AAS - 3810

Atomic Absorption Spectrophotometer

EPCC / PRODUCTS / APPLICATION / SOFTWARE / ACCESSORIES / CONSUMABLES / SERVICES

Analytical Technologies Limited

An ISO 9001 Certified Company

www.analyticalgroup.net

▸▸ FEATURES

Higher Reliability

• Aberration eliminated C-T type monochromator with stable performance

• Modular electronic circuits design with easy operation and maintenance

• Reliable gas-liquid separator and fuel gas filter device provide the robustness even in high humid and harsh environment.

Higher Safety

• Intelligent feedback detection technique, real-time monitors the lamp current and protects the hollow cathode lamps.

• Simple structure modular gas supply system provides lower fault rate, higher safety and reliability.

• High precision mass flow controller and stable electronics in flame system control the fuel flow accurately. Temperature control protection system together with dual air circuit breakers in GF system, effectively prevent current overload or abnormal temperature rise.

• Multiple safety interlock device and prompt information display prevent possible dangers.

More easy to use

• Unique light source system, with 8-lamp turret fully automatic change and optimization, supports 1 lamp working and 7 lamps preheating in the same time.

• Easy changing emission burner for easily ionized elements such as K, Na, etc., with linear range 3 times that of normal flame.

• Temperature control modes in graphite furnace analysis can be switched over easily between optical control and constant voltage control, according to different elements and graphite tubes, for the best results and extending the lifetime of graphite tubes.

• One-click automatic optimization, easy analytical condition setting, expert database support, for easy operation with no worries.

Fewer Faults

• Hamamatsu's high performance PMT as the detector.

• Molding PPS spray chamber has high chemical stability, withstanding high temperature and strong acids etc..

• The communication system is based on the mature bussing technique. It improves anti-jamming capability and data transmission reliability.

▶▶ SPECIFICATIONS

Wavelength Range

• 190nm ~ 900nm

Light Source

• 8-lamp turret automatically rotates and aligns

• 2 positions for High performance lamp.

• 8-lamp power on and multiple lamp preheat at the same time.

• Lamp current range: 0~15mA

Optical System

• Czerny-Turner monochromator

• Diffraction Grating: Groove 1800lines/mm, blaze wavelength 250nm

• Focal Length: 277mm

• Spectral Bandwidth: 0.1nm, 0.2nm, 0.4nm, 0.8nm, 1.6nm

• automatically change (Model A)

• Bandpass: 0.1nm, 0.2nm, 0.4nm, 1.2nm automatically change (Model B)

• Automatic peak-picking, automatic spectral bandwidth setting, automatic energy and wave-length optimization.

• Sensitivity: Minimum absorbance of >0.9Abs for 5ppm Cu (Copper)

• Reciprocal Linear dispersion 0.5nm/mm

Flame System

• 10cm Ti burner head for air-acetylene flame, emission burner provided.

• Burner head height and horizontal position automatic adjustment, with burner angle rotatable.(Model A)

• Burner head height push-button adjustable and horizontal position manually adjusted, with burner angle rotatable.(Model B)

• Direct forming spray chamber with corrosion-resistant material PPS

• Automatic ignition with high precision mass flow control system, realizing fully automated fuel gas flow control an adjustment.

Graphite Furnace System (Type A)

• Longitudinal heating GF system with temperature up to 3000ºC, heating rate more than 2500ºC/s.

• Two temperature control modes selectable: optical and constant voltage. Both slope and stepped temperature programming are available.

• Fully automatic GF height and horizontal position setting and optimization.

• Inner gas, external gas and make up gas are controlled separately. Circulating water and gas flows monitoring system is equipped.

• Different types of graphite tubes can be used.

Auto sampler for furnace. The auto-sampler to accommodate up to 60 samples in the large carousel

Hydride Generation System (for elements such as As and Hg) having the facility of continuous flow vapour with minimum of four channel peristaltic pump and operates automatically under data station control

Data Coded single element Hollow Cathode Lamp (HCL) for 30 elements:

as per the application Consumables and spares including 100 nos. graphite tubes for graphite furnace along with one service manual and one operation manual

Safety Protection

• Full package of safety protection measures, with hardware and software dual alarm system.

• Real-time monitoring for flame condition and air pressure etc., with automatic flame shut-

ting down, gas supply cutting off and activating alarm when abnormal detected, such as ignition failure, fuel gas leakage, flow control error, etc.

• Real-time monitoring for GF conditions and heating program etc., with automatic power cut-off and alarm when abnormal detected, such as water and gas control error, graphite tube installation mistake, and temperature control problem etc.

Background Correction

• D2 lamp background correction, with correction ability more than 30 times.

• S-H -zeeman background correction, with correction ability more than 30 times.

Software and Communication

• Intelligent operation software compatible to WinXP, Win7, Win8, Win10.

• One-key operation for instrument optimization, supporting multi-task analysis.

• Automatic curve fitting, automatic re-slope, automatic concentration calculation, etc.

• Repeat measure 1~99 times, automatic calculation of Average Value, Standard Deviation, RSD, etc..

• Standard USB communication port.

Power Supply

Main Unit for model A：Single phase AC, 110V/220V, max power consumption: 0.2kVA

Main Unit for model B：Single phase AC, 110V/220V, max power consumption: 0.15kVA

GF Power Supply for model A：Single phase AC, 220V, max power consumption: 5.5kVA

Dimensions and Weight

Main Unit for Type A：1020mm（L）×530mm（W）×500mm（H），85kg

Main Unit for Type B：1020mm（L）×530mm（W）×500mm（H），80kg

GF Power Supply for Type A：350mm（L）×490mm（W）×430mm（H），40kg

▸▸ Flame AAS

No	Element	Wave length nm	Flame type	Detection limit µg/mL	Characteristic concentration µg/mL	Recommended analysis range µg/mL	Minimum analysis concentration µg/mL
1	Ag	328.1	oxidizing flame	0.0028	0.023	0.1 ~ 3.5	0.05
2	As	193.7	oxidizing flame	0.1348	0.585	5.0 ~ 50	1.5
3	Au	242.8	oxidizing flame	0.0032	0.051	0.2 ~ 7.5	0.1
4	Ba	553.6	reducing flame	0.3506	4.770	20 ~ 750	10
5	Bi	223.1	oxidizing flame	0.0189	0.109	0.75 ~ 15	0.25
6	Ca	422.7	oxidizing flame	0.0019	0.060	0.3 ~ 7.5	0.1
7	Cd	228.8	oxidizing flame	0.0034	0.014	0.1 ~ 2.0	0.03
8	Co	240.7	oxidizing flame	0.0321	0.046	0.2 ~ 6.0	0.1
9	Cr	357.9	reducing flame	0.0276	0.057	0.3 ~ 7.5	0.1
10	Cs	852.1	oxidizing flame	0.0042	0.075	0.5 ~ 10	0.2
11	Cu	324.7	oxidizing flame	0.0043	0.024	0.1 ~ 5.0	0.03
12	Fe	248.3	oxidizing flame	0.0183	0.440	0.3 ~ 6.0	0.15
13	Ga	294.3	oxidizing flame	0.0298	1.054	5.0 ~ 150	2
14	In	303.9	oxidizing flame	0.0039	0.153	1.0 ~ 20	0.4
15	K	766.5	oxidizing flame	0.009	0.008	0.03 ~ 1.0	0.02
16	Li	670.8	oxidizing flame	0.0018	0.013	0.05 ~ 1.5	0.03
17	Mg	285.2	oxidizing flame	0.00025	0.004	0.02 ~ 0.6	0.01
18	Mn	279.5	oxidizing flame	0.0023	0.013	0.05 ~ 2.0	0.03
19	Mo	313.3	reducing flame	0.0419	0.990	5.0 ~ 150	2.5
20	Na	589.0	oxidizing flame	0.0012	0.008	0.05 ~ 1.0	0.02
21	Ni	232.0	oxidizing flame	0.0019	0.028	0.2 ~ 4.0	0.05
22	Pb	283.3	oxidizing flame	0.0056	0.137	0.5 ~ 20	0.25
23	Pd	247.6	oxidizing flame	0.0026	0.049	0.3 ~ 7.5	0.1
24	Pt	365.9	oxidizing	0.0343	0.522	2.5 ~ 75	1

▸▸ Graphite Furnace AAS

No	Element	Wave length nm	Atomization temperature ℃	Detection limit pg	Characteristic quantity pg	Recommended analysis range ng/mL	Minimumanalysis quantity pg	Minimum analysis concentration ng/mL
1	Ag	328.07	2200	0.82	4.92	2.0 ~ 20	25	0.5
2	As	193.70	2200	89.97	17.52	5.0 ~ 80	200	4
3	Au	242.80	2200	2.49	7.14	3.0 ~ 50	30	0.6
4	Be	234.86	2400	0.20	0.48	0.1 ~ 5.0	2.5	0.05
5	Bi	306.77	2100	4.86	16.80	5.0 ~ 100	75	1.5
6	Cd	228.80	2000	0.39	0.55	0.3 ~ 6.0	3	0.06
7	Co	240.73	2400	7.62	11.50	3.0 ~ 70	50	1
8	Cr	357.87	2400	3.77	8.94	2.0 ~ 70	40	0.8
9	Cs	852.11	2000	11.07	18.03	4.0 ~ 100	80	1.6
10	Cu	324.75	2200	9.80	18.69	3.0 ~ 100	50	1
11	Ga	287.42	2400	60.13	186.13	30 ~ 800	500	10
12	In	303.94	1800	5.83	15.94	5.0 ~ 120	75	1.5
13	Li	670.80	2500	3.27	2.84	0.5 ~ 20	10	0.2
14	Mn	279.48	2600	2.56	2.85	0.3 ~ 10	7.5	0.15
15	Mo	313.26	2600	12.64	19.22	4.0 ~ 120	100	2
16	Ni	232.00	2400	5.18	5.34	1.0 ~ 50	25	0.5
17	Pb	283.31	1900	12.30	7.64	2.0 ~ 60	50	1
18	Pd	247.64	2500	5.31	11.60	3.0 ~ 80	50	1
19	Pt	265.90	2600	19.66	29.82	5.0 ~ 200	100	2

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HPLC Servicing :HPLC Servicing : We have team of service engineers who can attend to any make of HPLC promptly @the most affordable cost.

Trainings   :We also take up preventive Maintenace to reduce downtime of HPLC's Trainings.

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