

Electron Wavelength and Energy

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elementary charge	e [C]	1.6022E-19
electron rest mass	me [kg]	9.1094E-31
speed of light	c [m/s]	2.9979E+08
Plank constant	h [Js]	6.6261E-34

Accerlation Voltage	Additional Energy	Beta	Velocity	Gamma	Momentum	Wavelength
[kV]	dE [J]	(=v/c)	v [m/s]	(= (1-β^2)^(-0.5))	p [Ns]	[m]
1	1.60E-16	6.2470E-02	1.8728E+07	1.0020E+00	1.7093E-23	3.8764E-11
10	1.60E-15	1.9499E-01	5.8455E+07	1.0196E+00	5.4291E-23	1.2205E-11
20	3.20E-15	2.7187E-01	8.1503E+07	1.0391E+00	7.7150E-23	8.5885E-12
50	8.01E-15	4.1269E-01	1.2372E+08	1.0978E+00	1.2373E-22	5.3553E-12
100	1.60E-14	5.4822E-01	1.6435E+08	1.1957E+00	1.7901E-22	3.7014E-12
200	3.20E-14	6.9531E-01	2.0845E+08	1.3914E+00	2.6420E-22	2.5079E-12
500	8.01E-14	8.6286E-01	2.5868E+08	1.9785E+00	4.6621E-22	1.4213E-12
1000	1.60E-13	9.4108E-01	2.8213E+08	2.9569E+00	7.5994E-22	8.7192E-13
2000	3.20E-13	9.7907E-01	2.9352E+08	4.9139E+00	1.3139E-21	5.0432E-13
5000	8.01E-13	9.9569E-01	2.9850E+08	1.0785E+01	2.9325E-21	2.2595E-13
8000	1.28E-12	9.9820E-01	2.9925E+08	1.6656E+01	4.5403E-21	1.4594E-13
20000	3.20E-12	9.9969E-01	2.9970E+08	4.0139E+01	1.0958E-20	6.0466E-14
50000	8.01E-12	9.9995E-01	2.9978E+08	9.8847E+01	2.6993E-20	2.4547E-14
800000	1.28E-09	9.999999980E-01	2.9979E+08	1.5657E+04	4.2757E-18	1.5497E-16

w/o relativistic correction

Momentum	Wavelength
p [Ns]	[m]
1.7085E-23	3.8783E-11
5.4027E-23	1.2264E-11
7.6406E-23	8.6721E-12
1.2081E-22	5.4847E-12
1.7085E-22	3.8783E-12
2.4162E-22	2.7424E-12
3.8203E-22	1.7344E-12
5.4027E-22	1.2264E-12
7.6406E-22	8.6721E-13
1.2081E-21	5.4847E-13
1.5281E-21	4.3361E-13
2.4162E-21	2.7424E-13
3.8203E-21	1.7344E-13
4.8324E-20	1.3712E-14

