

Handheld Spectrometer for Mining



AI Overview

Handheld mining spectrometers are portable XRF or LIBS devices that provide rapid, on-site elemental analysis of minerals, ores, and soils, enabling real-time decision-making in exploration and mining operations. Overview and Technology Handheld mining spectrometers primarily use X-ray fluorescence (XRF) or laser-induced breakdown spectroscopy (LIBS) to analyze the elemental composition of materials directly in the field. XRF-based devices, such as the Bruker TITAN, SPECTRO xSORT, and Thermo Fisher Niton XL5 Plus, allow non-destructive testing of rocks, drill cores, soils, and sediments, providing near-instant results without the need for laboratory analysis. LIBS analyzers, like the SciAps Z Series, are particularly effective for detecting light elements such as lithium, beryllium, and carbon, which are challenging for traditional XRF.

Key Features

- Portability and Rugged Design:** Devices are built to withstand harsh field conditions, including extreme temperatures, dust, and moisture. Many models are lightweight and ergonomically designed for extended use.
- Rapid On-Site Analysis:** Handheld spectrometers provide immediate elemental data, supporting exploration, grade control, and ore characterization without waiting for lab results.
- Wide Elemental Range:** Modern analyzers can detect elements from magnesium to uranium, including rare earth elements (REEs), heavy metals, and trace elements.
- Advanced Detectors and Calibration:** Devices feature high-sensitivity detectors (Si-PIN or SDD) and matrix-matched calibrations for accurate quantification, even for light elements.
- Data Management and Connectivity:** Many handheld spectrometers include onboard storage, GPS tagging, Bluetooth, and USB connectivity for seamless data collection and export.

Applications in Mining

- Exploration and Geological Mapping:** Identify geochemical anomalies, lithological variations, and mineralized zones in real time.
- Ore Grade Control:** Rapidly distinguish ore from waste, optimize drill locations, and monitor extraction processes...

Article Content

Portable handheld spectrometers

The Z Series excels in applications like alloy analysis, mining exploration, and environmental testing, delivering accurate results with minimal sample preparation. Its portability and speed make it an

SPECTRO xSORT XRF Handheld Analyzer for many

Fast on-site elemental analysis: The SPECTRO xSORT handheld XRF is the ideal analyzer for compliance testing and quick screening of non-metallic samples.

Portable Mining & Exploration Solutions

Niton handheld XRF analyzers are a reliable method to analyze ore samples in open pits and underground mines – achieving the accuracy required to provide defensible information for process

High-end Handheld XRF Spectrometer Analyzer

High-end Handheld XRF Spectrometer Analyzer - Smart Metal & Mineral Scanner for Mining, Recycling, Geology | 42-Element Detection | 100% Waterproof | 10

Mobile Metal Analyzer

For onsite metal analysis, SPECTRO offers a complete range of mobile metal analyzer products, from handheld XRF to portable Arc Spark OES spectrometers.

AURA® handheld NIR | Versatile & portable spectrometer

AURA® handheld NIR is a portable spectrometer system, which enables measurements to be taken directly on site, suitable for a variety of applications.

New SPECTRO xSORT Handheld XRF Application Packages

The SPECTRO xSORT handheld XRF analyzer now supports a broader range of applications: geology, mining, environmental screening, and compliance testing.

Geology | Mining Spectrometers

With Spectral Evolution field portable UV-Vis-NIR spectrometers and EZ-ID™ mineral identification software, geologists can measure and identify

XRF Mineral Analyzer

XRF is a fast, accurate, and easy tool for different analytical applications in the mining industry. It provides an on-site analysis of ore samples with minimal

Handheld XRF Spectrometer

Handheld XRF spectrometers are a fast, accurate, and portable tool that can be used for a variety of tasks in the mining industry. What is a portable

Mining Mineral Analysis

Fast, accurate mineral analysis for exploration, mining, and research. Discover our portable solutions designed for field use. Contact us to learn more!

Handheld Mineral Analyzer (TrueX 900)

Truex 900 ore analyzer can provide fast and accurate results of element analysis in all stages of mining activities, including primary

Handheld XRF Spectrometer | Mining & Ore Analyzer -

Handheld Spectrometer XRF H500B The H500B Handheld Spectrometer uses X-Ray Fluorescence for precise elemental analysis in field and laboratory settings.

TITAN Handheld XRF Analyzer | Bruker

TITAN handheld XRF delivers fast, accurate precious metal analysis with dedicated calibrations for the reliable identification of gold, silver, platinum, and common

Handheld XRF Spectrometers for Elemental Analysis

In mineral exploration and mining, fast access to reliable geochemical data helps guide decisions in the field. X-Ray Fluorescence (XRF)-based portable mineral

JRS2S05A Battery for LANScientific Handheld Alloy Analyzer XRF Spectrometer

Premium 47.52Wh battery for LANScientific TrueX, SHINE XRF spectrometer, alloy analyzer. Replaces JRS2S05A. 7.2V Li-ion, 6600mAh, field analysis grade, 1-year warranty.

Portable handheld spectrometers

Malvern Panalytical offers a range of portable spectrometers and a portable XRF analyzer alternative to a XRF handheld or XRF gun.

Vanta Handheld XRF Mineral Analyzer | Evident

Vanta Max handheld XRF analyzers provide immediate, on-site elemental measurements for mining and geochemical applications for the analysis of a

XRF Mineral Analyzer

XRF Analyzer for Mining Exploration X-Ray Fluorescence Guns XRF Analyzer Provides On-Site Analysis of Ore Samples With Minimal Sample Preparation,

Portable Mineral Testers for Mining and Exploration

Bruker's portable mineral testers enable the fast & accurate elemental analysis of mineral's on-site, even in remote mining locations.

The best supplier of spectrometer and power meter

YIXIST Technology Co., Ltd. is a smart device tech company that specializes in making spectrometers and optical power meters, ensure that we continue to

SPECTRO xSORT XRF Handheld Analyzer for many

The new SPECTRO xSORT handheld XRF boasts numerous new features and designs aimed at enhancing user speed, ease, and convenience, while also

Portable XRF Metal Analyzer

Meet your metal analysis needs anywhere with the JITA19201 Handheld XRF Analyzer. This rugged 245x250x90mm portable spectrometer delivers fast,

Handheld XRF Spectrometers for Elemental Analysis

Applications of Handheld XRF Portable Mineral Testers for Mining and Exploration In mineral exploration and mining, fast access to reliable geochemical data helps

TerraSpec 4 | Portable Vis-NIR Spectrometer | Mining

TerraSpec 4: Vis-NIR for mining and mineral exploration The TerraSpec 4 portable Vis-NIR instrumentation are the most widely used spectrometers in mining

Contact Us

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