MAS800 / 860

Professional manufacturer, best quality with competitive price ●
Recommended by the world UT NDT inspection association for training and examination ●
Core technology with independent intellectual property rights, certificate of CE, GOST and etc.. ●

Portable spectrometer

Overview

MITECH MAS800/860 Portable spectrometer, also called alloy analyzer. It adopts the principle of energy and wavelength differences in X-ray generated by metal atoms when energy level flips, so as to analysis element type and content in alloy material. Small size and light weight makes it convenient to work on site. It is easy to operate without tricky skills. A variety of elemental content can be measured at once in solid/powder/liquid sample detection. It is also designed with low consumption, high speed analysis and high accuracy; widely used in the field of analysis of elements such as boiler containers, petrochemical refining, iron and steel smelting, nonferrous metals, aerospace, weapons manufacturing and other elements that need to analyze Na or above to U. MAS 800 / 860is a necessary professional precision instrument to improve the production efficiency and pass rate as well as cost savings.

Technical Parameters

Technical Parameters	Technical Indicators
Measuring range	From Mg to U MAS 800 : Can analyzed Ti , V , Cr , Mn , Fe , Co , Ni , Cu , Zn , Se , Zr , Nb , Mo , Rh , Pd , Ag , Cd , Sn , Sb , Hf , Ta , W , Re , Pb , Bi,25 standard elements totally. MAS 860 : Can analyzed Mg , Al , Si , P , S , Ti , V , Cr , Mn , Fe , Co , Ni , Cu , Zn , Se , Zr , Nb , Mo , Rh , Pd , Ag , Cd , Sn , Sb , Hf , Ta , W , Re , Pb , Bi,30 standard elements totally.
Applicable materials	For the detection of iron-based alloy series (Stainless steel, chrome / molybdenum alloy steel, low alloy steel, tool steel, seamless stee) , Nickel-based alloy series (Nickel alloy, nickel / cobalt superalloy) , Cobalt-based alloy series, titanium-based alloy series, copper-based alloy series (Bronze, brass, copper-nickel alloy) , Superalloy (Molybdenum tungsten alloy) , Aluminum-based alloys and other alloys.
Excitation source	50KV/200uAmaximum , Pipe pressure and flow can be freely adjusted , Ag target material(standard) Au、W、R target(Optional)
Detector	MAS 800 equipped with BOOST Si-PIN detector;MAS 860 equipped with High Sensitivity Silicon Drift Detector
Display system	Industrial resistive touch screen with screen size of 4.3";Proprietary operating system software and sound waves;Multiple languages including English and Chinese;And it automatically adjusts display brightness according to the environment brightness.
Data processing	Built-in 32G memory; USB, Bluetooth, WIFI, the device can be connected to the Internet, remote control equipment and maintenance Data can be output as EXCEL, PDF, the user can create a professional report: including company logo, company address, test results, spectral spectrum and other sample information (such as product description, origin, batch number, etc.)
Heat dissipation	The instrument is equipped with a dedicated T-slot heat sink to improve the instrument's thermal performance without waiting for the detector to cool frequently
Safety	Built-in Double Beam TM technology automatically senses the presence of samples in front, improving the safety and protection of radiation;Waterproof, dustproof, shockproof suitcase; Dedicated safety rope.
Weight	1.6Kg (with battery)
Dimentions	254×79×280mm (L×W×H)
Power Systems	Intelligent battery management through MSBUS bus, real-time monitoring of the residual capacity of battery and backup battery. The battery complies with air transport regulations of dangerous goods.A single battery can last 8 hours.

Working Condition

- Working condition : -10℃ ~ 50℃
- Relative Humidity : ≤95%

Applications

- Boiler, container, pipeline, manufacturing and other high temperature and high pressure industry in the production process of material analysis and reliability identification (PMI);
- Iron and steel smelting, nonferrous metals, aerospace, weapons manufacturing, submarine ships and other military, national key projects in the production process of metal materials identification;
- Petrochemical refining, fine chemicals, pharmaceuticals, power plants, aerospace and other engineering installation and construction of metal materials to identify;
- Scrap metal recycling and recycling of metal for identification, sorting;
- QA / QC management of metal materials during the production, processing, manufacturing and casting and so on.

Features

- Using Micro X-ray tube imported from the USA, small size, light weight, safe and reliable;
- High-speed processing chip, advanced algorithm and high-responsive software, resulting in even faster analysis..;
- Ultra-high Resolution Detector combined with Digital Multi-channel Processing Technology, yielding super-high detection resolution;
- Users can customize the creation of professional reports: including company logo, company address, test results, spectral maps and other sample information (such as product description, origin, batch number, etc.);
- Built-in all-round environment sensor system that can real-time perception of changes in the surrounding environment and automatically adjust the parameters to apply to high and low temperature, dust, dark and so on extreme conditions of extreme elements analysis;
- Built-in Double Beam TM technology, can automatically perceive the presence of samples in front of the instrument to improve the safety and protection of radiation levels, and it also can automatically adjust the brightness of the display according to the external environment;
- It can be connected to the Internet to remote operation, parameter setting and maintenance, remote data analysis, etc;
- Built-in new net strength fitting algorithm to optimize the spectral analysis process, making it has a very large laboratory equipment comparable to the very low detection limit;
- Built-in Ultrashort TM optical path design that can significantly improve the light element Mg, Al, Si, S, P excitation effect without the need for nitrogen;
- 3.5 inch Industrial resistive touch screen, superior to capacitor screen in back-light and clearer against sunlight in the field, support the spectrum display and the results show mode;
- Built-in high-performance low-power A8 main control board, intelligent operating system with a virus immune function, stable performance;
- Humanized X-ray tube automatic control on and off function that can protect the operator in maximum degree;
- Large-capacity lithium battery, can work for 6 hours to meet the production testing requirements;
- Intelligent battery management exerts a real-time monitoring of the residual capacity of battery and backup battery through MSBUS bus;
- Consistent with GBZ115-2002, GB18871-2002 and other relevant domestic and foreign standards, the radiation performance of the instrument is safe and reliable.

Comparison of MAS Series Spectrum Analyzers

Model	Analysis mode and element range	Detector components
MAS 800	Ti , V , Cr , Mn , Fe , Co , Ni , Cu , Zn , Se , Zr , Nb , Mo , Rh , Pd , Ag , Cd , Sn , Sb , Hf , Ta , W , Re , Pb , Bi, 25 standard elements totally	BOOST type Si-PIN detector
MAS 860	Mg , Al , Si , P , S , Ti , V , Cr , Mn , Fe , Co , Ni , Cu , Zn , Se , Zr , Nb , Mo , Rh , Pd , Ag , Cd , Sn , Sb , Hf , Ta , W , Re , Pb , Bi,30standard elements totally	High Sensitivity Silicon Drift Detector

Comparison of Test Values for 316SS Stainless Steel Standard Samples

Reading	Mode	V%	Cr%	Mn%	Fe%	Ni%	Cu%	Mo%
No1	ALLOYS	0.130	16.56	1.22	69.558	10.18	0.322	2.03
No2	ALLOYS	0.132	16.66	1.29	69.438	10.15	0.32	2.01
No3	ALLOYS	0.130	16.61	1.20	69.645	10.05	0.315	2.05
No4	ALLOYS	0.128	16.62	1.19	69.701	10.03	0.331	2.00
No5	ALLOYS	0.126	16.68	1.18	69.489	10.15	0.325	2.05
No6	ALLOYS	0.132	16.67	1.22	69.570	10.10	0.318	1.99
No7	ALLOYS	0.134	16.62	1.25	69.474	10.16	0.322	2.04
No8	ALLOYS	0.140	16.5	1.16	69.655	10.20	0.315	2.03
No9	ALLOYS	0.132	16.7	1.19	69.472	10.17	0.326	2.01
No10	ALLOYS	0.128	16.63	1.20	69.611	10.08	0.321	2.03
Avg value		0.131	16.625	1.210	69.561	10.127	0.322	2.024
Standard value		0.128	16.68	1.22	69.500	10.11	0.32	2.03
Standard deviation		0.004	0.057	0.035	0.086	0.055	0.005	0.020
RSD/%		2.83	0.34	2.93	0.12	0.54	1.47	0.97

Note: 316SS sample block 10 test results indicate the content of metal elements contained.

Radiation level test

Point No.	Point Discription	Testing Results (µSv/h)						Device State
		1	2	3	4	5	Average	
1	5cm above the surface of the device	0.10	0.11	0.12	0.10	0.09	0.10	Turn On
2	5cm the surface left of the device	0.10	0.12	0.10	0.11	0.12	0.11	Turn On
3	5cm the surface right of the device	0.10	0.12	0.10	0.11	0.13	0.11	Turn On
4	5cm below the surface of the device(holding place)	0.12	0.10	0.10	0.11	0.12	0.11	Turn On
5	5cm back the surface of the device	0.09	0.08	0.10	0.12	0.08	0.09	Turn On
6	Operation place	0.10	0.09	0.11	0.08	0.09	0.09	Turn On
7	Public Distance Zone	0.09	0.05	0.07	0.08	0.06	0.07	Turn Off

Note: The results are not deducted from the radiation background values.

Instrument case
X ray spectrometer
Standard block
Power adapter
USB cable
Battery charging seat
Lithium battery
Spare battery

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Application Characteristics

Simple operation, excellent performance

High precision, fast rate, close to the laboratory level of analysis, can be intuitive display elements in the British symbol, alloy licensing, element percentage content (elements can be accurate to the decimal point after three) and ppm content. The complete analysis process takes only a few seconds, and the alloy grade identification takes only 1-2 seconds. The operation of the operator without high skills requirements.

Non - destructive testing, safe and energy saving

Does not damage or have any adverse effect on the use of samples. No damage is foreseen in the entire test process.

Professional software, powerful

Data can be transferred via USB, WIFI and Bluetooth and stored in excel, pdf or other formats. Users can customize the reports by adding their company logos, addresses, test results, spectrum and others (such as product description, origin of goods and batch number); The user can edit the alloy brand library, add the alloy grade and enterprise custom grade; custom to create test report including company logo, company address, test results, spectral spectrum and other sample information (such as product description, origin, batch number, etc.); Can provide cloud data services. Enterprise Resource Planning (ERP) Production Resource Planning Management. Automatic calibration, diagnostic equipment failure; through the Internet to achieve software upgrades.

Coating analysis, measurement accuracy

Can detect copper on the silver thickness, detection range: 0-60μm, detection of relative error: <5.0%.

Widely used, meet the standard

Alloy material identification (PMI) for incoming inspection; material inventory management; re-inspection of construction materials in petrochemical construction, metal smelting, pressure vessel, power plant, petrochemical industry, fine chemical, pharmaceutical, aerospace and other industries to avoid serious safety accidents resulting from mixed or unqualified materials. Consistent with ANTM standard, China National Standard (GB), UNS, electric industry standard (DL), API, JIS, GMP, TSG, Mechanical Industry standard (JB), etc.

Quality control, security precautions

In metal processing and manufacturing industry, quality control and quality assurance (QC/QA) and error proofing (PKKA - YOKE) of materials (raw materials), semi-finished products and finished products is indispensable. Use of mixed or unqualified materials will bring losses to the company.

Instrument configuration
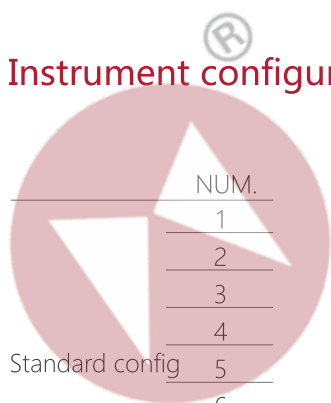
	NUM.	NAME	QTY.	TIPS
	1	Main unit	1	
	2	Instrument case	1	
	3	Lithium battery	2	
	4	Battery charging seat	1	
Standard config	5	USB cable	1	
	6	Adapter	1	The input voltage is 100-240VAC
	7	Standard block	1	
	8	Attached files	1	
Optional config	1	Test stand	1	