Terraplus

oreXpress™

Accurate mineral identification and analysis for mining exploration and production

oreXpress™ Spectrometers for Mineral Identification, and Quantitative Analysis

Meaningful spectra In the field. In seconds.

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An essential tool for successful mining exploration and production

oreXpress™ and oreXpress Platinum spectrometers deliver the benefits of a full range NIR spectrometer to the geologist in the field.
With oreXpress, geologists can get an accurate idea of what they are looking at, quickly scan samples, and cover more ground in less time and at less expense than using traditional field methods. They can identify different mineral phases, work up forensics on an area, and understand more clearly what's there.

With EZ-ID™ real-time mineral identification software, oreXpress facilitates identification of critical alteration minerals for better interpretation and a more profitable approach to drilling.
Targeting the most promising areas before drilling begins can eliminate unnecessary drilling costs and quickly pay back the investment on the oreXpress.

Used in a core shack, the oreXpress can eliminate unnecessary assays on cores that show no potential and reduce the time logging takes—in one application it cut logging time from six to two hours.

What are you looking for?

Use the oreXpress with EZ-ID to identify minerals across a range of deposit types including epi-thermals, porphyries, kimberlites, carbonate hosted bas metals, shear veins, skarns, and disseminated systems.

Gold
Low sulfidation deposits: illite, kaolinite, chlorite, illite/smectite, buddingtonite, epidote, montmorillonite, zeolite, quartz, calcite, hematite
For high sulfidation: alunite, opal, dickite, pyrophyllite, diaspora, zunyite, topaz, illite, kaolinite, epidote, quartz, montmorillonite, goethite, jarosite, hematite
For orogenic gold: muscovite, paragonite muscovite, roscoelite, illite, kaolinite, quartz, siderite, ankerite, calcite, dolomite, carbonates

Copper
Porphyry copper: tourmaline, muscovite, alunite, kaolinite, jarosite, goethite, hematite, chalcanthite
Oxidized BXA (leach cap): mica, jarosite, alunite, kaolinite
Oxidized phyllic: alunite, kaolinite, jarosite, copper sulfate overprinting muscovite
Potassic: muscovite, tourmaline, some alunite

Contact probe

Nickel
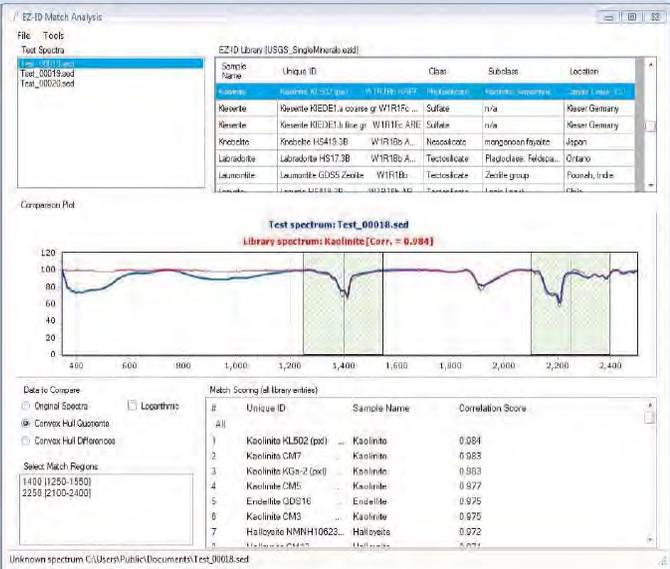*Nickel in lateritic ore deposits:* nickeliferous limonite, goethite, smectite, nontronite, garnierite

Uranium
Uraninite, sericite, dickite, chlorite, kaolinite, illite, pyrite, chalcopyrite

The oreXpress and oreXpress Platinum save your scans as ASCII files for use with 3rd party software such as:

GRAMS is a software suite for visualizing, processing, and managing spectroscopic data. It offers tools to capture, store, process, and report data, plus a graphical multivariate analysis tool for qualitative and quantitative analysis.

TSG™ is a tool for geological analysis of spectral reflectance data of minerals, rocks, and soils, including drill cores and chips. With this software you can organize all your data as part of a project data set for more effective analysis.

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EZ-ID Real Time Mineral Identification

oreXpress spectrometer packages can include the EZ-ID software that allows a geolpgist to compare a target scan against a spectral library like USGS or SpecMIN, or build a custom, special purpose library.

With EZ-ID, you can compare unknown mineral samples to a library, using various algorithms to provide more accurate matches. You can select different spectral regions depending on the minerals of interest and view a match report on screen.

Above is a sample of kaolinite matched against the USGS library. As can be seen, the unknown sample has a match score in the bottom window of 0.984, with 1.000 being an exact match. With EZ-ID, a geologist could scan and identify samples very rapidly—this would be an exceptional tool for core shack logging as well as field measurements. EZ-ID is available with the following libraries:

♦ USGS: 466 spectra for 226 minerals
♦ SpecMIN: 1528 spectra for 494 minerals

Library Builder Module—Build A Custom Spectral Library

In addition to matching unknown samples to known minerals in a commercial library, a geologist can quickly and easily build a custom library of spectra for minerals. A geologist can create a custom library for a class of minerals, a specific location, each project—whatever makes the most sense. With our Library Builder, you can:

♦ Scan your sample with the oreXpress spectrometer
♦ Select the appropriate metadata associated with this scan
♦ Define your own metadata
♦ Add new scans to your library quickly and easily
♦ Run new target scans against your library immediately

With EZ-ID and the Library Builder module, users have the ability to collect the best scans in the least amount of time, quickly identify minerals, save them, and add them to an existing library or create a new one.

With the GETAC PS336 microcomputer and backpack, an oreXpress spectrometer is easy for one person to carry and operate in the field for mineral identification on outcrops, blast hole chips, and hand samples.

The oreXpress is also the instrument of choice for fast and accurate core logging. Spectra can be collected and minerals identified in real-time with EZ-ID or stored for later chemometric analysis using 3rd party software.

The GETAC PS336 provides an auto-focus digital camera, e-compass, altimeter, voice note capability, GPS/photo/note tagging, and sunlight readable VGA display.

Many accessories are available including the benchtop lab reflectance probe with a scratch-resistant sapphire window and a foldable core logging cart.

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Specifications	oreXpress	oreXpress Platinum
Spectral Range	350–2500nm	350–2500nm
Spectral Resolution	3.5nm (350-1000nm) 9nm @ 1500nm 6.5nm @2100nm	3.5nm (350-1000nm) 9nm @ 1500nm 6.5nm @2100nm
Spectral Sampling Bandwidth	1.5nm (350-1000nm) 3.8nm @ 1500nm 2.5nm @2100nm	1.5nm (350-1000nm) 3.8nm @ 1500nm 2.5nm @2100nm
Si Detectors	512 element Si array (350–1000nm)	512 element Si array (350–1000nm)
InGaAs Detectors	256 element extended wavelength array (970–1910nm) 256 element extended wavelength array (1900-2500nm)	256 element extended wavelength array (970–1910nm) 256 element extended wavelength array (1900-2500nm)
FOV Options	Fiber mount only 1,2,3,4,5,8°	Direct attach lenses 4,8,14° 1,2,3,4,5,8° FOV lenses
Stray light	0.10%	0.10%
Minimum Scan Speed	100 milliseconds	100 milliseconds
Wavelength Reproducibility	0.1nm	0.1nm
Wavelength Accuracy	±0.5 bandwidth	±0.5 bandwidth
Communications Interface	USB, Bluetooth	USB, Bluetooth
Size	8.5" x 12" x 3.5"	8.5" x 12" x 3.5"
Weight	7.3 lbs	7.3 lbs
Battery	External Lithium ion; 7.4V	Two slide-in Li-ion; 7.4V
Battery Operation	Minimum 2 hour operation	Minimum 2 hour operation
On Board Memory	None	Storage for 1,000 spectra

Complete Mining Package

- SM-3500 field spectrometer
- DARWin SP data acquisition software
- 1.2 meter, metal clad fiber optic cable with SMA-905 quick disconnect
- Two Li-ion rechargeable battery with universal 100-240 VAC charger
- Universal 100-240 VAC wall power supply
- Pelican watertight protective hard case with high density foam padding
- Lightweight and sturdy backpack
- GETAC PS336 rugged handheld microcomputer(add GPS, photos, and voice notes to scans)
- Optional tungsten halogen contact probe with sapphire window
- Optional benchtop reflectance probe (for core shack) with built-in 5 watt tungsten halogen source
- 2x2 inch reflectance panel with convenient carrying case
- Optional EZ-ID mineral identification software and Library Builder module with USGS mineral library and the optional SpecMIN library
- ASCII files can be used with 3rd party software without pre-processing

September 29, 2014