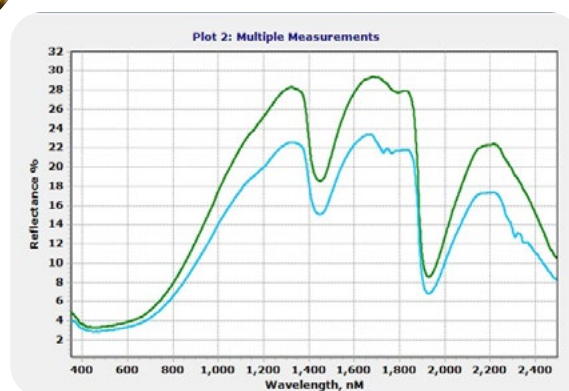




SOIL ANALYSIS

WITH AN NIR SPECTROMETER



DARWin™ SP spectral scans of topsoil and topsoil with hydrocarbon contamination.

Reflectance spectroscopy in the near infrared is a non-destructive tool for evaluating soil properties. Water, carbon, nitrogen, organic matter, and other soil constituents can be measured using a UV/VIS/NIR field spectroradiometer, providing critical information on soil health.

Traditional soil sampling processes are slow and expensive - gathering soil samples, preparing them for analysis, sending them to the lab, and waiting for the data. As concerns about efficient agricultural practices, the effects of climate change, chemical fertilization, erosion, and pollution grow, the availability of field spectrometry for soil science has become increasingly popular. Spectral Evolution field-portable spectroradiometers offer a fast, reliable, and accurate method of characterizing soil and land changes *in situ*.

Materials have unique spectral signatures defined by reflectance or absorption as a function of wavelength. The spectra of a soil sample may reveal mineral compositions, organic matter, clay content, water, iron, salinity, and particle size distribution if present in the soil. The data collected provides a picture of soil health and fertility to aid in food source management and security, natural resource management, and land conservation or development.

INSTRUMENTS & ACCESSORIES

Spectral Evolution offers a variety of portable UV/VIS/NIR spectroradiometers and accessories to aid in your soil research. Each of our NIST-traceable calibrated instruments measure the full spectral range (350-2500nm) with just one scan. They are specifically optimized for use in the field with a rugged, all photodiode array platform & no moving gratings. Our fiber optics are detachable & field-replaceable, so you'll never get stuck on-site with a broken fiber. All Spectral Evolution instruments come with DARWin™ SP data acquisition software to collect critical data & save it in ASCII format - no post-processing necessary. DARWin is available with the EZ-ID™ add-on, which includes sample libraries from the USGS, SPECMIN, and GeoSPEC™ for instant & accurate identification.



RS-3500

- Tried and true full-range model
- Standard spectral resolution
- Lightweight and portable for field research



PSR+

- Lightest, most portable full-range instrument
- Internal memory & onboard controls - no PC needed for operation
- Use in "handheld" mode with battery that slots into device and option to attach lense instead of fiber optic
- Tripod mountable for repeatable data collection



NaturaSpec™

- Best signal to noise compromise in a field instrument
- High resolution & sensitivity
- Better quality data - especially from dark samples



SR-6500

- Highest-resolution portable field spectroradiometer on the market
- Better ability to quantify contaminants or nutrients at a lower detection level
- More easily identify minerals within mixtures



RS-8800

- Built-in computer with IoT operating system to control instrument with smartphone
- See field of view in real-time & record essential metadata with exclusive accessory Sensaprobe™



ILM-550

- Illuminates large spot size for standoff measurements
- Aluminum reflector for bright, uniform illumination across the entire spectral range
- Includes two tungsten-halogen bulbs for diffuse or spot illumination mode
- Easily mounted on lab benches, optical tables, or tripod for repeatable data collection



Rugged Handheld Tablet

- Real-time, wireless instrument control
- Instantly view scans & match soil components *in situ* with DARWin LT and EZ-ID
- 8", sunlight readable touchscreen
- Built-in GPS, camera, and microphone to collect & organize essential field data



Pistol Grip

- Ergonomic handle with external trigger holds fiber optic in place for precise standoff measurements
- Reinforced tripod mount for hands-free, repeatable operation
- Picatinny rail to mount optional scopes & laser sights for enhanced targeting accuracy



Benchtop Probe w/Compactor

- Ideal for loose samples such as soil, crushed stone, or powders
- Optional compactor for consistent sample preparation
- Hands-free measurement
- SMA-905 fiber optic connection
- Built-in tungsten halogen bulb
- Durable sapphire window



Contact Probes

- Ergonomic design with external trigger for quick contact measurements
- Built-in illumination for great signal to noise across the full spectral range
- Available in 10mm or 3mm spot sizes for flexible targeting
- Scratch-resistant sapphire window

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