and other transparent samples. Minimum sample size is 30 x 40 mm.

**Part No.**  
**B0152471**



Standard Cell Holder



Rectangular Long-path Cell Holder

## Cell Holders

### Standard Cell Holder

The Standard Cell Holder is provided as standard equipment with your PerkinElmer LAMBDA Series instrument. A lifter (included) makes short cell removal easy. It accommodates a large selection of rectangular cells up to 10 mm pathlength. The Standard Cell Holder is adjustable both vertically and horizontally.

**Part No.**  
**B0505071**

### Rectangular Long-path Cell Holder

The Rectangular Long-path Cell Holder accepts cells with pathlengths from 10 to 100 mm. This optional cell holder is easy to install and has the same footprint as the Standard Cell Holder. It is designed for a precise fit and gives you maximum reproducibility.

Description	Part No.
For LAMBDA 1X/2X/3X/4X/Bio	<b>B0080821</b>

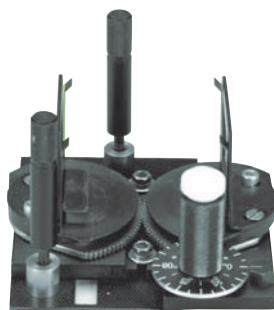
### Cylindrical Long-path Cell Holder

The Cylindrical Long-path Cell Holder accommodates cells with outside diameters from 22 to 30 mm. A versatile cell holder, it accepts cells with pathlengths up to 100 mm. The spring loaded clamping arms provide a precise, reproducible fit and are easy to adjust.

**Part No.**  
**C0550303**



Test Tube Holder



Variable Angle Sample Holder

# Cell changers for higher productivity



8+1 Cell Changer

## Water-thermostatted 8+1 and 8+8 Cell Changers

### 8+1 Cell Changer for LAMBDA 25/35/45

Automatic Water-thermostattable Linear Cell Changer for eight samples and one reference.

	Part No.
	<b>N1010567</b>
<b>Includes:</b>	<b>Part No.</b>
Automatic Linear Transport	<b>B2000186</b>
8-Cell Holder, Water-thermostattable	<b>B2205411</b>
Water-thermostattable Reference Cell Holder	<b>B2000201</b>

### 8+8 Cell Changer for LAMBDA 25/35/45

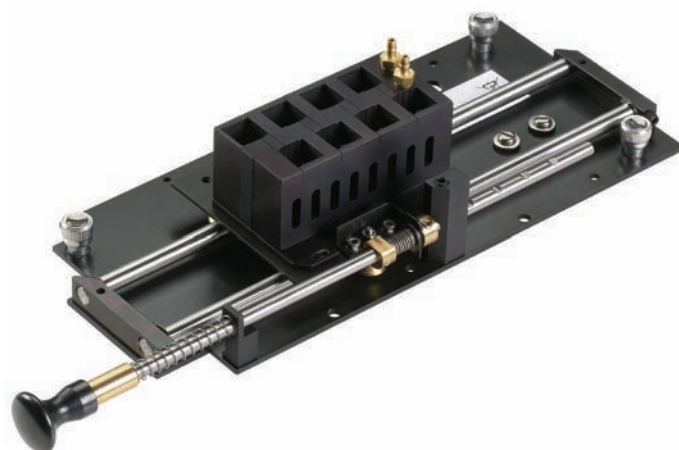
Automatic Water-thermostattable Linear Cell Changer for eight samples and eight references.

	Part No.
	<b>N1010568</b>
<b>Includes:</b>	<b>Qty.</b>
Automatic Linear Transport	<b>B2000186</b>
Reference Kit	<b>B2000310</b>
8-Cell Holders	<b>B2205411</b>
	2

### 5+5 Cell Changer for LAMBDA 25/35/45

Automatic Linear 5+5 Cell Changer for long pathlength cells up to 50 mm.

	Part No.
	<b>N1010569</b>
<b>Includes:</b>	<b>Qty.</b>
Automatic Linear Transport	
Reference Kit	
Long Pathlength 5-Cell Holder	2
	<b>Part No.</b>
	<b>B2000186</b>
	<b>B2000310</b>
	<b>B0089439</b>



Manual Cell Changer with Water-thermostatted 8-Cell Holder

### Manual Cell Changer for LAMBDA 25/35/45

Base unit to be used with cell holder of choice.

	Part No.
	<b>B2500080</b>
<b>Includes:</b>	<b>Part No.</b>
Accessory Cover	<b>B0094014</b>
<b>Requires one of the following (not included):</b>	<b>Part No.</b>
Long Pathlength 5-Cell Holder or	<b>B0089439</b>
8-Cell Holder, Water-thermostattable	<b>B2500081</b>

## 13-Cell Changer System

### For LAMBDA 25/35/45

Includes cell changer and one carousel each for glass/quartz and plastic cuvettes. Accessory PCB (L6000500) required for LAMBDA 25/35/45, or PCB (B0509681) required for LAMBDA 10/20/40/Bio, but not included.

	Part No.
	<b>B0185210</b>

# Thermostating options for **fast, efficient temperature-control**

## PTP-A Single-cell Air-cooled Peltier Accessory

The PTP-A Single-cell Peltier Accessory is air-cooled and does not require a source of cooling water, making it very convenient to use with minimal setup time. Temperature programs are set up, edited and stored from the front panel of the controller unit.

The PTP-A is ideal for protein and nucleic assays to 37 °C and for many studies of kinetics, thermodynamics and acid-base equilibria.

Description	Part No.
PTP-A Air-cooled Peltier System	L6310014

## Water-thermostatted Single-cell Holder

A single-cell holder with 3 mm fluid tubing connectors to enable fluid circulated temperature stabilization. Can be installed in the reference position with the PTP-1 and PTP-6 to allow the reference sample to be temperature controlled. Requires, but does not include, a fluid circulator.

LAMBDA Model	Part No.
All	B0080819



Temperature-measurement Kit

## Temperature-measurement Kit

Probe for measuring the temperature within the cell. Includes glass cell. Requires the LAMBDA 25, 35, 45 Accessory Board (L6000500).

LAMBDA Model	Part No.
25/35/45	B0185227



PTP 1+1 and PTP 6+6  
Research Peltier Systems

## Research Peltier Range

The research Peltier range of accessories is ideal for any application that requires precise control of temperature at, below or above ambient temperature. The ability to operate up to 100 °C allows applications such as DNA melting, protein denaturation and some polymer studies to be performed.

These new accessories consist of Peltier-controlled, single or six-cell cuvette holders for the sample and reference channels. Single-channel versions are also available. The accessory includes in-cuvette stirring and the ability to preset temperature programs.

The unit requires a source of cooling water.

Description	Part No.
PTP-1 Research Peltier System	L6310010
PTP 1+1 Research Peltier System	L6310012
PTP-6 Research Peltier System*	L6310011
PTP 6+6 Research Peltier System*	L6310013

*\*For the PTP-6 and 6+6 the sample and reference cell holders must be fitted to the baseplate of the cell changer unit in the sample compartment. In a Lambda 25, 35 or 45 this is the Automatic Linear Transport (B2000186), while in a Lambda 650, 850 or 950 the Linear Cell Programmer (B2205401) is required.*

# Specular Reflectance Accessories



## Specular Reflectance Accessories for LAMBDA 650/750/850/950/1050

### The Fully-automated Universal Reflectance Accessory (URA)

PerkinElmer's unique Universal Reflectance Accessory (URA) is the only fully-automated, multi-angle, absolute specular reflectance accessory available today.

Simply place the sample on the horizontal sampling plate, select the required measurement angles with a few mouse clicks and scan. Unlike traditional methods, the URA automatically and reproducibly changes the measurement angle, eliminating time-consuming manual mirror adjustments and changes of accessory. This approach reduces running costs and increases productivity. The URA snaps into place in the second sampling position and can quickly be interchanged with integrating spheres and other detector modules.

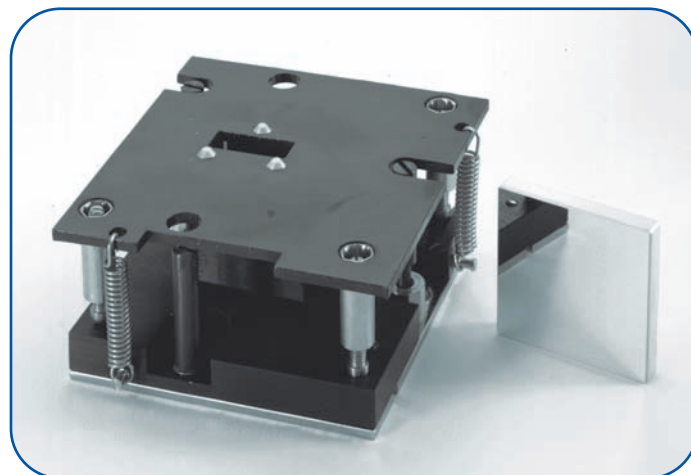
#### Features and Benefits

- Measurement range: 190 – 3,100 nm (UV/Vis/NIR), 190 – 900 (UV/Vis)
- Angular range: 8 – 68° incident angle
- Depolarization recommended for angles >15°
- Measure separate S&P polarizations using the Double Depolarizer Drive (page 22)
- Absolute and relative measurements can be made
- Typical applications include the measurement of anti-reflection coatings, high-reflectors, coating thickness and metallic reflectors

Description	Part No.
URA* (UV/Vis only)	L6020208
URA* (UV/Vis/NIR)	L6020202
URA (UV/Vis/NIR) for LAMBDA 1050 only	L6020358

\*Not available for the LAMBDA 750

## Relative Specular Reflectance Accessories



Relative Specular Reflectance Accessory, 6°

#### Features and Benefits

- Locates in the standard sample compartment for routine relative reflectance measurements at a 6° fixed angle of incidence
- Accommodates samples from 20 x 20 mm to 100 x 100 mm
- Wavelength range: 175 – 3,300 nm
- Choice of angles: 45° and 80° also available\*

\*See Consumables and Accessories Reference Catalog.

Part No.

B0086703

## Variable-Angle Relative Specular Reflectance Accessory

For relative specular reflectance studies which require data from more than one angle of incidence, the variable angle accessory is ideal. The angular range is from 15 to 70° with an accuracy of +/- 1°. Typical applications include the study of the how the reflectivity of a sample changes with change of incident angle.

#### Features and Benefits

- Wavelength range: 175 – 3,300 nm
- Locates in standard sample compartment
- Uses standard instrument detectors
- Range of angles: 15 – 70°

Part No.

B0137314

# Snap-in Integrating Spheres

## Accessories for LAMBDA 150 mm Integrating Spheres

For LAMBDA 650/850/950/1050 Integrating Spheres

### Center Mounted Sample Holder, Clip Style

Clip style for films and paper samples.

LAMBDA Model	Part No.
6XX/8XX/9XX/10XX	PELA9039

### Center Mounted Sample Holder, Jaw Style

Jaw style for solid samples like glasses, prisms, etc.

LAMBDA Model	Part No.
6XX/8XX/9XX/10XX	PELA9038

### Cell Holder

For measurement in 1 cm cuvettes in transmission or reflectance mode.

LAMBDA Model	Part No.
6XX/8XX/9XX/10XX	C6951019

### Small Spot Accessory Kit

Lens kit for reducing beam size to the transmittance position, to the center mount and to the diffuse reflectance position. Requires Reflectance Aperture Kit, Part No. L6020314.

LAMBDA Model	Part No.
6XX/8XX/9XX/10XX	L6020211

### Reflectance Only Small Spot Kit

Lens kit for reducing beam size to the reflectance position. Requires Sample Compartment Iris, Part No. L6020316.

LAMBDA Model	Part No.
6XX/8XX/9XX/10XX	L6020313



150 mm Integrating Sphere

## Integrating Spheres for LAMBDA 650/750/850/950/1050 Snap-in Integrating Spheres

PerkinElmer's range of snap-in integrating spheres is the industry standard for the measurement of total reflectance, diffuse reflectance and diffuse transmittance measurements for a huge range of sample types. The 150 mm Integrating Sphere is the recommended accessory for measurement of total solar reflectance and transmittance in the glass industry and for the measurement of UV transmittance of paint films in the automotive industry. Many national laboratories use it in R&D studies and for calibration measurements.

The 60 mm Integrating Sphere is used for routine diffuse reflectance and diffuse transmittance measurements. The detector sphere comprises a 60 mm Spectralon detector sphere contained in a snap-in module which fits into the second sample compartment position. This leaves the primary sample compartment free for the use of accessories such as the V-N absolute reflectance accessories, transmission sample holders and polarizer/depolarizer drive.

### Features and Benefits

- Measurement range: 200 – 2,500 nm (UV/Vis/NIR), 200 – 900 (UV/Vis)
- InGaAs versions offer higher sensitivity in the near-IR range
- Sampling modes include total and diffuse reflectance at an incident angle of 8°, and total and diffuse transmittance at normal (0°) incidence

Description	Part No.
150 mm Integrating Sphere*	L6020204
60 mm Integrating Sphere	L6020203
60 mm Detector Sphere*	L6020209
150 mm InGaAs Integrating Sphere*	L6020322
60 mm InGaAs Integrating Sphere*	L6020323

\*Not available for the LAMBDA 750.

## 50 mm Integrating Sphere for LAMBDA 35

Simplifies analysis of a wide variety of samples, including solids, powders, pastes and liquids. For scattered transmittance and diffuse reflectance measurement. Spectralon coated, wavelength range 250 to 1,100 nm.



Part No.  
C6951014

## Accessories for LAMBDA 35 Integrating Spheres

Description	Part No.
1.25" Calibrated Spectralon Diffuse Reflectance Standard	PELA9057
Powder Sample Holder Set	PELA9040

# Polarizers and Depolarizers

## for precise transmission and reflectance measurements



Double Polarizer Drive

### Double Polarizer drive for LAMBDA 650/750/850/950/1050

When samples are oriented and polarize incident light, it is important to correct for the inherent polarizing effect of the spectrometer's optics by using a depolarizer. Another important application is to make measurements using a specific orientation of incident radiation e.g. for crystalline materials and polymers.

#### Features and Benefits

- Measurement range (Depolarization): 185 – 2,600 nm
- Measurement range (with Polarizers): 400 – 700 nm (Film), 300 – 2,600 nm (Glan-Thompson), 210 – 1,000 nm (Glan-Taylor)
- Fits into standard sample compartment alongside reflectance accessories and transmittance sample holders
- Suitable for reflectance and transmittance measurements

The high performance Double Polarizer/Depolarizer Drive is installed in the primary sample compartment. The polarization/depolarization orientation can be fully automated, changed by a scan at a fixed wavelength or with a stepping mode. Resolution of 0.25° for scanning. The polarization (depolarization) orientation in the stepping mode can be changed at up to 20 wavelength positions. Applications include specular reflectance studies of optics, coatings, metallic reflectors and thin films. The Double Polarizer Drive can operate with the Universal Reflectance Accessory or manual specular reflectance and transmission accessories.

Part No.

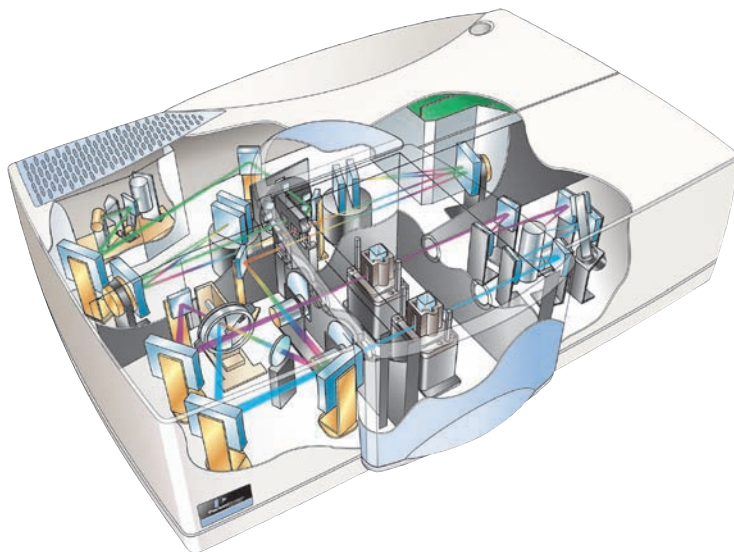
B0505530

The Double Polarizer Drive requires, but does not include, one or two of the following polarization elements:

#### Polarizer/Depolarizer Elements for the Double Polarizer Drive

A range of polarizing materials is available, according to the required wavelength range. For equal energy in the sample and reference beams of the spectrometer, two are required.

Description	Wavelength Range	Part No.
Film Polarizer	400 – 700 nm	B2205022
High Performance Polarizer Crystal	300 – 2,600 nm	B0505284
Glan-Taylor Polarizer Crystal	210 – 1,000 nm	N1010520
Depolarizer Crystal (98% efficiency)	190 – 2,600 nm	B2205021



The Common-beam Depolarizer is located just before the beam is chopped to create sample and reference beams.

#### Common-beam Depolarizer

Another approach to depolarization involves the use of a software controlled depolarizer inside the spectrometer. Driven by a stepper drive, and controlled by UV WinLab™ software, the Common-beam Depolarizer operates between 190 and 2,600 nm uses a double-wedge quartz/Suprasil design for 92% depolarization efficiency. Service installation is required.

Part No.

B0501282

# Ultra-high precision cells and long-lifetime lamps for Polarimetry

## Long Lifetime Source Lamps

High-quality source lamps, specially selected to optimize the performance of all PerkinElmer polarimeters, offer high radiant energy and a long operating lifetime. Their high output ensures that very accurate measurements of optical rotation can be made, even when the sample absorbs strongly.

Description	Polarimeter Model	Part No.
Sodium, 20 W	341/343/343 <i>plus</i> /341LC/ 241/241MC/243/243B	<b>B0008754</b>
Mercury Vapor (St46)	341/343S/343 <i>plus</i> /341LC	<b>B0510581</b>



## Secondary Quartz Standards for Instrument Validation

Quartz control plates provide traceable instrument calibration in the visible spectral range, ensuring the highest standards of accuracy and precision for all measurements. All quartz control plates feature a thermostatable housing.

Description	Nominal Rotation	Part No.
Quartz Control Plate +1	+1° at 589 nm	<b>B0098800</b>
Quartz Control Plate -1	-1° at 589 nm	<b>B0098799</b>



100 mm pathlength Polarimetry Cell

## Standard Cells for Polarimetry

PerkinElmer's polarimetry cells are exclusively manufactured for us, using a special process in which the windows are fused to the cell bodies to ensure that they're free of tension. This eliminates the birefringence effects which are found in conventional designs and can affect the accuracy of your measurements.

Each cell is individually tested and the actual pathlength is engraved on the cell to the nearest 0.01 mm. All cells are jacketed for thermostating and are designed for easy filling and emptying, with no loss of sample. A wide range of cells are available for all applications, including short-pathlength cells, flow cells and micro-cells. Fused silica (quartz) cells are available for measurements in the UV and visible regions, as well as work at temperatures of up to 200 °C. Glass cells can be used at visible wavelengths above 400 nm.

Description	Lightpath	Cell Volume	Part No.
Quartz	100 mm	3.0 mL	<b>B0507403</b>
Quartz	100 mm	6.2 mL	<b>B0041696</b>
Optical Glass	100 mm	3.0 mL	<b>B0507447</b>
Optical Glass	100 mm	6.2 mL	<b>B0041693</b>

## Micro Cells

Description	Lightpath	Cell Volume	Part No.
Optical Glass	100 mm	1.0 mL	<b>B0017047</b>

# Defining the standards for FT-IR technology for over 65 years

**For over 65 years, PerkinElmer has been the world leader in Infrared Spectroscopy because we are committed to providing solutions to the challenges you face in your laboratory.**

We continually pioneer technology to help you produce more insightful results with greater reliability and ease of use. Through several industry firsts and patented innovations, as well as in-depth training and unmatched service, we are committed to providing you with the ultimate in FT-IR systems.

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

The PerkinElmer Spectrum™ 100 FT-IR Spectrometer is the gold standard for routine materials testing applications in industry and academia. The system's high sensitivity, sampling speed and stability, enables laboratories to achieve high quality, reproducible results with ease.

### Features and Benefits

- Exclusive source design for accurate, repeatable measurements
- Go button and LCD display for increased productivity and ease-of-use
- Smart, zero-alignment, modular accessories for quick, predictable and reproducible sampling
- Absolute Virtual Instrument (AVI) standardizes the instrument's wavenumber scale to a far higher accuracy than can be achieved with conventional calibration methods
- Spectrum software provides intuitive user operation and helps ensure consistent results, day-to-day, user-to-user



Spectrum 100 System

## The Spectrum 400

The Spectrum 400 is a dual range (either FT-IR/FT-NIR or FT-IR/FT-FIR) system that combines the latest developments in design, sampling and data-handling.

Incorporating sophisticated automated range switchover, this amazing instrument provides you with fully optimized performance across the entire measurement range. The Spectrum 400 is ideally suited to a wide range of applications in product development, product and process troubleshooting and method development environments.

*See page 10 for details on the new Spectrum 65 FT-IR.*

## Microscopy and Imaging Systems – designed to meet every challenge of even the most demanding analyses

The PerkinElmer line of IR Microscopy and Imaging Systems is designed to allow your laboratory to analyze even the smallest sample with pinpoint accuracy. We are the only instrument manufacturer to achieve the maximum spatial resolution across our entire product range. Our instruments are engineered to the highest quality specifications, providing high throughput, reproducibility and, ultimately, confidence in every result.

### Microscopy vs. Imaging

While infrared microscopy provides the highest sensitivity and widest spectral range for small area FT-IR measurements, collecting a microscopic chemical picture of your sample can be time consuming, depending on the data collection and sample size requirements.

Unlike IR microscopes that employ a single detector measuring a single point at a time, FT-IR Imaging systems contain multi-element detectors, producing IR images almost as fast as an optical microscope presents a visible image.

## Spotlight 400 FT-IR and 400N FT-NIR Imaging Systems

The Spotlight 400 Imaging System is the ultimate in IR imaging, allowing rapid collection of data from virtually any material. It's combination of high-sensitivity and speed extends IR imaging to many new applications, and provides valuable information about structure and molecular composition.



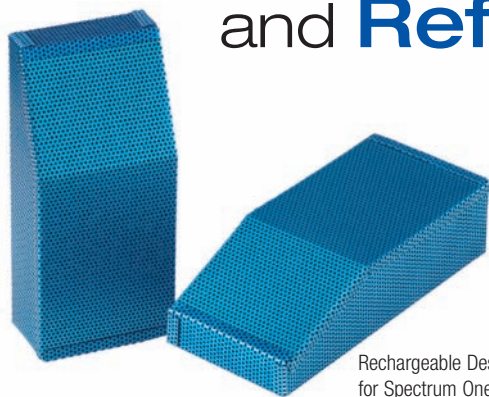
### Features and Benefits

- Best-in-class signal-to-noise ratio — typically better than 12,000:1
- Rapid-scan IR imaging in transmission reflectance and ATR
- Fully automated focus, stage movement and illumination
- Duet detector design containing single element microscopy and array imaging detectors
- Solid-state white light illumination
- 1.56, 6.25, 25 and 50  $\mu$  pixel size

## TG-IR Hyphenated technique

PerkinElmer offers a TG-IR Interface which can connect a TGA 4000 or STA 6000 to a Spectrum 100, 100N, or 400. Spectrum One and Spectrum One NTS are also compatible with the Interface. For more information on hyphenated techniques see page 50.

# Desiccant and Laser Kits, Sources and Reference Materials



Rechargeable Desiccant Kit for Spectrum One/One NTS



Disposable Desiccant Kit

## Rechargeable Desiccant Kits

The desiccant is contained in rigid metal cages which are user-installable. Depending on the instrument either one or two cages are required. It is recommended to have spare cages of desiccant so when a desiccant change is required recharged desiccant can be available to be installed immediately.

Description	Part No.
For Spectrum Spectrum 65/100/100N/400 Includes: four (4) Desiccant Packs, two to be used in the instrument and two spares for recharging.	<b>L1250311</b>
For Spectrum One/One NTS Includes: four (4) Desiccant Packs, two to be used in the instrument and two spares for recharging.	<b>L1200219</b>
For Spectrum 1000/BX/RX, Model 1600, Paragon 500/1000 Includes: one (1) Desiccant Pack. One pack required for each desiccant change.	<b>L1180480</b>
For Spectrum 400 Second Desiccant area Includes: one (1) Desiccant Pack. One required for each desiccant change.	<b>L1251840</b>

## Replacement Laser Head Kit and Sources

Description	Part No.
Laser Head (HeNe) and Laser Power Supply User-installable spare for Spectrum One 65/100/400 and Spectrum One NTS/100N systems.	<b>L1200253</b>
NIR Source Lamp for Spectrum One/65/100/400	<b>L1240098</b>
Mid-IR Source Assembly for Spectrum One/100/400	<b>L1200406</b>
Mid-IR Source Element for Spectrum One/65/100/400	<b>L1200443</b>

## Instrument Performance Validation (IPV) Kits

Instrument Performance Validation Kits are available for both Mid-IR and Near-IR FT-IR instruments. All the kits include a polystyrene Traceable Reference Material (TRM) for abscissa calibration valid for three years. The Mid-IR IPV kits also include NG11 Schott Glass Reference Material (RM) for checking the repeatability of ordinate measurement. Upgrade kits are available to replace the polystyrene TRM once the validity period has expired.

Description	Part No.
Mid Infrared IPV kit for Spectrum Software V.6 or lower	<b>L1365335</b>
Mid Infrared IPV upgrade kit for Spectrum Software V.6 or lower	<b>L1365341</b>
Mid Infrared IPV kit for Spectrum 10 Software	<b>L1250404</b>
Mid Infrared IPV upgrade kit for Spectrum 10 Software	<b>L1250474</b>
Near Infrared IPV kit for Spectrum Software V.6 or lower	<b>L1180479</b>
Near Infrared IPV upgrade kit for Spectrum Software V.6 or lower	<b>L1180490</b>
Near Infrared IPV kit for Spectrum 10 Software	<b>L1250405</b>
Near Infrared IPV upgrade kit for Spectrum 10 Software	<b>L1250475</b>
Polystyrene Test Film – 0.038 mm thickness (not traceable)	<b>L1202057</b>

## Desiccant Kits

These kits are required for all the PerkinElmer FT-IR Spectrometers to keep the optical path free from moisture. It is recommended that the desiccant is replaced every six months. Follow the instructions in the appropriate instrument manual to install the desiccant.

## Disposable Desiccant Kit

User-installable desiccant includes two desiccant packs. Four packs (two kits) required for each desiccant change. Six packs (three kits) required for use with Spectrum 65, Spectrum 100, Spectrum 100N and Spectrum 400.

Description	Part No.
For use with Model 1600, Paragon 500/1000, System 2000, Spectrum One/One NTS/400/1000/2000/BX/GX/RX/65	<b>N0171159</b>

**SPECIAL SAVINGS OFFERS**  
from **Interchim!**

**SAVE on Disposable Desiccant Kits**

**when you purchase 4 or more kits at the same time!**

*Please contact Interchim - Hotline 33 (0)4 70 03 73 09 - email [interchim@interchim.com](mailto:interchim@interchim.com)  
Delivering enhanced VALUE and outstanding SAVINGS on the products you use most!*

# PerkinElmer Liquid Sampling Cells and

## PerkinElmer offers a **wide selection** of liquid **sampling cells** and **window materials**

PerkinElmer offers a versatile product line of liquid sampling cells which utilize a specially designed Universal mount suitable for both FT-IR and dispersive instruments, and a wide variety of high-quality window materials to meet your analytical needs. These windows are polished to precise tolerances of flatness.

The first criteria to consider when selecting a window material is the wavelength range over which the spectrum must be measured.

Other important considerations include solubility, reactivity, and the refractive index of the window material with respect to the sample. Sometimes mechanical and thermal characteristics may also be important.

### PerkinElmer offers a variety of cell options for analyzing liquid samples

Liquids are traditionally analyzed as thin films in cells. A cell consists of two FT-IR transparent windows. A Teflon® spacer is generally used to produce a film of the desired thickness or pathlength.

**Demountable Cells** – using circular windows, the Universal Demountable Cell is ideal for use with mulls, capillary films, cast films and very viscous liquids.

**Semi-demountable Cells** – using rectangular windows, the Universal Demountable Cell is designed for use with high viscosity liquids or mull samples.

**Sealed Liquid Cells** – designed as a preassembled, integral unit, Sealed Liquid Cells are great for highly volatile samples and quantitative analysis.

PerkinElmer cells feature both rugged construction and flexibility. All can easily be cleaned for re-use and, depending on the cell you choose, can be disassembled so that cell windows can be cleaned and polished regularly.

### Selecting Window Materials

The following information may be helpful in selecting window materials:

**Sodium Chloride (NaCl)** is one of the most versatile window materials available, due to its spectral range and low cost. Samples should not contain water because NaCl is hygroscopic. This will cause the windows to fog and become unusable. Store NaCl cells in a desiccator when not in use. NaCl withstands mechanical stress and can be used up to 400 °C.

**Potassium Bromide (KBr)** has a slightly wider spectral range than NaCl but is more hygroscopic. Although able to provide good resistance to mechanical shock, KBr is easily cleaved. KBr can be used up to 300 °C.

**Calcium Fluoride (CaF<sub>2</sub>)** is extremely hard and stable. CaF<sub>2</sub> is not significantly affected by moisture and does not fog. While resistant to most acids and bases, CaF<sub>2</sub> should not be used with ammonium salts.

**Barium Fluoride (BaF<sub>2</sub>)** is a relatively hard material, similar to CaF<sub>2</sub>. Though less resistant to water than CaF<sub>2</sub>, BaF<sub>2</sub> has a wider spectral range. The useful temperature range extends to 500 °C. Also, BaF<sub>2</sub> should not be used with ammonium salts.

**Thallium Bromide-Iodide (KRS-5)** has a broad spectral range and a high refractive index, making it ideal for internal reflectance accessories. KRS-5 is slightly soluble in water and bases but insoluble in acids; KRS-5 is toxic and should not be repolished.

**Silver Bromide (AgBr)** is easily scratched and has a tendency to cold flow at room temperature. Although only minimally degraded by water, AgBr will corrode after prolonged contact with moisture and metals. Avoid exposure to ultraviolet lights, as the crystal has a tendency to darken.

**Zinc Selenide (Irtran-4™)** is similar to Cleartran except that it is somewhat softer and more easily scratched. Irtran-4 is used in total reflectance accessories because of its high refractive index.

Window Material	Transmission Range $\mu\text{m}$	Transmission Range $\text{cm}^{-1}$	Refractive Index at 1,000 $\text{cm}^{-1}$	Solubility G/100 G H <sub>2</sub> O at 20 °C
Sodium Chloride, NaCl	0.25 – 16	40,000 – 625	1.49	36.0
Potassium Bromide, KBr	0.25 – 26	40,000 – 385	1.52	65.2
Potassium Chloride, KCl	0.25 – 20	40,000 – 500	1.46	34.7
Cesium Iodide, CsI	0.30 – 50	33,000 – 200	1.74	160.0 (at 61 °C)
Fused Silica, SiO <sub>2</sub>	0.20 – 4	50,000 – 2,500	1.42 (at 3,333 $\text{cm}^{-1}$ )	Insoluble
Calcium Fluoride, CaF <sub>2</sub>	0.20 – 9	50,000 – 1,100	1.39 (at 2,000 $\text{cm}^{-1}$ )	1.51 x 10 <sup>-3</sup>
Barium Fluoride, BaF <sub>2</sub>	0.20 – 13	50,000 – 770	1.42	0.12 (at 25 °C)
Thallium Bromide-Iodide, KRS-5	0.60 – 40	16,600 – 250	2.37	< 4.76 x 10 <sup>-2</sup>
Silver Bromide, AgBr	0.50 – 35	20,000 – 285	2.00	12 x 10 <sup>-6</sup>
Zinc Sulfide, ZnS (Cleartran)	1.0 – 14	10,000 – 715	2.20	Insoluble
Zinc Selenide, ZnSe (Irtran-4)	1.0 – 19.5	10,000 – 515	2.41	Insoluble
Polyethylene (high-density)	16 – 333	625 – 30	1.54 (at 5,000 $\text{cm}^{-1}$ )	Insoluble

# Window Materials

## Semi-demountable Cells and Cell Windows for High-viscosity Liquids or Mull Samples

By using rectangular windows instead of circular windows, the demountable cell becomes a semi-demountable cell. The Semi-demountable Cell can be used either as a demountable cell or as a sealed cell for high-viscosity liquids or mull samples. Combining two different requirements into one cell allows a myriad of different sampling applications. To order a Semi-demountable Cell, order the Universal Demountable Cell and your choice of windows and spacers.

### Rectangular Semi-demountable Cell Windows

Rectangular Semi-demountable Cell Windows are available in a variety of window materials. All windows come in pairs and measure 41 x 23 mm (H x W).

Description (Thickness)	Part No.
Sodium Chloride (4 mm)	L1271191
Potassium Bromide (4 mm)	L1271192
Calcium Fluoride (4 mm)	L1271193

### Rectangular Spacers for Rectangular Semi-demountable Cell Windows

Description	Qty.	Part No.
Teflon 0.05 mm	6	L1270402
Teflon 0.10 mm	6	L1270404
Teflon 0.20 mm	3	L1270408

Note: For a full list of windows and spacers visit [www.perkinelmer.com/irsupplies](http://www.perkinelmer.com/irsupplies)

## Sealed Liquid Cells

For highly volatile samples and quantitative analysis. The Sealed Liquid Cells have a corrosion-resistant construction, making them ideal for highly volatile samples. Each sealed liquid cell has a precise pathlength which is calibrated using the interference pattern generated by an empty cell in the beam of a spectrometer.

### Rectangular Sealed Liquid Cells

Material	Pathlength	Part No.
Calcium Fluoride	0.025 mm	L1270961
Calcium Fluoride	0.100 mm	L1270964
Potassium Bromide	0.025 mm	L1270951
Potassium Bromide	0.100 mm	L1270954
Sodium Chloride	0.025 mm	L1270941
Sodium Chloride	0.100 mm	L1270944



Sealed Cell

Demountable Cell

## The Universal Cell Mount for Mulls, Capillary Films, Cast Films and Very Viscous Liquids

Circular windows are used to construct a demountable cell where the sample is placed on one window and the second window is pressed lightly on top of the first. Spacers of various thicknesses can be used to vary the cell pathlength. The Universal Demountable Cell is supplied without windows or spacers – circular windows and spacers should be ordered separately. The windows are demountable and can be easily changed and repolished when necessary.

### Universal Demountable Cell Mount and Cell Parts

Description	Part No.
Universal Demountable Cell Mount	L1270986
Window Aligner	04821132
Neoprene Gasket	L1270512
Teflon® Plugs (pkg. 6)	04821008
Quick Release Nut	04821131

### Circular Demountable Cell Windows (Pair)

Description (Diameter, Thickness)	Part No.
Sodium Chloride (25 mm, 4 mm)	L1271102
Potassium Bromide (25 mm, 4 mm)	L1271202
Calcium Fluoride (25 mm, 4 mm)	L1271602

Note: For a full list of windows visit [www.perkinelmer.com/irsupplies](http://www.perkinelmer.com/irsupplies)

### Circular Spacers for Circular Demountable Cell Windows

Description	Qty.	Part No.
Teflon 0.05 mm	10	51001135
Teflon 0.1 mm	6	51001137
Teflon 0.2 mm	3	51001140

Note: For a full list of spacers visit [www.perkinelmer.com/irsupplies](http://www.perkinelmer.com/irsupplies)

## SPECIAL SAVINGS OFFERS from Interchim!

**SAVE** when you order a **Universal Cell Mount** with two or more pairs of **NaCl or KBr Windows**

Please contact Interchim - Hotline 33 (0)4 70 03 73 09 - email [interchim@interchim.com](mailto:interchim@interchim.com)  
Delivering enhanced VALUE and outstanding SAVINGS on the products you use most!

# KBr Press, Mini Press and Quick Press



Manual Hydraulic Press



Evacuatable Potassium Bromide Die

## Hydraulic Press and Evacuatable Potassium Bromide Die

The KBr pellet technique is probably the one most often used to prepare solid samples for infrared analysis. First the sample is ground to a fine particle size and then mixed uniformly with dry KBr powder. Finally, this sample is placed in an evacuatable KBr die and a 13 mm clear disk is pressed in a hydraulic press to form a KBr pellet. Pellets can also be prepared using less expensive and quicker methods.

### Manual Hydraulic Press

This compact and easy-to-operate press is used with the KBr die to prepare KBr pellets. The pressure is produced by operating a pump lever.

**Part No.**

**51004599**

### Evacuatable Potassium Bromide Die

The Evacuatable Potassium Bromide Die will prepare 13 mm diameter pellets of the highest quality and clarity. The pellet is formed inside an evacuated chamber and pressed between a highly polished anvil and plunger. This die is precisely constructed to produce pellets of uniform quality and will continue to provide many years of service in your laboratory.

**Part No.**

**51001144**

## Die Accessories

The following parts are included with the Evacuatable Potassium Bromide Die, but can also be ordered separately:

Description	Part No.
Plunger	51001152
Set of Upper and Lower Anvils	04820519
Set of O-rings	04800514
Perspex™ Extractor Ring	04977042

## Potassium Bromide Pellet Holder

A KBr Pellet Holder is required, but must be ordered separately.

**Part No.**

**04810949**

## Adjustable Adapter

The Adjustable Adapter is required in order to mount the Potassium Bromide Pellet Holder in your FT-IR spectrometer.

**Part No.**

**L1060351**

## Evacuatable KBr Mini-press

The Mini-press is designed for those situations where you occasionally need to make KBr pellets. This is the simplest solid sample device and is ideal for student use, where very low cost is an important factor. Two highly polished bolts turn against each other in a steel cylinder. The pellet is formed right inside the cylinder which becomes the sample holder. Once formed, the pellet cannot be removed from the cylinder without being destroyed. The Mini-press requires, but does not include, the holder.

**Description**

**Part No.**

Evacuatable KBr Mini-Press

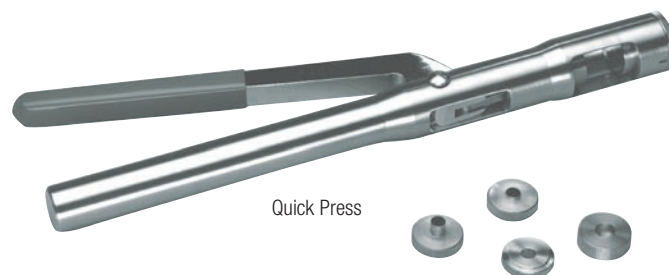
**51002592**

Holder for Evacuatable KBr Mini-Press

**51002593**

## KBr Pellet Quick Press

The Quick Press provides a fast and economical way to prepare good quality KBr pellets. A hydraulic press is not needed and pellets with diameters of 1, 3 or 7 mm can be prepared, depending on the die sets used. The Quick Press is simple and easy to use. Simply load the sample and potassium bromide mixture into the selected die. Place the die in position in the Quick Press. Then apply a steady pressure to the handle, equivalent to that of a firm handshake.



Quick Press

The Quick Press consists of a handpress, a 7 mm die set and a metal collar. Micropellets can be prepared in the Quick Press by purchasing the optional 1 or 3 mm die. The KBr pellet is formed in a metal collar that fits into an adjustable Pellet Holder.

**Description**

**Size**

**Part No.**

Quick Press with Die

7 mm

**01860436**

Optional Die

1 mm

**01862295**

Optional Die

3 mm

**01862292**

Spare Die

7 mm

**01862289**

Adjustable Pellet Holder Adapter\*

**L1060351**

\*Required, but not included, with Quick Press.

# Near Infrared Reflectance Accessory (NIRA) and NIR Probes



## Near Infrared Reflectance Accessory (NIRA) for the Spectrum 400/100N/One NTS

PerkinElmer's Near Infrared Reflectance Accessory (NIRA) with it's range of accessories is the ideal accessory for analyzing many sample types including tablets, powders, granular solids, blister packs, samples in glass vials, gels and viscous liquids.

For the Spectrum 400 there is a special version which is installed on the right hand side of the instrument which leaves the sample compartment free for other applications.

### Features and Benefits

- For a wide variety of sample types in various containers
- Integrated, zero alignment, zero set-up design. Once locked into the sample compartment the accessory becomes an integral part of the system and is ready to use
- Self-referencing for increased reproducibility and ease of use
- Horizontal sample platform for convenient sample positioning
- Wide collection angle and large spot size the most representative sampling
- Integrated, high performance stabilized InGaAs detector system standard
- Range of optional accessories available for inhomogeneous solids or liquids samples
- Removed and replaced in seconds via quick-release lever with automatic parameter setup

*Supplied with standard accessories kit including sample positioner, reference materials, sample handling tools.*

Description	Part No.
Near Infrared Reflectance Accessory (NIRA) Right hand side mounted for Spectrum 400 only	L125401N
Near Infrared Reflectance Accessory (NIRA) Sample compartment mounted for Spectrum 400/100N/One NTS	L1240050
Near Infrared Reflectance Accessory (NIRA) Right hand side mounted for Spectrum 100 only	L125403L

### Accessories and Consumables for NIRA

Description	Qty.	Part No.
Solids Rotating Sample Holder for RHS NIRA	1	L1250042
Solids Rotating Sample Holder for Sample Compartment NIRA	1	L1240053
NIRA Transflectance Liquids Sampling Accessory Starter Kit	1	L1185153
Spare Glass Sample Dish for NIRA Solids Rotating Sample Holder	5	L1181257
High Performance Sample Dish for NIRA Solids Rotating Sample Holder	1	L1185305
Disposable 4 mL Glass Vial with Cap, 15 mm x 45 mm	100	L9001029
NIRA Spectralon Reference	1	L1245028

### NIR Remote Solids Sampling Systems

Designed for the remote sampling of solids or powders for up to 10 m from the instrument. It incorporates a handset user interface and LCD display to increased productivity by allowing continuous remote operation. The design facilitates easy and rapid decontamination and is electrically safe for use in hazardous environments.

*Available for Spectrum 400 and Spectrum 100N.*

### Features and Benefits

- Comprising high performance triggered fiber optic probe for sampling of solids or powders
- Automatic recognition of the fiber optic sampling interface within Spectrum software
- Handset user interface and LCD display allowing continuous remote operation
- Electrically safe for use in hazardous environments. No electrical connections
- Larger optical depth of field allows improved measurement as samples through thicker glass containers
- Large spot size (-6 mm) for improved performance with more granular, inhomogeneous materials
- Complete with protective cap and probe holster with Spectralon reference for background collection
- Modular, expandable and smart – in common with other Spectrum 400 and 100 premium sampling options. Simple accessory changeover, full plug 'n play operation
- Probe tip features sapphire window for robustness and ease of cleaning



Description	Length	Part No.
Remote Solids Sampling System	2 m	L1250030
Remote Solids Sampling System	3 m	L1250037
Remote Solids Sampling System	5 m	L1250031
Remote Solids Sampling System	10 m	L1250032

# Attenuated Total Reflectance and Diffuse

## Sampling options for all your sampling needs



UATR  
Accessory

### Universal Attenuated Total Reflectance (UATR) Accessories

#### For the Spectrum 400/100/One/65 Spectrometers

The universal ATR is an excellent general accessory for the analysis of solids and liquids. The UATR produces high quality spectra through the use of a pressure arm allowing good contact of the sample with the diamond crystal. The pressure arm force indicator ensures first-class sample-to-sample and operator-to-operator reproducibility.

#### Features and Benefits

- **Automatic recognition** – as soon as the accessory is placed in the sample compartment the Universal ATR module is recognized along with its serial number, type of ATR crystal (1, 3 or 9 Reflection) and system suitability checks can be carried out. Spectrum 400/100/One only
- **Automatic optimization** – the optics are automatically optimized for the different top-plate options. Spectrum 400/100/One only
- **Zero alignment, zero set-up** – once locked into the Spectrum 100 sample compartment, the accessory is ready to be used without any alignment necessary
- **Integrated** – the plug-in module design means the accessory becomes an integral part of the instrument once installed
- Pressure arm with pressure sensor supplied as standard
- Volatiles cover (9 reflection UATR only)

Description	Part No.
<b>Diamond/ZnSe UATR</b>	
With 1 Reflection Top-plate and Pressure Arm	L1250050
With 3 Reflection Top-plate and Pressure Arm	L1250051
With 9 Reflection Top-plate and Pressure Arm	L1250052
<b>Diamond/KRS-5 UATR</b>	
With 1 Reflection Top-plate and Pressure Arm	L1250053
<b>Ge/Ge UATR</b>	
With 1 Reflection Top-plate and Pressure Arm	L1250054

Note: Spectrum software v.6 or higher is required to support the UATR Accessory.

### Spare/Replacement Top-plates and Consumables for UATR Accessory

Description	Qty.	Part No.
UATR – 1 Reflection Diamond Top-plate – ZnSe	1	L1250240
UATR – 3 Reflection Diamond Top-plate – ZnSe	1	L1250241
UATR – 9 Reflection Diamond Top-plate – ZnSe	1	L1250242
UATR – 1 Reflection Diamond Top-plate – KRS-5	1	L1250046
UATR – 1 Reflection Ge/Ge Top-plate	1	L1250048
UATR 0.5 mm Shoe	1	L1202049
UATR 6.0 mm ATR Shoe	1	L1202050
UATR Cone Shoe	1	L1201980
UATR 3.0 mm Sample Position Plate	1	L1202023
UATR 7.0 mm Sample Position Plate	1	L1202024



Miracle ATR

### Miracle ATR Accessories

A single reflection ATR accessory designed for the analysis of highly absorbing solid, semi-liquid and liquid samples. The sampling plate configuration features a small round crystal allowing reliable analysis of small sample volumes (5 µL and higher).

Solid materials can be put in a good physical contact with the crystal, yielding high quality, reproducible spectra. Supplied with micrometer-controlled compression clamp, volatiles cover, purge attachments and a choice of crystal material.

Description	Part No.
<b>Miracle Single Reflection ATR</b>	
Diamond for Spectrum RX/BX	L1272239
ZNSE for Spectrum RX/BX	L1272107
ZNSE for Spectrum 400/100/One/65	L1272126
GE for Spectrum 400/100/One/65	L1272127
ZNSE for Spectrum GX	L1272103
GE for Spectrum GX	L1272104

Note: Please contact your local PerkinElmer representative for a complete list of Miracle ATR accessories with different crystal materials.

# Reflectance Accessories



Diffuse Reflectance Accessory

## Diffuse Reflectance Accessory

Ideal for measurement of opaque or highly scattering samples, the Diffuse Reflectance Accessory provides a convenient and sensitive method for analyzing opaque or highly scattering solid samples such as pharmaceuticals, food products, soap powders, coal, clay, paper, painted surfaces, polymer foam and catalysts.

### Features and Benefits

- **Automatic recognition** – as soon as the accessory is placed in the sample compartment, the diffuse reflectance accessory is recognized along with its serial number
- **System suitability checks** – including noise, throughput and contamination can be carried out as soon as the accessory is inserted or on demand
- **Automatic optimization** – sample position is automatically optimized for all sampling methods: powder, silicon carbide pads or diamond sticks
- **Zero alignment, zero set-up** – once locked into the sample compartment, the accessory is ready to be used. No alignment is necessary
- **Integrated** – the plug-in module design means the accessory becomes an integral part of the instrument once installed

*Supplied with multi-purpose sample holder, 2 macro- and 2 micro-sample cups, 25 metal-coated abrasive pads, 25 metal-coated abrasive sticks with holder and 30 gram bottle of KBr powder.*

Description	Part No.
For Spectrum 400/100/One	L1200351

## Consumables for Diffuse Reflectance Accessory

Description	Qty.	Part No.
Macro Cup	1	L1201654
Micro Cup	1	L1201655
Multi-purpose Sample Holder	1	L1201865
Metal-coated Abrasive Pads	100	L1275106
Metal-coated Abrasive Sticks	100	L1275105
Silicon Carbide Abrasive Pads	100	L1271021
Diamond Abrasive Sticks	100	L1275102

## Horizontal ATR Accessories

Based on an attenuated total reflectance principle, the PerkinElmer Horizontal ATR (HATR) Accessory offers a fast, reliable means for analyzing a wide range of solid, liquid and paste samples not easily examined by conventional transmission techniques.



### Features and Benefits

- **Automatic recognition** – as soon as the accessory is placed in the sample compartment, the HATR accessory is recognized along with its serial number, and system suitability checks can be carried out
- **Automatic optimization** – the optics are automatically optimized for all various types of crystal
- **Zero alignment, zero set-up** – once locked into the sample compartment, the accessory is ready to be used without any alignment necessary
- **Integrated** – the plug-in module design means the accessory becomes an integral part of the instrument once installed
- **Pressure arm with pressure sensor** supplied as standard (Flat top-plate version only)

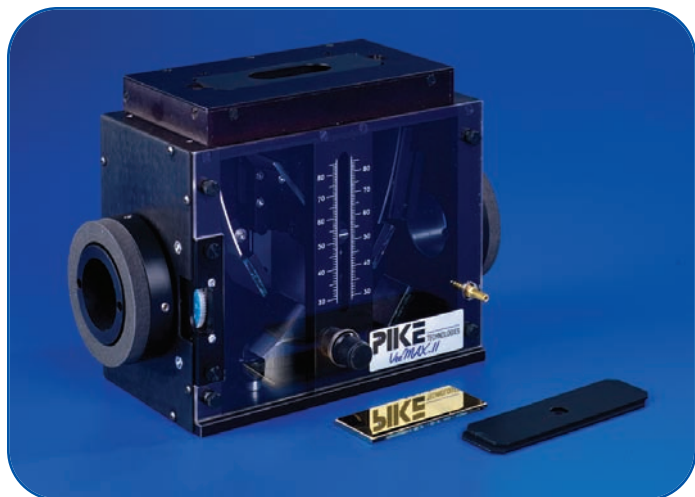
*Supplied with flat top-plate fitted with ZnSe 45° crystal, powder press and volatiles cover.*

Description	Part No.
<b>For Spectrum 400/100/One</b>	
HATR Accessory with ZnSe Flat Top-plate and Pressure Arm	L1200311
HATR Accessory with ZnSe Trough Top-plate	L1200312

## Spare/Replacement Top-plates and Consumables for HATR Accessory

Description	Qty.	Part No.
HATR ZnSe 45° Flat-plate	1	L1200313
HATR ZnSe 45° Trough-plate	1	L1200314
HATR Ge 45° Flat-plate	1	L1200333
HATR Ge 45° Trough-plate	1	L1200334
HATR Pressure Arm Kit	1	L1200321
Powder Press	1	L1201944
Volatiles Cover	1	L1205436

# VeeMax II, 10Spec, 80Spec and Silver Gate Evolution Reflectance Accessories



## VeeMAX™ II - Variable Angle Specular Reflectance Accessory

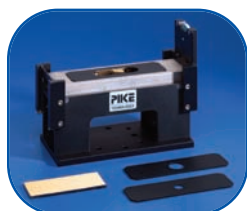
### For the Spectrum 400/100/One/65 Spectrometers

The VeeMAX™ II is a highly versatile specular reflectance accessory designed to analyze a wide range of samples from thin films and monolayers to relatively thick films. The angle of incidence can be varied continuously from thirty to eighty five degrees by the rotation of a single control. The unique optical design enables the accessory to be in alignment for all angles of incidence. The VeeMAX II has a built-in polarizer mount to permit selection of polarization angle without disturbing purge.

### Features and Benefits

- Angle of incidence selectable from 30 to 80 degrees in one degree increments
- Optional IR polarizer for monolayer analysis and study of sample orientation
- Includes 3 sample masks to define smaller areas on a sample

Description	Part No.
VeeMAX II Variable angle specular reflectance accessory	L1272240
KRS-5 Polarizer for VeeMAX II	L1272243



## 80Spec – Grazing Angle Specular Reflectance Accessory

### For the Spectrum 400/100/One/65 Spectrometers

The 80Spec™ is ideal for the measurement of relatively thin films and mono-molecular layers by specular reflectance. The use of a polarizer is recommended for the measurement of ultra-thin film samples, especially monolayers. The 80Spec includes polarizer mounts on both incoming and outgoing beams.

### Features and Benefits

- Gold-coated reflective optics for highest throughput grazing angle analysis
- Dual polarizer mounts for optional IR polarizer's
- Includes 3 sample masks to define smaller areas on a sample

Description	Part No.
80Spec Grazing angle specular reflectance accessory	L1272248
KRS-5 Polarizer for 80Spec	L1272243

## 10Spec™ – Specular Reflectance Accessory

### For the Spectrum 400/100/One/65 Spectrometers

The 10Spec™ is an optimized specular reflectance accessory designed to make high performance measurements of sample reflectivity. The 10Spec can be used to measure near-normal reflectivity of a wide variety of surfaces including military devices, reflecting optics, anti-reflective (AR) coated surfaces, and other reflecting and non-reflecting materials.



### Features and Benefits

- Sample illumination precisely fixed at 10 degrees
- Measure glass reflectivity per ASTM Standard E1585-93
- Includes 3 sample masks to define smaller areas on a sample

Description	Part No.
10Spec Specular reflectance accessory	L1272247

## Silver Gate Evolution Accessory

### For the Spectrum 400/100/One/65 Spectrometers

The Silver Gate™ Evolution single reflection ATR system is capable of analyzing solids, liquids and pastes with little or no sample preparation. The accessory is available with a choice of ZnSe or Ge and flat or recessed crystal plates. The crystal plates are interchangeable and additional plates can be ordered for different application requirements. Each accessory includes a clamp bridge, standard anvil, pellet anvil, purge bellows and volatiles cover.



Description	Part No.
Silver Gate with Flat ZnSe crystal plate	L1272270
Silver Gate with Flat Ge crystal plate	L1272271
Silver Gate with Recessed ZnSe crystal plate	L1272272
Silver Gate with Recessed Ge crystal plate	L1272273
Silver Gate ZnSe Flat Crystal Plate	L1272274
Silver Gate Ge Flat Crystal Plate	L1272275
Silver Gate ZnSe Recessed Crystal Plate	L1272276
Silver Gate Ge Recessed Crystal Plate	L1272277

# A comprehensive range of long path gas cells to satisfy all your gas sampling requirements

## Fixed Long Pathlength Gas Cells

### For the Spectrum 400/100/One/65

The Tornado™ fixed long pathlength gas cells are designed for measuring the infrared spectra of gases and vapors at ambient temperature and pressures. They are based on the White cell principle of multiple light passes between an arrangement of reflecting mirrors to achieve long pathlengths. The cells are available in three sizes:

- Tornado™ T5 with pathlength ranging from 1 m to 8 m and cell volume 1.33 litres
- Tornado™ T10 with pathlength ranging from 2.1 m to 10.6 m and cell volume 2.6 litres
- Tornado™ T20 with pathlength ranging from 2.0 m to 20 m and cell volume 4.7 litres

### Features

- Wide pathlength range (1 m – 20 m)
- Vacuum to 15 p.s.i. operation
- Ambient temperature operation
- Borosilicate glass body
- Anodized components
- Gold mirrors (protected)
- Viton 'O' ring seals
- KBr windows
- Purgeable transfer optics box
- Optional vacuum/gas inlet and outlet taps
- Optional purge bellows
- Optional desiccant storage caps



## Features

- Variable pathlength range (1 m – 8 m)
- Ambient temperature operation or up to 200°C with heating jacket/controller
- Borosilicate glass body (vacuum to 15 p.s.i. operation) or nickel-plated aluminium body (high pressure operation up to 125 p.s.i.)
- Nickel-plated aluminium components
- Gold mirrors (protected)
- Viton 'O' ring seals
- CaF2 windows
- Purgeable transfer optics box
- Vacuum/gas inlet and outlet taps
- Optional purge bellows
- Optional desiccant storage caps
- Optional pressure gauge kit) vacuum to 125 p.s.i.)
- Optional heating jacket/controller with temperature stability of +/- 1°C



Description	Part No.
Cyclone™ C5 Variable Pathlength Gas Cell with glass body	L1272299
Cyclone™ C5 Variable Pathlength Gas Cell with metal body	L1272300
Cell Heating Jacket/Temperature Controller for C5 Cell (220V UK)	L1272304
Cell Heating Jacket/Temperature Controller for C5 Cell (220V Europe)	L1272305
Cell Heating Jacket/Temperature Controller for C5 Cell (110V, 60Hz)	L1272306
Gas Cell Pressure Gauge for C5 Cell*	L1272307
Gas Cell Desiccant Storage Caps	L1272152
Purge Bellows	L1272227

\*Recommended for high pressure applications

## Variable Temperature Cell

The Variable Temperature Cell can be used for the transmission study of liquid or solid samples between a temperature range from between -190 °C and 250 °C. The Variable Temperature Cell consists of a vacuum jacket that contains a refrigerant dewar/cell holder assembly and a heating block that contains the appropriate sample cell. There are liquid sample cells with different pathlengths and a solid sample cell available. These are not included with the variable temperature cell and should be specified separately.

The whole assembly is operated within a vacuum environment maintained by the outer jacket. The external windows are also heated to prevent condensation and these and the heating block are operated by a separate high stability controller supplied with the system. The cell is supplied with NaCl external windows as standard but KBr windows are available as an option.



Description	Part No.
Variable Temperature Cell (220V, UK)	L1272288
Variable Temperature Cell (220V, Europe)	L1272289
Variable Temperature Cell (110V, 60Hz)	L1272290
Sealed Liquid Cell with KBr windows, 1.00 mm pathlength	L1272292
Sealed Liquid Cell with KBr windows, 0.50 mm pathlength	L1272293
Sealed Liquid Cell with KBr windows, 0.10 mm pathlength	L1272294
Solids holder. Accommodates sample sizes from 12 mm to 30 mm diameter and 0.1 mm to 8 mm thick	L1272298
Cell Jacket KBr windows (pair)	L1272291

## Variable Long Pathlength Gas Cell

### For the Spectrum 400/100/One/65

The Cyclone™ C5 variable long pathlength gas cell allows the measurement of infrared spectra of gases and vapors at a wide range of temperatures and pressures. It is based on the White cell principle of multiple light passes between an arrangement of reflecting mirrors to achieve long pathlengths. The C5 is available with either a glass body or metal body which is required for high pressure applications. The pathlength is variable between 1 m and 8 m and has a cell volume of 1.33 liters.

# ATR Imaging upgrade for Spotlight systems



## ATR Imaging Upgrade for Spotlight Systems

Recommended option for the Spotlight 400 or 400N which allows convenient Imaging of samples up to 10 mm thick. A large precision aligned crystal enables 400  $\mu\text{m}$  areas to be collected to get more information from the sample quickly.

### Features and Benefits

- High quality optical and mechanical assemblies provide the highest performance
- Alignment tools speed operation and improve data quality
- Largest area size for the most information from your ATR samples
- Flexible imaging area sizes for efficient data collection
- Comprehensive software assistance guides operation and minimizes mistakes
- Extensive software data processing allows the rapid extraction of information from ATR images

**Part No.**

**L1860319**

## ATR Imaging Accessory Supplies

Description	Qty.	Part No.
Spare Germanium Crystal	1	<b>L1860317</b>
ATR Imaging Sample Supports	10	<b>L1860318</b>

## Micro ATR Objective Upgrade Kit

This kit upgrades Spotlight 400 and Microscope Systems without ATR Objective to include micro ATR facility. Includes an ATR Objective consisting of a cassegrain, mount and Germanium micro ATR crystal with holder. It covers the range 5,500 – 600  $\text{cm}^{-1}$ . A spare Germanium crystal and holder is provided. An optional Silicone crystal is available with working range 7,800 – 800  $\text{cm}^{-1}$ .

Description	Part No.
Micro ATR Objective Upgrade for Spotlight 400 Systems	<b>L1860334</b>
Micro ATR Objective for AutoIMAGE Systems	<b>L1860275</b>
Micro ATR Objective for Multiscope Systems	<b>L1860298</b>
Optional/Spare Silicone Crystal with Holder	<b>L1860269</b>
Spare Germanium Crystal with Holder	<b>L1860268</b>

## Microsampling Tools

PerkinElmer offers a range of carefully selected tools and supplies which allow you to prepare and manipulate samples for infrared microspectroscopy.

Description	Part No.
Microsampling Tool Kit	<b>N1870151</b>
<b>Includes:</b>	<b>Part No.</b>
Dissecting Forceps	<b>N9302610</b>
Roller Knife	<b>N9302619</b>
Micro Specimen Tweezers	<b>N9302609</b>
Straight Micro Probe	<b>N9302605</b>
Aluminum Probe Handle	<b>N9302622</b>
Pin Vise	<b>N9302603</b>

## Microscope Supplies

Description	Part No.
Holder for 13 mm Sampling Disks	<b>L1861634</b>
Holder for 13 mm Sampling Disks Includes gold mirror.	<b>L1860409</b>
Base Microscope Slides Optical quality glass, 1 x 3 in., 1 mm thick for visible observations (box of 72).	<b>N9302600</b>
Low-e Microscope Slides Optical quality with infrared reflective coating, 1 x 3 in., 1 mm thick for visible observations and infrared reflectance measurements (box of 25).	<b>L1272249</b>

## Diamond Compression Cell

The cell consists of two Hastelloy plates containing a pair of diamond windows that enable samples to be compressed to an ideal thickness for transmission measurements. The screw down compression system gives non-rotating uniform pressure across the sample and the large clear aperture is ideal for multiple sample loading. Fits MultiScope™, AutoIMAGE Systems and Spotlight Systems.

**Part No.**

**L1272282**

## Crystal Compression Cell

This is a device for flattening soft materials and holding specimens flat and in optical contact with salt windows. 1 and 2 mm thick windows of 13 mm outer diameter can be used with the cell. Two KBr windows (2 mm thickness) are included. The cell can apply pressure without rotating (and therefore scratching) the windows. Fits MultiScope™, AutoIMAGE Systems and Spotlight Systems.

**Part No.**

**N1870185**

## Infrared Windows

Infrared windows allow you to support microsamples for infrared analysis with the microscope. All windows are 13 mm diameter and are available in the infrared crystals designated below.

Window Material	Dimensions	Part No.
Barium Fluoride	13 x 1 mm	<b>N9302611</b>
Barium Fluoride	13 x 2 mm	<b>N9302612</b>
Sodium Chloride	13 x 2 mm	<b>N9302614</b>
Potassium Bromide	13 x 2 mm	<b>N9302615</b>

# Educational packages to advance student understanding of FT-IR

## FT-IR Sampling Kits

Two FT-IR Sampling Kits are available to help the newcomer to FT-IR spectroscopy choose the more frequently required items, and to simplify ordering and storage. KBr has been chosen for the transmitting material. The two kits are packaged in attractive storage and carrying cases.



### Liquid and Mull FT-IR Sampling Kit

This kit will satisfy the needs of most new users of FT-IR spectroscopy and has been designed to provide all the necessary equipment for handling liquids and mulls. A magnetic film holder is also included.

Part No.

L1365311



### General Purpose FT-IR Sampling Kit

This kit includes all of the necessary equipment for handling liquids, mulls and KBr pellets and also includes a magnetic film holder and a Microfocus Accessory. It should be noted that a laboratory press for making KBr pellets should be ordered separately.

Part No.

L1365312

## Special Educational Packages

PerkinElmer Spectrum 10 Educational Software Package provide schools and colleges with software to advance students understanding of FT-IR. IR-Tutor software guides students through the background and theory of FT-IR spectroscopy as well as how to interpret the spectra they collect.

### Spectrum 10 Educational Software Package



#### Includes:

- IR-Tutor software CDs and 5-user license
- Spectrum 10 software CD and 5-user license

Part No.

L1108527

Also available is a PerkinElmer Educational Starter Pack which provides the sampling tools needed to perform the HCl gas experiment and general purpose FT-IR spectroscopy within the teaching laboratory.

### PerkinElmer Educational Starter Pack

#### Includes:

- 10 cm gas cell
- Gas cell holder
- Rechargeable desiccant
- KBr Mini-pellet Press and Pellet Holder

Spectrum Model

RX/BX  
65/100/400

Part No.

L1270800  
L1270802

## FT-IR Starter Packs

Description

Part No.

KBr Disc Starter Pack Includes Adjustable Adaptor, KBr Die (13 mm) and KBr Pellet Holder.	L1272265
KBr Disc Complete Starter Pack Includes Adjustable Adaptor, KBr Die (13 mm), KBr Pellet Holder, 15 ton press and KBr Powder (100 g).	L1272266
Gas Sampling Starter Pack Includes 10 cm short-pathlength demountable gas cell, Spare KBr windows (47 mm diameter) and Universal gas cell mount.	L1272267
Liquid Sampling Starter Pack Includes Universal Demountable Cell Mount, Circular KBr Windows (pair), Rectangular KBr Windows (pair), 0.1 mm Circular Teflon Spacers (contains 6) and Assorted Rectangular Spacers.	L1272268

## FT-IR Sampling Kit Supplies

Description

Size

Part No.

Nujol	100 mL	04960691
Fluorolube	1 oz bottle	01862301
KBr Powder	100 g	04977043
KBr Random Cuttings	100 g	N9300086
Micro Spatula	10 cm	04967843
Luer Syringe	2 mL	04967845

## A new approach to a familiar technique



### Raman Spectroscopy – A Perfect Complement to FT-IR and FT-NIR

Because Raman spectroscopy offers a complete high-resolution spectrum, the resulting analysis yields rich information about the molecular structure of a sample.

Raman can stand alone as an analytical technique or be used in conjunction with existing instrumentation to provide complementary information to that obtained from Mid-IR and Near-IR spectroscopy.

However you use it, the RamanStation 400 will be a valuable analytical tool suitable for a wide range of applications.

#### Features and Benefits

- **Little or no sample preparation** for most solid or liquid samples
- **Non-destructive technique**
- **No water interference** – simple, fast analysis of aqueous samples
- **Minimal glass interference** – allows in-container sampling
- **Extended spectral range**, down to  $90\text{ cm}^{-1}$

### Raman Spectroscopy

#### Easy to Understand and Use

Thanks to new, cutting-edge technology, the RamanStation 400 does not require constant adjustment or alignment. It was designed for intuitive use, freeing you to concentrate on what is really important: obtaining high-quality results. And its operating ease is complemented by PerkinElmer's powerful range of Spectrum™ software packages.

#### Focused on Simple Operation

RamanStation 400's software-controlled X, Y, Z sample stage automatically aligns your sample in all three coordinates to obtain the optimum spectrum. Large numbers of spectra can be acquired quickly, providing reproducible, research-quality results – all at the touch of a button.

#### Echelle Technology Saves You Time

Most Raman instruments have motorized gratings, producing one-dimensional dispersion with limited spectral range that must be “scanned and stitched” together by software. The RamanStation 400's echelle-based spectrograph disperses light into a two-dimensional pattern, giving you full spectral coverage and high resolution – all within one second.

- No waiting for software to stitch high-resolution scans together
- A full-range spectrum is produced in one scan

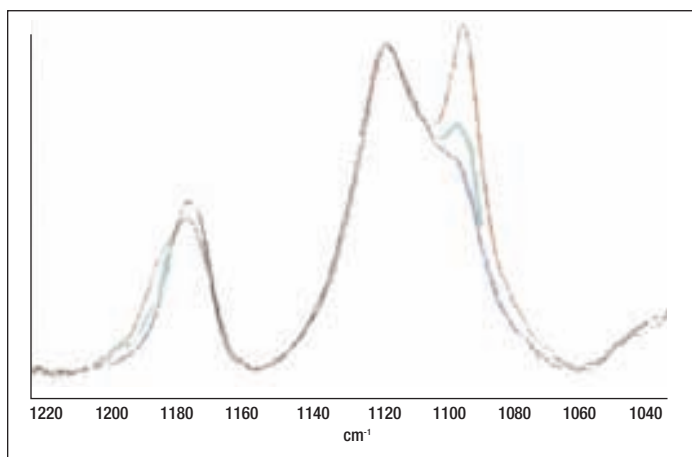
And because there are no moving parts and all the data is collected simultaneously, there are no spectral artifacts.

#### Research-level Performance

PerkinElmer recognizes that your work demands an extremely high level of accuracy. Our echelle spectrograph was specially designed for Raman, not borrowed from ICP spectrometers or telescopes. It is highly optically efficient and has no “dead” zones.

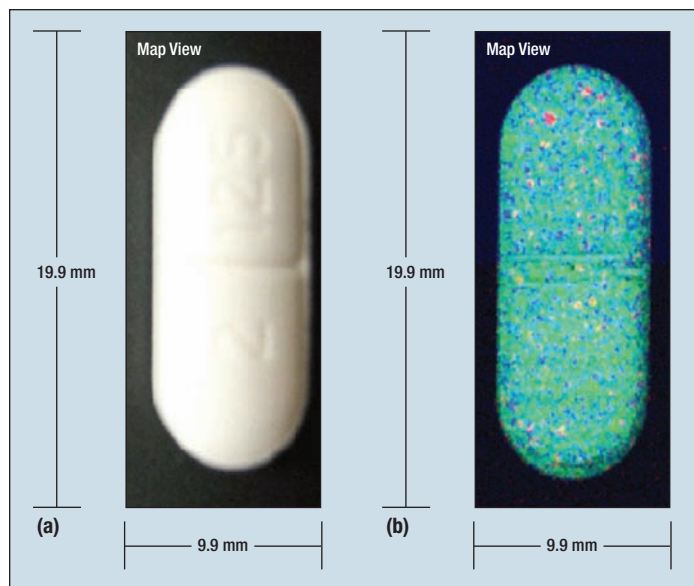


**Interchangeable Sampling Modules.** A full range of clip-on sampling accessories ensures that the widest range of sample types can be accommodated.



Raman Spectra of different semi-crystalline PET samples (Polyethylene Terphthalate)

Raman spectroscopy is ideal for studying polymer crystallinity. The peak-ratio of the bands at approximately 1,120 and 1,095  $\text{cm}^{-1}$  reveal information about the degree of crystallinity in a sample, with highly crystalline samples displaying a large peak at 1,095  $\text{cm}^{-1}$ . Amorphous PET simply shows a smaller shoulder on the peak at 1,120  $\text{cm}^{-1}$ .



Visible (a) and Raman (b) chemical images of a pharmaceutical caplet.

The RamanStation 400 allows chemical images to be recorded rapidly through an intuitive software interface. The echelle system has the unique advantage that they allow full coverage maps of even large samples to be recorded at high spectral resolution. The example above contains 20,000 spectra at 100  $\mu\text{m}$  spatial resolution and took 5 hours to acquire. Once the raw data has been collected, a range of powerful software options allows the construction of further images, showing the distribution of individual components.



RamanMicro 300

## Also Available:

- **RamanMicro 200** – Raman Microscope System for imaging and single-point measurements
- **RamanMicro 300** – Raman Microscope that can be attached to the RamanStation 400 or RamanFlex 400 to provide a multi-purpose Raman Microscope System
- **RamanFlex 400** – fiber-optic analyzer for reaction monitoring
- **Raman IdentiCheck** – portable, hand-held triggered probe system with the high performance of a laboratory-based instrument

**Call your local Sales Representative to find out how you can increase your productivity and problem solving.**

## Simply Point and Analyze

Fiber-optic probes allow you to bring the spectrometer to the sample – with a simple point and click process you can analyze a range of sample types, even in uncontrolled environments and restricted spaces. This easy-to-use accessory adds additional functionality, such as reaction monitoring and in-situ analysis, to your lab.



# Raman IdentiCheck

## The new **Raman IdentiCheck** portable **Raman** system



**NEW!**

The PerkinElmer® Raman IdentiCheck™ is a unique instrument that combines the convenience of a portable, hand-held triggered probe system with the performance of a highly specified laboratory instrument. It is the perfect choice for in-situ Raman analyses performed away from the normal laboratory but where high quality data is essential.

### Advantages of Raman spectroscopy for material identification

- Raman spectra are highly specific to the material being analyzed and hence can be used as a fingerprint for material identification
- The spectrum of a sample being analyzed can be searched against either user-generated libraries or commercially purchased libraries of specific types of materials
- There is normally no sample preparation required
- Material identification can be carried out through various packaging materials. Samples can be analyzed while still contained in plastic bags or glass or plastic bottles
- Accurate sample identification takes a matter of seconds
- Versions available for elevated temperatures and pressures

### Key Features

- High performance in a convenient portable system giving confidence in results and decision-making
- Hand-held triggered probe for analysis through glass and plastic protects analyst and preserves integrity of sample
- Comprehensive software processing including library searching for accurate sample identification in seconds
- 21 CFR Part 11 compliant ES software available, including AssureID material checking software
- Calibration to ASTM, and NIST standard, with optional IQ/OQ



### Application Areas

- Laboratory-based or field-based forensic analysis
- Homeland security
- Laboratory or warehouse QA/QC analysis
- In-situ conservation analysis
- Analysis of samples in specialist enclosures such as fume-cupboards
- Laboratory or in-field geological analysis
- Any field-based material identification analysis such as chemical spillage or environmental analysis



# Robust, versatile **Raman Fiber-optic Probes** to match your application

## Near Infrared Fiber-optic Probes

For the Raman IdentiCheck, RamanStation 400F, RamanFlex 400 and RamanMicro 200F

PerkinElmer's Fiber-optic Probes allow you to bring the spectrometer to the sample, making results easier than ever to gather. With a simple point and click process, you can analyze a range of samples types – even in uncontrolled environments and restricted spaces. Offering considerable additional functionality, like in-situ analysis and reaction monitoring, this easy-to-use accessory will be beneficial to your lab.

There are five probes available to cover applications from routine sampling of solids and samples in bottles through to reaction monitoring at elevated temperature and pressure.

### Features

- Patented micro-optics for beam steering and background features (OD 8 at the excitation wavelength)
- Spectral range low end cut off 230  $\text{cm}^{-1}$
- Steel-encased fiber-optic cable
- Warning LED with DIN connector
- Removable beam attenuator/cover
- Versions available for elevated temperatures and pressures

Description	Part No.
Raman Probe Stainless steel probe, 7.5 mm working distance, 5 M cabling. Spectral range is 230 – 3,500 $\text{cm}^{-1}$ .	L1320002
Liquid Immersion Sleeve An option for Raman Probe comprising stainless steel body with sapphire window. The sleeve allows the Raman Probe to be immersed in liquids at temperatures up to 200 °C.	L1320003
Trigger Fiber Optic Raman Probe, 5 m Stainless-steel probe, 7.5 mm Working distance, 5 m Cabling. Handle with Trigger, Removable contact tip 7.5 mm included, Spectral range is 230 – 3,500 $\text{cm}^{-1}$ .	L1320030
Trigger Fiber Optic Raman Probe, 20 m Stainless-steel probe, 7.5 mm Working distance, 20 m Cabling. Handle with Trigger, Removable contact tip 7.5 mm included, Spectral range is 230 – 3,500 $\text{cm}^{-1}$ .	L1320031
Short (10 cm) immersion sleeve for Triggered Fiber Optic Probe An optional Stainless-steel immersion sleeve for Fiber optic probes.	L1320070
Raman Probe — Long Stainless steel probe, 350 mm long, suitable for non-contact and liquid immersion, and use at elevated temperature and pressure up to 200 °C / 1,500 psi, 5 M cabling. Spectral range is 230 – 3,500 $\text{cm}^{-1}$ .	L1320011
Raman Probe — Max Stainless steel probe, suitable for non contact and liquid immersion, and for use at elevated temperature and pressure up to 500 °C / 3,000 psi, 5 M cabling. Spectral range is 230 – 3,500 $\text{cm}^{-1}$ .	L1320012
Purge Jacket for Raman Probe — Max Required to enable Max Probe operation at temperatures between 200° & 500 °C.	L1320013



Description	Part No.
Removable Contact tip 7.5 mm working distance, replacement unit. Optimize the working distance of the fiber probe by directly touching the sample and reduce the risk of external light contamination of the spectrum.	L1320324
Ultra long working distance lens for fiber probes and triggered fiber probes This accessory allows a working distance of 25 mm instead than 7.5 mm.	L1320071

## Accessories and consumables to meet all your Raman sampling requirements



### Raman Calibration and Operational Qualification Kit

An option for use with RamanStation 400, RamanFlex 400, RamanIDentiCheck and RamanMicro 200. Due to the design of these instruments no routine calibration is required. Annual calibration is normally performed during annual servicing or recertification. The Calibration Kit has been made available for those customers who wish to perform more frequent calibrations.

#### The kit includes:

- Neon lamp and fiber-optic connector for Wavelength Calibration
- Calibration Plate containing Polystyrene for Wavelength Calibration Verification and Laser Wavelength Calibration
- Calcite for Resolution Verification
- NIST 2241 Standard for Intensity Correction

Description	Part No.
RamanStation Calibration and Operational Qualification Kit (785 nm)	L1320237
NIST 2241 Intensity Correction Standard	L1321831

### Tablet Holder and Powder Holder Kits

The tablet and powder sampling kits can be used with the RamanStation 400, RamanMicro 200 and RamanMicro 300 equipped with a motorized stage. The accessories enable an array of tablets or powder samples to be placed on the motorized stage. Using the software, positions of interest can be specified. The imaging system can then collect multiple images from the samples automatically.

Description	Part No.
Powder Holder Kit for Motorized Stage For automated analysis of powders. <b>Includes:</b> Powder Holder Baseplate, Powder Cup Loading Base and Tray, Powder Holder Cups (24), 10 cm Micro Spatula, Brush and Tweezers. <i>Compatible with Standard and Multiwell Motorized Stages</i>	L1320280
Tablet Holder Kit for Motorized Stage For automated analysis of tablets. <b>Includes:</b> Tablet Holder Baseplate, 11 mm Tablet Holder Cup (24 off), 15 mm Tablet Holder Cup (12 off), 22 mm Tablet Holder Cup (6 off) and three packs of 100 Disposable Circular Tablet Mounts at three different sizes; 9, 13 and 20 mm. <i>Compatible with Standard and Multiwell Motorized Stages</i>	L1320278
Custom Tablet Molding Kit for use with Tablet Holder Kit For analysis of non-circular tablets. <b>Includes:</b> Tablet Mold Base (10 off), Tablet Mold 6 mm (5 off), Tablet Setting Pin 6 mm (5 off), Tablet Mold 4 mm (5 off), Tablet Setting Pin 4 mm (5 off), Custom Tablet Molds Resin Kit (1 off), Beaker 100 mL (1 off), 1 mL Disposable Syringe (1 off), 10 mL Disposable Syringe (1 off), 100 mL Disposable Syringe (1 off), Syringe Nozzle (1 off), 7.5 in Spatula (1 off), No 6 large Pencil Brush (1 off). <i>Compatible with Tablet Holder Kit</i>	L1245025

### Replacement Parts for Tablet Holder and Powder Holder Kits

Description	Qty.	Part No.
<b>Sample Disks</b>		
9 mm for Tablet Holder Kit	100	L1860538
13 mm for Tablet Holder Kit	100	L1860539
20 mm for Tablet Holder Kit	100	L1860540
<b>Tablet Holder Cup</b>		
11 mm for Tablet Holder Kit	50	L1860535
15 mm for Tablet Holder Kit	25	L1860536
22 mm for Tablet Holder Kit	12	L1860537
<b>Powder Cup</b>		
For Powder Holder Kit	24	L1860541

## Electrochemical Cell for RamanStation 400



The Electrochemical cell can be used for applications such as in situ corrosion studies, the identification of electrochemically produced intermediates and for investigations of catalysts.

The Electrochemical cell includes three electrodes; a working electrode, a secondary, unreactive (Pt) electrode and a reference electrode. The cell has a borosilicate glass body which carries the Platinum ring secondary electrode and has a side pocket for the standard electrode. The working electrode consists of a pellet held in a fluorocarbon sleeve connected electrically to a rod passing down its axis. The position of the working electrode can be adjusted by moving it forward, towards the front quartz window or back, closer to the secondary electrode. When in use all three electrodes operate in a common electrolyte solution which is connected by cables to a standard electrochemical potentiostatic control unit.

Description	Part No.
Electrochemical Cell with quartz window. Requires but do not includes a working electrode of Silver, gold or copper and a reference Electrode.	L1320072
Electrochemical Cell fitted with a quartz window and reference electrode window. Requires but do not includes a working electrode of Silver, gold or copper	L1320073
Gold electrode for Electrochemical cell	L1320074
Silver Electrode for electrochemical cell	L1320075
Copper Electrode for Electrochemical cell	L1320076
Reference electrode for Electrochemical cell	L1320077

**Note:** PerkinElmer does not supply the electrochemical potentiostatic control unit or the electrolyte solution required for the operation of the electrochemical cell.



## Fiber Probe Sample Holder



Compact sample holder for the measurement of small vials and cuvetts. Can accommodate three sizes of standard glass vials (29, 23, 15 mm diameter) and cuvetts up to 1 cm pathlength. Also includes four solid sampling cups for powders, pastes and

films. A spring-loaded mechanism shields user from laser light and avoids measurement of ambient light.

Description	Part No.
Fiber Probe Sample Holder	L1320095

## MALDI Sample Plates



MALDI sample plates can be used to examine liquid samples; either in solution or as material dried onto the surface of the plate. A micro-pipette can be used to place a small drop of sample on an appropriate 1 or 2 mm 'spot' on the plate. The MALDI plates can be used with the motorized stage of the RamanStation 400, RamanMicro 300 and RamanMicro 200.

Description	Qty.	Part No.
96-well plate, 1 mm diameter target (gold on glass)	10	L1322000
384-well plate, 1 mm diameter target (gold on glass)	10	L1322001
96-well plate, 2 mm diameter target (gold on glass)	10	L1322002
96-well plate (stainless steel)	1	L1322003
384-well plate (stainless steel)	1	L1322004

## SERS Gold Colloids and Consumables



Description	Part No.
SERS Gold Colloid 50 nm particles (20 ml)	L1329300
SERS Gold Colloid 100 nm particles (20 ml)	L1329307
SERS Gold Colloid 200 nm particles (20 ml)	L1329308
Aggregating Agent – MgSO4 0.16 M milli Q water (20 ml)	L1329301
Standard Crystal Violet Pigment (0.25 ml)	L1329303
Disposable Micropipettes 200 µL 100/pk	L1329304
Disposable Micropipettes 50 µL 100/pk	L1329305
Disposable Micropipettes 2 µL 100/pk	L1329306

## Raman Laser Safety Kit (785 nm)

Description	Part No.
Raman Laser Safety Kit (785 nm), Including Coded Reed Switch with 10 M cabling, 1 pair of Laser Safety Glasses, Laser Viewing Card, Door Warning Label USA and Europe.	L1320262
Door Interlock Kit, Coded Reed Switch with 10 M cabling (one included in safety kit)	L1320820
Laser Viewing Card, for safe viewing of laser position (one included in safety kit)	L1323521
Door Warning Label USA and Europe. (one included in safety kit)	L1323523
Laser Safety Goggles for 785 nm, OD 6 at 785 nm (one included in safety kit)	L1323518

## Low-e Microscope Slides



Low-e microscopy slides are standard size microscope slides which reflect 95% of mid-IR radiation with no interfering absorption effects.

This is achieved by one side of the slide having a reflective surface made up of several coatings, two of which are silver.

Low-e microscopy slides can be used with solids, liquids, and biological materials. Liquid samples are simply applied to the slide surface. For solid samples such as Fibers, minerals and polymers a rolling tool can be used to press the sample flat on the slides surface.

Description	Part No.
Low-e microscope slides (pack 25)	L1272249
Roller Knife	N9302619

## SPECIAL SAVINGS OFFERS from Interchim!

### SAVE on Low-e Microscope Slides!

The more packs you buy  
the more you save!

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Delivering enhanced VALUE and outstanding SAVINGS on the products you use most!



## Micro and Ultra-micro cells for sensitive analysis on small sample quantities

Micro cells have the same outside dimension as the Macro cells but the cell walls have been thickened, limiting the interior sample chamber width to 2 mm. This reduces the sample requirements by 80%.

Each Micro cell has a standard light path of 10 mm and each package contains two cells with two clear windows each. All Micro cells listed have black sidewalls and base.

### Micro Cells without Lid

Material	Qty.	Light Path	Outside Dim. H x W x D mm	Inside Dim. H x W x D mm	Base Thickness	Cell Volume	Windows	Remarks	Part No.
Quartz SUPRASIL*	2	5 x 5 mm	33.5 x 7.5 x 7.5	32.25 x 5 x 5	1.25 mm	600 µL	5		<b>B0631123</b>
Quartz SUPRASIL	2	5 x 5 mm	46 x 7.5 x 7.5	38.75 x 5 x 5	1.25 mm	850 µL	5	w/ PTFE Stopper NS 5	<b>B0631142</b>
Micro Cell Adapter	4								<b>L2250139</b>

\*Requires Microcell Adapter (L2250139). Microcuvette Adapter allows 5 mm pathlength microcells to be used in any of the cuvette holders. (pkg. 4)

### Ultra-micro Cells with PTFE Stopper

Ultra-micro cells use a narrower sample chamber, raising it directly into the center of the light path and masking it with black quartz. This design optimizes the use of smaller sample volumes. All Ultra-micro cells contain one cell and two clear windows.

Material	Qty.	Light Path	Center Height	Outside Dim. H x W x D mm	Aperture	Chamber Volume	Filling Volume	Windows	Part No.
Quartz SUPRASIL	1	10 x 2 mm	15 mm	45 x 12.5 x 12.5	5 x 2 mm	100 µL	120 µL	3	<b>B0631124</b>

### Flow-through Cells for Fluorescence Spectroscopy

Flow-through cells are used for measuring samples with continuous flow or with Sippers where individual samples are aspirated into the cell. All cells have center heights of 15 mm. Each package contains one cell with two clear windows. The cells listed below are Compact with two screw connectors, M6x1 and 500 mm length FEP tubing – 1.9 mm o.d., 1.1 mm i.d.

Material	Qty.	Light Path	Outside Dimension	Inside Width H x W x D mm	Base Thickness	Cell Volume	Windows	Part No.	
<b>Macro Inlet/Outlet Tubes on Top</b>									
Quartz SUPRASIL	1	10 x 6.5 mm	15 mm	45 x 12.5 x 12.5	11 x 6.5 mm	750 µL	3	<b>B0631126</b>	
<b>Semi-micro Inlet/Outlet Tubes on Top</b>									
Quartz SUPRASIL	1	10 x 4 mm	15 mm	45 x 12.5 x 12.5	11 x 4 mm	450 µL	3	<b>B0631127</b>	
Quartz SUPRASIL*	1	3 x 3 mm	15 mm	35 x 12.5 x 12.5	11 x 3 mm	100 µL	3	<b>B0631133</b>	

\*Compact with two (2) screw connectors and FEB tubing.

# High-sensitivity, ultra-stable Xenon Source Lamps



Xenon Source Lamp



Set of six Luminescence Sample Blocks.

## Xenon Source Lamps for LS30/40/45/50/50B/55

PerkinElmer Fluorescence Spectrometers use pulsed Xenon discharge lamps, which are not only very reliable and stable, but also provide remarkable sensitivity with a peak intensity exceeding 1 KW.

To maintain optimum stability and sensitivity of your instrument, installation of a new lamp by a PerkinElmer service engineer is recommended. Additionally, Xenon lamp quartz envelopes are under pressure, requiring eye protection and extreme caution in handling.

Description	Part No.
Xenon Source Lamp for LS30/40/45/50/50B/55	L2251157
Festoon Lamp for the LS Series*	04969486

*\*The Festoon Lamp is used along with the Xenon Lamp to maintain even triggering and stability.*

## Checking Your Fluorescence Spectrometer

### Checking the Day-to-Day Reproducibility of your Fluorescence Spectrometer

For day-to-day checks on reproducibility and wavelength calibration a set of six PMMA (polymethyl-methacrylate) blocks can be used. These have emission characteristics in the following wavelength ranges:

	Wavelength Range (nm)
1	300 – 400 (anthracene/naphthalene)
2	420 – 600 (ovalene)
3	300 – 400 (p-terphenyl)
4	400 – 600 (tetraphenyl/butadiene)
5	600 – 640 (europium)
6	540 – 640 (rhodamine B)

For checking instrument sensitivity, a 10 mm sealed cell contains high-purity water, which acts as a constant sample to reproducibly measure signal-to-noise using the Raman band.

Description	Part No.
Luminescence Sample Blocks (Set of 6)	52019600
Sealed Water Sample	L2251293

## Red-sensitive Photomultiplier for the LS50B/45/55

The Red-sensitive Photomultiplier is a useful addition to the LS-series spectrometers to extend the detection range out to 800 nm. The full detection range is 200 – 800 nm.

*Requires installation by a PerkinElmer service engineer.*

Part No.
09972337

# Simple, accurate temperature control for all applications

**Ideal for Polarization Studies, Protein Folding and DNA Melting.**



Biokinetics Accessory for LS50/45/55

## Biokinetics Accessory

The Biokinetics Accessory consists of a magnetically stirred single-cell holder with a built-in temperature sensor (0 – 100 °C) event marker. Thermostatable by an external water-bath (not included).

*Includes 6 Stirrer Fleas. Requires Accessory PCB Kit (L2250162) for use with LS-45.*

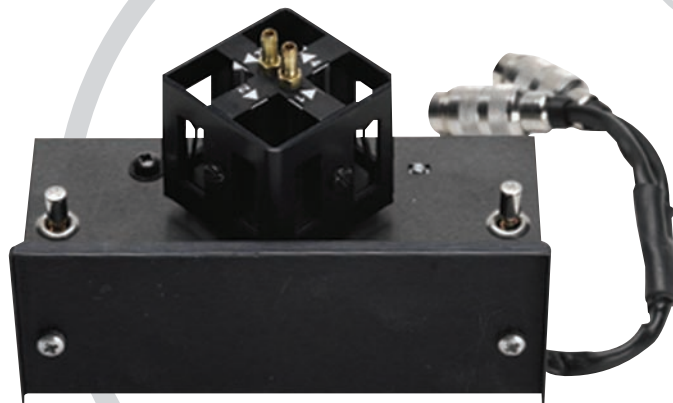
Description	Part No.
For LS50/45/55	L2250145

## Single-position Peltier Accessory

For analyses where more rapid heating and cooling is required, a single-cell, water-cooled Peltier accessory is available. Operation between 0 – 100 °C with a resolution of 0.1 °C makes it the ideal choice for a wide variety of applications, for example, thermal denaturation of proteins. Temperature control is via keypad or the optional TempScan software.

Description	Part No.
<b>For LS50/45/55</b>	
Single-cell Peltier Accessory	L2250150
TempScan Software	L225B009

*Requires a source of liquid cooling, such as a water-circulator. Requires Accessory PCB Kit (L2250162) for use with LS-45.*



Four-position Thermostatted Automatic Cell Changer

**Changes in temperature affect fluorescence intensity. A simple, inexpensive and accurate way to control sample temperature is to use a thermostatable cell holder through which water from an external water-bath can be circulated. For temperature ramping studies and experiments where more rapid heating and cooling is required, a single-cell Peltier-thermostatted accessory is available.**

## Four-position Thermostatted Automatic Cell Changer

The Four-position Cell Changer accommodates four square, 10 mm pathlength cells or four micro-cells with adapters.

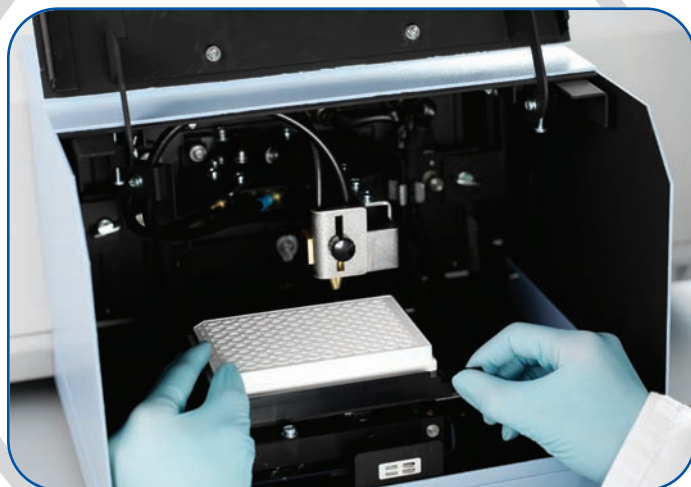
Description	Part No.
For LS50B/55	L2250134
<i>Requires, but does not include, 4 Adapters (L2250139) to work with micro cells. Includes 6 Stirrer Fleas.</i>	

## Single-position Thermostatted Cell Holder

Water-thermostatted cell holder for a 10 mm pathlength cell. This cell holder is included as standard with the LS-45 and LS-55.

Description	Part No.
For LS50B/45/55	L2250140

# A **powerful** range of accessories that **increase** your applications **capabilities**



Fluorescence Well-plate Reader

## Well-plate Reader Accessory for LS50B/55

The Well-plate Reader Accessory allows you to switch from a cuvette-based system to a well-plate reader in seconds. The accessory is front-mounted, providing easy access to standard well-plates.

### Features and Benefits

- Measures in fluorescence, phosphorescence, bioluminescence and chemiluminescence modes
- Fiberoptic light feed for permanent alignment and high performance
- Standard or far-UV fiberoptics
- Easily removes and installs for switching between plate and cuvette measurements
- Can create programs for single end-point and kinetics analysis
- Optional plug-in software module allows the user to collect multiple spectra per well
- Measures up to 96 well plates

Description	Part No.
For work above 260 nm Excitation, 340 nm Emission	L2250035
For work above 260 nm Excitation and Emission	L2250042
<i>Installation by a PerkinElmer service engineer is required. Includes one pack of white Microplates (L2251692).</i>	

**Ideal for DNA Quantitation, Enzyme-linked Assays, Protein Measurements, Fluorescent ELISAs, Cell Viability Testing and Drug and Steroid Testing.**

## Liquid Sipper Accessory

The Liquid Sipper Accessory is ideal for the automation of liquid sampling, providing productivity improvements and sample-handling convenience. The accessory consists of a 16 microliter volume flowcell and a peristaltic pump controlled by the instrument software, which automatically transfers samples from the vessel to the cuvette.

Description	Part No.
For LS50B/55	L2250135
<i>Includes Flowcell, Peristaltic Pump, 0.4 mm FEP Inlet Tube and 0.7 mm FEP Outlet Tube. Requires installation by a PerkinElmer service engineer.</i>	



Liquid Sipper Accessory

## LC Flow Cell Accessory

The LC Flow Cell Accessory allows you to detect trace components eluted from a liquid chromatograph. Fluorescence can be monitored continuously at selected excitation and emission wavelengths, simply by replacing the standard cell holder with an LC flow cell.

Description	Part No.
For LS50B/45/55	L2250138
<i>Includes Flowcell, Peristaltic Pump, 0.4 mm FEP Inlet Tube and 0.7 mm FEP Outlet Tube. Requires installation by a PerkinElmer service engineer.</i>	

**High-sensitivity Alternative to a Dedicated LC Fluorescence Detector.**

# Sampling accessories for your application needs



Remote Fiber-optic Accessory

## Remote Fiber-optic Accessory

The Remote Fiber-optic Accessory allows you to make the measurement at the sample, without needing to take the sample to the instrument. Includes bifurcated synthetic fused-silica fiber-optics (1 m in length), which operate over the range 280 – 800 nm, and transfer-optics which mount in the spectrometer. This accessory is ideal for remote, non-destructive testing of fluorescent papers and fabrics, or remote sampling of hazardous materials.

Description	Part No.
For LS50B/45/55	L2250144

## Total Emission Accessory

The Total Emission Accessory enhances the sensitivity of the fluorescence detection for samples with weak emission, and is recommended for bioluminescence and chemiluminescence experiments. The accessory uses a plane mirror that swings into place in front of the emission monochromator so that the total fluorescence of the sample can be measured.

The use of cut-off emission filters is recommended to reduce emission from other wavelengths. Five software-controlled emission filters are supplied with the LS55 spectrometers.

Description	Part No.
For LS50B/55	L2250101

*Requires installation by a PerkinElmer service engineer.*

**Ideal for Studies of Polymer Stability and the Properties of Optical Brighteners.**

Front-surface Accessory



## Front-surface Accessory\*

### For Measurements on Solids, Powders and Viscous or Opaque Liquids

The simple-to-use Front-surface Accessory extends your measurement capabilities to a wide variety of solid and semi-solid samples, including powders, paper, plastic films, cloth samples, TLC plates, gels and turbid liquids. The accessory can be used with the LS-50B/45/55 spectrometers.

### Features and Benefits

- Used for fluorescence and phosphorescence measurements
- Sample can be placed in the accessory directly or held in the synthetic fused silica window powder holder
- Ultra-small volumes or viscous samples can be sandwiched between the two windows
- Opaque and turbid samples can be measured in small cuvettes (under 10 mm)

Part No.
52123130

*\*Includes Powder Sample Holder (52123164).*

# New Range of Thermal Analysis

## Thermal analysis solutions for material property analyses



**PerkinElmer is the leader in high sensitivity thermal analysis instrumentation, providing you the confidence to achieve fast, accurate, reproducible results.**

**Our industry leading Thermal Analysis software and extensive range of Thermal Analysis accessories combine ease of use with needed flexibility, delivering solutions for a vast array of material property analysis.**

### Differential Scanning Calorimetry (DSC)

#### Reliability at its Best!

DSC measures the amount of energy absorbed or released by a sample as it is heated, cooled or held at a constant temperature. This technique is used for a wide range of applications including polymer and pharmaceutical applications. Our new line of high-performance DSC solutions includes the DSC 4000, DSC 6000, DSC 8000 and DSC 8500.

#### DSC 4000

The DSC 4000 is a compact, single-furnace solution you can depend on for a wide range of routine and traditional materials characterization research applications in the academic, polymer and pharmaceutical markets. And not only is the DSC 4000 consistent, reliable and easy-to-use, it's also upgradeable to meet your laboratory's

- Single-furnace DSC
- Optional 45-position autosampler
- Upgradeable to DSC 6000

#### DSC 6000

The DSC 6000 gives you all the features of the DSC 4000 and much more. It includes Modulated Temperature DSC (MT-DSC) technology for easier data interpretation, and new capabilities for product development and troubleshooting.

- Single-furnace DSC
- Modulated Temperature DSC
- Optional photocalorimeter accessory and 45-position autosampler
- Enhanced software package

#### DSC 8000

The DSC8000 features our proprietary double-furnace technology, which directly measures the change in heat flow of the sample. And with the most precise energy measurements over the whole temperature range, it gives you new insights into materials to meet your most demanding applications.

- Double-furnace DSC
- Optional 96-position autosampler and UV Photocalorimeter accessory
- Enhanced software package
- Upgradeable to DSC 8500
- Modulated Temperature DSC



DSC 8000/8500 Autosampler

#### DSC 8500

The DSC 8500 features second-generation HyperDSC® technology. Now you can gain unlimited insight into the structure, properties and performance of your materials. And with hyper-enabled, double-furnace technology and better application capabilities, the DSC 8500 gives you higher accuracy and sensitivity than ever before.

- Double-furnace DSC
- HyperDSC
- Enhanced software package
- Optional 96-position autosampler and Photocalorimeter accessory
- Modulated Temperature DSC

#### HyperDSC heating and cooling

- Extremely fast controlled scanning rates to 750 °C/min
- In-situ ballistic cooling to 2100 °C/min, enabling experiments that mimic real-world processes
- Extremely fast readout rates (100 points/second) providing high data Integrity

# Instrumentation



TGA 4000

## Thermogravimetric Analysis (TGA)

### High Sensitivity – Reliable Results!

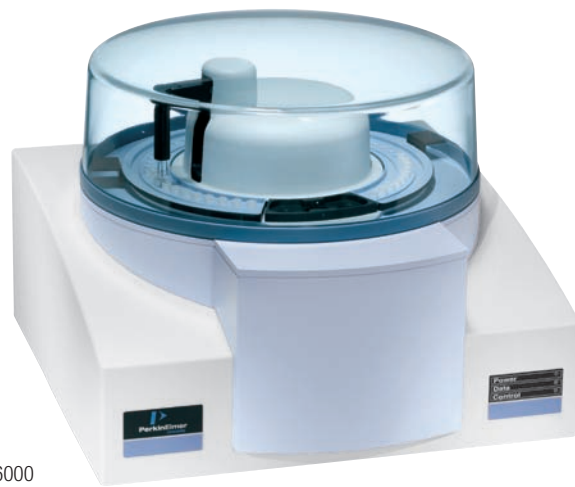
TGA measures the change in weight of a sample as it is heated, cooled or held at a constant temperature. PerkinElmer offers the high performance Pyris 1 TGA and the new TGA 4000 both providing robustness and reliability for quality control and the answers researchers need to solve even the toughest problems.

## Introducing the TGA 4000

The TGA 4000 has a compact ceramic furnace, which provides the temperature control needed for accurate, precise results and the fast sample purge and cool down required for short cycle times. Forced air and liquid cooling further reduce cycle times allowing you to run more samples in less time. The ceramic construction is inert and corrosion resistant for improved ruggedness, permitting a wide range of reactive gases for enhanced applications flexibility. A large isothermal zone keeps your samples at the same temperature as the furnace throughout a temperature program providing you with results, even with large samples up to 1500 mg weight or 180 µl volume.

## Key Features

- Compact footprint with optional autosampler
- High performance balance and furnace for maximum accuracy and precision
- Top loading balance for easy sample loading and unloading
- Furnace and balance isolated from operators to minimize maintenance, ensuring uptime
- Fast cooling reduces cycle times improving productivity
- Integrated mass flow controller extends applications flexibility
- Optional 45 position autosampler allows unattended operation, improving productivity
- Pyris software suite is easy to use and feature rich for maximum application flexibility

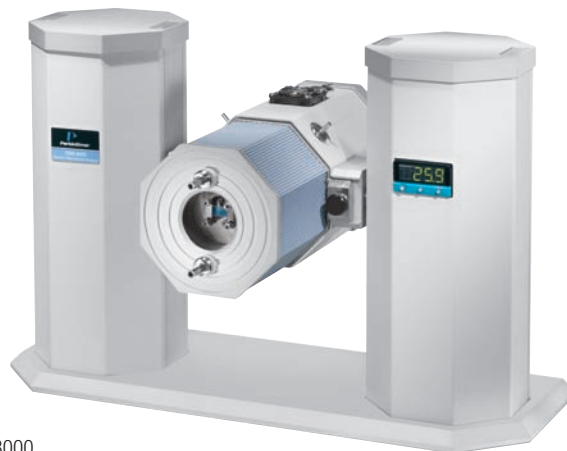


STA 6000

## Simultaneous Thermal Analysis (STA)

### Insights . . . Fast!

STA is a simultaneous technique that determines the weight change of a sample (TG) and measures the change in temperature between a sample and the reference as a function of temperature and/or time (DTA). The STA 6000 combines the high flexibility of the differential analysis feature (DTA, DSC) with the proven capabilities of the thermogravimetric (TG) measurement technology to provide highly reliable characterization information.



DMA 8000

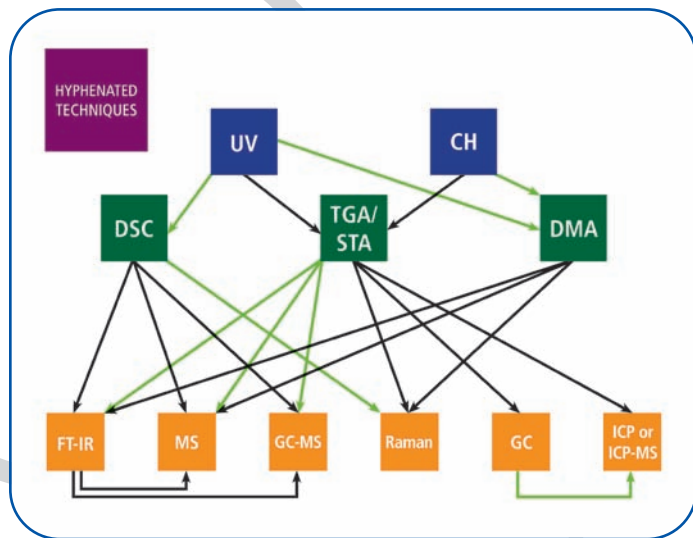
## Dynamic Mechanical Analysis (DMA)

### Innovation in Materials Science!

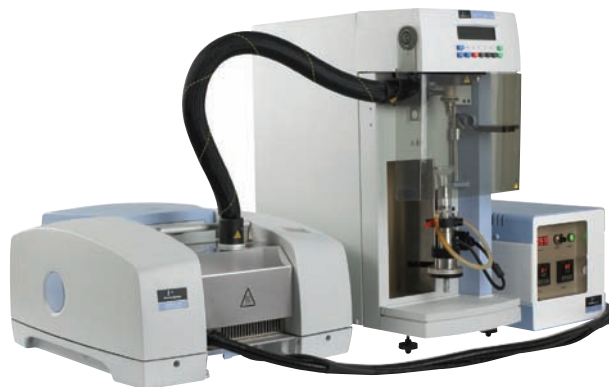
DMA measures changes in mechanical behavior, such as modulus, compliance and dampening, as a function of temperature, time, frequency, stress or a combination of these parameters. The DMA 8000, with its innovative design, high functionality and flexible operation, is ideal for advanced research and routine quality testing.

# PerkinElmer Hyphenation

delivering more **information**  
**quickly** and **efficiently**



**Evolved Gas Analysis** – Measurement of the gases evolved from a TGA, STA, or a GC by another technique. The best known is TGA-FTIR where the IR is used to identify the off-gases from a TGA experiment. Another example would be GC-ICPMS where the GC helps separate the sample before ICP/MS testing.



The term hyphenated techniques has developed to cover the coupling of two distinct instruments to improve the quality of information one obtains about their sample. As useful as the individual techniques are, by combining them one can greatly increase their effectiveness.

## PerkinElmer offers Hyphenated techniques for:

**Sample Modification in Testing** – Techniques where various instruments are coupled together to change the sample while it is being monitored. UV-irradiation of a sample in DSC or attaching a humidity generator to a DMA are both examples of this approach.



**Simultaneous Analysis** – Use of 2 or more techniques to measure the same sample at the same time. An STA can be considered the simplest form of this but normally it refers to combined DSC-Raman or DTA-ATR.



PerkinElmer's breadth of experience in the instrument field makes it uniquely positioned to address your needs for hyphenated techniques. No other company makes the range of equipment needed for this. With PerkinElmer, you have one supplier, one service organization and one company capable of designing and supporting both sides of a hyphenated system.

# Precision designed Sample Pans and Covers

## Sample Pans and Covers

PerkinElmer offers a range of sample pans to cover virtually any Thermal Analysis application. Ambient sample pans are available in aluminum, copper or gold with the option for crimping.



Aluminum



Aluminum Vented

## Aluminum Sample Pans and Covers

These superior quality sample pans and covers are routinely used for applications such as polymer melting, crystallization, glass transitions of polymers, thermoplastics and thermosets.

Sample Pan	Operating Range	Vol. (µL)	Maximum Pressure	Qty.	Crimper (Sealer)	Part No.
<b>Open/Crimped Pans</b>						
▲ Standard Aluminum Pans and Covers	-170° to 600 °C	40	Ambient	400	02190048 or B0139005 with B0508921	<b>02190041</b>
▲ Aluminum Sample Pans	-170° to 600 °C	28	Ambient	200	N5356027 or N5356028	<b>N5356010</b>
▲ Aluminum Sample Pans	-170° to 600 °C	45	Ambient	400	N5356027 or N5356028	<b>N5356012</b>
▲ Aluminum Pans for Photocalorimetric Analysis	-170° to 600 °C	12.5	Ambient	100	Not Required	<b>B0196858</b>
<b>Vented/Pierced Pans</b>						
▲ Aluminum Covers (Pierced)	-170° to 600 °C		0.05 mm hole	400		<b>B7001014</b>
▲ Volatile Aluminum Pans and Covers (Pierced)	-170° to 600 °C	20	0.05 mm hole	100	02190061 or B0139005 with B0144637	<b>N5190788</b>
▲ Aluminum (Vented)	-170° to 600 °C	30	Vented	400	B0139005	<b>B0143018</b>
▲ Aluminum (Vented)	-170° to 600 °C	50	Vented	400	B0139005	<b>B0143019</b>
<b>Hermetically Sealed/Volatile Pans</b>						
▲ Aluminum Pans	-170° to 600 °C	10	1 bar	400	B0139005	<b>B0143015</b>
▲ Aluminum Pans	-170° to 600 °C	30	1 bar	400	B0139005	<b>B0143016</b>
▲ Aluminum Pans	-170° to 600 °C	50	1 bar	400	B0139005	<b>B0143017</b>
▲ Aluminum Pans and Covers	-170° to 600 °C	20	2 bar	400	02190061 or B0139005 with B0144637	<b>02190062</b>
▲ Aluminum Pans and Covers	-170° to 600 °C	10	3 bar	400	B0139005	<b>B0169319</b>
▲ Aluminum Pans and Covers	-170° to 600 °C	30	3 bar	400	B0139005	<b>B0169320</b>
▲ Aluminum Pans and Covers	-170° to 600 °C	50	3 bar	400	B0139005	<b>B0169321</b>
▲ Non-coated Aluminum Sample Pans and Covers	-170° to 500 °C	7.5	3 bar	200	N5356027 or N5356028	<b>N5356008</b>
<b>Sample Pan Kits</b>						
▲ Aluminum Pan and Cover Starter Kit			3 bar	200/200	B0139005	<b>B0510800</b>

▲ For use with DSC 4000, DSC 6000, DSC 8000, DSC 8500, Diamond DSC, Pyris 1 DSC, DSC 7, DSC 6, Pyris 6 DSC and Jade DSC

▲ For use with Sapphire DSC

## SPECIAL SAVINGS OFFERS from Interchim !

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when you purchase  
**2 or more sets!**

\* Please contact Interchim - Hotline 33 (0)4 70 03 73 09 - email [interchrom@interchim.com](mailto:interchrom@interchim.com)  
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# High Pressure and Open Sample Pans



Stainless Steel Pans with O-rings

## High Pressure Sample Pans (24 to 150 bar)

Pans contain the sample in a sealed environment throughout an experiment. The sealing suppresses the vaporization of a solvent or contains a volatile reaction product, thereby eliminating the interfering effects of the heat of vaporization.

## Universal Crimper Press

The Universal Crimper Press provides high quality pan sealing for the autosampler sample pans/hermetically sealed pans and can also crimp standard aluminum pans, large volume stainless steel (24 bar) and volatile pans. This is achieved simply by using the appropriate sealing insert. Includes sample pan suction tool and inserts to seal 10, 30 and 50  $\mu$ L sample pans.



Part No.

B0139005

## Requires:

Part No.

Insert for Volatile Sample Pans<sup>1</sup>

B0144637

Insert for Stainless Steel Pans<sup>2</sup>

B0505340

Insert for Standard Aluminum Pans<sup>3</sup>

B0508921

Insert for Hermetically 10, 30 and 50  $\mu$ L Pans

B0139033

<sup>1</sup>For use with Sample Pans: 02190062, 02190080 and N5190788<sup>2</sup>For use with Sample Pans: 03190218 and 03190029<sup>3</sup>For use with Sample Pan: 02190041

## High Pressure Sample Pans (24 to 150 bar)

Sample Pan	Operating Range	Vol. ( $\mu$ L)	Maximum Pressure	Qty.	Crimper (Sealer)	Part No.
▲ Stainless Steel Pans, Covers and O-rings	-40° to 300 °C	60	24 bar	20	B0139005 with B0505340	<b>03190218</b>
▲ Stainless Steel Pans, Covers and O-rings	-40° to 300 °C	60	24 bar	1,000	B0139005 with B0505340	<b>03190029</b>
▲ Stainless Steel Pans, Covers and Seals <sup>1</sup>	-170° to 400 °C	30	150 bar	5	B0182864	<b>B0182901</b>
▲ High Pressure Gold-plated Pans and Covers	-170° to 400 °C	30	150 bar	5	B0182864	<b>B0182902</b>
▲ Aluminum Sample Pans and Covers, High Volume <sup>2</sup>	-170° to 500 °C	70	30 bar	40	N5356027 or N5356028	<b>N5356002</b>
▲ Aluminum Sample Pans and Covers, Small Volume <sup>2</sup>	-170° to 500 °C	15	30 bar	40	N5356027 or N5356028	<b>N5356003</b>

<sup>1</sup> Reusable, includes 5 Pans and 20 Gold-plated Seals, uses Replacement Seals (B0182905)<sup>2</sup> Electric Sealer (N5356028) requires Hermetic Die (N5356032) and Stage (N5356035), included with Manual Sealer

## Specialty Sample Pans and Covers

Sample Pan	Operating Range	Vol. ( $\mu$ L)	Maximum Pressure	Qty.	Crimper (Sealer)	Part No.
▲ Alumina Pans and Covers	-170° to 730 °C	40	Ambient	6	Not Required	<b>N5190180</b>
▲ Standard Copper Pans and Covers <sup>1</sup>	-170° to 730 °C	40	Ambient	200	02190048	<b>03190026</b>
▲ Copper Sample Pans <sup>4,5,6</sup>	-170° to 800 °C	45	Ambient	200	Not Required	<b>N5356021</b>
▲ Aluminum Sample Pans, High Volume <sup>2,3</sup>	-170° to 600 °C	90	Ambient	200	N5356027 or N5356028	<b>N5356034</b>
▲ Ceramic Sample Pans <sup>7</sup>	RT to 1,500 °C	25	Ambient	5	Not Required	<b>N5356019</b>
▲ Ceramic Sample Pans <sup>7</sup>	RT to 1,500 °C	55	Ambient	2	Not Required	<b>N5356020</b>
▲ Platinum Sample Pans <sup>8</sup>	-170° to 1,500 °C	45	Ambient	5	Not Required	<b>N5356016</b>
▲ Platinum Sample Pans, High Volume <sup>8</sup>	-170° to 1,500 °C	95	Ambient	5	Not Required	<b>N5356017</b>

<sup>1</sup> Not for use with Diamond DSC, PYRIS 1 DSC or DSC 7 Autosampler <sup>2</sup> Cover Crimp style (N5356014). Not for DSC Autosampler, requires Crimping Die and Stage (N5366030)<sup>3</sup> Cover Plate style (N5356015)<sup>4</sup> Copper Mesh Cover (N5356022)<sup>5</sup> Stainless Steel Mesh Cover (N5356023)<sup>6</sup> Recommended for O.I.T. tests<sup>7</sup> No Covers<sup>8</sup> Plate Covers (N5356018)

▲ For use with DSC 4000, DSC 6000, DSC 8000, DSC 8500, Diamond DSC, Pyris 1 DSC, DSC 7, DSC 6, Pyris 6 DSC and Jade DSC

▲ For use with Sapphire DSC

# DSC supplies for fast, accurate reproducible results

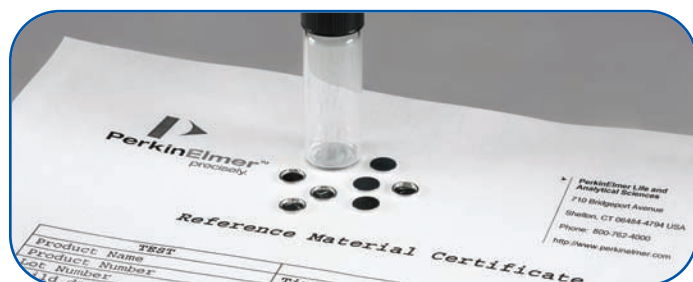
## Calibration Reference Materials

PerkinElmer reference materials are 99.999% pure. DSC requires elements of this purity so that the instrument can be accurately calibrated.

Reference Material	Transition Point	Part No.
Indium	156.60 °C	<b>03190033</b>
Tin	231.88 °C	<b>03190034</b>
Lead	327.47 °C	<b>03190035</b>
Zinc	419.47 °C	<b>03190036</b>
Encapsulated Kit*		<b>02190045</b>
Encapsulated Kit**		<b>N5190762</b>

\*Includes a large and small indium, tin and lead

\*\*Includes indium and zinc for DSC 4000, DSC 6000, DSC 8000, DSC 8500, DSC 7, PYRIS 1 DSC, Jade DSC and Diamond DSC



## Intracoolers

Intracoolers from PerkinElmer are subambient devices that automatically control the flow of coolant through a circulating chamber attached to the DSC 4000, DSC 6000, Diamond DSC, Jade DSC and PYRIS 1 DSC. Contact your local PerkinElmer representative for information on Intracoolers for the DCS 8000 and DSC 8500.

### Diamond DSC/PYRIS 1 DSC Intracooler 2P

Allows for subambient operation to -65 °C.

Voltage	Part No.
115 V, 50/60 Hz	<b>N5370207</b>
230 V, 50/60 Hz	<b>N5370208</b>

### DSC 4000/DSC 6000/Jade DSC Intracooler 6P

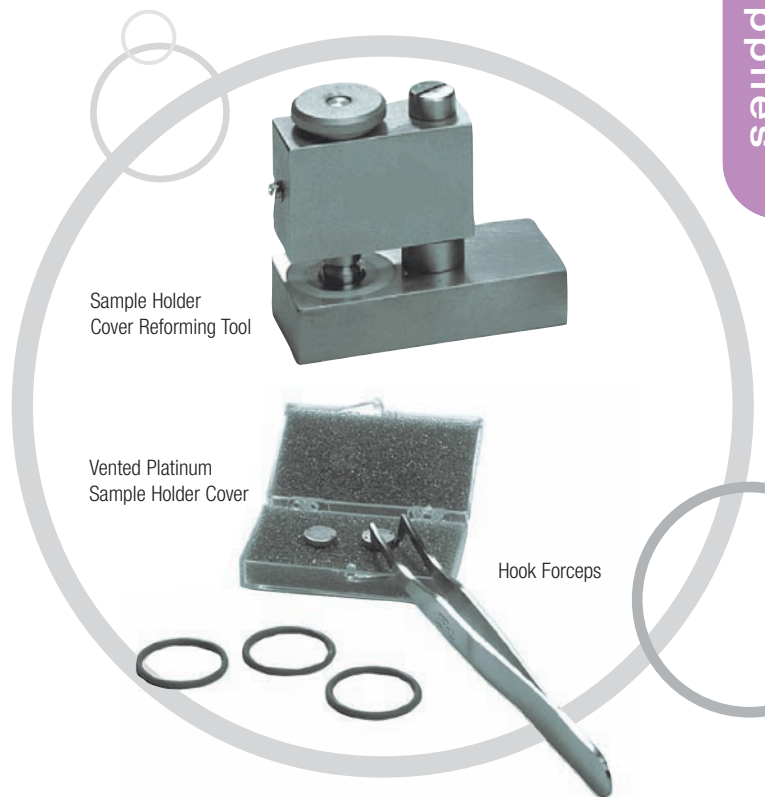
Allows for subambient operation to -80 °C.

Voltage	Part No.
115 V, 50/60 Hz	<b>N5374098</b>
230 V, 50/60 Hz	<b>N5374099</b>

### Portable Cooling Device for DSC 4000/DSC 6000/Jade DSC

In situations where occasional liquid nitrogen temperature operation is required this unique portable cooling device (PCD) is now available. The PCD can be used in combination with the standard instrument configuration to quickly cool to ambient temperature or to cool below room temperature for occasional subambient measurements. It can be filled with ice, ice water, liquid nitrogen or other cooling mixtures. This convenient device does not require any instrument modification.

Part No.
<b>N5202068</b>



## Sample Holder Supplies

### Sample Holder Cover Reforming Tool

DSC performance is enhanced with sample holder covers that are formed properly and not degraded by extended usage. This tool allows the analyst to reform the platinum covers to their original dimensions.

Part No.
<b>03190030</b>

### Vented Platinum Sample Holder Covers

Each cover has two vent holes and is used for the Diamond DSC, PYRIS 1 DSC and DSC 7 sample holders.

Description	Part No.
Kit of 2	<b>04190299</b>
Kit of 6	<b>03190031</b>

### Diamond DSC Loading Tool

Allows for easy insertion and removal of sample or reference pans or platinum lids.

Part No.
<b>N5361180</b>

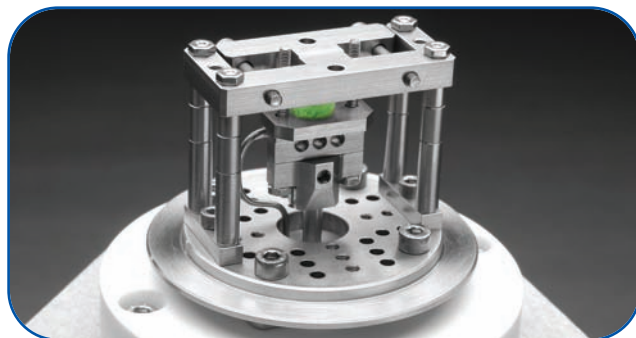
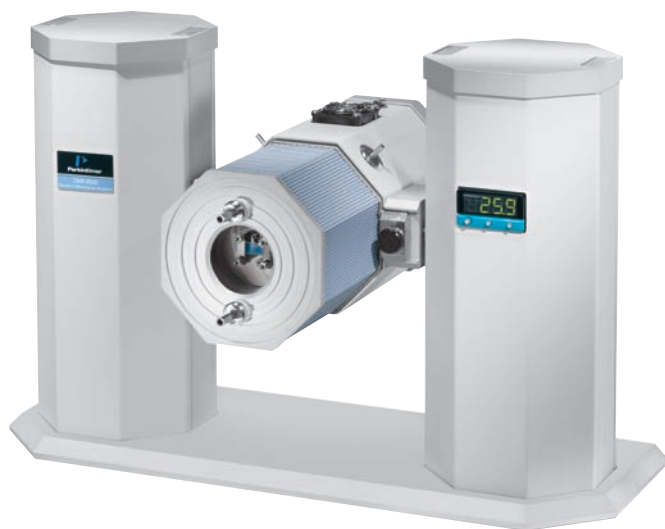
### Forceps

Description	Part No.
Flat Round Tips	<b>09908400</b>
Flat Pointed Tips	<b>N5361078</b>
Hook	<b>09908138</b>

# DMA 8000 Supplies and Accessories

## Cost effective Dynamic Mechanical Analyzer supplies for routine quality testing

Cost effective Dynamic Mechanical Analyzer supplies for routine quality testing in the polymers, composites, pharmaceutical and food industries.



### Specialty Fixtures and Accessories

Special problems often require special tools and a wide range of options exist for the DMA 8000. Advanced software for special tasks, clamps for tablets, material pockets, photo-adaptor for UV studies and fixtures that allow you to use the DMA 7 fixtures in the DMA8000 are all available.

### Cooling Accessories

The DMA 8000 has two options for sub-ambient operation; a 1 Liter Dewar for those needing occasional cooling, and a 50 L Dewar for those requiring longer or more frequent sub-ambient experiments. Use of the 50 L Dewar also requires the Autocryo accessory.

Description	Size	Part. No.
LN2 Cryo Dewar with Transfer Line and Fittings	1 L	N5330254
LN2 Cryo Dewar with Transfer Line and Fittings	50 L	N5373009

### Replacement Fixtures for the DMA Kit

The DMA 8000 comes with a complete set of standard fixtures to allow tension, bending (3 types), shear and compression experiments. Replacement parts are available for those lost or damaged over time. Call for further details.

### User Replaceable Parts

#### For Instrument and Fluid Bath

Description	Part. No.
Pt 100 Replacement Sensor	N5330253
Pyrex Cup for Fluids Bath (set of 3)	N5330320

Description	Part. No.
Measuring System for Tablets	N5330320
For holding non-flat tablets, capsules and pills in compression. Can be used with the fluid bath or the humidity chamber as well as the standard furnace. One side is V-grooved and the other side has a round groove, to allow a wide range of specimens to be held.	
Material Pockets	Set of 10 N5330322
For running pharmaceuticals, powders	Set of 100 N5330323
and other non-self supporting samples.	Set of 1,000 N5330324
Mesh Pockets	Set of 25 N5330177
For running pharmaceuticals, paints	Set of 100 N5330178
and other non supporting samples where letting moisture and solvent in and out is desirable.	
DMA 7e Fixture Adapter	N5330613
Allows use of DMA 7 fixtures in DMA 8000.	
DMA Photo Adapter	N5337024
Allows use of DSC UV system light guides with DMA 8000.	
Fluid Bath Accessory*	N5330262
Allows immersion of samples.	
Humidity Generator**	N5330400
Allows testing in controlled relative humidity.	
Time Temp Superposition SW	N5330265
Allows manipulation of freq scan data to generate mastercurves.	

\*Required for routine humidity work with Humidity Generator (N5330400).

\*\*Requires Fluid Bath Accessory (N5330263).

### Calibration Supplies

Description	Part. No.
PMMA Test Sample (set of 5)	N5330316
Steel Test Sample	N5330317
Temperature Calibration Kit	N5330318
Traceable Calibration Kit, DMA Testing Kit	N5330319
Includes 6 known samples and instructions.	

# TGA supplies and furnace accessories for reliable results

## TGA Standard and High-temperature Accessories

Components	Standard TGA Part No.	TGA High-temperature Part No.
Furnace	<b>N5190264</b>	<b>N5190172</b>
<b>1</b> Sample Thermocouple	<b>03190253</b>	<b>N5190197</b>
<b>2</b> Sample Thermocouple	<b>N5190786</b>	
<b>3</b> Balance Platinum Ribbon Kit*		<b>N5370478</b>
<b>4</b> Balance Tare Weight		<b>N5190284</b>
<b>4</b> Balance Tare Weight	<b>N5190282</b>	
<b>5</b> O-Ring, used under Balance Cover 5 1/2 in. o.d. x 1/8 in. wide		<b>09902163</b>

\*PerkinElmer Service installation required.



Hangdown Wire Link Kit,  
Quartz



Hangdown Wire Kit,  
Nichrome



Stirrup Kit,  
Platinum

### Hangdown Wire Kits

Description	Qty.	TGA 7 Standard Part No.	PYRIS 1 TGA Standard Part No.
<b>Quartz</b>			
<b>6</b> Hangdown Wire Link Kit	10	<b>N5190330</b>	
Hanger Kit	5		<b>N5370487</b>
Autosampler Hanger Kit	5		<b>N5370488</b>
<b>Nichrome</b>			
<b>7</b> Hangdown Wire Kit <sup>1,2</sup>	6	<b>N5190285</b>	
Hangdown Wire Kit <sup>1</sup>	6	<b>N5190516</b>	
Hangdown Wire Kit <sup>2</sup>	6	<b>N5190515</b>	
Autosampler Hanger Kit	5		<b>N5370490</b>

### Platinum

<b>8</b> Stirrup Kit	4	<b>03190265</b>	<b>03190265</b>
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<sup>1</sup>Includes 6 preformed wires.

<sup>2</sup>Includes 6 straight wires.

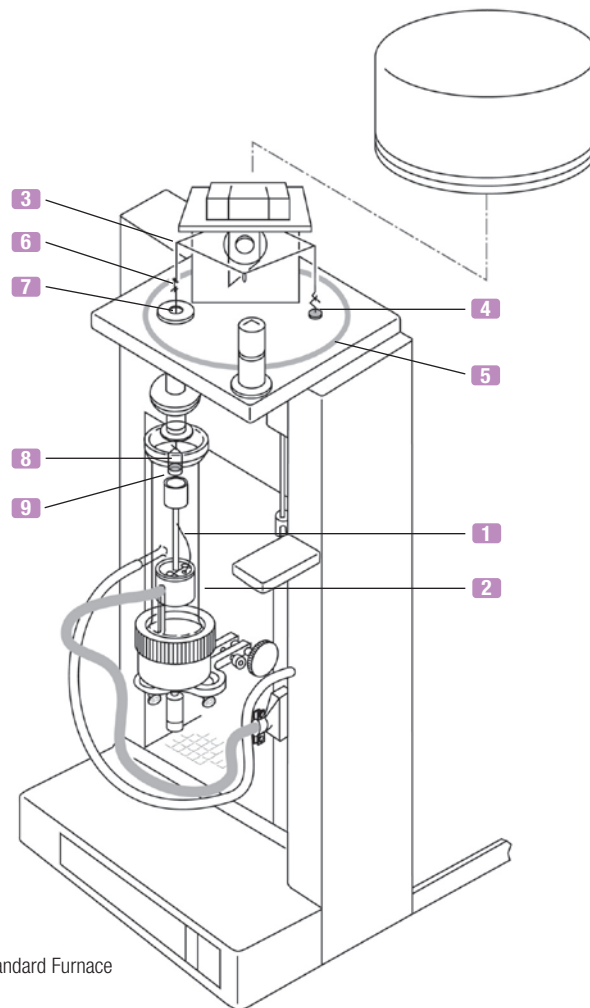
### TGA 4000, STA 6000 and Pyris 6 TGA

Description	Part No.
Sample Pan Kit includes 3 pans	<b>N5200040</b>
Ceramic Sample Cup Holder	<b>N5203020</b>
Calibration Weight	<b>N5200042</b>

### Pyris 1 TGA Autosampler Ceramic Crucible Kit

Contains 10 ceramic crucibles.

Part No.
<b>N5370464</b>



TGA Standard Furnace

### TGA Platinum Sample Pan Kits for TGA 7 and PYRIS 1 TGA

TGA Sample Pan Kits include 4 pans.

Components	Part No.
<b>9</b> For TGA 7 Standard/PYRIS 1 TGA	<b>03190264</b>
<b>9</b> For TGA 7/PYRIS 1 TGA High-temperature	<b>N5190280</b>

### TGA Platinum Sample Pans for TGA 4000 and STA 6000

Description	Part No.
Pt/Rh Sample Pan, wall height 2.5 mm (qty 5)	<b>N5201021</b>
Pt/Rh Sample Pan, wall height 5.0 mm (qty 5)	<b>N5201022</b>
Pt/Rh Sample Pan, wall height 2.5 mm (qty 1)	<b>N5201023</b>
Pt/Rh Sample Pan, wall height 5.0 mm (qty 1)	<b>N5201024</b>

# Elemental Analysis Supplies for Fast,

## Analysis Kits and Reagents designed specifically for your **PerkinElmer** instrument

The PerkinElmer 2400 Series II CHNS/O Elemental Analyzer is the leading organic elemental analyzer available today. It is ideal for the rapid determination of carbon, hydrogen nitrogen, sulfur and oxygen in organic and other type of materials.



### CHN Analysis Kit

For automatic determination of carbon, hydrogen and nitrogen in organic substances.

Add this optional kit to simultaneously determine CHN with your PerkinElmer 2400 Series II Analyzer. The sample is combusted in an oxygen-rich environment at 925 °C. The resulting reaction products are converted to carbon dioxide, water and nitrogen. All of the reaction products are then separated and detected.

Part No.

**N2410506**

### CHNS Analysis Kit

For automatic determination of carbon, hydrogen, nitrogen and sulfur in organic substances.

Add this optional kit to simultaneously determine CHNS with your PerkinElmer 2400 Series II Analyzer. The sample is combusted in an oxygen-rich environment at 975 °C. The resulting reaction products are converted to carbon dioxide, water, nitrogen and sulfur dioxide. All of the reaction products are then separated and detected.

Part No.

**N2410507**

### Oxygen Analysis Kit

For automatic determination of oxygen in organic substances.

Add this optional kit to use with your PerkinElmer 2400 for oxygen analysis. The sample is pyrolyzed in a hydrogen/helium mixture at 1,000 °C. When the resulting reaction products which contain oxygen pass over platinized carbon, they are converted to carbon monoxide. The carbon monoxide and other gases pass through scrubbers, where interferences are removed, and the carbon monoxide is then separated and determined.

Part No.

**N2410513**

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### 2400 Tubes and Reagent Kits

#### 2400 CHN Kit for 2000 Runs

Includes:	Part No.
Combustion and Reduction Tube and Reagent Kits and Tin Capsules	<b>N2410683</b>

#### 2400 CHNS Kit for 2000 Runs

Includes:	Part No.
Combustion/Reduction Tube, Reagent Kits and Tin Capsules	<b>N2410684</b>

#### 2400 CHN Combustion Tubes and Reagents for 2000 Runs

Includes:	Part No.
Combustion Tubes, EA1000, Silver Tungstate on Magnesium Oxide, Silver Vanadate and Vial Receptacles	<b>N2410680</b>

#### 2400 CHN Reduction Tubes and Reagents for 500 Runs

Includes:	Part No.
Reduction Tubes, Copper Plus and Copper Oxide	<b>N2410681</b>

#### 2400 CHNS Combustion/Reduction Tubes and Reagents for 500 Runs

Includes:	Part No.
Combustion/Reduction Tubes, EA600 and Copper (wire form)	<b>N2410682</b>

PerkinElmer genuine reagents will assure consistent and accurate results.



### Reagents

Description	Size	Part No.
EA-1000	50 g	<b>N2410092</b>
Silver Tungstate/Magnesium Oxide	100 g	<b>02401344</b>
Silver Vanadate	40 g	<b>02401117</b>
EA-6000	50 g	<b>N2410278</b>
Copper Plus	454 g	<b>02400117</b>
Copper Plus – Wire Form	454 g	<b>02401362</b>
Copper for Nitrogen	454 g	<b>N2411527</b>
Copper Oxide – Wire Form	454 g	<b>02401092</b>

# Accurate Results

## Calibration Standards, Tubes and Sample Capsules to yield reliable, accurate results

### Calibration Standards

Description	Size	Part No.
Acetanilide	2 g	<b>02401121</b>
Benzoic Acid	4 g	<b>02401120</b>
Cystine	4 g	<b>N2410324</b>
EDTA	100 g	<b>N2410325</b>
Sulfamic Acid	10 g	<b>N2410501</b>



Combustion and Pyrolysis Tubes

### Sample Capsules

#### Tin Capsules

For analysis of nonvolatile solid samples.

Description	Qty.	Part No.
Standard Tin Capsule Kit	96	<b>N2411255</b>
Standard Tin Capsule Kit, (pkg. 10)	96	<b>N2410155</b>
Large Tin Capsule Kit	250	<b>N2411362</b>

#### Flat Tin Disks

For analyzing 13 or 25 mm filters.

Description	Qty.	Part No.
Flat Tin Disks	100	<b>N2411363</b>
Flat Tin Disks, (pkg. 10)	100	<b>N2410244</b>

#### Aluminum Capsules

For analyzing volatile liquid samples. Requires, but does not include, Liquid Sample Sealer (B0198093) and Tin Capsules (N2411255, N2410155 or N2411362).

Description	Qty.	Part No.
Aluminum Capsules, 4 µL	1,000	<b>02400642</b>
Aluminum Capsules, 30 µL	1,000	<b>00090709</b>

#### Tin Pans and Covers

For volatile liquid or solid samples, including viscous materials. Requires, but does not include, Volatile Sample Sealer (02190061).

Description	Qty.	Part No.
Volatile Tin Sample Pans and Covers	400	<b>N2410320</b>

#### Silver Capsules

For analyzing organic substances with Oxygen Analysis.

Description	Qty.	Part No.
Silver Capsules	96	<b>N2411364</b>

### Tubes

PerkinElmer tubes are composed of pure fused quartz which is 99% SiO<sub>2</sub>. Fused quartz has been chosen because of its very high purity and low thermal expansion rate. Because we care about your safety, all combustion tubes are pressure tested to eliminate any tubes which might contain weak spots. In addition, stringent specifications are used to ensure that the combustion tubes fit in an airtight connection when placed in the analyzer.

Type	Material	Analyzer	Mode	Qty.	Part No.
Combustion	Quartz	2400	CHN	1	<b>N2411264</b>
Combustion	Quartz	2400	CHN	3	<b>N2410212</b>
Combustion/ Reduction	Quartz	2400	CHNS	1	<b>N2411514</b>
Combustion or Reduction	Stainless Steel	2410	Nitrogen	1	<b>N2421070</b>
Combustion	Quartz	2410	Nitrogen	1	<b>N2411487</b>
Reduction	Quartz	2400	Oxygen & Sulfur	1	<b>N2411300</b>
Reduction	Quartz	2400	CHN	1	<b>N2411291</b>
Scrubber	Pyrex®	2400/ 2410	Oxygen & Nitrogen	1	<b>N2411359</b>

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# Three **service plan options** are available to **meet your needs**

## Maximize instrument performance and uptime

From unplanned repair expenses to lost productivity, few events can be as disruptive as the failure of a key instrument. With a service and support plan from PerkinElmer, your lab will be protected from unplanned downtime and unexpected expense.

**Planning for future service needs as part of your new instrument budget proposal or purchase order will enable your laboratory to:**

- Fix the cost of ownership of mission critical or revenue generating instrumentation
- Ensure seamless continuation of support when the initial 12-month warranty expires
- Eliminate administration costs incurred by continually renewing contracts
- Avoid having to re-justify maintenance expense at a future date
- Make use of funds now that may not be available in the future

Call your local sales representative to learn more about the PerkinElmer service and support products that the most successful global corporations, research facilities and analytic laboratories use to enhance their performance.



## Depedable coverage to enhance your productivity and performance



PerkinElmer's range of multi-year service plans eliminates the risk of unbudgeted service expense and ensures instrumentation is maintained to the highest possible standard throughout its lifetime.

### Comprehensive

This plan is ideal for laboratories whose financial success depends on the consistent availability and high performance of their scientific instruments.

### Basic

This plan is ideal for medium to large laboratories that require predictable instrument performance.

### Repair

The Repair service plan is ideal for small to medium laboratories seeking to maximize limited maintenance budgets and maintain instrument performance.

## Three Options of Service Plan Packages

PerkinElmer Service Benefits	Comprehensive Maximum Uptime	Basic Managed Expense	Repair Dependable Protection
<b>Core Benefits</b>			
Priority On-Site Response	Within 48 hours		
Preventative Maintenance	2 Annual Visits	1 Annual Visit	
Training	15% off	5% off	
PerkinElmer Certified Parts	100% included	100% included	100% included
Expert Service Engineers	100% included	100% included	100% included
Travel to your Location	100% included	100% included	100% included
<b>Additional Features</b>			
Online Support Resources	100% included	100% included	100% included
Responsive Technical Support	100% included	100% included	100% included
Service History Tracking	100% included	100% included	100% included
Six Sigma & ISO Best Practices	100% included	100% included	100% included

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proven quality, reliability  
and results.



THE WORLD LEADER IN MATERIALS CHARACTERIZATION

## Demountable Cells and Windows – for Accuracy and Performance!

### SAVE on Cell Windows!

Order a Universal Cell Mount with two or more pairs of NaCl or KBr windows to receive a special price

See pages 26–27 for more information.



Sealed Cell



Demountable Cell

### SAVE on Low-e Microscope Slides!

The more packs you buy the more you save!

See page 41 for more information.



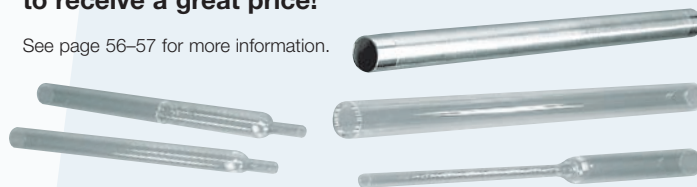
### SAVE on Elemental Analysis Reagents when you order in quantity

See page 56–57 for more information.

### SAVE on Elemental Analysis Tubes!

Purchase 4 or more tubes  
to receive a great price!

See page 56–57 for more information.



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