## PSR+ 3500 Specifications

<table>
<thead>
<tr>
<th>Specification</th>
<th>Value</th>
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<tbody>
<tr>
<td><strong>Spectral Range</strong></td>
<td>350–2500nm</td>
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</table>
| **Spectral Resolution—FWHM**                       | 3nm @ 700nm  
8nm @ 1500nm  
8nm @ 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)**            | 0.5x10⁻⁹ W/cm²/nm/sr @400nm  
0.8x10⁻⁹ W/cm²/nm/sr @1500nm  
1.0x10⁻⁹ W/cm²/nm/sr @2100nm |
| **Max Radiance @ 700nm (4° lens)**                  | 1.5x10⁻⁴ W/cm²/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 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                                              |
**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:
  - 3nm at 700nm (FWHM)
  - 8nm at 1500nm (FWHM)
  - 6nm at 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 GETAC PDA with digital camera and GPS—tags photos, GPS coordinates, and voice notes to scans
- Optional Galletc + Mela Humidity sensor tags scans with humidity and ambient temperature data (requires GETAC PS3366 option)

The PSR+ can be used with FOV options that include 4, 8, 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.

**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
- Forestage 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, and the ability to save all data as ASCII files for use with third party analysis software like ENVI.

**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 know 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
- GETAC handheld microcomputer with GPS, camera, voice recorder, sunlight readable display and more

Immediate Access to the USGS Library and 19 Vegetation Indices

PSR+ comes in DARWin SP includes access to vegetation indices that include Normalized Difference Vegetation Index (NDVI), Simple Ratiо Vegetation Index (SR), Soil-Adjusted Vegetation Index (SAVI), Atmосhерically Resistant Vegetation Index (ARI), Enhanced Vegetation Index (EVI), Water Band Index (WBI), Green Ratiо Vegetation Index (GRI), and many more. In addition, DARWin provides access to the USGS library with its collection of range band, grass, and forest spectra.

www.spectralevolution.com