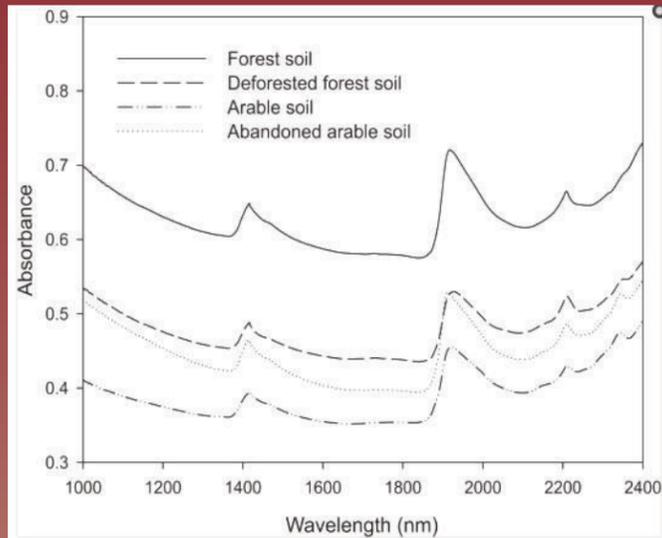


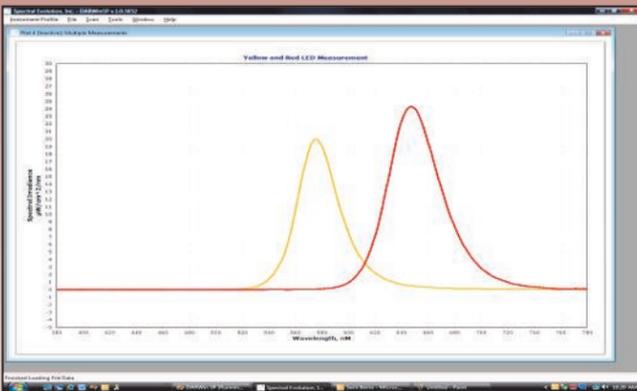
All SPECTRAL EVOLUTION LF-Series spectrometers come with our exclusive DARWin SP Data Acquisition Package– an easy-to-use menu driven software program designed to analyze spectral irradiance, radiance, reflectance, transmittance, absorbance and more.



The exclusive DARWin SP Data Acquisition software included with each unit allows for full featured instrument control and data handling. The LF-2500 can be used as a lab system or in the field with an optional battery. In field studies, the LF-2500 can provide critical information on different soil characteristics, for example in the spectra at left, distinguishing between arable soil in use, arable soil not in use, forest soil, and de-forested soil.

LF-Series spectrometers come in a standard bench package with SMA-905 fiber optic input. Batteries are available for use as a field spectrometer. Units can be customized with a range of slit options, as well as a wide choice of accessories, including: probes, lenses, integrating spheres, right angle diffusers, and more.

The LF-880 uses a single silicon photodiode array detector. The LF-880 is an ideal small size lab spectrometer that can be quickly and seamlessly incorporated into OEM systems or used for lab applications. It is often used in labs to measure irradiance levels of commercially available LEDs. The LF-880 has also been used to measure chlorophyll content in leaves using fluorescence. The instrument weighs less than 2 pounds and provides high performance and reliability across limited spectral ranges.



#### Suggested Application: LED Measurement

Rapid one-touch measurements of light emitting diodes can be obtained using the LF-880 spectrometer (with optional calibration) and the companion DARWin SP Data & Acquisition Module included with each unit. Here, an LF-880 was used to measure irradiance levels of commercially available red LEDs (red trace) and yellow LEDs (yellow trace) in two separate experiments. Easy pull-down menus in the software allow users to superimpose graphs for convenience.

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## Single Photodiode Array NIR Spectrometers



### Affordable NIR Spectrometers for a Range of Lab and Field Applications

Single photodiode array spectrometers that deliver high performance and reliability

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# The LF-Series Single Photodiode Array NIR Spectrometers for Lab & Field Applications

- All photodiode array construction directly mated to fiber optic for the ultimate in throughput and reliability—no moving optical parts
- Optimized gratings for maximal sensitivity (signal-to-noise ratio)
- Built-in autoshutter and autexposure for one-touch scanning
- USB/wireless Bluetooth connections
- Easy to set up anywhere—compact, lightweight, single-box design
- DARWin SP Data Acquisition software captures spectra in ASCII format for use with third party software—no post-processing required

MODEL #	LF-2500	LF-1250	LF-880
Spectral Range (nm)	1000-2500	900-1700	650-1050nm
Spectral Resolution (slit dependent—nm)	10,14,20	3, 4, 5	2
Spectrometer Type	fiber optic	fiber optic	Fiber optic input/ diffraction grating
Slit (µm)	25, 50, 100	25, 50, 100	50
Detector Type	256 element extended InGaAs array	512 element InGaAs array	512 element Si array
A / D Converter	16 bit	16 bit	16 bit
λ Reproducibility (nm)	0.5	0.5	0.1
λ Accuracy	±0.5 bandwidth	±0.5 bandwidth	±0.5 bandwidth
Integration Time (ms)	0.5-15	0.8-15	7.5-20
Power (typical)	6V, 8W	6V, 5W	6-12V, 0.5W
Size	8" x 6" x 3"	8" x 6" x 3"	4" x 2" x 5"
Weight	< 3 lbs	< 3 lbs	<2 lbs
Interface	USB, Bluetooth	USB, Bluetooth	USB

## Applications for the LF-Series spectrometers can include:

- Soil analysis
- General spectroscopy
- Water/moisture analysis
- Process monitoring
- Petrochemical analysis
- Environmental studies
- Refining
- Food identification and analysis
- Polymer identification
- Total petroleum hydrocarbons in soil
- LED light testing and binning

