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Amptek K and L Emission Line Lookup Chart

XR-100CR / XR-100T-CZT / ROVER

X-Ray and Gamma Ray Detectors

Group IA		Key to Energy Values in keV										Group VIII						Group VIIIA					
H 1		K _{α1} K _{β1}		Au 79		L _{α1} L _{β1}												He 2					
0.052 Li 3	0.110 Be 4																	0.185 B 5	0.282 C 6	0.392 N 7	0.526 O 8	0.677 F 9	0.851 Ne 10
1.04 1.07 Na 11	1.25 1.30 Mg 12																	1.49 1.55 Al 13	1.74 1.83 Si 14	2.02 2.14 P 15	2.31 2.46 S 16	2.62 2.82 Cl 17	2.96 3.19 Ar 18
3.31 3.59 K 19	3.69 4.01 Ca 20	4.09 4.46 Sc 21	4.51 4.93 Ti 22	4.95 5.43 V 23	5.41 5.43 Cr 24	5.90 6.49 Mn 25	6.40 7.06 Fe 26	6.93 7.65 Co 27	7.48 8.26 Ni 28	8.05 8.90 Cu 29	8.64 9.57 Zn 30	9.25 10.26 Ga 31	9.89 10.98 Ge 32	10.54 11.73 As 33	11.22 12.50 Se 34	11.92 13.29 Br 35	12.65 14.11 Kr 36						
13.39 14.96 Rb 37	14.16 15.83 Sr 38	14.96 16.74 Y 39	15.77 17.67 Zr 40	16.61 18.62 Nb 41	17.48 19.61 Mo 42	18.41 19.61 Tc 43	19.28 21.66 Ru 44	20.21 22.72 Rh 45	21.18 23.82 Pd 46	22.16 24.94 Ag 47	23.17 26.09 Cd 48	24.21 27.27 In 49	25.27 28.48 Sn 50	26.36 29.72 Sb 51	27.47 30.99 Te 52	28.61 32.29 I 53	29.80 33.64 Xe 54						
30.97 34.98 Cs 55	32.19 36.38 Ba 56	57 - 71	55.76 63.21 Hf 72	57.52 65.21 Ta 73	59.31 67.23 W 74	61.13 69.30 Re 75	62.99 71.40 Os 76	64.89 73.55 Ir 77	66.82 75.74 Pt 78	68.79 77.97 Au 79	70.82 80.26 Hg 80	72.86 82.56 Tl 81	74.96 84.92 Pb 82	77.10 87.34 Bi 83	79.30 89.81 Po 84	81.53 92.32 At 85	83.80 94.88 Rn 86						
86.12 97.48 Fr 87	88.46 100.14 Ra 88	90.89 102.85 Ac 89	93.33 105.59 Th 90	95.85 108.41 Pa 91	98.43 111.29 U 92	101.00 114.18 Np 93	103.65 117.15 Pu 94	106.35 120.16 Am 95	109.10 123.24 Cm 96	111.90 126.36 Bk 97	114.75 129.54 Cf 98	117.65 132.78 Es 99	120.60 136.08 Fm 100	Md 101	No 102	Lr 103	Actinides 89-103						
Lanthanides 57-71		33.44 37.80 La 57	34.72 39.26 Ce 58	36.02 40.75 Pr 59	37.36 42.27 Nd 60	38.65 43.96 Pm 61	40.12 45.40 Sm 62	41.53 47.03 Eu 63	42.98 48.72 Gd 64	44.47 50.39 Tb 65	45.99 52.18 Dy 66	47.53 53.93 Ho 67	49.10 55.69 Er 68	50.73 57.58 Tm 69	52.36 59.35 Yb 70	54.06 61.28 Lu 71							

Actinium - Ac 89 (10.07)	Bromine - Br 35 (0.007139)	Dysprosium - Dy 66 (8.55)	Helium - He 2 (0.0001785)	Lutetium - Lu 71 (9.84)	Nobelium - No 102	Radium - Ra 88 (5.0)	Strontium - Sr 38 (2.56)	Uranium - U 92 (18.7)
Aluminum - Al 13 (2.70)	Cadmium - Cd 48 (8.65)	Einsteinium - Es 99	Holmium - Ho 67 (8.795)	Magnesium - Mg 12 (1.74)	Osmium - Os 76 (22.5)	Radon - Rn 86 (4.4)	Sulphur - S 16 (1.92)	Vanadium - V 23 (5.98)
Americium - Am 95 (11.87)	Calcium - Ca 20 (1.55)	Erbium - Er 68 (9.066)	Hydrogen - H 1 (0.0000899)	Manganese - Mn 25 (7.41)	Oxygen - O 8 (0.001429)	Rhenium - Re 75 (21.0)	Tantalum - Ta 73 (16.6)	Xenon - Xe 54 (0.00585)
Antimony - Sb 51 (6.62)	Californium - Cf 98	Europium - Eu 63 (5.234)	Indium - In 49 (7.28)	Mendelevium - Md 101	Palladium - Pd 46 (12.16)	Rhodium - Rh 45 (12.44)	Technetium - Tc 43 (11.5)	Ytterbium - Yb 70 (6.965)
Argon - Ar 18 (0.001783)	Carbon - C 6 (2.25-G; 3.51-D)	Fermium - Fm 100	Iodine - I 53 (4.94)	Mercury - Hg 80 (13.55)	Phosphorus - P 15 (1.83-Y 2.20-R)	Rubidium - Rb 37 (1.53)	Tellurium - Te 52 (6.25)	Yttrium - Y 39 (3.8)
Arsenic - As 33 (5.73)	Cerium - Ce 58 (6.90)	Fluorine - F 9 (0.00169)	Iridium - Ir 77 (22.42)	Molybdenum - Mo 42 (10.22)	Platinum - Pt 78 (21.45)	Ruthenium - Ru 44 (12.1)	Terbium - Tb 65 (8.229)	Zinc - Zn 30 (7.1)
Astatine - At 85	Cesium - Cs 55 (1.87)	Francium - Fr 87	Iron - Fe 26 (7.88)	Neodymium - Nd 60 (6.96)	Plutonium - Pu 94 (19.8)	Samarium - Sm 62 (7.75)	Thallium - Tl 81 (11.86)	Zirconium - Zr 40 (6.4)
Barium - Ba 56 (3.5)	Chlorine - Cl 17 (0.003220)	Gadolinium - Gd 64 (7.90)	Krypton - Kr 36 (0.00368)	Neon - Ne 10 (0.00090)	Polonium - Po 84 (9.27)	Scandium - Sc 21 (3.02)	Thorium - Th 90 (11.3)	
Berkelium - Bk 97	Chromium - Cr 24 (7.14)	Gallium - Ga 31 (5.93)	Lanthanum - La 57 (6.15)	Neptunium - Np 93 (20.4)	Potassium - K 19 (0.86)	Selenium - Se 34 (4.82)	Thulium - Tm 69 (9.321)	
Beryllium - Be 4 (1.85)	Cobalt - Co 27 (8.71)	Germanium - Ge 32 (5.46)	Lawrencium - Lr 103	Nickel - Ni 28 (8.88)	Praseodymium - Pr 59 (6.48)	Silicon - Si 14 (2.42)	Tin - Sn 50 (7.3)	
Bismuth - Bi 83 (9.78)	Copper - Cu 29 (8.96)	Gold - Au 79 (19.32)	Lead - Pb 82 (11.34)	Niobium - Nb 41 (8.57)	Promethium - Pm 61	Silver - Ag 47 (10.49)	Titanium - Ti 22 (4.5)	
Boron - B 5 (2.53)	Curium - Cm 96	Hafnium - Hf - 72 (13.3)	Lithium - Li 3 (0.534)	Nitrogen - N 7 (0.001251)	Protactinium - Pa 91 (15.4)	Sodium - Na 11 (0.97)	Tungsten - W 74 (19.3)	(density in g/cm ³ at NTP)