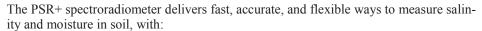
SPECTRAL EVOLUTION

Measuring Soil Salinity

Regular measurement of soil salinity is important for efficient soil and water management especially in semi-arid or arid environments. Traditional methods use lab-based electrical conductivity (EC) testing of samples. EC tests can be expensive and time consuming. In addition, to get an accurate picture for a large area requires a large number of samples, as salinity can change rapidly from spot to spot. Hyperspectral and multi-spectral remote sensing can be used along with vegetation indices, however the usual issues with these images such as resolution, vegetation cover and atmospheric effects can leave a researcher without a clear and complete understanding.

Using a field spectroradiometer like the PSR+ to take measurements *in situ*, can provide a more complete and accurate approach. The PSRE+ can also be used in conjunction with satellite or flyover imagery to offer a comprehensive understanding of soil salinity across an area. Spectra collected by a PSR+ spectroradiometer are saved as ASCII files for analysis using third party software, for example, R or a chemometrics package. In addition, the PSR+ is available with Spectral Evolution's EZ-ID sample identification software and Custom Library Builder module so that researchers can create their own soil spectra library to match against unknown samples.



- Fast collection of data in minutes with no sample prep or sample destruction
- Precision, accuracy, and a wealth of information—especially if the spectra are combined with statistical analysis software or chemometrics analysis
- ♦ Affordable measurement technology
- ♦ In situ measurement

The PSR+ has a compact design that makes it sleeker for easier handling and use in the field with improved cooling and long-term performance. The case is small and ergonomically designed. Textured grips and handles provide for comfortable single user operation. The optical path has been re-configured for improved resolution, signal-to-noise ratio (SNR), and reliable operation. System cooling is enhanced with a one-piece anodized aluminum chassis with integral heat dispersion channels. Our proprietary SotexTM filter technology delivers improved order sorting for enhanced stray light performance and smoother transition between detectors. Spectral resolution of our PSR+ is enhanced for high resolution scans for accurate soil spectra:

- ≤3.0nm @ 700nm (FWHM)
- ≤8.0nm @ 1500nm (FWHM)
- ≤6.0nm (2100nm (FWHM)

The PSR+ also offers improved electronic control circuitry for best-in-class NER (with 4° lens):

- $\leq 0.5 \times 10^{-9} \text{ W/cm}^2/\text{nm/sr} @ 400 \text{nm}$
- $\leq 0.8 \times 10^{-9} \,\text{W/cm}^2/\text{nm/sr} \, \bar{\text{@}} 1500 \,\text{nm}$
- $\leq 1.0 \text{ x } 10^{-9} \text{ W/cm}^2/\text{nm/sr}(\hat{a}) 2100 \text{nm}$

The PSR+ can be used to measure

The PSR+ can be used to measure the salinity of soil in semi-arid and arid environments.



PSR+ provides the highest resolution available in a field portable spectroradiometer.

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