SPECTRAL EVOLUTION

NaturaSpec™

FIELD-PORTABLE
UV-VIS-NIR SPECTRORADIOMETER

THE NEW STANDARD FOR REMOTE SENSING

WONWOO SYSTEMS CO.,LTD

LAB-QUALITY DATA IN A RUGGED, PORTABLE PACKAGE

Spectral Evolution manufactures spectroradiometers differently. With a variety of features including rechargeable batteries, state-of-the-art detector technology, Bluetooth connectivity, lightweight housing, and a rugged design, you can be sure that you are getting the most accurate and reliable data in the field with a Spectral Evolution spectroradiometer.

COMMITTED TO EXCELLENCE

Every instrument and accessory built and sold by Spectral Evolution is subjected to rigorous quality testing. Each component is meticulously designed, manufactured, and calibrated at our facility in Haverhill, MA to ensure the maximum performance and reliability.

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NaturaSpec™

THE NEW STANDARD FOR REMOTE SENSING

The new NaturaSpec™ spectroradiometer offers the best spectral resolution and signal-to-noise performance in a field instrument on the market today, giving users the ability to collect lab-quality data *in situ* without the need for sample preparation.

Specifically designed for fieldwork, the NaturaSpec utilizes all solid-state photodiode array detectors with no moving optical parts on a rugged chassis to ensure toughness and provide excellent stability and repeatability of measurement in the field. Field-replaceable, metal-clad fiber optic cables with a keyed connection ensure no loss of calibration if replacement is needed.

NaturaSpec looks sharp with the high-visibility red color of the sealed unit. It is fitted with rugged bumpers and a convenient carrying handle to easily bring your instrument on field campaigns without the concern of unit damage.

FEATURES:

- Full spectral range of 350-2500nm
- 3 photodiode arrays
- No moving parts for greater reliability
- Automatic optimization of dark current and exposure with every scan
- User-replaceable, metal-clad fiber optic cable with SMA-905 input
- Lightweight and compact

APPLICATIONS:

- Vegetation studies
- Environmental research
- Soil analysis, mapping and profiling
- Ground truthing
- Geological remote sensing
- Solar radiance and irradiance research
- Mineral and vegetation species identification
- Snow & ice measurements

TECHNICAL SPECIFICATIONS

Spectral Range	350-2500nm		
Spectral Resolution	2.7nm @ 700nm	5.5nm @ 1500nm	5.8nm @ 2100nm
Spectral Sampling Bandwidth (nm)	0.6 @ 700nm	1.7 @ 1500nm	1.2 @ 2100nm
Detector(s)	1024-element UV-enhanced Si Array 512-element TE-cooled InGaAs Array 512-element extended TE-cooled InGaAs Array		
Calibration	Factory calibrated for radiance/ irradiance using NIST traceable sources		
Noise Equivalence Radiance $W/cm^2/nm/sr$ (1.2m fiber optic)	$0.3x10^{-9}$ @ 400nm	$0.1x10^{-9}$ @ 1500nm	$2.5x10^{-9}$ @ 2100nm
Sofware Included	DARWin™ SP Data Acquisition		
Power	7.4V, 28W		
Dimensions (in/mm)	12.4 x 8.7 x 4.4/ 314.9 x 220.9 x 111.7		
Weight (lbs/kg)	12.6/5.7		
Interface	USB, Bluetooth		
Minimum Scan Speed	100ms		
Wavelength Reproducibility (nm)	0.1		
Wavelength Accuracy (nm)	±0.5 bandwidth		
Automatic Exposure	✓		
Automatic Shutter for Dark Scans	✓		

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NaturaSpec™ REMOTE SENSING BUNDLE

The NaturaSpec is sold as a bundle so you can gather your mission-critical data without delay.

In addition to the NaturaSpec Spectroradiometer and the DARWin™ Software, the remote sensing bundle includes:

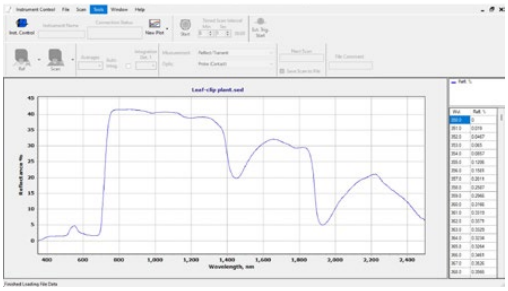
Pistol Grip	Reflectance Standard	Battery & Charger	Fiber Optic Cable	Pelican® Case	Padded Backpack
					
• Ergonomic handle with trigger holds fiber optic in place for precise standoff measurements • Picatinny rail to mount optional scopes & laser sights for enhanced targeting accuracy	• 99% white reflectance • 5x5 inch included - additional sizes available • Includes a protective, tripod-mountable metal case	• Extended capacity, rechargeable lithium-ion battery provide maximum power for long field expeditions • Dedicated charger included	• 1.5m user detachable, ruggedized, metal-clad, fiber optic cable • SMA-905 connection • NIST-traceable calibration	• Rigid foam-lined protection • Lightweight, watertight, airtight, dustproof, and corrosion-resistant • Ideal for shipping and storage	• Designed for ventilation *in situ* • Custom eyelet openings for fiber optic cable • Side pockets for batteries, charger, and accessories • Compatible with all Spectral Evolution instruments

Bundled accessories are subject to change depending on availability.
NaturaSpec is compatible with all existing Spectral Evolution accessories, including the leaf clip, R/T sphere, reflectance contact probes, handheld rugged tablet, diffusers, field of view lenses, and illumination sources.

DARWin™ DATA ACQUISITION SOFTWARE

Every Spectral Evolution spectroradiometer includes the exclusive DARWin™ software – a full-featured, menu-driven program for easy data acquisition and analysis of multiple UV-VIS-NIR spectra.

DARWin ensures that every spectral scan collected is optimized for the best signal-to-noise ratio possible. Dark-current correction is automatically applied to every scan, and each detector is independently exposed to the signal at the optimum integration time. No tedious manual optimization is ever required to ensure outstanding, repeatable data.



DARWin interface showing a vegetation scan

DARWin comes equipped with features specifically for field measurements.

- One-touch operation
- Ability to adjust parameters such as integration time, number of average scans, fore optics selection
- Automatic Data collection at user adjustable intervals from 1 second to 1 hour
- Saves scans as ASCII files for use with third-party software without pre-processing
- Ability to trigger scan from either the software or accessory
- Instrument status displayed after each scan (voltage, temperature, scan title, etc.)

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