KS-TY9100 Optical Emission Spectrometers (Arc/Spark-OES)

(Picture just for reference)

Summary:

KS-9100 is Full Range of Solutions for the Entire Metals Industry. It use full-digital technology to replace bulky photomultiplier tube (PMT) simulation technology and keep pace with international spectrometer technology. The adoption of vacuum optical chamber design, full-digital excitation light source, advanced CCD detectors, and high-speed data readout system equips the device with high properties, ultra-low limit of detection (LOD), long-term stability and repeatability. The analytical precision can meet the requirements of laboratory standard, the analytical date is stable and reliable. Widely used in Metallurgy, casting, machinery processing and other industries incoming and outgoing product quality control.

Scoop of supply:

1. Supply list

No.	Item	Specifications	Unit	QTY	Remarks
1	Optical Emission Spectrometer	KS-9100	Set	1	Included in quotation
2	Business computer	Standard configuration	Set	1	
3	Printer	Standard configuration	Set	1	
4	Flue gas pipe		Pc	1	
5	Flue gas filter	2 filter bottle and accessories	Set	3	
6	Argon gas pressure reducing valve		Set	2	
7	Quick connector		Pc	1	
8	Argon gas pipeline		Pc	2	
9	Ethernet cables		Pc	1	
10	Three core power line		Pc	1	
11	Calibration samples		Set	1	
12	Daily Maintenance		Set	1	
13	Spectrometer manual		Set	1	
14	Spare parts and tools		Set	1	

Notes: The Buyer knows and agrees that the Seller may adjust the supply when the production of the above-mentioned instruments, spare parts and other suppliers change due to technological progress, product upgrading, market changes, etc.

2. Optional items:

Optional item	Qty	Note
High purity argon gas (pure ≧ 99.999%)	1 bottle	Essential, if can't get should use argon purifier to get 99.999% argon gas.
Small air conditioning	1 set	Essential, customer should prepare by themselves.
High precision magnetic saturation voltage stabilizer (1KVA)	1 set	Need for voltage instability, if the customer use intermediate frequency furnace, then need 3KVA Voltage Stabilizer
Argon purifier	1 set	When argon gas is not pure

Samples grinder (ferrous metals) or Mini lathe (non-ferrous metals)	1 set	Essential
Type sample	X pieces	Essential for foundry

Analytical Program

		FE-001	FE-003
No.	Elements	Low Alloy	Cr/Ni Stainless Steel
1	C	0.006-1.3	0.008-2.5
2	Si	0.01-3.9	0.09-4.0
3	Mn	0.03-2.1	0.12-16
4	P	0.002-0.12	0.003-0.3
5	S	0.002-0.16	0.001-0.4
6	Cr	0.01-4.5	7.4-32
7	Ni	0.004-4.4	0.8-48
8	Mo	0.004-1.3	0.08-4.2
9	Al	0.003-1.5	0.005-1.7
10	Cu	0.002-0.5	0.05-4.5
11	Co	0.001-0.5	0.008-17
12	Ti	0.002-1.2	0.005-1.1
13	Nb	0.002-0.3	0.02-2.0
14	V	0.003-0.9	0.02-9.5
15	W	0.03-2.1	0.002-4.1
16	Pb	0.003-0.03	
17	B	0.006-0.02	
18	Sn	0.001-0.09	
19	Zr	0.004-0.35	
20	Sb	0.002-0.02	
21	Fe	Reference	Reference

Note:

The instrument is calibrated with limited standard samples which Kason have for general purpose. For special alloy and special elements, the instrument must be calibrated by customer themselves. Or if customer is willing to provide sample collaboration for program development, the customer must provide accurate sample element content tables and ensure

sample uniformity, but such curves are not used as acceptance indicators of the instrument.

If the customer has type sample demand, the type sample number can be provided, and the customer can purchase the type sample by himself; if the salesman buys the type sample on behalf of the salesman, the type sample will be shipped separately by Kason;

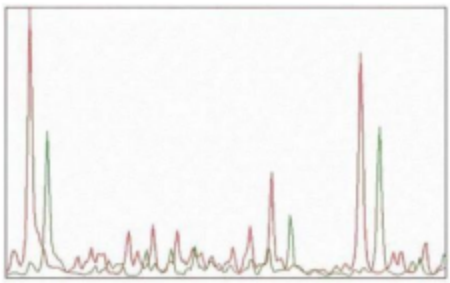
Technical Data of KS-9100

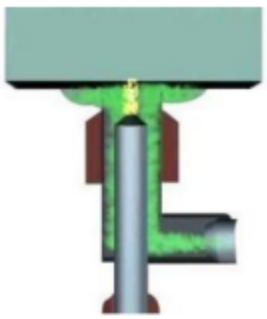
1. Parameter

Item		Index
Optical System	Focal Length	400mm
	Wavelength range	130nm-800nm
	Detector	High resolution CCD Multi detectors
	Degree of vacuum	Auto control within 6-20 pa
	Pixel resolution	30pm
	Grating line	2400m1/mm
	First order spectral line dispersion rare	1.2nm/mm
	Average resolution ratio	10pm/pixel
	Full spectrum	
	Light room temperature is controlled automatically	
Spark Source	Type	Digital arc and spark source
	Spark frequency	100-1000HZ
	Discharge current	1-400A
	Ignition voltage	> 15000V
	Excitation light	Optimization of discharge parameters design
		High energy precombustion technology HEPS
	Processor	High-speed data synchronization acquisition and processing
Spark Stand	Electrode	Tungsten electrode technology
	Make up	Thermal deformation self-compensation design
	Argon flushed with minimal consumption of Argon	
	Spray discharge electrode technology	
	Adjustable electrode technology	
	Measurable elements	Fe、Al、Cu、Ni、Ti、Co、Zn、Sn、Mg、Pb etc

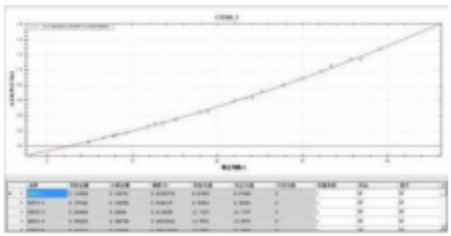
Others	Dimension	800 mm(L)*700 mm*470 mm(H)
	weight	About 100 kg
	Storage temperature	0℃-45℃
	Operating temperature	10℃-35℃, 23±2℃ is recommended
	Power	AC220V/50Hz(Customized)
	Power consumption	Excitation:700W/Stand by:100W
	Argon quality	99.999%, Argon pressure>4Mpa
	Argon consumption	5L/min during spark mode
	Interface	Ethernet data transmission based on DM9000A

2. Main features

1.Optimized vacuum optics system (1) Integrated optics room and Paschen Runge construction design, making all the spectrum lines focused on the gratings. x Direct-jet type optics technology and MgF2 material lens to make sure ultraviolet wave's best energy of elements, such as C,S, P and N.	
2. Automatic Light-Path Correction (1) With automatic light path correction, optical system automatically scans the spectral lines to ensure the correctness of received lines and avoid tedious scanning of wave peaks. x The instrument automatically identifies specific spectral lines and compares them with original stored lines to determine the location of the drift and find the present pixel position for analysis among the lines.	
3. Single-Board Lens Design (1) The adopted specialized entrance window separating from vacuum in the vacuum optical system can be operated under the system working status. The adopted single-board lens structure in the optical lens is convenient for routine cleaning and maintenance. x It is not required to maintain the device in the daily operation, and there is no consumable and renewal part.	

4. Optical Chamber Integration (1) Specialized optical chamber structural design makes the volume of the chamber smaller, with less than half air exhaust speed of ordinary spectrometers. x Integrated design and high-precision processing in the vacuum chamber improves the duration of vacuum.	
5. Vacuum Anti-Oil-Returning Technology (1)Multi-level separating vacuum anti-oil-returning technology absorbs vacuum compaction and baffle valves to ensure the complete separation of vacuum optical chamber from vacuum pump during non-operation time. x The intermediate addition of vacuum oil filtering device ensures the oil inside the vacuum pump not to enter the vacuum chamber, and ensures CCD detectors and optical components to work under reliable situation.	
6. Open-Access Inspire Stand (1)Flexible sample clamp design of Open-Access Excitation Stand satisfies user on-site analysis of samples with different sizes and shapes x The small sample clamps in cooperative use can make the analytic precision of wire rods achieve 1.5 mm at the minimum.	
7. Injection Electrode Technology (1)The instrument adopts the most internationally-advanced injection electrode technology with tungsten used. Under the status of excitation, the electrode forms argon gas injection flow surrounded. Thus, there is no opportunity for the surrounding excitation points to contact external air so as to improve precision of excitation. x The attached specialized argon gas channel design significantly reduces the usage amount of argon gas and use cost for customers.	
8. Integrated Gas Channel Block (1) The excitation stand is made of alloys with good heat dissipation to achieve solidity, durability and cleaning convenience. x The gas supply system adopts integrated gas channel block and electrode self-flushing function to create good environment for excitation.	

9. Full Digital Inspire Light Source (1) The system uses the most internationally-advanced plasma inspire light source, and generates ultra-stable energy release to excite samples in the environment filled with argon gas. x Full Digital Inspire Light Source ensures ultra-high resolution and high-stability output rate of plasma in the excitation samples. (3) Full Digital Inspire Light Source can satisfy inspire requirements for different type of materials.	
10. High-Speed Data Acquisition (1)The instrument adopts high-performance CCD devices, UV coating technology and high-performance FPGA, DSP and ARM processors. xThe system has ultra-high functions of data acquisition and analysis, and can realize automatic real-time monitoring and control of the block operation status of optical chamber temperature, vacuum degree, argon gas pressure, light source and excitation chamber.	
11. Ethernet Data Transfer (1) Ethernet cards and TCP / IP protocol are connected between computers and spectrometers to avoid electromagnetic interference, fiber aging defects. Meanwhile, the computers and printers are completely placed in external position for the benefit of promotion and substitution. x Complete network systems. (3) The system can remotely monitor the status of devices, operate the system through multiple channels, as well as control and monitor all the instrumental parameters.	

12. Pre-Set Working Curves (1) The analysis programs in terms of elements and materials exist slight difference. The parameters of excitation and measurement have been adjusted before delivery. Customers can automatically choose optimal measurement conditions according to analysis programs. x Over a long period of time, the factory has been accumulating a large amount of experience and comprehensive international standard sample base. The factory pre-sets the working curves before delivery to benefit customers to put the device into use immediately after receiving. (3) The analysis range is attached to the technical specification (the system can plot or prolong working curves for free according to samples provided by customers).	
13. Fast Analysis Speed (1) The fast analysis speed saves time for customers by finishing the element component analysis through all channels within 20 seconds. x According to the specific type of materials to be analyzed, it is available to make the instruments achieve the best analysis results within the minimum duration by setting pre-burning time and measurement time.	
14. Multiple Matrices Analysis (1) The light-path design absorbs the structure of Rowland circle and vertically interleaved CCD arrays to ensure all the spectral lines to be received. No hardware is required to realize analysis of multiple matrices. x It is convenient to add up matrices, material types and analysis elements according to the requirements of production. (3) Compared with photomultiplier tubes (PMTs), spectrometers can significantly decrease use cost and increase the range of usage.	

15. Software with Multiple National Languages

(1) The instrumental operating software is completely compatible with Windows system, and can be equipped with specific language versions according to user requirements.

(2) The software is easy to use. Even those staff without any knowledge and experience about spectrometers can easily use the software after a short simple training.

3. Core Components

No.	Product	Brand	Place of origin	Warranty period
1	Grating	Zeiss	Germany	15 years
2	Linear array CCD	Sony	Japan	8 years
3	Optical lens	Zeiss	Germany	8 years
4	Optical fiber	Zeiss	Germany	8 years
5	Slit	lenoxlaser	America	10 years
6	Digital light source		Kason	3 years
7	Regulating valve	Burkert	Germany	10 years
8	Vacuum pump		China	2 years
9	Optical fiber	Agilent	America	1 years
10	Filter	TDK	Japan	2 years
11	Pressure sensor	SSI	Canada	2 years
12	Magnetic valve	Burkert	Germany	2 years
13	CMOS acquisition module		Kason	1 years
14	Control module		Kason	1 years
15	Integrated circuit board		Kason	1 years
16	Excitation table module		Kason	2 years
17	Spectral analysis software		Kason	permanent
18	Standard sample		China or Import	

Attachment 1 Installation conditions should be prepared by buyer.

1. Space: The optical room and sample prepare room should separately. In order to operate convenient, please leave 1 meter space around the instrument.

2. Prepare two bottles of high purity argon gas, the purity should be more than 99.996%.

3.Spectrometer access side should be equipped with power protection, air switch, over-current protection of the 20A

4.Independent special ground, ground resistance is less than 1 ohm, grounding body with 38 ~ 50 mm diameter copper bar, its length is 2.1 m, the method of making the ground see the attachment. 5.According to the space of the laboratory, it should be equipped with air conditioner.

6. Equip with a double disc grinding prototype or a floor grinder, mill Φ 350 mm diameter, used in steel specimen surface polishing, generally need 40-60 mesh. If the sample is non-ferrous metals, need a small lathe to sampling.

7. In order to ensure the argon gas purity, need to configure an argon gas purifier. If the purity is more than 99.999%, it will not be necessary.

8. The standard sample should be prepared by the user. It is used for the calibration function. 9.Equip with a high precision regulated power supply if it is before the furnace analysis or harmonic interference.

Note:

-Spectrometer power supply system should be separate with high power electric equipment (such as the power of the medium frequency furnace and its frequent start-stop devices).

-Stay away from high-power electrical appliances at least 50 m or so. Spectral laboratory dustproof effect should be good.

-Spectral instrument avoid single heat or direct sunlight.

Attachment 2 The installation of ground wire method

Grounding resistance requirement

(1) Resistance<2Ω

The value of the grounding resistance can define the value of earth current. If grounding electric resistance is smaller, the grounding device of grounding voltage value will be smaller. That is to say, the value of the grounding resistance has marked the equipment grounding performance is good or bad.

(2) Resistance measurement

Grounding resistance is generally measured by ammeter, voltmeter, bridge method, grounding resistance measuring instrument etc. At present it is measured by grounding resistance measuring instrument. This method is simple and convenient. Common grounding resistance measuring instrument is the type of ZC - 8 and ZC - 29. Before the grounding resistance test, it should unscrew the ground down lead first.

(3) Installation

Generally speaking, a ground wire buried depth should not be less than 2 m. Installation of grounding in special places, if the depth of less than 2 m should be placed around the grounding salt 5 kg, wood carbon about 10 kg and add water, to reduce the grounding resistance. If you use a minimum of 2 and 2 root of grounding, the distance between each pole should not be less than 2.0 m, in order to reduce the diaspora of the earth resistance. In strong corrosive soil, it should use plating of copper or galvanized grounding electrodes. And grounding shall not be buried in the garbage and ash layer, laying on the ground and the ground is extremely should not be painted, in order to avoid the grounding resistance is too big.

19 YEARS

Professional focused on testing equipment

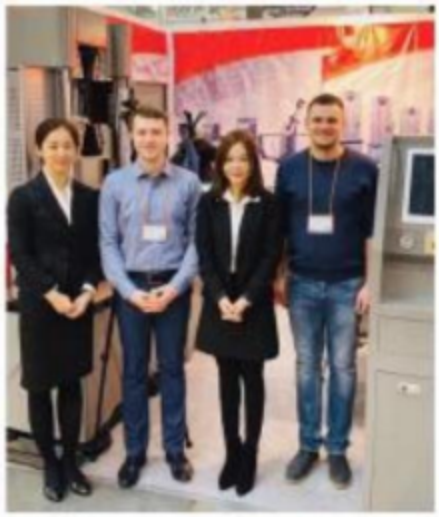
KASON is established in 2003,owns more than 8000 square meters factory.has a professional sales teams, modem enter prise technology center,scientific and technological research and development team.

Machines passed the European CE authentication,American FDA certificate and and ISO 9001.

Products sold to USA, Canada, Australia, Europe, Africa etc,more than 130 countries and supply OEM service for many customers

PROFESSIONAL TEAM

KASON has a professional sales teams, modem enter prise technology center,scientific and technological research and development team



OUR CUSTOMERS (more than 130 countries)



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