

# The Optima™ Series of ICP-OES Spectrometers

## Revolutionizing ICP Performance



1 <b>H</b>																		2 <b>He</b>			
		<div><div><div>51 <b>Sb</b> 206.836 I</div><div>Atomic Number, Element</div><div>Wavelength</div><div>Ionization States</div></div><div><div><div>&lt; 0.1 ppb</div><div>0.1-1 ppb</div><div>1-10 ppb</div><div>&gt; 10 ppb</div></div><div>Detection Limit Ranges</div></div><div><div>Wavelength (nm)</div><div>Ionization States</div><div>I = Neutral Atom</div><div>II = +1 ion</div></div></div>																			
3 <b>Li</b> 670.784 I		4 <b>Be</b> 313.107 II														5 <b>B</b> 249.772 I	6 <b>C</b> 193.030 I	7 <b>N</b>	8 <b>O</b>	9 <b>F</b>	10 <b>Ne</b>
11 <b>Na</b> 589.592 I		12 <b>Mg</b> 280.271 II														13 <b>Al</b> 396.153 I	14 <b>Si</b> 251.611 I	15 <b>P</b> 213.617 I	16 <b>S</b> 180.669 I	17 <b>Cl</b> 725.670 I	18 <b>Ar</b>
19 <b>K</b> 766.490 I	20 <b>Ca</b> 393.366 II	21 <b>Sc</b> 361.383 II	22 <b>Ti</b> 334.940 II	23 <b>V</b> 290.880 I	24 <b>Cr</b> 267.716 II	25 <b>Mn</b> 257.610 II	26 <b>Fe</b> 238.204 II	27 <b>Co</b> 228.616 II	28 <b>Ni</b> 231.604 II	29 <b>Cu</b> 327.393 I	30 <b>Zn</b> 206.200 II	31 <b>Ga</b> 417.206 I	32 <b>Ge</b> 265.118 I	33 <b>As</b> 188.979 I	34 <b>Se</b> 196.026 I	35 <b>Br</b> 863.866 I	36 <b>Kr</b>				
37 <b>Rb</b> 780.023 I	38 <b>Sr</b> 407.771 II	39 <b>Y</b> 371.029 I	40 <b>Zr</b> 343.823 II	41 <b>Nb</b> 309.418 II	42 <b>Mo</b> 202.031 II	43 <b>Tc</b> 249.677 II	44 <b>Ru</b> 240.272 II	45 <b>Rh</b> 343.489 I	46 <b>Pd</b> 340.458 I	47 <b>Ag</b> 328.068 I	48 <b>Cd</b> 228.804 I	49 <b>In</b> 230.606 I	50 <b>Sn</b> 189.927 II	51 <b>Sb</b> 206.836 I	52 <b>Te</b> 214.281 I	53 <b>I</b> 178.215 I	54 <b>Xe</b>				
55 <b>Cs</b> 455.531 I	56 <b>Ba</b> 455.403 II	57 <b>La</b> 408.672 II	72 <b>Hf</b> 264.141 II	73 <b>Ta</b> 226.230 II	74 <b>W</b> 207.912 II	75 <b>Re</b> 197.248 I	76 <b>Os</b> 228.226 II	77 <b>Ir</b> 224.268 II	78 <b>Pt</b> 214.423 I	79 <b>Au</b> 267.595 I	80 <b>Hg</b> 194.168 II	81 <b>Tl</b> 190.801 II	82 <b>Pb</b> 220.353 II	83 <b>Bi</b> 223.06 I	84 <b>Po</b>	85 <b>At</b>	86 <b>Rn</b>				
87 <b>Fr</b>	88 <b>Ra</b>	89 <b>Ac</b>																			
			58 <b>Ce</b> 413.764 II	59 <b>Pr</b> 414.311 II	60 <b>Nd</b> 406.109 II	61 <b>Pm</b>	62 <b>Sm</b> 442.434 II	63 <b>Eu</b> 381.967 II	64 <b>Gd</b> 342.247 II	65 <b>Tb</b> 350.917 II	66 <b>Dy</b> 353.170 I	67 <b>Ho</b> 345.600 II	68 <b>Er</b> 337.271 II	69 <b>Tm</b> 313.126 II	70 <b>Yb</b> 328.937 II	71 <b>Lu</b> 261.542 II					
			90 <b>Th</b> 283.730 II	91 <b>Pa</b> 385.958 II	92 <b>U</b> 385.958 II	93 <b>Np</b>	94 <b>Pu</b>	95 <b>Am</b>	96 <b>Cm</b>	97 <b>Bk</b>	98 <b>Cf</b>	99 <b>Es</b>	100 <b>Fm</b>	101 <b>Md</b>	102 <b>No</b>	103 <b>Lr</b>					



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