



# **spectraval 1501**VIS Spectroradiometer

**spectraval 1501** is a compact spectroradiometer for the visible spectral range. It can be used for spectral Radiance and Irradiance\* measurements with a viewing angle of 2.1°. The actual measuring area is marked by a red circle.

There are special versions of **spectraval 1501** available: spectraval 1501-HiRes (with increased optical resolution), spectraval 1501-NIR (with a wavelength range up to 1000 nm), spectraval 1501-LAN (with additional LAN interface instead of Bluetooth) and spectraval 1501-focus (compatible with add-on optics).

**spectraval 1501** is delivered with the radiometric software JETI LiVal (demo version see jeti.com), but it can also be used with special programs for monitor calibration (CalMAN, ColourSpace, ChromaPure).

## **Highlights:**

- Optimized operation routines
- Piezo-electric shutter for dark signal compensation
- Suited for HDR (Luminance values up to 140 000 cd/m² can be measured)
- Implementation into customer specific applications possible using:

Radiometric DLLs (Windows applications) or Serial commands (SCPI-like syntax) (Windows and Linux applications)

## Advantages:

- · Bluetooth and USB interfaces
- USB or battery powered
- Compact solution
- Fast measurement
- Precise results due to high quality spectrograph and NIST traceable calibration
- Comfortable handling due to Bluetooth interface
- Measurement of source repetition rate

### **Examples for application are the following:**

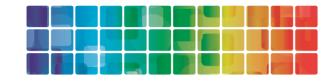
- Calibration of broadcast monitors
- Color adjustment of digital projectors
- Color characterization of LED displays
- Color measurement of video walls
- spectraval 1501-HiRes: measurement of RGB Laser projectors



### Software **JETI LiVal**:

- Intuitive operation
- Weighting the obtained spectrum with an action function
- Classification of samples
- Easy data export to Excel and CSV
- Automatic detection of attached accessories
- Specific calculations as PAR, circadian metrics and metamerism according to ISO 23603
- spectraval 1501-NIR: remote sensing, spectral measurement of plant lighting
- spectraval 1501-LAN: spectral measurements in production and production environment
- spectraval 1501-focus: measurement of small symbols and display segments

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



# **Specifications**

### **Optical parameters**

Spectral range

spectraval 1501 380 ... 780 nm / spectraval 1501-NIR: 380 ... 1000 nm

Optical bandwidth

spectraval 1501  $\leq$  4.5 nm (FWHM) / spectraval 1501-HiRes:  $\leq$  2 nm<sup>1</sup> (FWHM)

Wavelength resolution 1 nm Digital electronic resolution 16 bit ADC

Viewing angle 2.1° (Radiance mode)

15 cm - Ø 5 mm; 50 cm - Ø 20 mm; 100 cm - Ø 38 mm; 200 cm - Ø 74 Measuring distance/ diameter

mm (measured from front end of the device)

### Measuring values

Spectral Radiance, Luminance, total Radiance, x,y, u',v', CCT, CRI, color purity, RGB and others

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

Luminance measuring range 0.2 ... 180 000 cd/m<sup>2</sup> (Illuminant A)

0.2 ... 140 000 cd/m<sup>2</sup> (typical warm white LED)

(higher values with optional filter)

 $\pm$  4.4 % (Illuminant A @ 100 cd/m<sup>2</sup>, k=2) Luminance accuracy

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 f8 < 2 %

### Other technical data

Dispersive element Imaging grating (flat field)

CCD line array 2048 pixels (binned) Light receiving element

(4096 pixels at spectraval 1501-HiRes)

Power supply Battery and USB powered

Interfaces USB 2.0 full speed

Bluetooth, alternatively LAN

**Dimensions** 140 mm x 80 mm x 70 mm

Weight 400 q

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, tripod, carrying bag and battery charger

Calibration certificate

Calibration NIST traceable

Recommended interval 1 year

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Technical data may be changed without notice

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<sup>&</sup>lt;sup>1</sup> About 4 times higher measuring time compared to standard version.