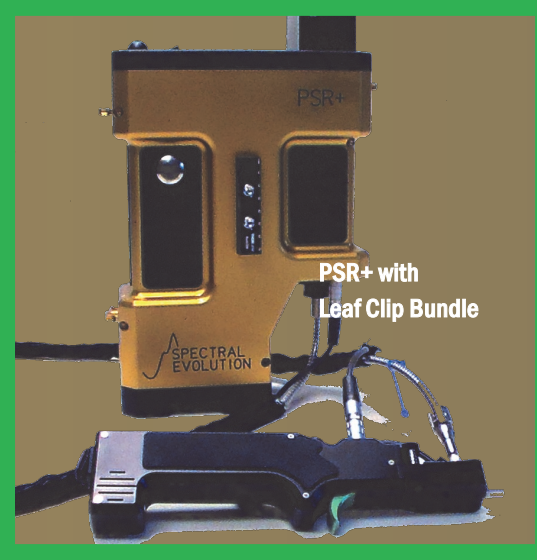


PSR+ 3500 Specifications	
Spectral Range	350–2500nm
Spectral Resolution—FWHM (Full Width at Half Maximum)	2.8nm @ 700nm
	8nm @ 1500nm
	6nm @ 2100nm
Si Detector	512 element Si photodiode array (350–1000nm)
InGaAs Detectors (cooled)	256 element extended wavelength photodiode array (970–1910nm)
	256 element extended wavelength photodiode array 1900-2500nm
FOV Options (direct mount)	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)	$1.5 \times 10^{-4} \text{ W/cm}^2/\text{nm/sr}$
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	7.6 lbs (3.5 kg)
Batteries	Lithium ion; 7.4V; 7200mAh; 400g/battery
Battery Operation	Removable battery; typically up to 4 hour operation/battery (2 provided)
On Board Memory	Storage of 1000 spectra



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**PSR+**  
High Resolution  
Field Portable  
Spectroradiometer



# High Resolution Spectroradiometer for Remote Sensing

The PSR+ is designed for the ultimate in field spectroradiometer performance. The lightweight, 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
- Highest resolution in a field handheld spectroradiometer:  
2.8nm @ 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 sensitivity (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 integrating sphere
- Fiber mount: 1,2,3,4,5, 8 and 10° lenses
- LCD display & integral storage for 1000 scans
- USB and Class I wireless Bluetooth interfaces
- Wide range of accessories: contact probe, pistol grip, leaf clip, benchtop probe/sample compactor
- Optional ALGIZ 8X rugged tablet with digital camera and GPS— tags photos, GPS coordinates, and voice notes to scans
- Optional Galltec + Mela Humidity sensor tags scans with humidity and ambient temperature data (requires ALGIZ 8X option)



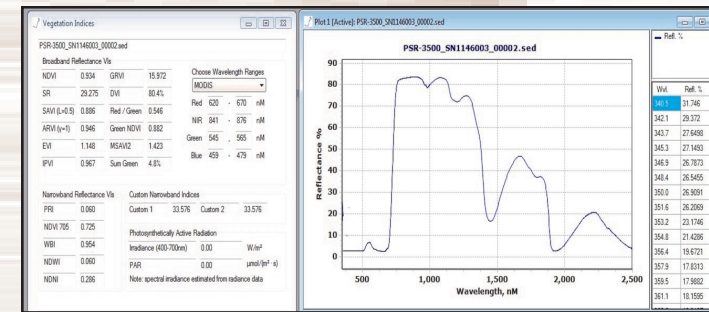
*The PSR+ can be used with FOV options that include 4, 8, or 14° directly attached lenses, a 25° fiber optic, diffuser, or integrated sphere. Lenses are field swappable so that the researcher can select the best lens for the circumstances in the field.*

*Inset—We also offer a variety of fiber mount FOV options.*



*The PSR+ can also be used with fiber mount options and a range of accessories including (A) ergonomic sample contact probe with a built-in 5W halogen light source; (B) pistol grip with 1,2,3,4,5, 8 and 10° fiber mount lenses; (C) benchtop probe with sample tray and compactor; and (D) a custom leaf clip with a pushbutton trigger and an integrated light source. An integral swing-away reflectance panel provides easy reference measurements.*

*The PSR+ is also available with an RT Sphere for reflectance and transmittance measurements of leaf and needle samples. It is lightweight and portable so you can take it into the field for in situ measurements, delivered with a stand as well as a ¼-20 mount for use with tripods. Light reflected or transmitted from a sample in a sphere is integrated over a full hemisphere, with measurements insensitive to sample anisotropic directional reflectance (transmittance).*



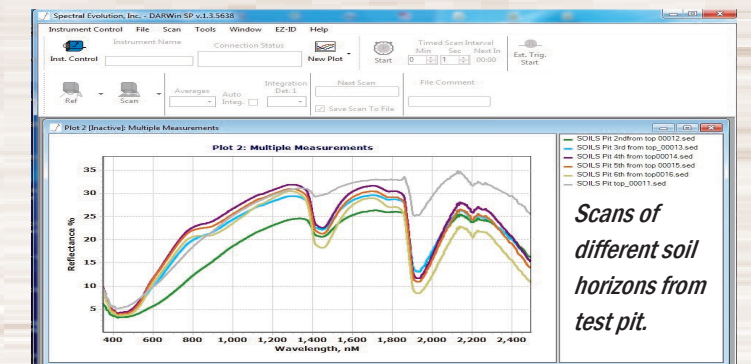
## Immediate Access to the USGS Library and 19 Vegetation Indices

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.

## No Better Field Instrument for Vegetation and Soil Analysis

Light, reliable, high resolution, compact, and easy-to-use, the PSR+ is designed for single user operation in the field to collect critical remote sensing data, graphically present the data, store it, and allow 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
- Measuring soil salinity and irrigation assessment
- Microbial diversity research
- Radiometric calibration transfer
- Mine mitigation assessment
- Geological remote sensing and mapping including surveying, mineral identification, and geomorphology
- Forage analysis and precision agriculture
- Total organic carbon (TOC) in soil; Total petroleum hydrocarbon) TPH in soil



## DARWin SP Data Acquisition Software

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



## EZ-ID & 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.

## The Right Accessories

- Contact probe
- Leaf clip
- Benchtop probe
- Irradiance diffuser, integrating sphere
- Illumination sources
- ALGIZ 8X rugged handheld tablet with GPS, camera, sunlight readable display, running Windows 10