

**Table 279: Muons in Hevymet as in ATLAS calorimeter**

$\langle Z/A \rangle$	$\rho$ [g/cm <sup>3</sup> ]	$I$ [eV]	$a$	$k = m_s$	$x_0$	$x_1$	$\bar{C}$	$\delta_0$
0.40594	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	$4.704 \times 10^1$	4.109				4.109	$1.387 \times 10^0$	
14.0 MeV	$5.616 \times 10^1$	3.254				3.254	$2.492 \times 10^0$	
20.0 MeV	$6.802 \times 10^1$	2.577				2.577	$4.586 \times 10^0$	
30.0 MeV	$8.509 \times 10^1$	2.028				2.028	$9.017 \times 10^0$	
40.0 MeV	$1.003 \times 10^2$	1.747				1.747	$1.436 \times 10^1$	
80.0 MeV	$1.527 \times 10^2$	1.336				1.336	$4.133 \times 10^1$	
100. MeV	$1.764 \times 10^2$	1.263				1.263	$5.676 \times 10^1$	
140. MeV	$2.218 \times 10^2$	1.192				1.193	$8.950 \times 10^1$	
200. MeV	$2.868 \times 10^2$	1.159				1.159	$1.407 \times 10^2$	
242. MeV	$3.316 \times 10^2$	1.155	0.000			1.155	<i>Minimum ionization</i>	
300. MeV	$3.917 \times 10^2$	1.160	0.000		0.000	1.160	$2.271 \times 10^2$	
400. MeV	$4.945 \times 10^2$	1.178	0.000		0.000	1.178	$3.127 \times 10^2$	
800. MeV	$8.995 \times 10^2$	1.258	0.001		0.000	1.259	$6.407 \times 10^2$	
1.00 GeV	$1.101 \times 10^3$	1.290	0.001		0.000	1.292	$7.974 \times 10^2$	
1.40 GeV	$1.502 \times 10^3$	1.341	0.002		0.001	1.344	$1.101 \times 10^3$	
2.00 GeV	$2.103 \times 10^3$	1.396	0.004	0.001	0.001	1.402	$1.537 \times 10^3$	
3.00 GeV	$3.104 \times 10^3$	1.458	0.006	0.003	0.001	1.470	$2.233 \times 10^3$	
4.00 GeV	$4.104 \times 10^3$	1.502	0.009	0.006	0.002	1.519	$2.902 \times 10^3$	
8.00 GeV	$8.105 \times 10^3$	1.600	0.023	0.021	0.003	1.647	$5.421 \times 10^3$	
10.0 GeV	$1.011 \times 10^4$	1.630	0.030	0.029	0.004	1.693	$6.618 \times 10^3$	
14.0 GeV	$1.411 \times 10^4$	1.672	0.046	0.047	0.005	1.771	$8.926 \times 10^3$	
20.0 GeV	$2.011 \times 10^4$	1.715	0.071	0.078	0.007	1.872	$1.222 \times 10^4$	
30.0 GeV	$3.011 \times 10^4$	1.759	0.117	0.136	0.011	2.024	$1.735 \times 10^4$	
40.0 GeV	$4.011 \times 10^4$	1.789	0.165	0.201	0.014	2.170	$2.212 \times 10^4$	
80.0 GeV	$8.011 \times 10^4$	1.856	0.373	0.484	0.028	2.742	$3.848 \times 10^4$	
100. GeV	$1.001 \times 10^5$	1.876	0.483	0.637	0.035	3.032	$4.541 \times 10^4$	
140. GeV	$1.401 \times 10^5$	1.905	0.710	0.951	0.049	3.616	$5.748 \times 10^4$	
154. GeV	$1.544 \times 10^5$	1.913	0.792	1.067	0.054	3.828	<i>Muon critical energy</i>	
200. GeV	$2.001 \times 10^5$	1.935	1.064	1.450	0.069	4.519	$7.230 \times 10^4$	
300. GeV	$3.001 \times 10^5$	1.969	1.667	2.282	0.104	6.024	$9.142 \times 10^4$	
400. GeV	$4.001 \times 10^5$	1.993	2.291	3.145	0.139	7.569	$1.062 \times 10^5$	
800. GeV	$8.001 \times 10^5$	2.051	4.867	6.680	0.280	13.879	$1.447 \times 10^5$	
1.00 TeV	$1.000 \times 10^6$	2.070	6.189	8.488	0.352	17.100	$1.576 \times 10^5$	
1.40 TeV	$1.400 \times 10^6$	2.099	8.838	12.094	0.498	23.531	$1.775 \times 10^5$	
2.00 TeV	$2.000 \times 10^6$	2.130	12.888	17.596	0.721	33.336	$1.988 \times 10^5$	
3.00 TeV	$3.000 \times 10^6$	2.165	19.647	26.739	1.102	49.655	$2.232 \times 10^5$	
4.00 TeV	$4.000 \times 10^6$	2.191	26.495	35.978	1.488	66.154	$2.406 \times 10^5$	
8.00 TeV	$8.000 \times 10^6$	2.254	54.090	73.113	3.091	132.550	$2.825 \times 10^5$	
10.0 TeV	$1.000 \times 10^7$	2.274	67.991	91.778	3.914	165.959	$2.960 \times 10^5$	
14.0 TeV	$1.400 \times 10^7$	2.306	95.718	129.021	5.601	232.648	$3.162 \times 10^5$	
20.0 TeV	$2.000 \times 10^7$	2.340	137.544	185.120	8.187	333.193	$3.377 \times 10^5$	
30.0 TeV	$3.000 \times 10^7$	2.379	207.173	278.459	12.652	500.665	$3.620 \times 10^5$	
40.0 TeV	$4.000 \times 10^7$	2.408	277.042	372.014	17.221	668.687	$3.792 \times 10^5$	
80.0 TeV	$8.000 \times 10^7$	2.478	556.905	746.476	36.290	1342.151	$4.206 \times 10^5$	
100. TeV	$1.000 \times 10^8$	2.501	697.059	933.871	46.135	1679.567	$4.339 \times 10^5$	