

Introduction

UV/Visible Spectrometry is the most widely used spectroscopic technique. It is, in fact, one of the most widely used of all instrumental analytical techniques. Because so many organic, inorganic, and biological samples absorb radiation in the Ultraviolet, Visible and Near Infrared, UV/VIS Spectrometers are in use everywhere. From industrial quality control laboratories to research laboratories at the South Pole, they help us learn more about the products we use, the environment we live in, and the basic biochemical processes of life.

OPTICS AND COATINGS TECHNOLOGY

UV/Visible (and Near Infrared) Spectrometry is used to characterize the reflectance of laser mirrors, optical coatings, energy-efficient window glass, and of modern coated surfaces designed to resist exposure to heat, light, salt water, and other environmental hazards.

LIFE SCIENCES

UV/Visible Spectrometry is used to determine the purity of DNA samples, as well as to characterize the stability of DNA tertiary structures. UV/Visible Spectrometry is also used to study the kinetics of many enzymatically catalyzed biochemical reactions.

ENVIRONMENTAL

UV/Visible Spectrometry helps assure the quality of drinking water by testing for phenolics, sulfate, and nitrite.

PHARMACEUTICAL

UV/Visible Spectrometry is used to test the dissolution rate of tablet dosage formulations, as well as to assure the uniformity of active ingredient strength among tablets or capsules in production.

CHEMICAL INDUSTRY

UV/Visible Spectrometry is used to test the purity of many fine chemicals used to produce photographic film, plastics, paper, electronic components, and many other products.

PerkinElmer has a long history of producing excellent UV/VIS Spectrometers and the sampling accessories necessary to meet our customers' diverse needs for accurate measurement of their samples.

Whatever your field of specialty is, the supplies and accessories on the following pages will help you make full use of your PerkinElmer UV/VIS Spectrometer.

Spectroscopy Cells for UV/Visible Spectroscopy

Care and Handling of UV/VIS Spectroscopy Cells

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.

PerkinElmer cells ensure top optical performance, with high cell transmission and accurate pathlength. 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.

We offer three basic materials, special optical glass, SUPRASIL UV Quartz and SUPRASIL 300 NIR Quartz, in all the common sizes and types.

TO GET THE BEST RESULTS AND LONGEST LIFE FROM YOUR CELL, BE SURE TO:

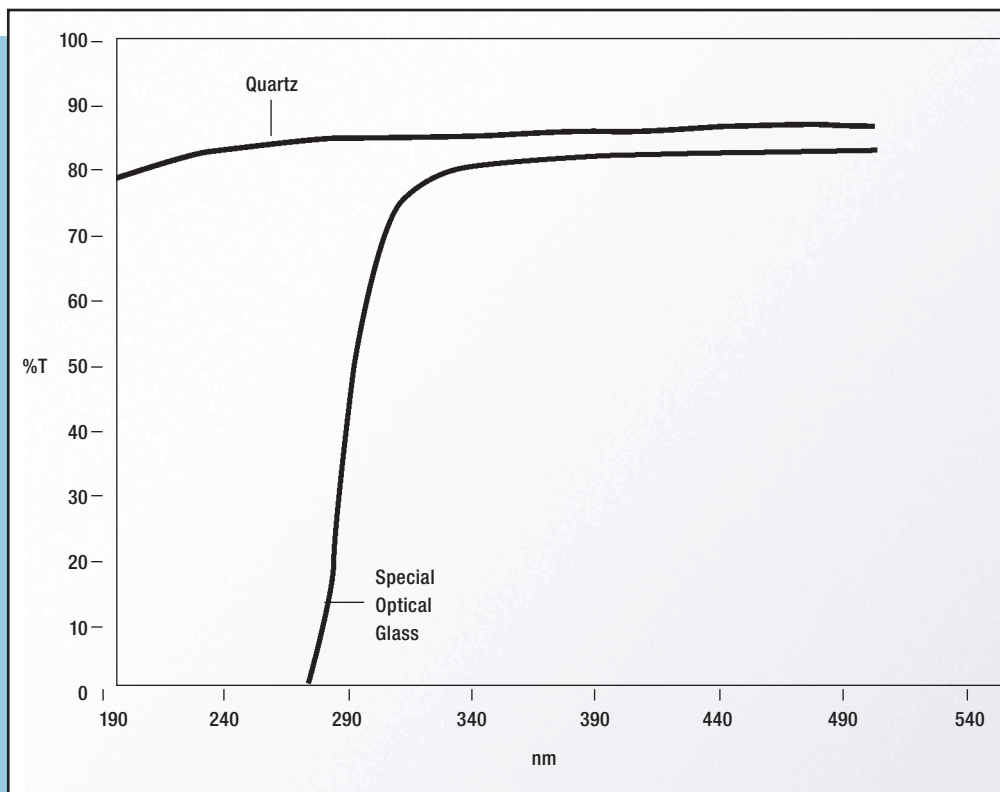
- Use the correct cell for the application.
- Hold cells only by the matte finish surfaces. These are not optical surfaces.
- Protect cells from scratches and never permit them to rub against one another or against other hard surfaces.
- Avoid abrasive, corrosive or stain producing cleaning agents, and ensure that the exposed surfaces of the cells are optically clean.
- Do not place strongly basic solutions on the cell.
- Before placing cells in the cell holder, always wipe the optical surfaces dry and free from finger marks using a soft cloth or cleaning tissue.
- Ensure that no bubbles cling to the inner surface of the cell, particularly when dealing with cold solutions.
- For maximum precision and accuracy, standardize and test with cells of the same type, and always insert cells into the holder with the same orientation (e.g. cell inscriptions to the light beam).

- The transmission of glass decreases rapidly below 320 nm. If a great deal of work is performed in the lower wavelength range, quartz cells should be used.

When you choose high quality, precision cells from PerkinElmer, you know you'll get top quality optical performance, high cell transmission and accurate pathlength. The special process for fusing the cell windows to the bodies assures that the full width of the cell is usable and the finished cell dimensions accurately match the nominal values.

CAUTION

Do not leave corrosive solutions in a cell any longer than necessary. If the cell and/or system is not to be used for a period of time, we suggest that the appropriate washing procedure be followed before the instrument is shut down.



Spectroscopy Cells

PerkinElmer™
instruments.

UV-3

Standard Cells for Spectroscopy

www.perkinelmer.com

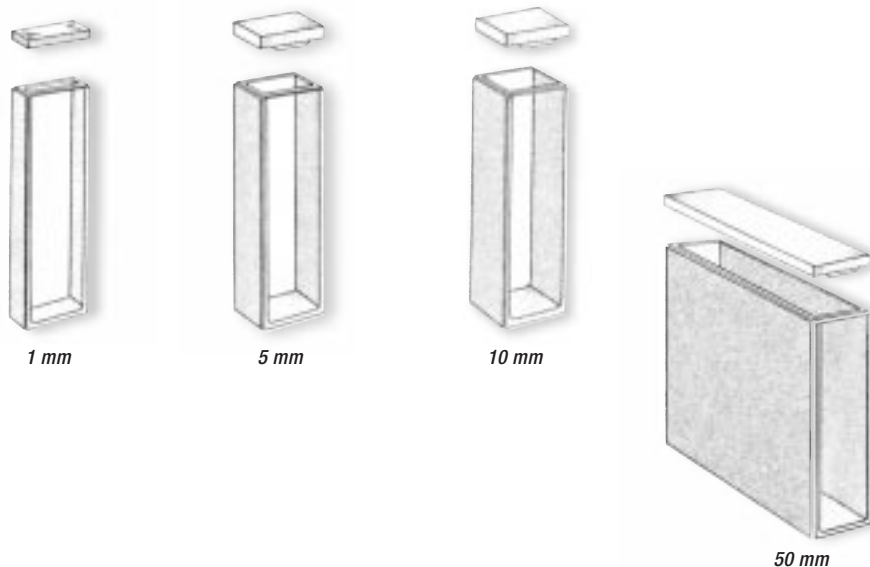
MACRO WITH PTFE LID

Ordering Information

Part No.	Material	Qty	Light Path mm	Outside Dim. H x W x D mm	Inside Width mm	Base Thickn. mm	Cell Volume
B0631001	Special Optical Glass	2	1 *	45 x 12.5 x 3.5	9.5	1.5	350 µL
B0631002		2	5	45 x 12.5 x 7.5	9.5	1.5	1.75 mL
B0631003		2	10	45 x 12.5 x 12.5	9.5	1.5	3.5 mL
B0631004		2	20	45 x 12.5 x 22.5	9.5	1.5	7.0 mL
B0631005		1	50	45 x 12.5 x 52.5	9.5	1.5	17.5 mL
B0631006		1	100	45 x 12.5 x 102.5	9.5	1.5	35.0 mL
B0631007	Quartz SUPRASIL®	2	1 *	45 x 12.5 x 3.5	9.5	1.5	350 µL
B0631008		2	5	45 x 12.5 x 7.5	9.5	1.5	1.75 mL
B0631009		2	10	45 x 12.5 x 12.5	9.5	1.5	3.5 mL
B0631010		2	20	45 x 12.5 x 22.5	9.5	1.5	7.0 mL
B0631011		1	50	45 x 12.5 x 52.5	9.5	1.5	17.5 mL
B0631012		1	100	45 x 12.5 x 102.5	9.5	1.5	35.0 mL
B0631013	NIR Quartz SUPRASIL 300	2	1 *	45 x 12.5 x 3.5	9.5	1.5	350 µL
B0631014		2	5	45 x 12.5 x 7.5	9.5	1.5	1.75 mL
B0631015		2	10	45 x 12.5 x 12.5	9.5	1.5	3.5 mL
B0631016		2	20	45 x 12.5 x 22.5	9.5	1.5	7.0 mL
B0631017		1	50	45 x 12.5 x 52.5	9.5	1.5	17.5 mL
B0631018		1	100	45 x 12.5 x 102.5	9.5	1.5	35.0 mL
B0631134	Optical Glass 360-2500 nm without lid	4	10	45 x 12.5 x 12.5	9.5	1.5	3.5 mL

*Glass lid

Note: all cells contain two clear windows.



1.800.762.4002 US
1.800.561.4646 Canada

UV-4 Spectroscopy Cells

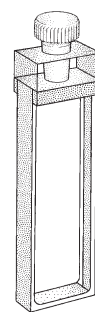
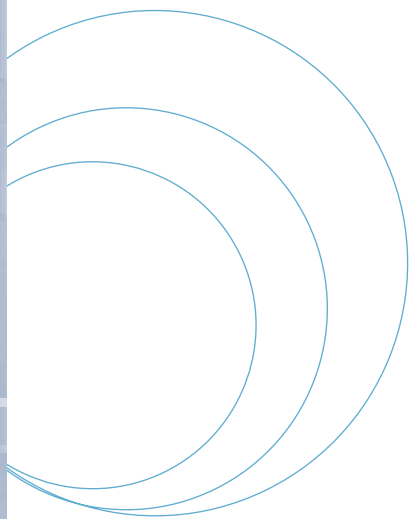
Standard Cells for Spectroscopy

MACRO WITH PTFE STOPPER

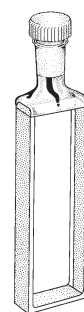
Ordering Information

Part No.	Material	Qty	Light Path mm	Outside Dim. H x W x D mm	Inside Width mm	Base Thickn. mm	Cell Volume
B0631019	Special Optical Glass	2	1	48 x 12.5 x 3.5	9.5	1.5	350 μ L
B0631020		2	5	46 x 12.5 x 7.5	9.5	1.5	1.75 mL
B0631021		2	10	46 x 12.5 x 12.5	9.5	1.5	3.5 mL
B0631022		2	20	46 x 12.5 x 22.5	9.5	1.5	7.0 mL
B0631023		1	50	46 x 12.5 x 52.5	9.5	1.5	17.5 mL
B0631025	Quartz SUPRASIL	2	1	52 x 12.5 x 3.5	9.5	1.5	350 μ L
B0631026		2	5	46 x 12.5 x 7.5	9.5	1.5	1.75 mL
B0631027		2	10	46 x 12.5 x 12.5	9.5	1.5	3.5 mL
B0631028		2	20	46 x 12.5 x 22.5	9.5	1.5	7.0 mL
B0631029		1	50	46 x 12.5 x 52.5	9.5	1.5	17.5 mL
B0631030		1	100	46 x 12.5 x 102.5	9.5	1.5	35.0 mL
B0631031	NIR Quartz SUPRASIL 300	2	1	52 x 12.5 x 3.5	9.5	1.5	350 μ L
B0631032		2	5	46 x 12.5 x 7.5	9.5	1.5	1.75 mL
B0631033		2	10	46 x 12.5 x 12.5	9.5	1.5	3.5 mL
B0631034		2	20	46 x 12.5 x 22.5	9.5	1.5	7.0 mL
B0631035		1	50	46 x 12.5 x 52.5	9.5	1.5	17.5 mL
B0631036		1	100	46 x 12.5 x 102.5	9.5	1.5	35.0 mL

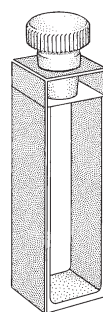
Note: all cells contain two clear windows.



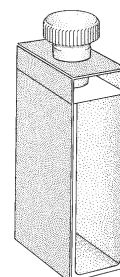
1 mm



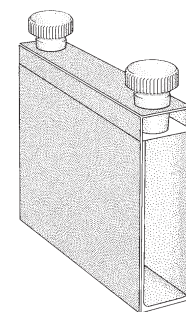
1 mm



10 mm



20 mm



50 mm

Standard Cells for Spectroscopy

www.perkinelmer.com

MICRO WITH PTFE LID OR WITH PTFE STOPPER

Ordering Information

Part No.	Material	Qty	Light Path mm	Outside Dim. H x W x D mm	Inside Width mm	Base Thickn. mm	Cell Volume
WITH PTFE LID							
B0631070	Special Optical Glass†	2	10	45 x 12.5 x 12.5	2	3.2	700 µL
B0631071	Quartz SUPRASIL†	2	10	45 x 12.5 x 12.5	2	3.2	700 µL
WITH PTFE STOPPER							
B0631076	Special Optical Glass†	2	10	40 x 12.5 x 12.5	2	1.5	400 µL
B0631077	Quartz SUPRASIL†	2	10	40 x 12.5 x 12.5	2	1.5	400 µL
B0631078	NIR Quartz SUPRASIL 300†	2	10	40 x 12.5 x 12.5	2	1.5	400 µL

† Black versions

ULTRA-MICRO WITH PTFE LID

Ordering Information

Part No.	Material	Qty	Light Path mm	Center Height mm	Outside Dim. H x W x D mm	Aperture mm	Chamber Vol. µL	Filling Vol. µL
B0631079	Quartz SUPRASIL	1	10	15	45 x 12.5 x 12.5	2 x 1.5	30	50

Note: all cells contain two clear windows.

ULTRA-MICRO WITH PIPETTE TIPS

Ordering Information

Part No.	Material	Qty	Light Path mm	Center Height mm	Outside Dim. H x W x D mm	Aperture mm	Chamber Vol. µL	Filling Vol. µL
B0631082	Quartz SUPRASIL	1	0.1	15	40 x 12.5 x 12.5	1 x 5	0.5	2
B0631083		1	1	15	40 x 12.5 x 12.5	1 x 5	5	10
B0631080	Quartz SUPRASIL	1	5	15	45 x 12.5 x 12.5	Ø 0.8	2.5	5
B0631081		1	10	15	40 x 12.5 x 12.5	Ø 0.8	5	10

Note: all cells contain two clear windows.



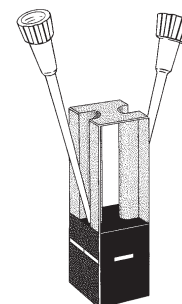
B0631070



B0631076

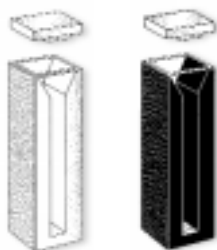


B0631079



B0631082

Standard Cells for Photometry/Spectroscopy



SEMI-MICRO WITH PTFE LID

Ordering Information

Part No.	Material	Qty	Light Path mm	Outside Dim. H x W x D mm	Inside Width mm	Base Thickn. mm	Cell Volume
B0631039	Special Optical Glass	2	20	45 x 12.5 x 22.5	4	3.2	2.8 mL
B0631042	Quartz SUPRASIL	2	20	45 x 12.5 x 22.5	4	3.2	2.8 mL
B0631045	NIR Quartz SUPRASIL 300	2	20	45 x 12.5 x 22.5	4	3.2	2.8 mL
BLACK VERSIONS							
B0631046	Special Optical Glass	2	5	45 x 12.5 x 7.5	4	3.2	700 μ L
B0631047		2	10	45 x 12.5 x 12.5	4	3.2	1.4 mL
B0631048	Quartz SUPRASIL	2	5	45 x 12.5 x 7.5	4	3.2	700 μ L
B0631049		2	10	45 x 12.5 x 12.5	4	3.2	1.4 mL
B0631050	NIR Quartz SUPRASIL 300	2	5	45 x 12.5 x 7.5	4	3.2	700 μ L
B0631051		2	10	45 x 12.5 x 12.5	4	3.2	1.4 mL



SEMI-MICRO WITH PTFE STOPPER

Ordering Information

Part No.	Material	Qty	Light Path mm	Outside Dim. H x W x D mm	Inside Width mm	Base Thickn. mm	Cell Volume
B0631054	Special Optical Glass	2	20	46 x 12.5 x 22.5	4	3.2	2.8 mL
B0631057	Quartz SUPRASIL	2	20	46 x 12.5 x 22.5	4	3.2	2.8 mL
B0631060	NIR Quartz SUPRASIL 300	2	20	46 x 12.5 x 22.5	4	3.2	2.8 mL
BLACK VERSIONS							
B0631061	Special Optical Glass	2	5	46 x 12.5 x 7.5	4	3.2	700 μ L
B0631064	Quartz SUPRASIL	2	10	46 x 12.5 x 12.5	4	3.2	1.4 mL
B0631065	NIR Quartz SUPRASIL 300	2	5	46 x 12.5 x 7.5	4	3.2	700 μ L
B0631066		2	10	46 x 12.5 x 12.5	4	3.2	1.4 mL

Note: all cells contain two clear windows.

Spectroscopy Cells

PerkinElmer™
instruments.

UV-7

Flow-Through Cells for Spectroscopy

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SEMI-MICRO/ULTRA-MICRO WITH IN- AND OUTLET TUBES

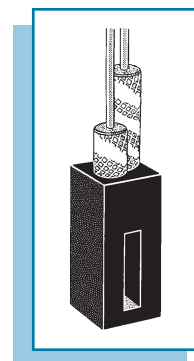
Ordering Information

Part No.	Material	Qty	Light Path mm	Center Height mm	Outside Dim. H x W x D mm	Aperture mm	Cell Volume
B0631085	Quartz SUPRASIL	1	1	15	35 x 12.5 x 12.5	17.5 x 3.5	62 μ L
B0631084	Quartz SUPRASIL	1	10	15	35 x 12.5 x 12.5	11 x 3.5	390 μ L
B0631087	Quartz SUPRASIL	1	10	15	35 x 12.5 x 12.5	8 x 2	160 μ L
B0631150	Quartz SUPRASIL	1	10	15	35 x 12.5 x 12.5	11 x 2.5	300 μ L
B0631089	Quartz SUPRASIL	1	10	15	35 x 12.5 x 12.5	\emptyset 3	80 μ L
B0631088		1	50	15	45 x 12.5 x 52.5	\emptyset 3	370 μ L
B0631090	Quartz SUPRASIL	1	10	15	35 x 12.5 x 12.5	\emptyset 2	30 μ L
B0631151	Quartz SUPRASIL (FIAS)	1	10	15	35 x 12.5 x 12.5	\emptyset 1.5	18 μ L
B0631152		1	10	15	35 x 12.5 x 12.5	\emptyset 1	8 μ L

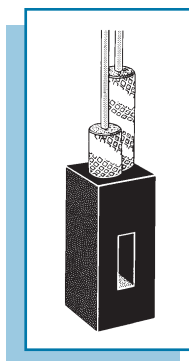
Compact with 2 Screw Connectors

M 6 x 1 and FEP Tubing o.d. 1.9 mm, i.d. 1.1 mm 500 mm long

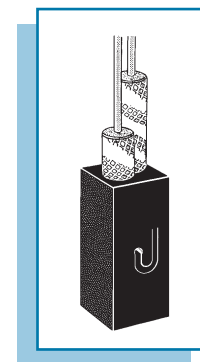
Note: all cells contain two clear windows.



B0631085



B0631084



B0631089

1.800.762.4002 US
1.800.561.4646 Canada

UV-8 Spectroscopy Cells

Cylindrical Cells for Spectroscopy

MACRO WITH PTFE STOPPER

Ordering Information

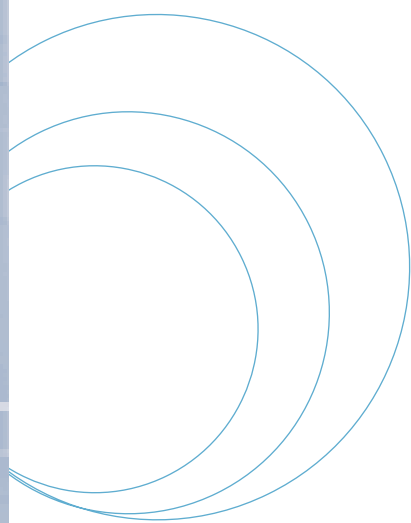
Part No.	Material	Qty	Light Path mm	Outside Dia. mm	Inside Dia. mm	Outside Depth mm	Cell Volume	Remarks
B0631091	Special Optical Glass	1	10	22	19	12.5	2.8 mL	neck Ø 6 mm taper 1:10
B0631092		1	20	22	19	22.5	5.6 mL	neck NS 7
B0631093		1	50	22	19	52.5	14.0 mL	2 necks NS 7
B0631094		1	100	22	19	102.5	28.0 mL	2 necks NS 7
B0631095	Quartz SUPRASIL	1	10	22	19	12.5	2.8 mL	neck Ø 6 mm taper 1:10
B0631096		1	20	22	19	22.5	5.6 mL	neck NS 7
B0631097		1	50	22	19	52.5	14.0 mL	2 necks NS 7
B0631098		1	100	22	19	102.5	28.0 mL	2 necks NS 7
B0631099	NIR Quartz SUPRASIL 300	1	10	22	19	12.5	2.8 mL	neck Ø 6 mm taper 1:10
B0631100		1	20	22	19	22.5	5.6 mL	neck NS 7
B0631101		1	50	22	19	52.5	14.0 mL	2 necks NS 7
B0631102		1	100	22	19	102.5	28.0 mL	2 necks NS 7



10 mm / 20 mm



50 mm / 100 mm



LIDS AND STOPPERS

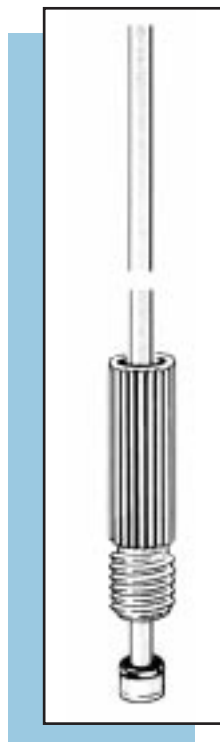
Ordering Information

Part No.	Light Path mm	Description
B0631144	1	Glass covering plate
B0631145	5	PTFE fitted lid
B0631129	10	PTFE fitted lid
B0631146	20	PTFE fitted lid
B0631147	50	PTFE fitted lid
B0631148	100	Glass fitted lid
B0631128		PTFE stopper with NS 7 fitting
B0631149		PTFE stopper with fitting Ø 6, taper 1:10

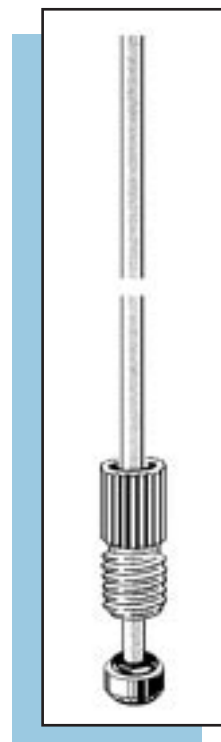
REPLACEMENT TUBING

Ordering Information

Part No.	Description
B0631130	FEP-Replacement tubing with one short screw fitting, 500 mm long
B0631131	FEP-Replacement tubing with one long screw fitting, 500 mm long
B2500129	Sipper tubing to cuvette (in)
B2500127	Sipper tubing to cuvette (out)



B0631130



B0631131

To extend the range of samples you can analyze, we offer a wide range of sample cell holders. Use them with the precision far-UV and special optical glass cells offered on pages UV-3 through UV-9.



C0550303

CYLINDRICAL LONG-PATH CELL HOLDER

- Accommodates cells with outside diameters from 22 mm to 30 mm
- Versatile! Accepts cells with pathlengths up to 100 mm
- Spring loaded clamping arms provide precise, reproducible fit
- Easy to adjust!



B0080821

RECTANGULAR LONG-PATH CELL HOLDER

- Accepts cells with pathlengths from 10 mm to 100 mm
- Easy to install! Same as standard cell holder
- Adjustable
- Precise fit, maximum reproducibility

CUVETTE STAND

- Holds 16 cuvettes up to 10 mm rectangular
- Safe, economical way to contain cuvettes while awaiting use

TEST TUBE HOLDER

Accommodates test tubes from 11 mm to 17 mm diameter.



B0500952

VARIABLE ANGLE SAMPLE HOLDER



B0152471

STANDARD CELL HOLDER ACCOMMODATES A LARGE SELECTION OF RECTANGULAR CELLS UP TO 10 MM PATHLENGTH

This is the same cell holder which is provided as standard equipment with your PerkinElmer Lambda Series instrument. A lifter (included) makes short cell removal easy.

- Accommodates a large selection of rectangular cells up to 10 mm pathlength
- Adjustable both vertically and horizontally
- Standard equipment with all PerkinElmer Lambda Series instruments



B0505071

SOLID SAMPLE HOLDER



C5500117

Ordering Information

Part No.	Description
B0505071	Standard Cell Holder for Lambda 2, 3, 6, 9, 11, 12, 14, 16, 18, 19, 900 and Bio
C0550303	Cylindrical Long Path Cell Holder
B0080821	Rectangular Long Path Cell Holder
B0500952	Test Tube Holder for diameters between 11 and 17 mm
B0509350	Cuvette Stand 16 Positions
B0080819	Water Thermostatted Cell Holder
B0152471	Solid Sample Holder, Variable Angle
C5500117	Solid Sample Holder

AUTOMATIC CELL CHANGERS

Cell Programmer (9 + 9)

For Lambda 800/900 Spectrometers. The accessory includes two sample trays with nine positions each. The following sample setup is possible: one reference cell and eight sample cells on either tray or nine cells on the sample tray and nine cells on the reference tray. For temperature control B2205116 accessory PCB required. Temperature range 15°C-45°C.

Part No. B2205104



Cell Programmer (9 + 9)

Thermoelectric Cell Holder (1 + 1)

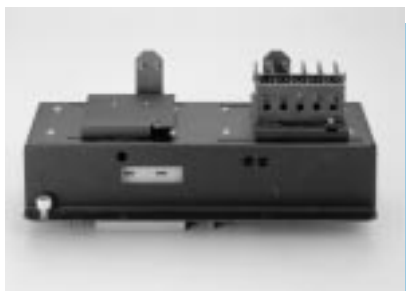
For Lambda 800/900 Spectrometers. The accessory includes one thermoelectric cell holder for the sample and the reference beam. For temperature control B2205116 accessory PCB required. Temperature range 15°C-45°C.

Part No. B2205103

Linear Cell Programmer

For Lambda 900 UV/VIS/NIR Spectrometer. Requires set of cell holders of choice (2x B0089439 Long Pathlength 5-cell Holder, or 2x B2205411 Cell Holder, water thermostatable).

Part No. B2205401



Linear Cell Programmer

Long Pathlength 5-Cell Holder

For B2000186 linear transport or B2205401 for Lambda 800/900 in sample or reference position. Accommodates five cells of up to 50 mm pathlength.

Part No. B0089439

8-Cell Holder, Water Thermostatable

For B2000186 linear transport for Lambda 10/20/40 and B2205401 linear cell programmer for Lambda 800/900 for sample or reference position for up to eight 10 mm cells.

Part No. B2205411

Linear Transporter and Gel-Scanner for Lambda 800/900

Complete gel-, film-, and filter-scanner accessory for Lambda 800/900. Allows measurement of 100 mm gel cuvettes or film and glass samples in continuous or random mode.

Part No. B2205420



Linear Transporter and Gel-Scanner

Slit Assembly for B2205420 Linear Transporter and Gel-Scanner for Lambda 800/900

Changeable slit system for reference and sample beam. Slit selection: 10x2 mm, 10x1 mm, 3x0.05 mm, 3x0.1 mm, and 3x0.2 mm.

Part No. B2205418

AUTOMATIC CELL CHANGERS**Automatic Linear 8-Cell Changer for Lambda 10/20/40/Bio**

Water thermostatable automatic linear cell changer for sample position. Includes: B2000186 Linear Transport and B2205411 8-Cell Holder, Water Thermostatable. Controlled through Lambda 10/20/40/Bio Stand-alone instrument. No accessory PCB required. For double-beam instruments water thermostatable single cell holder (B2000201) or water thermostatable 8-cell holder (B2205411) and reference kit (B2000310) for reference position recommended (but not included).

Part No. BUV8CELL

Automatic Linear 5-Cell Long Pathlength Cell Changer for Lambda 10/20/40/Bio

Automatic linear 5-cell changer for Lambda 10/20/40/Bio for long pathlength cells up to 50 mm. Includes: B2000186 Linear Transport and B0089439 Long Pathlength 5-Cell Holder. Controlled through Lambda 10/20/40/Bio Stand-alone instrument. No accessory PCB required. For double-beam instruments 5-cell long pathlength holder (B0089439) and reference kit (B2000310) for reference position recommended (but not included).

Part No. BUV5CELL

Automatic Linear Transport for Lambda 10/20/40/Bio

Basic linear transport unit. Can be combined with water thermostatable 8-cell holders (B2205411), long pathlength 5-cell holders (B0089439), research peltier system (C6952945). For reference position, reference kit (B2000310) and 5- or 8-cell holder recommended (but not included). Single cell reference holder (B2000201) can be used alternatively.

Part No. B2000186

Single Cell Reference Holder

For B2000186 linear transport. For 1 cell with up to 10 mm pathlength.

Part No. B2000201

Reference Kit

For B2000186 linear transport. For reference position to be used with B2205411 (8-cell holder) or B0089439 (long pathlength 5-cell holder).

Part No. B2000310

Gel-Scanner Linear Transport for Gels and Glasses

Complete Gel-Scanner accessory for Lambda 10/20/40/Bio. Allows measurement of 100 mm gel cuvettes or glass samples up to 100 mm pathlength in continuous or random access mode. Controlled through Lambda 10/20/40/Bio Stand-alone instrument. No accessory PCB required. For gel measurement B0107047 gel cell required (but not included).

Part No. B2000199

Gel Cell, Glass

For gel measurements with B2000199 Gel-Scanner Linear Transport. Dimensions are 6 mm pathlength by 100 mm width by 10 mm height.

Part No. CP183700

13-Cell Changer System

Includes cell changer and one carousel each for glass/quartz and plastic cuvettes. B0509681 accessory PCB required for Lambda 10/20/40 and Bio (but not included).

Part No. B0185210

Cell holder, for 13-Cell Changer

Carousel for 13-cell changer for glass/quartz cuvettes.

Part No. B0185163

Cell Holder, for 13-Cell Changer

Carousel for 13-cell changer for plastic cuvettes.

Part No. B0193768

MANUAL CELL CHANGERS**Manual Cell Changer for Lambda Bio, 11, 12/14, 10/20/40 and 18 UV/VIS Spectrometers**

Base unit to be used with cell holder of choice. Includes B0094014 accessory cover. Requires (but does not include) B0089439 long pathlength 5-cell holder, or B2500081 8-cell holder, water thermostatable.

Part No. B2500080

Long Pathlength 5-Cell Holder

For B2000186 linear transport in sample or reference position. Accommodates 5 cells of up to 50 mm pathlength.

Part No. B0089439

Long Pathlength Reference Holder, Non-thermostatted

For B2500080 Manual Cell Changer.

Part No. B2500082

8-Cell Holder, Water Thermostatable

For B2500080 manual cell changer. Accepts 8 cells of up to 10 mm pathlength.

Part No. B2500081

Reference Cell Holder, Water Thermostatable

For B2500080 manual cell changer.

Part No. B2500083

TEMPERATURE-CONTROLLED ACCESSORIES

Routine Peltier System, Single Cell

For Lambda Bio/10/20/40 Spectrometers. Selectable temperature range 15-45° C. Requires accessory PCB B0509681 or B2190034. For double-beam instruments B0510412 reference holder recommended. Must be service installed.

Part No. B2000159

Routine Peltier System, 9 Position

For Lambda Bio/10/20/40 Spectrometers. Selectable temperature range 15-45°C. Requires accessory PCB B0509681 or B2190034. For double-beam instruments B0510412 reference holder recommended. Must be service installed.

Part No. B2000160

9 Position Cell Holder

As included in B2000160 Routine Peltier System, 9 Position.

Part No. B0510366

Reference Holder

Peltier thermostatted reference holder for B2000159 Routine Peltier System, Single Cell or B2000160 Routine Peltier System, 9 Position.

Part No. B0510412

Research Peltier System, Single Cell

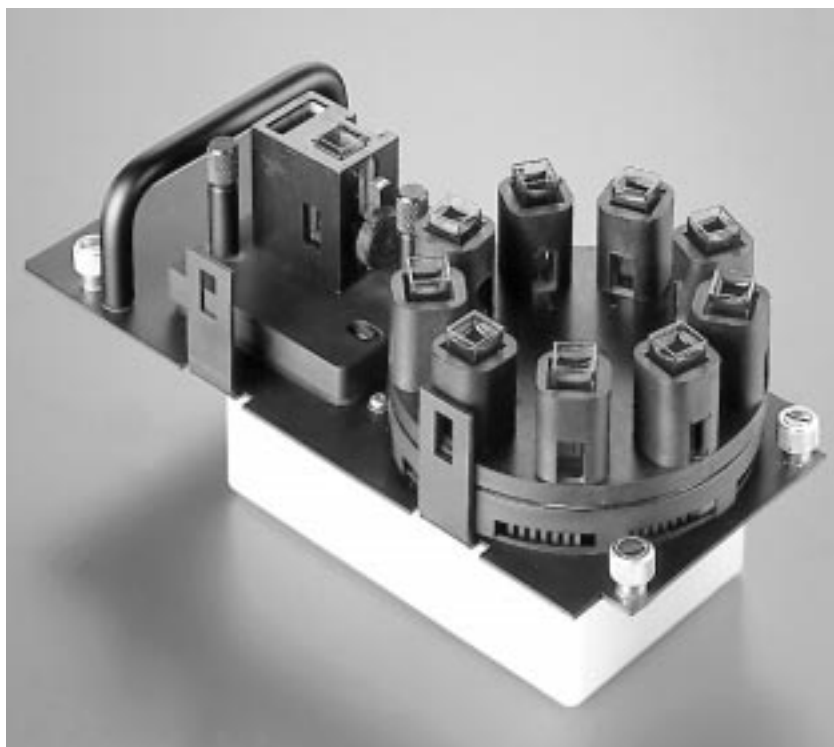
For thermostating of one rectangular cell in the sample beam. Temperature range 0° to 100°C. Flexible programming of temperature ramps with up to 8° segments is possible. For thermostating the reference cell holder, use B0080819 cell holder (not included), water-thermostatted.

Part No. C6952944

Research Peltier System, 6 Position

For thermostating of up to six rectangular cells in the sample beam, stirring possible. Temperature range 0° to 100°C. Flexible programming of temperature ramps with up to 8° segments is possible. Requires (but does not include) B2000186 Linear Transport for Lambda 10/20/40 and B2205401 linear cell programmer for Lambda 900.

Part No. C6952945



B2000160 Routine Peltier System with B0510412 Reference Holder.

STANDARDS

Spectralon™ UV/VIS/NIR Diffuse Reflectance Standards

- For use with Lambda 9/18/19/900 integrating spheres
- Durable, chemically inert
- High reflectance values – 95% to 99%!
- Washable
- Direct traceability to the National Institute of Standards and Technology (NIST)

Spectralon diffuse reflectance standard sets consist of a diffuse white standard and a selection of diffuse gray standards. Each standard in the set is supplied with complete diffuse reflectance data from 250 nm to 2500 nm, and is mounted in an anodized aluminum frame. The set is packed in an airtight storage case.

Spectralon® Diffuse Color Standards

- For use with Lambda 9/18/19/900 integrating spheres
- Highly diffuse
- Consistent reflectance
- Non-thermochromic

These durable, waterproof standards can be washed and easily machined without loss of color or surface texture. They are non-thermochromic, so there is no need to control laboratory temperature. As in the Diffuse Reflectance Standards set, standards are supplied with data from 250 nm to 2500 nm, mounted in anodized aluminum frames, and packed in an airtight case.

Visible Spectrum Calibration Filter Set

A convenient and practical set of secondary transmittance and spectral standards for the calibration of the visible range of spectrometers. All calibrations are derived from the NIST certified primary standards. The filters are mounted in holders that fit standard cuvette holders.

Calibrated Reference Mirror

This mirror is necessary to check the accuracy of absolute and to correct the spectra of non-absolute specular reflectance accessories. The mirror is a secondary standard and is calibrated according to GLP regulations, wavelength range 250 to 2500 nm.

Calibrated Diffuse Reflectance Standards

Set of four calibrated 1.25" D diffuse reflectance standards. Reflectance Factors: 99%, 75%, 50% and 2%.

Part No. PELA9010

Calibrated Diffuse Reflectance Standards

Set of eight calibrated 1.25" D diffuse reflectance standards. Reflectance Factors: 99%, 80%, 60%, 40%, 20%, 10%, 5%, 2%.

Part No. PELA9012

Calibrated Diffuse Reflectance Standards

Set of eight calibrated 2.00" D diffuse reflectance standards. Reflectance Factors: 99%, 80%, 60%, 40%, 20%, 10%, 5%, 2%.

Part No. PELA9013

Calibrated Diffuse Color Standards

Set of four calibrated 2" D diffuse color standards. Set includes one each: red, green, blue and yellow standard.

Part No. PELA9018

Calibrated Diffuse Color and Neutral Reflectance Standards

Set of eight calibrated 2" D diffuse color and neutral reflectance standards. Set includes one each: red, green, blue, yellow and four diffuse reflectance standards: 99%, 75%, 50% and 2%.

Part No. PELA9020

Calibrated Diffuse Color Standards

Set of eight calibrated 2" D diffuse color standards. Set includes one each: red, green, blue, yellow, orange, purple, cyan and violet.

Part No. PELA9021

Calibrated white plate, Spectralon

1.25" calibrated diffuse reflectance standard, Spectralon.

Part No. PELA9057

Calibrated white plate, Spectralon

2" calibrated diffuse reflectance standard, Spectralon.

Part No. PELA9058

Calibrated diffuse reflectance standard, color

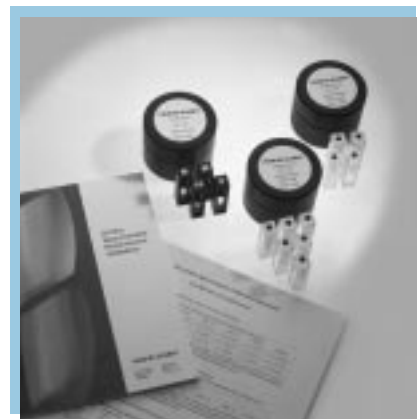
Calibrated Spectralon color standards, set of four, approximately 5 cm diameter.

Part No. PELA9019

WINDOW SETS

Window Sets: Protect the optical surfaces in your PerkinElmer UV/VIS Spectrometer from corrosive fumes and dust

These window sets are made from the highest quality UV transmitting quartz and are matched to 1% T. Use the chart below to select the appropriate window set for your PerkinElmer Lambda Spectrometer, or PerkinElmer Model 552, 552A, 559, or 559A Spectrometer.



Ordering Information

Part No.	Description
UV STANDARDS	
B0507805	Visible Spectrum Calibration Set
B0551004	Diffuse Reflectance Standards 1.25"
B0551005	Diffuse Color Standard 1.25"
B2500099	Secondary Standard Set Stray Light
B2500100	Secondary Standard Set Pharmacopoeia
B0505975	Second Source Aluminum Mirror
WINDOW SETS	
C6180327	Lambda 3, 4, 6
B0080818	Models 552, 552A, 559, 559A
B0144794	Lambda 5, 7, 15, 17, 16, 9, 19
B0172270*	Lambda 2, 11, 12, 14, Bio
B0505982	Lambda 800/900

*This is a set of two, a total of four is required.

Deuterium and Tungsten Lamps for PerkinElmer Spectrometers

www.perkinelmer.com

For optimum instrument performance, ALWAYS use original replacement sources from PerkinElmer! Our extensive quality control and inspection process demands the very best quality sources. For many of our instruments, the lamps are mounted, prealigned and prefocused. This guarantees top performance and maximum stability from your UV/VIS Spectrometer.

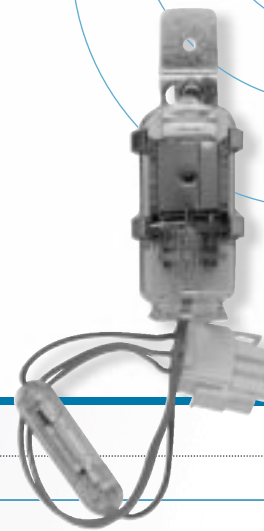
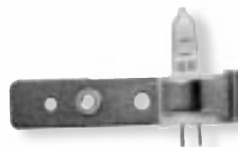
NOTICE

Installation of a new lamp by a PerkinElmer Service Engineer is recommended for one reason:

- Optimum performance is achieved when lamp is correctly aligned

CAUTION

Eye protection required when viewing deuterium or tungsten lamps when lit.



Ordering Information

Part No.	Description
DEUTERIUM LAMPS (ULTRAVIOLET REGION)	
C0550505	For Lambda 1 and 3
B0160917**	For Lambda 2, 5, 7, 9, 10, 11, 12, 14, 15, 16, 17, 18, Bio, 19, 20, 40, 800 and 900
C6880055	For Lambda 4 and 6
B0166354	Adapter
B0160917	For 55, 550, 551, 552, 552A, 553, 559, 559A
TUNGSTEN LAMPS (VISIBLE REGION)	
C0550500*	For Lambda 1 and 3
B0114620**	For Lambda 2, 5, 7, 9, 10, 11, 12, 14, 15, 16, 17, 18, Bio, 19, 20, 40, 800 and 900
C6880054*	For Lambda 4 and 6
B0091906	For 55, 550, 551, 552, 552A, 553, 559 and 559A

*Prefocused and Prealigned

**Adapter may be required for older models of Lambda 5, 7 and 9

Software and Sippers

PC SOFTWARE PACKAGES

UV WinLab™ Operating Software

Windows®-based operating software. Provides recording, manipulation and storage of spectral data and complete control of instruments and accessories of Lambda series spectrometers.

Operating modes: Scan, Fixed wavelength, kinetics, wavelength program, calibration concentration measurements, 50 standards, 5 ordinate types, 5 curve models, background correction, instrument validation. Additionally, general arithmetic functions, peak-picking, kinetics slope calculations, efficient report generator and optional automation. PC requirements recommended: Pentium® Processor 166 MHz or greater, 32 MB RAM or higher, 1 GB hard drive with 200 MB free, and Windows® 95 or Windows NT® (4.0) or higher.

Part No. B2500170

SIPPERS

Peristaltic Sipper “PESI”

Sampling purging and return time selectable from software. Requires B2500123, Lambda 800/900 sipper installation kit, Lambda 800/900 accessory PC board (B2205116) and a flowcell of choice with screw connectors (see below).

Part No. B2190036

Vacuum Sipper “VASI” with Pinch Valve

Sampling purging and return time selectable from software. Requires B2500123, Lambda 800/900 sipper installation kit, Lambda 800/900 accessory PC board (B2205116), a flowcell of choice with screw connectors (see below) and pump unit (B0505866).

Part No. B2190037

Vacuum Sipper “VASI” with Solenoid Valve

Sampling purging and return time selectable from software. Requires, but does not include, B2500123 Lambda 800/900 sipper installation kit, Lambda 800/900 accessory PC board (B2205116), a flowcell of choice with screw connectors (see below) and pump unit (B0505866).

Part No. B2190038

Low Sample Volume Sipper Kit

Include the following parts: B0506708 aspiration tubing, 0.5 mm i.d. (must be cut to the appropriate length), B0506709 outlet tubing, 0.5 mm i.d., B0193342 adapter A, B0506742 pump tubing white/white, B0507918 adapter K, and B0506703 flowcell, 18 µL volume.

Part No. BUVLSIP

Pump Unit

Vacuum pump with one liter waste bottle. For use with sipper systems (or funnel cells).

Part No. B0505866

Flow-Through Cell, QS, 10 mm, with 2 Screw Connectors

10 mm pathlength, with 2 Screw Connectors, Quartz SUPRASIL®, 160 µL cell volume.

Part No. B0631087

Micro-Flowcell, Glass

For PESI/VASI sippers, 160 µL volume, 10 mm pathlength and screw connectors.

Part No. B0181295

Micro-Flowcell, Optical Glass

For PESI/VASI sippers 400 µL volume, 50 mm pathlength, 3 mm circular chamber, with screw connector.

Part No. B0183912

Long Pathlength Flowcell, Quartz

For PESI/VASI sippers, 50 mm pathlength, 400 µL volume with screw connectors.

Part No. B0183913

Long Pathlength Flowcell, Quartz Glass, SUPRASIL

For PESI/VASI sippers, quartz, 50 mm pathlength, 600 µL volume, 4 mm circular chamber with nipple connector.

Part No. B0109944

Tubing

Tubing kit “Peristaltic”

For Peristaltic sipper “PESI” and Vacuum sipper “VASI” with pinch valve.

Part No. B2500103

Tubing Kit for Vacuum Sipper “VASI” with Solenoid Valve

For micro flowcells with screw connectors.

Part No. B0198023

Tubing for Peristaltic Pump (Purple/Purple)

2.06 mm i.d. with 0.80 mm wall thickness.

Part No. B0190034 (pkg. 12)



Sipper

Reflectance Accessories

www.perkinelmer.com

INTEGRATING SPHERE, 60 MM, FOR LAMBDA 800/900 SPECTROMETER

Spectralon[®] coated integrating sphere 60 mm diameter, 8 degrees sample and reference reflectance ports. Wavelength range: 190 to 900 nm (Lambda 800), 190 to 2500 nm (Lambda 900).

Part No. PELA1020



Integrating Sphere

INTEGRATING SPHERE, 150 MM, FOR LAMBDA 800/900 SPECTROMETER

Spectralon coated integrating sphere, 150 mm diameter, 8 degrees sample and reference reflectance ports, 0 degrees transmittance port with optional cuvette holder, removable light trap at 8 degrees. Wavelength range: 200 to 900 nm (Lambda 800), 200 to 3300 nm (Lambda 900).

Part No. PELA1000

Accessories for 150 mm Integrating Sphere

Small Spot Accessory Kit for 150 mm Integrating Sphere

Lens kit for reducing beam size to the transmittance, to the center mount, and to the diffuse reflectance position.

Part No. PELA9048

Center-Mounted Sample Holder, Jaw Style

For 150 mm integrating spheres. Jaw style for solid samples like glasses, prisms, etc.

Part No. PELA9038

Center-Mounted Sample Holder, Clip Style

For 150 mm integrating spheres. Clip style for films and paper samples.

Part No. PELA9039

Cell Holder for Integrating Sphere

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

Part No. C6951019

Powder Sample Holder Set

For measurement of powder samples.

Part No. PELA9040

Biconical Accessory Small Spot Size (Praying Mantis)

For diffuse reflectance measurement with horizontal sample position for powders, pastes and granulates. Provides a very small (approx. 2 mm) spot size. Wavelength range: 200 to 900 nm (Lambda 800), 200 to 3300 nm (Lambda 900).

Part No. PELA1022



Biconical Accessory



Center-Mounted Sample Holder, Clip Style

Reflectance Accessories

ABSOLUTE FIXED-ANGLE REFLECTANCE ACCESSORY

The absolute accessory mounts in the standard sample compartment of the Lambda 800/900. It is used to produce absolute data on various types of reflective surfaces. Both highly reflective and anti-reflective surfaces may be measured. When measuring a sample, only one light bounce from the sample surface is required. This provides the optimal s/n performance. As implied, this is an absolute accessory so no additional mirrors or changes to the reflective surfaces are done, only the introduction of the sample.

Specifications

- Angle of Incidence: 8, 15, 30, 45 and 60 degrees
- Typical Accuracy: Better than 1% reflectance when compared to a known commercially available standard (SRM 2003 etc.)
- Wavelength Range: 175 to 900 nm (Lambda 800), 175 to 3300 nm (Lambda 900)
- Sample Size: Minimum sample size ~ 1"

VN Baseplate

Part No. N1016001

VN 8 Degree

Part No. N1016008

VN 15 Degree

Part No. N1016015

VN 30 Degree

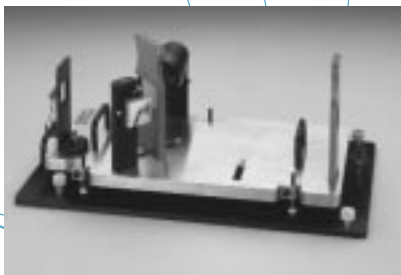
Part No. N1016030

VN 45 Degree

Part No. N1016045

VN 60 Degree

Part No. N1016060



Absolute Fixed Angle Reflectance Accessory

SPECULAR REFLECTANCE

Remote Multi-angle Relative Specular Accessory

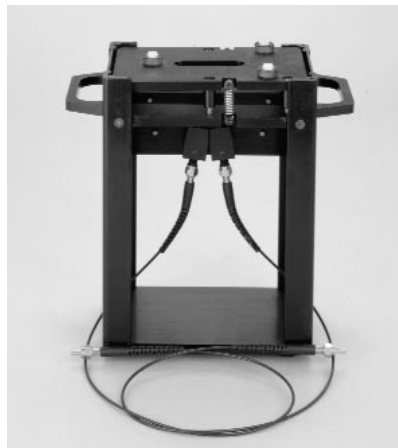
Reflectance optrode which is connected by monofiber optic cables to the spectrometer allowing remote specular measurement of samples. Three angles of incidence: 7.5, 30 and 45 degrees. B2205302 and monofibers are required.

Part No. PELA1034

VW Absolute Specular Reflectance Accessory for the Lambda 800/900 Spectrometer

For measurements of absolute specular reflectance of filters, glasses and mirrors. 7.5 degrees of light incidence. Minimum sample size is 40 mm x 40 mm square or 50 mm diameter round sample.

Part No. PELA1029



Remote Multi-angle Relative Specular Accessory

Variable Angle Absolute Specular Reflectance Accessory for Lambda 800/900 Spectrometer

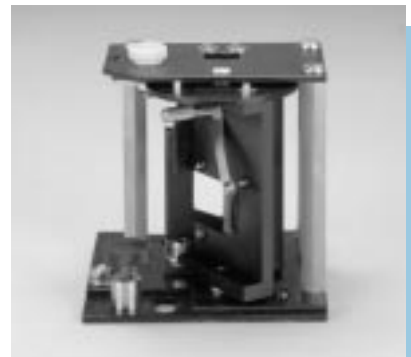
Angle of incidence from 10 to 72 degrees. Sample size 7.5 cm x 10 cm x 1.5 cm. Wavelength range: 200 to 900 nm (Lambda 800), 200 to 2500 nm (Lambda 900).

Part No. PELA1030

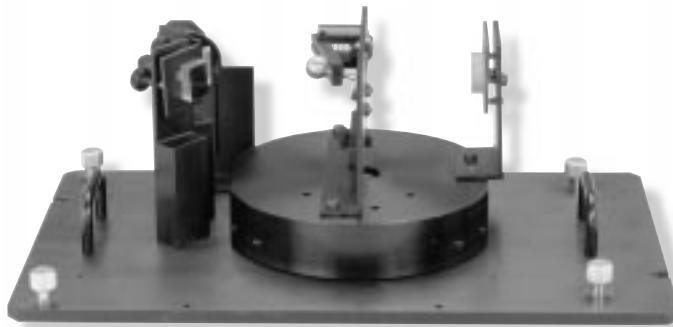
Variable Angle Reflectance Accessory

Vernier selection of incidence angle from 15-70 degrees. Accommodates samples from 20 x 20 mm to 100 x 100 mm.

Part No. B0137314



Variable Angle Reflectance Accessory



VW Absolute Specular Reflectance Accessory

Reflectance Accessories

www.perkinelmer.com

Relative Specular Reflectance Accessory 6 Degrees

Fixed angle of incidence of 6 degrees. Accommodates samples from 20 x 20 mm to 100 x 100 mm.

Part No. C5500228



Relative Specular Reflectance Accessory, 6 Degrees

Relative Specular Reflectance Accessory 45 Degrees for the Lambda 800/900

For reflectance measurements 45 degrees of light incidence.

Part No. PELA1025

"Grazing Angle" Relative Reflectance Accessory for the Lambda 800/900

For reflectance of thickness measurements 80 degrees of light incidence.

Part No. PELA1026

Spare Standard Mirror

For C5500228 Relative specular reflectance accessory and B0137314 variable angle reflectance accessory.

Part No. B0071519



Relative Specular Reflectance Accessory, 45 Degrees

POLARIZERS/DEPOLARIZERS

Common Beam Depolarizer for Lambda 800/900 Spectrometer

For measurements with depolarized light. Wavelength range: 190 to 900 nm (Lambda 800), 190 to 2600 nm (Lambda 900). Setup with stepper drive, controlled by UV WinLab™ software. **Service installation required.**

Part No. B0501282

Double Polarizer Drive for Lambda 800/900 Spectrometer

High-performance double polarizer (depolarizer) driver for installation in the sample compartment. The polarization (depolarization) orientation can be changed by a stepper drive with the UV WinLab software. Resolution of 0.2 degrees. The polarization (depolarization) orientation can be changed at up to 20 wavelength positions. Required but not included are one or two of the following polarization elements:

(a) B0505284, (b) B2205022, (c) B2205021.

Part No. B0505530

Polarizer Crystal for Lambda 800/900 Double Polarizer Drive

High-performance polarizer. One set to update the double polarizer drive. For equal energy level in sample and reference beam, two sets are necessary (B0505530 and B0501282). Wavelength range: 300 to 900 nm (Lambda 800), 300 to 2600 nm (Lambda 900).

Part No. B0505284

Film Polarizer for Lambda 800/900 Double Polarizer Drive

High-performance film polarizer. One part to update the double polarizer drive. For equal energy level in sample and reference beam, two are necessary (B0505530 and B0501282). Wavelength range: 400 to 700 nm.

Part No. B2205022

Depolarizer Crystal for Lambda 800/900 Double Polarizer Cassette

High-performance depolarizer crystal for measurements in depolarized light in the sample compartment. One part to update the double polarizer drive. For equal energy level in sample and reference beam, two are necessary (B0505530 and B0501282). The depolarizer crystals can be rotated at up to 20 wavelength points to get a wavelength independent depolarization. Wavelength range: 190 to 900 nm (Lambda 800), 190 to 2600 nm (Lambda 900).

Part No. B2205021



Double Polarizer Drive

Reflectance Accessories

GENERAL PURPOSE OPTICAL BENCH SYSTEM

General Purpose Optical Bench (GPOB) for Lambda 800/900 Spectrometer

The GPOB features a magnetized, ruled optical bench with a moveable 60 mm Spectralon® collection integrating sphere. Samples up to 400 mm in pathlength can be analyzed using the General Purpose Optical Bench. Wavelength range: 200 to 900 nm (Lambda 800), 200 to 2700 nm (Lambda 900).

Part No. PELA1003



General Purpose Optical Bench

Accessory Kits

60 mm Diffuse Reflectance Integrating Sphere Accessory Kit

To be mounted on the General Purpose Optical Bench for diffuse reflectance analysis.

Part No. PELA1004

Sample Holder Mount Kit

Two cantilever sample holders with magnetic bases.

Part No. PELA1005

Variable Angle Transmittance Sample Holder Kit

Holder allows for holding samples at an accurately measured angle to the incident beam for measurement of transmittance. Samples can be up to 1 cm thick and up to 10 cm square.

Part No. PELA1006

Lens Assembly Kit

The kit allows for the focusing of the beam to a small spot by means of a number of plane convex lenses and iris diaphragms. The lenses are mounted on magnetized bases.

Part No. PELA1007

Optical Bench Kit

Two magnetized, mounted iris diaphragms on two optical rails with mounts.

Part No. PELA1008



Fiber Optic Reference Feed Kit

Fiber Optic Reference Feed Kit

The kit allows the reference beam to be introduced into the sphere via a flexible fiber optic bundle. This eliminates the need to use mirrors to direct the reference beam into the sphere allowing a wider variety of geometries to be used.

Part No. PELA1009

Light Trap Aperture Kit

The kit contains black glass light traps and iris diaphragms especially mounted for use with the General Purpose Optical Bench.

Part No. PELA1010

Specular Reflectance Kit

Kit consists of six mirrors on magnetized bases that can be easily placed on the base plate of the General Purpose Optical Bench. Included are two square, flat mirrors with magnesium fluoride overcoat, two concave and two convex mirrors.

Part No. PELA1011

Flat Mirror Kit

Kit consists of two, 2-inch-square plane mirrors on magnetic mounts.

Part No. PELA1012

Short Focal Length Mirror Kit, Spot Incidence

Kit consists of a short focal length (20-30 mm) concave mirror on an adjustable base with magnetic mounts to allow for small spot incidence of curved samples.

Part No. PELA1013

Beam Blocker Kit

Optical black beam blocker on adjustable base with magnetic mounts.

Part No. PELA1014

Fiber Optic Measurement Stage and Holder Kit

Includes two fiber optic holders to allow for measurement of small diameter fibers and fixed apertures.

Part No. PELA1015

Reflectance Accessories

www.perkinelmer.com

FIBER OPTICS ACCESSORIES

Transfer Optic for Monofibers

Fiberoptic transfer holder for Lambda spectrometers. Requires pair of monofibers 2 x 2 or 2 x 10 meters and/or optrode. Other optrodes available on request.

Part No. B2205302

Pair of Monofibers

UV/VIS (250 to 900 nm) 2 x 2 meters each.

Part No. B0196912

Pair of Monofibers

UV/VIS (250 to 900 nm) 2 x 10 meters each.

Part No. B0196913

Pair of Monofibers

VIS/NIR (400 to 2400 nm) 2 x 2 meters each.

Part No. B0509591

Pair of Monofibers

VIS/NIR (400 to 2400 nm) 2 x 10 meters each.

Part No. B0509577

Flowthrough Optrode

Flowthrough cell, stainless steel with variable pathlength from 0.1 to 10 mm, SMA-light fiber connectors, quartz windows, NPT 1/4" connectors for process stream inlet and outlet. The cell is used for remote measurements of process streams. B2205302 transferoptic and monofibers required.

Part No. B0501860

External Sample Compartment

Incorporates an optical bench with two light fiber adapters (for SMA-plugs) as well as one cell holder for a 1 cm pathlength cell. The distance between the light fibers is variable from 0-30 mm. The housing contains light tight openings for light fibers and tubings. Dimensions: 300 x 180 x 140 mm (WxHxD). B2205302 and monofibers are required.

Part No. B0500943

Dipping Optrode

Special optrode for direct measurement of absorption in a liquid sample. Wavelength range: 200 to 900 nm (Lambda 800), 200 to 1000 nm (Lambda 900), light path 1 cm. Light fiber y-shaped, front part VA steel (length=450 mm, diameter=15 mm). Total length of optrode is 2000 mm. SMA light fiber connectors to fit directly to transfer optic for monofibers, aluminum-coated mirror with magnesium fluoride coating, mirror holder VA steel, pathlength 15 mm (+/- 0.5 mm). B2205203 and monofibers are required.

Part No. B0504053

LIGHT TRAP ACCESSORIES

Light Trap Accessory

For use with the PELA1000 150 mm Sphere Accessory.

Part No. PELA9026

Light Trap Accessory

For use with the PELA1001 150 mm Downward-Viewing Sphere Accessory.

Part No. PELA9027

Light Trap Accessory

For use with the PELA1002 150 mm Large Sample Compartment Accessory.

Part No. PELA9028

Light Trap Accessory

For use with the PELA1003 General Purpose Optical Bench.

Part No. PELA9029

Light Trap Accessory

For use with the PELA1016 0°/45° Spectroscopy Accessory.

Part No. PELA9030

Light Trap Accessory

For use with the PELA1020 60 mm Spectralon Sphere Accessory.

Part No. PELA9033

Light Trap Accessory

For use with the PELA1021 60 mm Infragold Sphere Accessory.

Part No. PELA9034

CUSTOMIZED ACCESSORIES

Please contact your local PerkinElmer product application specialist for more information.

Downward-Viewing Integrating Sphere, 150 mm for Lambda 800/900 Spectrometer

Sample measurement in horizontal position of powders, granular materials and large irregular geological samples. Spectralon[®] coated integrating sphere, 150 mm diameter, 8 degrees sample and reference reflectance ports, 0 degrees transmittance ports with optional cuvette holder. Removable light traps at 8 degrees. Wavelength range: 200 to 900 nm (Lambda 800), 200 to 2500 nm (Lambda 900).

Part No. PELA1001

0°/45° Accessory for Lambda 800/900 Spectrometer

For extremely accurate color measurements. Angle of incidence 0 degrees. Angle of collection 45 degrees with ellipsoidal mirror to integrating sphere detector. Sample size unlimited. Wavelength range: 200 to 900 nm (Lambda 800), 200 to 2500 nm (Lambda 900).

Part No. PELA1016

PC SOFTWARE PACKAGES

UV WinLab™ Operating Software

Windows®-based operating software. Provides recording, manipulation and storage of spectral data and complete control of instruments and accessories of Lambda series spectrometers.

Operating modes: Scan, Fixed wavelength, kinetics, wavelength program, calibration concentration measurements, 50 standards, 5 ordinate types, 5 curve models, background correction, instrument validation. Additionally, general arithmetic functions, peak-picking, kinetics slope calculations, efficient report generator and optional automation. PC requirements recommended: Pentium® Processor 166 MHz or greater, 32 MB RAM or higher, 1 GB hard drive with 200 MB free, and Windows® 95 or Windows NT® (4.0) or higher.

Part No. B2500151

Dissolution Lab Software Package

For automated on-line or off-line analysis of pharmaceutical tablet dissolution studies. For Lambda 20/40, Windows® 95/98 or Windows NT®. Requires, but does not include, additional sampling accessories.

Part No. B0193864

SIPPERS

Peristaltic Sipper “PESI”

For Lambda instruments. Sampling, purging and return time selectable from keyboard.

For Lambda 10/20/40, no accessory PCB necessary. Requires (but does not include) B0509681 or B2190034 accessory PCB for Lambda Bio, 11, 12 and 14 UV/VIS Spectrometer, or B0124984/B0116378 accessory PCB for Lambda 18/19, and B2500123 installation kit for Lambda 800/900 Spectrometers.

Requires (but does not include) flowcell of choice with screw connector.

Part No. B2190036



Sipper

Vacuum Sipper “VASI” with Pinch Valve

For Lambda instruments. Sampling and purging time selectable from keyboard. For Lambda 10/20/40 no accessory PCB necessary. Requires (but does not include) B0509681 or B2190034 accessory PCB for Lambda Bio, 11, 12 and 14 UV/VIS spectrometer or B0124984/B0116378 accessory PCB for Lambda 18/19, and B2500123 installation kit for Lambda 800/900. Requires (but does not include) B0505866 pump unit and flowcell of choice with screw connector.

Part No. B2190037

Vacuum Sipper “VASI” with Solenoid Valve

For Lambda instruments. Sampling and purging time selectable from keyboard. For Lambda 10/20/40, no accessory PCB necessary. Requires (but does not include) B0509681 or B2190034 accessory PCB for Lambda Bio, 11, 12 and 14 UV/VIS Spectrometer or B0124984/B0116378 accessory PCB for Lambda 18/19, and B2500123 installation kit for Lambda 800/900. Requires (but does not include) B0505866 pump unit and flowcell of choice with screw connector.

Part No. B2190038

Sipper Parts for Low Sample Volume

Includes: B0506708 aspiration tubing, 0.5 mm i.d. (must be cut to the appropriate length), B0506709 outlet tubing, 0.5 mm i.d., B0193342 adapter A, B0506742 pump tubing white/white, B0507918 adapter K, and B0506703 flowcell, 18 µL volume.

Part No. BUVLSIP

Tubing Kit “Peristaltic”

For Peristaltic Sipper “PESI” B2190036, and Vacuum Sipper “VASI” with pinch valve, B2190037.

Part No. B2500103

Tubing Kit

For B2190038 Vacuum Sipper “VASI” with solenoid valve. For micro flowcells with screw connectors.

Part No. B0198023

Tubing for Peristaltic Pump (Purple/Purple)

2.06 mm i.d. with a 0.80 mm wall thickness.

Part No. B0199034 (pkg. 12)

Flow-Through Cell, QS, 10 mm, with 2 Screw Connectors

10 mm pathlength, with 2 Screw Connectors, Quartz SUPRASIL®, 160 µL cell volume.

Part No. B0631087

Long Pathlength Flowcell, 50 mm, with 2 Screw Connectors

50 mm pathlength, with 2 Screw Connectors, Quartz, 400 µL cell volume.

Part No. B0183913

Micro Flowcell for Sipper, QS, 50 mm, with Nipple Connector

50 mm pathlength, 4 mm circular chamber. Nipple connector, Quartz SUPRASIL®, 600 µL cell volume.

Part No. B0109944

Micro Flowcell, QS, 10 mm, with Nipple Connector

10 mm pathlength, non-thermostatted, nipple connector, Quartz SUPRASIL®, 160 µL cell volume.

Part No. B0191766

LAMBDA 10/20/40 Spectrometers

PerkinElmer™ UV-23

instruments.

www.perkinelmer.com

AUTOSAMPLER

AS91 Autosampler

For Lambda 10/20/40/B10. Includes sample tray (F). Requires, but does not include, B2190034 accessory board, sipper, and flowcell.

Part No. B2190039

AUTOSAMPLER TRAYS

Sample Tray (F) for AS91 Autosampler

Easily removable sample tray with 152 locations for 15 mL sample vessels, eight locations for 50 mL reference vessels and one location for 250 mL wash vessel. Included with B2190039 AS91 Autosampler.

Part No. B0509555

Sample Tray (E) for AS91 Autosampler

Easily removable sample tray with 218 locations for 6 mL sample vessels (12.5 mm); eight locations for 50 mL reference vessels and one location for 250 mL wash vessel. Optional accessory for B2190039 AS91 Autosampler.

Part No. B0509554

Sample Tray (G) for AS91 Autosampler

Easily removable sample tray with 55 locations for 50 mL sample vessels, eight locations for 50 mL reference vessels and one location for 250 mL wash vessel. Optional accessory for B2190039 AS91 Autosampler.

Part No. B0508520

REFLECTION ACCESSORIES

Integrating Sphere for Lambda 10/20/40/12/14

Spectralon® coated, wavelength range 250 to 1100 nm, for scattered transmittance and diffuse reflectance measurement. Powder sample holder B0505833 included.

Part No. C6951014

Calibrated White Plate, Spectralon®

1.25" calibrated diffuse reflectance standard, Spectralon®

Part No. PELA9057

Calibrated White Plate, Spectralon®

2" calibrated diffuse reflectance standard, Spectralon®

Part No. PELA9058

Relative Specular Reflectance Accessory, 6 Degrees

For reflectance or thickness measurements. 6-degree angle of light incidence.

Part No. C5500228



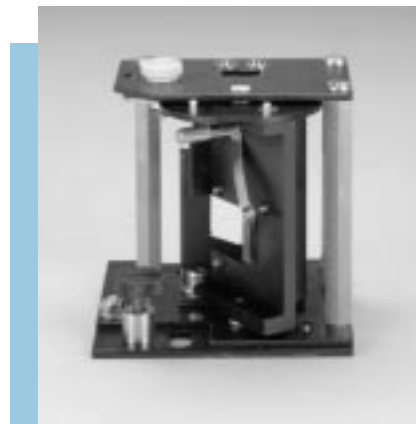
Relative Specular Reflectance Accessory, 6 Degrees

Reflectance Accessory

Variable angle of incidence (15 to 70 degrees) for sample position. In double-beam instruments a second unit as reference is recommended.

Accommodates samples from 20 x 20 mm to 100 x 100 mm.

Part No. B0137314



Reflectance Accessory

Spare Standard Mirror

For B0086703 specular reflectance accessory and B0137314 reflectance accessory.

Part No. B0071519

1.800.762.4002 US
1.800.561.4646 Canada

FIBER OPTIC ACCESSORIES**Transfer Optic for Monofibers**

Fiberoptic transfer holder for Lambda instruments. Requires pair of monofibers 2 x 2 m or 2 x 10 m and/or optrode.

Part No. B0509546



Transfer Optic

Set of Monofiber UV/VIS

Length 2 x 2 m. 600 micron diameter, standard SMA adapters included.

Part No. B0196912 (pkg. 2)

Set of Monofiber UV/VIS

Length 2 x 10 m. 600 micron diameter, standard SMA adapters included.

Part No. B0196913 (pkg. 2)

Flowthrough Optrode for Lambda Series UV/VIS and UV/VIS/NIR Spectrometers

Flowthrough cell, stainless steel with variable pathlength from 0.1-10 mm, SMA light fiber connectors, quartz windows, NPT 1/4" connectors for process stream inlet and outlet. The cell is used for remote measurements of process streams. B0509546 transferoptic and monofibers required.

Part No. B0501860

MISCELLANEOUS ACCESSORIES**Water Circulator**

Electronic temperature control, continuously settable from 32° to 60°C, temperature stability $\pm 0.2^\circ\text{C}$, with precision thermometer, built-in cooling coils. Heating rate 2 kilowatt. Power supply 110V/60Hz.

Part No. N9302736

Pump Unit

Vacuum pump with one-liter waste bottle. For use with sipper systems or funnel cells.

Part No. B0505866

Temperature Measurement Kit

For temperature monitoring in one cell. Glass cell included. B0509681 Accessory PCB for Lambda 10/20/40/11/12/14 or B2205116 Accessory PCB for Lambda 900 required (but not included).

Part No. B0185227

Magnetic Stirrer Accessory

For one-cell position. For single cell holders and cell changers.

Part No. B0507355

Stirring Rods

Set of 15 pieces for stirring in the cuvette. For use with C6952945 Research Peltier System with 6-cell holder and B0185210 13-cell changer and B0507355 magnetic stirrer accessory.

Part No. B0187028

In the past 25 years, a large number of biochemical and industrial applications for fluorescence and other forms of luminescence spectroscopy have been developed.

Crude Oils

- Many aromatic compounds such as fuel oil additives have strong natural fluorescence.
- Characterization of crude oils (often using three-dimensional fluorescence plots) helps identify the source of an oil spill.

Immunoassay

- Chemiluminescence and bioluminescence effects have led the way to new fields of research in immunoassays.

Living Cells

- Study phenomena within living cells using chelating dyes. One example is the FURA-2-calcium complex for analysis of intracellular changes in calcium concentration.
- Detect and quantitate DNA rapidly, using Hoechst dye 33258, especially in conjunction with the DNA Thermal Cycler.

Environmental Studies

- Fluorescence measurements determine selenium in marine environments to a level as low as 3.2 nanograms.

Industrial Applications

- Study molecular aggregation through analysis of behaviors of dyes in polymer matrices.
- Measure the fluorescence from optical brighteners – compounds added to fabrics, papers, polymers and such produce a brighter, and therefore more desirable, shade.

Pharmaceutical and Biological Investigations

- Rapidly screen “apc” drugs for the presence of acetylsalicylic acid, salicylamide and salicylic acid.

Solid State Research

- Measure color balance of phosphors used in cathode ray tubes.

WHAT IS PHOTOLUMINESCENCE?

Photoluminescence occurs after a molecule absorbs ultraviolet or visible energy. Electrons are first excited to a higher energy level, then return to one of the ground states with emission of energy.

FLUORESCENCE AND PHOSPHORESCENCE ARE DIFFERENT FORMS OF PHOTOLUMINESCENCE

Fluorescence is emitted at longer wavelengths than the excitation wavelength, and is characterized by very short decay times, on the order of 10^{-9} to 10^{-6} seconds (nanoseconds or microseconds).

Phosphorescence emission occurs when the electrons of the excited molecule are promoted to the triplet state. When these electrons returned to the ground state phosphorescence emission occurs and it is characterized by decay times of 10^{-4} to as long as 1 to 10's of seconds.

A QUALITATIVE TOOL

Some excitation and emission spectra have characteristic structural features that help in qualitative identification. A combination of excitation and emission spectra are often useful for identification. In a 3D Fluorescence analysis, scan data are collected from a series of fluorescence spectra whereby one monochromator is scanned over a constant wavelength range and the other monochromator is stepped by a fixed wavelength increment before each successive scan. The resulting series of scans can be displayed as a three-dimensional (3D) stacked plot or a two-dimensional (2D) contour map. These 2D and 3D data plots can often be used to “fingerprint” fluorescent samples.

FLUORESCENCE SPECTROSCOPY IS BOTH SENSITIVE AND SELECTIVE

The sensitivity of the fluorescence technique is very high compared to absorption studies – from 10 to 10,000 times more sensitive.

Many substances absorb ultraviolet or visible light, but only certain classes exhibit native fluorescence. However, it is often possible to convert non-fluorescent molecules into fluorescent derivatives using specific reagents.

VERSATILITY OF SAMPLING MODES

A number of sampling modes are possible, including right angle fluorescence viewing from dilute solutions, front surface viewing of turbid solutions and solid samples and powders, and the use of fiber optics to sample the fluorescence from spots on TLC plates.

The purpose of this section of the catalog is to describe the many types of sampling accessories and supplies that are available to you for luminescence studies with PerkinElmer spectrometers.

Standard Fluorescence Cells for Fluorimetry

MACRO WITH PTFE LID OR WITH PTFE STOPPER

Ordering Information

Part No.	Material	Qty	Light Path mm	Outside Dim. H x W x D mm	Inside width mm	Base Thickn. mm	Cell Volume	Windows
WITH PTFE LID								
B0631104	Special Optical Glass	2	10 x 10	45 x 12.5 x 12.5	10	1.25	3.5 mL	4
B0631107	Quartz SUPRASIL®	2	10 x 10	45 x 12.5 x 12.5	10	1.25	3.5 mL	4
WITH PTFE STOPPER								
B0631110	Special Optical Glass	2	10 x 10	46 x 12.5 x 12.5	10	1.25	3.5 mL	4
B0631113	Quartz SUPRASIL®	2	10 x 10	46 x 12.5 x 12.5	10	1.25	3.5 mL	4

SEMI-MICRO WITH PTFE LID OR WITH PTFE STOPPER

Ordering Information

Part No.	Material	Qty	Light Path mm	Outside Dim. H x W x D mm	Inside Width mm	Base Thickn. mm	Cell Volume	Windows
WITH PTFE LID								
B0631115	Special Optical Glass	2	10 x 4	45 x 12.5 x 12.5	4	1.25	1.4 mL	4
B0631116	Quartz SUPRASIL®	2	10 x 4	45 x 12.5 x 12.5	4	1.25	1.4 mL	4
WITH PTFE STOPPER								
B0631117	Special Optical Glass	2	10 x 4	46 x 12.5 x 12.5	4	1.25	1.4 mL	4
B0631118	Quartz SUPRASIL®	2	10 x 4	46 x 12.5 x 12.5	4	1.25	1.4 mL	4



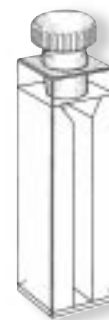
B0631104



B0631110



B0631115



B0631117

ULTRA-MICRO WITH PTFE STOPPER

Ordering Information

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

MICRO WITH PTFE LID OR WITH PTFE STOPPER

Ordering Information

Part No.	Material	Qty	Light Path mm	Outside Dim. H x W x D mm	Inside width mm	Base Thickn. mm	Cell Volume	Windows
B0631119	Special Optical Glass	2	10 x 2	45 x 12.5 x 12.5	2	1.25	700 µL	4
B0631120	Quartz SUPRASIL®	2	10 x 2	45 x 12.5 x 12.5	2	1.25	700 µL	4
B0631121	Special Optical Glass	2	10 x 2	40 x 12.5 x 12.5	2	1.25	400 µL	4
B0631122	Quartz SUPRASIL®	2	10 x 2	40 x 12.5 x 12.5	2	1.25	400 µL	4

MICRO WITHOUT LID

Ordering Information

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

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



B0631124



B0631120



B0631122



B0631123

Fluorescence Cells for Magnetic Stirrers**MACRO/SEMI-MICRO**

B0631132

Ordering Information

Part No.	Material	Qty	Light Path mm	Outside Dim. H x W x D mm	Inside width mm	Base Thickn. mm	Cell Volume	Windows
B0631132	Quartz SUPRASIL®	1	4 x 4	45 x 12.5 x 12.5	4	4.5	500 µL	4
04978499	Magnetic Stirrer fleas	6						

Temperature-Controlled Cells for Fluorimetry**SEMI-MICRO**

B0631125

Ordering Information

Part No.	Material	Qty	Light Path mm	Outside Dim. H x W x D mm	Inside Width mm	Base Thickn. mm	Cell Volume	Windows	Remarks
B0631125	Quartz SUPRASIL	1	10 x 4	48 x 12.5 x 12.5	4	3.2	1.4 mL	5	horizontal inlet/outlet tubes to temp. chamber

Flow-Through Cells for Fluorimetry**MACRO INLET/OUTLET TUBES ON TOP**

B0631126

Ordering Information

Part No.	Material	Qty	Light Path mm	Center Height mm	Outside Dim. H x W x D mm	Aperture mm	Cell Volume	Windows
B0631126	Quartz SUPRASIL®	1	10 x 6.5	15	45 x 12.5 x 12.5	11 x 6.5	750 µL	3

SEMI-MICRO INLET/OUTLET TUBES ON TOP

B0631127

Ordering Information

Part No.	Material	Qty	Light Path mm	Center Height mm	Outside Dim. H x W x D mm	Aperture mm	Cell Volume	Windows
B0631127	Quartz SUPRASIL®	1	10 x 4	15	45 x 12.5 x 12.5	11 x 4	450 µL	3
B0631133*	Quartz SUPRASIL®	1	3 x 3	15	35 x 12.5 x 12.5	11 x 3	100 µL	3

Compact with 2 Screw Connectors and FEB Tubing

Luminescence Sample Blocks and Source Lamps

For checking day-to-day reproducibility of your Luminescence Spectrometer

These sample blocks provide convenient day-to-day checks for wavelength calibration and reproducibility.

The six PMMA (polymethyl-methacrylate) blocks have emission characteristics in the wavelength ranges indicated below.

1. 300 to 540 nm (anthracene/naphthalene)
2. 420 to 600 nm (ovalene)
3. 300 to 400 (p-terphenyl)
4. 400 to 600 nm (tetraphenyl/butadiene)
5. 600 to 640 nm (European)
6. 540 to 640 nm (Rhodamine B)

Sealed Water Samples

This 10 mm sealed cell contains high-purity water for checking instrument sensitivity. It provides a constant sample to reproducibly measure signal-to-noise using the Raman band of water.

Fluorescence Cuvette Starter Kit

Includes pair of quartz cells, 10 x 10 mm, 3.5 mL cell volume (B0631107); set of six luminescence sample blocks (52019600); sealed water sample (L2251293).

Part No. BUVSTAR3

LUMINESCENCE SAMPLE BLOCKS

Ordering Information

Part No.	Description
52019600	Set of six Luminescence Sample Blocks
52124965	Phosphorescence Sample Blocks
B0631143	Sealed Water Sample
CP364460	Ovalene Block

XENON SOURCE LAMPS

Sources for the PerkinElmer Luminescence Spectrometers are pulsed Xenon discharge lamps (7.3 W average power at 50 Hz). This reliable source produces very little ozone or heat but provides remarkable sensitivity due to its peak intensity exceeding 1 KW! On most LS Series instruments the detector electronics are controlled so that delay and gate time can be varied to measure phosphorescence between source pulses.

To maintain the original stability and sensitivity of your instrument, use only PerkinElmer replacement lamps. We recommend that you have your Xenon source replaced by a PerkinElmer Service Engineer (not included in the prices for the lamps).

NOTICE

Installation of a new lamp by a PerkinElmer Service Engineer is recommended for two reasons:

- Optimum performance is achieved when lamp is correctly aligned
- Your personal safety is assured; Xenon lamp quartz envelopes are under pressure. Extreme caution and eye protection are necessary

Ordering Information

Part No.	Description
XENON SOURCE LAMPS	
L2150129	For LS-1 and LS-2 Series
52126271	For 3000 and LS-3/4/5 Series
L2251157	For LS-30/40/50 Series
04969486	Festoon Lamp for the LS Series
CP360020	For MPF-44E and MPF-66
03501646	For 650, 204, 203 and 512 Series and all MPF Series excluding MPF-44E and MPF-66

Note: The LS Series uses a small festoon lamp to maintain even triggering and stability

FLR PC Software Packages

The PerkinElmer LS-50B luminescence spectrophotometer provides flexibility, reliability, and affordability in a single integrated workstation for fluorescence, phosphorescence, and chemiluminescence assays.

The ability to rapidly and easily perform a wide variety of experiments on a single instrument platform has never been more important in the research laboratory. By simply using the interchangeable sample accessories for single-cell, multi-cell, or 96-well microplates, the user can easily move from development to routine assay performance, collecting the necessary data and analyzing the results with confidence. Combining the instrument's basic proven performance and variety of sample formats with computer-controlled accessories and FL WinLab™ software makes this an ideal tool for applications in areas such as Molecular Biology, Cell Biology, Biochemical and Pharmaceutical Research, Food and Agriculture, Environmental Studies and Analytical Chemistry.

EASY-TO-USE SOFTWARE PROVIDING UNLIMITED SELECTIVITY

FL WinLab™ software has been developed with today's Windows®-based technology to speed applications development and take your research to the next level with the same performance and reliability you have come to expect from PerkinElmer. Specific modes of instrument operation such as Scan, Time Drive, Ratio Data Collection, and Well Plate Reader can be accessed easily in the "Application Menu" for use with informative fluorescence dyes absorbing and emitting at a variety of wavelengths.

FL WinLab™ Software

Windows®-based software controls the instrument, sampling accessories and data collection. The software provides specific applications such as Scan, Time Drive, Ratio Data Collection, ICBC Calibration, Well Plate Reader and 3D view. Included in LS-50B computer-ready, PC systems and specified update kits.

Part No. B8011050

UPDATE KITS FOR LS-50B**LS-50B Upgrade Kit**

To update an LS-50B to Windows®-based operating software. Includes FL WinLab™ software and firmware revision.

Requires, but does not include, installation by a PerkinElmer Service Engineer (N0207181).

Part No. L2108529

LS-50 to LS-50B Upgrade Kit

To update an LS-50 to an LS-50B. Includes FL WinLab™ software, firmware revision, and PC boards.

Requires, but does not include, installation by a PerkinElmer Service Engineer (N0207181).

Part No. L2250020



LS-50B

Sampling Accessories

www.perkinelmer.com

CELL HOLDERS AND ACCESSORIES

Four-position Thermostatted Automatic Cell Changer, With Stirrer

Changes in temperature affect the intensity of fluorescence. A simple, accurate way to control sample temperature is by replacing the standard cell holder with a thermostatable cell holder. Water is circulated from an external circulating water bath (not included) through an internal passage in the cell holder which keeps the temperature of the sample uniform. The four-position cell holder accommodates four square, 10 mm pathlength cells or four microcells with four adapters. (L2250139)

When you occasionally work with limited volume samples, use the Microcell Adapter for the 5 mm pathlength microcells, which require a minimum volume of only 600 microliters. Includes six stirrer fleas (04978499).

Part No. L2250134

Single-position Thermostatted Cell Holder

Cell holder for a 10 mm pathlength cell, water thermostatted. This cell holder is included with the instrument.

Part No. L2250140

Single-position Thermostatted Cell Holder, With Stirrer

Cell holder with magnetic stirrer for a 10 mm pathlength cell, water thermostatted. Includes six stirrer fleas (04978499).

Part No. L2250141

Coverslip Accessory

Designed for 10 mm round coverslips with thickness of 0.155 to 0.185 mm. Requires (but does not include) a 10 mm pathlength cell.

Part No. L2250008 (pkg. 4)

Coverslips

10 mm diameter.

Part No. 04978912 (pkg. 100)

WELL PLATE READER ACCESSORY

Well Plate Reader Accessory

For measuring the fluorescence or phosphorescence from a 6-, 12-, 24-, 48-, or 96-well plate in either the X or Y direction or for luminescence microdensitometry of TLC plates and electrophoresis gels. Controlled by the computer. Silica excitation fiber, glass emission fiber. May require an LS-50B Upgrade Kit (L2108529); contact your PerkinElmer sales representative.

Requires, but does not include, installation by a PerkinElmer Service Engineer.

Part No. L2250035

96-Well Microplates

Hi-White flat bottom.

Part No. L2251692 (pkg. 100)

TOTAL EMISSION ACCESSORY

Total Emission Accessory for LS-50B

The Total Emission Accessory uses a plane mirror that swings into place in front of the emission monochromator grating so that the total fluorescence of the sample can be measured. This accessory is often used with long pass emission filters to restrict the wavelengths. The mirror can be positioned from a switch on the instrument panel. Installation of the accessory by a PerkinElmer Service Engineer is required (not included).

A plane mirror in place of the emission grating will reflect about 90% of the light entering the monochromator which is considerably greater than if the grating were used in zero order. The more efficient fluorescence collection provides greater sensitivity for samples that have weak emission. It is strongly recommended for bio- and chemiluminescence measurements. In most

cases the operator needs to reduce interference from other wavelengths including second-order radiation, and the use of cut-off filters is recommended. Five computer-controlled emission cut-off filters are supplied with the Model LS-50B Spectrometer.

Requires, but does not include, installation by a PerkinElmer Service Engineer.

Part No. L2250101

Excitation Filter Wheel Accessory

Includes a 390 nm cutoff filter that is automatically inserted into the excitation beam when the excitation monochromator is scanned at 410 nm. Included in LS-50B Spectrometers.

Requires, but does not include, installation by a PerkinElmer Service Engineer.

Part No. L2250102

Excitation Filter Kit

Includes filter and retaining spring to be installed on excitation filter wheel. (For use on any LS-50B or any LS-50 fitted with excitation polarization wheel).

Part No. L2250012

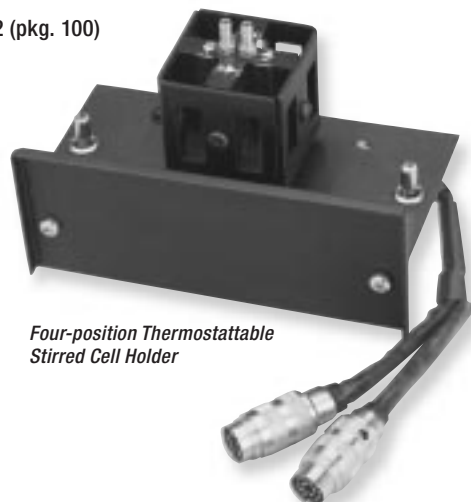
EXCITATION/EMISSION POLARIZATION ACCESSORY

Excitation and Emission Polarizers

Consists of two filter wheels, each with horizontal and vertical polarizing films installed. The excitation and emission polarizer positions are software-controlled and can be independently set or automatically calculated for polarization, anisotropy or G-factor.

Requires, but does not include, installation by a PerkinElmer Service Engineer.

Part No. L2250100

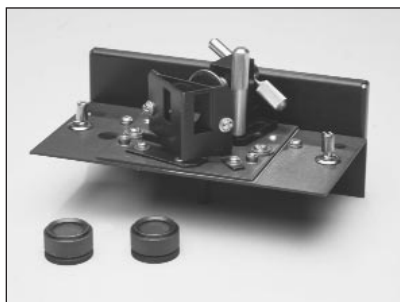


Four-position Thermostatted Stirred Cell Holder

Sampling Accessories**FRONT SURFACE ACCESSORY****Front Surface Accessory for examination of solids, powders, and viscous or opaque liquids**

- Obtain fluorescence or phosphorescence spectra of powders, paper, plastic films, cloth samples, turbid liquids
- View the front surface fluorescence from a filled cuvette
- Study the luminescence of phosphors

It is often more convenient to examine material in the solid state. The Front Surface Accessory allows you to obtain fluorescence or phosphorescence spectra of powders, paper, plastic films, cloth samples, gels, TLC section and turbid or opaque liquids with the LS-3B, LS-5B, or LS-50B Spectrometers.



Front Surface Accessory

Powders are held in a special holder, included with the accessory, that is fitted with a silica window. Examine viscous or opaque liquids in a 10 mm or smaller cuvette. Films, cloths and paper samples are measured directly.

Some applications that require the use of this accessory are research work on phosphor and measuring the stability of polymers and properties of optical brighteners.

Front Surface Accessory

For holding films, blocks, powders, and turbid samples. Includes two holders with synthetic, fused silica windows (52123164). Position externally adjustable for optimizing sensitivity.

Part No. 52123130

Powder Sample Holder

For use with front surface accessory (52123130).

Part No. 52123164

Synthetic Fused Silica Window

For powder sample holder.

Part No. 52123814

LC FLOWCELL

- Detect trace components eluted from liquid chromatographs
- Use your fluorescence spectrometer as a detector to monitor fluorescence continuously at selected excitation and emission wavelengths

If you have a High-Pressure Liquid Chromatograph, you can use your fluorescence spectrometer to detect components eluted from the column by replacing the standard cell holder with one of these LC Flowcell Accessories. The accessory includes a 1.5 mm square section fused silica flowcell with a 25 microliter illuminated volume. When a smaller volume flowcell is required, a 1.3 mm-square section flowcell with a 16 microliter illuminated volume can be used in place of the standard cell. Both cells are capable of withstanding 500 psi.



LC Flowcell and Sipper Accessory

LC Flowcell Accessory

Although the instrument has a built-in flowcell, the inlet and outlet tubing have too large a diameter for it to be used for high-resolution HPLC. This can be overcome by replacing the standard flowcell assembly with an LC flowcell accessory.

Includes 1.3 mm, square section, synthetic, fused silica flowcell (L2151247); 16 μ L volume, 0.4 mm FEP inlet tube (L2151202); and 0.7 mm FEP outlet tube (L2151203).

Part No. L2250138

SIPPER**Sipper Cell and Pump Accessory**

- Rapid analysis of batches of samples

If you routinely measure large numbers of liquid samples the Sipper Accessory is most valuable. It consists of a 16 microliter illuminated volume flowcell and a peristaltic pump controlled by the LS-50B Series software. Samples can be rapidly and easily transferred from a wide variety of containers to the flowcell for measurement.

Includes 1.3 mm, square section, synthetic, fused silica flowcell (L2251247); 16 μ L volume and peristaltic pump, which is controlled by the computer. Fitted as standard with 0.4 mm FEP inlet tube (L2151202) and 0.7 mm FEP outlet tube (L2151203).

Part No. L2250135*

**Requires, but does not include, installation by a PerkinElmer Service Engineer.*

Flowcell, Square Section, Synthetic, Fused Silica, 1.3 mm

1.3 mm pathlength, square section, synthetic, fused silica, 16 μ L cell volume. For use in L2250135 sipper cell and pump accessory and L2250138 LC flowcell accessory.

Part No. L2251247

Flowcell, Square Section, Synthetic, Fused Silica, 1.5 mm

1.5 mm pathlength, square section, synthetic, fused silica, 25 μ L cell volume. For use in L2250135 sipper cell and pump accessory and L2250138 LC flowcell accessory.

Part No. L2251223

Inlet Tube, 0.4 mm i.d.

FEP inlet tube.

Part No. L2151202

Outlet Tube, 0.7 mm i.d.

FEP outlet tube.

Part No. L2151203

Inlet Tube, 0.7 mm i.d.

Part No. L2261143

Outlet Tube, 1.0 mm i.d.

Part No. L2151204

Manifold Pump Tubing

Part No. 04974155

Sampling Accessories

LUMINOMETER ACCESSORY

Luminometer Accessory

Allowing for very high sensitivity chemi- and bioluminescence measurements. Includes a built-in stirrer and septum injector. Accepts 10 mm pathlength cuvettes. May require a Remote Detector Kit.

Installation by a PerkinElmer Service Engineer is included unless a Remote Detector Update Kit is required.

Part No. L2250037

Remote Detector Update Kit

Required for those LS-50Bs with serial numbers below 38418.

Part No. L2250038

LOW-TEMPERATURE LUMINESCENCE ACCESSORY

Low-Temperature Accessory for the Model LS-50B Series

- Easily replaces the standard sample compartment for the analysis of samples at the temperature of liquid nitrogen
- Cools more efficiently and uses less sample than conventional quartz Dewars

Samples can be measured at the temperature of liquid nitrogen by placing them in synthetic fused silica tubes which have an internal diameter of 2 mm, an outer diameter of 4 mm and a length of 75 mm. The tubes are cooled by conduction by placing them in contact with the end of a high-purity copper rod which itself

is immersed in liquid nitrogen. The position of the tube is reproducible and the samples cool rapidly. Frosting of the cell is minimized by purging the sample compartment with a flow of dry nitrogen gas.

The Model LS-50B Series uses a pulsed Xenon lamp as a source of excitation. Fluorescence data are collected at the instant of the flash while phosphorescence data are collected in the dark period between each flash. The use of the pulsed Xenon lamp obviates the need for a mechanical means of chopping the excitation and emission beams, thus leading to improved precision and speed of analysis. The instrument software includes application programs for observing short (msec) and long (seconds) phosphorescence decay curves in addition to spectra.

Low-temperature Luminescence Accessory

For cooling samples to liquid nitrogen temperature. Used for measuring fluorescence or phosphorescence. Includes a pack of five sample tubes (52126027).

Part No. L2250136

Low-temperature Sample Tubes

Part No. 52126027 (pkg. 5)

BIOKINETICS ACCESSORY

Changes in temperature can be accurately monitored in the range from 0° C to 100° C by using the Biokinetics accessory. This is a single-position, stirred-cell holder, thermostatted by circulating water and which has a built-in temperature sensor. The addition of reagents to the cell during a time-drive experiment can be recorded using the built-in event marker.

Biokinetic Accessory

Magnetically stirred single cell holder; water thermostatted. Includes a built-in temperature sensor (range 0° C to 100° C and an event marker. Thermostattable by means of an external water bath (not included). Accommodates 10 mm pathlength cuvettes. Includes a pack of six stirrer fleas.

Part No. L2250145

Biokinetic Accessory Retrofit

For existing LS-50 units. Includes the Biokinetic Accessory (L2250145) and LS-50B Upgrade Kit (L2250020).

Requires, but does not include, installation by a PerkinElmer Service Engineer.

Part No. N1870197



Biokinetics Accessory

Sampling Accessories

FAST FILTER WHEEL ACCESSORY

The Fast Filter Wheel Accessory, which is exclusive to the Model LS-50B, is used for rapid collection of data in the study of biochemical processes such as intracellular ion monitoring. Pairs of optical filters specifically designed for the indicator dyes are rapidly rotated in either the excitation or emission beam, allowing ratio measurement to be made every 40 msec.

Two pairs of filters can be fitted on each wheel allowing for example, the simultaneous measurement of both calcium and pH using a pair of FURA-2 and BCECF filters.

The Fast Filter Application Software, which is similar to the Intracellular Biochemistry program, is used to control the accessory. It provides the facility to set up methods, collect data and calibrate the result.

Either the ratio data or the individual intensities can be viewed in real time. The data are automatically saved as ASCII files and a full numerical report can be printed out.

Fast Filter Wheel Accessory Kit for LS-50B

Includes the Fast Filter Accessory Boards and Software (L2250019) and one drive unit (L2250146). Requires, but does not include, a filter set (see below).

Part No. N1870195*

Fast Filter Wheel Accessory Retrofit Kit

For LS-50 units. Includes the Fast Filter Accessory Kit (N1870195) and LS-50B Upgrade Kit (L2250020).

Part No. N1870196*

Polarization Filter Kit

Consists of two (2) pairs of polarizing filters each set at 0 and 90 degrees to the vertical. Enables polarization values to be obtained every 40 msec. Requires at least two (2) drive units (L2250146).

Part No. L2250030*

**Requires, but does not include, installation by a PerkinElmer Service Engineer.*

Fast Filter Wheel Accessory Drive Unit for LS-50B

Requires, but does not include, a Fast Filter Accessory Board, Software (L2250019), and filter set.

Part No. L2250146*

**Requires, but does not include, installation by a PerkinElmer Service Engineer.*

Filter Sets

Filter Set – FURA 2 (Excitation)

Part No. L2250021

Filter Set – BCECF (Excitation)

Part No. L2250022

Filter Set – SNAFL-2 (Emission)

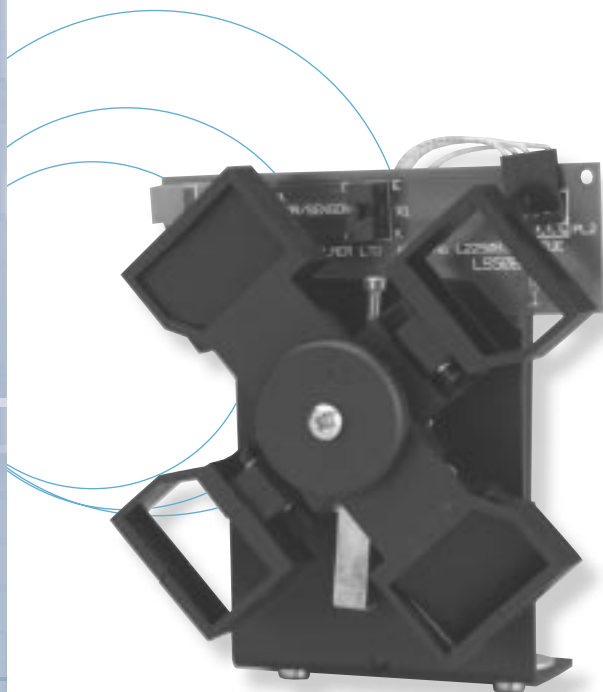
Part No. L2250023

Filter Set – INDO-1 (Emission)

Part No. L2250024

Filter Set – SNARF-1 (Emission)

Part No. L2250025



Fast Filter Wheel Accessory

INTRACELLULAR ION FILTER GUIDE

Filter/Dye	nm	Monochromator
FURA 2	340/330	Excitation
or	340/365	Excitation
BCECF	495/440	Excitation
SNAFL-2	514/550	Excitation
INDO-1	405/480	Emission
SNARF-1	530/640	Emission

Notes:

1. If using FURA 2 and BCECF, which are both excitation dyes, one (1) drive unit (L2250146) is required to fit on both pairs of filters. Both dyes can be monitored in the same experiment.
2. If using INDO-1 and BCECF, two (2) drive units are necessary – one for excitation and one for emission.

OPTICAL FILTERS

Cutoff filters minimize scatter from low wavelengths and are included as standard with the model LS-50 series. They are also available separately and are 2 inch square.

290 nm Cutoff Filter

Part No. 02639507

310 nm Cutoff Filter

Part No. 02639508

350 nm Cutoff Filter

Part No. 02639505

390 nm Cutoff Filter

Part No. 02639509

430 nm Cutoff Filter

Part No. 02639510

530 nm Cutoff Filter

Part No. L2151164

ATTENUATORS

Use attenuators to reduce the intensity of fluorescence

Light from the excitation monochromator strikes the sample at an angle of 60 degrees. Often the intensity of fluorescence is high and it can be reduced by wire mesh attenuators.

Fluorescence from the sample is detected by the emission monochromator and detector system at an angle of 30 degrees to the surface of the sample.

A spring-loaded mount, adjustable for optimizing the signal to noise, holds the sample in the proper position.

Attenuator

Approximate open area 0.5% T, two in square.

Part No. 52126318

Attenuator

Approximate open area 1% T. Included in LS-50B; two in square.

Part No. 52126319

Attenuator

Approximate open area 2% T. Included in LS-50B; two in square.

Part No. 52126320

Attenuator

Approximate open area 4% T, two in square

Part No. CP361670

FLUORESCENCE CALIBRATION SAMPLES

Fluorescence Intensity Samples

In blocks of PMMS (polymethyl methacrylate) containing fluorescent compounds with storage box.

The set consists of six blocks with emission characteristics in the wavelength ranges listed below:

1. 300 to 540 nm
2. 420 to 600 nm
3. 300 to 400 nm
4. 400 to 600 nm
5. 420 to 520 nm
6. 540 to 640 nm

Spectra and excitation wavelength for each sample are given.

Part No. C5207440 (pkg. 6)

Phosphorescence Sample Block

Used in 52019600.

Part No. 52124965

PHOTOMULTIPLIER

Standard Reference and Sample Photomultiplier

For measurements in the 200 to 650 nm range. (Included in computer-ready and PC systems.)

Part No. L2251281

R928 Red-sensitive Photomultiplier

For measurements over the 200 to 800 nm range.

Part No. 09972337

OPERATOR'S MANUAL

LS-50B Operator's Manual

Part No. L2259151

LS-30 SAMPLING ACCESSORIES**HPLC Flowcell Assembly**

For LS-30 for enhanced HPLC performance; 1.5 mm cell; 7 µL volume.

Part No. L2265123

Emission Filter Wheel Accessory

Has a series of cutoff filters of nominal wavelength values 350 nm, 390 nm, 430 nm, and 530 nm, together with a one-percent attenuator.

Part No. L2260121

SPARES AND MISCELLANEOUS ACCESSORIES**R928 Red-sensitive Photomultiplier**

Part No. 09972337

R955 Red-sensitive Photomultiplier

Part No. 09972329

Standard Sample or Reference Photomultiplier

Part No. L2251281

1.5 mm Square Flowcell

7 µL volume.

Part No. L2261145 (pkg. 1)

0.4 mm i.d. FEP Tubing

Part No. L2261155 (pkg. 5)

1.0 mm i.d. FEP Tubing

Part No. L2261144 (pkg. 5)

Silicone Tubing for Peristaltic Pump

Part No. 04978069 (pkg. 1)

Solvaflex Tubing for Peristaltic Pump

Part No. 04978067 (pkg. 1)

OPERATOR'S MANUAL**LS-30 Operator's Manual**

Part No. L2269064

SIPPER**Sipper Cell and Pump Accessory**

- Rapid analysis of batches of samples

If you routinely measure large numbers of liquid samples the Sipper Accessory is most valuable. It consists of a 16 microliter illuminated volume flowcell and a peristaltic pump controlled by the LS-50B Series software. Samples can be rapidly and easily transferred from a wide variety of containers to the flowcell for measurement.

Includes 1.3 mm, square section, synthetic, fused silica flowcell (L2251247); 16 µL volume and peristaltic pump, which is controlled by the computer. Fitted as standard with 0.4 mm FEP inlet tube (L2151202) and 0.7 mm FEP outlet tube (L2151203).

Part No. L2250135*

**Requires, but does not include, installation by a PerkinElmer Service Engineer.*

Flowcell, Square Section, Synthetic, Fused Silica, 1.3 mm

1.3 mm pathlength, square section, synthetic, fused silica, 16 µL cell volume. For use in L2250135 sipper cell and pump accessory and L2250138 LC flowcell accessory.

Part No. L2251247

Flowcell, Square Section, Synthetic, Fused Silica, 1.5 mm

1.5 mm pathlength, square section, synthetic, fused silica, 25 µL cell volume. For use in L2250135 sipper cell and pump accessory and L2250138 LC flowcell accessory.

Part No. L2251223

Inlet Tube, 0.4 mm i.d.

FEP inlet tube.

Part No. L2151202

Outlet Tube, 0.7 mm i.d.

FEP outlet tube.

Part No. L2151203

Inlet Tube, 0.7 mm i.d.

Part No. L2261143

Outlet Tube, 1.0 mm i.d.

Part No. L2151204

Manifold Pump Tubing

Part No. 04974155

Silicone Rubber Tubing

For connecting outlet from flowcell to pump tubing used with Sipper Cell and Pump Accessory (L2250135).

Part No. 04972556

HTS 7000 Plus Bio Assay Reader Accessories and Consumables

Versatile, optimized measurement systems such as the PerkinElmer HTS 7000 Bio Assay Reader have been developed specifically for rapid turnaround of nonradioactive, photometric analyses on large arrays of small-volume samples. Microplates are preferred for rapid, high-sensitivity assays over a wide dynamic range of unknown sample concentrations. Simple software options allow selection of stored user methods for top or bottom reading of fluorescence or through-well absorbance measurements on a wide variety of sample formats. Reading 96 and 384 well formats is the preferred universal choice for kinetic and endpoint ELISAs and high-sensitivity fluorescence assays, whereas cell function studies often require bottom fluorescence reading in 6 or 24 well plates. No hardware reconfiguration is necessary to change the measurement mode and all plate types and styles can be added to the stored library.

Recent advances in genomics and combinatorial chemistry are helping to accelerate the pace of biological research and pharmaceutical drug development. With such rapid progress in the life sciences, routine microplate assays and high throughput screening (HTS) applications are now the norm in many molecular and cell biology and biochemistry laboratories. Brighter and more photostable dyes and reagents have popularized and improved techniques such as:

- *DNA and protein quantitation*
- *Drug screening and therapeutic drug monitoring*
- *Immunoassays*
- *Cell function studies (toxicity, viability, apoptosis, proliferation, and adhesion)*

FLUORESCENCE FILTERS

Wavelength	Part No.
360	N4501080
430	N4501081
465	N4501082
485	N4501083
520	N4501084
535	N4501085
550	N4501086
590	N4501087
595	N4501088
625	N4501089
635	N4501090
650	N4501091
340	N4501092
380	N4501093
405	N4501094
420	N4501095
440	N4501096
460	N4501097
510	N4501098
530	N4501100
560	N4501101
612	N4501103
670	N4501104

ABSORBANCE FILTERS

Wavelength	Part No.
370	N4501105
405	N4501106
415	N4501107
450	N4501108
510	N4501109
540	N4501110
550	N4501111
570	N4501112
595	N4501113
620	N4501114
690	N4501115
750	N4501116

ACCESSORIES

Excitation Filter Slide, Blank

Part No. N4501034

Absorbance Filter Slide, Blank

Part No. N4501034

Emission Filter Slide, Blank

Part No. N4501035

Introduction and Source Lamps

Polarimeters, such as the Model 341 and Model 343, measure optical rotation directly. When an optically active substance is introduced into the beam path, the plane of polarized light is altered by an angle corresponding to the optical rotation of the sample. A servo system then rotates the analyzer to a new null balance position. The angular difference between the new and the original balance positions of the polarizer-analyzer system corresponds to the optical rotation of the sample. At any given wavelength the rotatory power is the sum of the rotatory power of each of the active chromophores.

TYPICAL APPLICATIONS OF POLARIMETRY ARE:

To measure the yield of a chemical reaction

The kinetics of chemical reactions are studied by polarimetry. The sugar industry, the pharmaceutical industry and synthetic organic chemistry are examples of the fields of application.

To monitor the output of a liquid chromatograph

A mixture of optical isomers can often be separated by chromatography. The identification and purity of resolved fractions can be ascertained by the measurement of optical rotation. A flow-through sample cell is used.

To study the kinetics of an enzyme reaction

Polarimetry is used to simultaneously determine penicillin and penicillase. The decomposition speed is directly proportional to the enzyme concentration, but independent from the penicillin.

For quality control

Batch processes in the sugar and food products industry and in the pharmaceutical manufacturing industry can be monitored for purity and quantitative assay by the use of a rapid digital polarimeter.

For qualitative analysis

One of the constants that will help to identify a synthesized compound is the specific rotation. It is calculated directly from the observed optical rotation, the pathlength and the concentration.

For quantitative analysis

Optical rotation is proportional to concentration times pathlength, and the proportionality constant is the specific rotation.

SOURCE LAMPS FOR PERKINELMER POLARIMETERS

High-quality source lamps, specifically selected to optimize the performance of all PerkinElmer Polarimeters, offer high radiant energy and a long operating lifetime. As a result, precise measurements of optical rotation can be made, even when the sample absorbs strongly.

Ordering Information

Part No.	Description
POLARIMETRY SOURCE LAMPS	
B0008754	Sodium Lamp, for all Models
B0022438	Mercury Vapor Lamp; for 141, 241, 241 MC
B0510581	Mercury Vapor Lamp, for 341, 343 plus

Polarimeter Cells and Supplies

www.perkinelmer.com

- *High efficiency*
- *Thermostatable*
- *No birefringence effects*
- *Easy to fill, easy to empty, with no loss of sample*
- *Fit all PerkinElmer Polarimeters (Models 141, 241, 241 MC, 243, 341, and 343)*

Use PerkinElmer polarimetry cells to maintain the high level of accuracy and precision of your PerkinElmer Polarimeter. They are manufactured by a special process in which the windows are fused to the cell bodies to ensure that they are free of tension. Because the windows are not mechanically inserted, birefringence effects, which could affect the accuracy of your reading, are eliminated.

To make PerkinElmer cells easy to identify, a defined pathlength is engraved on each cell. All cells are jacketed for thermostating with constant temperature water, except for one flowcell.

Cells are designed for easy filling and emptying, with no loss of sample. The filling ports are arranged so that liquid flows over the inner window surfaces.

In addition to the cells listed here, a wide variety of cells made of fused silica are available. These cells are used for measurements of optical rotation in the ultraviolet range or at elevated temperatures.

SECONDARY STANDARDS FOR POLARIMETER INSTRUMENT PERFORMANCE VALIDATION

Quartz Control Plate +1° at 589 nm

Thermostatable housing, nominal rotation +1° to 589 nm (NaD)

Part No. B0098800

Quartz Control Plate -1° at 589 nm

Thermostatable housing, nominal rotation -1° to 589 nm (NaD)

Part No. B0098799

Coupling, pluggable

Female

Part No. B0023491

Male

Part No. B0023492

POLARIMETER CELLS

Ordering Information

Part No.	Description			
B0041693	Standard	100 mm	6.2 mL	Glass
B0507403	Semi-micro	100 mm	3.0 mL	Fused Silica
B0017047	Microcell	100 mm	1.0 mL	Glass
B0017052	Short-Path	10 mm	0.5 mL	Glass
B0017057	Short-Path	1 mm	0.25 mL	Glass
B0023365	Microcell	100 mm	1.0 mL	Fused Silica
B0017054	Flowcell	100 mm	5.0 mL	Glass
B0107593*	Micro Flowcell	100 mm	40.0 µL	Fused Silica

*Non-thermostatable