

spectraVal 1511

Stand-alone VIS Spectroradiometer

spectraVal 1511 is a compact spectroradiometer for the visible wavelength range. It has a display and can be used for spectral Radiance and Irradiance* measurement with a measuring angle of 2.1° . The actual measuring area is marked by a red circle.

There are special versions of **spectraVal 1511** available: spectraVal 1511-HiRes (with increased optical resolution), spectraVal 1511-NIR (with a wavelength range up to 1000 nm) and spectraVal 1511-focus (compatible with add-on optics).

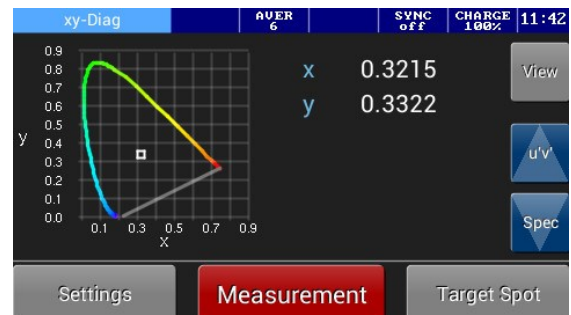
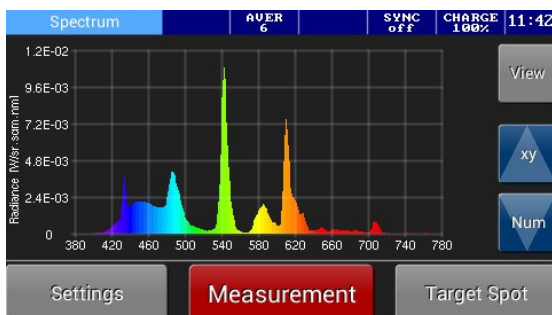
spectraVal 1511 can be operated in stand-alone mode (using the display program) or in connection with a computer (using the included software JETI LiVal or special programs for monitor calibration as CalMAN, ColourSpace, ChromaPure).

Advantages:

- Compact solutions
- Fast measurement
- Precise results due to high quality spectrograph and NIST traceable calibration
- Comfortable handling due to Bluetooth connection

spectraVal 1511 displays the following measuring values:

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



More quantities like CQS, RGB, $L^*a^*b^*$, TLCI and TM-30 can be obtained using the PC software JETI LiVal.

Examples for applications are the following:

- Calibration of broadcast monitors
- Color adjustment of digital projectors
- Measurement of LED displays
- spectraVal 1511-HiRes: measurement of RGB Laser projectors
- spectraVal 1511-focus: measurement of small symbols and display segments
- spectraVal 1511-NIR: remote sensing

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

Specifications

Optical parameters

Spectral range	380 ... 780 nm / spectraval 1511-NIR: 380 ... 1000 nm
spectraval 1511	
Optical bandwidth	
spectraval 1511	≤ 4.5 nm (FWHM) / spectraval 1511-HiRes: ≤ 2 nm ¹ (FWHM)
Wavelength resolution	1 nm
Digital electronic resolution	16 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, CRI, RGB and others

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

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

Luminance measuring range	0.2 ... 180 000 cd/m ² (Illuminant A) 0.2 ... 140 000 cd/m ² (typical warm white LED) (higher values with optional filter)
Luminance accuracy	± 4.4 % (Illuminant A @ 100 cd/m ² , k=2)
Luminance reproducibility	± 1 % (Illuminant A)
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) 1 ... 1 500 000 lx (typical warm white LED)
CCT reproducibility	± 20 K (Illuminant A)
Max. wavelength error	± 0.2 nm (HgAr line source)
Polarization error f ₈	< 2 %

Other technical data

Dispersive element	Imaging grating (flat field)
Light receiving element	CCD line array 2048 pixels (binned) (4096 pixels at spectraval 1511-HiRes)
Power supply	Battery and USB powered
Interfaces	USB 2.0 fullspeed Bluetooth
Dimensions	140 mm x 115 mm x 70 mm
Weight	500 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, battery charger, USB cable, tripod, carrying bag, calibration certificate
Calibration	NIST traceable
Recommended interval	1 year

¹ About 4 times higher measuring time compared to standard version