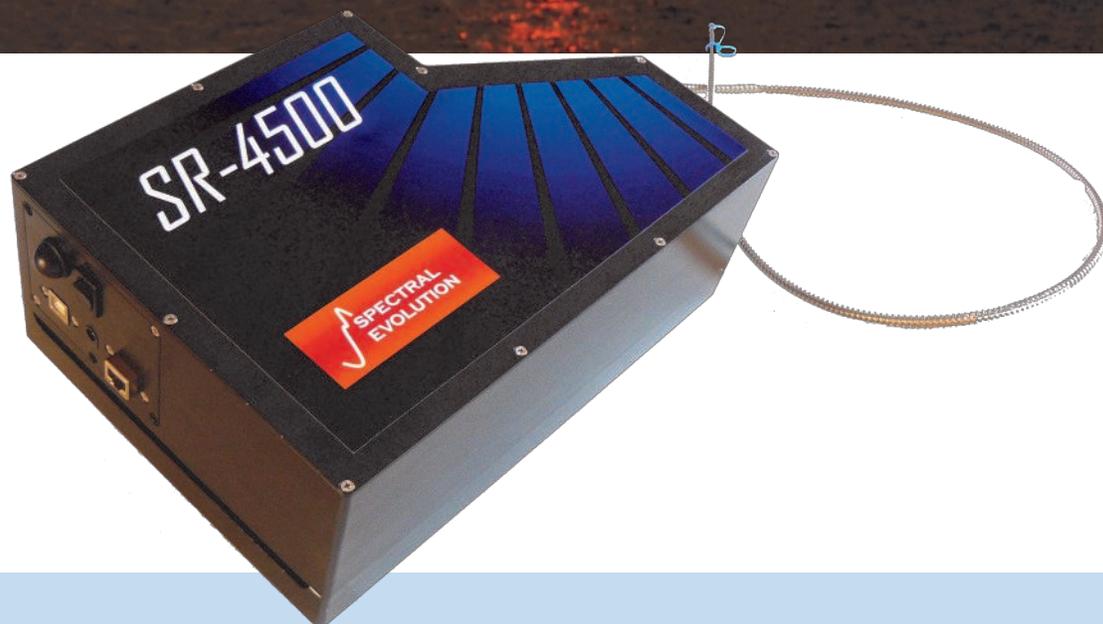


SPECTRAL EVOLUTION

Spectroradiometers for Radiometric Calibration Transfer



Perform Radiometric Calibration Transfer With Precise, Stable, Repeatable Performance

The SR-4500 spectroradiometer delivers the ultimate in high performance radiometric calibration transfer with stable temperature control across a range of ambient temperatures and environments. Using all thermoelectrically cooled photodiode arrays, this spectroradiometer is built specifically for the performance demands of calibration transfer applications. The SR-4500 spectroradiometer is portable, so you can take the calibration process to the sphere—eliminating unnecessary downtime and cumbersome shipment back to the manufacturer. It also delivers twice the Noise Equivalence Radiance capabilities.

SR-4500

- ◆ Spectral range 350-2500nm
- ◆ 512 element TE-cooled silicon photodiode array (350-1000nm)
- ◆ 256 element TE-cooled extended InGaAs photodiode array (1000-1900nm)
- ◆ 256 element TE-cooled extended InGaAs photodiode array (1900-2500nm)



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SPECTRAL EVOLUTION

Spectroradiometers for Radiometric Calibration Transfer

The SR-4500 spectroradiometer is ideal for applications involving satellite sensors and integrated spheres that require radiometric calibration. The spectroradiometer includes Bluetooth and USB communications capabilities. It is also equipped with DARWin SP Data Acquisition software that's easy to use and stores data as ASCII files for use with third party software. Easy software routines allow users to upload their own calibration tables. Users can also easily replace fiber optics, minimizing downtime.

SR-4500 Technical Specifications

Spectral range 350-2500nm

Photodiode Arrays:

512 element TE cooled Si (350-1000nm) NEW!

256 element TE cooled extended InGaAs (1000-1900nm)

256 element TE cooled extended InGaAs (1900-2500nm)

All dispersive optics fixed in place— no moving parts

Auto dark current shutter & auto-exposure control

Fixed metal clad fiber optic cable with SMA-905 input
(fiber is user removable with 4 bolts)

Wireless Bluetooth and USB interfaces

Comes complete with DARWin SP Data Acquisition Software
(Windows XP/Vista/System 7 compatible)

Minimum scan speed: 100milliseconds

Spectral resolution

<3.5nm (350-1000nm)

<10nm @ 1500nm

<7nm @ 2100nm

Sampling bandwidth

1.5nm (350-1000nm)

3.8nm @1500nm

2.5nm @ 2100nm

Noise Equivalence Radiance (with 1.2 meter fiber optic)

0.2×10^{-9} W/cm²/nm/sr @ 400nm

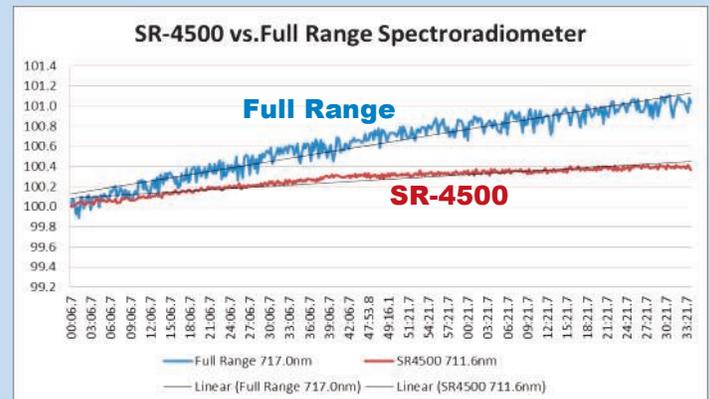
0.2×10^{-9} W/cm²/nm/sr @ 700-nm

0.9×10^{-9} W/cm²/nm/sr @ 900-nm

Max Radiance @ 700nm (1.2m fiber optic): 3.0×10^{-4} W/cm²/nm/sr

Available Accessories

- ◆ Lenses : 1, 2, 3, 4, 5, and 8 degree FOV
- ◆ Spare fiber optic cables



Comparison of Si detector stability – SR-4500 vs. a full range spectroradiometer

The SPECTRAL EVOLUTION SR-4500 and a full range spectroradiometer were run side-by-side at room temperature (23° C), measuring the radiance of the same 50 watt tungsten halogen source using a 1.2 meter fiber optic cable reflected off the same 5x5 inch reflectance panel. The x axis shows elapsed time from the start of the test; the y axis represents the ratio of the measured radiance value to the starting radiance value, over a period of 154 minutes. The SR-4500 uses a 512 element silicon photodiode array which was thermoelectrically cooled to 10°C. The full range spectroradiometer uses a 512 element silicon photodiode array which is not thermoelectrically cooled. After a 30 minute period, the SR-4500 shows very little drift. The spectroradiometer demonstrates a slightly wider variation over the course of the test. Both instruments use identical thermoelectrically cooled extended range InGaAs photodiode arrays for NIR performance. The SR-4500 also offers 2x the NER measurement.



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