



ICP 3000

Instrument introduction

ICP-3000 Inductively Coupled Plasma Spectrometers can detect approximately 70 trace to constant elements in different materials. They are widely used in scientific research Institutes, colleges, and other industry enterprises related to the fields such as geology, metallurgy, rare earth materials, electro-plating, cement, petroleum, chemical engineering, environmental detection, non-ferrous metals, medical science, food and agriculture.



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Performance characteristics

Simultaneous measurement of multi elements
Low detection limit: 0.1-10ppb, and even lower
Wide density linear range, 5-6 orders of magnitude
Less chemical interference, maximum accuracy, RSD≤2%
High analysis speed, low cost

Technical specifications

RF Generator Specifications

Circuit type: inductively feedback self-oscillation circuit, coaxial cable transmission, matched tuning, power feedback close-loop auto-control

Working frequency: 40MHz±0.05%

Frequency stability: <0.1%

Power output: 800W-1200W

Power output stability: <0.3%

Intensity of electromagnetic leakage: electric field intensity in 30cm distance to the body: E: <2V/m

High Frequency Box

High Frequency Box excites very stable plasma torch by exploiting the inductively feedback self-oscillation circuit. The circuit is transmitted by coaxial cable, matchingly tuned and implements close-loop auto-control by means of power feedback (National Patented Invention). Industrial argon can be used in this kind of generator, which not only makes the lighting the ICP torch easy but also saves the cost of highly purified argon.

Match box

The high performance match box is composed of vacuum ceramic adjustable capacitors and gas adjustable capacitors, which allows it to reach the best match state and achieve maximum effective output on load coils.

Directional coupler

The stability of power output is achieved by controlling the anode voltage of oscillation valve after the power signals are sent out of the directional coupler and get amplified by the amplifier.



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Sample introduction system specifications:

Inner diameter of output coils: 25 mm, 3 coils

Torch: three concentric torches, outer diameter 20 mm, quartz

Outer diameter of coaxial nebulizer: 6mm

Outer diameter of double-pass spray chamber: 34mm

Specifications of Ar flowmeter and carrier gas pressure gauge:

Plasma gas flowmeter: (100-1000) L/h (1.6-16L/min)

Auxiliary gas flowmeter (10-100) L/h (0.16-1.66L/min)

Carrier gas flowmeter (10-100) L/h (0.16-1.66L/min)

Carrier gas pressure stabilization valve (0-0.4MPa)

Cooling water: Water temperature: 15-25°C Flow rate >5L/min Water pressure: >0.1MPa Resistivity>1MΩ

Technical Specifications of Optical System

Optical path: Czerny-Turner

Focal length: 1000mm

Grating specification: Ion Beam Etching Holographic Grating; The etching density is 3600 grooves/mm; the etching area is 80*110 mm.

(Alternative 2400 grooves/mm; etching area: 80*110mm)

Reciprocal linear dispersion rate: 0.26nm

Resolution: ≤ 0.008nm

Scan wavelength range:

3600 grooves/mm scan wavelength range: 195—500 nm

2400 grooves/mm scan wavelength range: 195—800 nm

Minimum pace of stepper motor drive: 0.0006nm

Exit and entrance slit: 20μm

Speculum specifications: (78×105×16) mm

Lensφ30, 1 : 1 imaging

Thermostatic device for optical system: 32°C±1°C



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Application fields

Petrochemical engineering

Minerals

Metallurgy

Geography

Medicine safety

Lab research

Environment monitoring

Food safety



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