

Worldwide Acknowledged Testing Equipment

Made in Germany



Determine the Protection Potential of Your Products

Speed up Your Formulation Process of Sunscreen Products

- Scientifically backed measurement methods
- Expertise for more than 35 years
- Easy set-up & handling
- Low service & maintenance costs
- Exceptional customer support



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Non-invasive SPF testing with LED Hybrid

SPF-InVivoSpec DRS 320



Ideal instrument for **time & cost saving SPF measurements** according to **HDRS*** and **screening** as well as the investigation of **special questions** relating to sunscreen products.

- high-resolution **spectrometer**
- compact, **easy-to-handle** system with **high quality** components requiring **very little service**
- protected by several **patents**
- **multi-wavelength LED** illumination source. LEDs are pulsed, no warm-up needed, ideal to subtract interfering light

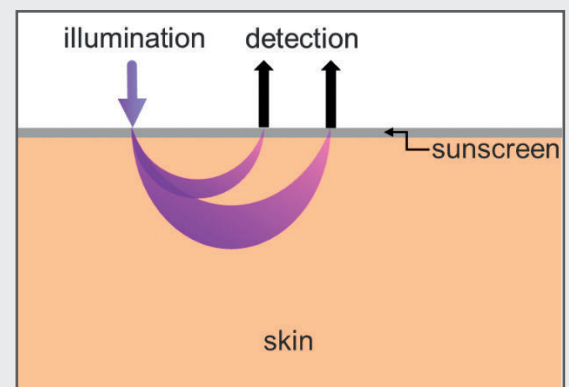
- **fiber optic probe** with spatial separation of illumination and reflectance into 2 x 7 measurement channels and integrated calibration check reference
- **hand- & footswitch** and other helpful accessories for precise measurements
- sophisticated **software SPF-FlowPro** that guides you step-by-step through measurement sessions and the hybridization procedure
- integrated **Skin-Colorimeter Flex CL 440** supplies ITA° measurements directly into the application



*The 6 **UV-A LEDs** are coupled into the fibre optics probe. The probe illuminates 7 spots, each with a diameter of 100 μm . The light travels through the skin and the paths of the detected photons have a so-called “photon banana” shape. The **reflected light** is assessed with detection fibres in spatial separation from the illumination by an imaging spectrometer. A series of measurements **with and without sunscreen** can determine the **transmission of the layer of applied sunscreen (UV-A PF)**.*

*By combining the in vivo **UV-A spectrum** with the in-vitro **UV-B spectrum**, a hybrid spectrum for transmission is calculated.*

*Sophisticated internal monitoring of the light ensures that an irradiation dose only reaches a **fraction of the permissible limits** for SED and for actinic damage.*



***The LED-HDRS method of the SPF-InVivoSpec DRS 320 is currently not part of ISO 23698:2024-12!**

Diffuse Reflectance Spectroscopy (LED-HDRS)

Software SPF- FlowPro



- Supports the **ISO 23698:2024-12*** measurement procedure in a strict standard session
- Gives you the freedom to investigate **topics that go beyond** this in **research or experimental** sessions (e.g. dark skin, other body parts, etc.)
- an in-vitro **dose calculator** followed by fool-proof loading of the in vitro data directly into the software including a plausibility check make the HDRS procedure **convenient and easy**

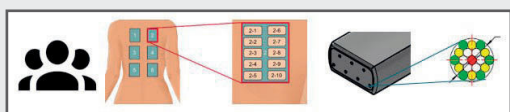
Product Dashboard

Session Type	Subject Count	Q TSP _y	ITM ² Distribution	UVA-PF DRS ₀	SPF DRS ₀	Homogeneity C ₀ Panel Level	Estimated Needed Subjects	SPF HDRS ₀	UVA-PF HDRS ₀	Critical Wavelength CW (nm)
Standard	11	32.0	3	18.4	0.04	10.7	18.5	372.4		
Research	4	21.8	0	20.2	0.19	46.3	19.6	388.0		
Experimental	1			21.3	> 4 subjects required	51.0	19.9	379.3		

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Standard	2	51.0	0	2.9	> 4 subjects required	6.3	3.1	188.4		
Research	2	45.0	0	1.0	> 4 subjects required	1.0	1.0	0.0		

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- All **ITA°**, **DRS** (including homogeneity) and **HDRS** (including critical wavelength) results are immediately calculated and clearly displayed
- Assign products to test sites by click & match. A **timer function** in the programme simplifies the standardisation of product penetration time
- **Spectra** for remission, transmission and absorbance are displayed
- Results are calculated for **panel, test site, subsite & channel level**



- Export all results and spectra to **Excel®**
- **Ambient conditions** (RH and temperature) are constantly recorded and saved with every measurement

