ATOMIC ABSORPTION SPECTROPHOTOMETER

COMPANY PROFILE

Our Promise

Respond to customers and provide solutions in 8 hours.

Our Mission

Provide high quality products and services.

Our Vision

To be a well-known brand for analytical instruments.

PEAK Instruments Inc is located in Houston, TX-77084, where our head office and warehouseare also located, which is a high tech enterprise integrated with R&D, production, sales and service of spectrophotometer, pH meter, conductivity meter, dissolved oxygen meter, ion meter and balances, which have wide applications in the following areas like metallurgy, pharmacy, food, health, institutes, biological chemistry, life science, petrochemical industry, quality control, environmental protection, electrochemistry and water quality analysis, etc..

We have professional teams of management, R&D, production, QC, sales and technical support, which guarantee good quality products, competitive prices and efficient service for global customers. We have CE and ISO9001 certificates.We continuously absorb new ideas and technologies to improve our products and services in accordance with the concept of innovation, quality and service.

We have steady growth and good reputation in the markets of more than 95 countries, like USA, Argentina, Italy, Germany, Spain, Russia, Korea, India, Indonesia and Egypt.

# Atomic Absorption Spectrophotometer

The AAS is fully PC controlled with modern and compact design. They have flexible configuration and different accessories to meet variable requirements. Advance optical system can guarantee stable and reliable performance. Unique and intelligent gas control module can ensure the device safety. The AAS can test more than 70 elements including metallic and non-metallic elements, which can be used widely in petrochemistry, metallurgy, mining, geology, material analysis, food and pharmacy.
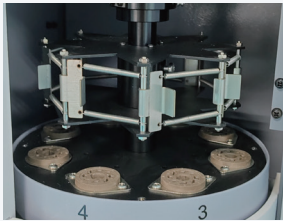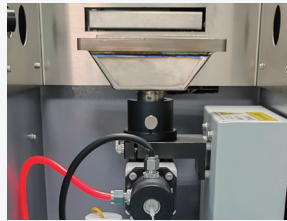
Main Features

Hollow Cathode Lamp
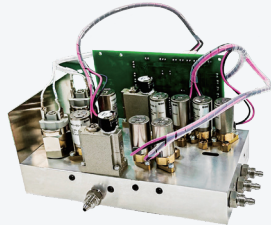
Gas Control Module
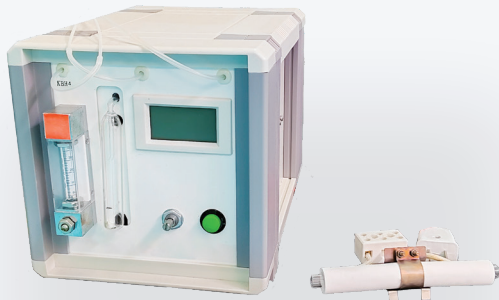

Vertical Automatic
4/8 Lamp Turret

Graphite
Furnace Head

- Automatic vertical 4/8-lamp turret supports high-performance element lamp, can be rotated 360 degrees and make sure the test accuracy and reliability is not affected by the gravity.

- Automatic burner adjustment ensures the maximum sensitivity, you can raise or lower the burner according to the reading. Flame detection enhances the device safety.

- Modular design for optical system and circuit makes the maintenance and repair simple.

- Total reflection optical system can reduce energy loss to ensure better signal-to-noise ratio and lower detection limit.

- Standard deuterium lamp background correction for all models. Standard high-performance self-absorption background correction for double beam models, and optional for the models with 8-lamp turret.

- Automatic pneumatic control module ensures the device safety and accuracy and protects the operator and device better.

Autosampler

Hydride System

Graphite Tube

Burner Head

Safety protection system: flame monitoring (acetylene will be turned off automatically if there is any abnormality and show warning information), unique acetylene protector (warning information will be shown if the leak acetylene concentration is beyond the alert concentration), pressure monitoring (the flame will not work if the air or acetylene pressure is not normal, the graphite furnace will not work if the argon pressure is too high or too low), graphite tube installation self-inspection.

Professional, automatic and easy to operate full operation RGWIN AAS software under MS window system and QA/QC function.

Transversely heated graphite tube ensures the consistency of the gas temperature in the graphite tube, and make the sample reach the atomic temperature instantly and simultaneously, improve atomic efficiency and test accuracy, ensure that the analysis results are more accurate, reduce the requirements for furnace body and prolong lifetime.
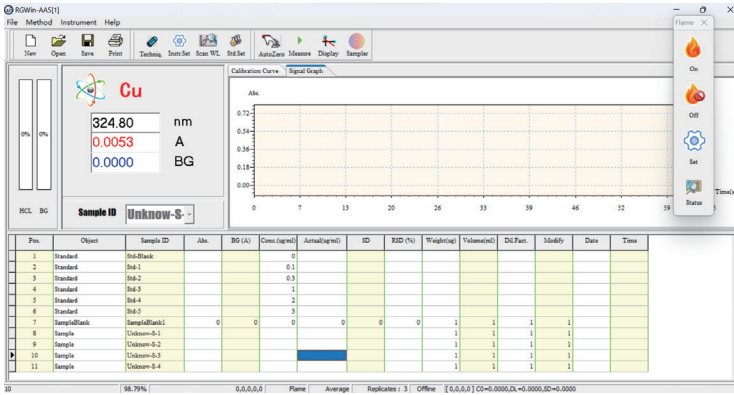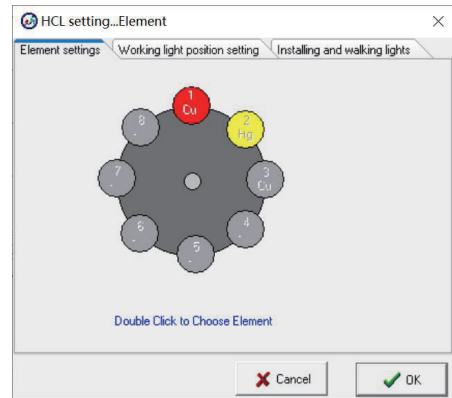

Air Compressor

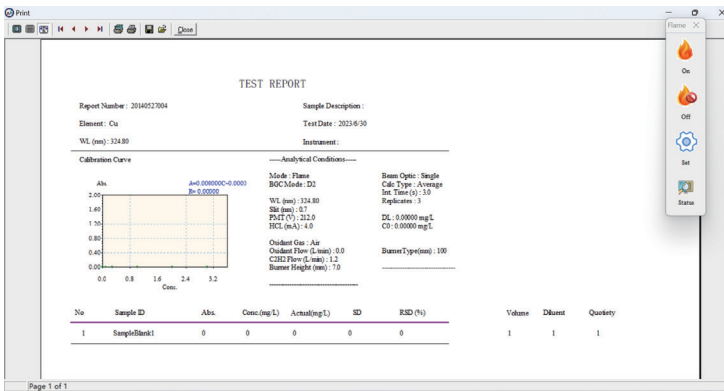Circulation Cooling Water System

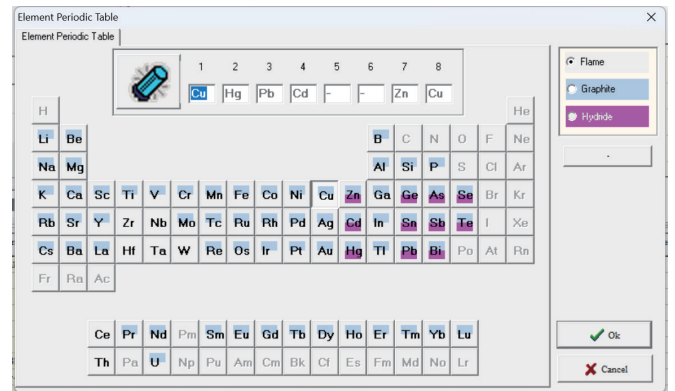# Automatic full operation RGWIN AAS software
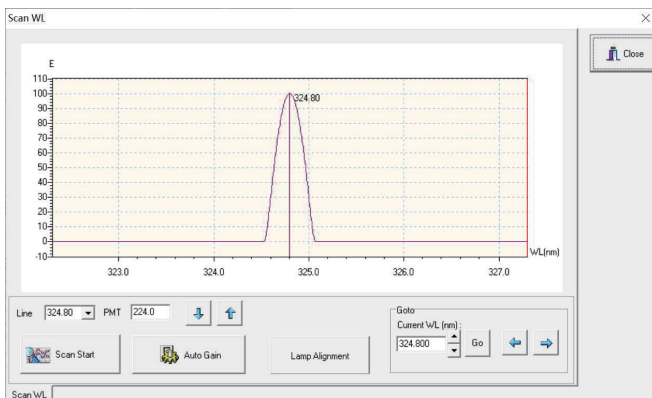

Enter the main interface

Element setting, double-click the lamp position to select the element
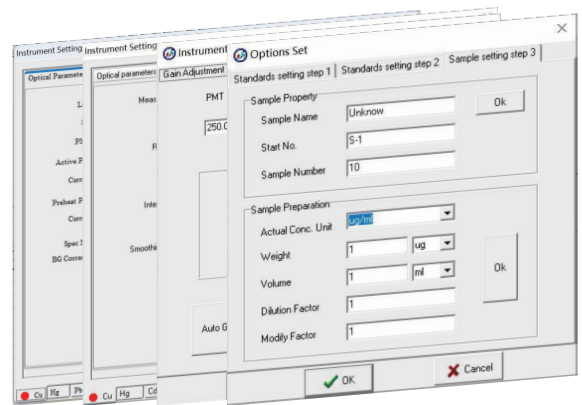

Result printing, Click Print to enter print preview

Select element, atomization mode

"Scan WL" interface

Parameter setting

Flame AAS Specification

Model		AA2914	AA2918	AA2928
Optical System	Optical Type	Single beam	Single beam	Double beam
	Monochromator	Czerny-Turner type with focal lengths at 350mm		
	Wavelength Range	190-900nm		
	Grating	Holographic diffraction grating with 1800 lines/mm		
	Slits	Automated slit selection 0.1, 0.2, 0.4, 0.7, 1.4, 2.0 nm		
	Wavelength Accuracy	±0.3 nm	±0.2 nm	±0.15 nm
	Wavelength Repeatability	±0.1 nm	±0.1 nm	±0.05 nm
	Lamp Holder	Automated 4-lamp turret	Automated 8-lamp turret	
	Detector	Wide range UV sensitive photomultiplier tube		
Photometric Performance	Reading Mode	Transmittance(T), Absorbance(A), Concentration(C)		
	Photometric Range	0-125%, -0.1-3.00A		
	Static Baseline Drift (Cu)	≤0.004A/30 min	≤0.003A/30 min	≤0.002A/30 min
	Dynamic Baseline Drift (Cu)	≤0.006A/15 min	≤0.005A/15 min	≤0.004A/15 min
	Background Correction	Deuterium (D2) Background Correction		D2 and Self-absorption
Flame Analysis	Characteristic Concentration	Cu≤0.04ug/ml	Cu≤0.035ug/ml	Cu≤0.02ug/ml
	Detection Limit	Cu≤0.008ug/ml	Cu≤0.006ug/ml	Cu≤0.004ug/ml
	Repeatability (Cu)	RSD≤1%	RSD≤0.6%	RSD≤0.5%
	Acetylene Flow Control	Auto 12-level	Auto 12-level	Auto 12-level
	Air Flow Control	Auto 4-level	Auto 4-level	Auto 4-level
	Nebulizer	High efficiency glass		
	Burner Adjustment	Automatic up and down		
	Burner Head	Titanium alloy 100mm burner for air/acetylene operation		
	Premix Chamber	Corrosion resistant		
	Safety Protection	Flame sensor, gas leak sensor, gas pressure sensor		
Data Processing	Software	RGWIN AAS software pacakage		
	Analytical Method	Flame AA, Flame AE, Hydride Generation		
	Concentration Calculation Method	Standard curve(6 linear/non-linear fitting), Standard Addition, Interpolation		
	Repeated Measurement Times	1-30 times, calculate the average, show SD and RSD value of absorbance and concentration		
	QA/QC Function	Correlation coefficient, SD & RSD of Abs and calculate SD & RSD of concentration		
	Report Printing	Parameter printing, resulting printing		
	Communication Port	Standard RS-232		
Others	Computer	External(excluded)		
	Dimension & Weight	(W*D*H), Kg		
	Power Supply	110/220V, 50/60Hz		
	Working Environment	Temperature 10 ~ 35 °C, Humidity≦85%		

Packing List

NO.	Description	Qty	NO.	Description	Qty
1	Main Unit	1	8	6mm air tube(transparent)	10m
2	Power Cable	1	9	USB(manual and software)	1
3	Data Cable	1	10	Drain Tube	2m
4	Screw Driver	1	11	Acetylene pressure reducing valve connector	1
5	Cu HCL	1	12	5A fuse	3
6	Air Compressor	1	13	Ignition filament	5
7	6mm acetylene tube(orange)	10m			

Graphite Furnace AAS Specification

Model		AA3014	AA3018
Optical System	Optical Type	Single beam	Single beam
	Monochromator	Czerny-Turner type with focal lengths at 350mm	
	Wavelength Range	190-900nm	
	Grating	Holographic diffraction grating with 1800 lines/mm	
	Slits	Automated slit selection 0.1, 0.2, 0.4, 0.7, 1.4, 2.0 nm	
	Wavelength Accuracy	±0.3 nm	±0.2 nm
	Wavelength Repeatability	±0.1nm	±0.1nm
	Lamp	Automated 4-lamp turret	Automated 8-lamp turret
	Detector	Wide range UV sensitive photomultiplier tube	
Photometric Performance	Reading Mode	Transmittance(T), Absorbance(A), Concentration(C)	
	Photometric Range	0-125%, -0.1-3.00A	
	Static Baseline Drift (Cu)	≤0.004A/30 min	≤0.003A/30 min
	Dynamic Baseline Drift (Cu)	≤0.006A/15 min	≤0.005A/15 min
	Background Correction	Deuterium (D2) Background Correction	
Graphite Furnace Analysis	Characteristic Concentration	Cd≤0.9pg , Cu≤20pg	Cd≤0.9pg , Cu≤20pg
	Detection Limit	Cd≤1.5pg , Cu≤25pg	Cd≤1.5pg , Cu≤25pg
	Repeatability (Cu)	RSD≤4%	RSD≤4%
	Temperature Range	Ambient -3000℃	Ambient -3000℃
	Ramp and holding time	1-255s	1-255s
	Heating Rate	Maximum linear heating rate 2000℃/s	
	Atomization Heating Method	Light-controlled heating, Time-controlled heating, General heating	
	Gas Flow Rate Inside Tube	1 L/min	
	Gas Flow Rate Outside Tube	4-speed adjustable (0, 50, 200, 250ml/min)	
	Safety Protection	Water flow sensor, Argon pressure sensor, Furnace body temperature sensor, Graphite tube installation self-inspection.	

Model	AA3014	AA3018
Data Processing Software	RGWIN AAS software package	
Analytical Method	Flame AA, Flame AE, Hydride Generation	
Concentration Calculation Method	Standard curve(6 linear/non-linear fitting), Standard Addition, Interpolation	
Repeated Measurement Times	1-30 times, calculate the average, show SD and RSD value of absorbance and concentration	
QA/QC Function	Correlation coefficient, SD & RSD of Abs and calculate SD & RSD of concentration	
Report Printing	Parameter printing, resulting printing	
Communication Port	Standard RS-232	
Others Computer	External(excluded)	
Dimension & Weight	(W*D*H), Kg	
Power Supply	110/220V, 50/60Hz	
Working Environment	Temperature 10 ~ 35 °C, Humidity≦85%	

Packing List

NO.	Description	Qty	NO.	Description	Qty
1	Main Unit	1	9	Argon pressure reducing valve connector	1
2	Power Cable	1	10	Graphite tube	5
3	Data Cable	1	11	High power socket	1
4	Screw Driver	1	12	6*4mm argon tube(transparent)	10m
5	Cd HCL	1	13	5-50ul pipette	1
6	Cd HCL	1	14	200ul pipette tip(1000pc/bag)	1
7	USB(manual and software)	1	15	6*10mm cooling water tube	6m
8	5A fuse	3	16	Graphite furnace camera connection cable	1

Flame & Graphite Furnace AAS Specification

Model	AA6018	AA6028
Optical System Optical Type	Single beam	Double beam
Monochromator	Czerny-Turner type with focal lengths at 350mm	
Wavelength Range	190-900nm	
Grating	Holographic diffraction grating with 1800 lines/mm	
Slits	Automated slit selection 0.1, 0.2, 0.4, 0.7, 1.4, 2.0 nm	
Wavelength Accuracy	±0.2 nm	±0.15 nm
Wavelength Repeatability	±0.1nm	±0.05nm
Lamp Holder	Automated 8-lamp turret	
Detector	Wide range UV sensitive photomultiplier tube	

Model		AA6018	AA6028
Photometric Performance	Reading Mode	Transmittance(T), Absorbance(A), Concentration(C)	
	Photometric Range	0-125%, -0.1-3.00A	
	Static Baseline Drift (Cu)	≤0.003A/30 min	≤0.002A/30 min
	Dynamic Baseline Drift (Cu)	≤0.005A/15 min	≤0.004A/15 min
	Background Correction	Deuterium (D2) Background Correction and Self-absorption Background Correction	
Flame Analysis	Characteristic Concentration	Cu≤0.035ug/ml	Cu≤0.02ug/ml
	Detection Limit	Cu≤0.006ug/ml	Cu≤0.004ug/ml
	Repeatability (Cu)	RSD≤0.6%	RSD≤0.5%
	Acetylene Flow Control	Auto 12-level	Auto 12-level
	Air Flow Control	Auto 4-level	Auto 4-level
	Nebulizer	High efficiency glass	
	Burner Adjustment	Automatic up and down	
	Burner Head	Titanium alloy 100mm burner for air/acetylene operation	
	Premix Chamber	Corrosion resistant	
	Safety Protection	Flame sensor, gas leak sensor, gas pressure sensor	
Graphite Furnace Analysis	Characteristic Concentration	Cd≤0.6pg , Cu≤20pg	Cd≤0.5pg , Cu≤20pg
	Detection Limit	Cd≤1.0pg , Cu≤25pg	Cd≤0.8pg , Cu≤25pg
	Repeatability (Cu)	RSD≤3%	RSD≤2.5%
	Temperature Range	Ambient -3000°C	Ambient -3000°C
	Ramp and holding time	1-255s	1-255s
	Heating Rate	Maximum linear heating rate 2000°C/s	
	Atomization Heating Method	Light-controlled heating, Time-controlled heating, General heating	
	Gas Flow Rate Inside Tube	1 L/min	
	Gas Flow Rate Outside Tube	4-speed adjustable (0, 50, 200, 250ml/min)	
	Safety Protection	Water flow sensor, Argon pressure sensor, Furnace body temperature sensor, Graphite tube installation self-inspection.	
Data Processing	Software	RGWIN AAS software package	
	Analytical Method	Flame AA, Flame AE, Hydride Generation	
	Concentration Calculation Method	Standard curve(6 linear/non-linear fitting), Standard Addition, Interpolation	
	Repeated Measurement Times	1-30 times, calculate the average, show SD and RSD value of absorbance and concentration	
	QA/QC Function	Correlation coefficient, SD & RSD of Abs and calculate SD & RSD of concentration	
	Report Printing	Parameter printing, resulting printing	
	Communication Port	Standard RS-232	
Others	Computer	External(excluded)	
	Dimension & Weight	(W*D*H), Kg	
	Power Supply	110/220V, 50/60Hz	
	Working Environment	Temperature 10 ~ 35 °C, Humidity≦85%	

Packing List

NO.	Description	Qty	NO.	Description	Qty
1	Main Unit	1	12	Acetylene pressure reducing valve connector	1
2	Power Cable	1	13	5A fuse	3
3	Data Cable	1	14	Argon pressure reducing valve connector	1
4	Screw Driver	1	15	Graphite tube	5
5	Cu HCL	1	16	High power socket	1
6	Cd HCL	1	17	6*4mm argon tube(transparent)	10m
7	Air Compressor	1	18	5-50ul pipette	1
8	6mm acetylene tube(orange)	10m	19	200ul pipette tip(1000pc/bag)	1
9	6mm air tube(transparent)	10m	20	6*10mm cooling water tube	6m
10	USB(manual and software)	1	21	Graphite furnace camera connection cable	1
11	Drain Tube	2m	22	Ignition filament	5

Comparison Table

Model	Optical Type	Atomization	Lamp Holder	Background Correction
AA2914	Single Beam	Flame	4-lamp Turret	Deuterium (D2) Lamp
AA2918	Single Beam	Flame	8-lamp Turret	Deuterium (D2) Lamp Self-absorption(optional)
AA2928	Double Beam	Flame	8-lamp Turret	Deuterium (D2) & Self-absorption
AA3014	Single Beam	Graphite Furnace	4-lamp Turret	Deuterium (D2) Lamp
AA3018	Single Beam	Graphite Furnace	8-lamp Turret	Deuterium (D2) Lamp Self-absorption(optional)
AA6018	Single Beam	Flame & Graphite Furnace	8-lamp Turret	Deuterium (D2) Lamp Self-absorption(optional)
AA6028	Double Beam	Flame & Graphite Furnace	8-lamp Turret	Deuterium (D2) & Self-absorption

Legend:
- Air/Acetylene Flame
- Graphite Furnace
- N₂O/Acetylene Flame
- Hydride Method

Periodic table with AAS (Atomic Absorption Spectroscopy) application color coding:

Group headers: I A 1, II A 2, III B 3, IV B 4, V B 5, VI B 6, VII B 7, VIII 8, 9, 10, I B 11, II B 12, III A 13, IV A 14, V A 15, VI A 16, VII A 17, 0

Period	Elements
1	1 H; 2 He
2	3 Li; 4 Be; 5 B; 6 C; 7 N; 8 O; 9 F; 10 Ne
3	11 Na; 12 Mg; 13 Al; 14 Si; 15 P; 16 S; 17 Cl; 18 Ar
4	19 K; 20 Ca; 21 Sc; 22 Ti; 23 V; 24 Cr; 25 Mn; 26 Fe; 27 Co; 28 Ni; 29 Cu; 30 Zn; 31 Ga; 32 Gc; 33 As; 34 Se; 35 Br; 36 Kr
5	37 Rb; 38 Sr; 39 Y; 40 Zr; 41 Nb; 42 Mo; 43 Tc; 44 Ru; 45 Rh; 46 Pd; 47 Ag; 48 Cd; 49 In; 50 Sn; 51 Sb; 52 Te; 53 I; 54 Xe
6	55 Cs; 56 Ba; 57~71 La~Lu; 72 Hf; 73 Ta; 74 W; 75 Re; 76 Os; 77 Ir; 78 Pt; 79 Au; 80 Hg; 81 Tl; 82 Pb; 83 Bi; 84 Po; 85 At; 86 Rn
7	87 Fr; 88 Ra; 89~103 Ac~Lr; 103 Rf; 104 Db; 105 Sg; 106 Bb; 107 Hs; 108 Mt; 109 Uun; 110 Uuu; 111 Uub

La~Lu: 57 Lr; 58 Cc; 59 Pr; 60 Nd; 61 Pm; 62 Sm; 63 Eu; 64 Gd; 65 Tb; 66 Dy; 67 Ho; 68 Er; 69 Tm; 70 Yb; 71 Lu

Ac~Lr: 89 Ac; 90 Th; 91 Pa; 92 U; 93 Np; 94 Pu; 95 Am; 96 Cm; 97 Bk; 98 Cf; 99 Es; 100 Fm; 101 Md; 102 No; 103 Lr

PEAK INSTRUMENTS