



## TerraSpec<sup>4</sup> STANDARD-RES

### Optimizing ore recovery

Leading mine operations around the world already trust TerraSpec® mineral analyzers for their ability to immediately quantify problem mineral occurrences to optimize ore recovery. Designed to enhance the productivity of mining site ore analysis, the TerraSpec 4 Standard-Res spectrometer, with 10 nm resolution, provides high-throughput mineralogical analysis to help better optimize ore processing, sorting and metal extraction.

- Improved optics deliver more precise spectral data in a fraction of the time required by previous models.
- High-throughput sample analysis (capable of analyzing more than 1,000 samples a day) means accurate measurements even in high-volume production environments.
- Upgraded feature recognition helps analyze darker rock samples and improve management of ore variability.
- A 2x increase in performance for the SWIR 1/SWIR 2 regions leads to better problem mineral analysis, such as delineating clay species.

This flexible near-infrared spectrometer accurately measures a wide variety of geologic samples, including clays and rocks with darker mineral content, offering better visibility into the ore sorting, processing and extraction processes. Portable and rugged, it transitions easily from the production lab to the field, where it can quickly and accurately analyze ore feeds and tailings.

For active mine environments, the TerraSpec 4 Standard-Res helps boost yield and reduce processing costs by supplying critical mineralogical information quickly. Significant improvements in spectral response provide impressive results in production analysis efforts. For example, the TerraSpec spectrometer can produce high-quality spectra used to identify problem minerals such as talc, goethite, montmorillonite and other clay minerals in real time with no sample preparation required.

The high-quality spectral data of the TerraSpec 4 requires less interpretation by lab technicians, providing for faster, more confident and more efficient ore processing.

#### Unique applications:

- Problem mineral monitoring
- Extractive metallurgy
- Heap leach optimization
- Ore sorting
- Agglomeration optimization
- Flotation ore feed control
- Block modeling
- Blast hole analysis



## Optional TerraSpec 4 spectrometer accessories

ASD offers a comprehensive variety of spectroscopy accessories to meet a multitude of application requirements. The following accessories are those most commonly requested by geologists interested in mineral analysis:

- Rapid analysis probe for powders and chips. This probe is specially designed for speedy spectral collection of fine grained materials like powders and can be used with quantitative predictive models.
- Small diameter reflectance probe for vugs and grain-specific mineralogy.
- The goLab mobile work station eases transport and movement of the spectrometer around the core shack or laboratory.
- The turntable, for non-homogenous material like blast chips, allows for a larger field of view and a more representative mineralogy of the material.

## TerraSpec 4 Standard-Res specifications

Performance	
Wavelength range	350 - 2500 nm
Spectral resolution	3 nm @ 700 nm and 10 nm @ 1400/2100 nm
Scanning time	100 milliseconds
Signal-to-noise ratio VNIR SWIR 1 SWIR 2	9,000:1 @ 700 nm 9,000:1 @ 1400 nm 4,000:1 @ 2100 nm
Stray light	VNIR: 5000:1 (0.02%) NIR: 10,000:1 (0.01%)
Wavelength reproducibility	0.1 nm
Wavelength accuracy	0.5 nm
Channels	2151
VNIR detector	(350-1000 nm) 512 element silicon array
SWIR 1 & 2 detectors	(1001-1800 nm) & (1801-2500 nm) graded endex InGaAs photodiode, two stage TE cooled
Certification and approvals	
CE certified	EN61010-1:2001 2nd Edition
EU Directive	2006/95/EC, 2004/108/EC
ISTA®	Transit tested
Traceability	NIST traceable
Communications	
Wired	10/100 Base T ethernet port with ethernet cross-over cable
Wireless	802.11g/n

Physical & Environmental	
Height x width x depth	12.7 x 36.8 x 29.2 cm (5 x 14.5 x 11.5 in)
Weight	5.44 kg (12 lbs)
Battery weight	1.2 kg (2.7 lbs)
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 and a sealed lead-acid gel cell battery
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	Indico® Pro acquisition software, compatibility with GRAMS, seamless interface with ENVI®, ASD ViewSpec Pro for post processing, optional RS <sup>3</sup>
Portability	Rugged instrument transportation case; optional customized backpack with soft-sided travel bag
Warranty	One year full warranty including expert customer support
Computer	Windows® 7 64-bit laptop (instrument controller)

### Global and near



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