

## specbos 1211-2

### Broadband Radiometer 350 ... 1000 nm

**specbos 1211-2** is a broadband miniaturized and fast which can be used in laboratories as well as production environment to measure the following quantities:

- Luminance, Radiance
- Illuminance, Irradiance
- xy and u'v' coordinates, RGB values
- Dominate wavelength, color purity
- Correlated Color Temperature
- Color Rendering Index

#### Highlights:

- Wavelength range from VIS to NIR
- High sensitivity
- Radiance as well as Irradiance measuring modes
- Small and easy to use
- NIST traceable calibration
- Measurement also possible with DLLs or SCPI compatible commands



#### Additional features:

- Pass/ fail decisions
- Ranking function (up to 16 ranks)
- Saving of reference spectra
- Spectral calculations
- Data export in csv and xls files
- Switching between Si and Imperial units

#### Advantages:

- USB powered
- Very fast measurement
- Internal target spot laser (luminance measurement)
- Mechanical shutter for dark signal compensation
- Easy to install
- Start of measurement with external trigger

#### Examples for Applications are the following:

- Calibration of broadcast monitors
- Color adjustment of digital projectors
- Measurement of weighted spectra, e.g. to characterize hazardous radiation
- Measurement of fluorescence lamps
- Spectral measurements in goniometers
- Measurement of extended luminaires like OLEDs

The instrument can be operated with the intuitive measuring software JETI LiVal (for a demo version see [www.jeti.com](http://www.jeti.com)) or with one of the application specific programs.



## Specifications

### Optical parameters

Spectral range	350 ... 1000 nm
Optical bandwidth	4.5 nm
Wavelength resolution	1 nm
Digital electronic resolution	15 bit ADC
Viewing angle	1.8° (Luminance 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/ Irradiance, Luminance/ Illuminance, total Radiance/ Irradiance, x,y, u',v', CCT, color purity, CRI, RGB, PAR, TLCl, circadian metrics and others

### Measuring ranges and typical measuring uncertainties (according to CIE TN 009:2019)

Luminance measuring range	0.2 ... 150 000 cd/m <sup>2</sup> (Illuminant A) 0.2 ... 100 000 cd/m <sup>2</sup> (typical warm white LED) (higher values with optional filter)
Luminance uncertainty	± 4.4 % (Illuminant A @ 100 cd/m <sup>2</sup> , k=2)
Luminance repeatability	± 1 %
Chromaticity uncertainty	± 0.002 x, y (Illuminant A, k=2)
Color repeatability	± 0.0005 x, y (Illuminant A)
Illuminance measuring range	1 ... 1 800 000 lx (Illuminant A) 1 ... 1 500 000 lx (typical warm white LED)
Illuminance uncertainty	± 2.4 % (Illuminant A @ 2000 lx, k=2)
CCT repeatability	± 20 K (Illuminant A)
Max. wavelength error	± 0.5 nm (HgAr line source)
Polarization error f8	< 1 %

### Other technical data

Dispersive element	Imaging grating (flat field)
Light receiving element	Backthinned CCD array 2048 pixels (binned)
Power supply	USB Hub powered
Interface	USB 2.0 fullspeed, Bluetooth (specbos 1211-2-BT) RS232 (specbos 1211-2-RS), LAN (specbos 1211-2-LAN)
Dimensions	180 mm x 82 mm x 53 mm
Weight	450 g
Operating conditions	Temperature 10 ... 40 °C Humidity < 85 % relative humidity at 35 °C
Accessories (included)	PC software JETI LiVal for Windows 8.1/ 10, operating instructions and software development kit on BT stick, USB cable, battery charger and trigger connector, tripod, carrying case, protection cap Calibration certificate
Accessories (optional)	Filters, side view and fiber extended diffusors, add on optics
Calibration	NIST traceable
Recommended interval	1 year