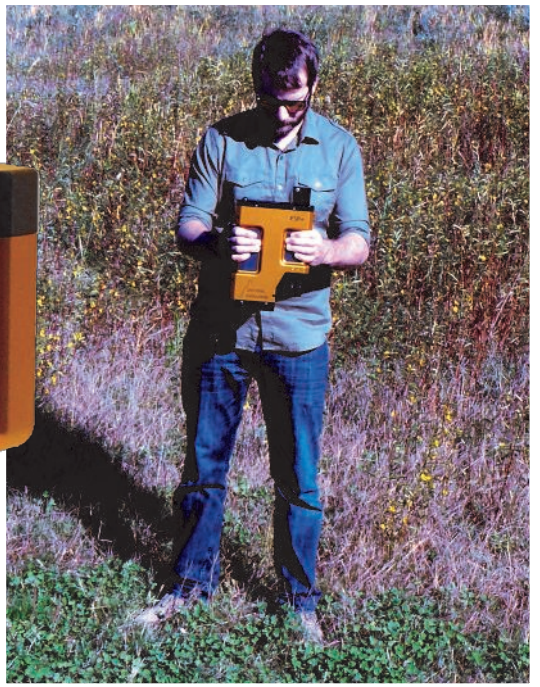


PSR+ 3500 Specifications	
Spectral Range	350–2500nm
Spectral Resolution—FWHM (Full Width at Half Maximum)	3nm (@700nm)
	8nm @ 1500nm
	6nm @ 2100nm
Spectral Sampling Bandwidth	1.5nm @ 700nm
	3.8nm @ 1500nm
	2.5nm @ 2100nm
Si Detectors	512 element Si array (350–1000nm)
InGaAs Detectors (TE-cooled)	256 element extended wavelength photodiode array (970–1910nm)
	256 element extended wavelength photodiode array 1900-2500nm)
Direct Attached FOV Options	4°, 8°, or 14° lens, 25° fiber optic, diffuser, integrating sphere
Fiber Mount Options	1,2,3,4,5,8, and 10° Lenses
Noise Equivalence Radiance (4° lens)	$0.5 \times 10^{-9} \text{ W/cm}^2/\text{nm/sr}$ @400nm
	$0.8 \times 10^{-9} \text{ W/cm}^2/\text{nm/sr}$ @1500nm
	$1.0 \times 10^{-9} \text{ W/cm}^2/\text{nm/sr}$ @2100nm
Max Radiance @ 700nm (4° lens)	$1.5 \times 10^{-4} \text{ W/cm}^2/\text{nm/sr}$
Calibration Accuracy (NIST Traceable Radiance)	±5% @ 400nm
	±4% @ 700nm
	±7% @ 2200nm
Minimum Scan Speed	100 milliseconds
Wavelength Reproducibility	0.1nm
Wavelength Accuracy	±0.5 bandwidth
Communications interface	USB or Class I Bluetooth– laptop or PDA compatible
Size	8.5" x 11.5" x 3.25"
Tripod mounting	2 each ¼-20 mounting holes provided
Weight	7 lbs (3.5 kg)
Batteries	PSR+ comes with two lithium ion batteries (only 1 used at a time); 7.4V
Battery Operation	Removable battery; typically 4 hour operation per battery
On board memory	Storage of 1000 spectra in standalone operation



www.spectralevolution.com

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PSR+

The Ultimate Portable Spectroradiometer



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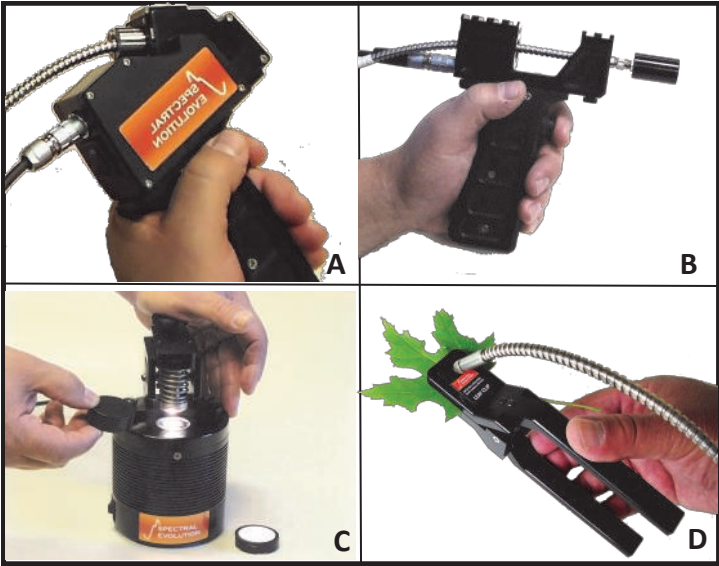
High Resolution, High Performance Spectroradiometer

The **PSR+** is designed for the ultimate in spectroradiometer performance in the field. The new smaller, ergonomic design is optimized for single user operation all day long in a wide range of outdoor environments. The PSR+ features:

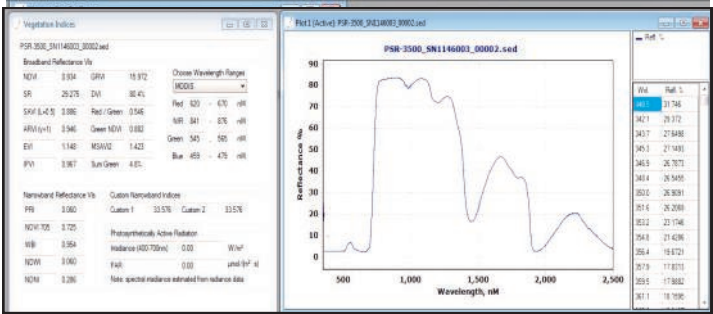
- Full 350-2500nm spectral range using one 512 element silicon photodiode array detector and two 256 element extended InGaAs photodiode array detectors
- High resolution:
3nm @ 700nm (FWHM)
8nm@1500nm (FWHM)
6nm@2100nm (FWHM)
- Proprietary Sotex™ filter technology for improved order sorting, smoother transitions and enhanced stray light performance
- Improved cooling and long term performance, with a new anodized aluminum unibody chassis and integrated heat dispersion channels
- No moving optical parts and improved optical path for reliable, superior operation no matter what the conditions
- Best-in-class signal-to-noise ratio at the best resolution
- Auto-shutter, auto-exposure, auto-dark correction for one-touch operation
- Direct attach 4,8,14° lenses, 25° fiber optic, diffuser or integration sphere
- Fiber mount: 1,2,3,4,5,8, and 10° lenses, irradiance diffuser
- LCD display & integral storage for 1000 scans
- USB and Class I wireless Bluetooth interfaces
- Wide range of accessories: contact probe, leaf clip, benchtop probe/sample compactor, and more
- Optional GETAC microcomputer with digital camera, GPS— tags photos, GPS coordinates, and voice notes to scans



The PSR+ can be used with FOV options that include 4,8, or 14° directly attached lenses, a 25° fiber optic, diffuser, or integrated sphere. Lenses are field swappable so that the researcher can select the best lens for the circumstances in the field.



The PSR+ can also be used with fiber mount options and a range of accessories including (A) our sample contact probe with a built-in halogen light source; (B) pistol grip with 1,2,3,4,5,8, and 10° screw-on lenses; (C) benchtop probe with sample tray and compactor; and (D) a custom leaf clip with a separate tungsten halogen illuminator to keep heat away from leaves during measurements to prevent burnout. An integral swing-away reflectance panel provides easy reference measurements.



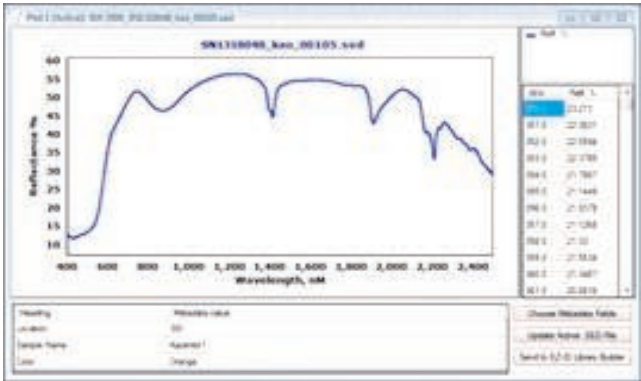
Immediate Access to the USGS Library and 19 Vegetation Indices
Pull-down menus embedded in DARWin SP provide access to vegetation indices that include Normalized Difference Vegetation Index (NDVI), Simple Ratio Vegetation Index (SR), Soil Adjusted Vegetation Index (SAVI), Atmospherically Resistant Vegetation Index (ARVI), Enhanced Vegetation Index (EVI), Water Band Index (WBI), Green Ratio Vegetation Index (GRVI), and many more. In addition, DARWin provides access to the USGS library with its collection of range land, grass, and forest spectra.

Designed for Remote Sensing Field Applications

No Better Instrument for Field Work

Light, reliable, high resolution, compact, easy-to-use, the PSR+ is designed for single user operation in the field that collects critical remote sensing data, graphically presents the data, stores it, and allows it to be used with other 3rd party analysis software, if desired. The PSR+ allows researchers to ground truth hyperspectral and multispectral imagery from satellites like Worldview3 or scan a single leaf to measure plant health. Some of the applications where the PSR+ is being used include:

- Ground truthing including confirming/interpreting hyperspectral and multi-spectral data from airplane flyovers (LIDAR, ASTER), UAVs, and satellite imagery (Worldview 3, Rapideye, LANDSAT, etc.)
- Estimation of crop and grass chlorophyll
- Environmental research
- Atmospheric/climate research
- Crop health- measuring photosynthesis efficiency
- Forestry research and canopy studies
- Plant species identification
- Water body studies
- Soil analysis including topsoil fertility and erosion tests
- Microbial diversity research
- Radiometric calibration transfer
- Irrigation assessment
- Mine mitigation assessment
- Geological remote sensing and mapping including surveying, mineral identification, and geomorphology
- Forage analysis and precision agriculture



DARWin SP Data Acquisition Software

Every PSR+ includes DARWin Data Acquisition SP software for ease-of-use, access to important tools like the vegetation indices, and the ability to save all data as ASCII files for use with third party analysis software like ENVI.

EZ-ID and Custom Library Builder Software

Optional EZ-ID Sample Identification software with the Custom Library Builder module provides researchers with the ability to rapidly identify a target scan by matching it to a library of known scans. Custom Library Builder allows you to scan known samples and store the scans and metadata to build your own spectral library for your specific research.

The Right Accessories

The PSR+ is available with a range of accessories:

- Sample contact probe
- Leaf clip
- Benchtop probe
- Irradiance diffuser, integrating sphere
- Illumination sources
- GETAC with GPS, camera, voice recorder, and more