



XFlash[®] SDD Technology

Precise. Fast. Unmatched.

1 H Hydrogen 1.01 0.0007																	2 He Helium 4.00 0.0002						
3 Li Lithium 6.94 0.53	4 Be Beryllium K _α 0.109 9.01 1.85																	5 B Boron K _α 0.183 10.81 2.34	6 C Carbon K _α 0.277 12.01 2.27	7 N Nitrogen K _α 0.392 14.01 0.001	8 O Oxygen K _α 0.525 16.00 0.001	9 F Fluorine K _α 0.677 19.00 0.001	10 Ne Neon K _α 0.849 20.18 0.0009
11 Na Sodium K _α 1.040 22.99 0.97	12 Mg Magnesium K _α 1.254 24.31 1.74																	13 Al Aluminium K _α 1.486 26.98 2.70	14 Si Silicon K _α 1.740 28.09 2.33	15 P Phosphorus K _α 2.010 30.97 1.82	16 S Sulfur K _α 2.309 32.07 2.07	17 Cl Chlorine K _α 2.621 35.45 0.003	18 Ar Argon K _α 2.957 39.95 0.002
19 K Potassium K _α 3.313 39.10 0.86	20 Ca Calcium K _α 3.691 L _α 0.341 40.08 1.54	21 Sc Scandium K _α 4.092 L _α 0.395 44.96 2.99	22 Ti Titanium K _α 4.510 L _α 0.452 47.87 4.54	23 V Vanadium K _α 4.950 L _α 0.510 50.94 6.11	24 Cr Chromium K _α 5.412 L _α 0.572 52.00 7.15	25 Mn Manganese K _α 5.897 L _α 0.637 54.94 7.44	26 Fe Iron K _α 6.401 L _α 0.705 55.85 7.87	27 Co Cobalt K _α 6.926 L _α 0.775 58.93 8.86	28 Ni Nickel K _α 7.474 L _α 0.849 58.69 8.91	29 Cu Copper K _α 8.040 L _α 0.928 63.55 8.93	30 Zn Zinc K _α 8.629 L _α 1.012 65.38 7.13	31 Ga Gallium K _α 9.242 L _α 1.098 69.72 5.91	32 Ge Germanium K _α 9.875 L _α 1.188 72.64 5.32	33 As Arsenic K _α 10.531 L _α 1.282 74.92 5.78	34 Se Selenium K _α 11.210 L _α 1.379 78.96 4.81	35 Br Bromine K _α 11.908 L _α 1.481 79.90 3.12	36 Kr Krypton K _α 12.630 L _α 1.584 83.80 0.004						
37 Rb Rubidium K _α 13.376 L _α 1.692 85.47 1.53	38 Sr Strontium K _α 14.142 L _α 1.806 87.62 2.64	39 Y Yttrium K _α 14.932 L _α 1.924 88.91 4.47	40 Zr Zirconium K _α 15.746 L _α 2.044 91.22 6.51	41 Nb Niobium K _α 16.583 L _α 2.168 92.91 8.57	42 Mo Molybdenum K _α 17.444 L _α 2.292 95.94 10.22	43 Tc Technetium K _α 18.327 L _α 2.423 (98) 11.50	44 Ru Ruthenium K _α 19.235 L _α 2.558 101.07 12.37	45 Rh Rhodium K _α 20.167 L _α 2.696 102.91 12.41	46 Pd Palladium K _α 21.123 L _α 2.837 106.42 12.02	47 Ag Silver K _α 22.103 L _α 2.982 107.87 10.50	48 Cd Cadmium K _α 23.107 L _α 3.132 112.41 8.69	49 In Indium K _α 24.138 L _α 3.285 114.82 7.31	50 Sn Tin K _α 25.271 L _α 3.443 118.71 7.29	51 Sb Antimony K _α 26.359 L _α 3.603 121.76 6.69	52 Te Tellurium K _α 27.473 L _α 3.767 127.60 6.23	53 I Iodine K _α 28.612 L _α 3.937 126.90 4.93	54 Xe Xenon K _α 29.775 L _α 4.108 131.29 0.006						
55 Cs Cesium K _α 30.973 L _α 4.284 132.91 1.87	56 Ba Barium K _α 32.194 L _α 4.465 137.33 3.59	57 La Lanthanum K _α 33.442 L _α 4.645 138.91 6.15	72 Hf Hafnium L _α 7.894 M _α 1.646 178.49 13.31	73 Ta Tantalum L _α 8.140 M _α 1.711 180.95 16.65	74 W Tungsten L _α 8.392 M _α 1.775 183.84 19.25	75 Re Rhenium L _α 8.645 M _α 1.842 186.21 21.02	76 Os Osmium L _α 8.904 M _α 1.907 190.23 22.61	77 Ir Iridium L _α 9.167 M _α 1.980 192.22 22.65	78 Pt Platinum L _α 9.435 M _α 2.050 195.08 21.46	79 Au Gold L _α 9.704 M _α 2.123 196.97 19.28	80 Hg Mercury L _α 9.980 M _α 2.195 200.59 13.53	81 Tl Thallium L _α 10.259 M _α 2.271 204.37 11.85	82 Pb Lead L _α 10.541 M _α 2.342 207.20 11.34	83 Bi Bismuth L _α 10.828 M _α 2.423 208.98 9.81	84 Po Polonium L _α 11.119 M _α 2.499 (209) 9.32	85 At Astatine L _α 11.415 M _α 2.577 (210) 7.00	86 Rn Radon L _α 11.714 M _α 2.654 (222) 0.01						
87 Fr Francium L _α 12.017 M _α 2.732 (223) 1.87	88 Ra Radium L _α 12.325 M _α 2.806 (226) 5.50	89 Ac Actinium L _α 12.637 M _α 2.900 (227) 10.07																					

Non-Metals	Alkali Earth Metals	Transition Metals	Halogens	Noble Gases
Alkali Metals	Rare Earth Elements	Other Metals	Metalloids	

Atomic number
 Atomic weight
 Density (g/cm³)
 Symbol
 Element name
 Energy (keV)
 Spectral line

35	79.90				
Br	3.12				
Bromine					
K _α	11.924				
L _α	1.481				

Lanthanides

58 Ce Cerium L _α 4.837 M _α 0.884 140.12 6.77	59 Pr Praseodymium L _α 5.033 M _α 0.927 140.91 6.77	60 Nd Neodymium L _α 5.225 M _α 0.979 144.24 7.01	61 Pm Promethium L _α 5.429 M _α 1.023 (145) 7.26	62 Sm Samarium L _α 5.630 M _α 1.078 150.36 7.52	63 Eu Europium L _α 5.846 M _α 1.131 151.96 5.24	64 Gd Gadolinium L _α 6.050 M _α 1.181 157.25 7.90	65 Tb Terbium L _α 6.269 M _α 1.240 158.93 8.23	66 Dy Dysprosium L _α 6.494 M _α 1.293 162.50 8.55	67 Ho Holmium L _α 6.716 M _α 1.348 164.93 8.80	68 Er Erbium L _α 6.945 M _α 1.404 167.26 9.07	69 Tm Thulium L _α 7.175 M _α 1.462 168.93 9.32	70 Yb Ytterbium L _α 7.411 M _α 1.526 173.04 6.97	71 Lu Lutetium L _α 7.650 M _α 1.580 174.47 9.84
90 Th Thorium L _α 12.952 M _α 2.996 232.04 11.72	91 Pa Protactinium L _α 13.274 M _α 3.082 231.04 15.37	92 U Uranium L _α 13.596 M _α 3.171 238.03 18.95	93 Np Neptunium L _α 13.927 M _α 3.250 (237) 20.45	94 Pu Plutonium L _α 14.262 M _α 3.339 (244) 19.84	95 Am Americium L _α 14.599 M _α 3.438 (243) 13.69	96 Cm Curium L _α 14.927 M _α 3.527 (247) 13.51	97 Bk Berkelium L _α 15.262 M _α 3.616 (247) 14.79	98 Cf Californium L _α 15.615 M _α 3.705 (251) 15.1	99 Es Einsteinium L _α 15.970 M _α 3.794 (252) 13.5	100 Fm Fermium L _α 16.325 M _α 3.883 (257) 13.5	101 Md Mendelevium L _α 16.680 M _α 3.972 (258) 13.5	102 No Nobelium L _α 17.035 M _α 4.060 (259) 13.5	103 Lr Lawrencium L _α 17.390 M _α 4.148 (262) 13.5

Actinides