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FieldSpec 4

The gold standard in field spectroradiometers

ASD pioneered the science of field spectroscopy over 25 years ago and continues to lead the industry with the world's most trusted field-portable NIR spectroradiometers.

The ASD FieldSpec® 4 line of full-range spectroradiometers delivers the fastest and most accurate spectral field measurements available from any commercial field-portable spectroradiometer. Continued enhancements to core instrument spectrometers and other critical components have dramatically improved overall performance, signal, and integration speeds compared to earlier models.

The FieldSpec 4 spectroradiometer is designed specifically around the challenges researchers face when collecting spectral measurements in the field.

- Full-range detection capacity (350 nm – 2500 nm) provides uniform VIS/NIR/SWIR data collection across the entire solar irradiance spectrum.
- Faster integration speed allows more measurements in a limited solar collection time window.
- Single element scanning detectors in the SWIR ensure seamless measurements in the 1001 nm – 2500 nm spectral range. Single element detectors eliminate the uncertainty of missing 'dead pixels' and the need to fill the gaps with data interpolation and smoothing as required with instruments using 'solid state' array SWIR detectors.
- Superior signal throughput, signal-to-noise, and radiometric performance ensure data integrity in suboptimal atmospheric conditions.
- Long-range wireless increases collection coverage potential from a stationary base of operations.
- A permanent fiber optic cable design provides superior signal throughput over detachable fiber optic cable systems and a ruggedized design reduces the risk of signal loss from broken optical fibers.
- The customized fully adjustable ergonomic Pro-Pack backpack is designed specifically around the workflow rigors of field research. Durable and lightweight, the Pro-Pack backpack makes field portability a reality with the FieldSpec 4 product line and comes standard with every instrument.



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Which FieldSpec spectroradiometer is best suited for my application?

All ASD FieldSpec spectroradiometers provide 3 nm spectral resolution in the VNIR (350 nm – 1000 nm) range. Several spectral resolution options are available for the SWIR (1001 nm – 2500 nm) range to better address specific user needs and provide superior performance across the full solar irradiance spectrum (350 nm – 2500 nm).

FieldSpec 4 Hi-Res NG: The enhanced 6 nm SWIR spectral resolution provides both the sampling interval and spectral resolution necessary for accurate sensor calibration and image ground truthing for the next generation of sub-10 nm spectral resolution hyperspectral imagers such as the Next Generation Airborne Visible/Infrared Imaging Spectrometer (AVIRIS-NG) and HySpex ODIN.

FieldSpec 4 Hi-Res: The 8 nm SWIR spectral resolution is particularly useful for detecting and identifying compounds with narrow spectral features in the longer wavelengths. The FieldSpec 4 Hi-Res is an excellent choice for standard sensor validation and calibration, as well as ground truth measurements and building spectral libraries.

FieldSpec 4 Standard-Res: The 10 nm SWIR spectral resolution meets the technical requirements of most field researchers seeking to characterize typical spectral features with widths of 10 nm to 50 nm. The FieldSpec 4 Standard-Res has long been the industry's number one choice for trusted NIR field spectroscopy.

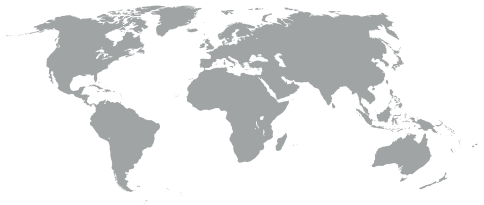
FieldSpec 4 Wide-Res: The 30 nm SWIR spectral resolution is an ideal fit for applications such as vegetation analysis and vegetation indices that are characterized by broad spectral features. The wider optical slit provides superior signal throughput and signal-to-noise performance.

Resolution			Application
Hi-Res	Standard-Res	Wide-Res	
			Ideal
			Adequate
			Not recommended
■	■	■	Asbestos detection
■	■	■	Atmospheric research
■	■	■	Camouflage
■	■	■	Concrete and aggregates
■	■	■	Cosmetics
■	■	■	Crop science
■	■	■	Food and agricultural products
■	■	■	Forestry
■	■	■	General material identification
■	■	■	Geologic mapping
■	■	■	Hyperspectral image ground truthing
■	■	■	Landscape ecology
■	■	■	Multispectral image ground truthing
■	■	■	Pharmaceuticals and nutraceuticals
■	■	■	Photonics
■	■	■	Pigment/color analysis vegetation
■	■	■	Plant physiology
■	■	■	Plastics/petrochemicals
■	■	■	Quantitative analysis
■	■	■	Sensor and radiometric calibration
■	■	■	Snow and ice research
■	■	■	Soil mineralogy
■	■	■	Spectral library creation
■	■	■	Water body/column analysis

FieldSpec 4 specifications

Product	FieldSpec 4 Hi-Res NG	FieldSpec 4 Hi-Res	FieldSpec 4 Standard-Res	FieldSpec 4 Wide-Res
Spectral range	350 – 2500 nm	350 – 2500 nm	350 – 2500 nm	350 – 2500 nm
Resolution	3 nm @ 700 nm 6 nm @ 1400/2100 nm	3 nm @ 700 nm 8 nm @ 1400/2100 nm	3 nm @ 700 nm 10 nm @ 1400/2100 nm	3 nm @ 700 nm 30 nm @ 1400/2100 nm
Noise Equivalent Radiance (NEdL) VNIR	1.0 x 10^{-9} W/cm^2/nm/sr @ 700 nm	1.0 x 10^{-9} W/cm^2/nm/sr @700 nm	1.0 x 10^{-9} W/cm^2/nm/sr @ 700 nm	1.0 x 10^{-9} W/cm^2/nm/sr @700 nm
SWIR 1	8.0 x 10^{-9} W/cm^2/nm/sr @ 1400 nm	1.4 x 10^{-9} W/cm^2/nm/sr @ 1400 nm	1.2 x 10^{-9} W/cm^2/nm/sr @ 1400 nm	1.5 x 10^{-9} W/cm^2/nm/sr @ 1400 nm
SWIR 1	8.0 x 10^{-9} W/cm^2/nm/sr @ 2100 nm	2.2 x 10^{-9} W/cm^2/nm/sr @ 2100 nm	1.9 x 10^{-9} W/cm^2/nm/sr @ 2100 nm	2.8 x 10^{-9} W/cm^2/nm/sr @ 2100 nm
Height x width x depth	12.7 x 36.8 x 29.2 cm	12.7 x 36.8 x 29.2 cm	12.7 x 36.8 x 29.2 cm	12.7 x 36.8 x 29.2 cm
Weight (w/o battery)	5.44 kg (12 lbs)	5.44 kg (12 lbs)	5.44 kg (12 lbs)	5.44 kg (12 lbs)

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