INSIZE

MEASUREMENT SOLUTION PROVIDER

ELEMENTAL ANALYZERS

CATALOGUE NO. EA-E01

INSIZE full-series analytical instruments leverage cutting-edge spectroscopy and elemental analysis technologies.Covering seven major technical platforms including XRF, OES, AAS, ICP, KND, LIBS, Our equipment supports non-destructive/destructive, fast/precise, qualitative/quantitative analysis for diverse samples such as metals, ores, coatings, powders and liquids.

With low detection limit, high stability, easy operation and broad compatibility, our products serve industrial QC, raw material inspection, composition analysis, environmental monitoring, laboratory testing, waste recycling and precious metal appraisal. We provide all-in-one compositional analysis solutions for various sectors.

Application Industries

- Metallurgy, Foundry, Machining, Automotive, Aerospace, Marine
- Jewelry Appraisal, Pawn, Recycle, Purity Test
- Geology, Mining, Ore Analysis, Cement, Refractories, Coal
- New Energy, Li-battery Materials, Rare Earth, NdFeB
- Metal Recycle, Alloy ID, PMI
- Food, Feed, Pharma, Fertilizer, Pesticide Residue, Biochemical Test
- Electroplating, Coating Thickness Test, Electronic Components, Hardware, Fasteners
- Research Institutes, Third-party Labs, University Labs
- RoHS, Hazardous Substance Test, Water & Soil Monitoring

Product Catalogue

X-ray Fluorescence Spectrometer	Spark Direct Reading Spectrometer	Handheld Libs Spectrometer	Handheld XRF Alloy Analyzer	Atomic Absorption Spectrometer	ICP-Optical Emission Spectroscopy	Dedicated Elemental Analyzer	Kjeldahl Nitrogen Analyzer	Accessory
1 	2 	3 	4 	5 	6 	7 	8 	9 

1 X-RAY FLUORESCENCE SPECTROMETER

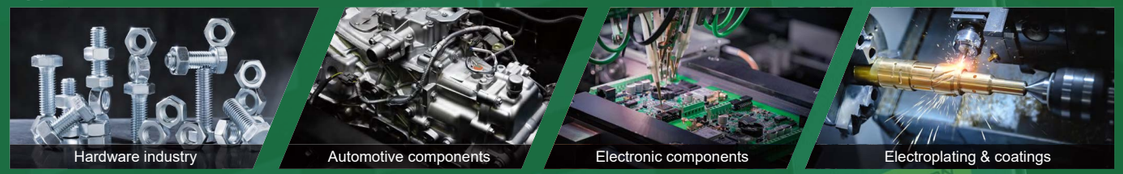
Non-destructive testing | **Rapid measurement** | **Wide application coverage**

Suitable for coating thickness analysis, RoHS hazardous substance screening, rapid analysis of various alloys, ore elemental analysis and precious metal purity identification, serving testing scenarios across multiple industries.

Core Features:

- Non-destructive testing
- No sample preparation required
- Fast measurement
- Wide element coverage

Application Industries:



XRF PLATING THICKNESS INSTRUMENT

CODE: XRF-PT230

MANUAL ZOOM

- According to DIN ISO 3497, DIN 50987, and ASTM B568
- Application fields: electroplating plating thickness analysis, inspection of electronic components such as connectors, fastener industry, automotive parts, hardware industry (household equipment and accessories, such as Cr/Ni/CuZn(ABS)), new energy industry (photovoltaic welding wire, etc.), thickness analysis of accessories, Ni/Cu/Ni/NdFeB on rubidium iron boron magnets, metal cation detection in electroplating solution, etc.
- It can detect 90 plating elements
- Equipped with a micro-focus X-ray generator and an advanced light path conversion focusing system, the minimum measurable area is up to 0.03mm²
- It has non-destructive manual zoom detection technology, which can perform non-destructive testing on various shaped and irregular grooved parts from 0 to 30mm
- Equipped with Si-PIN semiconductor detector, high resolution, fast testing speed,stable data, equipped with micro-light focusing technology, ranging spot diffusion less than 10%
- The core EFP algorithm allows for the simultaneous analysis of 23 plating and 24 elements. It can quickly, accurately, and stably analyze multiple layers and multiple elements, including the same element in different layers
- User-friendly closed software, automatically identifies faults, provides calibration and operation steps, and avoids misoperations

VIDEO

To be continued

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SPECIFICATION

Plating analysis	elemental analysis range	Li (3)-U (92)
	detection limit	0.005μm
	analysis thickness	0.01~80μm
EFP alaorithm		standard configuration
Measuring time		5~300s
Detector		Si-Pin semiconductor detector
X-ray source		micro-focusing X-ray tube
Collimator		standard: Ø0.3mm (**optional**: Ø0.5mm, Ø0.2mm, 0.1×0.3mm)
Nearest ranging spot diffusion		<10%
Camera		1/2.7" color CCD, zoom function
Measureing distance		zoom lens 0~30mm
Focus method		high-sensitivity lens, manual focus
Max. sample height		180mm
XY stage		manual high-precision XY stage
Available moving range		45mm×45mm
Operation environment		15~30°C, <70%RH
Power supply		AC110/220V, 50/60Hz, 95W
Dimension (L×W×H)		380×545×435mm
Net weight		41kg

STANDARD DELIVERY

Main unit	1 pc
Computer	1 pc
Printer	1 pc
Accessory box	1 pc
Twelve element plate	1 set
Ni standard tablet	1 pc
Ag standard tablet	1 pc

OPTIONAL ACCESSORY

Plating solution measuring cup	XRF-PT230-MC
Solution test membrane	XRF-PT230-SF
Au standard tablet	MSS-P01
Cr standard tablet	MSS-P02
Cu standard tablet	MSS-P03
Zn standard tablet	MSS-P04

VACUUM XRF PLATING THICKNESS INSTRUMENT/RoHS ANALYZER

CODE: XRF-VF300

VACUUM SYSTEM MANUAL ZOOM

- According to DIN ISO 3497, DIN 50987, and ASTM B568
- Used for RoHS analysis, electroplating/electrophoretic plating analysis
- Minimum measurement area of 0.2mm² with micro-focus X-ray generator and advanced optical switching focusing system
- Equipped with manual zoom technology, it allows for non-destructive testing of irregular components with depths from 0 to 30mm
- Core EFP algorithm for simultaneous analysis of 23 plating layers, 24 elements
- Equipped with an intelligent vacuum system, it enhances the precision of analysis for platings of light elements, resulting in more stable data

VIDEO

SPECIFICATION

RoHS analysis	range of elemental analysis	Cd, Pb, Hg, Br, Cr, Cl, As, Sb
	detection limit	2ppm
	content range	2ppm~99%
Plating analysis	range of elemental analysis	Li (3)-U (92)
	detection limit	0.005μm
	range of plating thickness	0.01~80μm
Algorithm		EFP
Analysis time		5~300s
Detector		SDD (silicon drift detector)
X-ray device		microfocus enhanced ray tube
Collimator		automatic switching of 4 types of collimators: Ø0.5mm, Ø1.5mm, Ø3mm, Ø8mm
Spot spread at the nearest measurement distance		<10%
Sample observation		1/2.7" color CCD with zoom functionality
Distance to zoom		0~30mm
Focusing method		highly sensitive lenses with manual focusing
Vacuum system		intelligent vacuum system
Height of vacuum cavity		80mm
Working environment		15~30°C, <70%RH
Power supply		AC220V, 50Hz, 95W
Dimension (L×W×H)		550×410×370mm
Net weight		50kg

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STANDARD DELIVERY

Main unit	1 pc
Computer	1 set
Software	1 set
Printer	1 pc
Vacuum pump	1 pc
Accessory case	1 pc
12 elemental tablet	1 set
Ni standard sheet	1 pc
Ag standard sheet	1 pc
ERM-EC681m standard sheet	1 pc

OPTIONAL ACCESSORY

Plating solution measuring cup	XRF-PT230-MC
Solution test membrane	XRF-PT230-SF
Au standard sheet	MSS-P01
Cr standard sheet	MSS-P02
Cu standard sheet	MSS-P03
Zn standard sheet	MSS-P04

AUTOMATIC XRF PLATING THICKNESS INSTRUMENT

CODE: XRF-FA350

AUTOMATIC MOBILE PLATFORM

- According to DIN ISO 3497, DIN 50987, and ASTM B568
- For large parts, irregularly shaped parts, and multi-point testing of tiny parts
- Equipped with zoom technology, it allows non-destructive testing of irregular components with depth from 0 to 70mm
- Equipped with AI image recognition function, it enables automatic, intelligent, and online detection
- Equipped with an automatic programmable mobile platform, it allows automatic detection of large batches of samples
- Core EFP algorithm for the simultaneous analysis of 23 types of platings and 24 elements

VIDEO

To be continued

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SPECIFICATION

Plating analysis	range of elemental analysis	Li (3)-U (92)
	detection limit	0.01μm
	range of plating thickness	0.01~80μm
Analysis time		0~40s
Detector		high-efficiency proportional detector
X-ray device		microfocus enhanced ray tube
Collimator		Ø0.2mm
Spot spread at the nearest measurement distance		<10%
Distance to zoom		0~70mm
Sample observation		1/2.7" color CCD with zoom functionality
Focusing method		high-sensitivity probe featuring imperceptible auto-focusing
Movement mode of sample stage		automatic high-precision XY platform
Movement range of XY-axis		210×230mm
Movement range of Z-axis		145mm
Working environment		15°C~30°C, <70%RH
Power supply		AC110/220V, 50/60Hz, 150W
Dimension (L×W×H)		535×760×635mm
Net weight		120kg

STANDARD DELIVERY

Main unit	1 pc
Computer	1 set
Printer	1 pc
Accessory case	1 pc
12 elemental tablets	1 set
Ni standard sheet	1 pc
Ag standard sheet	1 pc

OPTIONAL ACCESSORY

Plating solution measuring cup	XRF-PT230-MC
Solution test membrane	XRF-PT230-SF
Au standard sheet	MSS-P01
Cr standard sheet	MSS-P02
Cu standard sheet	MSS-P03
Zn standard sheet	MSS-P04

XRF PRECIOUS METALS ANALYZER
CODE: XRF-FM480

- Used in precious metal jewelry processing and manufacturing, gold retail stores, pawnshops, recycling department, and testing laboratories
- Quickly analyze the components of precious metals (Au/Ag/Pt/Pd, etc.), detect the purity grade of gold (0~24K), and achieve a detection accuracy of ppm level
- Non-destructive testing with no sample preparation required
- Large-cavity sample chamber suitable for detecting various sample forms
- Equipped with high-definition cameras, it can monitor the test area in real time, take photos automatically and generate reports
- Integrated design with 11.6" capacitive touch screen, intuitive and convenient operation
- The high-voltage safety lock, software-controlled cover, leak-proof switch, and all-metal enclosure ensure operator safety

SPECIFICATION

Excitation source	Max. 50kV/1mA
Detector	Si-PIN
Optical structure	vertical
Collimator	Ø2.5mm
Detection range	Ti-U
Accuracy	±0.01%
Sample object	solid, liquid, powder
Data output	bluetooth, reports can be generated in EXCEL and PDF formats
Work temperature	-20~50°C
Power supply	AC100~240V, 50/60Hz
Sample chamber dimension (L×W×H)	320×480×130mm
External dimension (L×W×H)	330×580×360mm
Net weight	38.6kg

STANDARD DELIVERY

Main unit	1 pc
Bluetooth printer	1 pc
316 calibration sample	1 pc
Small parts fixed tool	1 pc
Window test film (XRF-FM480-FILM)	10 pcs
Wireless keyboard and mouse	1 set

OPTIONAL ACCESSORY

External display	XRF-FM480-DISPLAY
Sample cup	XRF-FM480-CUP

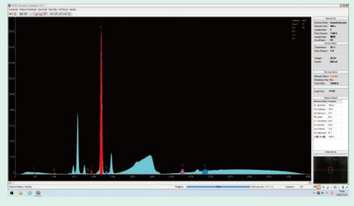
XRF PLATING THICKNESS INSTRUMENT/RoHS ANALYZER/ALLOY ANALYZER

CODE: XRF-B210

CALIBRATION CURVE CAN BE CUSTOMIZED ACCORDINGTO CUSTOMER REQUIREMENTS

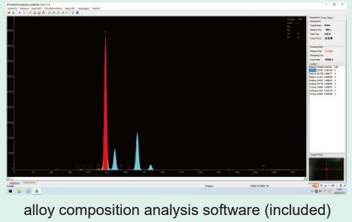
- Used for RoHS detection, alloy analysis, plating analysis
- Using Si-PIN detector with electric cooling, small size, accurate data analysis and low maintenance cost
- Seven optical path correction and collimation system, automatically switch according to different samples
- Multiple radiation leakage prevention design
- The temperature monitoring technology ensures the safe and reliable operation of the X-ray source
- Dedicated software, standard window design, friendly interface, easy to operate
- Can display multiple spectrograms at the same time and print multiple report forms
- USB3.0 interface to ensure accurate, high-speed and efficient data transmission

VIDEO

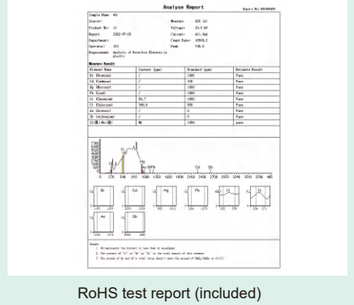


RoHS test software (included)

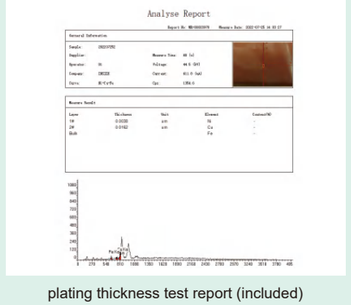
plating thickness detection software (included)



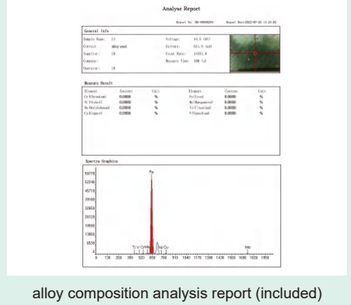
alloy composition analysis software (included)



RoHS test report (included)



plating thickness test report (included)



alloy composition analysis report (included)

To be continued

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SPECIFICATION

Detector	type	Si-PIN electrical refrigeration semiconductor detector
	resolution	149±5eV
	amplifier circuit module	detect the sample characteristic X-ray, further enlarge the information collected by detection
X-ray excitation device	maximum output current	1mA
	power	50W, air cooling
High and low voltage power	maximum output voltage	50kV, built-in voltage overload protection
	minimum output voltage	5kV
Multi-channel pulse amplitude analyzer		maximum channel number: 4096
Optical path filter module		reduce interference light path in the process of sending x-rays, guarantee the accuracy of the detector signal
		integrate the collimator with the filter
Collimator automatic switching module		7 kinds, Ø0.5~Ø8mm
Filter automatic switching module		5 kinds (free to choose and switch)
RoHS analysis software	harmful element analysis	Cd, Pb, Hg, Br, Cr, Cl, As, Sb
	test time	60~200s
	detection limit	2PPM
	content analysis range	2PPM~99.9%
Alloy analysis	elemental analysis range	Ti~U
	detection limit	100PPM
	content analysis range	100PPM~99.9%
	repeatability	0.1%
	stability	0.1%
Plating analysis	elemental analysis range	Ti~U
	detection limit	0.01μm
	analysis thickness	single layer thickness 0.01~30μm
		3 layer thickness≤10μm
	repeatability	0.1μm (for outside plating less than 1μm)
	stability	0.1μm (for outside plating less than 1μm)
	light spot	within 0.2mm
Operation temperature		10~30°C
Relative humidity		10%~90%
Power supply		AC 220V±5V
Dimension (L×W×H)		460×700×370mm
Net weight		49kg

STANDARD DELIVERY

Main unit	1 pc
Standard sample	1 pc
Silver calibration	1 pc
Sample cup	2 pcs
Test film	50 pcs
Computer	1 pc
Printer	1 pc
Collimator (Built-in)	7 pcs
Softerware	RoHS test software, alloy composition analysis software, plating thickness detection software

XRF-CA550

XRF ORE COMPOSITION ANALYZERS

- Used for materials such as coal ash, coal, steel, cement, refractories, geological samples, and non-ferrous metal ores
- High-performance SDD detector, high resolution, high count rate, low detection limit, high precision
- Equipped with high-definition cameras, it can monitor the test area in real time, take photos automatically and generate reports
- Advanced Peltier electric cooling technology, eliminating the need for liquid nitrogen
- The high-voltage safety lock, software-controlled cover, leak-proof switch, and all-metal enclosure ensure operator safety

SPECIFICATION

Code		XRF-CA550	XRF-CA660
Sampler method		manual	automatic
X-ray tube	type	side window	
	Beryllium window area	25mm²	
	tube voltage	5~50kV (continuously adjustable)	
	tube current	0~1000μA (continuously adjustable)	
	target material	Ag	
	cooling method	air cooling	
Detector	type	SDD detector	
	resolution ratio	125eV	
	cooling method	Peltier cooling	
Element range		Na~U	
Collimator		automatic switching of 4 types of collimators:Ø1mm, Ø3mm, Ø5mm, Ø8mm	
Measurement situation		atmosphere, vacuum, Helium	
Sample condition		solid, liquid, powder	
Work environment		10~35°C, 40%~70%RH	
Power supply		AC220V, 50Hz	
Dimensions (L×W×H)	sample chamber	304×368×78mm	
	main unit	570×400×400mm	
Net weight		64kg	

To be continued

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STANDARD DELIVERY

Main unit	1 pc
Computer	1 pc
316 standard material	1 pc
Vacuum pump	1 pc
Sample cup (HSM-S110-CUP)	100 pcs
Printer	1 pc

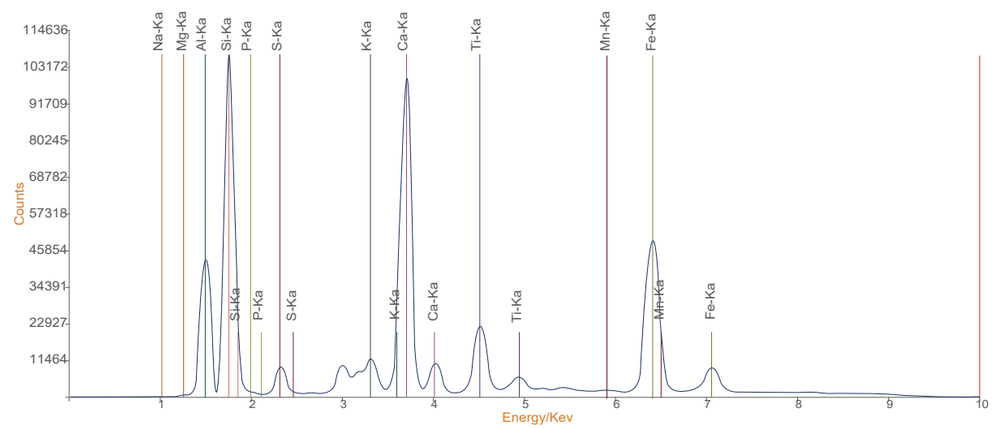
OPTIONAL ACCESSORY

Tablet press for XRF	XRF-CA550-TPM

Application example

Sample	Na_2O	MgO	Al_2O_3	SiO_2	P_2O_5	SO_3	K_2O	CaO	Fe_2O_3
6#-1	0.353	0.691	32.606	49.193	0.127	1.246	0.836	5.975	4.838
6#-2	0.407	0.659	32.666	49.117	0.127	1.238	0.846	5.932	4.820
6#-3	0.361	0.725	32.611	49.152	0.148	1.261	0.847	5.953	4.840
6#-4	0.366	0.650	32.687	49.115	0.132	1.247	0.843	5.932	4.835
6#-5	0.313	0.666	32.601	49.122	0.153	1.244	0.828	5.973	4.844
6#-6	0.341	0.681	32.644	49.163	0.139	1.245	0.824	5.986	4.841
6#-7	0.358	0.714	32.660	49.162	0.138	1.254	0.846	5.953	4.843
6#-8	0.365	0.725	32.634	49.134	0.127	1.262	0.835	5.942	4.839
6#-9	0.282	0.692	32.604	49.241	0.124	1.248	0.839	6.006	4.850
6#-10	0.350	0.711	32.635	49.159	0.130	1.249	0.846	5.975	4.831
Mean	0.350	0.691	32.635	49.156	0.135	1.249	0.839	5.963	4.838
SD	0.033	0.027	0.030	0.039	0.010	0.008	0.008	0.024	0.008
RSD	9.533	3.938	0.091	0.079	7.278	0.604	0.972	0.408	0.169
Min	0.282	0.650	32.601	49.115	0.124	1.238	0.824	5.932	4.820
Max	0.407	0.725	32.687	49.241	0.153	1.262	0.847	6.006	4.850
VP	0.125	0.075	0.086	0.126	0.029	0.024	0.023	0.074	0.030

test instance of coal ash sample



spectrum of coal ash sample

2 SPARK DIRECT READING SPECTROMETER

For alloy materials | **Rapid measurement** | **Accurate analysis**

Core Features:

- Direct excitation analysis for solid metals
- Rapid testing of matrix elements: Fe, Al, Cu, Ni, Zn, Mg
- Accurate analysis of C, P, S, B

Application Scenarios:

OES-R420

SPARK DIRECT READING SPECTROMETERS (STANDARD TYPE)

- Widely used in metallurgy, casting, machinery, iron and steel and non-ferrous metal industries, etc.
- Can be used for sample analysis of metals and their alloys such as Fe, Al, Cu, Ni, Co, Mg, Ti, Zn, Pb, Sn, Mn, etc.
- It can automatically calibrate the pixel drift to ensure the stability of the optical system
- Fractional exposure is used to lower the detection limit of trace elements
- Equipped with a coaxial spinning air excitation stage, pressurized self-purge, excitation for thousands of times without cleaning
- Supports intelligent grade recognition, automatic carbon equivalent calculation, etc.
- The software is available in multiple languages (Chinese, English, German, Spanish)

STANDARD DELIVERY

Main unit	1 pc
Computer	1 set
Printer	1 pc
Voltage regulator	1 pc
Calibration sample	1 set
Electrode brush (OES-T350-BR)	1 set
Analysis and calibration software	1 set
Consumable and spare parts	1 set*

*Including polarimeter, pressure reducing valve, electrode brush and other consumable and spare parts


spectral sample grinder **(optional)**


lathe **(optional)**


small sample fixture **(optional)**


gasket **(optional)**

OPTIONAL ACCESSORY

Spectral standard sample	**MSS series**	select standard sample based on the test material
Spectral sample grinder	**OES-MY100**	Ø350mm, 380V
Lathe	**OES-R420-LATHE**	220×300mm, 220V
Small sample fixture	**OES-R420-RODLIKE**	Ø3.1~7mm regular bar sample
	OES-R420-FILIFORM	Ø0.5~3mm filament sample
Gasket	**OES-R420-GASKET1**	copper, ID6mm
	OES-R420-GASKET2	copper, ID8mm
	OES-R420-GASKET3	boron nitride, ID4mm
	OES-R420-GASKET4	boron nitride, ID6mm
N analysis module	**OES-R530-MC-N**	the measurement range can be customized, used with **OES-R530**
Na analysis module	**OES-R530-MC-NA**	
K analysis module	**OES-R530-MC-K**	
Li analysis module	**OES-R530-MC-LI**	

To be continued

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SPECIFICATION

Code		OES-R420	OES-R530
Optical system	**spectral range**	160~500nm	130~800nm*
	lightroom material	cast aluminum	cast iron
	detector	multiple CCD detectors, unlimited maximum number of detection channels	
	optical system construction	paschen-runge construction, grating focal length 500mm, roland circle diameter: 500mm	
	raster scribing	2700 lines/mm	
	resolution	better than 0.01nm (line resolution 0.7407nm/mm, pixel resolution 0.005926nm)	
	pixel dimension	8μm	
	dispersion	class I: 0.74nm/mm	
Curve	**standard curve**	low alloy steel (**A1**), plain stainless steel (**A2**), Al-Si-Cu alloy (**B1**)	
	customized curve	curves can be added or customized for special base materials (Mg, Ti, Pb, Sn, Mn, etc.)	
Excitation source	**excitation frequency**	20~1000Hz	
	excitation current	90A	
	excitation voltage	190V	
Spark stand	**discharge parameter**	inductance: 120μH, resistance: 3.5Ω, capacitance: 5μF, voltage: 380V	
	dimension	125×95mm, max. load 50kg	
	lens	one-piece lens isolation valve	
	excitation electrode	tungsten electrode	
Gas supply	**argon quality**	purity: 99.999%, pressure: ≥0.6MPa	
	flow rate	tidal flushing mode, excitation: 8L/min, standby: 60ml/min	
General analysis time		<40s	
Data processing		after instrument excitation, acquisition and countback to independently control the integration exposure time of different CCDs	
Work environment		20~25°C, <70%RH	
Power supply		AC220V, 50Hz, 1Ø, 16A, 2.5KW, ground resistance <4Ω	
Dimension (L×W×H)		470×872×435mm	
Net weight		80kg	100kg

*The instrument can be optionally equipped to analyze elements N, Li, Na, and K

TEST CURVES**

Fe base curves	**A1**	**A2**	**A3**	**A4**	**A5**		
	Low alloy steel***	Plain stainless steel	High speed tool steel	Cr/Mn stainless steel	Nodular iron		
Al base curves	**B1**	**B2**	**B3**	**B4**			
	Al-Si-Cu	Low-Al	Al-Mg-Si	Al-Zn			
Cu base curves	**C1**	**C2**	**C3**	**C4**	**C5**	**C6**	**C7**
	Zn-Brass	Pb-Brass	Sn-Bronze	P-Bronze	Al-Bronze	Cu-Ni alloy	Cu-Ni-Zn alloy
Ni base curves	**D1**	**D2**	**D3**	**D4**			
	Nimonic alloy	Inconel alloy	Monel alloy	Hartz alloy			
Co base curves	**E1**	**E2**	**E3**	**E4**			
	Co-Cr-W	Co-Cr-Ni-W	Co-Ni-Cr-Mo	Co-Cr-Mo			
Zn base curves	**F1**	**F2**					
	Die-casting zinc alloy	Zinc-Aluminum alloy					

Low alloy steel **(A1) ,Plain stainless steel **(A2)** and Al-Si-Cu **(B1)** are standard curves, and all others are optional
The specific range of curve elements is shown in the attached curve table
***Low alloy steel **(A1)** includes carbon and medium-low alloy steel

OES-G630

SPARK DIRECT READING SPECTROMETERS (VACUUM TYPE)

- Widely used in metallurgy, foundry, machinery, scientific research, electric power, aviation, nuclear power, processing and recycling industries
- Suitable for sample analysis of metals and their alloys such as Fe, Al, Cu, Ni, Co, Mg, Ti, Zn, Pb, Sn and Mn
- Equipped with automatic optical path calibration and automatic identification of specific spectral lines
- Integrated vacuum chamber design enables fast vacuum pumping and longer vacuum retention
- The vacuum optical system adopts a unique entrance window and vacuum isolation design, optical lenses adopt a single-plate lens structure
- Optional flexible sample clamps to accommodate sample analysis of various shapes and sizes

STANDARD DELIVERY

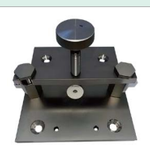
Main unit	1 pc
Computer	1 pc
Analysis software	1 pc
Vacuum pump	2 pcs
Electrode brush (OES-G630-BR)	2 pcs
Pressure valve	1 pc
Consumable and spare parts	1 set*

* Including wrenches, airway connection pipes and other common consumables

OPTIONAL ACCESSORY

Spectral standard sample	**MSS series**	based on the test material
Spectral sample grinder	**OES-MY100**	Ø350mm, 380V
Small sample fixture	**OES-G630-FIX1**	4mm boron nitride small hole fixture
	OES-G630-FIX2	4-15mm rod sample rotating fixture
	OES-G630-FIX3	7~10mm rod sample rotating fixture
	OES-G630-FIX4	15mm rod sample fixture
	OES-G630-FIX5	8.7mm spherical sample fixture
	OES-G630-FIX6	0.5~3mm wire sample fixture

spectral sample grinder **(optional)**



boron nitride small hole fixture

rod sample rotating fixture

rod sample rotating fixture

rod sample fixture

spherical sample fixture

wire sample fixture

small sample fixture **(optional)**

To be continued

Continued from previous page

SPECIFICATION

Code		OES-G610	OES-G630
Optical system	wavelength range	165~580nm	130~580nm (N element detection supported)
	focal length	400mm	
	detector	high-performance CMOS detector	
	optical system construction	paschen-runge double optical chamber structure	
Excitation source	light source	DDD digital excitation light source	adjustable digital light source
	frequency	100~1000Hz	
	excitation voltage	400VA	
	excitation current	1~400A	
Test curve	standard curve	low alloy steel **(A1)** and Cr/Ni stainless steel **(A2)**	
	customized curve	curves can be added or customized for special base materials (Al, Cu, Ni, Mg, Zn, Ti, etc.)	
Excitation stand	gas supply	argon (purity≥99.999%, pressure: ≥0.5MPa)	
	flow rate	excitation: 3.5L/min, standby: 0.4L/min	
	electrode	tungsten electrode	
	analysis interval	3.4mm	
	excitation aperture	9mm	
Vacuum system		vacuum software automatic control and monitoring	
Analysis software		complete automatic system diagnosis function; perfect database management function for convenient data query and summary; complete spectral line information and intelligent interference deduction algorithm; realize data acquisition and processing, generate data formats compatible with office software	
Power supply		220V AC, 50/60Hz	
Work environment		10~35°C, humidity: 20%~80%	
Dimension (L×W×H)		750×560×350mm	725×865×550mm
Net weight		40kg	80kg

TEST CURVES**

Fe base curves	**A1**	**A2**	**A3**	**A4**	**A5**	**A6**	**A7**
	Low alloy steel***	Cr/Ni stainless steel	High speed tool steel	High Mn steel	High Cr cast iron	High Ni cast iron	Cast iron
Al base curves	**B1**	**B2**	**B3**	**B4**	**B5**		
	Low-Al	Al-Si	Al-Zn	Al-Cu	Al-Mg-Si		
Cu base curves	**C1**	**C2**	**C3**	**C4**	**C5**	**C6**	**C7**
	Brass	Copper	Al-Cu	Beryllium Bronze	Sn-Pb-Cu	Pure copper	Si-Bronze
Zn base curves	**D1**	**D2**	**D3**	**D4**	**D5**		
	Low-Zn	Zn-Al 2%	Zamak 2, 3, 5	Zamak 6, 8,12,15	Zamak 27		
Ni base curves	**E1**	**E2**	**E3**	**E4**	**E5**		
	Pure Ni	Monel	Hastelloy	Inconel/Incoloy	Nimonic		
Pb base curves	**F1**	**F2**	**F3**				
	Pure lead	Pb-Ca	Pb-Sb-Sn				
Co base curves	**G1**	**G2**	**G3**				
	Low-Co	Stellite 6, 25, 31	Stellite 8, WI-52				
Sn base curves	**H1**	**H2**	**H3**				
	Pure Sn	Sn-Sb-Cu-Ag	Sn-Pb				
Ti base curves	**K1**	**K2**					
	Pure Ti	Low-Ti					
Mg base curves	**L1**	**L2**					
	Pure Mg	Mg-Al-Mn-Zn					

Low alloy steel **(A1) and Cr/Ni stainless steel **(A2)** are standard curves, and all others are optional
The specific range of curve elements is shown in the attached curve table
***Low alloy steel **(A1)** includes carbon and medium-low alloy steel

SPARK DIRECT READING SPECTROMETER (BASIC TYPE)
CODE: OES-T350

- Widely used in metallurgy, casting, scientific research, commodity inspection, automobile, shipbuilding, aviation, nuclear power, etc.
- Ability to analyze trace elements such as carbon (C), phosphorus (P), sulfur (S), etc.
- The analysis speed is fast, and the element composition of all channels is measured within 20 seconds
- Paschen-Runge structure with full wavelength coverage, the most concise and stable optical system structure
- Perfect aberration correction, so that the spectrometer has excellent resolution, minimize the cross interference of different elements
- Argon-filled optical chamber, effectively reducing the attenuation of P and S rays in the far ultraviolet region
- The software has automatic spectrum correction technology, can store database, trace historical data, output and print reports
- Report format can be customized, data can be sent out

VIDEO

STANDARD DELIVERY

Main unit	1 pc
Computer	1 pc
Software	1 pc
Printer	1 pc
Calibration sample	1 pc
Electrode brush (OES-T350-BR)	2 pcs
Filter element	2 pcs
AC voltage regulator	1 pc
Pressure valve	1 pc

OPTIONAL ACCESSORY

15# steel control sample	OES-KY235
Gray iron control sample	OES-KY282
Spectroscopic Grinder	OES-MY100
Argon purifier	OES-T350-PURIFIER


calibration sample (included)


printer (included)


AC voltage regulator (included)


pressure valve (included)

To be continued

Continued from previous page


electrode brush (included)


filter element (included)


spectral sample grinder **(optional)**


argon purifier **(optional)**

SPECIFICATION

Curves	standard curve	low alloy steel **(A1)**, cast iron **(A2)**, plain stainless steel **(A3)**
	customized curve	curves can be added or customized for special base materials (Ti, Pb, Sn, Co, etc.)
Optical system	optical structure	paschen-runge structure
	rowland circle of diameter	350mm
	wavelength range	160~510nm
	detector	multi high resolution CCD detectors
	pixel resolution	20pm
	full spectrum	cover the full range of element analysis
	light room temperature	34±0.5°C (be controlled automatically)
Spark source	type	digital arc and spark source/new plasma generator
	spark frequency	100~1000Hz
	plasma current	1~80A
	Ignition voltage	>7000V
Spark stand		spray discharge electrode technology reduces argon consumption and improves argon use efficiency
		good heat dissipation, continuous excitation for 100 times, the temperature of the excitation table does not rise more than 5°C
Operation temperature		10~30°C, 23±2°C is recommended
Argon quality		99.999% high purity argon, argon pressure≥4MPa
Argon consumption		5L/min during spark mode
Operation humidity		20%~80%RH
Power supply		AC220V, 50Hz
Power consumption		ecitation: 300W, stand by: 40W
Dimension (L×W×H)		700x660x340mm
Net weight		30kg

TEST CURVES*

Fe base curves	A1	A2	A3	A4	A5	A6	A7
	Low alloy steel**	Cast iron	plain stainless steel	High Mn steel	High Cr cast iron	High speed tool steel	High Ni cast iron
Al base curves	B1	B2	B3	B4	B5		
	Low-Al	Al-Si	Al-Zn	Al-Cu	Al-Mg		
Cu base curves	C1	C2	C3	C4	C5	C6	C7	C8
	Brass	Aluminum Bronze	Sn-Pb-Cu	Red Copper	Chromium Bronze	Beryllium Bronze	Silicon Bronze	Mn Brass
Ni base curves	D1	D2	D3	D4	D5	D6		
	Monel Alloy	Inconel Alloy	Hastelloy Alloy	GH30 Alloy	GH4169 Alloy	DZ125 Alloy		
Zn base curves	E1	E2						
	Pure Zn	Zn-Al Alloy						
Mg base curves	F1	F2						
	Pure Mg	Mg/Al/Mn/Zn Alloy						

*Low alloy steel **(A1)**, cast iron **(A2)**, plain stainless steel **(A3)** are standard curves, and all others are optional
The specific range of curve elements is shown in the attached curve table
Low alloy steel **(A1) includes carbon and medium-low alloy steel

PORTABLE SPARK DIRECT READING SPECTROMETER
CODE: OES-P200

- Widely used in metallurgy, foundry, machining, automobile manufacturing, metal processing, furnace testing, etc.
- Ability to accurately analyze the elemental content of metallic materials such as C, P, S, B, etc.
- Automatically eliminates spectral drift due to temperature and pressure changes for accurate measurements
- Ability to add desired measurement curves without adding hardware
- Unique jet electrode technology, can save the use of argon gas, reduce the use of costs
- Replaceable lithium batteries, long battery life, hundreds of consecutive excitation times, to ensure the integrity of the field work
- The instrument is easy to carry, analysis is not limited, more convenient to complete outdoor work

VIDEO

STANDARD DELIVERY

Main unit	1 pc
Computer	1 pc
Analysis software	1 pc
Battery	2 pcs
Electrode brush (OES-T350-BR)	2 pcs
Pressure valve	1 pc
Mobile cart	1 pc
Charger	1 pc
Consumable and spare parts	1 set*

*Including lens, mirror paper, wrench, air connection line and other common consumables

spectral sample grinder **(optional)**

To be continued

Continued from previous page

OPTIONAL ACCESSORY

Spectral standard sample	**MSS series**	select standard sample based on the test material
Spectral sample grinder	**OES-MY100**	Ø350mm, 380V

SPECIFICATION

Curves	**standard curve**	low alloy steel **(A1)**, Cr/Ni stainless steel **(A2)**
	customized curve	curves can be added or customized for special base materials (Ni, Mg, Zn, etc.)
Optical system	**detector**	high performance CMOS
	optical system construction	paschen-runge double optical chamber structure
	visible room temperature	34°C±0.5°C
	UV room temperature	34°C±0.5°C
	raster scribing	3600 lines/mm
	spectral range	165~580nm
	average resolution	≤10pm/pixel
	visible focal length	300mm
	ultraviolet focal length	298mm
Excitation source	**light source**	high energy excitation light source
	frequency	100~1000Hz
	excitation voltage	300V
	excitation current	400A
Excitation stand	**gas supply**	argon (purity≥99.9995%, pressure: ≥0.3MPa)
	flow rate	excitation: 3L/min, standby: 0.3L/min
	electrode	tungsten electrode
	purge	automatic cleaning
	design	self-compensating thermal deformation design
	analysis interval	2.8mm
Analysis software		1.automatic calibration control according to the given deviation and number of excitations 2.the analyzed results show the percentage, light intensity values, intensity ratios 3.electrode cleaning according to set data, display and corresponding deviation 4.ability to store and print test element results
Transmission		DM9000A-based ethernet data transmission
Work hours		standby: 10h, continuous excitation: 160~180 times
Work environment		5~35°C
Power supply		replaceable lithium battery, 24V
Dimension (LxWxH)		840×700×1050mm
Net weight		50kg

TEST CURVES*

Fe base curves	**A1**	**A2**	**A3**	**A4**	**A5**	**A6**	**A7**
	Low alloy steel**	Cr/Ni stainless steel	High speed tool steel	High Mn steel	High Cr cast iron	High Ni cast iron	Cast iron
Al base curves	**B1**	**B2**	**B3**	**B4**	**B5**		
	Al low alloy	Al-Si alloy	Al-Zn alloy	Al-Cu alloy	Al-Mg-Si alloy		
Cu base curves	**C1**	**C2**	**C3**	**C4**	**C5**	**C6**	**C7**
	Brass	Copper	Al-Cu alloy	Beryllium bronze	Sn-Pb-Cu alloy	Pure copper	Si-Bronze

*Low alloy steel **(A1)** and Cr/Ni stainless steel **(A2)** are standard curves, and all others are optional
The specific range of curve elements is shown in the attached curve table
Low alloy steel **(A1) includes carbon and medium-low alloy steel

3 HANDHELD LIBS SPECTROMETER

Portable & high efficiency | **Direct testing for solid samples** | **Material identification**

Core Features:

- No shielding gas required, radiation-free, eye-safe
- Second-level alloy grade identification
- Detects light elements such as Al, Mg, Si

Application Scenarios:

POPULAR MODEL

HANDHELD LIBS SPECTROMETER
CODE: HLS-B410

LASER CLASS CLASS I | EYE SAFE LASER | NO RADIATION

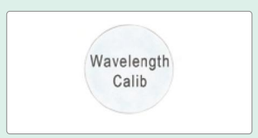
- Widely used in metallurgy, casting, steel, non-ferrous metals and scrap metal recycling, etc.
- LIBS is a technique that uses laser light on the sample's surface to excite outer electrons and generate a plasma, analyzing its elemental composition
- Ability to quickly analyze the metal elements of materials for quantitative characterization and grade differentiation
- Ability to accurately analyse light elements such as Al, Si, Mg, etc.
- No radiation, faster, more accurate, eye-safe handheld spectrometer
- The instrument includes standard metal grade database, ability to create user-owned metal grade database
- Compact size, lightweight, replaceable batteries, long battery life
- IP54 dust/waterproof

IP54 WATERPROOF

VIDEO

STANDARD DELIVERY

Main unit	1 pc
Battery	2 pcs
Charger	1 pc
Sanding paper (HLS-B410-SP30)	20 pcs
Iron base calibration foil	2 pcs
Aluminum base calibration foil	2 pcs
Copper base calibration foil	2 pcs
Wavelength base calibration foil	1 pc



wavelength calibration foil (included)

iron base calibration foils (included)

aluminum base calibration foils (included)

copper base calibration foils (included)

To be continued

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SPECIFICATION

Application	alloy analysis	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)	can be used for quality control in the metal fabrication and processing industry to analyze material composition and identify alloy grades for a wide range of materials including critical components, raw materials, and welded seams
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 (photos available, 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

STANDARD DATABASE

Alloy type	Elemental range
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

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

4 HANDHELD XRF ALLOY ANALYZER

Non-destructive testing | **Fast measurement** | **Customized functions**

Core Features:

- Non-destructive and rapid testing
- Alloy grade & composition results within 1~3 seconds
- No sample preparation required

Application Scenarios:

HSM-S110

HANDHELD XRF ALLOY ANALYZERS (ADVANCED TYPE)

CAN BE CUSTOMIZED DATA OUTPUT

- Widely used in alloy identification, metal scrap recycling, and quality assurance/control processes within the metal manufacturing industry
- Analyzable alloy series: aluminum-based Alloys, cobalt-based alloys, titanium-based alloys, molybdenum/tungsten alloys, nickel-based alloys, copper-based alloys, iron-based alloys (stainless steels, chromium/molybdenum alloys, low alloy steels, tool steels, seamless steels)
- High accuracy, fast measurement speed, and intuitive display of alloy grades, element percentages (with up to 0.001% resolution), and ppm-level concentrations
- The analysis cycle is completed in seconds with one-touch operation
- Non-Destructive Testing (NDT), which ensures no damage to the sample during the testing process
- No sample preparation is required; direct measurement can be performed on the sample surface
- Built-in 380 alloy grades, expandable with 2 user-defined grade libraries

To be continued

Continued from previous page

SPECIFICATION

Code	HSM-S110	HSM-S130	HSM-S620	HSM-S640
Analysis mode*	alloy analysis	alloy analysis plating analysis	alloy analysis	alloy analysis plating analysis
Detector	Si-PIN		SDD	
Elemental analysis range	Ti~U		Mg~U	
Target material	Ag target		Rh target	
Excitation source	50kV/200μA Max.			
Heat dissipation	dedicated T-slot heat sink enhances thermal dissipation performance of the instrument			
Display	4.3-inch industrial-grade resistive touchscreen			
Operation system	Android			
Safety	air-test protection against untargeted operation			
Memory module	32G			
Data interface	mini-USB			
Data processing	reports can be generated in EXCEL and PDF formats, and users can customize the content			
Battery	6600mAh			
Working environment	-35~60°C			
Dimension (L×W×H)	254×79×280mm			
Net weight	1.6kg			

*Can be customized according to user requirements: RoHS analysis mode, ore analysis mode

STANDARD DELIVERY

Main unit	1 pc
Battery	2 pcs
Power adapter	1 pc
316 reference sample	1 pc
Window protective film (HSM-S110-FILM)	10 pcs

316 reference sample (included)

window protective film (included)

OPTIONAL ACCESSORY

Bluetooth printer	HSM-S110-BP
Stand	HSM-S110-STAND
Testing cup	HSM-S110-CUP

POPULAR MODEL

HANDHELD XRF ALLOY ANALYZER (BASIC TYPE)
CODE: HSM-A310

- Fast and non-destructive test to identify alloy grade and composition
- For iron-based alloys (stainless steels, chromium/molybdenum alloys, low alloy steels, tool steels, seamless steels), nickel-based alloys, cobalt-based alloys, titanium-based alloys, copper-based alloys, high-temperature alloys (molybdenum/tungsten alloys), aluminium-based alloys

VIDEO

SPECIFICATION

Excitation source	35kV/200μA, Ag target, integrated end window, micro X-ray tube and high voltage, power supply matching power ≥4W
Detector	Si-PIN, window area 25mm²
Elemental analysis range	K, Ca, Ti, V, Cr, Mn, Fe, Co, Ni, Cu, Zn, As, Se, Rb, Sr, Zr, Nb, Mo, Ru, Rh, Pd, Ag, Cd, Sn, Sb, Ba, Ta, Hf, W, Re, Ir, Pt, Au, Hg, Pb, Bi
Alloy analysis mode	1.iron-based alloys (stainless steels, chromium/molybdenum alloys, low alloy steels, tool steels, seamless steels), nickel-based alloys, cobalt-based alloys, titanium-based alloys, copper-based alloys, molybdenum/tungsten-based alloys, aluminium-based alloys 2.comes with 288 commonly used alloy grades 3.can create your own grade database
Display	3.5-inch LCD touch screen, clearly visible in all light conditions
Memory	built-in 8G, storage data, >40000 groups
Data transmission	data transfer via mobile phone shared WIFI with mobile phone app
Battery	6600mAh lithium battery, for 4 hours working time
System	Windows
Security protection	air-test protection against untargeted operation
Work environment	temperature: -20~40°C, relative humidity: 10%~80%
Dimension (L×W×H)	250×265×85mm
Net weight	1.3kg

To be continued

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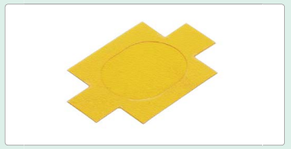
STANDARD DELIVERY

Main unit	1 pc
Power adapter	1 pc
Charger	1 pc
Battery	2 pcs
Window protection film (HSM-A310-FILM)	5 pcs
316 stainless steel standard block	1 pc



window protection film (included)

316 stainless steel standard block (included)

COMPARISON TABLE

HANDHELD LIBS SPECTROMETER	HANDHELD XRF ALLOY ANALYZER
HLS-B410	**HSM Series**
	
· 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	· 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

5

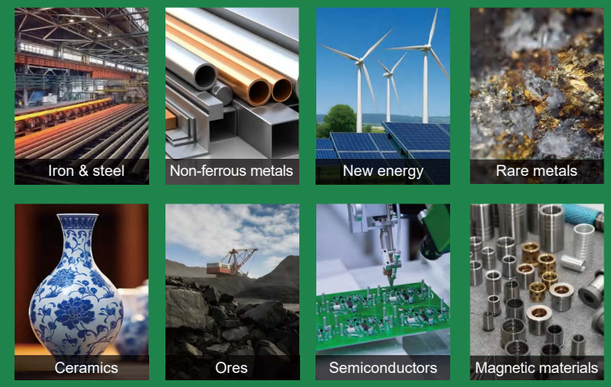
DEDICATED ELEMENTAL ANALYZER

Precisely detects C, S, O, N, H in steel, alloys and solid materials. Ideal for metallurgy, machining, QC and research, ensuring dependable data for analysis and quality management.

Core Features:

- High-precision dedicated measurement of C/S, O/N/H
- Improved detection limit and testing accuracy

Application Scenarios:

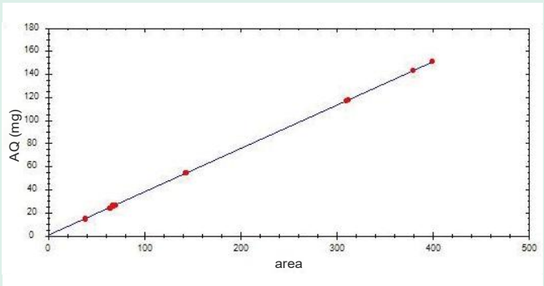


CARBON AND SULFUR ANALYZER
CODE: CSA-R300

CAN BE CUSTOMIZED FOR HIGH SULPHUR CHANNEL ACCORDING TO REQUIREMENTS

- Widely used in iron and steel metallurgy, powder metallurgy, magnetic materials, new energy, third-party testing, research institutes, etc.
- Analysis of carbon and sulfur in steel, cast iron, alloys, cement, sand, glass, lime, rubber, catalysts, soil, semiconductors, electronic materials, metal ores, ceramics and other solid materials
- Adoption of high-end infrared detection system and the core components of the air circuit system ensures the stability and accuracy of detection
- The high-frequency heating system adopts special high-frequency capacitors to ensure the long-term reliability of high-frequency work
- Adopt German imported special external metal dust filter, easy to dismantle, easy to clean
- Electronic balance for accurate weighing, auto-matic tare of crucible mass, auto-matic input of sample weight
- The software can monitor solenoid status, signal acquisition status, high frequency status, baseline status, etc.
- With data management and storage, query and statistics, printing projects, generating reports

ANALYSIS CURVE



To be continued

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SPECIFICATION

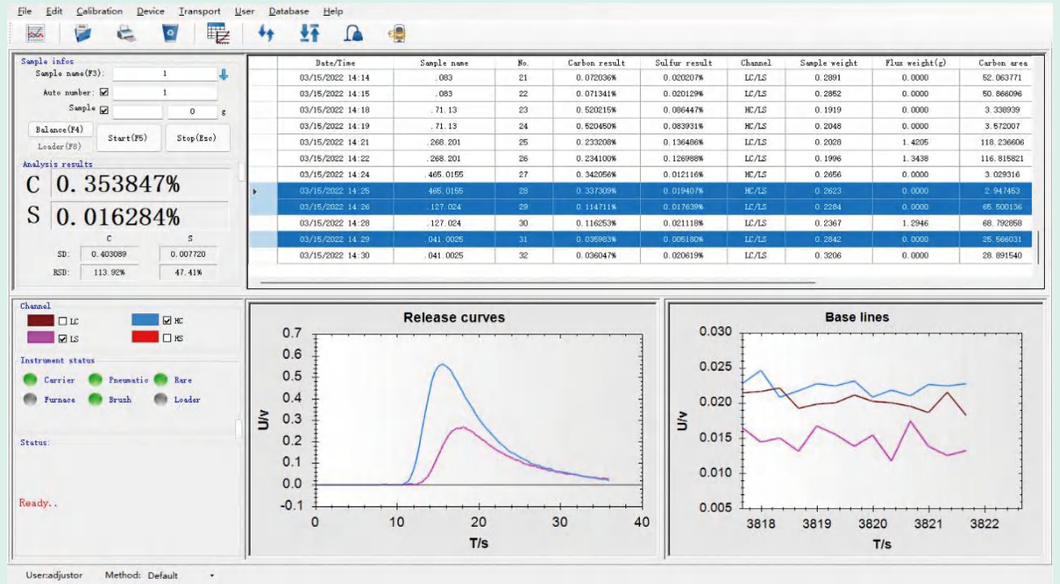
Detector	pyroelectric solid state infrared detectors
Light source	infrared light source
Channel configuration	standard with high carbon, low carbon, low sulfur
Thermostatic	gas chamber thermostat control
Analysis range	low carbon: 0.6ppm~0.1%, high carbon: 0.1%~50%, low sulfur: 0.6ppm~0.3%*
Analysis accuracy	carbon: 1ppm or RSD≤0.5%, sulfur: 1ppm or RSD≤1.0%
Sensitivity	0.01ppm
Analysis time	30S~40S
Sample weighing	recommended range 0.1g~0.5g, can be changed according to the sample content
Combustion furnace	18MHz, 2.7kVA
Carrier gas	oxygen concentration ≥99.5%
Motive gas	nitrogen concentration ≥99.5%
Power supply	AC220V±10%, 50Hz, 16A
Dimensions (L×W×H)	550×760×770mm
Net weight	100kg

*Changing the weighing volume can extend the analysis range up to 100%, can be customized for high sulfur channel with 0.3-30% analysis range

STANDARD DELIVERY

Main unit	1 pc
Computer	1 pc
Software	1 pc
Dust catcher	1 pc
Electronic balance (8311-60)	1 pc
Printer	1 pc
Pressure valve	1 pc
Standard sample	3 pcs
Soda lime (CSA-R300-SL)	1 pc
Tungsten flux (CSA-R300-TF)	1 pc
Desiccant (CSA-R300-DE)	1 pc
Crucible (CSA-R300-CR)	1000 pcs
Tool	1 set

ANALYSIS SOFTWARE (INCLUDED)



ELA-ONH35

OXYGEN/NITROGEN/HYDROGEN ANALYZERS (STANDARD TYPE)

- Widely used in iron, non-ferrous metals, new materials, magnetic materials, new energy, research institution, etc.
- Can analyze oxygen, nitrogen, and hydrogen in alloys, lithium battery materials, powders, rare earths, neodymium-iron-boron materials, etc.
- Can analyze the oxygen in various oxide and the nitrogen in various nitride
- Test method can be established for different types of sample
- Thermal extraction is used to analyze the content of residual hydrogen in the sample
- Featured software with linearization and self-diagnostic function
- Automatic switching of channel from low to high content

SPECIFICATION

Code	ELA-O35	ELA-N35	ELA-ON35	ELA-ONH35	ELA-H35	ELA-OH35
Analysis element	O	N	O, N	O, N, H	H	O, H
Analysis range**	O: 0.1ppm~0.5%*	N: 0.1ppm~50%	O: 0.1ppm~0.5%* N: 0.1ppm~50%	O: 0.1ppm~0.5%* N: 0.1ppm~50% H: 0.1ppm~0.5%	H: 0.1ppm~0.5%	O: 0.1ppm~0.5% H: 0.1ppm~0.5%
Carrier gas	Ar (≥99.9995%)	He (≥99.9995%)			N2 (≥99.9995%)	
Motive gas	N2 (≥99.9995%)					
Accuracy	O: 1ppm or RSD≤1%, N: 1ppm or RSD≤1%, H: 0.2ppm or RSD≤2%					
Sensitivity	0.01ppm					
Pulse furnace	current: 0~1500A, the maximum temperature can reach 3000°C					
Analysis time	3 minutes					
Sample weighing	recommended 1g, can be changed according to the sample content					
Work environment	18~29°C, ≤80%RH					
Power supply	AC 220V, 50Hz/60Hz					
Dimensions (L×W×H)	700×1100×680mm					
Net weight	180kg					

*Can be customized to extend the analysis range of oxygen: 0.1ppm~20%
**The analysis range can be expanded by changing the weight

To be continued

Continued from previous page

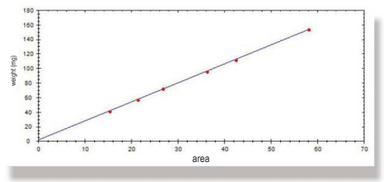
STANDARD DELIVERY

Main unit	1 pc
Computer	1 pc
Analysis software	1 pc
Water circulate chiller	1 pc
Electronic analytical balance (8311-60) balance	1 pc
Standard sample (ELA-ONH35-BYST)	1 pc
Electrode brush (ELA-ONH35-BR)	1 pc
Copper brush (ELA-ONH35-CR)	1 pc
Single crucible (ELA-ONH35-DCB25)	100 pcs
Reusable crucible (ELA-ONH35-FCB14)	50 sets
Tin sheet (ELA-ONH35-TS100)	1 pc
Copper oxide (ELA-ONH35-CU50)	1 pc
Soda lime (ELA-ONH35-SL)	1 pc
Printer	1 pc
Voltage regulator	1 pc
Tool	1 set

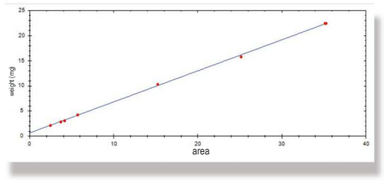
OPTIONAL ACCESSORY

Quartz tube (Ø15mm×207mm)	ELA-ONH35-QT25
Nickel basket (200 pcs)	ELA-ONH35-NB200
Nickel foil (100g)	ELA-ONH35-NF100
Ultrasonic cleaner	ELA-ONH35-UC150

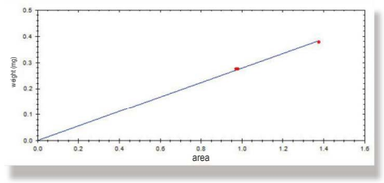
ANALYSIS CURVE



oxygen analysis curve

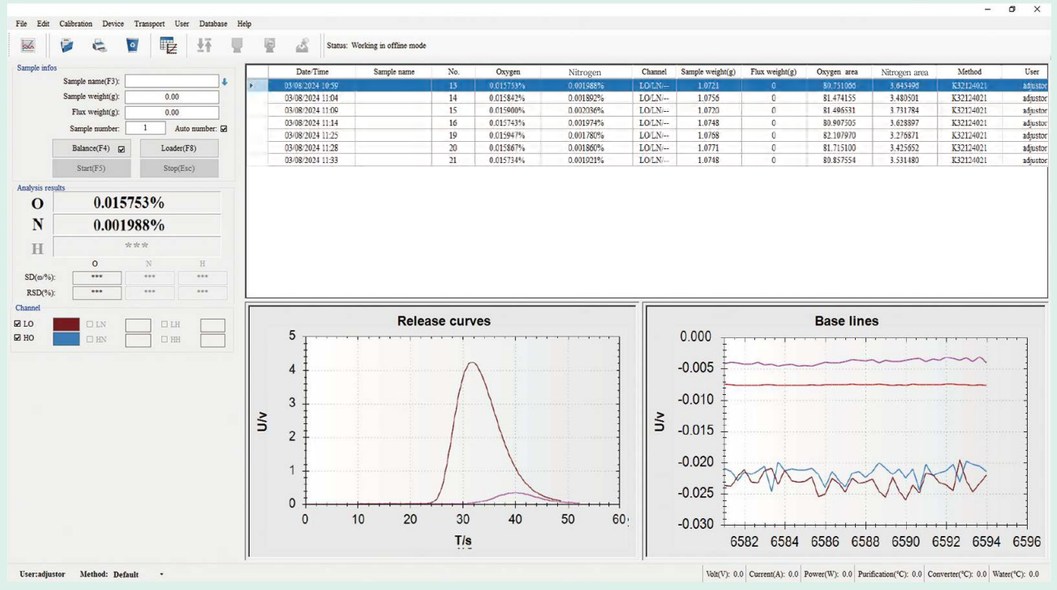


nitrogen analysis curve



hydrogen analysis curve

ANALYSIS SOFTWARE (INCLUDED)



6

ICP-OPTICAL EMISSION SPECTROSCOPY

Suitable for alloys, ores and chemicals. Performs fast simultaneous analysis of metals and non-metals. High sensitivity and stability for metallurgy, environmental protection, third-party testing, research and QC.

Core Features:

- 70+ elements: major & trace analysis
- Adapt to high-salt, complex matrix and organic solvents
- For digested liquids & clear solutions

Application Scenarios:

ICP-OPTICAL EMISSION SPECTROSCOPY
CODE: ICP-S760

- Widely used in industries such as metallurgy, geology, materials, environment, food, medicine, petroleum, chemical engineering, biology, water quality
- Suitable for elemental analysis of various complex matrices, high salt content, organic solvents, etc.
- Echelle grating and prism cross-dispersion configuration with radial observation, featuring robust detection capability
- An efficient solid-state radio frequency generator with fast matching speed, high precision operation and long-term stability
- High speed area array CCD acquisition technology, obtaining all spectral line information in a single exposure
- Powerful software system, simplifies the development process of analysis methods, with intuitive and smooth operation

automatic sampler **(optional)**

simultaneous hydride generator **(optional)**

organic injection system **(optional)**

To be continued

Continued from previous page

SPECIFICATION

Optical system	optical system	echelle two-dimensional spectroscopic optical system
	focal length	400mm
	wavelength range	165nm~950nm
	raster specification	echelle grating, 56.27 lines/mm, size: 100×50mm
	optical prism	SiO_2 material
	stray light	10000μg/mL Ca solution: EBC<2μg/mL at As 189.042nm
	light room inflation	multi point inflation technology: low flow purge at 1L/min, high flow purge at 4L/min
	temperature control	38°C±0.1°C, can be adjusted according to the actual environment 33~40°C±0.1°C
Detecting system	detector	large area, back illuminated CCD detector
	pixel count	1024×1024
	pixel area	24μm×24μm
	work temperature	<-40°C, stabilization time<3min
	quantization efficiency	without coating, the quantum efficiency can reach over 75%
Generator system	output power	500W~1600W, continuous 1W adjustable
	power stability	≤0.1%
	vibration frequency	27.12MHz
	frequency stability	≤0.01%
Injection system	torch orientation	vertical orientation
	torch coil	3 turns
	torch	integrated torch, 0.8mm quartz central tube
	nebulizer	concentric nebulizer, 6mm outer diameter
	spray chamber	cyclonic spray chamber
	peristaltic pump	4-channel, 12-roller Peristaltic Pump with Continuous Speed Adjustment
	argon gas consumption	8L/min~18L/min
	cooling gas	0~20.00L/min, accuracy: 0.01L/min
	auxiliary gas	0~2.00L/min, accuracy: 0.01L/min
	carrier gas	0~2.00L/min, accuracy: 0.01L/min
Software System	analysis program	multi-window, multi-method: simultaneous measurement, editing and viewing
	spectral library	70,000+lines: intelligent interference prompts
	calibration mode	supports calibration after preliminary testing and sample analysis with the sandwich method
	analysis method	supports the standard curve method and standard addition method, with functions including blank subtraction, internal standard calibration and interference correction
	observation mode	intuitive display of test results, multiple report output formats available
Operation Environment	argon gas	purity≥99.995%
	chilled water	flow rate>3L/h, head>3m
	work temperature	18~24°C±2°C
	work humidity	20~80%RH
	exhaust ventilation	≥400m³/h or wind speed>5m/s, with adjustable setting
Power supply		220V±10%, 25A, 50~60Hz
Dimension (L×W×H)		1210×740×800mm
Net weight		200kg

To be continued

Continued from previous page

STANDARD DELIVERY

Main unit	1 pc
Computer	1 pc
Glass injection system	1 set
Analysis software	1 set
Circulating water cooler	1 pc
Voltage regulator	1 pc
Printer	1 pc
Consumable and spare parts	1 set

OPTIONAL ACCESSORY

Automatic sampler (160 positions)	ICP-S760-SA
Simultaneous hydride generator	ICP-S760-TH
Organic injection system	ICP-S760-YJ
HF-resistant injection system	ICP-S760-NS
High-salt-resistant injection system	ICP-S760-GQ

ANALYSIS ELEMENTS

Li Green-grid elements: analyzable

H Gray-grid elements: non-analyzable

H																	He
Li	Be											B	C	N	O	F	Ne
Na	Mg											Al	Si	P	S	Cl	Ar
K	Ca	Sc	Ti	V	Cr	Mn	Fe	Co	Ni	Cu	Zn	Ga	Ge	As	Se	Br	Kr
Rb	Sr	Y	Zr	Nb	Mo	Tc	Ru	Rh	Rd	Ag	Cd	In	Sn	Sb	Te	I	Xe
Cs	Ba	La	Hf	Ta	W	Re	Os	Ir	Pt	Au	Hg	Tl	Pb	Bi	Po	At	Rn
Fr	Ra	Ac															

Lanthanide	La	Ce	Pr	Nd	Pm	Sm	Eu	Gd	Tb	Dy	Ho	Er	Tm	Yb	Lu
Actinide	Ac	Th	Pa	U	Np	Pu	Am	Cm	Bk	Cf	Es	Fm	Md	No	Lr

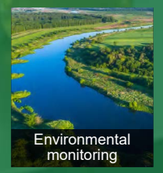
7 ATOMIC ABSORPTION SPECTROMETER

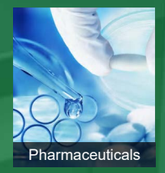
Accurate analysis of micro | **Trace metal elements**

Core Functions:

- Precise detection of micro/trace metals
- Flame & Graphite Furnace dual mode
- Multi-protection, real-time monitoring

Application Scenarios:





AAS-R304

ATOMIC ABSORPTION SPECTROMETERS (BASIC TYPE)

GRAPHITE FURNACE CAN BE CUSTOMIZED LIQUID ANALYSIS

- Widely used in metallurgy, mining, petroleum, light industry, agriculture, medicine, food and environmental monitoring, etc.
- Concentration analysis of major and microtrace element
- Equipped with intelligent software for rights management and audit trail
- Automatic setting of work lamp, warm-up lamp and analysis condition
- System with deuterium background deduction for complex sample
- The protection system can monitor flame, pressure and acetylene leakage in real time

STANDARD DELIVERY

Main unit	1 pc
Computer	1 pc
Software	1 pc
Air compressor	1 pc
Cu hollow cathode lamp (AAS-R304-CU)	1 pc
Standard sample (AAS-R304-BY)	1 pc
Tool	1 set

OPTIONAL ACCESSORY

Flame auto-sampler (100 positions)	AAS-R304-HAS
Hydride generator	AAS-R304-HDG
Hollow cathode lamp	AAS-R304-□□*

*□□ is analysis element, for example, code **AAS-R304-ZN** stands for the hollow cathode lamp used to analyze the element Zn


Cu hollow cathode lamp (included)


hydride generator **(optional)**


flame auto-sampler **(optional)**

To be continued

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SPECIFICATION

Code	AAS-R304	AAS-R308
Lamp position	4 positions**	8 positions**
Static baseline drift (Cu)	±0.004A/30min	±0.003A/30min
Dynamic baseline drift (Cu)	±0.006A/15min	±0.005A/15min
Characteristic concentration (Cu)	≤0.04μg/mL	≤0.035μg/mL
Detection limit (Cu)	≤0.008μg/mL	≤0.006μg/mL
Background calibration	deuterium lamp ≥ 30 times (1Abs)	deuterium lamp ≥ 40 times (1Abs)
Repeatability	RSD≤1%	RSD≤0.6%
Wavelength error	0.3nm	0.2nm
Wavelength repeatability	≤0.1nm	
Wavelength range	185~900nm	
Display data	transmittance, absorbance, concentration	
Photometric range	0~125%, -0.1~3.00A	
Beam type	single beam	
Monochromator	C-T type, focal length 350mm	
Dispersive element	raster scribing 1800 lines/mm, scintillation wavelength	
Spectral bandwidth	six levels auto-matic switching (0.1, 0.2, 0.4, 0.7, 1.4, 2nm)	
Spectral bandwidth deviation	±0.02nm	
Natural gas	C_2H_2 (≥99.9%)	
C_2H_2 flow adjustment	automatic 12 levels	
Air flow adjustment	automatic 4 levels	
Burner	titanium metal burner (auto-matic lifting and lowering)	
Atomizer	glass atomizer	
Atomization chamber	corrosion resistant atomization chamber	
Safety measure	gas pressure protection	
Measurement method	flame method, hydride generation-atomic absorption method, flame emission method	
Concentration calculation	standard curve method, standard addition method, interpolation method	
Measurement data	mean values of absorbance and concentration, standard deviation and relative standard deviation data	
Work environment	10~30°C, 40~80%RH	
Power supply	AC 220V, 50 Hz	
Dimension (L×W×H)	830×650×560mm	
Net weight	90kg	

**Only Cu hollow cathode lamp included and other element lamps need to be optioned

ANALYSIS ELEMENT

Regular element	Li	Na	K	Al	Ga	Ca	Mg	Sr	Ba	Mn	V	Mo	Rh
	Cu	Zn	Fe	Co	Ni	Cr	Zr	Au	Ag	Pt	Si	Ti	W
Special element***	As	Se	Sb	Bi	Sn	Pb	Te	Ge	Cd	Hg			

***Special element requires hydride generator **AAS-R304-HDG**

ATOMIC ABSORPTION SPECTROMETER (STANDARD TYPE)
CODE: AAS-D506

LIQUID ANALYSIS

- Widely used in metallurgy, petrochemical industry, geology, medicine, environmental protection, scientific research, agriculture, disease control, food industry, materials science, commodity inspection, etc.
- It can analyse more than 70 elements, enabling trace and sub-trace elemental component analysis
- The design of optical system suspension effectively nullifies the impact of vibrations and environmental variations on the optical system
- The flame atomizer, graphite furnace and graphite furnace power supply are ingeniously integrated
- It takes only 2 seconds to automatically switching between flame and graphite furnace
- Overcurrent protection for hollow cathode lamps, low pressure or gas leakage alarm for fuel gas/protection gas, overheating protection for graphite furnace, abnormal flame condition protection

STANDARD DELIVERY

Main unit	1 pc
Computer	1 pc
Software	1 pc
Air generator	1 pc
Circulating water chiller	1 pc
Cu hollow cathode lamp (AAS-D506-CU)	1 pc
Standard sample (AAS-D506-BY)	1 pc
Tool	1 set

OPTIONAL ACCESSORY

Flame auto-sampler	**AAS-D506-FG10**
Graphite furnace auto-sampler	**AAS-D506-GF20**
Flame/graphite furnace auto-sampler	**AAS-D506-FGF600**
Hydride generator	**AAS-D506-HG15**
Hollow cathode lamp	**AAS-D506-□□***

*□□ is analysis element, for example, code **AAS-D506-ZN** stands for the hollow cathode lamp used to analyze the element Zn


Cu hollow cathode lamp (included)


circulating water chiller (included)


hydride generator **(optional)**


flame auto-sampler **(optional)**


graphite furnace auto-sampler **(optional)**


flame /graphite furnace auto-sampler **(optional)**

To be continued

Continued from previous page

SPECIFICATION

Optical system	**lamp position**	6 positions*
	wavelength range	190~900nm
	wavelength repeatability	≤0.05nm
	wavelength accuracy	±0.1nm
	shining wavelength	250nm
	resolution	better than 0.1nm
	monochromator	C-T type
	raster line	1800 lines/mm
	spectral bandwidth	five levels auto-matic switching (0.1, 0.2, 0.4, 1.0, 2.0)nm
	baseline stability	≤0.003A/30min (dynamic), ≤0.002A/30min (static)
Flame system	**characteristic concentration (Cu)**	≤0.02μg/mL/1%
	detection limit	≤0.003μg/mL
	precision	RSD≤0.6%
	burner	interchangeable single seam 100mm titanium burner and 50mm stainless steel burner the position and rotation Angle of the front and back of the combustion head are adjustable optional burner automatic lifting function **(AAS-D506-AUTO)**
Graphite furnace system	**characteristic quantity (Cd)**	≤0.3×10^{-12}g/1%
	detection limit	≤0.2×10^{-12}g
	precision	RSD≤2%
	temperature control range	room temperature ~3000ºC
	temperature control program	maximum 20 steps of heating procedures, ladder, slope, maintain three heating methods
	warming model	light-controlled heating rate: ≥3000ºC/s, power heating rate: ≥2000ºC/s
Background correction	**correction mode**	deuterium lamp, optional self absorption background correction **(AAS-D506-SPBC)**
	correction capability	when background absorption approaches 1.0 Abs, the instrument is capable of a background correction of 60 times or more
Acetylene (C_2H_2)		≥99.9%
Argon (Ar)		≥99.9%
Work environment		15~35°C, ≤85%RH
Power supply		AC220V, 50Hz, main unit power: 500W, graphite furnace power: 5kW
Dimension (L×W×H)		880×540×450mm
Net weight		125kg

*Only Cu hollow cathode lamp included and other element lamps need to be optioned

ANALYSIS ELEMENT

Black metal element		Fe, Cr, Mn
Non-ferrous metal element	**light metal element**	Al, Mg, Na, K, Ca, Sr, Ba
	heavy metal element	Cu, Pb, Zn, Ni, Cd, Hg*, Sn, Sb, Bi
	precious metal element	Au, Ag, Pt, Pd, Rh, Ir, Os, Ru
	metamaterial element	B, Si, As*, Sb, Te
	rare metal element	Li, Rb, Cs, Ti, Zr, Nb, Mo, Ta, W, Ga, In, Ge, Tl, La, Ce, Nd, Y, Sc, etc.

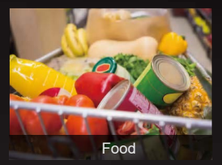
*Analysis of this element requires the selection and configuration of a hydride generator **AAS-D506-HG15**

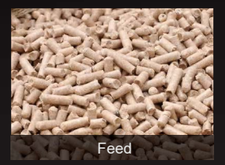
8 KJELDAHL NITROGEN ANALYZER

Core Advantage:

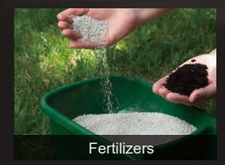
- One-click distillation, auto temperature compensation
- Auto reagent feeding & intermittent alkali addition
- Liquid level control & anti-dry burning protection
- 7-inch touch screen, easy operation
- Real-time cooling water monitoring
- ABS — Durable ABS anti-corrosion casing

Core Applications:


Food


Feed


Pharmaceuticals


Fertilizers


Soil


infrared digestion block **(optional)**


recirculating cooling water **(optional)**

KJELDAHL NITROGEN ANALYZER (BASIC TYPE)
CODE: KNA-SA50

- Widely used in industries such as food, agriculture, pharmaceuticals, environmental protection, and biochemical agents
- Suitable for analyzing the contents of nitrogen and protein in samples
- One-click operation for distillation process
- The reagents are added by a syringe pump, with the minimum unit being 1mL
- Automatically add acid, alkali and water
- 7-inch touch screen, clear and distinct, easy to operate
- Multi-level control and multi-aspect dry-fire prevention
- Built-in multiple distillation programs
- ABS plastic housing with high corrosion resistance

SPECIFICATION

Analysis range	0.06~240mgN
Sample weighting	solid<5g, liquid<5mL
Recovery	>99.5%
Repeatability	RSD≤0.5%
Distillation volume	0~30mL/min adjustable
Distillation time	0~99minutes
Distillation rate	3~9minutes per sample
Distillation power	more than 1500W
Cooling water	water pressure>0.15MPa flow rate<1.5L/min water temperature≤20°C
Work environment	5~35°C, <85%RH
Power supply	220V, 50Hz
Dimension (L×W×H)	400×340×740mm
Net weight	25kg

STANDARD DELIVERY

Main unit	1 pc
Cleaning bottle	1 pc
Acid bottle	1 pc
Caustic bottle	1 pc
Digestion tube (KNA-SA50-DT300)	1 pc
Collection bottle	1 pc
Distilled water bottle	1 pc
Tool	1 set

OPTIONAL ACCESSORY

Infrared digestion block*	**KNA-SA50-DB20**
Recirculating cooling water	**KNA-SA50-CW**
Neutralization discharge system	**KNA-SA50-ND**

*Including 20 digestion tubes

9 ACCESSORY

Sample pretreatment ensures accurate and stable test results.

XRF coating standards calibrate coating thickness and composition, while OES standard samples calibrate substrate matrix curves.

SPECTRAL SAMPLE GRINDER
CODE: OES-MY100

- Widely used for making specimens for spectral analysis and grinding of metal, ceramic, glass and other devices
- Compact machine structure, single disc with two speeds, can be equipped with different grits and hardnesses of grinding wheels for grinding
- The machine has smooth rotation, low noise, convenient operation and high working efficiency, and is suitable for factories and laboratories of scientific research units

VIDEO

SPECIFICATION

Disc diameter	350mm
Rotation speed	level 1: 1400r/min, level 2: 2800r/min (two fixed speed)
Power supply	AC380V, 50Hz, 2KW
Dimensions (L×W×H)	480×450×900mm
Net weight	77kg

silicon carbide sanding disc (included)

aluminum oxide sanding disc (included)

STANDARD DELIVERY

Main unit	1 set
Silicon carbide sanding disc	1 pc (60mesh)
Aluminum oxide sanding disc	1 pc (30mesh)

OPTIONAL ACCESSORY

Code	Material	Application	Granularity (mesh)	Diameter	Package (pcs/box)
OES-SCG60	silicon carbide	cast iron and non-ferrous metals	60	Ø350mm	25
OES-ALG30	aluminium oxide	ferrous metals (non-cast iron)	30		30

UCM-HC020

washing basket (included)

ULTRASONIC CLEANERS

- Widely used in medical treatment, hardware parts, jewelry, eyewear, dental care, clocks, 3D printing, etc.
- Whole machine made of stainless steel
- Equipped with industrial-grade transducers, featuring high electrical energy conversion efficiency
- One-piece stamped cleaning tank, no welding joints, excellent waterproof performance

SPECIFICATION

Code	UCM-HC020	UCM-HC045	UCM-HC100	UCM-HC150	UCM-HC220	UCM-HC300
Capacity	2L	4.5L	10L	15L	22L	30L
Tank size (L×W×H)	150×135×100mm	300×150×100mm	300×240×150mm	330×300×150mm	500×300×150mm	500×300×200mm
Overall size (L×W×H)	175×165×210mm	325×180×225mm	325×265×280mm	360×325×285mm	530×325×285mm	530×325×325mm
Frequency	40kHz	40kHz	40kHz	40kHz	40kHz	40kHz
Ultrasonic power	60W	180/90W	240/120W	360/180W	480/240W	600/300W
Heating power	100W	200W	200W	300W	500W	500W
Work time setting	7 gears adjustable*	0~30min	0~30min	0~30min	0~30min	0~30min
Heating temperature	RT~65°C	RT~80°C	RT~80°C	RT~80°C	RT~80°C	RT~80°C
Drain valve fitting	/	/	DN10	DN10	DN10	DN10
Power supply	220V, 50Hz	220V, 50Hz	220V, 50Hz	220V, 50Hz	220V, 50Hz	220V, 50Hz
Net weight	2.22kg	4.4kg	7.1kg	8.8kg	12kg	13.4kg

*7 gears adjustable: 60s, 180s, 300s, 600s, 900s, 30min, 60min

STANDARD DELIVERY

Main unit	1 pc
Washing basket	1 pc

MSS-P01

MSS-P08

MSS-P14

STANDARD SHEETS FOR XRF PLATING THICKNESS INSTRUMENTS

CAN BE CUSTOMIZED INSPECTION CERTIFICATE

- Can be used for standardised calibration of XRF plating thickness instruments
- Supplied with manufacturer inspection certificate
- Can be used to create plating measurement curves of XRF plating thickness instruments

STANDARD SHEETS (WITHOUT SUBSTRATE)

Code	Material	Thickness*
MSS-P01	Au	0.04-6μm
MSS-P02	Ni	0.1-20μm
MSS-P03	Cu	1-18μm
MSS-P04	Zn	1-18μm
MSS-P05	Al	10-75μm
MSS-P06	Cr	0.05-7.5μm
MSS-P07	Ag	0.2-20μm

*The thickness of the product is shown in the inspection certificate

SINGLE PLATING STANDARD SHEETS (WITH SUBSTRATE)

Code	Plating /Substrate	Plating thickness**
MSS-P08	Ni/Fe	2-18μm
MSS-P09	Cu/Fe	1-6.5μm
MSS-P10	Cu/Zn	12-24μm
MSS-P11	Ni/Cu	2-11μm
MSS-P12	Zn/Fe	1-40μm

MULTI-PLATING STANDARD SHEETS (WITH SUBSTRATE)

Code	Plating/Plating /Substrate	Plating thickness**
MSS-P13	Cu/Ni/Fe	3-8μm/2-6μm
MSS-P14	Sn/Ni/Cu	2-10μm/0.8-4μm
MSS-P15	Sn/Cu/Fe	2-6.5μm/0.6-4.5μm
MSS-P16	Sn/Ni/Al	4-6μm/0.1-10μm
MSS-P17	Sn/Ni/Fe	4-11μm/0.1-10μm

**The plating thickness of the product is shown in the inspection certificate

MSS-CS01

MSS-CUA01

MSS-AP01

STANDARD SAMPLES FOR SPECTRAL INSTRUMENT

CAN BE CUSTOMIZED INSPECTION CERTIFICATE

- Used for establishing working curves and calibrating spectrometers
- Supplied with manufacturer inspection certificate

CARBON STEEL

Code	MSS-CS01	MSS-CS02	MSS-CS03	MSS-CS04	MSS-CS05	MSS-CS06	MSS-CS07	MSS-CS08
Name	10#	20#	35#	40#	50#	60#	80#	T10

LOW ALLOY STEEL

Code	MSS-LS01	MSS-LS02	MSS-LS03	MSS-LS04	MSS-LS05	MSS-LS06	MSS-LS07	MSS-LS08	MSS-LS09	MSS-LS10
Name	1Cr5Mo	12Cr1MoV	20Cr2Ni4	20MnVB	33MnVS	35CrMnSi	40CrNiMo	40MnB	45B	55Ti

MEDIUM ALLOY STEEL

Code	MSS-MS01	MSS-MS02	MSS-MS03	MSS-MS04	MSS-MS05	MSS-MS06	MSS-MS07	MSS-MS08	MSS-MS09	MSS-MS10
Name	20MnB	20MnTi	20CrMnMo	40CrV	45Cr	50CrMoA	55SiMoV	B3	9SiCr	Cr6WV

To be continued

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HIGH ALLOY STEEL

Code	MSS-HS01	MSS-HS02	MSS-HS03	MSS-HS04	MSS-HS05	MSS-HS06
Name	3Cr2W8V	5CrNiMo	5CrMnMo	W18Cr4V	W6Mo5Cr4V2	W12Cr4V4Mo

STAINLESS STEEL

Code	MSS-SS01	MSS-SS02	MSS-SS03	MSS-SS04	MSS-SS05	MSS-SS06	MSS-SS07	MSS-SS08
Name	304	304L	316L	316Ti	317L	1Cr13	904L	321

CAST IRON

Code	MSS-CF01	MSS-CF02	MSS-CF03	MSS-CF04	MSS-CF05	MSS-CF06	MSS-CF07	MSS-CF08	MSS-CF09
Name	QT400	QT300-P	QT450	QT500	HT200	HT250	HT300	HT350	BTMCr34

1XXX, 8XXX ALUMINUM ALLOY

Code	MSS-AP01	MSS-AP02	MSS-AP03	MSS-AE01	MSS-AE02
Name	1080	1050	1235	8011	8021

2XXX, 3XXX ALUMINUM ALLOY

Code	MSS-AC01	MSS-AC02	MSS-AC03	MSS-AC04	MSS-AC05	MSS-AN01	MSS-AN02	MSS-AN03	MSS-AN04
Name	2524	2014	2024	2099	2A97	3004	3005	3104	3A21

4XXX ALUMINUM ALLOY

Code	MSS-AS01	MSS-AS02	MSS-AS03	MSS-AS04	MSS-AS05	MSS-AS06	MSS-AS07	MSS-AS08	MSS-AS09	MSS-AS10	MSS-AS11
Name	4032	4A99	360A.1	356Z.5	360Z.2	380Y.1	383	413Y.1	355Z.2	319Z.3	Y430

5XXX ALUMINUM ALLOY

Code	MSS-AM01	MSS-AM02	MSS-AM03	MSS-AM04	MSS-AM05	MSS-AM06	MSS-AM07	MSS-AM08
Name	1561	5005	5052	5083	5182	5383	5754	5A02

6XXX ALUMINUM ALLOY

Code	MSS-ASM01	MSS-ASM02	MSS-ASM03	MSS-ASM04	MSS-ASM05	MSS-ASM06	MSS-ASM07
Name	6005	6013	6016	6061	6063	6063A	6082

7XXX ALUMINUM ALLOY

Code	MSS-AZ01	MSS-AZ02	MSS-AZ03	MSS-AZ04	MSS-AZ05	MSS-AZ06	MSS-AZ07	MSS-AZ08	MSS-AZ09
Name	7022	7050	7055	7085	7136	7D04	7A19	7A52	7B50

COPPER ALLOY

Code	MSS-CUA01	MSS-CUA02	MSS-CUA03	MSS-CUA04	MSS-CUA05	MSS-CUA06	MSS-CUA07	MSS-CUA08
Name	H62	H65	H85	H96	HPb62-3	HPb59-1	HPb59-3	T2
Code	MSS-CUA09	MSS-CUA10	MSS-CUA11	MSS-CUA12	MSS-CUA13	MSS-CUA14	MSS-CUA15	MSS-CUA16
Name	TP2	QAl7	QAl9-4	QAl10-4-4	QAl10-3-1.5	QSn6.5	QAl9-2	QSi3-1

MAGNESIUM ALLOY

Code	MSS-MG01	MSS-MG02	MSS-MG03	MSS-MG04	MSS-MG05
Name	AZ61A	AM50A	AZ31B	AZ40M	ZK61M

NICKEL ALLOY

Code	MSS-NA01	MSS-NA02	MSS-NA03	MSS-NA04	MSS-NA05	MSS-NA06	MSS-NA07	MSS-NA08	MSS-NA09	MSS-NA10
Name	GH4133B	GH4169	NS3309	NS333	NS3308W	NS-HMP	NS1402	NS3105	NCu	NS3304

ZINC ALLOY

Code	MSS-ZN01	MSS-ZN02	MSS-ZN03	MSS-ZN04	MSS-ZN05	MSS-ZN06	MSS-ZN07
Name	ZnAl4	ZnA19	Zn-M	Z0	ZnAl5	ZnAl4-Mg	ZnAl3

TITANIUM ALLOY

Code	MSS-TA01	MSS-TA02	MSS-TA03	MSS-TA04	MSS-TA05	MSS-TA06
Name	TC11	TC4	TC11-2	Ti80-3	Ti80-4	Ti80-6

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