

**Muons in tungsten (W)**

Z	A [g/mol]	$\rho$ [g/cm <sup>3</sup> ]	I [eV]	$a$	$k = m_s$	$x_0$	$x_1$	$\bar{C}$	$\delta_0$
74 (W)	183.84(1)	19.300	727.0	0.15509	2.8447	0.2167	3.4960	5.4059	0.14
$T$	$p$ [MeV/c]	Ionization	Brems	Pair prod [MeV cm <sup>2</sup> /g]	Photonucl	Total	CSDA range [g/cm <sup>2</sup> ]		
10.0 MeV	$4.704 \times 10^1$	4.000				4.000	$1.446 \times 10^0$		
14.0 MeV	$5.616 \times 10^1$	3.185				3.186	$2.577 \times 10^0$		
20.0 MeV	$6.802 \times 10^1$	2.534				2.534	$4.711 \times 10^0$		
30.0 MeV	$8.509 \times 10^1$	2.000				2.000	$9.210 \times 10^0$		
40.0 MeV	$1.003 \times 10^2$	1.726				1.726	$1.463 \times 10^1$		
80.0 MeV	$1.527 \times 10^2$	1.323				1.323	$4.189 \times 10^1$		
100. MeV	$1.764 \times 10^2$	1.251				1.251	$5.747 \times 10^1$		
140. MeV	$2.218 \times 10^2$	1.182				1.182	$9.051 \times 10^1$		
200. MeV	$2.868 \times 10^2$	1.149				1.149	$1.422 \times 10^2$		
242. MeV	$3.316 \times 10^2$	1.145	0.000			1.145	<i>Minimum ionization</i>		
300. MeV	$3.917 \times 10^2$	1.150	0.000		0.000	1.150	$2.294 \times 10^2$		
400. MeV	$4.945 \times 10^2$	1.168	0.000		0.000	1.168	$3.157 \times 10^2$		
800. MeV	$8.995 \times 10^2$	1.247	0.001		0.000	1.249	$6.464 \times 10^2$		
1.00 GeV	$1.101 \times 10^3$	1.279	0.001		0.000	1.281	$8.045 \times 10^2$		
1.40 GeV	$1.502 \times 10^3$	1.329	0.002		0.001	1.332	$1.110 \times 10^3$		
2.00 GeV	$2.103 \times 10^3$	1.384	0.004	0.001	0.001	1.390	$1.551 \times 10^3$		
3.00 GeV	$3.104 \times 10^3$	1.446	0.006	0.003	0.001	1.458	$2.252 \times 10^3$		
4.00 GeV	$4.104 \times 10^3$	1.489	0.009	0.006	0.002	1.507	$2.926 \times 10^3$		
8.00 GeV	$8.105 \times 10^3$	1.587	0.023	0.021	0.003	1.634	$5.465 \times 10^3$		
10.0 GeV	$1.011 \times 10^4$	1.616	0.031	0.030	0.004	1.681	$6.671 \times 10^3$		
14.0 GeV	$1.411 \times 10^4$	1.658	0.047	0.048	0.005	1.760	$8.996 \times 10^3$		
20.0 GeV	$2.011 \times 10^4$	1.700	0.073	0.080	0.007	1.861	$1.231 \times 10^4$		
30.0 GeV	$3.011 \times 10^4$	1.745	0.120	0.140	0.011	2.016	$1.747 \times 10^4$		
40.0 GeV	$4.011 \times 10^4$	1.774	0.169	0.206	0.014	2.164	$2.225 \times 10^4$		
80.0 GeV	$8.011 \times 10^4$	1.840	0.383	0.496	0.028	2.748	$3.861 \times 10^4$		
100. GeV	$1.001 \times 10^5$	1.860	0.496	0.653	0.035	3.045	$4.553 \times 10^4$		
140. GeV	$1.401 \times 10^5$	1.889	0.728	0.975	0.048	3.642	$5.753 \times 10^4$		
150. GeV	$1.499 \times 10^5$	1.895	0.786	1.057	0.052	3.791	<i>Muon critical energy</i>		
200. GeV	$2.001 \times 10^5$	1.919	1.092	1.486	0.069	4.567	$7.221 \times 10^4$		
300. GeV	$3.001 \times 10^5$	1.952	1.711	2.339	0.103	6.108	$9.110 \times 10^4$		
400. GeV	$4.001 \times 10^5$	1.976	2.352	3.223	0.138	7.690	$1.057 \times 10^5$		
800. GeV	$8.001 \times 10^5$	2.034	4.994	6.846	0.279	14.155	$1.434 \times 10^5$		
1.00 TeV	$1.000 \times 10^6$	2.052	6.351	8.699	0.350	17.455	$1.561 \times 10^5$		
1.40 TeV	$1.400 \times 10^6$	2.081	9.069	12.395	0.496	24.042	$1.756 \times 10^5$		
2.00 TeV	$2.000 \times 10^6$	2.112	13.225	18.033	0.717	34.088	$1.965 \times 10^5$		
3.00 TeV	$3.000 \times 10^6$	2.147	20.159	27.403	1.096	50.807	$2.203 \times 10^5$		
4.00 TeV	$4.000 \times 10^6$	2.172	27.184	36.871	1.481	67.710	$2.373 \times 10^5$		
8.00 TeV	$8.000 \times 10^6$	2.235	55.495	74.923	3.076	135.730	$2.782 \times 10^5$		
10.0 TeV	$1.000 \times 10^7$	2.255	69.756	94.048	3.894	169.955	$2.914 \times 10^5$		
14.0 TeV	$1.400 \times 10^7$	2.287	98.201	132.213	5.573	238.275	$3.112 \times 10^5$		
20.0 TeV	$2.000 \times 10^7$	2.320	141.108	189.702	8.144	341.276	$3.321 \times 10^5$		
30.0 TeV	$3.000 \times 10^7$	2.359	212.538	285.348	12.585	512.833	$3.558 \times 10^5$		
40.0 TeV	$4.000 \times 10^7$	2.388	284.213	381.217	17.129	684.948	$3.727 \times 10^5$		
80.0 TeV	$8.000 \times 10^7$	2.457	571.307	764.940	36.091	1374.796	$4.131 \times 10^5$		
100. TeV	$1.000 \times 10^8$	2.480	715.080	956.970	45.880	1720.411	$4.260 \times 10^5$		