

Handheld laser-induced breakdown spectrometer for ores

LMKS

Features

- **Multi-element simultaneous analysis**
Capable of qualitative and quantitative analysis of multiple elements simultaneously, covering most elements in the periodic table.
- **Lightweight and portable**
Entire unit weighs 2.3 kg (without battery); long standby time and extended battery life.
- **Outstanding sample form compatibility**
Direct analysis of solid samples—a powerful tool for rapid screening. Rapid phase conversion and enrichment analysis for liquid samples. Short sample processing time.
- **Detection of light elements (Z<12)**
Can measure C, N, O, Li, Be, B, etc., addressing the limitations of XRF technology in light-element analysis.

Applications

- **Ore Analysis:** Rapid and accurate determination of metal element content in ores, suitable for field exploration and on-site analysis.
- **Lithium Mining and Processing:** Replaces traditional laboratory analysis, enabling rapid multi-point on-site testing to enhance exploration efficiency and reduce sample transportation and processing time.
- **Lithium Battery Recycling:** Precisely measures key elements such as lithium, cobalt, and nickel, optimizing the recycling process and improving resource recovery efficiency.
- **Multi-Element Rapid Screening:** Suitable for fast analysis of solid and liquid samples, supporting simultaneous detection of multiple elements, including light elements (e.g., C, N, O, Li, Be, B).

Description

The LMK5 Handheld Laser-Induced Breakdown Spectrometer for Ores is a portable analysis device based on Laser-Induced Breakdown Spectroscopy (LIBS) technology, specifically designed for on-site ore and material analysis. The instrument uses a high-energy pulsed laser to directly excite the sample surface, generating plasma spectra for rapid qualitative and quantitative analysis of multiple elements. It features a lightweight and portable design (2.3 kg total weight), long battery life, and user-friendly operation. It supports direct testing of solid and liquid samples and excels in light element analysis, addressing the limitations of traditional XRF technology. Widely used in mineral exploration, lithium battery recycling, industrial quality inspection, and other fields, it provides users with efficient and reliable frontline analysis solutions.



1. Parameter

Light Source Type	Pulsed Laser
Measurement Range	Percentage
Detection Time	1 second
Laser Wavelength	1064 nm
Laser Lifetime	100 million pulses
Detection Targets	Bulk, Powder
Detection Elements	Ni, Co, Mn, Li, P, Fe, C, and other elements
Detection Limit	0.05% - 0.15%
Safety Features	Safety switch mode, preventing accidental laser triggering
Waterproof Rating	IP54
Instrument Stability	RSD $\leq$ 5%
Operating Time	$\geq$ 4 hours
Laser Cooling	Temperature-controlled
Database:	Lithium-ion Battery, Spodumene, Clay-type Lithium Ore