

# FieldSpec<sup>®</sup>4

HI-RES



## The highest-quality spectral data with a new, faster system

The FieldSpec<sup>®</sup> 4 Hi-Res spectroradiometer has been designed for faster, more precise spectral data collection in remote sensing applications. The enhanced spectral resolution offered by the portable, ruggedized Hi-Res model is well suited to geologic applications and other fields of research that requires definition of narrow spectral features, especially in the longer wavelengths.

- Faster spectral collection speed by allowing researchers to measure more targets at more sites in a smaller timeframe.
- The full-range (350 – 2500 nm) Vis/NIR FieldSpec 4 Hi-Res provides the highest spectral resolution available in a portable, ruggedized spectroradiometer.
- An extended wireless range presents new opportunities in research supervision from longer distances.
- New ruggedized fiber optic cable and a smaller, lighter yet tough case make the FieldSpec 4 Hi-Res field ready and highly portable.

### UNIQUE APPLICATIONS:

- Atmospheric Research
- Field Spectrometry
- Geology and Mineral Analysis
- Ground Truthing
- Hyperspectral Remote Sensing
- Spectroradiometry and Radiometric Calibration



ASD is a Malvern Panalytical brand



The FieldSpec 4 Hi-Res has increased signal throughput, improved spectral resolution and vastly improved signal-to-noise ratio over previous models. For remote sensing, this means faster spectrum capture in the field with improved spectrum quality. Researchers looking at materials at longer wavelengths—such as carbonates, clays and chlorites—will benefit from a 2X radiometric performance increase in the SWIR 1 and 2 regions. The FieldSpec 4 Hi-Res spectrometer, with an 8 nm resolution, is also ideal for building spectral libraries, since it provides the high spectral resolution spectra required to support current and planned hyperspectral sensors.

Ideal for geologic applications requiring mapping of alteration mineralogy, the FieldSpec 4 Hi-Res is also suited for hyperspectral image validation and ground truthing.

## FieldSpec 4 Hi-Res Specifications

### PERFORMANCE

Wavelength range	350-2500 nm
Resolution	3 nm @ 700 nm and 8 nm @ 1400/2100 nm
Scanning time	100 milliseconds
NEdL (Noise Equivalent Radiance)	
VNIR	1.0 X10 <sup>-9</sup> W/cm <sup>2</sup> /nm/sr @ 700 nm
SWIR 1	1.4 X10 <sup>-9</sup> W/cm <sup>2</sup> /nm/sr @ 1400 nm
SWIR 2	2.2 X10 <sup>-9</sup> W/cm <sup>2</sup> /nm/sr @ 2100 nm
Stray light	VNIR 0.02% SWIR 1 & 2 0.01%
Wavelength reproducibility	0.1 nm
Wavelength accuracy	0.5 nm
Maximum radiance	VNIR 2X Solar, SWIR 10X Solar
Channels	2151
VNIR detector	(350-1000 nm) 512 element silicone array
SWIR 1 & 2 detectors	(1000-1800 nm) & (1800-2500 nm) Graded Index InGaAs Photodiode, TE Cooled

### CERTIFICATION AND APPROVALS

CE certified	EN61010-1:2001 2nd Edition
EU Directive	2006/95/EC, 2004/108/EC
NIST traceable calibration	
WEEE Compliance	

### COMMUNICATIONS

Wired	10/100 Base T Ethernet port with Ethernet cross-over cable
Wireless	802.11g wireless card

### PHYSICAL & ENVIRONMENTAL

Dimensions (H x W x D)	12.7 x 36.8 x 29.2 cm (5 x 14.5 x 11.5 in)
Weight	5.44 kg (12 lbs)
NiMH battery weight	1.2 kg (2.7 lbs)
NiMH battery run time	Approximately 6 hours (without lamps or accessories)
Operating temperature	0 to 40° C (32 to 104° F)
Storage temperature	-15 to 45° C (5 to 113° F)
Input power	AC/DC switching power supply or a 12V 9Ah NiMH battery pack
AC input	90-240 VAC, 50/60 Hz
DC input	12 VDC, 60 W
Auxiliary port power	Output, +12 VDC, 27 Watt (max)

### ADDITIONAL DETAILS

Software	RS <sup>3</sup> ™ spectral acquisition software, Seamless interface with ENVI®, ASD ViewSpec™ Pro for post processing Optional Indico™ Pro
Portability	Waterproof customized backpack with soft-sided travel bag; Rugged instrument transportation case
Warranty	One year full warranty including expert customer support
Computer	Windows® 7 64-bit laptop (instrument controller)
GPS	Optional

Manufactured by Malvern Panalytical,  
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