Datasheet

Integrated LIBS system | ATL6500

Features

- Wide range of element analysis. Able to analyze light elements (like C, H, O, N, Li, Be, B) and heavy elements, including almost all metals and non-metals.
- Intelligent spectral collection and analysis software. For peak matching, online element concentration prediction, and quantitative analysis modeling (peak height method, peak area method, etc.).
- Fast analysis time. A few seconds to minutes.
- Minimal sample preparation. Analyzes solid samples, even powders (or binders or adhesives).
- Eco-friendly and safe. No reaction reagents required.
- Microscopic to macroscopic analysis. Directed and flexible point analysis.
- Qualitative and quantitative analysis. Sample classification and elemental concentration.
- Multiple laser and probe options to suit different needs.
- Most elements have detection limits ranging from 10 ppm to several dozen ppm.

Description

ATL6500 system is a comprehensive, integrated solution for performing Laser Induced Breakdown Spectroscopy, a technique used for elemental analysis of materials. This technique involves focusing ultra-short pulse lasers onto a sample surface to form plasma, and then analyzing the emitted light spectrum to identify the elemental composition of the sample. This system is ideal for material identification, classification, qualitative, and quantitative analysis.

ATL6500 is a integrated LIBS System. Includes a laser, spectrometer, LIBS optical collection system, a 3D sample stage with linked control system, and a dual camera imaging system.

Application

- Coal quality and combustion products analysis
- Online component analysis in metallurgical industry
- Mineral exploration
- Soil heavy metal analysis, biomaterials, aerosols, nanoparticles
- Nuclear materials, waste, petroleum products
- Building materials, archaeology, casting, gold and jewelry testing

1503 Bld. A04, 3rd Software Park, Jimei, Xiamen, 361005, China
Tel: +86-592-6102588

Performance parameters

Items	ATL6500
Elements Measurement Range	Atomic number Z≥1, including organic elements like C, H, O, light elements like N, Li, Be, B, and almost all metals and non-metals.
Concentration Range	Depending on the element and instrument configuration
Analysis Time	<30s
Analysis Type	Qualitative and quantitative
Spectral Range	Four-channel spectrometer: 190-820nm Eight-channel spectrometer: 190-1070nm
Spectral Resolution	Four-channel spectrometer: 0.2nm Eight-channel spectrometer: 0.1nm
Laser	Nd-YAG: 266nm wavelength, 50mJ/pulse or 1064nm wavelength, 100-200 mJ/pulse at 10Hz frequency, 5 -10ns pulse width with built-in water cooling system.
Sample Window and Positioning	XYZ three-axis automatic positioning stage, up to 5cm travel, stepper motor driven, positioning accuracy of 5 μm.
Sample Imaging	Dual lens configuration, 5X wide-angle lens for broad field observation. 400X high magnification lens for precise micropositioning, with LED lighting.
Analysis Spot Size	Minimum focus size of 25μm
LIBS Spectral Software	Controls sample stage, laser, focusing, imaging, and other parameters.

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