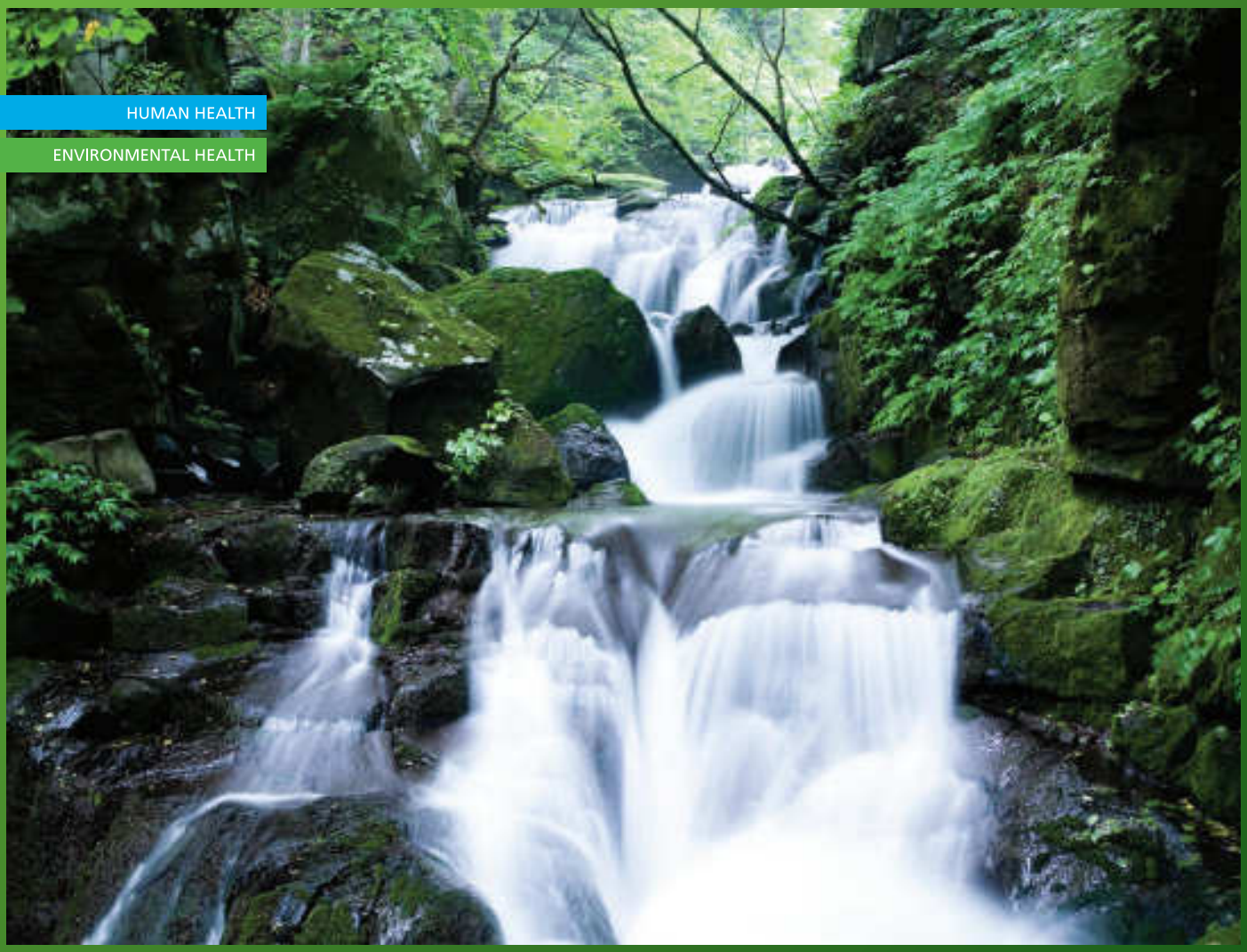
HUMAN HEALTH

ENVIRONMENTAL HEALTH



KEEP YOUR ANALYSIS FLOWING

LAMBDA 25/35/45

UV/Vis Spectrophotometers

PerkinElmer®

For the Better

LAMBDA 25/35/45

HIGH QUALITY RESULTS FOR THE FIRST TIME

LAMBDA™ 25/35/45 UV/Vis Spectrophotometers increase productivity by mimicking the QA workflow to generate high-quality results the first time, every time. And that's exactly what you need in a busy laboratory when the pressure's on and it's your job to keep the results flowing. LAMBDA systems are easy to operate and deliver results you can trust with the minimum of operator training. With our complete range of LAMBDA systems it's easy to develop simple, robust methods and ensure they're followed without mistakes. And, whichever LAMBDA system you choose, your day-to-day UV/Vis analyses will be faster, simpler and more dependable than ever before.

UV WinLab™ software works the way you work, guiding you through a step-by-step process that simplifies analysis from sample entry to report generation, eliminating costly mistakes and delivering rapid results. You can rely on our proven technology to deliver consistently high-quality results over the lifetime of the system, and you can confirm those results with our extensive suite of Instrument Performance Verification (IPV) tests. For FDA-regulated industries, the Enhanced Security™ (ES) version of UV WinLab integrates seamless 21 CFR Part 11 technical compliance without slowing you down.

	LAMBDA 25	**LAMBDA 35**	**LAMBDA 45**
	The LAMBDA 25 is an ideal match for most routine UV/Vis applications and regulatory tests, giving fast and reliable results time after time.	*The variable bandwidth of the LAMBDA 35 offers the best solution for measurement on solids, pastes and powders.*	*The LAMBDA 45's pre-monochromator offers the ultimate level of precision and accuracy.*
Range (nm)	190–1100	190–1100	190–1100
Double-Beam Operation	Yes	Yes	Yes
Bandwidth (nm)	1 (fixed)	0.5–4 (variable)	0.5–4 (variable)
Pre-Monochromator	No	No	Yes
Modes of Operation	Scanning, Wavelength Program, Timedrive, Rate, Quant, Scanning Quant		
Applications	Routine UV/Vis testing	Routine UV/Vis testing	Routine UV/Vis testing
	Liquids analysis	Liquids analysis	Liquids analysis
	Pharmacopeia and regulatory tests	Solids, pastes and powder samples	Transparent solids
		Regulatory tests requiring variable bandwidths	Regulatory tests requiring variable bandwidths
			Highly absorbing samples
Absorbance Range (linearity 0.99r2)	3.2A	3.2A	3.5A

Technology for best-in-class performance

With more than 10,000 units installed worldwide, our superior technology has proven itself under the toughest conditions.

- True double-beam operation provides the best possible stability and allows references to be measured and corrected in real time.
- Sealed and quartz-coated high-throughput optics ensure consistent performance throughout the instrument's service life.
- Fast scanning with no compromise in analytical performance.
- Surpasses all regulatory body, quality system and pharmacopeia requirements.
- Prealigned deuterium and tungsten halogen lamps mean that when a lamp needs to be replaced there's no service call and no downtime.

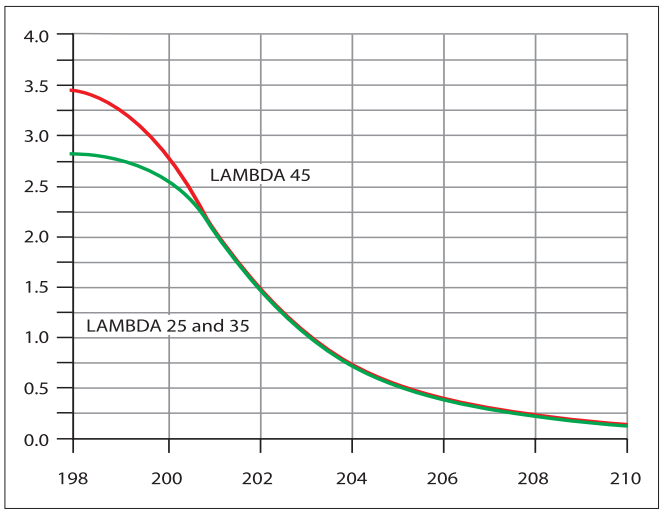


Figure 1. LAMBDA systems exceed the pharmacopeia stray light test specification of an absorbance of > 2.0A at 200 nm using a 1.2 w/v potassium chloride solution. The additional pre-monochromator in the LAMBDA 45 further reduces stray light compared to the LAMBDA 25 and 35.

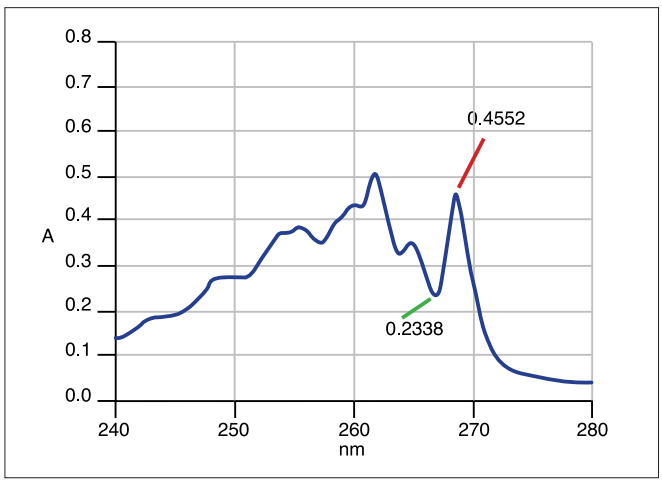


Figure 2. Pharmacopeia resolution test using 0.02% w/v toluene in hexane at 1 nm slit width. Ratio of peak and trough near 269 nm and 266 nm > 1.9 vs. the pass criterion of 1.5.

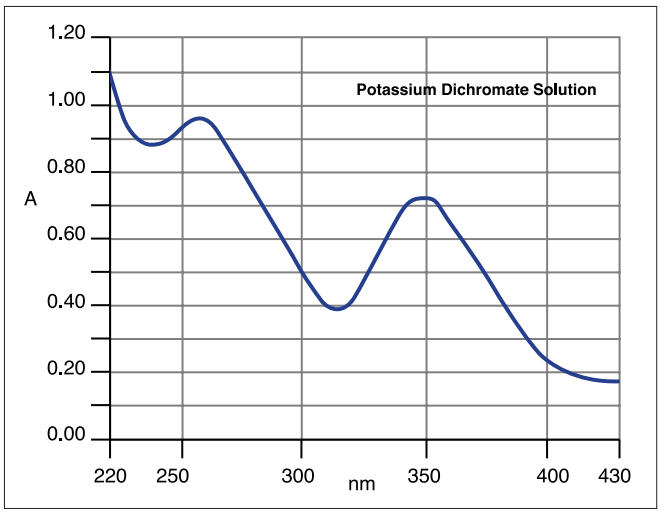


Figure 3. LAMBDA systems easily pass the pharmacopeia absorbance accuracy test at 235 nm, 257 nm, 313 nm and 350 nm using 60.06 mg/L potassium dichromate solution.

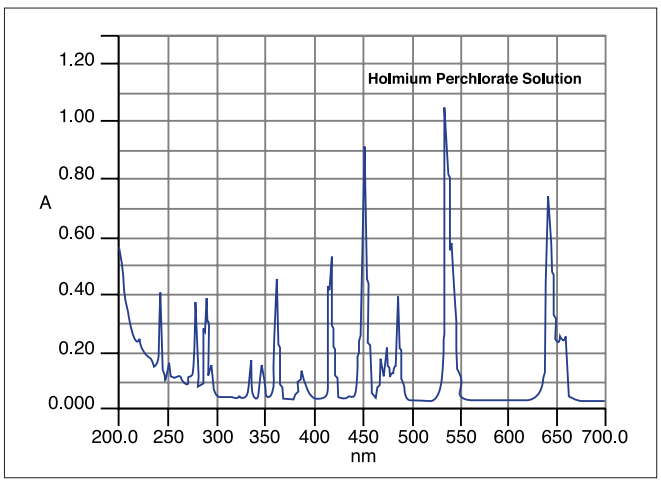


Figure 4. LAMBDA systems exceed pharmacopeia and ASTM® requirements for wavelength accuracy (NIST® 260-140) using a 4 mg/mL solution of holmium perchlorate.

UV WINLAB SOFTWARE

Works the way you work

UV WinLab software mimics the way you work, guiding you through method development, analysis, reporting and analysis of results in a series of simple steps – so it's easy to keep in touch with all the stages of your analysis.

UV WinLab archives all of your results and methods with a single mouse click in a secure, relational database. This transforms your data from a collection of individual results into valuable knowledge to help you make faster decisions. A range of intelligent querying options allows you to instantly answer questions from your customers and auditors and identify potential problems before they happen.

UV WinLab Enhanced Security

The Enhanced Security (ES) version of UV WinLab software integrates 21 CFR Part 11 technical compliance within the workflow user interface. Unlike other packages with "bolt-on" compliance modules, UV WinLab ES eliminates compliance loopholes without compromising productivity.

- Multi-level user permissions including administrator, method developer, analyst and reviewer.
- Password-protected access control includes password aging and expiry.
- Method-lock facility ensures that methods cannot be overwritten. All revisions are saved in a single location.
- Fully configurable e-signature points.
- Six-level database security protects valuable data.

Seamless validation and technical compliance

UV WinLab's integral performance tests give you the absolute confidence that your analyses and results will always meet the toughest internal and external quality standards.

- UV WinLab software includes a comprehensive suite of 20 Instrument Performance Verification (IPV) tests (Figure 5) covering pharmacopeia, ASTM®, GLP and ISO requirements.
- Specify the intervals between IPV tests.

Compliance for FDA-regulated industries

As the leading supplier of UV/Vis systems to regulated industries, PerkinElmer is your partner for all stages on the route towards system validation. We provide a full suite of materials to help you complete a thorough validation plan according to the GAMP 4 guidelines.

- Detailed functional and system design specifications.
- Materials to simplify preparation of your user requirements specification and supplier assessment questionnaire.
- Manufacturing test specification and certificates.
- Comprehensive IQ/OQ plan.
- Data processing validation and suitability CD.

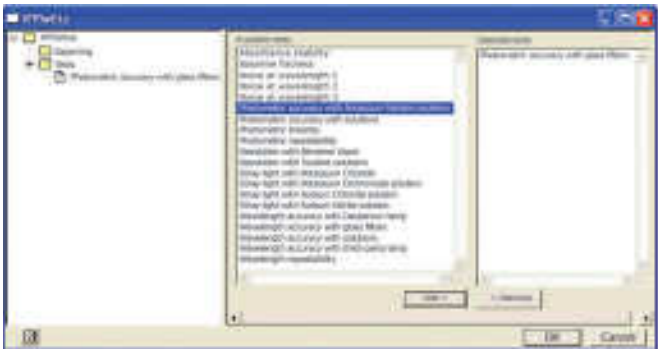


Figure 5. UV WinLab features a comprehensive list of IPV tests.

SAMPLING ACCESSORIES

Sampling accessories – simple, reproducible and robust

LAMBDA 25/35/45 systems offer the widest range of reproducible and robust sampling accessories to simplify and speed your analysis whatever your sample type. Choose the right accessory for your application at:

www.perkinelmer.com/UVsupplies

The S10 autosampler with built-in peristaltic pump offers unattended high-throughput measurement of up to 200 liquid samples. A wide range of sample vessels are available.

For liquids, the peristaltic sipper speeds throughput.

The fiber optic probe enables in-situ sampling away from the instrument.

Peltier controllers accurately control the temperature of your experiment.

The temperature measurement kit provides precise in-cell temperature monitoring with real-time display within UV WinLab.

The sensitive integrating sphere simplifies the analysis of a wide variety of sample types, including solids, powders, pastes and liquids (LAMBDA 35 only).

A range of automatic linear cell changers speeds and simplifies multi-sample measurements and quantitative calibrations.

For everyday UV/Vis measurements, a wide range of glass and disposable cells and cell holders extends the range of samples you can analyze.

INDUSTRY APPLICATIONS MEETING YOUR NEEDS

PerkinElmer recognizes that every application is different. We can address your needs providing a flexible and reliable solution for dependable and affordable results The combination of rugged instrumentation, a comprehensive choice of accessories, powerful software and unrivalled applications support, offers you the complete solution system that can meet your analytical requirements. Our intuitive UV Winlab software permits fast, accurate data analysis and reporting automatically and thus makes it the ideal tool for both research and routine applications.

Here are examples of our capabilities for each of the following industrial segments:

Environmental

UV/Vis spectroscopy is an important analytical technique used for the determination of metal and organic non-metal analytes in water. As a result of the high optical quality and excellent performance specifications of the LAMBDA 25/35/45 UV/Vis Spectrophotometers make them perfect for environmental analysis.

UV Winlab methods available from PerkinElmer include:

- Anions such as nitrates (EPA 352-1, US 9065) and phosphates (EPA 365-1/2, DIN 38405)
- Cations such as Iron (US 3500 Fe D), Chromium VI (US 7916, DIN 38405 part 24)
- Surfactants (MBAS – Methylene blue active substances EPA 425-1, DIN 38409 part 23)
- Chemical Oxygen Demand (COD EPA 410-4)
- Chlorophyll (e.g. US 10200 H, SCOR, Jeffrey & Humphrey)
- Phenols (EPA 425-1, US 9065), UV254 Absorbance (US 5910B)
- Inorganic kits (e.g. Merck, Hach & Palintest)

INDUSTRY APPLICATIONS

Petrochemical

The LAMBDA 25/35/45 UV/Vis Spectrophotometers are ideal for use in a petrochemical laboratory as they are solvent resistant and the sample area is easy to clean and well away from the instruments' main electronics and thus minimizing damage from accidental solvent spills.

UV Winlab methods available from PerkinElmer include:

- Naphthalenes in Aviation Turbine Fuels (AVTUR) ASTM D 1840
- Duty markers in fuel (e.g. Quinizarin IP 298)
- Hydrogen sulfide in fuel oils (IP 399)
- Phosphorus in Gasoline (ASTM D 3231)
- UV Aromatics (Shell SMS 2783)

Food and Beverage

UV Winlab software allows the user to generate quick and easy methods for common food analyses without the need for extensive training ensuring that the correct results are reported without compromising food quality

UV Winlab methods available from PerkinElmer include:

- Adulteration of orange juice with pulpwash (AOAC 986.14)
- Carotene content and DOBI (Deterioration Of Bleachability Index) of palm oil for margarine
- Browning Index of fruit juices
- Purity of olive oil (EU CAC/RM 26-1970)
- Beer color to ASBC and EBC
- Enzymatic determination of alcohols, aldehydes and malic acid
- Wine color and intensity
- L*a*b* color values of food colors in solution

POWERED BY PERKINELMER

A Constant Resource For Customer Support and Instrument Care

With a global team of certified, factory-trained Customer Support Engineers in more than 150 countries around the world, OneSource Laboratory Services from PerkinElmer lives up to its name by being the single source for all your instrument maintenance and repair needs.

Flexible and scalable, OneSource programs are tailored to the specific needs and goals of individual customers. From complete, all-inclusive long-term contracts to an a-la-carte offering of individual services, we have the people, experience and resources to deliver the ideal solution to labs of all types and sizes.

OneSource offers the most comprehensive portfolio of professional laboratory services in the industry, including complete care programs for virtually every technology and manufacturer. By allowing you to consolidate all your service contracts under a single supplier, and by providing responsive, expert technical advice and support at a moment's notice, we ensure your instrumentation – and your lab – is running at optimum levels at all times.

Whether it's care and repair, validation and compliance, asset management and laboratory relocation, software and hardware upgrades, or education and training, OneSource is… the ONE you can count on.

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.

Increased Productivity

Our workflow software and simple, robust sampling accessories simplify and speed your analysis – whatever your sample type.

Technology You Can Trust

With more than 10,000 units installed worldwide, our superior technology has proven itself under the toughest conditions.

Power in UV WinLab 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 – OneSource Laboratory Services.

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