spr'3

The versatile spectroradiometer

spr'3 enables a speedy and easy measurement of spectral power distributions and the respective illuminance and irradiance. The evaluation and processing of all current colorimetric parameters is simple by means of the spec software package. The measurement system consists of an array-spectrometer measuring with high wavelength resolution and with electromechanical shutter and filter wheel function. Therefore, adjustments to weighting functions or measurement areas are possible whenever required. The spectrometer is complemented by a top-quality radiometer of high measurement dynamic. Depending on the application, detectors for the visible region (VIS), the near infrared area (NIR) as well as UV detectors are available.

spr'3 provides an excellent linearity over several orders of magnitude. Additionally, the measurement values are corrected in respect of temperature in order to almost completely eliminate the influence of the ambient temperature on the measuring accuracy. Depending on the application, a selection from a high number of spectral regions can be made. The spectroradiometer system spr'3 is most suitable for applications within the visible spectral region between 360 and 830 nm and for the measurement of the spectral UV or IR irradiance. Due to the integrated USB interface spr'3 can be easily and directly connected and does not need any external analysis units.

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Measuring quantities

Spectral distribution	$S(\lambda)$	$[W \cdot m^{-2} \cdot nm^{-1}]$
Irradiance*1	E_R	$[W \cdot m^{-2}]$
Illuminance	E_V	[Lux], $[lm \cdot m^{-2}]$
Chromaticity coordinates		
(CIE 2° and 10° observer)	X,Y,Z	acc. CIE1931
	x,y	acc. CIE1931
	u,v	acc. CIE1960
	u', v'	acc. CIE1964
	L*a*b*	acc. CIE1976
	Lab99	acc. DIN6176:2001-3
Correlated color temperature (CCT)	T,T_n	[K]
Color rendering indices	R_a, $R_1 - R_{14}$	[%]
Color saturation	S	[%]
Hue angle	h	[°]
Dominant wavelength	λ_d	[nm]
Peak wavelength	λ_p	[nm]

Specifications

Wavelength band	350 nm – 830 nm typ./ any region from 180 nm to 2500 nm possible, filter wheel with up to 5 filters possible
Number of detector pixels	approx. 2048
AD Converter	16 Bit / 1 MHz (spectrometer), 16 Bit (radiometer)
Wavelength resolution	0,03 nm to 10 nm FWHM
Measuring dynamics	$2 \cdot 10^8$ (spectrometer system), 1300:1 (single measurement)
	$1 \cdot 10^8$, 100 mLux $\leq E_V \leq$ 1 MLux (photometer system)
Linearity	>99,92% (spectrometer), >99,7% (radiometer)
Stray light	0.05%@600 nm / 0.10%@435 nm (spectrometer)
Integration times	1 ms to 65 s
Spectral mismatch index*2	Insignificant due to spectrum related mismatch correction

Accessories

• Software Add-on spec'remote	• Software Plug-in MED
• Integrating spheres	• USB2LAN Ethernet Interface

*1 Power Integration in arbitrary intervals possible. *2 With standard illuminant A, f1 < 4 %, photometer without correction.

Typical values of a standard configuration. Changes are possible depending on the system configuration. Variations to the technical data may occur due to the permanent improvement and development of our measurement systems. We do not assume any juristic responsibility or liability whatsoever for such variations or misprints. The General Terms and Conditions of Trade of the opsira GmbH are valid. spr'3 · E · V00160513 · © opsira GmbH · www.koellekunter.de