

# UV-2000S

## Ultraviolet Transmittance Analyzer



### **One touch sample analysis**

Results in less than five seconds

### **Updated software**

Easy-to-use menu driven application

### **Automatic calculations**

SPF, UVA to UVB ratio, critical wavelength  
FDA 2011 Testing Method, COLIPA Method,  
Boots Star Rating

### **Easy and accurate sample positioning**

Manual stage positions for pre and  
post irradiation

### **New wavelength standard**

Captures six relevant spectral bands

### **Accurate, repeatable measurements**

Simple instrument performance validation routine

## Advanced

Labsphere's UV-2000S incorporates the latest component and software technology 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, ISO 24443, Boots Star Rating and the US FDA, as well as several pending global standards/methods.

## 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.

## Improved

Many improvements incorporated in the UV-2000S make it the industry 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 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 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.

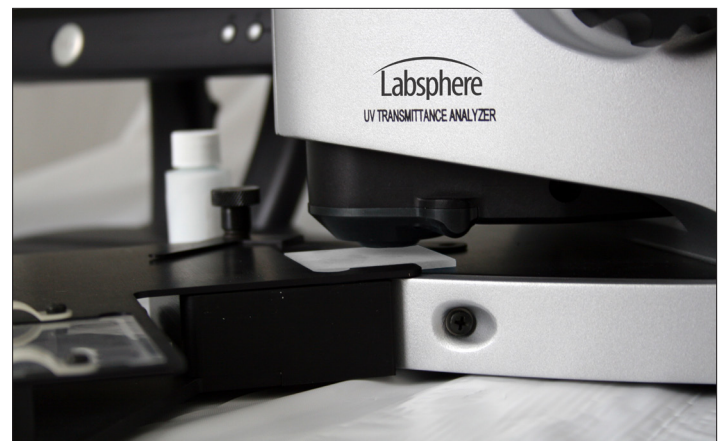
## Easy to operate

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 UV-2000S Software features different in-vitro measurement methods for UVA/UVB protection factors of sunscreen including the COLIPA, ISO 24443, Boots Star and FDA methods. This easy to use Windows® 7 or 10 compatible software 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.



# Ordering Information

Model Name	Order Number
UV-2000S	AA-00909-000
UV-2000S Control Software	AS-02755-001
50 HelioScreen HD6 Plates	PP-02090-000

## Optional Accessories

UV-2000S Starter Kit:	AS-02796-000
HelioScreen HD6 Plates:	PP-02097-000

# Specifications

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/O)
Integrating Sphere Geometry:	Spectralon®
Integrating Sphere Port Area:	< 5%
Sample Exposure Area:	0.79 cm <sup>2</sup>
Lamp:	Xenon Flash Lamp
UV Dose Per Measurement Cycle:	< 0.2 J/cm <sup>2</sup>
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 (2011)**	Yes
UVA Protection: Revised Boots Star Rating (2011)**	Yes
UVA Protection Factor: FDA UV1/UVA (2011)**	Yes
UVA Photoprotection Method: ISO 24443	Yes
Computer Interface:	USB
Minimum Computer Requirements:	1.6 GHz processor, Windows® 7, 8, 10 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 separate solar simulator



Advancing the Technology of Light: Measure. Create. Reflect.

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