Materials Characterization

Consumables and Supplies

Genuine PerkinElmer Products — Genuine Value

VOLUME 1 2008

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

NEW INSTRUMENTS

LAMBDA Bio
LAMBDA Bio+
LAMBDA XLS
LAMBDA XLS+

NEW!

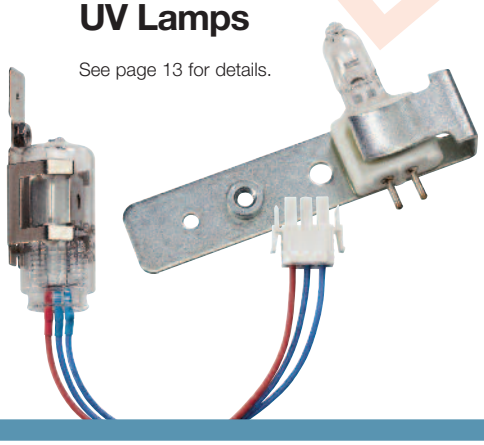
See pages 4–7.

DSC Sample Pans and Covers

See pages 47–48 for details.

UV Lamps

See page 13 for details.



UV Cells

See pages 15–16 for details.

Infrared Disposable Desiccant Kits

See page 27 for details.

PerkinElmer®
For the Better

PerkinElmer
For the Better

Table of Contents

Instruments - Available to Purchase Online

LAMBDA and Spectrum RX 4–11

UV Visible

LAMBDA UV Spectrometers 12
Lamps and Reference Materials 13
Cells, Cell Holders and Cell Changers 14–18
Thermostatted Accessories 19
Specular Reflectance 20
Integrating Spheres 21
Polarizers/Depolarizers 22
Polarimetry Supplies 23
UV/VIS WinLab Software 56

Infrared Spectroscopy

Spectrum and Spotlight Systems 24–26
Desiccant Kits, Laser Kits and Reference Materials . . . 27
Liquid Cells and Windows 28–29
Sampling Accessories 30–31
Reflectance Accessories 32-33
Microsampling and Imaging Accessories 34
Educational Packages and Sampling Kits 35

Raman Spectroscopy

RamanStation 400 and RamanMicro 200 36–37
Probes and Holders 38–39

Fluorescence

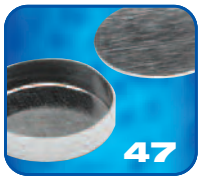
Cells 40–41
Lamps and Reference Materials 42
Cell Holders and Accessories 43–45

Thermal and Elemental Analysis

Thermal Analysis Solutions 46
DSC Sample Pans and Consumables 47–49
TGA and DMA Supplies and Accessories 50–51
Elemental Consumables 52–53
PYRIS Software 57

EcoAnalytix

EcoAnalytix 58–59



DRAFT

LAMBDA Bio and Bio+ Systems Available

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

- **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 δA/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.

To purchase LAMBDA Bio and Bio+ online, please visit:
www.perkinelmer.com/lambdabio
See page 2 for online ordering territories.
Call your local sales representative in territories without online ordering.

Speed, stability and confidence!

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

NEW! Ordering Information

Part Number	System
L7110184	**LAMBDA Bio**
L7110185	**LAMBDA Bio** with Printer
L7110186	**LAMBDA Bio+**
L7110187	**LAMBDA Bio+** with Printer
L7110188	**LAMBDA Bio+** with SD Card

Options and Consumables

Part Number	Description
L7110230	Printer module
L7110231	Print utility and cable*
L7110232	Spare printer paper (20 rolls)
L7110233	Bluetooth accessory

** Included as standard with the LAMBDA Bio+*

Speed, stability and confidence!
www.perkinelmer.com/lambdabio

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

NEW!

- **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.

To purchase LAMBDA XLS and XLS+ online, please visit:
www.perkinelmer.com/lambdaxls
See page 2 for online ordering territories.
Call your local sales representative in territories without online ordering.

DRAFT

Speed, stability and confidence!

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

NEW! Ordering Information

Part Number	System
L7110189	**LAMBDA XLS**
L7110190	**LAMBDA XLS** with Printer
L7110191	**LAMBDA XLS** with SD Card
L7110192	**LAMBDA XLS+**
L7110193	**LAMBDA XLS+** with Printer
L7110194	**LAMBDA XLS+** with SD Card

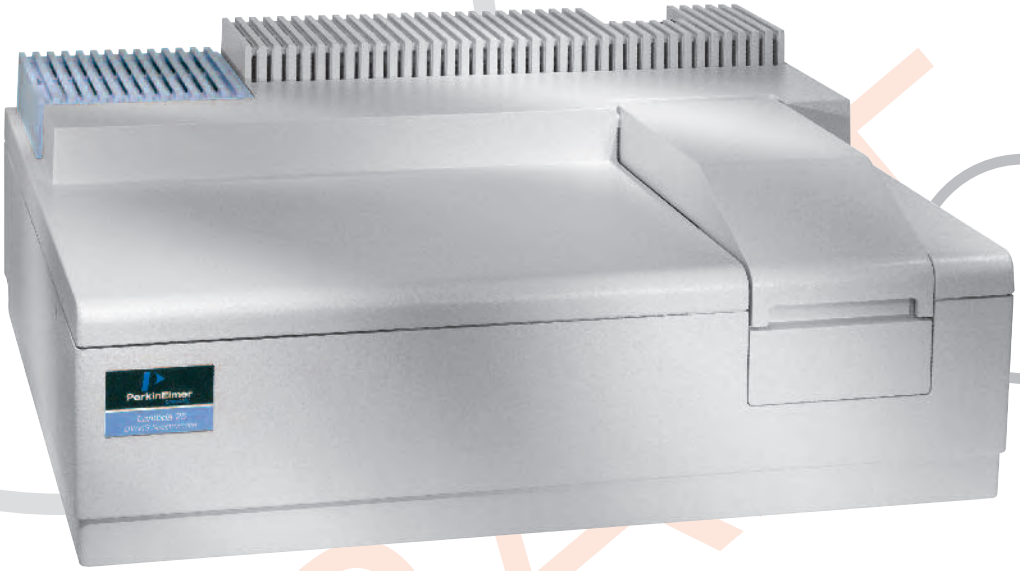
Options and Consumables

Part Number	Description
L7110230	Printer module
L7110231	Print utility and cable
L7110232	Spare printer paper (20 rolls)
L7110233	Bluetooth accessory

Speed, stability and confidence!
www.perkinelmer.com/lambdaxls

DRAFT

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.

*Monitor not included.

To purchase LAMBDA 25 and 35 Application Systems online, please visit:
www.perkinelmer.com/lambdasystems

Complete Application Systems for YOUR analysis

System	Also includes	Part. No.
LAMBDA 25 Teaching and Biosciences System	Water-thermostatted cell holder UV WinLab v2.85 software including kinetics module Suite of 50 biochemical methods including nucleic acid and protein assays, enzyme activity and base sequence and composition	**L60000GG**
LAMBDA 25 Multi-cell Kinetics System	Water-thermostatted and software-controlled 8+1 cell changer UV WinLab v2.85 software including kinetics module Suite of 50 biochemical methods including nucleic acid and protein assays, enzyme activity and base sequence and composition	**L60000HH**
LAMBDA 25 Industrial QA System	Pair of 10 mm quartz cells UV WinLab v6 software including performance validation, spectral calculation module and database operation for secure data storage and fast retrieval	**L6020075**
LAMBDA 25 Pharmaceutical QA System	Pair of 10 mm quartz cells UV WinLab v6 ES (enhanced security) software performance validation, spectral calculation module and database operation for secure data storage and fast retrieval Full 21 CFR Part 11 compliance including multi-level user permissions rigorous access control and e-signatures	**L6020074**
LAMBDA 25 Environmental Analysis System	Test-tube holder for in-situ measurement in tubes between 11 and 17 mm diameter Rectangular long-path cell holder UV WinLab v6 software including performance validation, spectral calculation module and database operation for secure data storage and fast retrieval	**L6020276**
LAMBDA 25 Sipper System	Liquid Sipper including integral peristaltic pump and 10 mm flow cell (160 µL volume) UV WinLab v6 software including performance validation, spectral calculation module and database operation for secure data storage and fast retrieval	**L6020078**
LAMBDA 35 Routine Reflectometry System	50 mm integrating sphere for scattered transmission and diffuse reflectance measurements of solids, liquids, powders and pastes UV WinLab v6 software including performance validation, spectral calculation module and database operation for secure data storage and fast retrieval	**L6020077**

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. Examples of items included in the starter-packs are:

- Replacement deuterium and tungsten lamps to ensure maximum instrument uptime
- Micro and ultra-micro cells for easy and reproducible analysis of very small volumes
- Reference material sets to provide complete validation of the system performance of your LAMBDA 25 or 35, including compliance with pharmacopoeia protocols
- Sampling accessories that extend your analysis to multi-cell work, or studies that require precise temperature control

Easy to Operate–Faster Results!
www.perkinelmer.com/lambdasystems

Spectrum RX1 FT-IR Systems
available for purchase **online**

Rugged, Integrated FT-IR System for Dependable Results

The Spectrum RX1 is an affordable, rugged FT-IR system for all routine applications, especially in academic and QA/QC environments. Based on a design that has been proven in more than 15,000 labs worldwide, the RX1 offers fast operation, accurate results and the ultimate reliability.

The Spectrum RX is a fully-integrated system with a built-in dedicated processor, color display and comprehensive software. However, for extra flexibility, the RX1 can be controlled from a PC running PerkinElmer's Spectrum™ software.

- **Range:** 7,800 – 350 cm^{-1}
- **Resolution:** Better than 0.8 cm^{-1}
- **Patented** self-compensating Dynascan™ interferometer
- **Sealed and desiccated** Germanium-coated KBr optics
- **Integrated local control**, including spill-resistant QWERTY keypad
- **Weight:** 54 kg, 118 lbs
- **Dimensions:** 770 x 1,100 x 540 mm (H x L x D)

To purchase Spectrum RX Systems online, please visit:
www.perkinelmer.com/spectrumRXsystems

Robust and Reliable

- Vibration-isolated optical bench protects the optics from external disturbance
- Spill-resistant QWERTY keypad with single-keystroke operation allows easier data-handling and cuts training time
- Sealed and desiccated optics protect moisture-sensitive components and remove the effects of change of atmospheric absorptions from spectra

Simple, Fully-integrated Operation

- All data and spectra are displayed in color using a custom palette
- Multi-tasking software allows scanning, plotting and data manipulation at the same time, increasing productivity
- Interactive commands allow spectra to be corrected, subtracted and baseline-adjusted easily
- Simple quantitative capabilities such as peak height and peak area are included as standard

Spectrum RX systems are available for purchase online, along with a range of essential accessories and consumables that are needed to get you started or expand your applications capabilities.

Versatile sampling options for solids, liquids and gases

COMPARE: The Industry Standard Method for Materials Checking

The Spectrum RX1 includes as standard, the patented COMPARE algorithm, the industry-standard method for materials checking in quality assurance testing. COMPARE recognizes and accentuates the smallest spectral differences between a sample and a library of reference spectra. Unique filters remove anomalies such as baseline variations or atmospheric absorptions to focus only on information that is relevant or unique to the sample.

A spectrum can be compared against another to determine how closely they match, or against a number of spectra to identify the most similar spectra. Spectral libraries can be user generated and acceptance criteria can be set to allow simple pass/fail decisions.

HATR Accessory

Complete Spectrum RX1 Systems for YOUR Analysis

NEW!

Spectrum RX1 System

	Part. No.
	L1185247

Spectrum RX1 PC-Ready System

For extra data processing flexibility can be controlled with PerkinElmer's Spectrum Software. Requires, but does not include, a PC.

	Part. No.
	LX185256

Increase Sampling Options

With each system a range of consumables and accessories starter-packs is available to increase your sampling options and maintain high-levels of system performance. Examples of items included in the starter-packs are:

- Liquid Sampling and KBr Disk starter-packs
- Gas Sampling starter-pack
- General Purpose FT-IR Sampling Kit for solids, liquids and microsamples
- ATR and Diffuse Reflectance accessories

To purchase Spectrum RX1 Application Systems online, please visit:
www.perkinelmer.com/spectrumRXsystems

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 NEW LAMBDA 1050

The innovative new 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

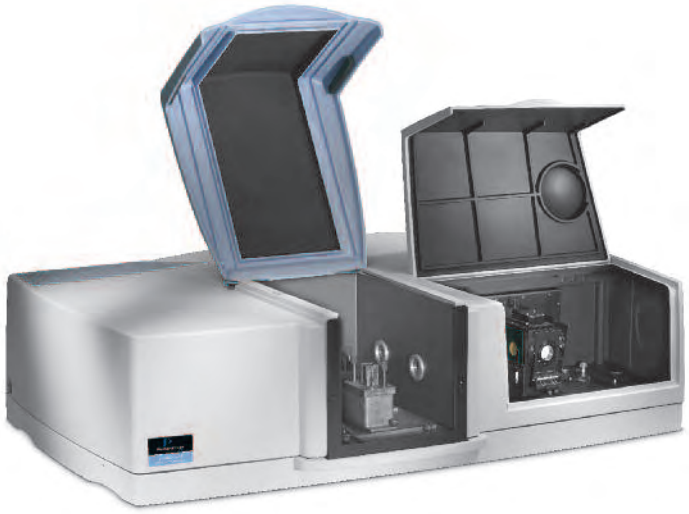
- An innovative 3-detector transmission module featuring photomultiplier, Indium Gallium Arsenide (InGaAs) and lead sulphide (PbS) detectors for ultra high-performance across the whole operating range
- High-performance 150 mm, 60 mm integrating spheres with PMT and InGaAs detectors, for higher performance 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
LAMBDA 1050	
Ultra High-performance UV/Vis/NIR	175 – 3,300 nm (3-detector)
Target Applications: Optics, Optical Coatings, Electronics, Displays, Glass and Filters	
LAMBDA 950	
High-performance UV/Vis/NIR	175 – 3,300 nm (2-detector)
Target Applications: Optics, Optical Coatings, Electronics, Displays, Glass, Academia, Non-optical Coatings and Materials Science	
LAMBDA 850	
High-performance UV/Vis	175 – 900 nm
Target Applications: Non-optical Coatings, Color, Pharmaceuticals and Materials Science	
LAMBDA 750	
UV/Vis/NIR	190 – 3,300 nm
Target Applications: Academia, Chemistry, Routine Materials Science Applications, Color, Paints, Coatings and Polymers	
LAMBDA 650	
UV/Vis	190 – 900 nm
Target Applications: Academia, Chemistry, Routine Materials Science Applications, Pharmaceuticals, Biosciences, Color and Textiles	

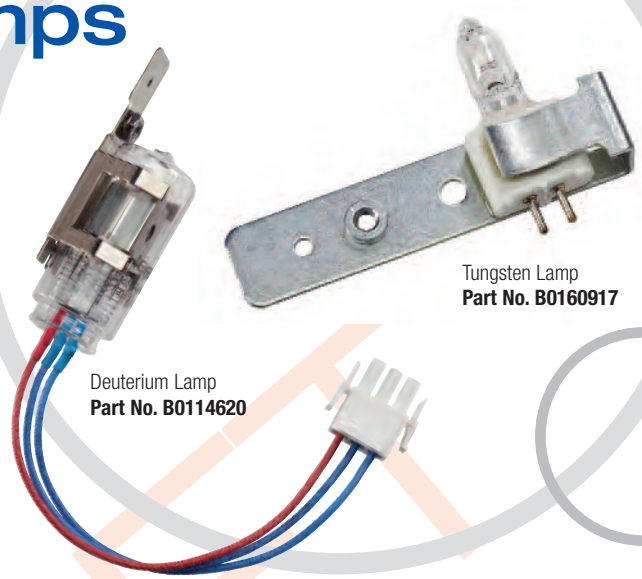


The LAMDBA Series features unique dual sample compartments for maximum flexibility.

NEW LOWER PRICES!

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.



Tungsten Lamp
Part No. B0160917

Deuterium Lamp
Part No. B0114620

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	**C0550505**
For LAMBDA 1X/2X/3X/4X/5X/5XX/Bio/6XX/8XX/9XX	**B0160917**
For LAMBDA 4/6	**C6880055**

Tungsten Lamps

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

**Prefocused and prealigned.*

For a full listing of Color Standards and Reflectance Reference Materials, please visit:
www.perkinelmer.com/uvsupplies

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

PerkinElmer Spectroscopy Cells are available in a wide variety of sizes and types.

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.

Application

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.
NIR Quartz SUPRASIL® 300				
1 mm*	45 x 12.5 x 3.5	350 µL	2	**B0631013**
5 mm	45 x 12.5 x 7.5	1.75 mL	2	**B0631014**
10 mm	45 x 12.5 x 12.5	3.5 mL	2	**B0631015**
20 mm	45 x 12.5 x 22.5	7.0 mL	2	**B0631016**
50 mm	45 x 12.5 x 52.5	17.5 mL	1	**B0631017**
100 mm	45 x 12.5 x 102.5	35.0 mL	1	**B0631018**
Optical Glass 360-2,500 nm without lid				
10 mm	45 x 12.5 x 12.5	3.5 mL	4	**B0631134**
Quartz SUPRASIL				
1 mm*	45 x 12.5 x 3.5	350 µL	2	**B0631007**
5 mm	45 x 12.5 x 7.5	1.75 mL	2	**B0631008**
10 mm	45 x 12.5 x 12.5	3.5 mL	2	**B0631009**
20 mm	45 x 12.5 x 22.5	7.0 mL	2	**B0631010**
50 mm	45 x 12.5 x 52.5	17.5 mL	1	**B0631011**
100 mm	45 x 12.5 x 102.5	35.0 mL	1	**B0631012**
Special Optical Glass				
1 mm*	45 x 12.5 x 3.5	350 µL	2	**B0631001**
5 mm	45 x 12.5 x 7.5	1.75 mL	2	**B0631002**
10 mm	45 x 12.5 x 12.5	3.5 mL	2	**B0631003**
20 mm	45 x 12.5 x 22.5	7.0 mL	2	**B0631004**
50 mm	45 x 12.5 x 52.5	17.5 mL	1	**B0631005**
100 mm	45 x 12.5 x 102.5	35.0 mL	1	**B0631006**

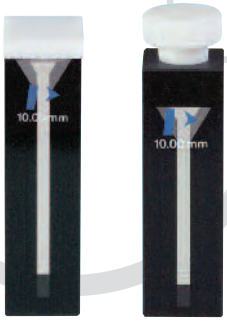
**Glass lid.*

Macro with PTFE Stopper

Lightpath	Outside Dim. H x W x D mm	Cell Volume	Qty.	Part No.
NIR Quartz SUPRASIL 300				
1 mm	52 x 12.5 x 3.5	350 µL	2	**B0631031**
5 mm	46 x 12.5 x 7.5	1.75 mL	2	**B0631032**
10 mm	46 x 12.5 x 12.5	3.5 mL	2	**B0631033**
20 mm	46 x 12.5 x 22.5	7.0 mL	2	**B0631034**
50 mm	46 x 12.5 x 52.5	17.5 mL	1	**B0631035**
100 mm	46 x 12.5 x 102.5	35.0 mL	1	**B0631036**
Quartz SUPRASIL				
1 mm	52 x 12.5 x 3.5	350 µL	2	**B0631025**
5 mm	46 x 12.5 x 7.5	1.75 mL	2	**B0631026**
10 mm	46 x 12.5 x 12.5	3.5 mL	2	**B0631027**
20 mm	46 x 12.5 x 22.5	7.0 mL	2	**B0631028**
50 mm	46 x 12.5 x 52.5	17.5 mL	1	**B0631029**
100 mm	46 x 12.5 x 102.5	35.0 mL	1	**B0631030**
Special Optical Glass				
1 mm	48 x 12.5 x 3.5	350 µL	2	**B0631019**
5 mm	46 x 12.5 x 7.5	1.75 mL	2	**B0631020**
10 mm	46 x 12.5 x 12.5	3.5 mL	2	**B0631021**
50 mm	46 x 12.5 x 52.5	17.5 mL	1	**B0631023**

For a full listing of Spectroscopy Cells, Lids, Stoppers and Tubing, please visit:
www.perkinelmer.com/uvsupplies

DRAFT



Micro, Semi-micro and Ultra-micro **cells** for **sensitive, accurate spectroscopy**

Quartz SUPRASIL
Micro with PTFE Lid or Stopper

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.

Micro with PTFE Lid

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

Micro with PTFE Stopper

NIR Quartz SUPRASIL 300			
40 x 12.5 x 12.5 mm	1.5 mm	400 µL	**B0631078**
Quartz SUPRASIL			
40 x 12.5 x 12.5 mm	1.5 mm	400 µL	**B0631077**
Special Optical Glass			
40 x 12.5 x 12.5 mm	1.5 mm	400 µL	**B0631076**

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.

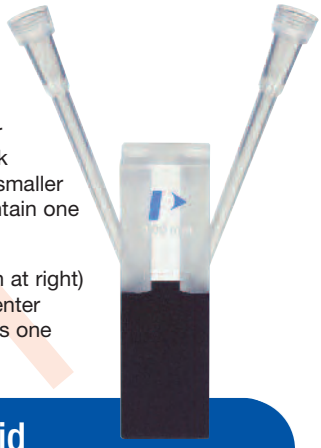
Semi-micro with PTFE Lid – Black

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

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 Vol.	Filling Vol.	Part No.
Quartz SUPRASIL					
45 x 12.5 x 12.5	10 mm	2 x 1.5 mm	30 µL	50 µL	**B0631079**

Ultra-micro with Pipette Tips

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

Versatile cell holders
to maximize sampling flexibility

Cylindrical Long-path Cell Holder

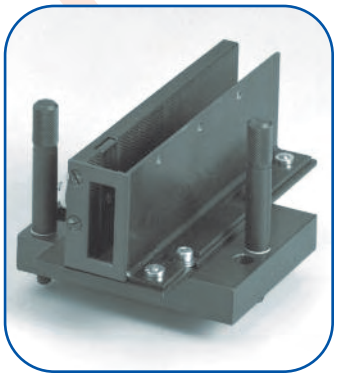
Solid Sample Holder

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-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.

Standard Cell Holder



Rectangular Long-path Cell Holder

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.

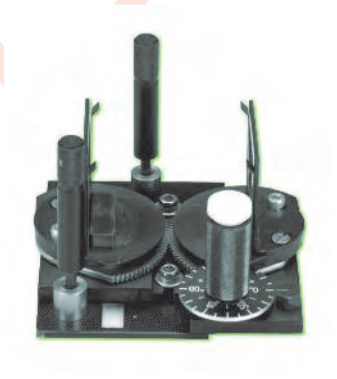
	Part No.
	B0500952

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

Test Tube Holder



Variable Angle Sample Holder

For a full listing of Spectroscopy Cells, Lids, Stoppers and Tubing, please visit:
www.perkinelmer.com/uvsupplies

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	B0080821

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

Cell changers for higher productivity

8+1 Cell Changer

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

8+1 Cell Changer for LAMBDA 1X/2X/3X/4X/Bio

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

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

8+8 Cell Changer for LAMBDA 1X/2X/3X/4X/Bio

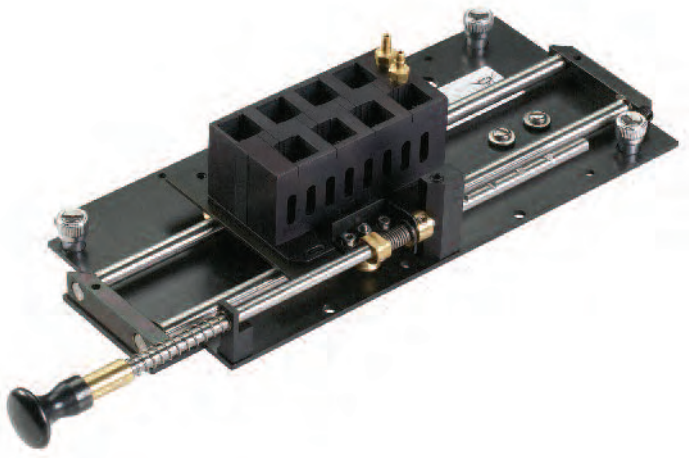
Automatic Water-thermostattable Linear Cell Changer for eight samples and eight references.

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

5+5 Cell Changer for LAMBDA 1X/2X/3X/4X/Bio

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

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



Manual Cell Changer with Water-thermostatted 8-Cell Holder

Manual Cell Changer for LAMBDA 1X/2X/3X/4X/Bio

Base unit to be used with cell holder of choice.

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

13-Cell Changer System

For LAMBDA 1X/2X/3X/4X/Bio

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.
B0185210

Thermostatting options for **fast, efficient temperature-control**

PTP-A Single-cell Air-cooled Peltier Accessory

NEW!

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.

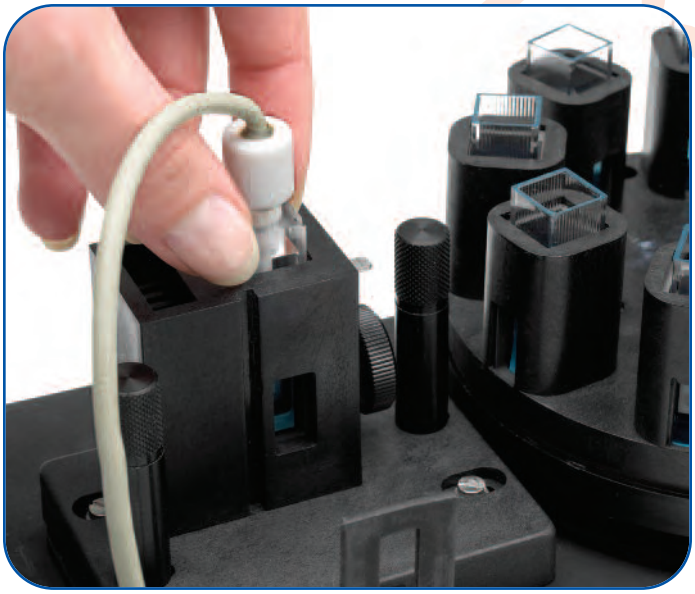
The PTP-A is ideal for protein and nucleic assays to 37 °C and for many studies of kinetics, thermodynamics and acid-base equilibria.

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.
1X/2X/3X/4X/Bio	**B0185227**

NEW!

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.

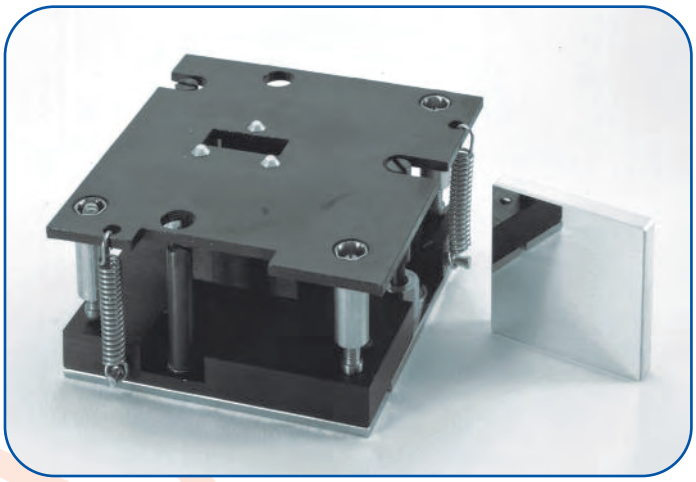
Features and Benefits

- 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**

**Not available for the LAMBDA 750*

Relative Specular Reflectance Accessories



Relative Specular Reflectance Accessory, 6°

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

DRAFT

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.

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

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**

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.*

Polarizers and Depolarizers for precise transmission and reflectance measurements

Double Polarizer Drive

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**

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

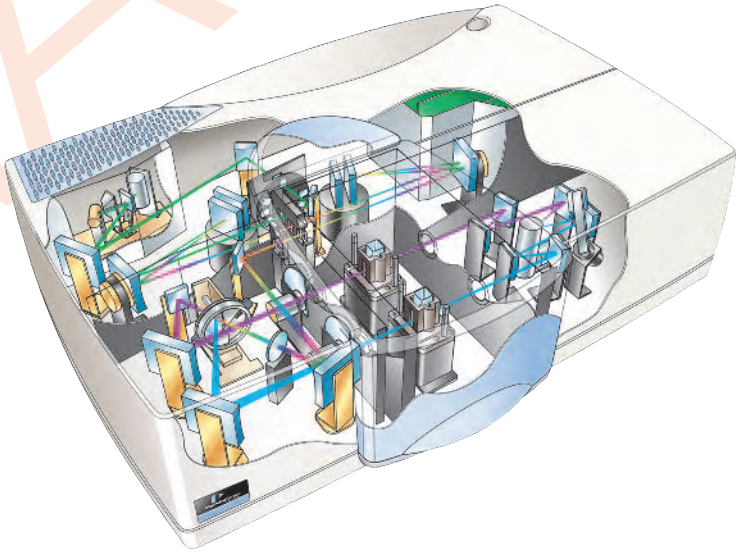
When samples are oriented and polarize incident light, it is important to correct for the inherent polarizing effect of the spectrometer's optics by using a depolarizer. Another important application is to make measurements using a specific orientation of incident radiation e.g. for crystalline materials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

DRAFT

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*plus*/341LC/ 241/241MC/243/243B	**B0008754**
Mercury Vapor (St46)	341/343S/343*plus*/341LC	**B0510581**

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 thermostattable housing.

Description	Nominal Rotation	Part No.
Quartz Control Plate +1	+1° at 589 nm	**B0098800**
Quartz Control Plate -1	-1° at 589 nm	**B0098799**

For a full listing of Polarimetry Cells, including Short-path, Beaker and Flow Cells, please visit:
www.perkinelmer.com/posupplies

PerkinElmer® Exclusive

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 thermostatting 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	**B0507403**
Quartz	100 mm	6.2 mL	**B0041696**
Optical Glass	100 mm	3.0 mL	**B0507447**
Optical Glass	100 mm	6.2 mL	**B0041693**

Micro Cells

Description	Lightpath	Cell Volume	Part No.
Optical Glass	100 mm	1.0 mL	**B0017047**

No matter what you measure, there is only one answer.

The new Spectrum 400 is the first and only fully automated, single platform, research-grade instrument for optimized FT-IR and FT-NIR spectroscopy.

PerkinElmer has developed a fully optimized FT-IR and NIR system in a single instrument, with no compromise in performance compared with dedicated-range systems. This system incorporates sophisticated automated range switchover and fully exploits the best in both mid-IR and near-IR QA/QC sampling and imaging developments.

In ONE System:

All the advantages of Mid-IR spectroscopy...

- Identify highly specific information about molecular structure
- Utilize well-established applications and measurement protocols across all industries
- Benefit from information-rich spectra that reveal small chemical and physical differences
- Increase productivity with faster interpretation of results that can be easily analyzed against a large number of commercial reference libraries

AND, all the advantages of Near-IR spectroscopy...

- Analyze samples directly and non-destructively, measuring through various sampling containers
- Quickly and consistently reproduce quantitative analysis of upstream ingredients and finished products
- Use robust methods for product development and manufacturing environments
- Take advantage of Process Analytical Technology (PAT) in pharmaceutical manufacturing

Find out more about the Spectrum 400 and Spotlight 400 by visiting:
www.perkinelmer.com/spectrum400
& www.perkinelmer.com/spotlight400

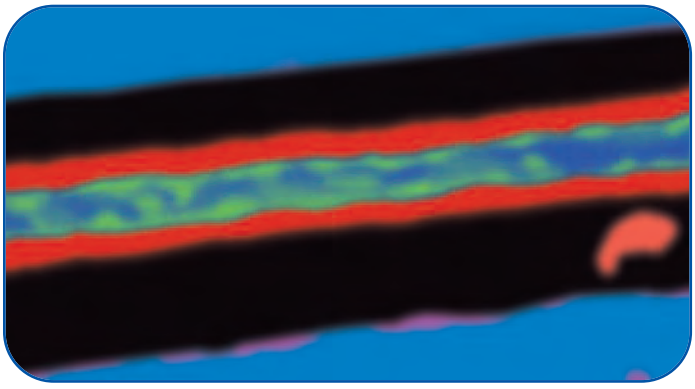
Spectrometer

EXTEND YOUR ANALYTICAL CAPABILITIES

The Spectrum 400 is an ideal platform to extend your analytical capabilities with one of PerkinElmer's range of Mid-IR or Near-IR microscopy or imaging systems.

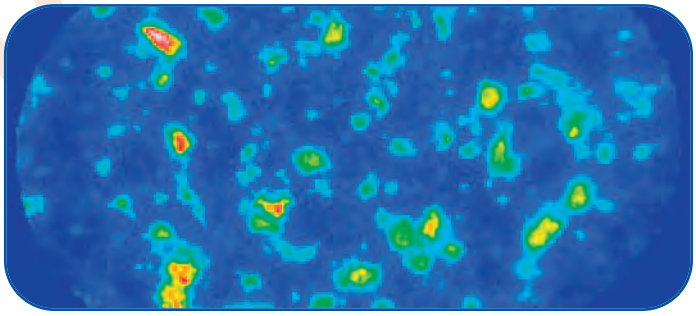
Our microscopes and imaging systems share these tremendous features:

- Easy to learn and simple to use for even the most advanced measurements, allowing you to obtain high-quality results as productively as possible
- Designed with optics that are optimized for all FT-IR applications, providing extraordinary sensitivity for even the most difficult samples
- Engineered with permanently aligned optics, ensuring the system is always working at maximum performance and no time is wasted on adjustments between samples
- Features spatial resolution down to 3 μm, transmission and reflectance modes of operation and options for micro-ATR sampling, allowing you to handle a wide variety of samples



ATR image of a Polymer Laminate. With a spatial resolution of down to 3 µm, Spotlight is a powerful tool for investigating materials and manufacturing processes.

The Spotlight 400 Family – High-speed, Flexible Mid-IR and Near-IR Imaging



Near-IR image showing the distribution of ingredients in a pharmaceutical tablet. Spotlight is an excellent tool for the study of active and excipient distribution in powder blends and solid dosage forms.

The Spotlight 400 and 400N imaging systems are the ultimate in infrared and near-infrared imaging, with the ability to collect 170 high-quality spectra per second. Analyses that previously took days can now take hours or even minutes.

Coupled with flexible pixel sizes, variable sampling area and full automation, Spotlight also features an Attenuated Total Reflectance (ATR) accessory, increasing the spatial resolution of the system to 3 µm for identification of even the smallest components. For the ultimate in productivity, multiple image areas can be measured in a single unattended operation.

This unique combination of high productivity and incredible analytical power provides a more superior understanding of products and materials than ever before.

Call your local PerkinElmer specialist to find out how you can increase your productivity and problem solving power.

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

For over 60 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

NEW!

The Spectrum 400 is an all-new, dual (Mid-IR/Near-IR) 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 24 for full details.

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

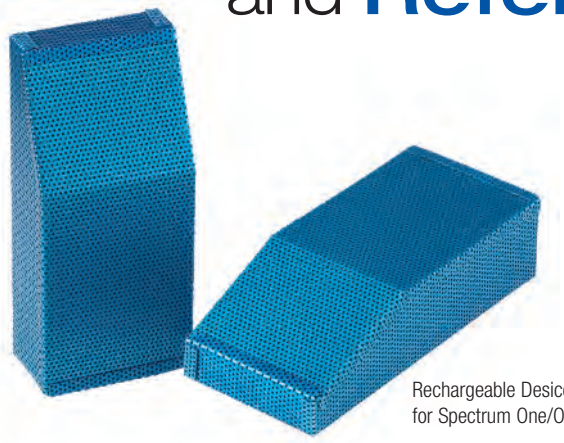
The Spotlight 400 Imaging System is the ultimate in IR imaging, allowing rapid collection of data from virtually any material. It's combination of high-sensitivity and speed extends IR imaging to many new applications, and provides valuable information about structure and molecular composition.

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 μ pixel size

DRAFT

Desiccant and Laser Kits, Sources and Reference Materials



Rechargeable Desiccant Kit for Spectrum One/One NTS

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 100/100N/400 Includes: four (4) Desiccant Packs, two to be used in the instrument and two spares for recharging.	**L1250311**
For Spectrum One/One NTS Includes: four (4) Desiccant Packs, two to be used in the instrument and two spares for recharging.	**L1200219**
For Spectrum 1000/BX/RX, Model 1600, Paragon 500/1000 Includes: one (1) Desiccant Pack. One pack required for each desiccant change.	**L1180480**

Replacement Laser Head Kit and Sources

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

Polystyrene Test Film

These thin polystyrene films, sealed in cardboard mounts, serve as easy-to-use standards which are stable with time. Use them to check frequency accuracy and to monitor any changes in the overall performance of the spectrometer.

Description (Thickness)	Part No.
0.038 mm	**L1202057**

For a full listing of Desiccant Kits for all PerkinElmer FT-IR Spectrometers, please visit:
www.perkinelmer.com/irsupplies

Disposable Desiccant Kit

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 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	**N0171159**

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_2) is extremely hard and stable. CaF_2 is not significantly affected by moisture and does not fog. While resistant to most acids and bases, CaF_2 should not be used with ammonium salts.

Barium Fluoride (BaF_2) is a relatively hard material, similar to CaF_2. Though less resistant to water than CaF_2, BaF_2 has a wider spectral range. The useful temperature range extends to 500 °C. Also, BaF_2 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 µm	Transmission Range cm^{-1}	Refractive Index at 1,000 cm^{-1}	Solubility G/ 100 G H_2O 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_2	0.20 - 4	50,000 - 2,500	1.42 (at 3,333 cm^{-1})	Insoluble
Calcium Fluoride, CaF_2	0.20 - 9	50,000 - 1,100	1.39 (at 2,000 cm^{-1})	1.51×10^{-3}
Barium Fluoride, BaF_2	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	$< 4.76 \times 10^{-2}$
Silver Bromide, AgBr	0.50 - 35	20,000 - 285	2.00	12×10^{-6}
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 cm^{-1})	Insoluble

DRY

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 please refer to the PerkinElmer Consumables and Accessories catalog.

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 please refer to the PerkinElmer Consumables and Accessories catalog.

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 please refer to the PerkinElmer Consumables and Accessories catalog.

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**

DRAFT

KBr Press, Mini Press and Quick Press

Manual Hydraulic Press

Evacuable Potassium Bromide Die

Hydraulic Press and Evacuable 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 evacuable 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

Evacuable Potassium Bromide Die

The Evacuable 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 Evacuable 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

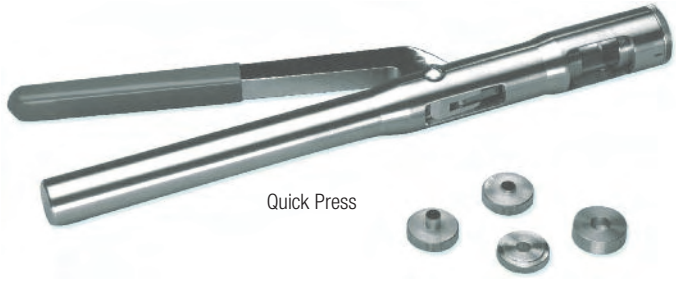
Evacuable KBr Mini-press

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.
Evacuable KBr Mini-Press	**51002592**
Holder for Evacuable 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.*

DRAFT

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**

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**

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**

For a full listing of Fiber Probes for liquid sampling, please visit:
www.perkinelmer.com/irsupplies

DRAFT

UATR Accessory

Sampling options for all your sampling needs

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**

Universal Attenuated Total Reflectance (UATR) Accessories

For the Spectrum 400/100/One 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
- **Automatic optimization** – the optics are automatically optimized for the different top-plate options
- **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.
Diamond/ZnSe UATR	
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**
Diamond/KRS-5 UATR	
With 1 Reflection Top-plate and Pressure Arm	**L1250053**
Ge/Ge UATR	
With 1 Reflection Top-plate and Pressure Arm	**L1250054**

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

Miracle ATR

Miracle ATR Accessories

A single reflection HATR 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.
Miracle Single Reflection ATR	
Diamond for Spectrum RX/BX	**L1272239**
ZNSE for Spectrum RX/BX	**L1272107**
ZNSE for Spectrum 400/100/One	**L1272126**
GE for Spectrum 400/100/One	**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.
For Spectrum 400/100/One	
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**

For a full listing of Diffuse Reflectance Accessories and Top-plates, please visit:
www.perkinelmer.com/irsupplies

DRAFT

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 µm 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	**L1860317**
ATR Imaging Sample Supports	10	**L1860318**

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 cm^{-1}. A spare Germanium crystal and holder is provided. An optional Silicone crystal is available with working range 7,800 – 800 cm^{-1}.

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

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	**N1870151**
Includes:	**Part No.**
Dissecting Forceps	**N9302610**
Roller Knife	**N9302619**
Micro Specimen Tweezers	**N9302609**
Straight Micro Probe	**N9302605**
Aluminum Probe Handle	**N9302622**
Pin Vise	**N9302603**

Rotatable Cell Holder and Microscope Supplies

Description	Part No.
Rotatable Cell Holder*	**L1861790**
Rotatable Cell Holder Plate	**L1861789**
Holder for 13 mm Sampling Disks	**L1861634**
Holder for 13 mm Sampling Disks Includes gold mirror.	**L1860409**
Holder for Reflection/Transmission Measurements	**N1873124**
Base Microscope Slides Optical quality glass, 1 x 3 in., 1 mm thick for visible observations (box of 72).	**N9302600**

**Requires, but does not include, Rotatable Cell Holder Plate (L1861789).*

Compression Cell

This is a device for flattening soft materials and holding specimens flat and in optical contact with salt windows. The cell consists of an aluminum block machined to accept FT-IR windows, window retainers and a special wrench to apply pressure across the IR windows. The Compression Cell fits into the sample slide holder on the stage of the microscope or imaging system. 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	**N9302611**
Barium Fluoride	13 x 2 mm	**N9302612**
Sodium Chloride	13 x 2 mm	**N9302614**
Potassium Bromide	13 x 2 mm	**N9302615**

DRAFT

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 Educational Software Packages 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.

There are two packages available; one incorporating Spectrum software for the Spectrum RX and BX Spectrometers and one for the newly announced Spectrum 100 Express instrument including Spectrum Express software.

**Only available when purchased with an instrument.*

Spectrum Educational Software Package

Includes:

- IR-Tutor software CD and 10-user license
- Spectrum software CD, manual and 10-user license

	Part No.
Note: Only available with order of a Spectrum BX or RX instrument.	L1108548

Spectrum Express Educational Software Package

NEW!

Includes:

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

	Part No.
Note: Only available with order of a Spectrum 100 Express instrument.	L1108527

Also available when purchasing a Spectrum RX or BX Spectrometer 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

	Part No.
Note: Only available with order of a Spectrum BX or RX instrument.	L1270800

FT-IR Sampling Kit Supplies

Description	Size	Part No.
Nujol	100 mL	04960691
Flurolube	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

DRAFT

A new approach to a familiar technique

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.

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.

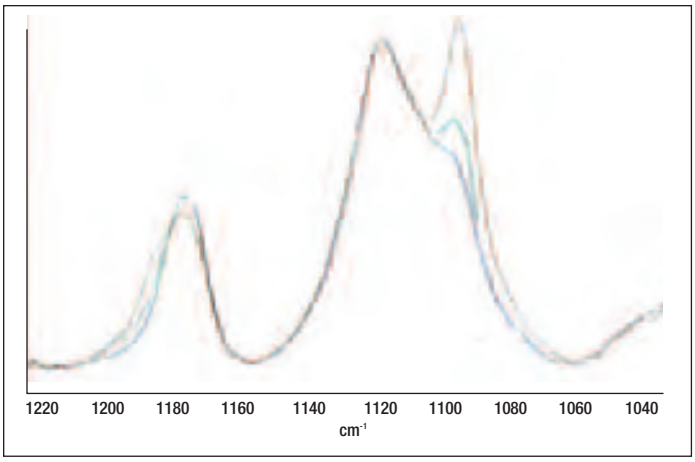
Raman can stand alone as an analytical technique or be used in conjunction with existing instrumentation to provide complementary information to that obtained from Mid-IR and Near-IR spectroscopy.

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

Features and Benefits

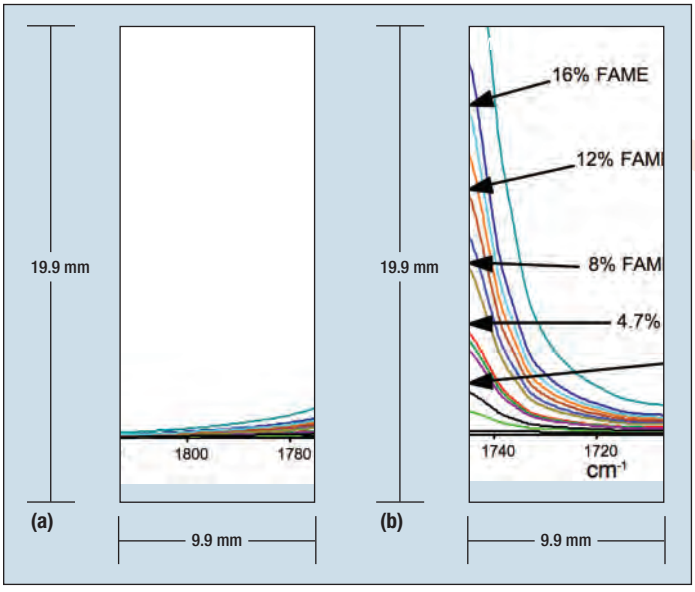
- **Little or no sample preparation** for most solid or liquid samples
- **Non-destructive technique**
- **No water interference** – simple, fast analysis of aqueous samples
- **Minimal glass interference** – allows in-container sampling
- **Extended spectral range**, down to 90 cm^{-1}

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 cm^{-1} reveal information about the degree of crystallinity in a sample, with highly crystalline samples displaying a large peak at 1,095 cm^{-1}. Amorphous PET simply shows a smaller shoulder on the peak at 1,120 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 µm 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.

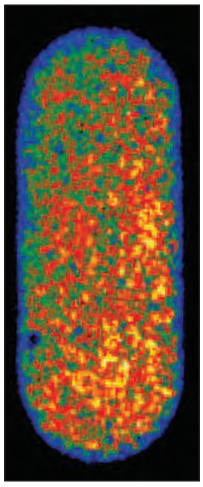
Find out more about PerkinElmer's exciting range of Raman products by visiting:
www.perkinelmer.com/raman

RamanMicro 200

Also Available:

- **RamanMicro 200** – Raman microscope system for imaging and single-point measurements
- **RamanFlex 400** – fiber-optic analyzer for reaction monitoring

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.

Accessories and consumables to meet all your Raman sampling requirements

Near Infrared Fiber-optic Probes

For the 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 three probes available to cover applications from routine sampling of solids and samples in bottles through to reaction monitoring at elevated temperature and pressure.

Features and Benefits

- Patented micro-optics for beam steering and background features (OD 8 at the excitation wavelength)
- Spectral range low end cut off 230 cm^{-1}
- 5 m of 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 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**
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 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 cm^{-1}.	**L1320012**
Purge Jacket for Raman Probe – Max Required to enable Max Probe operation at temperatures between 200° & 500 °C.	**L1320013**

Longer cable lengths available as specials, contact your local PerkinElmer representative.

For the complete range of Raman Accessories and Consumables, please visit: **www.perkinelmer.com/ramansupplies**

Tablet Holder and Powder Holder Kits for RamanMicro 200

The Tablet and Powder sampling accessories can be used with the RamanMicro 200 and the Spotlight 400 Series Imaging systems. 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. ***Includes:*** Powder Holder Baseplate, Powder Cup Loading Base and Tray, Powder Holder Cups (24), 10 cm Micro Spatula, Brush and Tweezers. *Compatible with Standard and Multiwell Motorized Stages*	**L1860336**
Tablet Holder Kit for Motorized Stage For automated analysis of tablets. ***Includes:*** 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. *Compatible with Standard and Multiwell Motorized Stages*	**L1860335**
Custom Tablet Molding Kit for use with Tablet Holder Kit For analysis of non-circular tablets. ***Includes:*** 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). *Compatible with Tablet Holder Kit*	**L1245025**

Replacement Parts for Tablet Holder and Powder Holder Kits

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

Raman Spectral Databases

Raman Spectral Databases are compatible with the RamanStation 400, RamanFlex 400 and RamanMicro 200. The complete collection of Raman Spectra can be purchased in one package or subsets aimed at particular application areas can be specified. Please visit web site for complete listing of Raman Databases.

Description	No. of Spectra	Part No.
Raman Database - complete	4,000	**L1108882**
Polymers and Polymer Additives	735	**L1108887**
Forensic	456	**L1108894**
Pharmaceuticals, Drugs and Antibiotics	352	**L1108899**
Hazardous and Toxic Chemicals	2,048	**L1108902**

Note: The databases are protected using a USB device (dongle). Every order for one or more databases must also include a dongle, part number L1108881.

Consumables for RamanStation 400 and RamanMicro 200

Description	Qty.	Part No.
Quartz Microscope Slides 25 x 75 x 1 mm	each	**L1323514**
Quartz Capillary Tubes, 1.8 mm o.d.	25	**L1323515**
Capillary Tube Sealant	10	**L1323516**
NIR Rectangular Cell with Lid, 10 mm Quartz SUPRASIL 300, Light Path: 10 mm	2	**B0631015**
NIR Rectangular Cell with PTFE Stopper, 10 mm Quartz SUPRASIL 300, Light Path: 10 mm	2	**B0631033**

Raman Calibration and Operational Qualification Kit

An option for use with RamanStation 400, RamanFlex 400 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**

High Quality, Precision Cells for Fluorescence

High quality Macro cells
for all applications

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.

For full details of the properties of Quartz SUPRASIL and Special Optical Glass see page 14.

Macro with PTFE Lid or with PTFE Stopper

Material	Qty.	Light Path	Outside Dim. H x W x D mm	Inside Width	Base Thickness	Cell Volume	Windows	Part No.
with PTFE Lid								
Special Optical Glass	2	10 x 10 mm	45 x 12.5 x 12.5	10 mm	1.25 mm	3.5 mL	4	**B0631104**
Quartz SUPRASIL®	2	10 x 10 mm	45 x 12.5 x 12.5	10 mm	1.25 mm	3.5 mL	4	**B0631107**
with PTFE Stopper								
Special Optical Glass	2	10 x 10 mm	46 x 12.5 x 12.5	10 mm	1.25 mm	3.5 mL	4	**B0631110**
Quartz SUPRASIL	2	10 x 10 mm	46 x 12.5 x 12.5	10 mm	1.25 mm	3.5 mL	4	**B0631113**

Semi-micro with PTFE Lid or PTFE Stopper

Semi-micro cells have the same outside dimensions 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.

Material	Qty.	Light Path	Outside Dim. H x W x D mm	Inside Width	Base Thickness	Cell Volume	Windows	Part No.
with PTFE Lid								
Special Optical Glass	2	10 x 4 mm	45 x 12.5 x 12.5	4 mm	1.25 mm	1.4 mL	4	**B0631115**
Quartz SUPRASIL	2	10 x 4 mm	45 x 12.5 x 12.5	4 mm	1.25 mm	1.4 mL	4	**B0631116**
with PTFE Stopper								
Special Optical Glass	2	10 x 4 mm	46 x 12.5 x 12.5	4 mm	1.25 mm	1.4 mL	4	**B0631117**
Quartz SUPRASIL	2	10 x 4 mm	46 x 12.5 x 12.5	4 mm	1.25 mm	1.4 mL	4	**B0631118**

Fluorescence Cells for Magnetic Stirrers

Material	Qty.	Light Path	Outside Dim. H x W x D mm	Inside Width	Base Thickness	Cell Volume	Windows	Part No.
Macro/Semi-micro								
Quartz SUPRASIL	1	4 x 4 mm	45 x 12.5 x 12.5	4 mm	4.5 mm	500 µL	4	**B0631132**
Magnetic Stirrer Fleas	6							**04978499**

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		**B0631123**
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	**B0631142**
Micro Cell Adapter	4								**L2250139**

**Requires Microcell Adapter (L2250139). Microcuvette Adapter allows 5 mm pathlength microcells to be used in a ny 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	**B0631124**

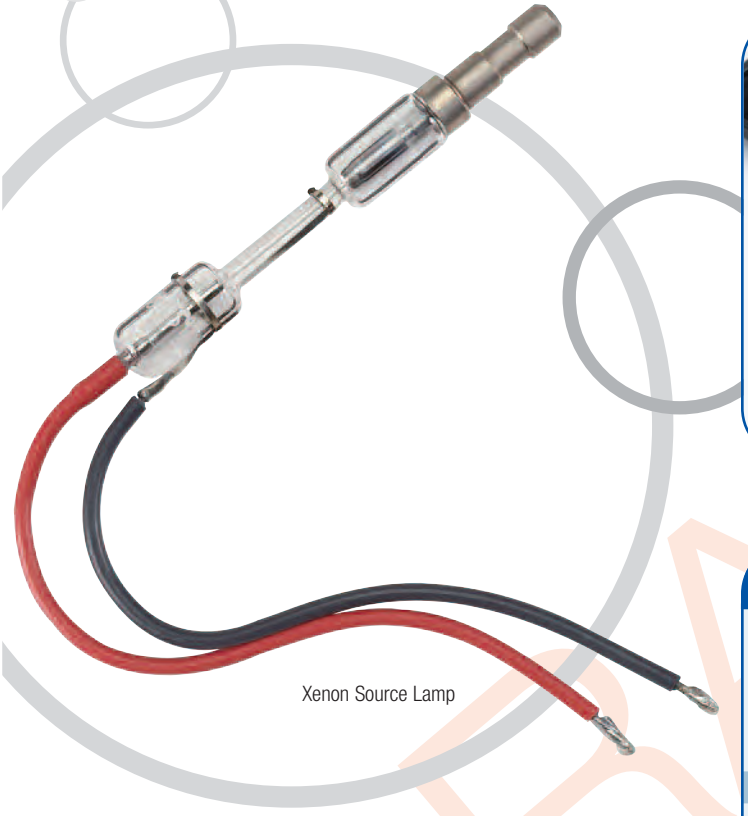
Flow-through Cells for Fluorescence Spectroscopy

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.
Macro Inlet/Outlet Tubes on Top								
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	**B0631126**
Semi-micro Inlet/Outlet Tubes on Top								
Quartz SUPRASIL	1	10 x 4 mm	15 mm	45 x 12.5 x 12.5	11 x 4 mm	450 µL	3	**B0631127**
Quartz SUPRASIL*	1	3 x 3 mm	15 mm	35 x 12.5 x 12.5	11 x 3 mm	100 µL	3	**B0631133**

**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

DRAFT

Simple, accurate temperature control for all applications

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. Thermostattable 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

NEW!

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.
For LS50/45/55	
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.

Autopole System

The Autopole System consists of a Julabo F25HD water bath, Julabo PT-100 in-cuvette sensor and Autopole software. It offers active control of temperature and real-time graphical presentation of data as intensity, polarization or anisotropy against time or temperature.

Description	Part No.
For LS50B/55	
110 V/60 Hz	**L2250151**
220 V/50 Hz	**L2250154**

Ideal for Polarization Studies, Protein Folding and DNA Melting.

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 thermostattable 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**

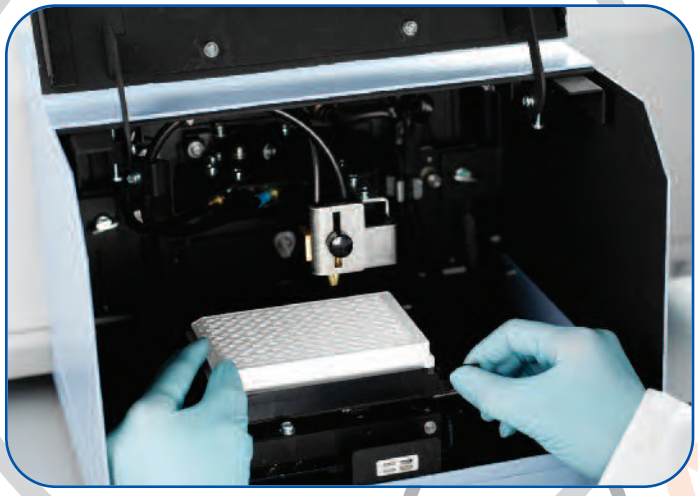
Requires, but does not include, 4 Adapters (L2250139) to work with micro cells. Includes 6 Stirrer Fleas.

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**

Installation by a PerkinElmer service engineer is required.
Includes one pack of white Microplates (L2251692).

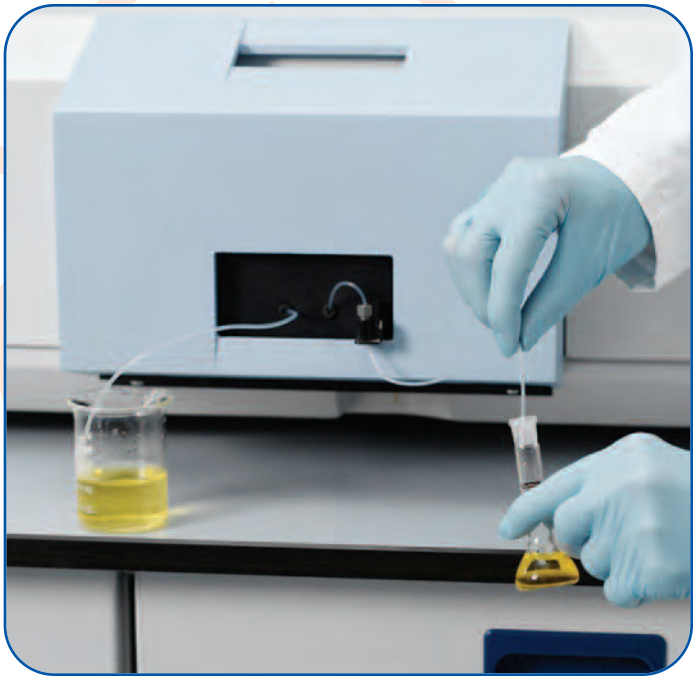
Ideal for DNA Quantitation, Enzyme-linked Assays, Protein Measurements, Fluorescent ELISAs, Cell Viability Testing and Drug and Steriod Testing.

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**

Includes Flowcell, Peristaltic Pump, 0.4 mm FEP Inlet Tube and 0.7 mm FEP Outlet Tube.
Requires installation by a PerkinElmer service engineer.



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**

Includes Flowcell, Peristaltic Pump, 0.4 mm FEP Inlet Tube and 0.7 mm FEP Outlet Tube.
Requires installation by a PerkinElmer service engineer.

High-sensitivity Alternative to a Dedicated LC Fluorescence Detector.

Sampling accessories for your application needs

Remote Fiber-optic Accessory

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

Front-surface 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.

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

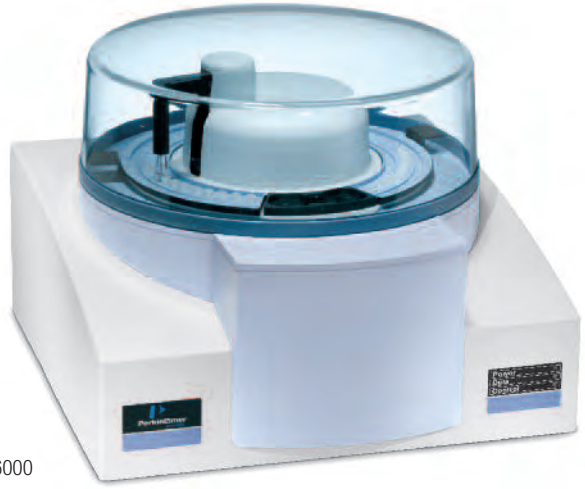
- Used for fluorescence and phosphorescence measurements
- Sample can be placed in the accessory directly or held in the synthetic fused silica window powder holder
- Ultra-small volumes or viscous samples can be sandwiched between the two windows
- Opaque and turbid samples can be measured in small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

	Part No.
	52123130

**Includes Powder Sample Holder (52123164).*

Thermal analysis solutions
for material property analysis

Diamond DSC



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.

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 polymer and pharmaceutical applications. PerkinElmer offers the best of both worlds – the Diamond DSC for highest resolution and sensitivity, and the Jade DSC for ease-of-use and robustness.

DMA 8000

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. The PerkinElmer Pyris 1 TGA instrument provides robustness and reliability for quality control and the answers researchers need to solve even the toughest problems.

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.

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.
Open/Crimped Pans						
◣ Standard Aluminum Pans and Covers	-170° to 600 °C	40	Ambient	400	02190048 or B0139005 with B0508921	**02190041**
◣ Aluminum Sample Pans	-170° to 600 °C	28	Ambient	200	N5356027 or N5356028	**N5356010**
◣ Aluminum Sample Pans	-170° to 600 °C	45	Ambient	400	N5356027 or N5356028	**N5356012**
◣ Aluminum Pans for Photocalorimetric Analysis	-170° to 600 °C	12.5	Ambient	100	Not Required	**B0196858**
Vented/Pierced Pans						
◣ Aluminum Covers (Pierced)	-170° to 600 °C		0.05 mm hole	400		**B7001014**
◣ Volatile Aluminum Pans and Covers (Pierced)	-170° to 600 °C	20	0.05 mm hole	100	02190061 or B0139005 with B0144637	**N5190788**
◣ Aluminum (Vented)	-170° to 600 °C	30	Vented	400	B0139005	**B0143018**
◣ Aluminum (Vented)	-170° to 600 °C	50	Vented	400	B0139005	**B0143019**
Hermetically Sealed/Volatile Pans						
◣ Aluminum Pans	-170° to 600 °C	10	1 bar	400	B0139005	**B0143015**
◣ Aluminum Pans	-170° to 600 °C	30	1 bar	400	B0139005	**B0143016**
◣ Aluminum Pans	-170° to 600 °C	50	1 bar	400	B0139005	**B0143017**
◣ Aluminum Pans and Covers	-170° to 600 °C	20	2 bar	400	02190061 or B0139005 with B0144637	**02190062**
◣ Aluminum Pans and Covers	-170° to 600 °C	10	3 bar	400	B0139005	**B0169319**
◣ Aluminum Pans and Covers	-170° to 600 °C	30	3 bar	400	B0139005	**B0169320**
◣ Aluminum Pans and Covers	-170° to 600 °C	50	3 bar	400	B0139005	**B0169321**
◣ Non-coated Aluminum Sample Pans and Covers	-170° to 500 °C	7.5	3 bar	200	N5356027 or N5356028	**N5356008**
Sample Pan Kits						
◣ Aluminum Pan and Cover Starter Kit			3 bar	200/200	B0139005	**B0510800**

◣ For use with Diamond DSC, Pyris 1 DSC, DSC 7, DSC 6, Pyris 6 DSC and Jade DSC ◣ For use with Sapphire DSC

High Pressure and Open Sample Pans

Stainless Steel Pans with O-rings

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 µL sample pans.

	Part No.
	B0139005

Requires:	Part No.
Insert for Volatile Sample Pans[1]	**B0144637**
Insert for Stainless Steel Pans[2]	**B0505340**
Insert for Standard Aluminum Pans[3]	**B0508921**
Insert for Hermetically 10, 30 and 50 µL Pans	**B0139033**

[1]For use with Sample Pans: 02190062, 02190080 and N5190788
[2]For use with Sample Pans: 03190218 and 03190029
[3]For use with Sample Pan: 02190041

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.

High Pressure Sample Pans (24 to 150 bar)

Sample Pan	Operating Range	Vol. (µL)	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	**03190218**
Stainless Steel Pans, Covers and O-rings	-40° to 300 °C	60	24 bar	1,000	B0139005 with B0505340	**03190029**
Stainless Steel Pans, Covers and Seals[1]	-170° to 400 °C	30	150 bar	5	B0182864	**B0182901**
High Pressure Gold-plated Pans and Covers	-170° to 400 °C	30	150 bar	5	B0182864	**B0182902**
Aluminum Sample Pans and Covers, High Volume[2]	-170° to 500 °C	70	30 bar	40	N5356027 or N5356028	**N5356002**
Aluminum Sample Pans and Covers, Small Volume[2]	-170° to 500 °C	15	30 bar	40	N5356027 or N5356028	**N5356003**

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

Specialty Sample Pans and Covers

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

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

For use with 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	Trasition Point	Part No.
Indium	156.60 °C	**03190033**
Tin	231.88 °C	**03190034**
Lead	327.47 °C	**03190035**
Zinc	419.47 °C	**03190036**
Encapsulated Kit*		**02190045**
Encapsulated Kit**		**N5190762**

**Includes a large and small indium, tin and lead*
***Includes indium and zinc for 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 Diamond DSC, Jade DSC and PYRIS 1 DSC.

Diamond DSC/PYRIS 1 DSC Intracooler 2P

Allows for subambient operation to -65 °C.

Voltage	Part No.
115 V, 50/60 Hz	**N5370207**
230 V, 50/60 Hz	**N5370208**

Jade DSC Intracooler 6P

Allows for subambient operation to -80 °C.

Voltage	Part No.
115 V, 50/60 Hz	**N5374098**
230 V, 50/60 Hz	**N5374099**

Portable Cooling Device for 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 Jade DSC 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.
	N5202068

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.
	03190030

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	**04190299**
Kit of 6	**03190031**

Diamond DSC Loading Tool

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

	Part No.
	N5361180

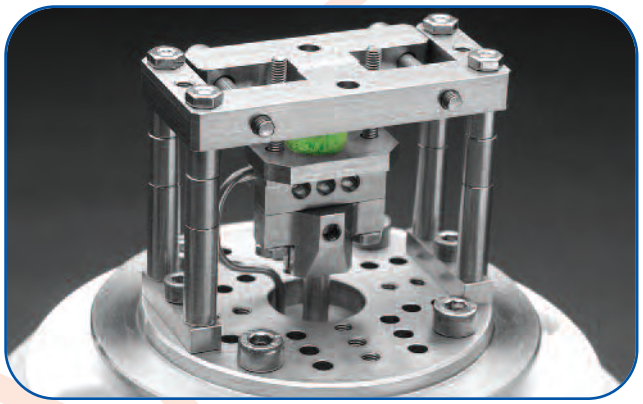
Forceps

Description	Part No.
Flat Round Tips	**09908400**
Flat Pointed Tips	**N5361078**
Hook	**09908138**

DRAFT

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-adapter for UV studies and fixtures that allow you to use the DMA 7 fixtures in the DMA8000 are all available.

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**
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).*

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**
Autocryo	10 L	**N5330255**

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**

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	N5190264	N5190172
1	Sample Thermocouple	03190253	N5190197
2	Sample Thermocouple	N5190786	
3	Balance Platinum Ribbon Kit*		N5370478
4	Balance Tare Weight		N5190284
4	Balance Tare Weight	N5190282	
5	O-Ring, used under Balance Cover 5 7/8 in. o.d. x 1/8 in. wide		09902163

**PerkinElmer Service installation required.*

Hangdown Wire Link Kit, Quartz

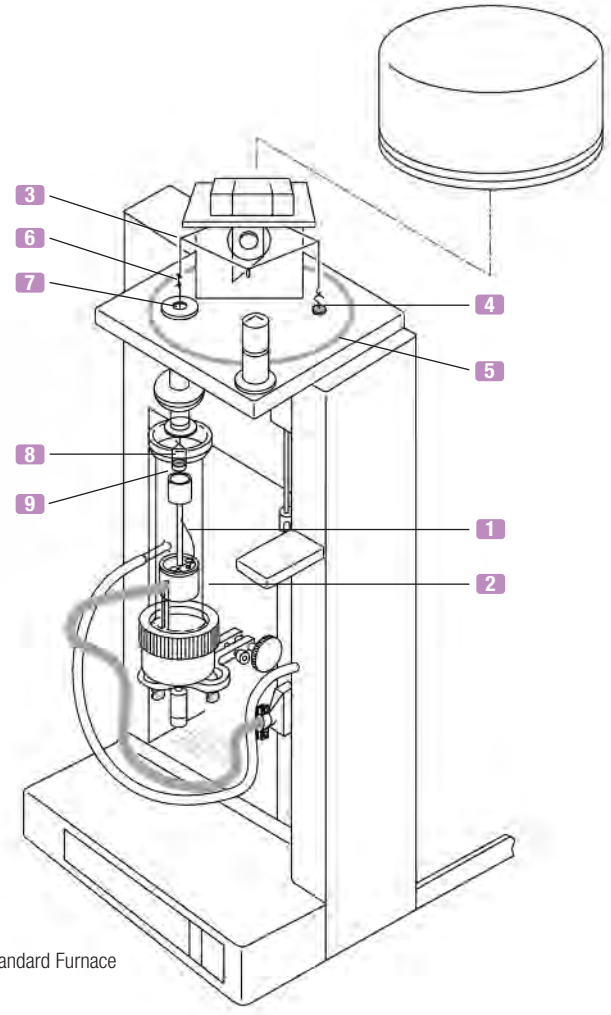
Hangdown Wire Kit, Nichrome

Stirrup Kit, Platinum

Hangdown Wire Kits

	Description	Qty.	TGA 7 Standard Part No.	PYRIS 1 TGA Standard Part No.
	Quartz			
6	Hangdown Wire Link Kit	10	N5190330	
	Hanger Kit	5		N5370487
	Autosampler Hanger Kit	5		N5370488
	Nichrome			
7	Hangdown Wire Kit [1,2]	6	N5190285	
	Hangdown Wire Kit [1]	6	N5190516	
	Hangdown Wire Kit [2]	6	N5190515	
	Autosampler Hanger Kit	5		N5370490
	Platinum			
8	Stirrup Kit	4	03190265	03190265

[1]Includes 6 preformed wires.
[2]Includes 6 straight wires.



TGA Standard Furnace

STA 6000 and Pyris 6 TGA

Description	Part No.
Sample Pan Kit for TGA 6	N5200040
Ceramic Sample Cup Holder	N5203020
Calibration Weight for PYRIS 6 TGA	N5200042

Pyris 1 TGA Autosampler Ceramic Crucible Kit

Contains 10 ceramic crucibles.

Part No.
N5370464

TGA Platinum Sample Pan Kits

TGA Sample Pan Kits include 4 pans.

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

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

2400 Tubes and Reagent Kits

2400 CHN Kit for 2000 Runs

Includes:	Part No.
Combustion and Reduction Tube and Reagent Kits and Tin Capsules	N2410683

2400 CHNS Kit for 2000 Runs

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

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	N2410680

2400 CHN Reduction Tubes and Reagents for 500 Runs

Includes:	Part No.
Reduction Tubes, Copper Plus and Copper Oxide	N2410681

2400 CHNS Combustion/Reduction Tubes and Reagents for 500 Runs

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

PerkinElmer genuine reagents will assure consistent and accurate results.

Reagents

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

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

Calibration Standards

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

Combustion and Pyrolysis Tubes

Sample Capsules

Tin Capsules

For analysis of nonvolatile solid samples.

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

Flat Tin Disks

For analyzing 13 or 25 mm filters.

Description	Qty.	Part No.
Flat Tin Disks	100	**N2411363**
Flat Tin Disks, (pkg. 10)	100	**N2410244**

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	**02400642**
Aluminum Capsules, 30 µL	1,000	**00090709**

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	**N2410320**

Silver Capsules

For analyzing organic substances with Oxygen Analysis.

Description	Qty.	Part No.
Silver Capsules	96	**N2411364**

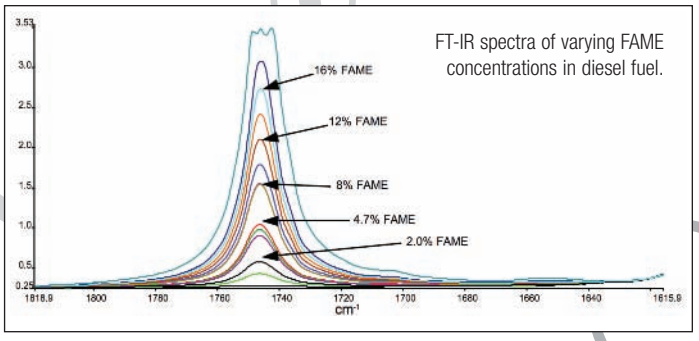
Tubes

PerkinElmer tubes are composed of pure fused quartz which is 99% SiO_2. 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	**N2411264**
Combustion	Quartz	2400	CHN	3	**N2410212**
Combustion/ Reduction	Quartz	2400	CHNS	1	**N2411514**
Combustion or Reduction	Stainless Steel	2410	Nitrogen	1	**N2421070**
Combustion	Quartz	2410	Nitrogen	1	**N2411487**
Reduction	Quartz	2400	Oxygen & Sulfur	1	**N2411300**
Reduction Scrubber	Quartz Pyrex®	2400/ 2410	CHN Oxygen & Nitrogen	1 1	**N2411291** **N2411359**

DRAFT

Molecular Spectroscopy Software



FT-IR spectra of varying FAME concentrations in diesel fuel.

Molecular Spectroscopy Software

Whether you are using Infrared, Raman, UV/Vis or Fluorescence as a analytical tool you will find a range of application packages available to meet your specific requirements. A few of the more popular ones are listed here. Visit our web site to see PerkinElmer's complete range of Molecular Spectroscopy software and upgrade paths.

Infrared Software

The core software package for PerkinElmer FT-IR instruments is Spectrum software. Spectrum software is supplied with all FT-IR instruments using a PC for control. Additionally there are Application Software Packages available for materials checking, quantitative analysis, identification of unknowns, automation of complete procedures and time-resolved infrared studies. Software upgrade kits for each software module means you can be sure you're using the most advanced software available. Each of these software packages are configured to run under Windows XP.

For Spectrum 400/100/100N/One/One NTS

Description	Part No.
Spectrum Search Plus A search package that can be used with PerkinElmer, Sadtler or ST Japan databases.	**LX108914**
Spectrum QUANT+ A chemometric quantitative multicomponent analysis package.	**LX108911**
Spectrum QUANTC A least squares quantitative multicomponent analysis package.	**LX108912**
Spectrum Procedures* A graphical procedure software for data collection and report processing.	**LX108913**
Spectrum TimeBase A time-resolved software package used for data collection and display in GC-IR, TG-IR, kinetics, reaction monitoring, LC-IR and GPC-IR studies.	**LX108898**

**Requires Visual Basic Kit v4.0 (L1108772).*

Infrared Software Upgrades

Description	Part No.
Spectrum Software Upgrade	**LX108916**
Spectrum ES Software Upgrade	**LX108909**
AssureID ES Software Upgrade	**LX108901**

Spectral Databases

PerkinElmer can supply the complete range of Sadtler and ST Japan Spectral Databases, so virtually every application area is covered. Please visit web site for complete listing

UV/Vis Software

The core software package for PerkinElmer UV/Vis instruments is UV WinLab software. UV/WinLab software is supplied with all UV/Vis instruments. Additionally there are Application Software Packages available for Architectural Glass, Color Methods, Filter Testing and Protection Glass. Software upgrade kits are available to upgrade UV WinLab to the latest versions. Each of these software packages are configured to run under Windows XP.

For UV/WinLab Version 6

Description	Part No.
Color Application Software Kit A software package to calculate color indices for liquids, clear and opaque solids.	**L6100114**
Architectural Glass Software Kit Software to enable the reflectance and transmittance properties of thin-film coatings applied to architectural glass to be evaluated.	**L6100116**
Protection Glass Software Kit Software offering industry standard calculations required for personal and industrial eye protection.	**L6100117**
Filter Application Software Kit A dedicated software package to evaluate transmission characteristics of optical thin-film coatings for bandpass and non-bandpass filters.	**L6100115**

Note: The above application packages are available for earlier versions of UV/WinLab under different part numbers. Please refer to the Consumables and Accessories Catalog or visit our web site for the complete listing.

UV/Vis Software Upgrades

Description	Part No.
From UV WinLab v3.0 or lower to UV WinLab v6 Std	**L6100095**
From UV WinLab v3.0 or lower to UV WinLab v6 ES	**L6100096**
From UV WinLab v4 to UV WinLab v6	**L6100097**
From UV WinLab v4 to UV WinLab v6 ES	**L6100099**
From UV WinLab v4 ES to UV WinLab v6 ES	**L6100098**
From earlier versions of UV WinLab to UV WinLab v2.85	**L6100014**

Fluorescence Software

The core software package for PerkinElmer Fluorescence instruments is FL WinLab software. FL WinLab software is supplied with all Fluorescence instruments. Additionally there are Application Software Packages available for Short Phosphorescence Decay, Enzyme Activity and automated collection of spectra from well-plates. Each of these software packages is configured to run under Windows XP.

Description	Part No.
Short Phosphorescence Decay Routine For collecting decay data and calculating single or dual exponential lifetimes.	**L225B005**
Enzyme Activity Program For internally-calibrated assays, (for example resorufin-based assays for cytochrome p450 etc.)	**L225B001**
WPRScan Program For automated collection of up to 12 spectra from each well of a microplate. Compatible with the Plate Reader Accessories (L2250035 and L2250142).	**L225B003**

Fluorescence Software Upgrade

Description	Part No.
From earlier versions of FL WinLab to FL WinLab v4	**L2258000**

Thermal Analysis software

A variety of Thermal Analysis software packages are available from PerkinElmer to allow you to perform specific tasks. Whether you need to determine absolute purity or kinetic parameters that characterize a reaction process, we have the software to handle the job. Just a few are listed here.

Visit www.perkinelmer.com to see our complete range of Thermal Analysis software.

PYRIS Series Thermal Analysis Manager

For control and operation of up to eight thermal analyzers of any type from a single PC controller.

Description	Part No.
PYRIS Series Thermal Analysis Manager	N5370600
Additional Licenses (2 to 10)	N5370603

PYRIS Series Multi-user IC License

For those customers that require additional instrument control of their thermal analyzers from remote locations, such as in different laboratories within one facility, order one for each additional license.

Part No.
N5370606

PYRIS DSC Step Scan Software

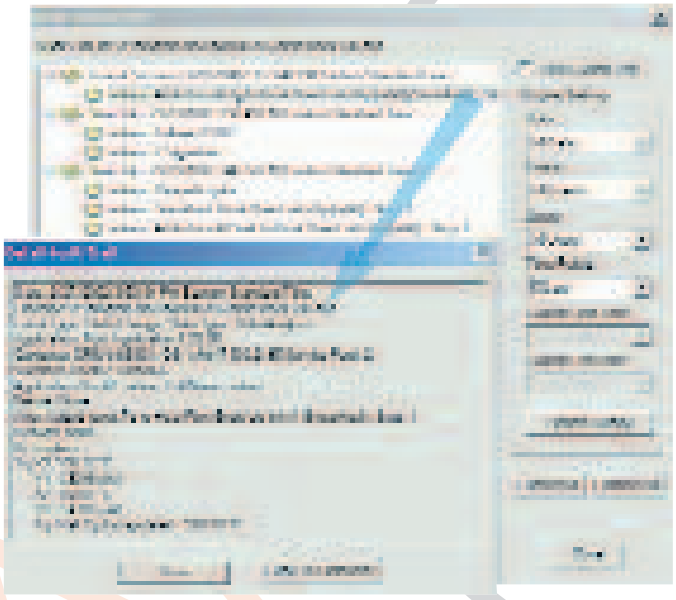
Used to determine accurate specific heat capacity (Cp) under a variety of conditions. Available for both Diamond DSC and the PYRIS 1 DSC. It requires the PYRIS Software v3.7 or above.

Part No.
N5370679

PYRIS Series DSC Specific Heat Advanced Software

For the PYRIS 1 DSC and the DSC 7. This two-curve Specific Heat Software allows the user to run a baseline and sample to calculate the Cp and enthalpy change of the sample.

Part No.
N5370665



Pyris Enhanced Security creates secure, computer generated, timestamped audit trails.

PYRIS Series DSC Purity Advanced Software

This software package enables the analyst to determine the absolute purity of a sample. The ideal melting point and the actual melting point may also be calculated.

Part No.
N5370666

PYRIS Enhanced Security Software

PYRIS Enhanced Security Software is an option which offers the technical compliance tools needed to meet 21 CFR Part 11.

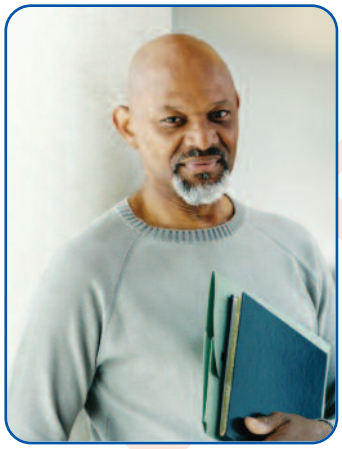
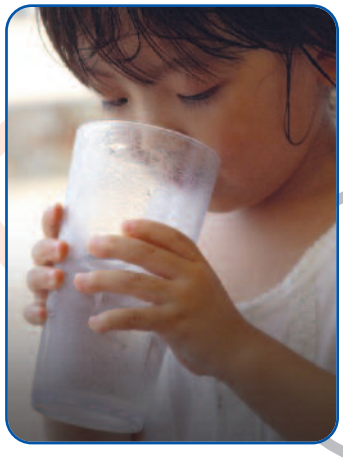
Part No.
N5370680

PYRIS Advanced Kinetics Software Suite

Includes: PYRIS Series DSC Scanning Kinetics, DSC Isothermal Kinetics, DSC/TGA MFK and TGA Decomposition Kinetics.

Part No.
N5370647

The New Measure of Success

EcoAnalytix™ is PerkinElmer's collaborative problem-solving initiative that creates application-based solutions for supporting local, regional and global projects. It is through these focused solutions that PerkinElmer contributes to protecting and improving our world.

Application Development Centers

Two new PerkinElmer EcoAnalytix Application Development Centers (ADC), in Shanghai and Mumbai, have been established and are being resourced to help facilitate support of responsible growth within the industry and to support rapidly growing infrastructure in developing countries.

PerkinElmer's EcoAnalytix

What is Eco?

"Eco" is derived from the idea of an ecosystem – a defined group of interdependent entities existing together within the environment they inhabit or depend on.

Why Eco?

Because we want our customers to understand that we view their businesses as complete, unique and contributing ecosystems.

What is Analytix?

"Analytix" refers to the process of analyzing and providing measurement of the ecosystem – anything that we consume, breathe, see or touch.

What is EcoAnalytix?

Combined, "Eco" and "Analytix" refer to the analytical measurements of our entire world.

Why EcoAnalytix?

Because only PerkinElmer can best help our customers make a measurable difference.

Community Outreach

PerkinElmer's EcoAnalytix program encourages local and global advocacy and partnerships for ecosystemic excellence on all levels.

PerkinElmer is working with and through customers, local governments and NGOs and the public to generate awareness of topics of importance to global health and well-being to people across the world.

PerkinElmer's Commitment to Environmental Responsibility

PerkinElmer is dedicated to ensuring that its facilities and employees operate in a manner that is environmentally conscious and contributes to a better world.

PerkinElmer facilities are taking an active role establishing programs to minimize impact on the environment. Whether in the laboratory, production facilities or other operations, the company is designing safe products and processes that prevent pollution, conserve resources and reduce waste. Employee involvement is integral to the continuous improvement of environmental safety and health programs.

EcoAnalytix is more than analytical solutions. It is training, SOPs, regulatory leadership, community outreach and industry collaboration, all working together to get you to better answers faster. A new way of viewing your world, your needs — your business ecosystem.

PerkinElmer®
For the Better

EcoAnalytix Application Focus

The EcoAnalytix initiative focuses on three primary application areas that are integral to global health and well-being: **Biofuels Development, Environmental Analysis** and **Food Safety**.

ecoanalytix™

PerkinElmer knows that the right training, methods, applications, reporting and support are as integral to getting answers as the instrumentation. That's why PerkinElmer has developed a novel approach to meet the challenges that today's labs face — that approach is called EcoAnalytix™.

Biofuels Development

EcoAnalytix solutions from PerkinElmer can help you achieve your business and operations objectives, from the field through to processing, and from fermentation to the final product, while ensuring the quality of biofuels and meeting regulatory requirements. Pre-defined analyzers and platforms support both ASTM and EN methods.

PerkinElmer's EcoAnalytix Solutions for Biodiesel Testing include:

- Biodiesel Gas Chromatography (GC) Turnkey Systems for the verification of free and total glycerin in pure biodiesel (B100) to meet ASTM standard D6584 and European CEN Method EN14105 standard, as well as biodiesel content of B2 through B20 mixes

Environmental Analysis

EcoAnalytix analyzers and platforms for environmental analysis from PerkinElmer provide methods, guidebooks and standard operating procedures where necessary so that you can keep pace with regulatory change. We provide industry leading environmental monitoring technology as well as renowned expertise and advocacy that shape regulatory methods.

EcoAnalytix water quality platforms will provide specific analyzers and methodologies to detect trace metal, organic, pesticide, chemical and radioactive contaminants in water.

PerkinElmer's Latest Environmental Analyzers include:

- The new Polycyclic Aromatic Hydrocarbons (PAH) Analyzer which is based on the Series 200 UV/VIS/Fluorescent HPLC for analysis of PAH, a family of organic pollutants widely distributed in the environment that can be carcinogenic

Food Quality and Safety

EcoAnalytix analyzers and platforms for food safety from PerkinElmer provide methods, guidebooks and standard operating procedures where necessary to allow you to simply and quickly meet or exceed an increasing level of scrutiny for food safety standards in an ever-expanding global food supply chain. EcoAnalytix food safety platforms are designed to assure food quality while ensuring regulatory compliance. Specific applications include the analysis of foods and food stuffs for melamine, pesticide, organic, chemical and metal contaminants.

PerkinElmer's Latest Food Quality and Safety Analyzers include:

- The new Melamine Analyzer, based on the Clarus® 600 T Gas Chromatograph/ Mass Spectrometer, for the analysis of melamine, associated with recently reported contamination in food

PerkinElmer's Melamine Analyzer

Visit us Online!

To find out more about **PerkinElmer's EcoAnalytix** solutions, please visit:

www.perkinelmer.com/ecoanalytix

PerkinElmer products — proven quality, reliability and results.

NEW LOWER PRICES

THE WORLD LEADER IN MATERIALS CHARACTERIZATION

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

Cell Windows

See pages 28–29 for details.

Sealed Cell

Demountable Cell

TGA Sample Pans, Stirrup Kits and Hangdown Wire Kits

See page 51 for details.

2400 CHN and CHNS Kits for 2000 runs

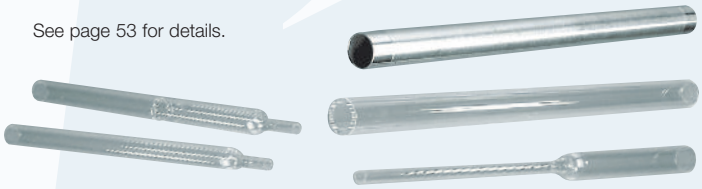
Tubes, Reagents and Vials

See page 52 for details.

NEW LOWER PRICES!

Elemental Analysis Tubes

See page 53 for details.



PerkinElmer® *For the Better*

PerkinElmer Life and Analytical Sciences, Inc.
710 Bridgeport Avenue
Shelton, CT 06484

008046A_05