

## specbos 1211-2 | specbos 1211-UV-2

### Broadband Spectroradiometer

**specbos 1211-2 and specbos 1211-UV-2** are broadband miniaturized and fast spectroradiometers 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
- Dominate wavelength, color purity
- Correlated Color Temperature
- Color Rendering Index



#### Highlights:

- Wavelength range:
  - specbos 1211-2 VIS to NIR
  - specbos 1211-UV-2 UV 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

#### Examples for applications are the following: specbos 1211-2

- 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

#### 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



#### specbos 1211-UV-2

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

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



## Specifications

### Optical parameters

|                               |                                                                                                             |
|-------------------------------|-------------------------------------------------------------------------------------------------------------|
| Spectral range                | 350 ... 1000 nm                                                                                             |
| specbos 1211-2                | 350 ... 1000 nm                                                                                             |
| specbos 1211-UV-2             | 230 ... 1000 nm                                                                                             |
| Optical bandwidth             | ≤ 4.5 nm (FWHM)                                                                                             |
| Wavelength resolution         | 1 nm                                                                                                        |
| Digital electronic resolution | 15 bit ADC                                                                                                  |
| Viewing angle                 | 2.1° (Radiance mode)                                                                                        |
| Measuring distance/ diameter  | 15 cm - Ø 5 mm; 50 cm - Ø 20 mm; 100 cm - Ø 38 mm; 200 cm - Ø 74 mm (measured from front end of the device) |

### Measuring values

|                               |                                                                                                                                |
|-------------------------------|--------------------------------------------------------------------------------------------------------------------------------|
|                               | Spectral Radiance, Luminance, total Radiance, x,y, u',v', CCT, CRI, color purity, RGB, PAR, TLCl, circadian metrics and others |
| With <b>optional</b> diffusor | Spectral Irradiance/ total Irradiance/ Illuminance                                                                             |

### 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)<br>0.2 ... 100 000 cd/m <sup>2</sup> (typical warm white LED)<br>(higher values with optional filter) |
| Luminance accuracy          | ± 4.4 % (Illuminant A @ 100 cd/m <sup>2</sup> , 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 ... 1 800 000 lx (Illuminant A)<br>1 ... 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       | ± 0.5 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-BT-2)<br>RS232 (specbos 1211-2-RS), LAN (specbos 1211-LAN-2)                                                                                                       |
| Dimensions              | 180 mm x 82 mm x 53 mm                                                                                                                                                                                        |
| Weight                  | 450 g                                                                                                                                                                                                         |
| Operating conditions    | Temperature 10 ... 40 °C<br>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)  | Filters, side view and fiber extended diffusors, add-on optics                                                                                                                                                |
| Calibration             | NIST traceable                                                                                                                                                                                                |
| Recommended interval    | 1 year                                                                                                                                                                                                        |

Technical data may be changed without notice