

the new industry-standard

LAMBDA™ UV/Vis/NIR and UV/Vis

spectrophotometers – 950, 850, and 650
from PerkinElmer



high-performance systems

delivering superior data quality
and sampling flexibility


PerkinElmer[®]
precisely.



the new LAMBDA Series introduces
intelligent modules and accessories
**designed to enhance flexibility,
productivity and convenience
in your lab**

Dear Analytical Scientist:

PerkinElmer's LAMBDA™ Series UV/Vis/NIR and UV/Vis spectrophotometers have consistently offered best-in-class accuracy, precision and reproducibility to scientists for nearly 50 years. For sampling flexibility and superior data quality, our instruments have become the standard in thousands of laboratories, in multiple industries worldwide. Building on this tradition of excellence, the new high-performance, innovative LAMBDA 950/850/650 range confirms our leadership in UV/Vis/NIR and UV/Vis spectroscopy.

Designed by scientists – for scientists.

We designed the LAMBDA 950/850/650 Series knowing the complex requirements of today's laboratories. When we queried our customers and industry experts, users overwhelmingly requested greater flexibility and easier-to-use and more functional accessories, along with the ability to produce results more quickly, and advanced software routines. As a result, the new LAMBDA Series offers an unmatched range of snap-in sampling modules, as well as newly engineered workflow software, ensuring increased productivity. We've also redesigned the LAMBDA Series for the highest spectroscopic performance. PerkinElmer is proud to introduce several new advanced features and accessories, including the industry's first fully automated Universal Reflectance Accessory (URA). Our URA, which completely redefines and simplifies variable angle absolute reflectance analysis, reduces set-up time and increases throughput for a broad range of tough measurements.

Everything you need, we thought of.

No matter what your industry – from optical coatings to life sciences to glass – and whether you need to analyze optics, flat panel displays or semiconductors – the LAMBDA 950/850/650 Series provides the high standards of results, accuracy and quality that have made PerkinElmer the industry leader.

Questions? Concerns? PerkinElmer wants to hear from you.

We hope you'll read through the brochure to learn about the features designed for laboratories like yours, and why they make LAMBDA spectrophotometers the standard for demanding UV/Vis/NIR and UV/Vis sampling. Or, for industry-specific questions and instrumentation information, contact a PerkinElmer representative at 1 (800) 250-6070 ext. 800 or visit www.perkinelmer.com/lambda.

Yours truly,

Peter Coggins, PhD
President
PerkinElmer
Life and Analytical Sciences

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LAMBDA Series: next-generation technology

addressing the demands of today's labs

PerkinElmer introduces a range of state-of-the-art spectrophotometers featuring innovative, quick-change, intelligent accessories, along with an expanded range of new options, tools and software. Our new systems minimize non-productive time spent on set-up and alignment, and offer something that is available nowhere else – PerkinElmer's reputation for excellence, along with our outstanding global service organization.

Maximizing consistent results

At PerkinElmer, we know the importance of delivering the highest reliability and data integrity on the most demanding of samples. Whether you need to measure the absolute reflectance of coatings at variable angles, characterize optical filters, or analyze highly absorbing liquids, the LAMBDA™ 950/850/650 Series produces the most consistent, accurate results in the industry.

Designed for demanding analysis

With a wide-range of intelligent modules that snap in and out easily, the LAMBDA Series can handle your laboratory's most demanding analyses. Our innovative new high-performance optical bench, intelligent accessories, large automated sampling compartments and easy-to-use analytical software with professional workflow make the new LAMBDA 950/850/650 Series the industry's most capable UV/Vis/NIR and UV/Vis instruments.

LAMBDA 950 UV-Vis-NIR

175 nm ————— 3,300 nm

- Highest performance UV/Vis/NIR system
- Wavelength range: 175 nm – 3,300 nm
- UV/Vis resolution: 0.05 nm – 5.00 nm
NIR resolution: 0.20 nm – 20.00 nm

LAMBDA 850 UV-Vis

175 nm ————— 900 nm

- Highest performance UV/Vis system
- Wavelength range: 175 nm – 900 nm
- UV/Vis resolution: 0.05 nm – 5.00 nm

LAMBDA 650 UV-Vis

190 nm ————— 900 nm

- Upgradeable, flexible UV/Vis at a cost-effective price
- Wavelength range: 190 nm – 900 nm
- UV/Vis resolution: 0.17 nm – 5.00 nm



increased flexibility and convenience

from the world leader in UV/Vis/NIR and UV/Vis



An industry first

The Universal Reflectance Accessory (URA) Only from PerkinElmer

The LAMBDA 950/850/650 Series introduces a breakthrough in high-sensitivity, absolute reflectance measurements – the Universal Reflectance Accessory (URA). The URA dramatically improves on traditional methods of testing by automatically and reproducibly changing the angle with no adjustments to sample or optics, reducing costs and producing results faster. Previously, multi-angle analyses often required three or four conventional accessories and many manual adjustments. Sampling angles are selected with a single mouse click, eliminating time-consuming manual mirror adjustment. In addition, the sample is simply placed onto a horizontal sampling plate, avoiding the inconvenience and damage caused by vertical clamping.

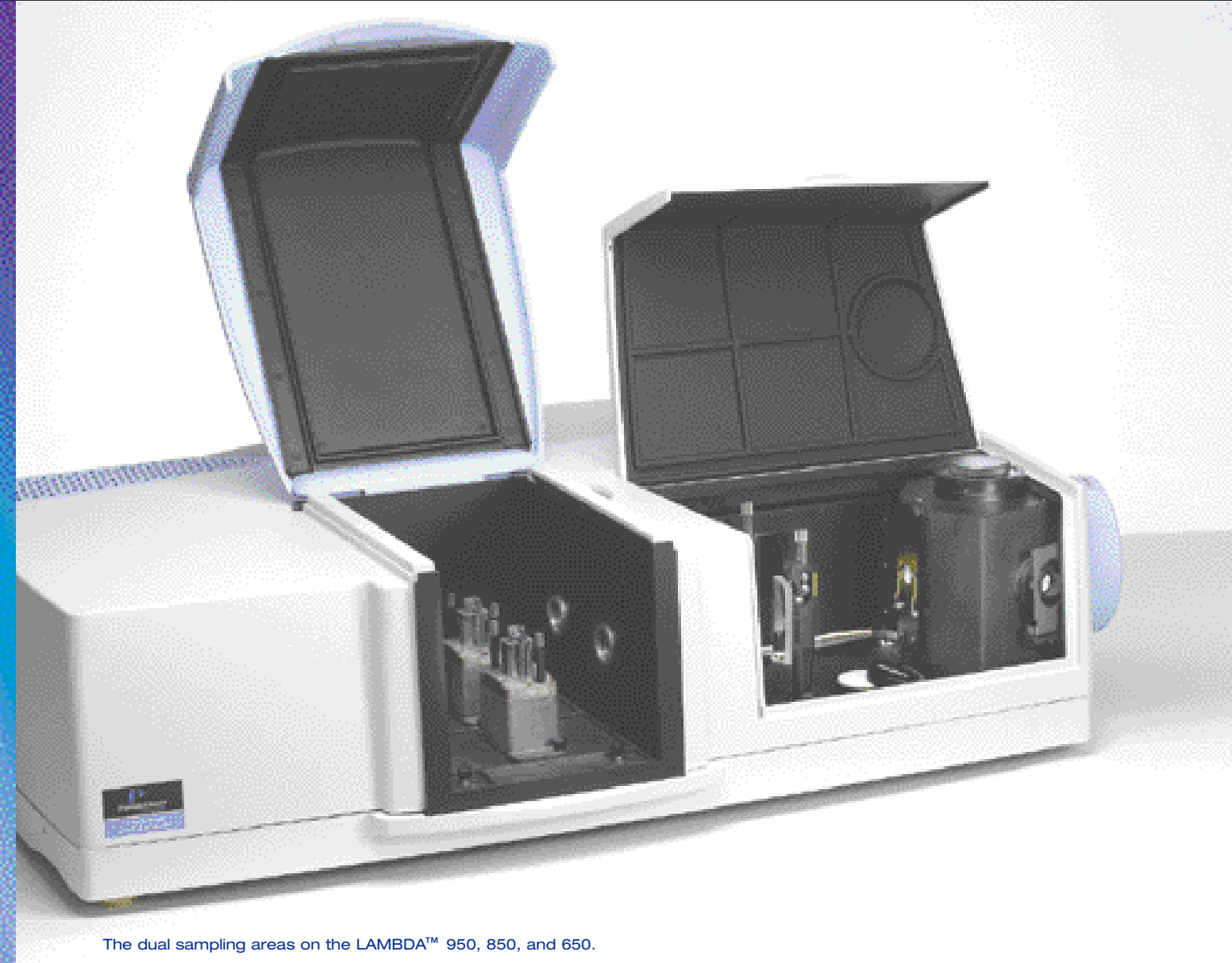
The LAMBDA™ 950/850/650 Series provides a more convenient and flexible approach to sampling than any other UV/Vis/NIR and UV/Vis system on the market today. Users are able to easily change intelligent sampling modules, and our wide range of accessories reduces the time-consuming complexity of challenging analyses. For example, PerkinElmer's unique new Universal Reflectance Accessory (URA) dramatically simplifies absolute reflectance measurements by increasing automation for a broad range of tough measurements.

Setting the standard for convenience

Improved interchangeability allows sampling modules to simply snap into place. Each one locks into position, requiring no adjustment, saving you valuable time and enabling you to process samples more easily. All key optical components are protected, maintaining critical alignment and minimizing non-productive time. Additionally, the new, easy-to-use UV WinLab™ analytical software with professional workflow streamlines analyses, making the LAMBDA Series the most thorough and capable UV/Vis/NIR and UV/Vis instrument range in the industry.

Engineered with smart flexibility

PerkinElmer has designed the LAMBDA Series to accommodate a wide variety of samples. The dual sample compartments, the largest in the industry, offer multiple options and the versatility to work with diverse samples. The large compartment/detector modules can be rapidly changed from a standard transmission configuration to all of the options necessary in today's busy laboratories, including a 150 mm integrating sphere and a Universal Reflectance Accessory (URA). The General Purpose Optical Bench (GPOB) with magnetic optical mounts allows you to create a customized optical system to handle a wide range of sample types – including lenses and telescopes – giving your lab the ultimate in flexibility.



The dual sampling areas on the LAMBDA™ 950, 850, and 650.

twice the flexibility. twice the ease. two sampling compartments.

Rapid-change modular components

- URA** – A PerkinElmer exclusive. Automated angle changes – no alignment and no adjustments.
- Integrating spheres** – Many different designs are available – diffuse and specular reflectance and diffuse transmittance are easily performed on a huge range of samples.
- GPOB** – Replaces both sampling areas, offering the largest, most versatile accessory space available.
- Standard Transmission Optics** – Including ultra-high sensitivity UV/Vis and NIR detectors for demanding transmission measurements on liquids and solids.

See inside spread for details.

The dual compartments in the LAMBDA Series are the largest in the industry. The primary compartment is used for a wide range of standard reflectance and transmission accessories and polarizers, while the second is customizable via a number of intelligent sampling modules, including integrating spheres, the URA or transmission optics.



Universal Reflectance Accessory (URA)

- Unique to PerkinElmer
- Snap-in module, changes angle automatically
- No alignment or adjustment required



Unmatched sample compartment size

- Additional room to mount samples
- More room to work
- Ability to mount polarizers and depolarizers



Industry's only dual sampling compartments

- Snap-in/snap-out for maximum flexibility
- Compartments are quickly and easily reconfigured
- Extra space available for samples, accessories and large integrating spheres



Snap-in integrating spheres to 150 mm

- 60 mm, 150 mm and detector sphere modules, in addition to specialist options
- Transmission, eight-degree reflectance and center mount capability
- LAMBDA™ 650 is the only instrument in its class offering a true 150 mm integrating sphere

maximum

delivering optimal performance.

versatility



9+9 Peltier controlled cell changer automates liquid analyses

Tackles difficult transmission analyses with ease

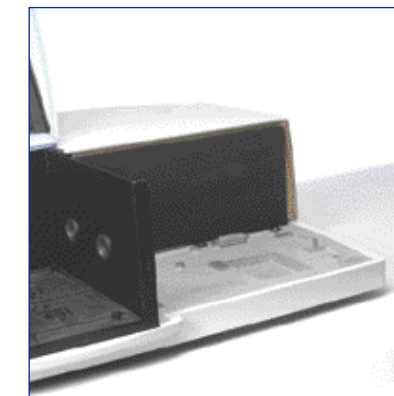
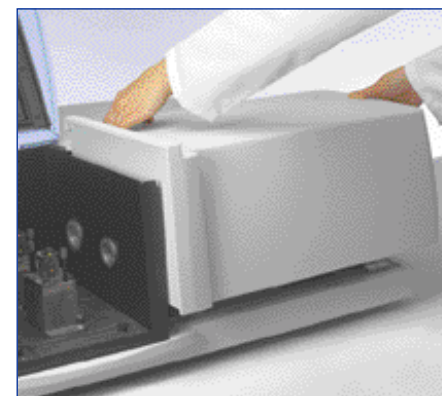
- High-sensitivity transmission measurements on liquids and solids
- Turbid and cloudy samples, including DNA, proteins and blood
- Cell changers speed and simplify multi-sample measurements

General Purpose Optical Bench (GPOB) handles a wide range of samples - including lenses and telescopes

- Replaces both compartments, creating very large sampling area
- Can be configured for custom optical layouts
- Accommodates large and awkwardly shaped samples such as optics, lenses and beamsplitters

Sampling modules require only seconds to change

- Easily changeable to accommodate next sample requirement
- Sample variety will no longer be a bottleneck
- Broader range of users able to run different analyses



Taking out the transmission module and replacing it with the Universal Reflectance Accessory (URA)

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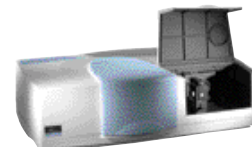
three models – choose the system with the specifications you need

The LAMBDA™ Series of UV/Vis/NIR and UV/Vis spectrophotometers is the industry standard for high performance, flexibility and convenience. Each model includes the same range of modular components and snap-in accessories to tackle a range of tough applications. Whatever specifications your laboratory requires, the LAMBDA Series provides best-in-class accuracy, precision and reproducibility.



LAMBDA 950

Choose the LAMBDA 950 for ultra-high UV/Vis/NIR performance for wavelengths up to 3,300 nm, high-precision measurements, and for applications such as highly reflective and anti-reflective coatings, color correction coatings, bandpass characteristics of UV, Vis and NIR filters, and more.



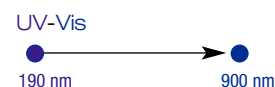
LAMBDA 850

Choose the LAMBDA 850 for ultra-high UV/Vis performance between 175 nm and 900 nm. Sun protection, reflectance properties of flat panel display screens, paint films, transmission and reflectance characterization of glass, solar cells, and more.



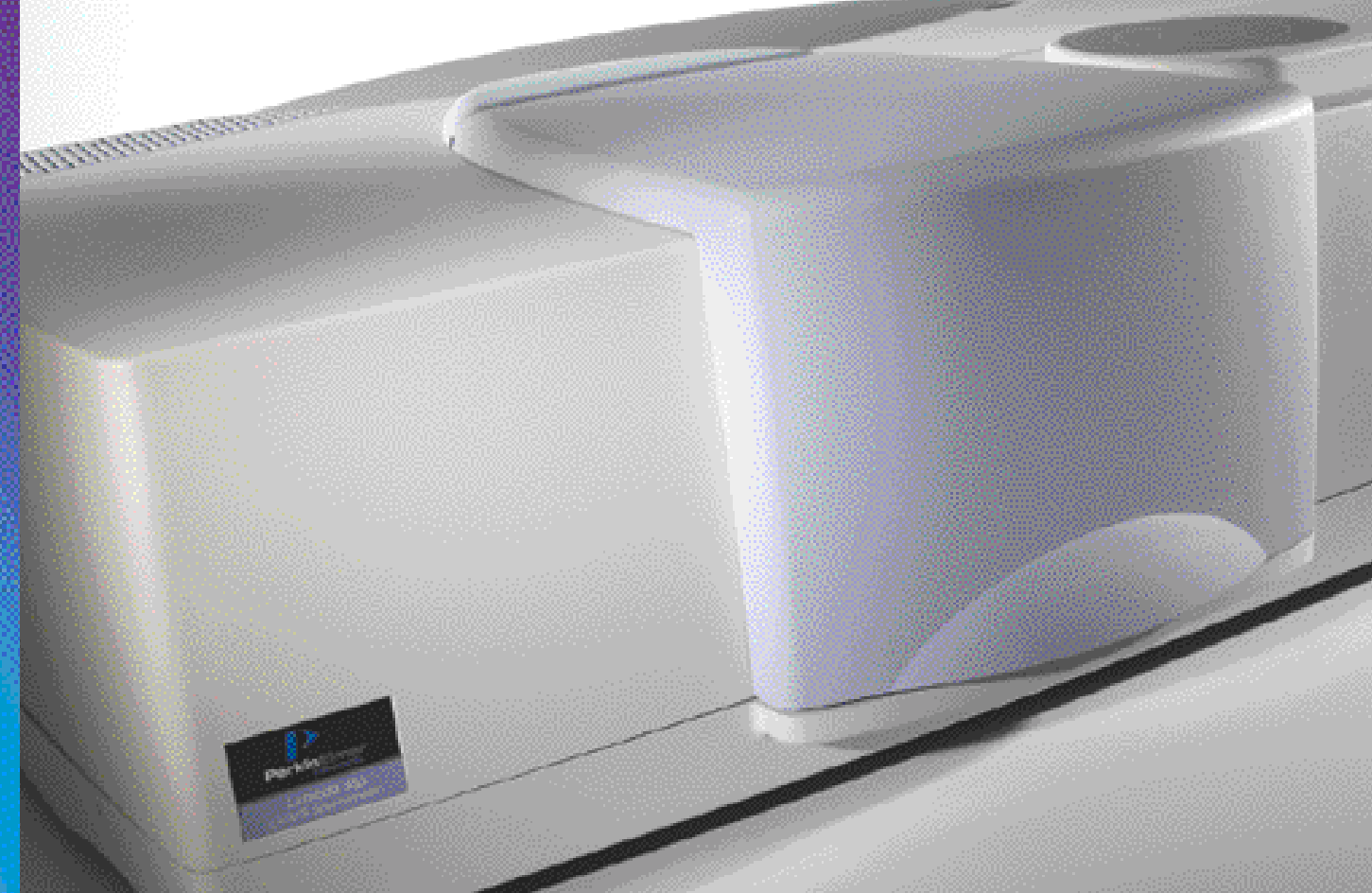
LAMBDA 650

The cost-effective choice for high-performance UV/Vis measurements between 190 nm and 900 nm – for example, color analysis of paints and textiles, and turbid solutions and enzyme kinetics in life science, biochemistry and pharmaceutical laboratories. The 650 also offers upgradability in sampling, and offers a 150 mm integrating sphere for ASTM, CIE and DIN measurements.



	950	850	650
Principle	Double-beam, double monochromator, ratio recording spectrophotometers.		
Optical System	All-reflecting optical system (SiO ₂ coated) with holographic grating monochromators. Littrow mounting, sample thickness compensated detector optics.		
Detector	Photomultiplier (UV/Vis), Peltier controlled PbS (NIR)	Photomultiplier (UV/Vis)	Photomultiplier (UV/Vis)
UV/Vis Resolution	≤ 0.05 nm	≤ 0.05 nm	≤ 0.17 nm
NIR Resolution	≤ 0.20 nm	–	–
Stray Light at 220 nm (10g/l NaI ASTM method)	≤ 0.00007 %T	≤ 0.00007 %T	≤ 0.0001 %T
Photometric Range	8A	8A	6A

See specification sheet for full details. For the 950 and 850 ask for specification sheet number 006991_12 and for the 650 ask for the specification sheet number 006991_00. These specifications are guaranteed, not “typical” performance specs.



a wide range of new features for hundreds of applications

	Which LAMBDA features are designed to help your laboratory?								
	GLASS PRODUCTS	NON-OPTICAL COATINGS, PAINTS	OPTICS	PHARMA-CEUTICALS	LIFE SCIENCE	COLOR	OPTICAL COATINGS	SEMI-CONDUCTOR	TEXTILES
Two large sample compartments	●	●	●	●	●	●	●	●	●
Modular integrating sphere	●	●	●	●	●	●	●	●	●
URA module	●	●	●				●	●	
GPOB	●	●	●				●		
Peltier-controlled multi-cell changers				●	●				
Polarization/depolarization	●		●				●	●	

To arrange a free consultation with a PerkinElmer LAMBDA specialist, or to receive application notes or specification sheets for the LAMBDA Series, call 1 (800) 250-6070 ext. 800*, or visit www.perkinelmer.com/lambda or e-mail us: lambda@perkinelmer.com



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inside the PerkinElmer LAMBDA

950/850/650 Series

the highest performing UV/Vis/NIR
and UV/Vis available

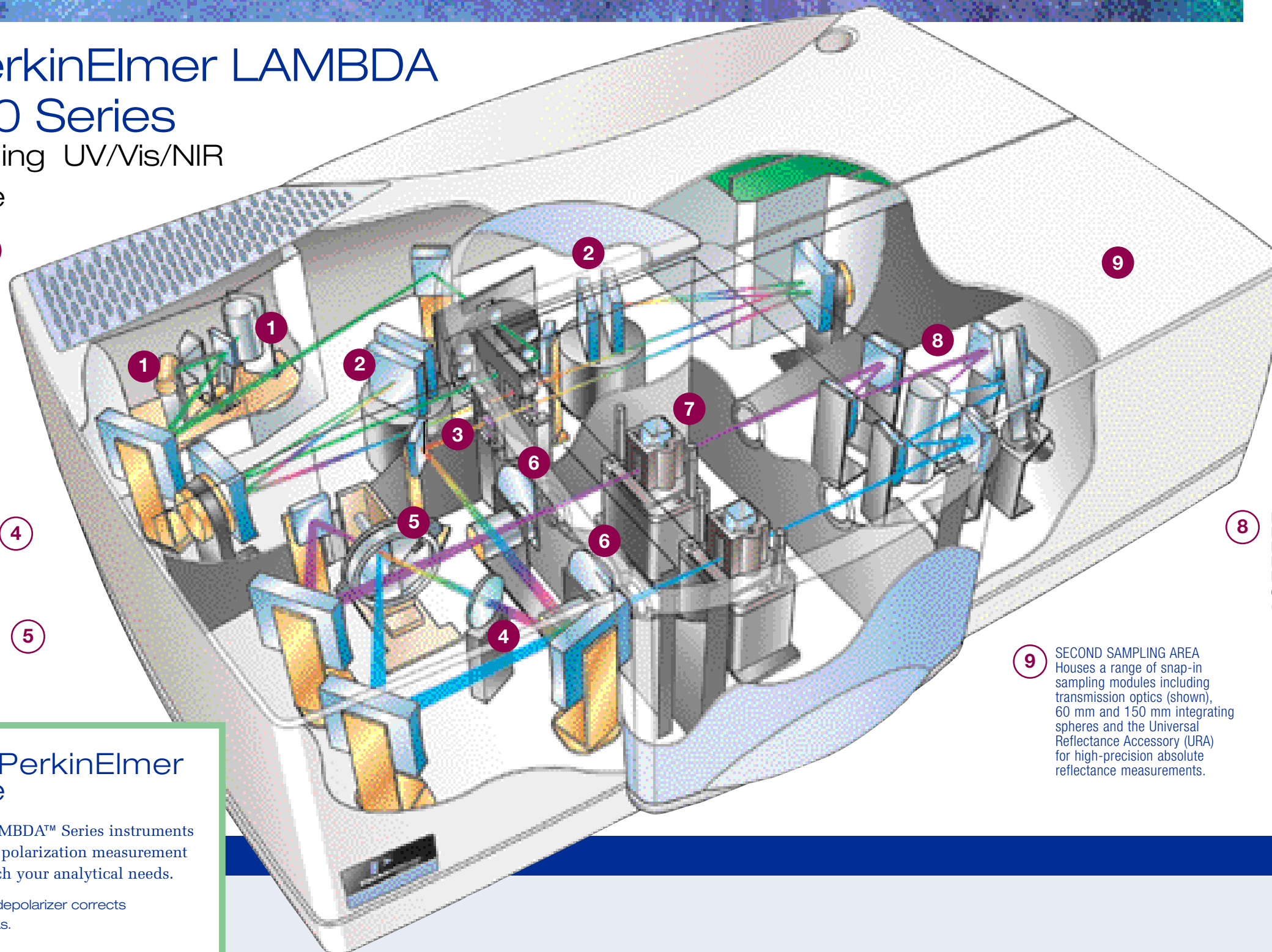
1 DEUTERIUM AND TUNGSTEN HALOGEN LIGHT SOURCES
Prealigned and prefocused for quick replacement and maximum uptime.

2 DOUBLE HOLOGRAPHIC GRATING MONOCHROMATORS
For ultra-low stray light performance.

3 COMMON BEAM MASK
Allows precise adjustment of beam height to match samples of different dimensions.

4 COMMON BEAM DEPOLARIZER
Corrects for inherent instrument polarization to allow accurate measurements of birefringent samples (optional).

5 CHOPPER
Switches between sample and reference beam. Four-segment design provides individual blank readings for sample and reference, increasing measurement accuracy.



6 SAMPLE AND REFERENCE BEAM ATTENUATORS
For extremely sensitive and accurate measurements on highly absorbing samples (LAMBDA 950/850 only).

7 LARGEST SAMPLE COMPARTMENT IN THE INDUSTRY
Allows easy access to a wide variety of sampling accessories and sample types.

8 HIGH-SENSITIVITY PHOTOMULTIPLIER AND Peltier-Controlled PbS DETECTORS
Provides full range UV/Vis/NIR coverage from 175 to 3,300 nm (LAMBDA 950 only).

9 SECOND SAMPLING AREA
Houses a range of snap-in sampling modules including transmission optics (shown), 60 mm and 150 mm integrating spheres and the Universal Reflectance Accessory (URA) for high-precision absolute reflectance measurements.

Another PerkinElmer exclusive

All three of the LAMBDA™ Series instruments feature unmatched polarization measurement capabilities to match your analytical needs.

- Common beam depolarizer corrects for instrument bias.
- Automated polarizer/depolarizer drive in the large sample compartment provides further depolarization or allows study of oriented samples with polarized light.
- Compatible with transmission and reflectance measurements.

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UV WinLab software – works the way you work

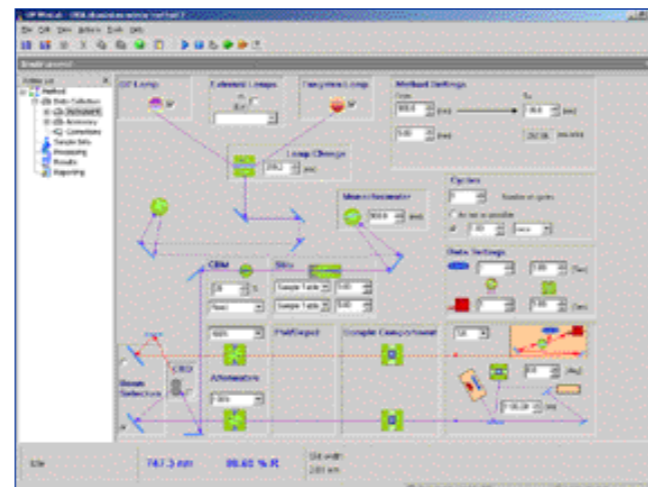
PerkinElmer's powerful UV WinLab™ software works the way you do – emulating laboratory workflow – guiding you through method development and reporting and analysis of results in simple steps. UV WinLab software also offers multiple tools, including databases, trending functions and security that you need to meet all of your analytical challenges and data requirements. The software is also available in an Enhanced Security™ (ES) 21 CFR Part 11 compliant version for regulated industries.

Maximum flexibility for enhanced productivity

- Simple Method Development with scan, rate, quant, timedrive and wavelength program modes for maximum applications flexibility.
- Storage of all results in a secure database aids GLP and makes reviewing results easy.
- Intelligent querying allows searching on multiple table parameters.
- Trending tools offer ability to review, analyze and predict based on a set of method parameters. This unique feature provides in-depth insight to your analysis and can help identify problems before they happen.
- Fully integrated math engine.
- Ability to create customized report templates.

Easy-to-use, unrivaled security features

Access control is built into the software, locking methods so that analysts follow defined procedures and cannot inadvertently make changes to key parameters. UV WinLab ES™ goes further, including multi-level user permissions and comprehensive audit trails and electronic signature points in a stringently controlled working environment.



All instrument set-up parameters are easily accessed within UV WinLab software.

Ask your PerkinElmer LAMBDA™ sales specialist for a demo of UV WinLab software.



LAMBDA: backed by a network of **accessible** service engineers – **worldwide**

Your worldwide partner for support

With OneSource™ Laboratory Services, you've got the power of PerkinElmer on your side. Our OneSource solutions are focused on customer value creation through improving instrument performance, increasing uptime/efficiency and driving lab productivity. OneSource offerings include:

- **Expert Support and Service**
- **Instrument Care and Upgrades**
- **Validation**
- **Education and Training**
- **Partnerships**

Global capabilities for rapid response

An industry leader in service, PerkinElmer offers technical and support services in more than 125 countries, with a team of over 1,000 factory-trained

service professionals. With global processes such as the ALERT network and global parts distribution, your service engineer will know the service history of your instruments and the methods you are running, providing you with the most effective and responsive service in the industry.

Application expertise and support

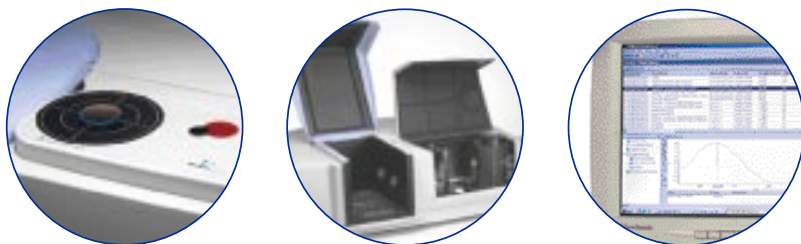
PerkinElmer has more UV/Vis product specialists than any other instrument manufacturer, offering superior UV/Vis/NIR and UV/Vis application support. Our extensive industry knowledge and depth of our support staff assures you of a rapid solution to any problem. For the full range of PerkinElmer OneSource service and support offerings visit us at www.perkinelmer.com/onesource

Preventing downtime with on-demand service when you need it

With PerkinElmer's OneSource™ Service Plans, you are assured of rapid response to your instrument repair request.

Call 1 (800) 250-6070 ext. 800* to arrange a **FREE CONSULTATION** with a PerkinElmer LAMBDA™ specialist, or e-mail us: lambda@perkinelmer.com www.perkinelmer.com/lambda

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LAMBDA UV/Vis/NIR and UV/Vis spectrophotometers:

powered by PerkinElmer

PerkinElmer, Inc. is a global technology leader focused in the following businesses – Life and Analytical Sciences, Optoelectronics, and Fluid Sciences. A \$1 billion market leader, the Life and Analytical Sciences division serves a large number of industries, including the academic research, biotechnology, clinical screening, pharmaceutical, environmental, forensic, petrochemical and semiconductor segments.

Our instruments and related software and customer support programs, including our OneSourcesm team of over 1,000 factory-trained service professionals deployed in over 125 countries, help our customers to enhance research productivity, meet strict

regulatory requirements, improve time-to-market, and increase manufacturing efficiencies.

Preferred for years by laboratories worldwide, the LAMBDATM Series is the premier range of high-performance UV/Vis/NIR and UV/Vis spectrophotometers, providing accurate, stable and repeatable results. All three models share the same high-performance optical bench, allowing each one to use the same array of intelligent sampling accessories. For sampling flexibility, ease-of-use and superior data quality, the PerkinElmer LAMBDA 950/850/650 Series spectrophotometers are the industry-standard for excellence.

The PerkinElmer LAMBDA Advantage

INDUSTRY-LEADING PERFORMANCE

For almost 50 years, PerkinElmer has been an industry leader in UV/Vis/NIR and UV/Vis instrumentation, and continues to set benchmarks with the innovative LAMBDA Series.

LOWEST SAMPLING SET-UP TIME

Thanks to intelligent design features like snap-in modules, dual compartments and more automation, the LAMBDA Series offers the industry's lowest sampling setup time.

ENHANCED FLEXIBILITY

The LAMBDA Series offers multiple options and the versatility to create a customized optical system to handle a wide range of sample types. This convenient and flexible approach reduces the time-consuming complexity of challenging analyses.

POWER IN UV WINLABTM SOFTWARE

Updated software "works the way you do" by mimicking laboratory workflow and offering the tools and enhanced security you need to meet all of your analytical challenges and data requirements.

PREMIUM SERVICE – "GO-TO" SUPPORT

PerkinElmer is the only major life and analytical sciences manufacturer to have a dedicated service business – OneSourcesm Laboratory Services.

PerkinElmer Life and Analytical Sciences
710 Bridgeport Avenue
Shelton, CT 06484-4794 USA
Phone: (800) 762-4000 or
(+1) 203-925-4602
www.perkinelmer.com



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