

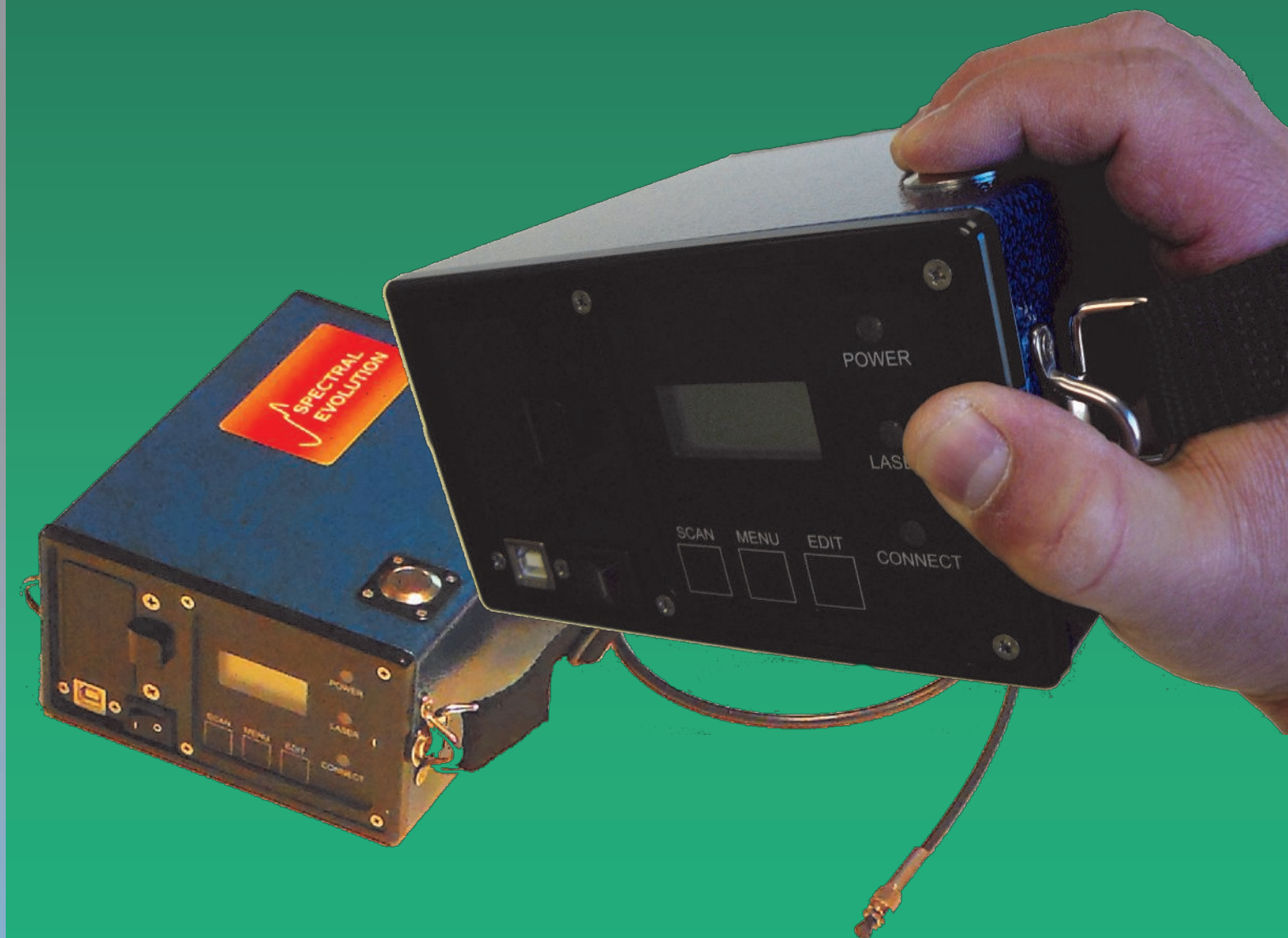
## PSR-1100 SPECIFICATIONS

Model:	PSR-1100	PSR-1100-F
Optics (included)	Fixed 4 degree field of view lens	Removable 1 meter fiber optic cable with FC-mount
Optional optics choices	None	1, 2, 3, 4, 5 and 8 degree field of view fiber mount lenses, irradiance diffusers, contact probes, leaf clips, integrating spheres and more
Spectral Range	320-1100nm	320-1100nm
Spectral Resolution	3.0nm @ 600nm	3.0nm @ 600nm
Sampling Bandwidth	1.5nm	1.5nm
Spectrometer type	Tall 512 element Si photodiode array with 25µ x 2.5mm pixel dimension; fixed grating	Tall 512 element Si photodiode array with 25µ x 2.5mm pixel dimension; fixed grating
Calibration	Factory calibrated for radiance using NIST traceable source	Factory calibrated for radiance and/or irradiance (depending upon optics choices) using NIST traceable sources
Slit	50µm	50µm
A/D Converter	16 bit	16 bit
λ Reproducibility	0.1nm	0.1nm
λ Accuracy	0.5nm	0.5nm
Integration Time	8-2000ms	8-2000ms
Internal Battery	2800mAH Li-Ion snap-in battery with AC charger; runs for >4 hours on a full charge	2800mAH Li-Ion snap-in battery with AC charger; runs for >4 hours on a full charge
Shutter for dark scans	Yes	Yes
Targeting	Yes- internal red laser	Optional
Internal Memory	2500 scans in stand-alone mode	2500 scans in stand-alone mode
Automatic Exposure	Yes	Yes
Interface	USB and Wireless Class 1 Bluetooth (100 meter range)	USB and Wireless Class 1 Bluetooth (100 meter range)
Dimensions	7.0" x 3.25" x 5.75"	7.0" x 3.25" x 5.75"
Weight	less than 4 pounds	less than 4 pounds
Mounting	Tripod mount (1/4 x 20 mounting thread)	Tripod mount (1/4 x 20 mounting thread)
Software	DARWin SP Data Acquisition Package (Windows compatible)	DARWin SP Data Acquisition Package (Windows compatible)



# Our Smallest, Lightest, Full-Featured Field Portable Spectroradiometers

## The PSR-1100 Series



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# Small, Lightweight, Full Featured

## The PSR-1100 Series Spectroradiometers Are Well Suited for a Range of Remote Sensing Applications:

- ◆ Vegetation Studies
- ◆ Soil Analysis
- ◆ Crop Health
- ◆ Agricultural Research
- ◆ Plant Science
- ◆ Biomass Research
- ◆ Leaf Chlorophyll Content
- ◆ Water Body Studies
- ◆ Climate Studies
- ◆ Environmental Research
- ◆ Nitrogen Level Measurements
- ◆ Forest Canopy Studies
- ◆ Ecological Research
- ◆ Ice and Glacier Research

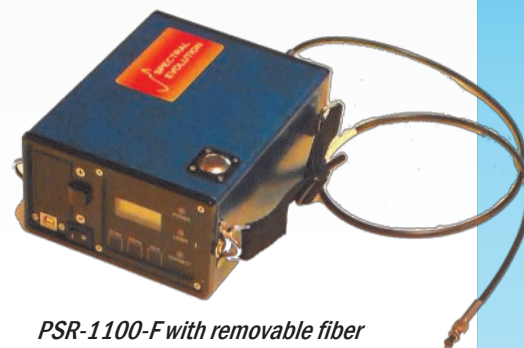
SPECTRAL EVOLUTION offers two budget-minded, lightweight, handheld spectroradiometers to meet the rigorous demands of the Remote Sensing community. The PSR-1100 features a durable, fixed 4 degree FOV optic and laser targeting for field operation. For greater optical flexibility, we also offer the PSR-1100-F which includes a detachable fiber optic cable with a wide array of optional fiber mount FOV lenses and irradiance diffusers. Whatever your measurement needs, SPECTRAL EVOLUTION offers an appropriate solution.

PSR-1100 Series units offer:

- ◆ 320-1100nm spectral range
- ◆ Keypad and LCD display—can collect and store 2500 spectra without a computer
- ◆ Auto-exposure and auto-dark shutter for easy, one-touch operation
- ◆ Snap-in 2800mAh Li-ion rechargeable battery for more than four hours of continuous use
- ◆ Tag spectra with GPS, elevation, photos, and voice notes with the optional GETAC PS336 handheld microcomputer
- ◆ High reliability with all photodiode arrays for stable calibration
- ◆ Wireless Bluetooth interface for cable-free data connection
- ◆ Lightweight, less than four pounds
- ◆ Exclusive DARWin SP Data Acquisition software charts radiance, irradiance, reflectance, absorbance, or transmittance
- ◆ All data is automatically saved as an ASCII file for immediate use with 3rd party software



PSR-1100 with fixed 4° FOV optic

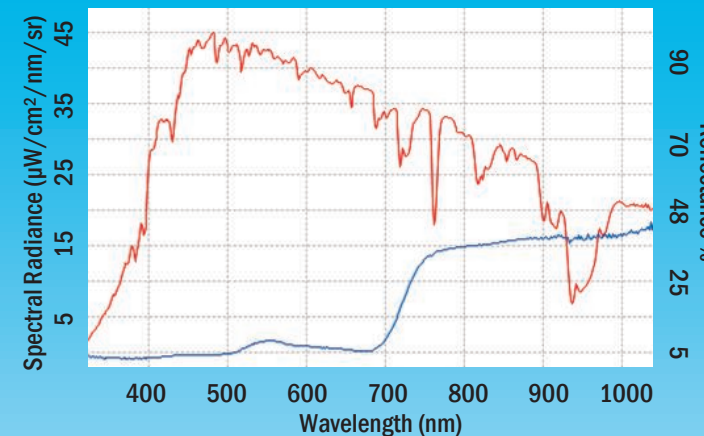


PSR-1100-F with removable fiber optic cable



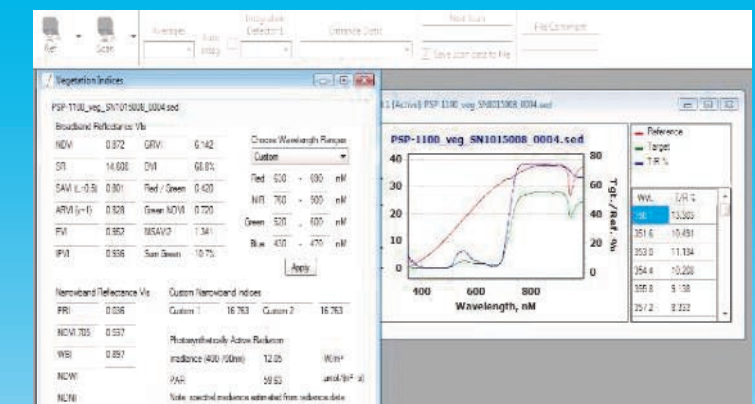
The PSR-1100F can be ordered with a range of accessories for field and laboratory use, including

- ◆ Leaf clip attachment to tungsten halogen contact probe—specifically designed for leaf reflectance measurements with a built-in white plate, small spot, and low power illumination.
- ◆ Tungsten halogen contact probe—easy-to-use with a built-in light source, it is well-suited for vegetation reflectance studies in the field.
- ◆ FOV lenses—with a 1 meter 25° FOV fiber optic cable with an industry standard FC connector, the PSR-1100F can be equipped with 1, 2, 3, 4, 5, and 8° FOV lenses to meet your application requirements
- ◆ GETAC PS336 microcomputer—with a sunlight readable display or viewing spectra, the ability to store an almost limitless number of scans, and the capability of tagging scans with voice notes, images from its digital camera, GPS coordinates, and altimeter reading, the GETAC is the perfect complement to the PSR-1100F in the field.



### Reflectance of grass field

Reflectance of grass field section was measured using the PSR-1100 Spectroradiometer with its standard 4° field of view lens. The graphs were generated with DARWin SP Data Acquisition and Analysis software included with each PSR-1100. Red trace represents a control solar scan as measured from a reflectance panel. The reflectance scan of green grass is shown in blue. DARWin SP allows users to plot multiple scans on the same graph for easy comparison using DARWin's built-in analysis features. Data is output in ASCII format and can be exported to many 3rd party programs for further analysis.



### Analyze spectra using 19 Vegetation Indices

DARWin SP Data Acquisition software provides pull-down menu access to more than 19 vegetation indices, including NDVI, SR, SAVI, ARVI, EVI, IPVI, PRI, WBI, PAR, and more. In addition, since DARWin SP saves your spectra as ASCII files, they can be used with other third party application software, without requiring pre-processing.