

SPF-290S Analyzer System

- Meets Colipa *in-vitro* Test Procedure
- Now with AATCC-183 Fabric Test Method
- NEW WinSPF software v4.1
- Windows® Automation and Measurement Software

Setting the standard for In-Vitro SPF assays of:

Lotions
Creams
Cosmetics
Fabrics





Optometrics Corporation would like to thank you for making the SPF-290S the instrument of choice for *in-vitro* evaluation of the sunscreen protection factors of various formulations and raw materials. This recording UV spectrophotometer is designed and optimized for the determination of SPF values, Boots Star Ratings and Australian TNUV standards, amongst others, on a variety of sunscreen, cosmetic products and fabrics.

With an installed base of over 300 units worldwide, Optometrics has set the standard for SPF measurement for almost 20 years. The SPF-290S can provide reliable results on the most difficult samples. An easy-to-use *in-vitro* testing methodology combined with reproducible results, using a user-friendly software interface, opens the door to efficient and low cost experimental design techniques for formulation optimization. This will result in faster formulation and lower development costs due to a reduction in the need for expensive and time consuming *in-vivo* panel studies.

Facilities

Optometrics' facility in Ayer, Massachusetts contains space for offices, engineering, R&D and production. Equipment that support our broad range of capabilities includes:

- Four metal vacuum coating systems;
- Three thin-film soft coated filter vacuum coating systems;
- Two Ion-Assisted Deposition hard coat vacuum coating systems;
- Three grating ruling engines;
- Production holographic laboratory;
- R&D holographic laboratory;
- Full replication and lamination facilities;
- Full assembly, alignment and test facilities;
- Full complement of test equipment for spectral testing from the UV to the Far Infrared, for mechanical and flatness testing, for humidity and environmental testing;
- Extensive marking, packaging and bar coding equipment and capabilities

Products

- **Gratings**
Originals and Replicated, Ruled and Holographic; Grazing Incidence, Echelles, Telecom and Transmission Gratings

- **Beamsplitters**
Reflecting/Transmitting Beamsplitters, Transmission Grating Beamsplitters, Beam Dividers/Combiners



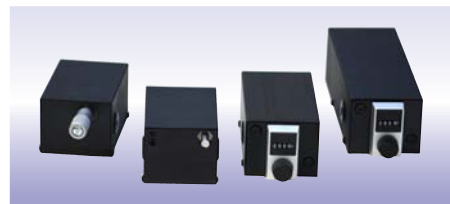
- **Optical Components**
Mirrors, Lenses, Windows, Flats, Beamsplitters, Prisms

- **Filters**
Soft Coated, Near Ultraviolet, Visible, Near Infrared, and Laser Line Filters

- **Infrared & Laser Products**
Laser Gratings, Holographic and Ruled Wire Grid Polarizers



- **Monochromators**
Mini-Chrom Monochromators



- **Systems & Accessories**
Monochromatic Light Modules, Sample Compartments, Detectors, Light Sources, Modular Recording Spectrophotometers

- **SPF-290S**
Spectrophotometer for determining Sunscreen Protection Factors

Plus specialized packaging, bar coding and Kanban stocking arrangements for all OEM customers.

Goals

Optometrics goal is to provide advanced optical components and systems for use in wavelength selection applications in:

- Analytical Chemistry
- Life Sciences
- Telecom Applications
- Physics
- Education
- Space Sciences

and other applications where high quality optics are key.

In order to accomplish this, the Company has assembled state-of-the-art facilities and people to produce:

- diffraction gratings: ruled & holographic, original & replicated, reflection and transmission
- interference filters
- optical components
- laser gratings & products
- monochromators & accessories
- spectrophotometers
- wire grid polarizers: ruled & holographic

OEM Services

Optometrics caters, in particular, to the needs of its OEM customers by offering special services such as:

- Kanban stocking arrangements
- Custom packaging programs
- Bar coding capabilities
- Code names for complete confidentiality
- Higher level pre-aligned optical assemblies

The company is also proud of its ability to support customers in all phases of the product development cycle.

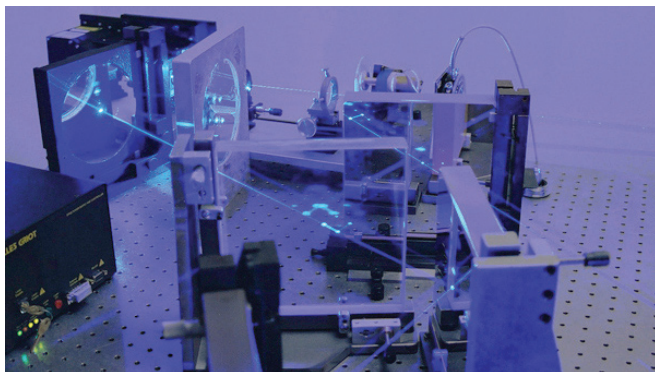


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SPF-290S Analyzer System |

NOW AVAILABLE

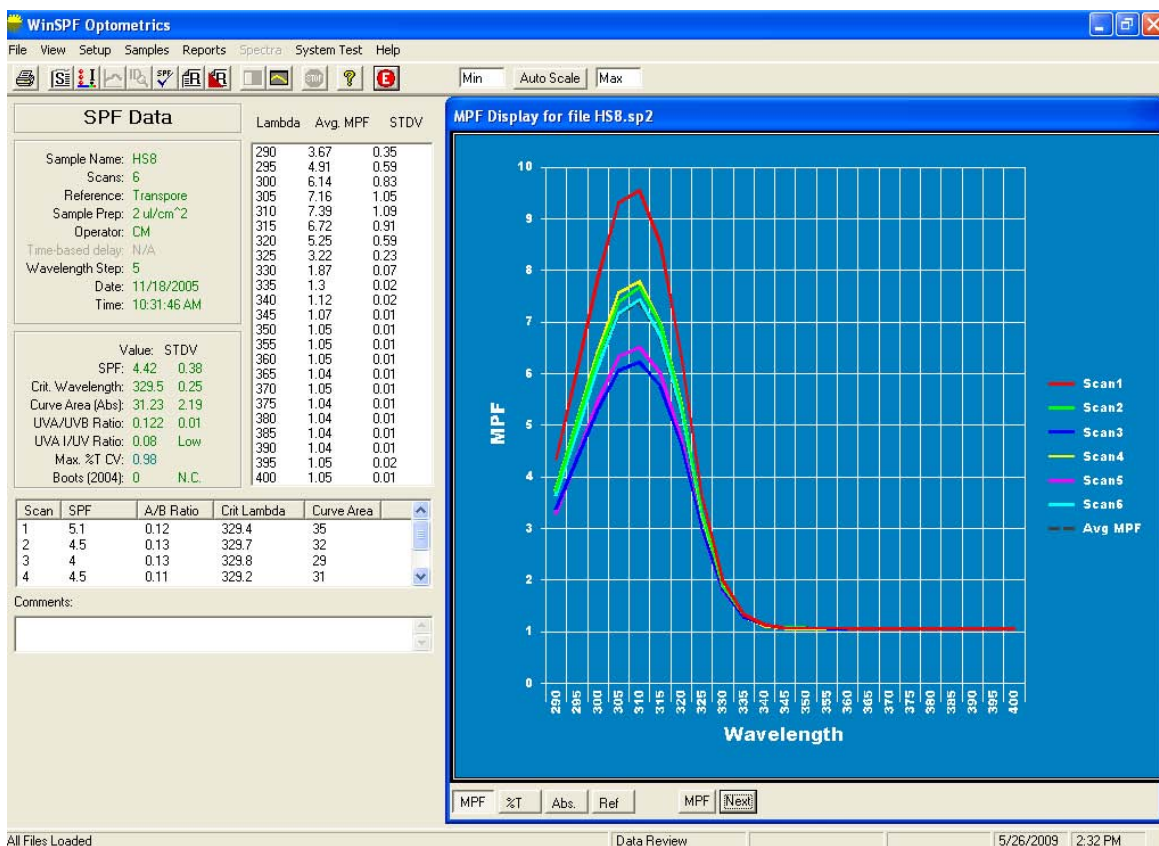
- Meets NEW FDA/UVA *in-vitro* test procedure
- Now with NEW Validation Kit
- NEW software v4.1
- Windows® automation and measurement software
- Supports revised Boots protocol

OVER 300 CUSTOMERS WORLDWIDE

Avon, BASF, Clairol, Elizabeth Arden, Estee Lauder, Good Housekeeping, ISP, Johnson & Johnson, Lever Bros, L'Oreal, Mary Kay, Merck, Revlon, Rohm & Haas, Proctor & Gamble, Unilever, Andrew Jergens, Helene Curtis, Whitehall Robins, Bayer, S/C/Johnson, Bristol-Myers Squibb, Tanning Research, Pfizer, Boots (the Chemist) and Amway...to name just a few!

Setting the standard for *in-vitro* SPF assays of:

- Lotions
- Creams
- Cosmetics
- Fabrics

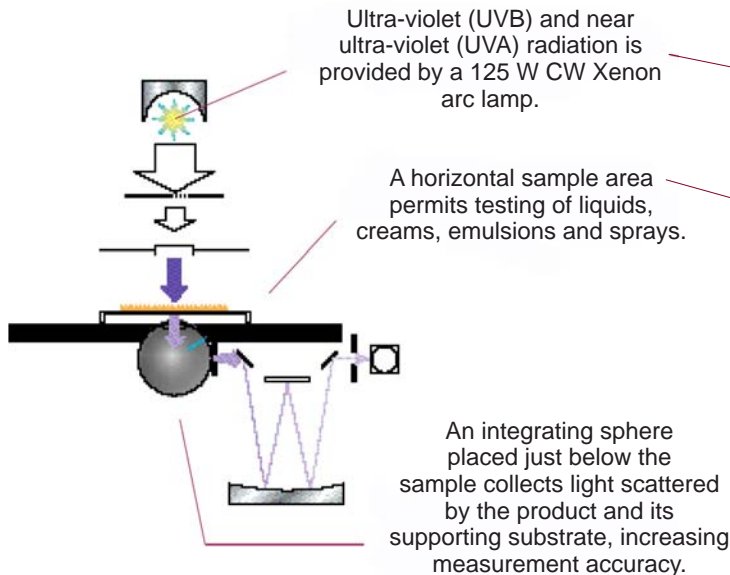
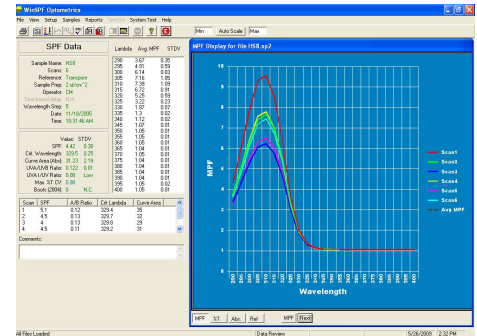
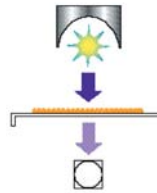


MEASUREMENT

The SPF-290S is a recording UV spectrophotometer designed and optimized for the determination of SPF values on a variety of sunscreen and cosmetic products reducing the need (and cost!) for in-vivo testing.

Covering both the UVB and UVA spectral regions, the system automatically scans from 290 to 400 nm, accumulating and storing data at intervals of 1, 2 or 5nm. The monochromatic protection factor (MPF) is determined for each of the selected wavelengths and is used to calculate the SPF value, using solar irradiance and erythemal constants that are programmed into the software but which can be easily modified.

DESIGNED TO MEET THE NEEDS OF SPF ASSAYS



SPF-290S SAMPLE HANDLING & SUPPORT MEDIA

Liquids, creams and gels are applied in small “dabs” or “spots” to the Transpore Tape® or other substrate, with the pipette supplied with the system. The substrate is placed on an open metal frame. The sample is spread lightly and evenly over a 50 cm² area at 2 μl/cm², equivalent to in-vivo testing.

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



SOFTWARE FEATURES

- Calculate and print SPF values
- Both tabular and graphical formats
- Boots Star Ratings calculated
- Create formulation assays of up to 36 scans
- Display MPF and absorbance values
- Photo-stability testing
- Calculate area under the curve
- Critical wavelength calculation
- UVA/UVB ratio
- Complete on-line help menu
- View scans individually
- Calculates TNUV standard
- Supports FDA UVA *in-vitro* test procedure

AND NEW WITH WinSPF v4.1

- Automatically loads Colipa spreadsheet during installation for use with Colipa's In-Vitro UVA guidelines.
- Now includes calculations and displays screens in compliance with AATCC-183 fabric test method.
- Now includes calculations and displays screens in compliance with AAS/NZS 4399 fabric test method.
- Now includes UVA Protection Factor & Erythema Protection Factor calculations.
- Updated Help System.
- Comes with audio visual training aids; intuitive computerized modules deigned to assist the operator with everything from spreading a sample to routine maintenance.

Fully Functional Toolbar

System Test and Validation

Complete On-Line Help System

Utilizes All Windows Features: Printing, Screen Capture, Etc.

Single Step Control Icons

MPF Display for file HS8.sp2

Lambda	Avg MPF	STDV
290	3.67	0.35
295	4.91	0.59
300	6.14	0.83
305	7.16	1.05
310	7.39	1.09
315	6.72	0.91
320	5.25	0.59
325	3.22	0.23
330	1.87	0.07
335	1.3	0.02
340	1.12	0.02
345	1.07	0.01
350	1.05	0.01
355	1.05	0.01
360	1.05	0.01
365	1.04	0.01
370	1.05	0.01
375	1.04	0.01
380	1.04	0.01
385	1.04	0.01
390	1.04	0.01
395	1.05	0.02
400	1.05	0.01

Scan	SPF	A/B Ratio	Crit Lambda	Curve Area
1	5.1	0.12	323.4	35
2	4.5	0.13	323.7	32
3	4	0.13	323.6	29
4	4.5	0.11	323.2	31

Value: STDV
 SPF: 4.42 0.38
 Crit. Wavelength: 329.5 0.25
 Curve Area (Abs): 31.23 2.19
 UVA/UVB Ratio: 0.122 0.01
 UVA/UV Ratio: 0.08 Low
 Max. %T CV: 0.98
 Boots (2004): 0 N.C.

MPF %T Abs. Ref MPF Next

Data can be acquired in approximately 20 seconds. Results displayed in easy to read format.

Switch Between Display Formats

CORRELATION BETWEEN SPF-290S AND IN-VIVO SPF TESTING

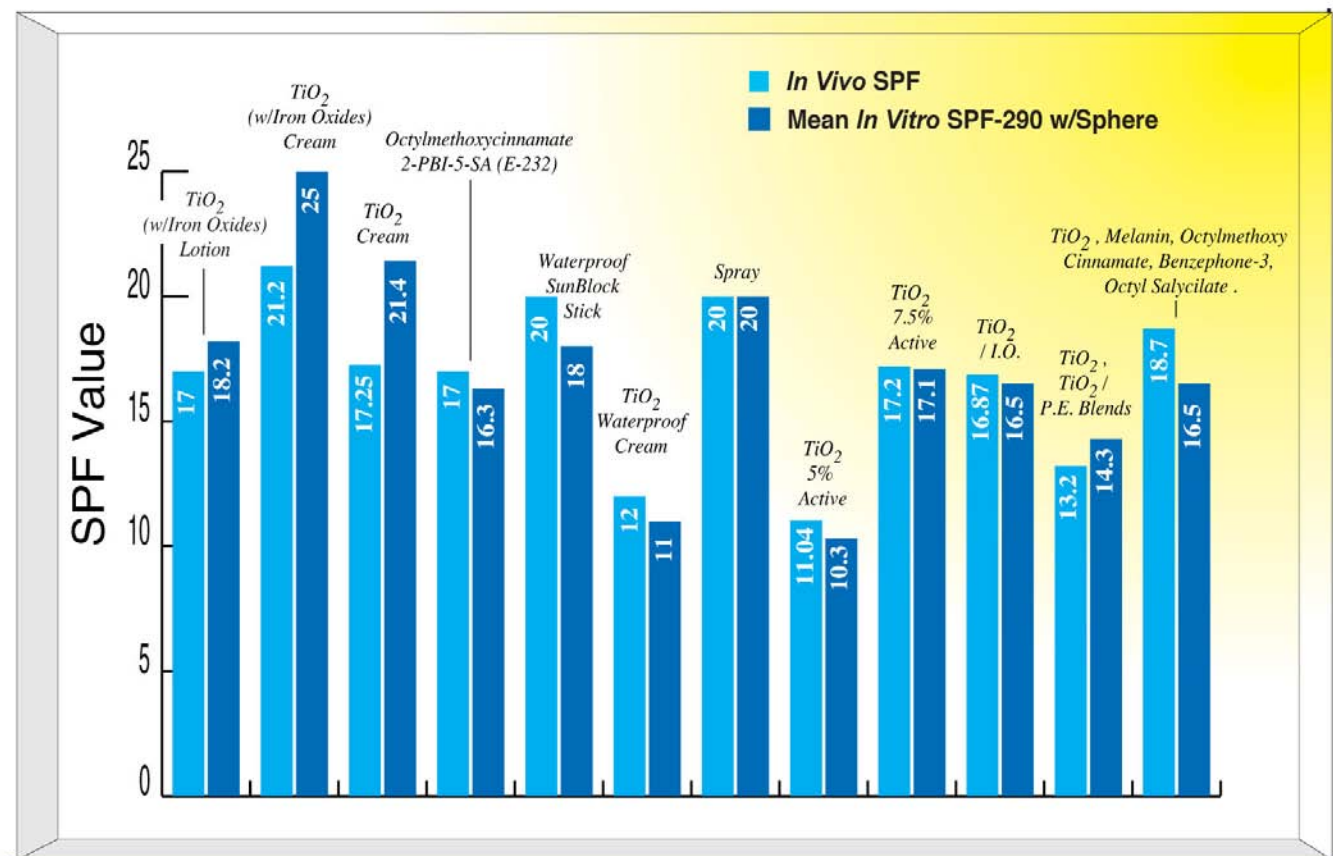
The high correlation between the SPF-290S's *in-vitro* measurements and in-vivo test results gives you confidence that the instrument will be a reliable guide to product performance.

The chart shows data comparisons for a variety of commercially available products including:

- physical sunscreens
- sprays
- waterproof sunscreens and stick formulations

The SPF-290S can provide reliable results on the most difficult samples.

An easy-to-use testing methodology combined with reproducible results opens the door to efficient and low cost experimental design techniques for formulation optimization. This will result in faster formulation and lower development cost due to a reduction in the need for extensive in-vivo panel studies.



COMPUTER CONTROLLED SAMPLING STAGE

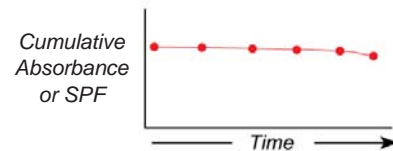
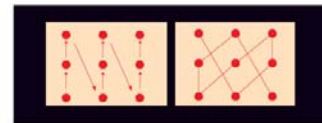
There are two modes of computer controlled operation:

- programmed reading of up to 12 locations (Autoscan), and,
- time based measurements (photo-stability)

Autoscan mode offers two methods of choosing up to 12 sampling locations. The operator can either specify the positions to be read or the computer can generate them randomly. Once set, the operation, data collection and reporting are performed automatically. The stage moves the sample on the holder into the light beam, takes the measurements, moves to the next position and continues until all the measurements have been completed.

Time-based (photo-stability) measurements monitor the SPF values for a sample at a user specified position against time. The effects of drying and exposure to air and light on a sample can be easily evaluated, making it particularly suitable for photostability testing. The system's computer provides a controlled repeatable time base for measurements.

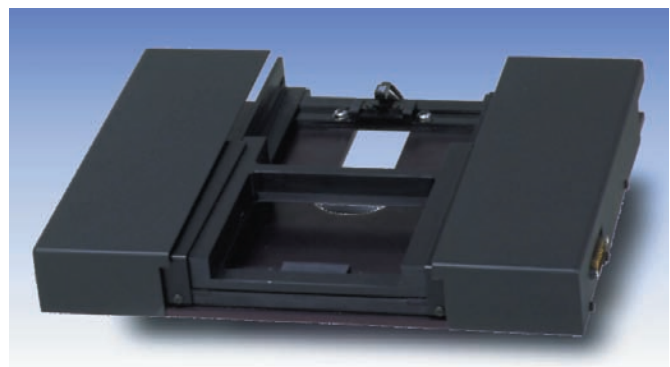
Computation of statistics for multiple assays is provided by the software.



X-Y SAMPLING STAGE

The Computer Controlled X-Y Sampling Stage:

- Reduces the overall cost of testing,
- Frees technicians for other tasks,
- Improves the repeatability and accuracy of measurements, and
- Facilitates photo-stability testing



SPF-290S SPECIFICATIONS

Source:	
Lamp.....	Xenon CW
Power.....	125 W (operated at 75 W)
Detector:	
Type.....	Multialkali side-on PMT
Dimensions:	
System Dimensions.....	46 x 32 x 35 cm
Monochromator:	
Resolution.....	1.66 nm
Wavelength Accuracy.....	± 0.2%
System Spectral Range.....	290 nm to 400 nm
Wavelength Reproducibility.....	0.25 nm

a UVA *in-vitro* testing procedure. The measurement takes the ratio of UVA 1 area per unit wavelength to UV area per unit wavelength.

WinSPF Release 4 performs the calculations and ratings prescribed in the Federal Register thus allowing the SPF-290S user to evaluate their products to ensure they conform to US Federal labeling guidelines.

Beginning with WinSPF Release 3.0, Optometrics software added the capability to make more than a single reference measurement, allowing up to 12 spatially separated measurements of the blank sample. With both the Boots Star rating and the new proposed Federal rules calling for the use of Taylor's approximation for MPF and transmittance standard deviation reporting, WinSPF Release 4 calculates all MPF and transmittance standard deviations using this method when multiple references recipes are used. When a single reference scan is prescribed, WinSPF 4 performs the standard deviation evaluation in the more familiar manner.

WinSPF VERSION 4 SOFTWARE

In August of 2007 the US Department of Health and Human Services, Food and Drug Administration proposed

VALIDATION KIT

Optometrics is now offering a Comprehensive Test Plate for use with the SPF-290S and WinSPF version 4. The test plate is designed to provide the user with a clear understanding of how their SPF-290S analyzer is performing. The test plate contains several optical filters that are measured by the SPF-290S and the results are compared to NIST traceable factory measurements. Equipped with this tool, users will not spend time performing tests on an analyzer that is in need of repair nor will they spend money for repairs that are not necessary. In addition to the test plate, the Validation Kit contains Transpore™ tape, syringes and two standard formulations: 8% Homosalate and the Colipa Standard.



Validation Kit

TURNKEY BASIC SYSTEM

SPF-290S Sunscreen Protection Factor Analyzer System and computer comprised of a 125W CW Xenon source, integrating sphere, color compensating filter, three sample holders, scanning monochromator with stepping motor and controller, in a self-contained, attractive desktop unit. Includes data acquisition board and drivers, I/O, communication and power cables and WinSPF operating software, four rolls of Transpore® tape (8-5010), a box of 25 syringes (8-5015), new Validation Kit, and complete instruction manual. WinSPF operating software also includes complete on-line help system, fully functional toolbar, single step control icons, graphical and tabular data display formats and utilizes all Windows® multi-tasking features. Available for use with 110V AC, 60 Hz. (catalog no. 8-5002) or 220V AC, 50 Hz. (catalog no. 8-5003). Computer includes a CPU, keyboard, monitor, mouse, and Windows® operating system. Data acquisition board, drivers and WinSPF v4.1 software are installed and tested.

\$17,500

Annual service contract available after first year for \$2,295; Contact sales for detail on contract benefits.

TURNKEY AUTOMATED SYSTEM

SPF-290S Sunscreen Protection Factor Analyzer System and computer comprised of a 125W CW Xenon source, integrating sphere, color compensating filter, six sample holders, scanning monochromator with stepping motor and controller, X-Y Module and electronic X-Y Control Module, in a self-contained, attractive desktop unit. Includes data acquisition board and drivers, I/O, communication and power cables and WinSPF operating software, four rolls of Transpore® tape (8-5010), a box of 25 syringes (8-5015), new validation kit, and complete instruction manual. WinSPF operating software also includes complete on-line help system, fully functional toolbar, single step control icons, graphical and tabular data display formats and utilizes all Windows® multi-tasking features. Available for use with 110V AC, 60 Hz. (catalog no. 8-5005) or 220V AC, 50 Hz. (catalog no. 8-5006). Computer includes a CPU, keyboard, monitor, mouse, and Windows® operating system. Data acquisition board, drivers and WinSPF v4.1 software installed and tested. Includes new Validation Kit.

\$22,200

Annual service contract available after first year for \$2,450; Contact sales for detail on contract benefits.

Details of system upgrades, accessories, replacement parts and other system options are on page 11.

Optometrics warranties all products against defects in material and workmanship for one year from the date of purchase with the following exception: Light Sources - warranted for 3 months.

Optometrics is not liable for any consequential or incidental damage arising from the sale of its product(s). In any event, liability shall not exceed the invoice value of the product(s) sold. Accidental damage, neglect, unreasonable use, attempted service, calibration, adjustments or cleaning not explicitly called for in an instruction manual voids the Optometrics warranty.

Optometrics makes no warranty other than described above for its products or for their performance in a specific application.

*Windows® is a registered trademark of Microsoft Corporation
Transpore® is a registered trademark of the 3M Corporation*

SPF-290S Sunscreen Analyzer System Consumables

CATALOG NO.	CONSUMABLES	LIST PRICE (\$)
8-5010	Transpore® Tape (3 inches x 10 yards) 4 rolls.	50.00
8-5015	Syringes with tips, 1 ml disposable (Lot of 25).	36.00
8-5078	HS8 (8%) Homosalate USFDA Standard SPF4 (1 oz Jar).	365.00
8-5079	Colipa Standard SPF 14-17 (1 oz Jar).	365.00

Accessories

CATALOG NO.	ACCESSORIES	LIST PRICE (\$)
8-5031	Sample holders for Transpore® Tape for use with X-Y stage, set of 3.	108.00
8-5032	Sample holder assemblies for Transpore® Tape for use without X-Y stage, set of 3.	125.00
8-5028	Quartz sample plates, 10.7 cm x 10.2 cm. Two plates/package.	415.00
8-5083	Validation Kit (Contains the following: a case, 10 syringes with tips, 1 roll of Transpore® Tape, calibration plate assembly, 1 oz of Homosalate Standard, and 1 oz of Colipa Standard).	1,100.00
8-5087	Calibration Plate Assembly (Includes 5 separate test filters).	405.00
8-5088	Sample Locator Plate Assembly	149.00

Services & Upgrades

CATALOG NO.	SERVICES AND UPGRADES	LIST PRICE (\$)
8-5080	Training program at Optometrics facility, per diem. Client responsible for all travel expenses.	600.00
8-5081	On-site training, per diem. Travel expenses to be borne by client.	900.00
8-5096	WinSPF v4.1 software (on CD-ROM), Operating Manual and Validation Kit.	1,920.00
8-5097	Upgrade from any Win SPF v3.xx to version v4.1 and Validation Kit.	1,545.00
8-5098	Upgrade from any Win SPF 4.0 to version v4.1.	495.00
8-5026	X-Y stage upgrade (For SPF units purchased after December 2000).	4,860.00
RENT	One month rental of SPF-290S Automated (X-Y) system (8-5005 or 8-5006); 70% credit towards purchase allowed at end of rental period. Rental must be paid in advance.	3,780.00

Replacement Parts

CATALOG NO.	REPLACEMENT PARTS	LIST PRICE (\$)
8-5022	125W CW Xenon lamp replacement.	1,245.00
8-5095	Color compensating filter, annealed UG-5.	52.00
8-5094	SPF packaging/shipping materials.	102.00

Quantity Discounts:

The purchase of multiple pieces of the identical item will be discounted from the prevailing list price as shown below. If more than 100 pieces of a specific item are required, contact our Sales Department for additional discounts.

Quantity	Discount (%)
3 to 9	5
10 to 24	10
25 to 49	20
50 to 100	30

Custom Orders:

All custom orders must be prepaid before entered into production. Cancellation charges will be assessed on any order cancelled after production has been started. Please see Prepaid payment methods.

Terms:

Prices are FOB Ayer, MA. Standard payment terms are net 30 days for open account customers.

Methods of Payment:

Open Account:

To apply for an open account, please provide a U.S. bank and three U.S. trade references.

Credit Cards:

Optometrics accepts Visa, MasterCard or American Express credit cards on orders not exceeding \$2,000 in value. Orders exceeding \$2,000 in value may be prepaid by wire transfer or bank check.

COD:

Orders to U.S. addresses may be shipped on a COD basis via UPS or Federal Express.

Prepaid:

Orders may be prepaid by money order, wire transfer, or company check (if encoded with an address and drawn on a U.S. bank). A \$35 additional fee is added for wire transfers.

Shipments:

Are made via UPS ground service throughout the U.S. International orders are shipped via Federal Express. Freight and insurance charges will be prepaid and added to your invoice. Air shipments or shipments via alternative carriers are made only when requested and authorized by the purchaser.

Returns:

To return a product within the warranty period, contact Optometrics to obtain a Returned Goods Authorization (RGA) number. Transportation costs for returned goods must be prepaid. Repaired or replaced products will be returned to you at Optometrics' expense. For out-of-warranty repairs, contact Optometrics to obtain a Customer Return Authorization (CRA) number. No repairs will take place until you have been notified of the cost and have issued a purchase order to cover these costs. All transportation costs are borne by the user. A 15% restocking fee will be charged for all unused returned goods. No product can be returned for restocking after 90 days.

Warranty:

Optometrics warranties all products against defects in materials and workmanship for one year from the date of purchase with the exception of light sources which are warranted for three (3) months. Optical components are warranted for one year against performance defects only. Cosmetic defects that do not affect performance are not covered under this warranty.

Optometrics is not liable for any consequential or incidental damage arising from the sale of its product(s). In any event, liability shall not exceed the invoice value of the product(s) sold. Accidental damage, neglect, unreasonable use, attempted service, calibration, adjustments or cleaning not explicitly called for in an instruction manual voids the Optometrics warranty.

Optometrics makes no warranty other than described above for its products or for their performance in a specific application.

Contact Details:

Optometrics Corporation
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Email: sales@optometrics.com
web: <http://www.optometrics.com>

Optometrics Corporation Order Form / Request for Quotation

Stony Brook Industrial Park, 8 Nemco Way, Ayer, MA 01432

Fax Your Order/Quotation
(978) 772-0017 24 hours a day

Name _____

Date _____ Fax _____

To Order by Phone
(978) 772-1700
Monday - Friday
8:30 AM to 5:00 PM EST

Email Address _____ Phone _____

Request for Quotation
(I wish to be contacted with a quotation) RFQ# _____

Purchase Order P.O. Number _____

Bill To: (Please print or type)

Ship To: (If different than Bill To; A street address is required)

Name _____

Name _____

Organization _____

Organization _____

Address _____

Address _____

Address _____ Dept _____

Address _____ Dept _____

City _____ State _____ Zip _____

City _____ State _____ Zip _____

Country _____ Postal Code _____

Country _____ Postal Code _____

Phone () _____ Ext _____

Phone () _____ Ext _____

Fax () _____

Fax () _____

Catalog No.	Qty	Item Description	Price Each	Total(\$)

Payment

Open Accounts: Available to current customers in good standing and new customers with approved credit.

Date Required _____

Shipping Instructions _____

C.O.D. Prepaid Check No. _____

Credit Card

MasterCard Visa American Express

Card No. _____ Expiration Date _____

Name as it appears on the card (Please print or type) _____

Signature (Required) _____

Total Merchandise

Mass Residents, add 5% tax or
enclose tax exempt certificate

Total Amount of Order

Shipping and Handling Charges are Additional



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Tel: 978-772-1700 • Fax: 978-772-0017
Email: sales@optometrics.com
URL: www.optometrics.com

SPF-290S Analyzer System 2011 Catalog

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