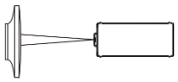
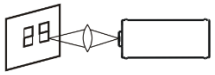
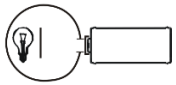
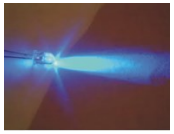
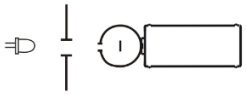
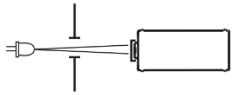
Spectrometric solutions from components to systems

JETI TECHNISCHE INSTRUMENTE GMBH

Technical Note 20

Spectroradiometer for the Measurement of Radiometric and Photometric Quantities

Example for application	Measuring objects	Measurement set-up	Photometric/ radiometric quantities	Units	Measuring devices	Measuring head	Remark
	Generally uniform light sources such as monitors and illuminated screens		Luminance Radiance	$\frac{cd}{m^2}$ $\frac{W}{sr * m^2}$	specbos 1201/ 1211 specbos 2501	Optionally: neutral density filter to extend the measuring range	Aperture angle 1.8°
	Segments of displays and signs		Luminous flux Radiant flux	$\frac{cd}{m^2}$ $\frac{W}{sr * m^2}$	specbos 1201-focus/ specbos 1211-focus specbos 2501-focus	Add-on optics	Measuring area 0.5, 1 and 3 mm Aperture angle 0.6 … 2.1°
	All-around radiating light sources such as bulbs, fluorescence lamps and LEDs (whole space and half-space)		Luminous intensity Radiant intensity	lm W	specbos 1301/ 1311 (specbos 1211 / 2501 with an integrating sphere)	Integrating sphere	Different sphere diameters available (100 … 500 mm)
	Low power LEDs		Luminous intensity Radiant intensity	cd $\frac{W}{sr}$	specbos 1401 (specbos 2501 with CIE 127-attachment)	CIE 127 tube type A or B (incl. integrating sphere)	Not for power-LEDs
	Point light sources such as single LEDs, directed bright light sources (reflector lamps, lensed lamps)		Luminous intensity Radiant intensity	cd $\frac{W}{sr}$	specbos 1201/ 1211 specbos 2501	Diffusor	Take care of the screening of extraneous light

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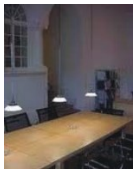
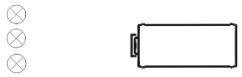
	Illuminated areas such as worktables		Illuminance Irradiance	lx $\frac{W}{m^2}$	specbos 1201/ 1211 specbos 2501	Diffusor	Cosine-matched

Additional colorimetric and special measurands (for all arrangements):

Chromaticity	x, y, u', v'	Dominant/ Peak/ Centroid wavelength	$l\ [nm]$
Correlated Color Temperature	$CCT\ [KT]$	Circadian metrics	$L_{ec}\left[\frac{W}{sr * m^2}\right]$, acv
Color purity	$PE\ [\%]$	Weighted integral values	
Color Rendering Index CRI	$Ra, R1 \ldots R15$	Photosynthetically active radiation	$E_{phot}\left[\frac{\mu mol}{sec. * m^2}\right]$
Tristimulus values	XYZ, RGB		

Last modified: April 2025