SOLAR® LIGHT

Spectrophotometer for Cosmetics and Sunscreen Testing

SPF-290AS™

Meets
ISO 23698:2024
ISO 23675:2024

Analyzer for *In Vitro* SPF Testing and Ultraviolet Protection Factor (UPF) Analysis

The SPF-290AS™ UV Spectrophotometer is specifically designed for accurate, reliable determination of SPF values across a wide range of sunscreens and cosmetic products. Scanning automatically from 290 to 400 nm, it covers both UVB and UVA regions while calculating SPF using customizable solar irradiance and erythemal constants. Suitable for liquids, creams, gels, and even challenging formulations like sprays, the system ensures strong correlation with *in vivo* testing—making it a cost-effective and dependable guide to product performance.

Easy-to-Use System: Why It Matters

The SPF-290AS™ simplifies complex SPF analysis with an easy-to-use, automated system that ensures reproducible results and minimizes operator variability. Its streamlined design allows R&D teams to focus on formulation optimization, reducing reliance on costly *in vivo* studies while lowering development costs and accelerating product innovation.

Benefits

- **New Software** making it easy to perform the two new methods
- **Cost-Effective Testing** with reduced reliance on *in vivo* studies
- **Comprehensive Analysis** across both UVA and UVB (290–400 nm)
- **Flexible and Customizable** data collection and SPF calculations
- **Versatile Sample Handling** for liquids, creams, gels, and sprays
- **Proven Reliability** with strong correlation to *in vivo* results, even on difficult samples
- **User-Friendly Design** that ensures reproducible results and consistent performance
- **Supports Formulation** optimization while lowering development time and cost

Compliant with the Latest Standards

ISO 23698:2024 — Measurement of sunscreen efficacy by diffuse reflectance spectroscopy

ISO 23675:2024 — *In vitro* determination of Sun Protection Factor (SPF) for cosmetics

ISO 24443 — *In vitro* UVA photoprotection method

COLIPA — *In vitro* determination of UVA Protection Factor (UVA-PF)

Boots Star Rating — Testing standard and labeling system for UVA protection

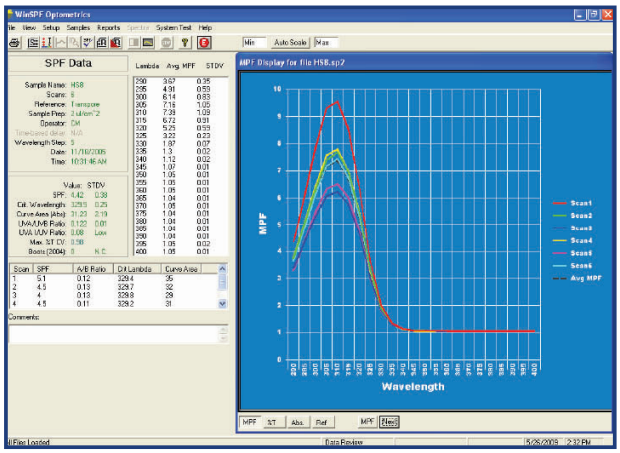
FDA — SPF, UVA-PF and Critical Wavelength

SPF-290AS™ • Spectrophotometer for Cosmetics and Sunscreen Testing

SPF-290AS™ Sample Handling and Support Media

Liquids, creams and gels are applied in small "spots" to the Molded and Sandblasted PMMA plates or other substrates.

Quartz plates are available from Solar Light for sprays and other difficult samples.



Designed to Meet the Needs of Sunscreen Testing

Validation Kit

Solar Light offers a Comprehensive Test Plate for use with the SPF-290AS™ and WinSPF™ software, enabling users to quickly validate the analyzer's performance. The plate contains optical filters measured by the SPF-290AS™, with results compared to NIST-traceable factory standards. This ensures reliable operation, helping users avoid unnecessary testing or costly, unneeded repairs.

In addition to the test plate, the Validation Kit contains:

- Hard Carrying Case
- (10) Syringes with tips
- (2) Sets of 3 PMMA Plates:
  - Molded PMMA Plates
  - Sandblasted PMMA Plates
- PMMA Plate Holder
- Calibration Plate Assembly
- (2) Standard Formulations:
  - 1 oz. of P5 SPF 30 Reference Standard
  - 1 oz. of S2 UVA Reference Standard

SPF-290AS SPECIFICATIONS	
Wavelength Range	290 – 400 nm *(Range Specified By International Methods)*
Wavelength Accuracy	0.2% (0.58 nm – 0.80 nm)
Wavelength Reproducibility	0.25 nm
Wavelength Interval	1.00 nm
Absorbance	0 – 3.2 A *(Dual Doped PMMA Method)*
SPF Measurement Range	1 – 100+
Scan Time	As Little As 24 Seconds
Wavelength Step Interval	1 nm, 2 nm, or 5 nm *(User selectable)*
Lamp	Power stabilized Xenon 150W, 100% Ozone Free
Detector	High Sensitivity Multialkali side-on PMT
Sample Positioning	Automated X-Y Stage
Power Options	110VAC-220VAC, 50/60 Hz

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