



PRESS RELEASE

Measuring Total Organic Carbon in Soil

The PSR+ field, portable spectroradiometer from SPECTRAL EVOLUTION provides fast, affordable, *in situ* analysis of soil for total organic carbon (TOC).

Lawrence, MA – July 29, 2015 – Total Organic Carbon (TOC) in soil is a measure of carbon contained in soil organic matter. Why is it important? TOC affects many soil characteristics including color, nutrient capacity (cation and anion exchange capacity), nutrient stability and turnover, water relationships, aeration, and cultivation. Measuring TOC with a field spectroradiometer like the Spectral Evolution PSR+ can provide critical information on soil fertility, aggregate stability, and the exchange of CO₂ with the atmosphere – all important for environmental monitoring and precision agriculture.

TOC is the main source of energy for soil microorganisms and plants, and functions as a trigger for nutrient availability through mineralization. In a typical soil spectra, TOC features would be seen at 1100, 1600, 1700-1800, 2000, and 2200-2400nm. Distinguishing between the absorption features for TOC can be tricky. Hydrocarbons also show features at 1180, 1380, 1680-1720, and 2300-2450nm. Calcium carbonate also shows strong absorption at 2335nm. The PSR+ has the highest resolution and sensitivity available in a field spectroradiometer, giving you an edge in measuring and analyzing for TOC.

The PSR+ is specifically designed for the field with rugged and reliable construction. It offers a wide range of direct attach FOV lenses as well as swappable fiber optic mount options for use with a handheld contact probe or a benchtop probe with compactor for easy soil sample loading. The fiber mount with contact probe is ideal for taking scans of vertical and horizontal layers in a soil pit. The PSR+ features:

- Fast, full spectrum 350-2500nm measurement with just one scan
- Highest resolution and sensitivity in a portable instrument

- Autosshutter, autoexposure, and auto-dark correction before each new scan for easy, one-touch operation
- Small and lightweight with rechargeable Li-ion batteries for field operation – half the weight of competitive instruments
- Reliable field performance with an all photodiode array platform and no moving gratings that can jam unexpectedly
- Single user operation with optional rugged handheld microcomputer that provides a sunlight readable screen plus the ability to tag spectra with GPS, digital camera images, and audio notes
- Standalone operation with 1,000 scan storage
- DARWin SP Data Acquisition software automatically saves spectra and data to ASCII file format for use with other analysis software
- Optional EZ-ID sample identification software with Custom Library Builder module to create your own soil reference library from known samples

For more information, visit:

http://www.spectralevolution.com/applications_soil_TOC.html

About SPECTRAL EVOLUTION

Established in 2004, SPECTRAL EVOLUTION is a leading manufacturer of laboratory and handheld portable spectrometers, spectroradiometers and spectrophotometers. SPECTRAL EVOLUTION spectrometers are used worldwide for many mission-critical lab and field applications in mining, remote sensing, vegetative studies, ground truthing, environmental and climate studies, developing satellite calibrations, and more, due to their reliable, robust, rugged design and user-friendly one-touch features.

SPECTRAL EVOLUTION maintains a facility in Lawrence, Massachusetts which houses design, prototyping, manufacturing and service facilities for the instruments that it markets and sells worldwide, either through direct sales, OEM sales or through distributor agents.

Press contact

Mo Kashdan

Marketing & Sales

978-687-1833

Maurice.kashdan@spectralevolution.com

SPECTRAL EVOLUTION

1 Canal Street, Unit B1

Lawrence, MA 01840 USA

www.spectralevolution.com

