specbos 2501
UV | VIS | NIR spectroradiometer

specbos 2501 is a miniaturized and fast spectroradiometer that can be used in laboratories as well as in production environment to measure the following quantities:

- Luminance, Radiance
- Illuminance*, Irradiance*
- xy and u'v' coordinates, RGB values
- Calculation of CCT, CRI, CQS, TM-30, TLCI etc.
- Various application specific quantities

Highlights:

- Wavelength range:
    - specbos 2501, specbos 2501-HiRes: VIS to NIR
    - specbos 2501-UV: UV to NIR
- High sensitivity
- Radiance as well as Irradiance* measuring modes
- Easy to install and use
- NIST traceable calibration
- Measurement also possible with DLLs or SCPI compatible commands
- Measurement of Laser projection and displays (specbos 2501-HiRes)

Additional features:

- Pass/ fail decisions
- Ranking function (up to 16 ranks)
- Saving of reference spectra
- Spectral calculations
- Data export in csv and xls files
- Issuing of customer specific pdf protocols
- Writing of history graphs

Examples for applications are the following:

specbos 2501 / 2501-HiRes / 2501-NIR

- Calibration of broadcast monitors
- Color adjustment of digital projectors
- Measurement of weighted spectra
- Spectral measurements in goniometers
- Measurement of extended luminaires like OLEDs

Advantages:

- USB/ Bluetooth (optionally LAN, PoE powered)
- Internal target spot laser (Radiance measurement)
- Mechanical shutter for dark signal compensation
- Start of measurement with external trigger
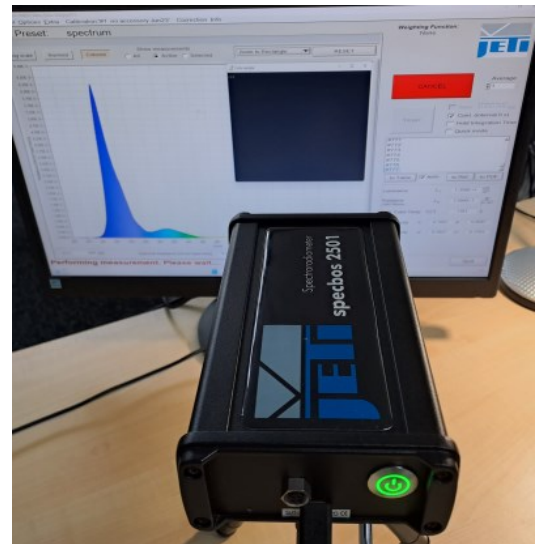
specbos 2501-UV

- Radiation measurement of UV curing devices
- Measurement of UV disinfection apparatus
- Determination of the optical hazard of non coherent radiation sources
- Measurement of UV LEDs and other UV sources
- Extended metameric measurements (M_u)

*For measurements of spectral Irradiance/Illuminance an optional diffusor is required (available at jeti.com).

Specifications

Optical parameters

Spectral range	
specbos 2501	380 … 780 nm
specbos 2501-NIR	380 … 1050 nm
specbos 2501-UV	200 … 1050 nm
Optical resolution (FWHM)	4.0 nm (all versions); 2.0 nm (specbos 2501-HiRes)
Wavelength resolution	1.0 nm
Digital electronic resolution	16 bit ADC
Viewing angle	1.8° (Radiance mode)
Measuring distance/ diameter (measured from front end of the device)	20 cm − Ø 7 mm; 100 cm − Ø 33 mm

Measuring values

	Spectral Radiance, Luminance, total Radiance, x,y, u',v', CCT, CRI, color purity, RGB, PAR, TLCI, circadian metrics and others
With **optional** diffusor	Spectral Irradiance/ total Irradiance/ Illuminance

Measuring ranges/ Accuracies/ Reproducibilities

Luminance measuring range	0.2 … 150 000 cd/m² (Illuminant A)
	0.2 … 100 000 cd/m² (typical warm white LED) (higher values with optional filter)
Luminance accuracy	± 3.5 % (Illuminant A @ 100 cd/m^2, k=2)
Luminance reproducibility	± 1 %
Chromaticity accuracy	± 0.002 x, y (Illuminant A, k=2)
Color reproducibility	± 0.0005 x, y (Illuminant A)
Illuminance measuring range	1 … 800 000 lx (Illuminant A), 1 … 500 000 lx (typical warm white LED)
Illuminance accuracy	± 2.4 % (Illuminant A @ 2000 lx, k=2)
CCT reproducibility	± 20 K (Illuminant A)
Max. wavelength error	± 0.3 nm (HgAr line source)
Polarization error f_8	< 1 %

Other technical data

Dispersive element	Imaging grating (flat field)
Light receiving element	Back thinned CMOS/ CCD array 2048 pixels
Power supply	USB Hub powered, optionally PoE
Interface	USB-C and Bluetooth (specbos 2501)
	USB-C and LAN (specbos 2501-LAN)
Dimensions (L x B x H)	186 mm x 105 mm x 50 mm
Weight	1000 g
Operating conditions	Temperature 10 … 40 °C
	Humidity < 85 % relative humidity at 35 °C
Accessories (included)	PC software JETI LiVal for Windows 10/ 11, operating instructions and software development kit on USB flash drive, USB cable, battery charger, tripod, carrying case, protection cap, calibration certificate
Accessories (optional)	Integrating sphere, filters, side view and fiber extended diffusors, add-on optics
Calibration	NIST traceable, recommended recalibration interval: 1 year

Technical data may be changed without notice