HLS-B410

HANDHELD LIBS SPECTROMETER

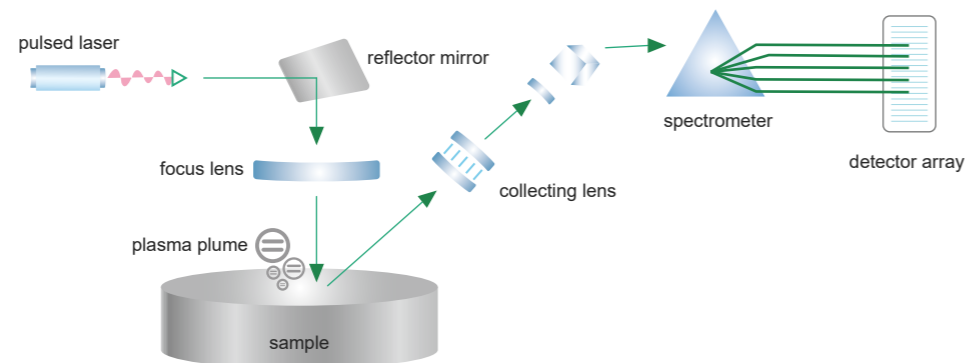CATALOGUE NO. HLS-E01

01

Product Introduction

02

Product Advantages

Laser-induced Breakdown Spectroscopy (LIBS) is a type of atomic emission spectroscopy that uses high-energy laser pulses to focus directly on the surface of a sample, and uses the laser to excite elecrons in the outer laver of an atom to generate plasma for analysis.

Almost non-destructive, rapid and safe multi-element analysis, for qualitative and semi-quantitative analysis of elements in materials, is particularly suitable for the detection of light elements such as aluminum, magnesium and silicon.

LIBS Schematic Diagram

pulsed laser
reflector mirror
spectrometer
detector array
focus lens
collecting lens
plasma plume
sample

Simple operation
No need for complex settings. Just turn it on and use it. It's easy to get started.

Portable design
The instrument adopts a compact and ergonomic design, weighing only 1.75kg. It is convenient for daily carrying and use.

Identify alloy grade
The database includes over 400 most commonly used alloy grades and allows for the free addition of alloy grades.

Safe and radiation-free
1535nm laser wavelength, human eye safety, no radiation, safer to use.

Measure quickly
It only takes 1-2 seconds to obtain reliable identification results for the material grades. When testing aluminum alloys, the testing speed of HLS-B410 is 10 times faster than that of XRF, significantly enhancing work efficiency.

Excellent battery endurance
The battery provides all-day power support, meeting the demand for long-term continuous operation without frequent charging. It is efficient and convenient.

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Application Scenario

◉ **Alloy analysis**

HLS-B410 can be used for almost all alloys, including scrap metal, high temperature alloys, alloy steel, stainless steel, tool steel, chromium molybdenum steel, aluminum alloys, nickel alloys, titanium alloys, cobalt alloys, copper alloys, precious metals, zinc alloys, anomalous alloys, zirconium alloys, mixed alloys, etc.

◉ **Material properties identification (PMI)**
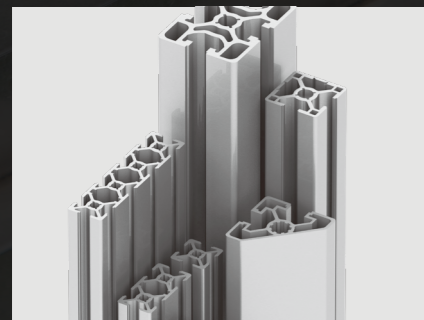
Raw material testing
Conduct composition testing of raw materials, accurately identify alloy grades, and control material quality.

Critical parts testing
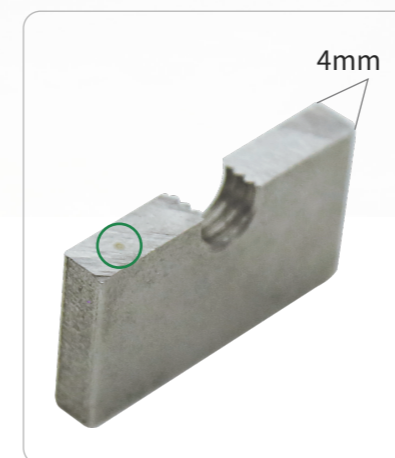Conduct composition analysis of key parts to ensure that products meet production standards.

Weld testing
Composition analysis of welds to create high quality processed products.

04
Case Study

4mm

1 **Low Workpiece Requirements**

The workpiece is required to have a flat surface with a diameter greater than 4mm and a thickness greater than 1mm, and is lightly polished to be tested.

2 **Nearly Lossless**

The test technique used is extremely precise, and the excitation points left behind after the test are nearly invisible, appearing as tiny dots between 0.5 mm and 1mm in size.

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Technical Parameters

Operative system	Android
Touch panel	5", 720×1280, multi-touch, adjustable brightness
Light source	pulsed laser
Wavelength	1535nm
Laser life	1 billion times
Laser class	CLASS I
Detection limit	0.05%
Repeatability	major element RSD<1%, nonmajor element RSD<5%
Analysis time	<5S
Work distance	fit to probe plane
Analysis environment	no protective gas required, direct analysis in ambient air

View window material	sapphire
Memory	16G
Data export format	PDF, xlsx (can add report content: company information, material information, etc.)
Data transmission	USB, flash drive (type C)
Protection class	IP54
Battery	3300mAh lithium battery
Work time	8h
Operation temperature	0~40°C
Dimension (W×D×H)	290×300×90mm
Net weight	1750g

	Alloy type	Elemental range	Database number
STANDARD DATABASE	Iron Alloy	Fe, Cr, Ni, Mn, Cu, V, Mo, Si, Ti, Co, etc.	
	Aluminum Alloy	Al, Cr, Ni, Si, Mg, Ti, Fe, Cu, Sn, Pb, Zn, Zr, Be, Sr, Sc, etc.	
	Copper Alloy	Cu, Fe, Al, Mn, Sn, Pb, Zn, Ni, etc.	
OPTIONAL DATABASE	Nickel Alloy	Ni, Cr, Fe, Nb, Mo, Ti, Al, Mn, Cu, etc.	A1
	Titanium Alloy	Ti, Al, V, Fe, Cr, Mo, Sn, Mn, Zr, Nb, Si, Cu, etc.	A2
	Magnesium Alloy	Mg, Si, Cu, Mn, Zn, Zr, Al, Y, Be, Ni, Fe, etc.	A3
	Au	Au, Ag, Zn, Ni, Pd, Cu, Co, In, etc.	A4
	Ag	Ag, Cu, Zn, Cd, Ni, etc.	A5
	Pt	Pt, Pd, Ag, Cu, Ni, Zn, Co, Ru, Pb, Cr, Au, etc.	A6
	Pd	Pd, Cu, Ni, Zn, Fe, Co, Ag, As, Pb, Cr, etc.	A7

HANDHELD LIBS SPECTROMETER
HLS-B410

Microdestructive testing, generates a spark point of 1mm²

Suitable for detection of low atomic number elements such as Mg, Al, Si, etc.

Suitable for detection of aluminium alloys, magnesium alloys and low alloy steels

Samples need to be grinded to remove the oxide layer

Without radiation

HANDHELD XRF ALLOY ANALYZER
HSM-S110

Non-destructive testing

Suitable for detection of high atomic number elements such as Mn, Fe, Ni, Mo, etc.

Suitable for detection of stainless steels, high-temperature alloy steels, nickel-based alloys, cobalt-based alloys and special alloys made of zirconium, tungsten or tantalum

Samples can be analyzed directly

Meets radiation safety standards