

## ICP-2060

Sequential Inductively Coupled Plasma Emission Spectrometer



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ICP 2060 Sequential Inductively Coupled Plasma Emission Spectrometer is designed to measure major, minor and trace elements in various samples with excellent analytical precision and accuracy. ICP2060 has wide wavelength range of 190nm to 800nm with 2400 line grating. The instrument feature high optical resolution, full automation, Solid State RF system as well as powerful analysis software with auto-matching.

### Features

- ❑ Advanced optical design with holographic grating and spectral interference correction 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, reduce interferences, improves SNR and minimize background emissions
- ❑ Software controlled real time monitoring for carrier gas flow, plasma gas and auxiliary gas
- ❑ 27.12 MHz RF generator delivers unsurpassed performance
- ❑ Accurate automatic coupling system ensures power transfer efficiency and stability
- ❑ Multiple types of torches, nebulizer and spray chambers are available as options
- ❑ Optional Autosampler



### Advanced software

ICP2060 Advanced Software provides , quantitative and qualitative analysis, test parameter setting, background and interference correction and fast calibration mode, Full data management with multiple export options and one button report generation. Real time instrument status indication and online self diagnostic prevent downtime.



Over 70 elements can be measured  
 Fast analysis, analyzing 5-8 elements per minute  
 Simultaneous analyses of multiple elements  
 Excellent detection limits- ppb level for most elements

### One-button plasma ignition

Inflame button immediately ignites the plasma

### Graph diagnosis Function

Graph diagnosis provides information on instrument status and analysis progress

### Multi-element analysis

Simply select the elements and set measurement parameters and ICP2060 will measure automatically and display real-time results

### Enhanced database

Thanks to large database users can choose spectral lines based on individual application

### Detection limits for typical elements ( $\lambda$ refers to wavelength)( $\mu\text{g/L}$ )

Element	La	Ce	Pr	Nd	Sm	Al	Zr	Ag	Sr	Au
$\lambda$ (nm)	408.672	413.765	414.311	401.225	360.946	396.152	343.823	328.068	407.771	242.795
LOD	< 3.0	< 5.0	< 5.0	< 5.0	< 10.0	< 5.0	< 5.0	< 3.0	< 1.0	< 5.0
Element	Eu	Gd	Tb	Dy	Ho	Pt	Pd	Ir	Rh	Ru
$\lambda$ (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	< 5.0	< 5.0	< 10.0	< 10.0	< 5.0
Element	Er	Tm	Yb	Lu	Y	Ba	Cr	Sb	Bi	Hg
$\lambda$ (nm)	337.271	313.126	369.419	261.541	371.030	455.403	267.716	206.833	223.061	253.652
LOD	< 3.0	< 3.0	< 1.0	< 3.0	< 1.0	< 1.0	< 5.0	$\leq 15$	$\leq 10$	$\leq 15$
Element	Sc	Ta	Nb	Mn	Mg	Pb	Ga	Se	Sn	Te
$\lambda$ (nm)	335.373	226.230	313.340	257.610	279.553	220.353	294.364	203.985	242.949	214.281
LOD	< 1.0	< 5.0	< 5.0	< 3.0	< 1.0	$\leq 15$	$\leq 10$	$\leq 10$	$\leq 20$	$\leq 10$
Element	B	Zn	Co	Si	Os	Ta	Th	Tl	Re	Ge
$\lambda$ (nm)	249.773	13.856	228.616	251.611	225.585	226.230	283.730	276.787	227.525	209.426
LOD	< 10.0	< 3.0	< 3.0	< 10.0	$\leq 1$	$\leq 5.0$	$\leq 10$	$\leq 30$	$\leq 5$	$\leq 15$
Element	Ni	Cd	Fe	Ca	Mo	W	Li	Na	K	Cu
$\lambda$ (nm)	232.003	226.502	239.562	393.366	281.615	207.911	670.784	588.995	766.490	324.754
LOD	< 5.0	< 3.0	< 3.0	< 1.0	< 5.0	$\leq 10$	$\leq 3$	$\leq 20$	$\leq 60$	< 3.0
Element	V	Be	Ti							
$\lambda$ (nm)	310.230	313.041	334.941							
LOD	< 5.0	< 1.0	< 3.0							

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### Application fields

Food and agricultural industries  
 Pharmaceutical and medical industries  
 Biological and chemical industries  
 Petrochemical and metallurgic industries  
 Others: environmental, semi-conductor, criminal science and general research

### Monochromator Specifications

Optical type: Czerny turner  
 Resolution: 0.015nm (3600 line grating); 0.030nm (2400 line grating)  
 Focal length: 1000mm  
 Grating specifications: holographic grating with 3600E/mil or 2400 L/mil, 80 mmx100mm of ruling area  
 Wavelength range: 195-500 nm for 3600 line grating  
 195-800 nm for 2400 line grating

### Solid State Power Specifications

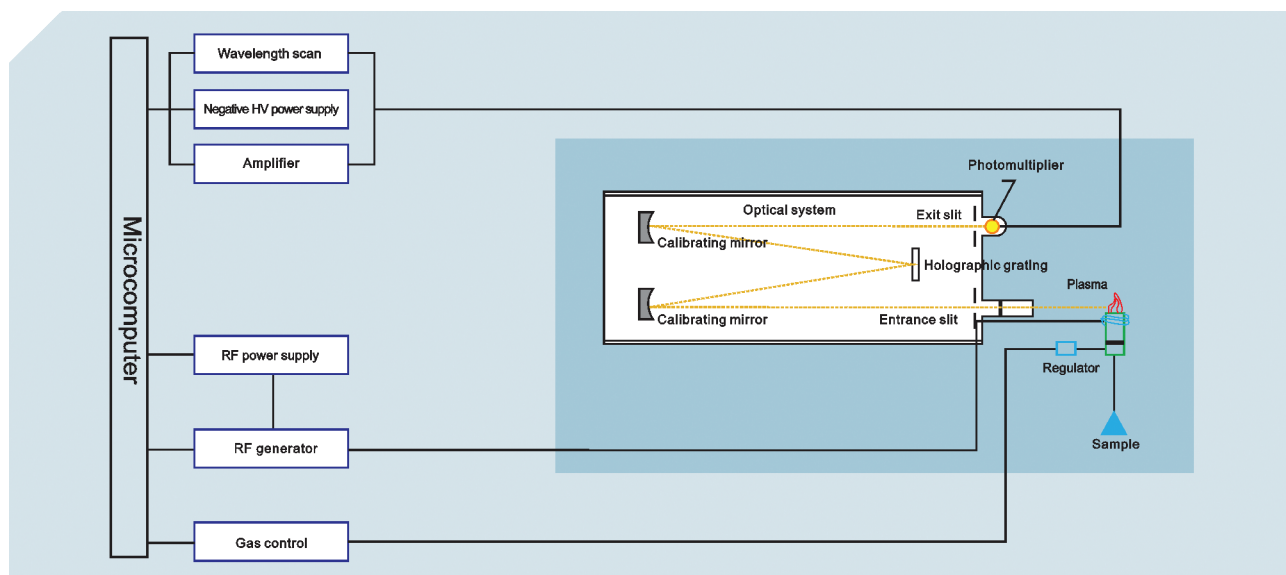
Frequency: 27.12MHz, Frequency stability: <0.05%  
 Spray chamber: Scott double pass spray chamber  
 Output power: 800W -1600W, adjustable with power efficiency more than 65%  
 Output power stability: 00.05%  
 Induction coil: 25mmx3 ID(ID-internal diameter), equipped with three concentric quartz torch tubes  
 35mm ED (ED-external diameter)

### Control Circuit Specifications

Photomultiplier tube specification: R212/R928  
 Negative high voltage: -50 - -1000 V  
 Circuit measuring range: (10<sup>1</sup> - 10<sup>1A</sup>)  
 Signal acquisition: VF conversion

### Other Specifications

Repeatability: short-term stability- RSD 1.5%  
 Long-term stability: RSD 2%  
 Test speed: 5-8 elements/min  
 Limits of detection (LOD, pg/L): 1ppb-10ppb



# Skyray Instruments



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