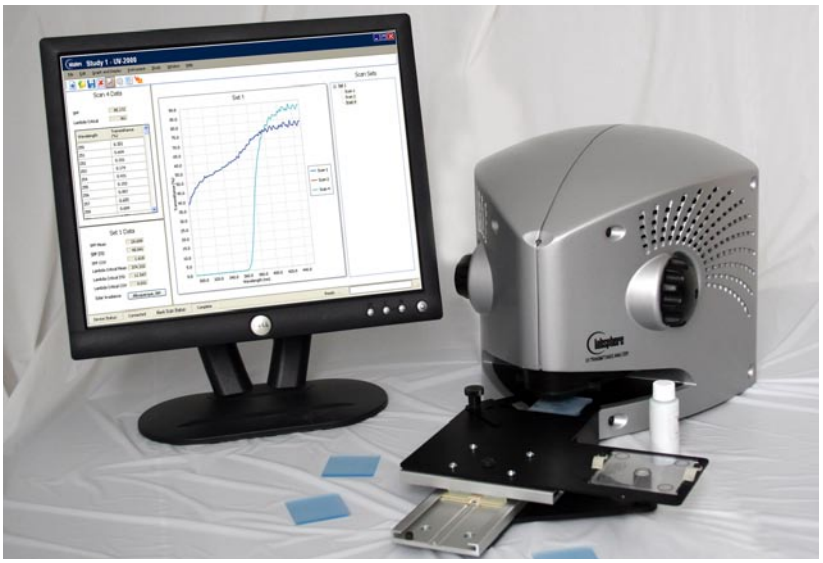
UV-2000S ULTRAVIOLET TRANSMITTANCE ANALYZER

Instantaneous Sun Protection Factor values of sunscreen samples



ADVANCED

Labsphere's UV-2000S incorporates the latest component and software technology into an industry proven system architecture, to achieve accurate in-vitro SPF/UVA-Protection Factor analysis of sun care products developed to receive the "very high" sun protection label. Driven by rapidly evolving industry requirements to simplify product labeling and new in-vitro methods to validate product UVA Protection, the UV-2000S is designed to comply with recently approved in-vitro methods, such as COLIPA UVA-PF, and several pending global standards/methods. The UV-2000S is positioned to replace Labsphere's UV-1000S as the Industry's choice for not only laboratory in-vitro SPF/UVA analysis, but also production floor quality control.

FAST

The UV-2000S rapidly measures the diffuse transmittance of sunscreen samples in the ultraviolet wavelength region from 250 - 450 nm. Labsphere's Spectralon® integrating sphere incorporates a re-optimized xenon flash lamp to provide exceptional diffuse illumination of the product sample and minimize data integration time. New high performance diode array spectrometers coupled by new, advanced fiber optics are optimized at the system level for low stray light with superior wavelength stability and flash-to-flash repeatability.

FEATURES:

One touch sample analysis, with results in less than five seconds

Manual stage for accurate sample positioning and pre and post irradiation

New Wavelength standard that captures six relevant spectral bands

Easy-to-use menu driven application software

Simple instrument performance validation routine ensures accurate, repeatable measurements

Automatic calculation of SPF, UVA to UVB ratio, critical wavelength, COLIPA Method and Revised Boots Star Rating (pending)

IMPROVED

Many improvements are incorporated in the UV-2000S to realize a new industry de facto standard for in-vitro sun care product analysis. System improvements include new spectrometers, Xenon Flash Lamp, optical coupling fibers, optical head positioning mechanism, sample positioning stage and a new, robust software development platform.

The new diode array spectrometers feature stable, custom concave diffractive optics for measurement integrity and repeatability, original holographic diffraction gratings, not replicated gratings, peaked for higher efficiency across the wavelength range, and longer pixel arrays for better pixel wavelength resolution.

Illumination is now filtered at the integrating sphere to limit total exposure at the sample and to improve stray light performance. A higher flash rate reduces exposure time, minimizing dark current and maximizing dynamic range.

Use of solarization resistant fibers maintains high system throughput over time. Longer fibers filter high order modes to provide cleaner grating illumination improving stray light performance.

EASY-TO-OPERATE

A built-in report function generates essential information at the click of a button. Reports include necessary information such as date, time, operator name, sample identification, and test parameters. Reports are conveniently viewed on your PC, printed, or exported as text to data processing software for further review and analysis.

POWERFUL APPLICATION SOFTWARE

Developed with .NET Framework®, the software includes modular architecture and supports latest UI elements. The software includes the COLIPA method and is expandable to include new industry or regional methods as they occur. Facilitates capture/archival/retrieval and export of all data including bare substrate data that may impact UVA-PF due to surface roughness.

UV-2000S application software includes an integrated Performance Validation Routine that allows for on-site validation and re-validation to ensure optimum instrument performance. A set of calibrated standards, including a wavelength standard that captures six relevant spectral bands, is included with each UV Transmittance Analyzer.

Labsphere, Inc. · 231 Shaker St. · North Sutton, NH 03260 · USA · Tel: +1 (603) 927-4266 · www.labsphere.com

Specifications

System Model Numbers	System Order Number
UV-2000S	AA-00909-000

System Properties and Performance

Wavelength Range	250 to 450 nm*
Wavelength Accuracy	±1 nm
Bandwidth (FWHM)	<4 nm
Wavelength Step (Data Interval)	1 nm
Optical Geometry	Hemispherical Illumination/0° viewing (d/0)
Integrating Sphere Geometry	Spectralon®
Integrating Sphere Port Area	< 5%
Sample Exposure Area	0.79 cm^2
Lamp	Xenon Flash Lamp
UV Dose Per Measurement Cycle	< 0.2 J/cm^2
Sample Positioning Stage	Manual Stage
Measurement Range	
Transmittance	0-100%
Absorbance	0 - 2.7 A (Dual Doped PMMA Method)
SPF	1 - 50+
Scan Time	< 5 s
Measurement Methods Supported	
Bare Substrate Analysis and Data Archival	Yes
SPF	Yes
UVA/UVB	Yes
Critical Wavelength	Yes
UVA Protection Factor - COLIPA Method (2007a)**	Yes
UVA Protection - Revised Boots Star Rating (2008)**	Yes
UVA Protection Factor - FDA UV1/UVA	Roadmap Upgrade
UVA Protection Factor - ISO	Roadmap Upgrade
Computer Interface	USB
Min computer requirements	1.6 GHz processor, Windows®XP or Vista SVGA 800 x 600 256MB RAM, 400MB free disk space
Power Requirements	110 - 120/220 - 240 VAC, 60/50 Hz
Operating environment	0° - 50°C, 0% - 70% RH (non-condensing)
Dimensions	
With Stage	11H x 22.6D x 12.3W In (27.9H x 56.6D x 31.2W cm)
Without Stage	11H x 12.6D x 12.3W in (27.9H 32.0D x 31.2W cm)

* All system specifications are based on a wavelength range of 290 to 400 nm.

** Requires a seperate solar simulator