



# OCEAN King India

Home of Quality Products

## Ocean Series ICP 2060T

### Sequential Scanning Inductively Coupled Plasma Emission Spectrometer



#### Introduction

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;

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

#### Contact Address :

Ocean King International  
6213/B, St. No.-4, Hargobind Nagar,  
Ludhiana, India 141008.

#### Sales and Support:

Tel : +91-161-5049059, 2222471

Email: info@oceankingindia.com, amitsood24@gmail.com  
website: www.oceankingindia.com, www.goldtester.co



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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 plasma 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

One-button plasma ignition

By simply click the button 'inflamm' in software , the plasma can be ignited immediately

The 'graph diagnosis' function provides information on instrument status and analysis progress (as figure 3)

Multi-element analysis

After selecting elements and setting measuring parameters, instrument will measure automatically with results directly displayed. (as figure 4)

Enhanced database management

The database contains several thousands of spectral line, where users can choose freely based on application method. (as figure 5)

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.

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## Specifications :

- Size: 1.5m×0.8m×0.8m
- Solid State Power
- Frequency : 27.12MHz
- Frequency stability : <0.05%

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- Couple method: Auto match
- Output power : 800W ~1600W, continuously adjustable with power efficiency more than 65%
- Output power stability :  $\leq 0.05\%$
- Induction coil : ID 25mm $\times$ 3, equipped with three concentric quartz torch tubes of ED
- 35mm (ID: internal diameter; ED: external diameter)
- Spray chamber : Scott double pass spray chamber
- Monochromator
- Optical type : Czery turner
- Focal length : 1000mm
- Grating specification : huge holographic grating with 3600L/mil or 2400 L/mil and 80
- mm $\times$ 100mm of ruling area
- Resolution :  $\leq 0.015\text{nm}$  (3600 line grating),  $\leq 0.030\text{nm}$  (2400 line grating)
- Wavelength range : 195~500 nm for 3600 line grating, 195~800 nm for 2400 line grating.
- Electronic Measurement& Control Circuit
- Photomultiplier tube specification : R212/R928
- Negative high voltage : (-50 ~ -1000) V
- Circuit measuring range : (10<sup>-12</sup> ~ 10<sup>-4</sup>) A
- Signal acquisition : VF conversion

## Technical Specifications

Suitable sample content range :

- Liquid sample : 0.01ppm~ several thousands ppm
- Solid or powder sample : 0.001% ~ 70%
- Repeatability : short-term stability, RSD $\leq 1.5\%$
- Long-term stability : RSD $\leq 2\%$
- Test speed : 5~8 elements/min
- Limits of detection (LOD,  $\mu\text{g/L}$ ) for typical elements : 1ppb~10ppb

Element	La	Ce	Pr	Nd	Sm	Eu	Gd	Tb
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<b>λ (nm)</b>	408.672	413.765	414.311	401.225	360.946	381.967	342.247	350.917
<b>LOD</b>	<3.0	<5.0	<5.0	<5.0	< 10.0	< 1.0	<10.0	< 3.0

<b>Element</b>	Dy	Ho	Er	Tm	Yb	Lu	Y	Sc
<b>λ (nm)</b>	353.170	345.600	337.271	313.126	369.419	261.541	371.030	335.373
<b>LOD</b>	<3.0	<3.0	<3.0	<3.0	<1.0	<3.0	<1.0	<1.0

<b>Element</b>	Ta	Nb	Mn	Mg	B	Zn	Co	Si
<b>λ (nm)</b>	226.230	313.340	257.610	279.553	249.773	13.856	228.616	251.611
<b>LOD</b>	<5.0	<5.0	<3.0	<1.0	<10.0	<3.0	<3.0	<10.0

<b>Element</b>	Ni	Cd	Fe	Ca	Mo	V	Be	Ti
<b>λ (nm)</b>	232.003	226.502	239.562	393.366	281.615	310.230	313.041	334.941
<b>LOD</b>	<5.0	<3.0	<3.0	<1.0	<5.0	<5.0	<1.0	<3.0

<b>Element</b>	Cu	Cr	Al	Zr	Ag	Sr	Au	Pt
<b>λ (nm)</b>	324.754	267.716	396.152	343.823	328.068	407.771	242.795	265.945
<b>LOD</b>	<3.0	<5.0	<5.0	<5.0	<3.0	<1.0	<5.0	<5.0

<b>Element</b>	Pd	Ir	Rh	Ru	Ba
<b>λ (nm)</b>	340.458	224.268	343.489	240.272	455.403
<b>LOD</b>	<5.0	<10.0	<10.0	<5.0	<1.0

<b>Element</b>	As	Sb	Bi	Hg	Pb	Ga	Se
<b>λ (nm)</b>	228.812	206.833	223.061	253.652	220.353	294.364	203.985
<b>LOD</b>	≤15	≤15	≤10	≤15	≤15	≤10	≤10

<b>Element</b>	Sn	Te	Ta	Th	Tl	Re	Ge
<b>λ (nm)</b>	242.949	214.281	226.230	283.730	276.787	227.525	209.426
<b>LOD</b>	≤20	≤10	≤5.0	≤10	≤30	≤5	≤15

<b>Element</b>	Os	W	Se	Li	Na	K
<b>λ (nm)</b>	225.585	207.911	203.985	670.784	588.995	766.490
<b>LOD</b>	≤1	≤10	≤30	≤3	≤20	≤60

### Other accessories:

Windpipe

Voltage stabilizer

Gas pressure regulator

ICP2060T power cable

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Water cooling system

Copper cable for ground

Sampling system include nebulizer, spray chamber, plasma torch

### **Application fields:**

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

### **Working environment:**

Temperature for storage and transportation:15°C-25°C

Humidity for storage and transportation:≤70%

Power stability:220±10v 50-60Hz

Humidity:≤70%

Temperature:15°C-30°C

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