

### Specifications

Solid State Power		Electronic Measurement& Control Circuit	
Frequency 27.12MHz		Photomultiplier tube specification R121R928	
Frequency stability<0.05%		Negative high voltage (-50 ~ -1500)V	
Matching Automatch		Circuit measuring range (10 <sup>-12</sup> ~ 10 <sup>-1</sup> )A	
Output power 800W ~ 1600W, continuously adjustable with power efficiency more than 65%		Signal acquisition: V/F conversion	
Output power stability<0.05%		Computer	
Induction coil ID 25mmx3, equipped with three concentric quartz torch tubes of ED 35mm (ID: internal diameter, ED: external diameter)		Monitor 17 inches LCD Monitor	
Spray chamber Scott double pass spray chamber		Printer Canon inkjet	
		Main power supply AC 220V, Current: 20A	
Monochromator		Technical Specifications	
Optical type Czerny turner		Syringable sample	Liquid sample: 0.01ppm ~ several thousands ppm
Focal length: 1000mm		solids range	Solid or powder sample: 0.001% ~ 70%
Resolution <0.015nm (3600 line grating)		Repeatability short-term stability, RSD<1.0%	
<0.030nm (2400 line grating)		Long-term stability RSD<2%	
Grating specification huge holographic grating with 3600/line or 2400/line and 80 mmx100mm of ruling area		Test speed 5~8 elements/min	
Wavelength range 195~800 nm for 3600 line grating		Limits of detection (LOD: ug/L) for typical elements 1ppb~10ppb	
		Machine Size	
		Desktop, 1.5m*0.8m*0.8m	

### Working environment

Item	Description
Temperature for storage and transportation	15°C ~ 25°C
Humidity for storage and transportation	<70%
Power stability	220V 10% 50-60Hz
Humidity	<70%
Temperature	15°C ~ 30°C

### Other accessories

Windage	Voltage stabilizer
Gas pressure regulator	ICP 2060T power cable
Water cooling system	Copper cable for ground
Sampling system include nebulizer, spray chamber, plasma torch	

### Implementing ISO9001 International Quality Certification System

Detection limits for typical elements (here λ refers to wavelength)( ug/L ) :

Element	La	Ce	Pr	Nd	Sm	Al	Zr	Ag	Sr	Au
λ (nm)	408.672	413.765	414.311	401.225	360.946	396.152	343.823	328.068	407.771	242.795
LOD	< 3.0	< 3.0	< 3.0	< 3.0	< 10.0	< 3.0	< 3.0	< 3.0	< 1.0	< 3.0
Element	Eu	Gd	Tb	Dy	Ho	Tl	Pd	Ir	Rh	Bi
λ (nm)	381.967	342.247	350.917	353.170	345.600	265.945	340.458	224.268	343.489	240.272
LOD	< 1.0	< 10.0	< 3.0	< 3.0	< 3.0	< 3.0	< 5.0	< 10.0	< 10.0	< 5.0
Element	Er	Tm	Yb	Lu	Y	Ba	Cr	Sb	Bi	Hg
λ (nm)	337.271	313.126	368.418	361.541	371.330	455.403	287.716	206.833	233.061	253.652
LOD	< 3.0	< 3.0	< 1.0	< 1.0	< 1.0	< 1.0	< 5.0	< 15	< 10	< 15
Element	Sc	Ta	Nb	Mo	Mg	Pb	Ga	Se	Sn	Te
λ (nm)	335.373	226.230	313.340	257.610	279.553	220.353	284.364	203.985	242.949	214.281
LOD	< 1.0	< 3.0	< 5.0	< 3.0	< 1.0	< 15	< 10	< 10	< 20	< 10
Element	B	Zn	Co	Si	Os	Te	Th	Tl	Ra	Ga
λ (nm)	249.773	13.856	228.616	251.611	235.585	226.230	283.730	276.787	227.525	209.426
LOD	< 10.0	< 3.0	< 3.0	< 10.0	< 1	< 5.0	< 10	< 30	< 5	< 15
Element	Ni	Od	Fe	Ga	Mo	W	Se	Li	Na	K
λ (nm)	232.503	228.162	228.543	393.369	281.615	201.911	203.955	670.784	589.305	766.490
LOD	< 5.0	< 3.0	< 3.0	< 1.0	< 5.0	< 10	< 30	< 3	< 20	< 60
Element	V	Be	Ti	Cu						
λ (nm)	310.230	313.541	334.941	324.754						
LOD	< 3.0	< 1.0	< 3.0	< 3.0						

- Wide Application
- Rapid analysis
- Low detection limits



## ICP2060T

Sequential Inductively Coupled Plasma Emission Spectrometer

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**Summary**

ICP 2060T Sequential Inductively Coupled Plasma Emission Spectrometer is designed to measure major, minor and trace elements in various samples with outstanding performance.

It was widely chosen in different industries for its superior optical resolution, high level of automation, reliable free running RF system as well as excellent analytical precision and accuracy.

ICP2060T was widely applied in various fields ranging from rare earth, geology, metallurgy, chemistry, environmental protection, clinical medicine, petroleum products, semiconductors, foods, biological samples, criminal science, to agricultural research, etc.

- ▶ Over 70 elements can be measured
- ▶ Fast analysis, 5-8 elements per minute
- ▶ Excellent detection limits, at ppb level for most elements
- ▶ Wide linear dynamic range, reaching 6 orders of magnitude, from ppb to percentage
- ▶ Lower gas consumption; Each argon gas cylinder can be used for 8 hours



- ▶ Rare earth metal
- ▶ Silicon materials, magnetic materials processing industry
- ▶ Metallurgical industry: analysis of impurity elements influencing the quality of metal materials
- ▶ Water quality control
- ▶ Geology, mineral
- ▶ Petrochemical: measurements of more than 30 elements in crude oil
- ▶ Pharmacy, hygiene, agriculture, environmental protection, commodities and food industry



**Advanced structure, optimized details make instrument accurate, stable and reliable**

- ▶ Advanced optical design with a fully illuminated holographic grating, with spectral interference correction and high light throughput for improved detection limits
- ▶ Wide wavelength range: 190nm to 500nm with 3600 line grating  
190nm to 800nm with 2400 line grating
- ▶ Computer controlled plasma platform optimizes the viewing position to reduce interferences, improve SNR and minimize background emissions
- ▶ Software controlled flow of carrier gas, plasma gas and auxiliary gas provide real time monitor as well as highly stability of flux
- ▶ Various types of torches, nebulizer as well as spray chamber are optional
- ▶ Choice of auto sampler greatly improves efficiency
- ▶ Sample waste drained by peristaltic pump ensures stable sample flow rate; Fast pump mode improves productivity
- ▶ The brand new robust free-running, 27.12 MHz RF generator that delivers unsurpassed performance
- ▶ Rapid and accurate automatic coupling system ensures the ultimate power transfer efficiency and stability

**Humanized software design makes operation easier and simpler**

**One-button plasma ignition**

By simply click the button 'ignite' in software, the plasma can be ignited immediately (as figure 1)



Figure 1



Figure 2



Figure 3



Figure 4

**Powerful graph diagnosis function**

The 'graph diagnosis' function provides information on instrument status and analysis progress. (as figure 2)

**Multi-element analysis**

After selecting elements and setting measuring parameters, instrument will measure automatically with results directly displayed. (as figure 3)

**Enhanced database management**

The database contains several thousands of spectral line, where users can choose freely based on application method. (as figure 4)

**Strong and User-friendly Software**

The professional software provide excellent features and multi access to functions as follow:

Data management, quantitative and qualitative analysis, test parameter setting, one button report generation, background and interference correction, fast calibration mode, instrument status indication, and online self diagnostic.

**Instrument Structure Diagram**

