

**Table 301: Muons in Lead tungstate (PbWO<sub>4</sub>)**

$\langle Z/A \rangle$	$\rho$ [g/cm <sup>3</sup> ]	$I$ [eV]	$a$	$k = m_s$	$x_0$	$x_1$	$\bar{C}$	$\delta_0$
0.41315	8.300	600.7	0.22758	3.0000	0.4068	3.0023	5.8528	0.00
$T$	$p$ [MeV/c]	Ionization	Brems	Pair prod [MeV cm <sup>2</sup> /g]	Photonucl	Total	CSDA range [g/cm <sup>2</sup> ]	
10.0 MeV	$4.704 \times 10^1$	4.333				4.333	$1.311 \times 10^0$	
14.0 MeV	$5.616 \times 10^1$	3.426				3.426	$2.360 \times 10^0$	
20.0 MeV	$6.802 \times 10^1$	2.710				2.711	$4.350 \times 10^0$	
30.0 MeV	$8.509 \times 10^1$	2.131				2.131	$8.566 \times 10^0$	
40.0 MeV	$1.003 \times 10^2$	1.835				1.835	$1.365 \times 10^1$	
80.0 MeV	$1.527 \times 10^2$	1.406				1.406	$3.931 \times 10^1$	
100. MeV	$1.764 \times 10^2$	1.331				1.331	$5.397 \times 10^1$	
140. MeV	$2.218 \times 10^2$	1.261				1.261	$8.498 \times 10^1$	
200. MeV	$2.868 \times 10^2$	1.231				1.231	$1.333 \times 10^2$	
227. MeV	$3.154 \times 10^2$	1.229				1.230	<i>Minimum ionization</i>	
300. MeV	$3.917 \times 10^2$	1.237	0.000		0.000	1.238	$2.145 \times 10^2$	
400. MeV	$4.945 \times 10^2$	1.260	0.000		0.000	1.260	$2.946 \times 10^2$	
800. MeV	$8.995 \times 10^2$	1.349	0.001		0.000	1.350	$6.007 \times 10^2$	
1.00 GeV	$1.101 \times 10^3$	1.383	0.001		0.000	1.385	$7.469 \times 10^2$	
1.40 GeV	$1.502 \times 10^3$	1.437	0.002		0.001	1.440	$1.030 \times 10^3$	
2.00 GeV	$2.103 \times 10^3$	1.494	0.003	0.001	0.001	1.500	$1.438 \times 10^3$	
3.00 GeV	$3.104 \times 10^3$	1.558	0.006	0.003	0.001	1.569	$2.089 \times 10^3$	
4.00 GeV	$4.104 \times 10^3$	1.602	0.009	0.006	0.002	1.618	$2.716 \times 10^3$	
8.00 GeV	$8.105 \times 10^3$	1.699	0.021	0.019	0.003	1.743	$5.088 \times 10^3$	
10.0 GeV	$1.011 \times 10^4$	1.728	0.028	0.027	0.004	1.788	$6.221 \times 10^3$	
14.0 GeV	$1.411 \times 10^4$	1.769	0.043	0.044	0.005	1.862	$8.412 \times 10^3$	
20.0 GeV	$2.011 \times 10^4$	1.809	0.067	0.072	0.008	1.957	$1.155 \times 10^4$	
30.0 GeV	$3.011 \times 10^4$	1.852	0.110	0.127	0.011	2.101	$1.648 \times 10^4$	
40.0 GeV	$4.011 \times 10^4$	1.880	0.156	0.187	0.015	2.239	$2.109 \times 10^4$	
80.0 GeV	$8.011 \times 10^4$	1.944	0.352	0.453	0.029	2.778	$3.710 \times 10^4$	
100. GeV	$1.001 \times 10^5$	1.963	0.456	0.596	0.036	3.052	$4.396 \times 10^4$	
140. GeV	$1.401 \times 10^5$	1.992	0.670	0.891	0.050	3.603	$5.602 \times 10^4$	
169. GeV	$1.695 \times 10^5$	2.008	0.832	1.117	0.060	4.018	<i>Muon critical energy</i>	
200. GeV	$2.001 \times 10^5$	2.022	1.004	1.358	0.070	4.456	$7.097 \times 10^4$	
300. GeV	$3.001 \times 10^5$	2.057	1.574	2.138	0.106	5.876	$9.047 \times 10^4$	
400. GeV	$4.001 \times 10^5$	2.081	2.163	2.947	0.141	7.333	$1.057 \times 10^5$	
800. GeV	$8.001 \times 10^5$	2.140	4.593	6.263	0.285	13.283	$1.456 \times 10^5$	
1.00 TeV	$1.000 \times 10^6$	2.159	5.841	7.960	0.358	16.320	$1.592 \times 10^5$	
1.40 TeV	$1.400 \times 10^6$	2.189	8.342	11.343	0.507	22.382	$1.801 \times 10^5$	
2.00 TeV	$2.000 \times 10^6$	2.220	12.165	16.505	0.733	31.625	$2.025 \times 10^5$	
3.00 TeV	$3.000 \times 10^6$	2.256	18.545	25.083	1.121	47.007	$2.283 \times 10^5$	
4.00 TeV	$4.000 \times 10^6$	2.282	25.008	33.752	1.515	62.559	$2.467 \times 10^5$	
8.00 TeV	$8.000 \times 10^6$	2.346	51.056	68.596	3.149	125.149	$2.910 \times 10^5$	
10.0 TeV	$1.000 \times 10^7$	2.367	64.178	86.110	3.987	156.644	$3.052 \times 10^5$	
14.0 TeV	$1.400 \times 10^7$	2.400	90.350	121.055	5.709	219.515	$3.267 \times 10^5$	
20.0 TeV	$2.000 \times 10^7$	2.434	129.830	173.695	8.348	314.308	$3.494 \times 10^5$	
30.0 TeV	$3.000 \times 10^7$	2.474	195.556	261.275	12.907	472.213	$3.752 \times 10^5$	
40.0 TeV	$4.000 \times 10^7$	2.503	261.508	349.059	17.574	630.646	$3.935 \times 10^5$	
80.0 TeV	$8.000 \times 10^7$	2.574	525.677	700.435	37.066	1265.754	$4.374 \times 10^5$	
100. TeV	$1.000 \times 10^8$	2.598	657.970	876.281	47.134	1583.985	$4.515 \times 10^5$	