

JB-750 Optical Emission Spectrometer from Jiebo Technology



- JB-750 Optical Emission Spectrometer is based on the superior research technology and development capabilities of Wuxi Jiebo Electrical Technology Co.,Ltd. The factory depend on the best service concept and reliable certification among the domestic and foreign markets. A lot of customers finally choose JB-750 Optical Emission Spectrometer after inspect and compare with foreign brand of optical emissions spectrometer. Now JB-750 is the high-end famous brand in China.
- JB-750 Optical Emission Spectrometer has high sensitivity which is up to 1ppm. The accuracy is very high especially the content range of elements is less than 0.1%. This test method is much higher than other methods. It can simultaneous multielement analysis. It can show the test results of dozens of elements under one time analysis. The operation is simple and show the test results within 60 seconds. The cost is very low. There is no consumption of expensive chemical reagents and special accessories. It also save argon gas. One bottle argon gas can test 2000 times. The operation of analysis software is also very easy.

The advantage of JB-750 Optical Emission Spectrometer:

1. The instrument has the advantages of good accuracy, high accuracy, long term stability and leading technology.
2. The delivery time is very short. Normally it' s within 10~15 days. If you are urgent, we can finish it within 7 days.
3. Manufacturing process and design is perfect.

Part I (Application Area, Performance and Technical Parameters)

1. Application Area: This apparatus is widely used in material analysis of various industries, such as iron and steel, non-ferrous metal, metallurgy, machinery, chemical equipment, quality inspection system and so on. It is also used in routine identification and analysis in metallic smelt industry. This apparatus can analyze various kinds of matrix, such as Fe, Co, Ni, Ti, Cu, Al, Pb, Mg, Zn and Sn.
2. Analysis Principle: The samples are tested by the high combustion spark excitation light source. Then it comes emission spectrum of every analysis elements. The electrical conversion unit receives it. Then it detects and measures. And the computer is for data processing to obtain the appropriate analysis content range. The test samples is any processing plane which the diameter is more than 20mm. For small diameter samples, you just need to buy sample fixture.
3. Analysis Time: Different samples has different analysis time. Normally it will be finished within 40 seconds.
4. Standard work curve: We will do pre-work curve in our factory according the user' s analysis requirement. All working curve conforms to nation standard or international standard. The standard samples are excited on the user' s instrument which is drawing off interference and background effects. We eliminate copy the curve. Meanwhile, all analytical procedures are open to users. And we use standard samples and control samples on site to establish special working curve. It has vacuum detection, temperature detection and other diagnostic functions.
5. Data Process Function: You can analyze the results according to different display methods, and store the data and print the result.

System Configuration and Technical Parameters

1. Optical System: Main Optical Part include the standard grating is 2400line/mm. The sewing frame of 750mm Rowland circle focal length is very stable. The reentrant optical design makes optical structure more compact. The light window and entrance slit design which can be disassembled make maintenance and cleaning much easier.

The exit slit adopts the whole process by German high precision machining center including all possible 120 channels analysis position which can satisfy various matrix and elements analysis. This design is convenient for add channels in future.

Aluminum Alloy whole optical chamber and the heating temperature of special design ensure the long-term stability of the optical system. The argon flow chamber flushing ensure optical system clean, reduce the number of regular maintenance. According to the vacuum and non vacuum can be applied to different optical chamber.
2. Light Source: JB-750 Optical Emission Spectrometer adopts the solid free maintenance excitation sources. The analysis result is very stable. The single pulse spark detection technology and excitation frequency 100-1000HZ can read all the 1000 pulse spark channel analysis data.
3. Data Readout System: JB-750 Optical Emission Spectrometer adopts Jiebo S-1000 readout and control system. This system is successfully used in Jiebo products. S-1000 adopts the design of solid-state electronics which can be applied to various types of PC. Module design makes it easy for add channels. Meanwhile, the design can prevent electromagnetic interference and free of maintenance.
4. Software: Jiebo analysis software is suitable for any types of JB-750 optical emission spectrometer. This software system makes analysis work more efficient, the interface is simple, the analysis process is simple and clear, and the analysis data is reliable and accurate.

Jiebo is continuously increase and upgrade the function of software, and supply free software upgrade during the use of this instrument. The software system is simple, but powerful, many analysis and calibration functions are automatic, prompt and guide the operator for the user has completed step by step. The spectrum of experience, the software provides the basis of calculation and parameter modify the settings, especially for edit curve fitting. The storage and flexible standardization of calibration data results in convenient and accurate analysis of the results to ensure that the analysis conforms to national standards.

Technical Parameters

1. Excitation Light Source:

- (1) Supply Voltage: 50Hz, 220V \pm 1%
- (2) Input Power: 1.0KVA
- (3) Discharge Capacitor: Precombustion7.5 μ F, Exposure1.5 μ F
- (4) Peak Current: Precombustion120A, Exposure30A
- (5) The peak pressure of main loop: 300VDC
- (6) Ignition Circuit : Pulse amplitude: +15KV
Assist clearance: adopt the tunnel diode
Discharge Frequency Digital Light Source 100Hz--1000Hz

2. Excitation Desk

- (1) Sample sets of gap: 4mm
- (2) Argon filling rack without water cooling
- (3) Analysis time interval: generally less than 1 minute

3. Spectrometer

- (1) Analysis band range: 160~450nm
- (2) Grating: 750mmMachine engraved concave grating: Curvature radius of 750mm
Characterization density: 2400 line/mm
Characterization Area: 30 \times 50mm²
Blaze wavelength (level 1): 300nm
Line dispersion: 0.55nm/mm
- (3) The incident slit width: 20 μ m
- (4) Exit slit width: 50 μ m、75 μ m
- (5) Multiplier Tube: Diameter 28mm, 10 side window, fused silica or glass shell
- (6) Max channels: 24(can be extended to 48 channels)
- (7) Spectrometer local constant temperature: 38 $^{\circ}$ C \pm 0.2 $^{\circ}$ C

4. Measuring Control System

- (1) Measurement and Control System: The single board computer measurement and control, data exchange with the Host Computer.
- (2) Measuring Methods: Piecewise integral
Integral capacitance: 0.047 μ F
reproducibility: RSD \leq 0.2%

(3) Photomultiplier High Voltage Power:

Voltage: -1000V

Stability: Eight hours is better than 0.5%

High pressure regulating: from -550V to -1000V change, 0-9 grades adjustment.

High pressure settings: User can change it through computer software.

5、 Others

Maximum power 1000W, standby 300W

16A fuse

Gas requirement: argon purity 99.995%

Maximum oxygen content: 5ppm

Ambient temperature requirement: 20-30

Vacuum: 2P-5P

Host: L1130mm×W750mm×H920mm

Net Weight: 280Kg

Packing list

Item.	Name	Specification	Qty.	Unit
Main unit				
1	Optical Emission Spectrometer	JB-750	1	set
Standard accessories				
2	Operating application software	Flash U-Disk	1	Pcs
	Apparatus operating manual			
3	Protective tube	$\phi 6.5 \times 45$ 10A	2	Pcs.
4	Tungsten electrode	Diameter 4mm	1	Pcs
5	Polar distance gauge	4.0mm	1	pcs
6	Sealing ring		1	set
7	Brush electrode		1	pcs
8	Stainless steel tube	6.0mm	2.5	meter
9	Oxygen Reducing Valve	0-0.4Mpa	1	pcs
10	Tool assembly		1	Set

Optional Spare Parts

No.	Name	Quantity	Select
1	High Precision Regulated Power Supply	1 pcs	
2	Argon Gas Purifier	1 set	
3	Small Air Conditioner	1 pcs	Necessary
4	Argon Gas (Purity>99.996%)	1 pcs	Necessary
5	Standard Sample	Several	Necessary
6	Small Lathe For Sample Preparation	1 set	Necessary

The origin of core components

No.	Name	Origin	Warranty	Note
1	Grating	America RGL	15 years	No human touch
2	Multiplier Tube	Japan hamamatsu	10 years	No human destroy
3	Exit Slit	Taiwan	10 years	No human touch
4	Sewing Motor	Changzhou	10 years	No human destroy
5	Excitation Light Source	Wuxi	3 years	No human destroy
6	Measuring System	Wuxi	3 years	No human destroy
7	Excitation Desk	Wuxi	3 years	No human destroy
8	Vacuum Pump	Japan	2 years	No human destroy

Training

1. The buyer can send the people to our company for training.
2. Our engineer can go to site for training. Train 3-5 people for free.
3. After the seller received the buyer's instrument installation notice, sent to the user's site for installation and debugging, round-trip airfares and local accommodation expenses shall be borne by the buyer.
4. After the instruments have arrived at your esteem company, warehouse storage, warehouse temperature 0 ~ 30 °C, relative humidity is not more than 75%, after waiting for installation personnel arrived, mutual unpacking, according to the packing list number counting.
5. Use the standard sample which is bought by your esteem company for instrument acceptance at the scene and check the analysis precision.
6. After installation and debugging, it must be paid to return if the quality can not meet the technical requirements. if only individual elements analysis deviation slightly larger, mutual analysis reason, through friendly consultation.
7. The training includes how to open the instrument, daily maintenance, software operation. After installation completely, Engineers need to complete an installation acceptance report, and on behalf of the signature or stamp by both parties.
8. Warranty period in accordance with the contract to perform

Aftersales

Wuxi Jiebo Electrical technology Co.,Ltd. is based on the principle of "honest business, service first" and tries all his best to provide users with satisfactory and timely service. We promise to all the buyers to buy the products implement "3 packets", provide the perfect technical support, with excellent after-sales service to remove the user's worries.

Service Commitment

The period of 3 packets: from the date of installation commissioning acceptance, instrument photoelectric direct reading spectrometer machine one year free warranty, life-long service, and provide all kinds of spare parts for years.

The content of 3 packets

(1) Repair: Within the period of 3 packets, all the quality problems is repaired by our company.

(2) The conditions of Guarantee Replacement: Within the period of 3 packets, our company is responsible for replace the new instrument.

① If the debugging have 3 times, it is still not meet the standards of quality.

② The same problem has been caused by the same instrument 3 times, it is still not meet the standard of the quality.

③ If the quality problem can' t be repaired, we will replace the new equipment.

The below conditions of return within the 3 packets, the seller will be responsible for the back products and return the payment to the buyer.

(1) After replacing the two equipments,, it is still not meet the standard of quality.

(2) After replacing two equipments, the quality problems can' t be repaired.

4. Beyond the period of 3 packets, if the instrument break down, our company will be responsible for repair, but the cost during the repair should be born by user.

5. The seller supply free installation and training.

6. Provide Communication Service on a regular time: introduce the company's new technology developments, instrument functions and test report of users in all walks of life and experience.

7. When users meet the problem, please call the service telephone number 0510-83211953. Aftersales service man will supply solution ways by telephone or fax within one hour.

8. If the break down of the instrument should be repaired on site, the service man will arrive the spot depend on the visa.

9. The content of the on-site maintenance service includes repairing the break down of instrument, test the instrument indicator, train function operation, introduce using experience and daily maintenance.

10. Supply software update for free.

11. According to the different materials, supply different analysis methods.

Installation Conditions

1. Space

The dimensions of the instrument is 1180×750×920mm, 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 10A.

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. 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

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.