Table 283: Muons in Liquid helium (He)

Z	A [g/mol]	ρ [g/cm^3]	I [eV]	a	$k = m_s$	x_0	x_1	$\overline{C}$	δ_0
2 (He)	4.002602 (2)	0.125	41.8	0.65713	3.0000	0.4729	2.0000	4.5180	0.00

T	p [MeV/c]	Ionization	Brems	Pair prod	Photonucl	Total	CSDA range [g/cm^2]
		[MeV cm^2/g]					
10.0 MeV	4.704×10^1	7.709				7.709	7.138×10^{-1}
14.0 MeV	5.616×10^1	5.998				5.998	1.308×10^0
20.0 MeV	6.802×10^1	4.673				4.673	2.455×10^0
30.0 MeV	8.509×10^1	3.616				3.616	4.922×10^0
40.0 MeV	1.003×10^2	3.082				3.083	7.937×10^0
80.0 MeV	1.527×10^2	2.305				2.305	2.343×10^1
100. MeV	1.764×10^2	2.165				2.165	3.240×10^1
140. MeV	2.218×10^2	2.026				2.026	5.159×10^1
200. MeV	2.868×10^2	1.954			0.000	1.954	8.186×10^1
277. MeV	3.683×10^2	1.936			0.000	1.936	*Minimum ionization*
300. MeV	3.917×10^2	1.937			0.000	1.937	1.334×10^2
400. MeV	4.945×10^2	1.952			0.000	1.952	1.849×10^2
800. MeV	8.995×10^2	2.037			0.000	2.037	3.853×10^2
1.00 GeV	1.101×10^3	2.072			0.001	2.072	4.826×10^2
1.40 GeV	1.502×10^3	2.126	0.000		0.001	2.127	6.730×10^2
2.00 GeV	2.103×10^3	2.184	0.000		0.001	2.185	9.511×10^2
3.00 GeV	3.104×10^3	2.247	0.000	0.000	0.002	2.249	1.402×10^3
4.00 GeV	4.104×10^3	2.290	0.000	0.000	0.002	2.293	1.842×10^3
8.00 GeV	8.105×10^3	2.386	0.001	0.001	0.004	2.392	3.545×10^3
10.0 GeV	1.011×10^4	2.415	0.002	0.002	0.005	2.423	4.375×10^3
14.0 GeV	1.411×10^4	2.458	0.002	0.003	0.007	2.470	6.010×10^3
20.0 GeV	2.011×10^4	2.501	0.004	0.004	0.010	2.519	8.414×10^3
30.0 GeV	3.011×10^4	2.549	0.006	0.008	0.014	2.578	1.233×10^4
40.0 GeV	4.011×10^4	2.582	0.009	0.012	0.019	2.622	1.618×10^4
80.0 GeV	8.011×10^4	2.657	0.021	0.029	0.036	2.744	3.107×10^4
100. GeV	1.001×10^5	2.681	0.028	0.039	0.045	2.792	3.829×10^4
140. GeV	1.401×10^5	2.716	0.042	0.058	0.062	2.878	5.240×10^4
200. GeV	2.001×10^5	2.752	0.063	0.090	0.088	2.993	7.284×10^4
300. GeV	3.001×10^5	2.794	0.101	0.144	0.132	3.171	1.053×10^5
400. GeV	4.001×10^5	2.823	0.140	0.201	0.175	3.340	1.360×10^5
800. GeV	8.001×10^5	2.895	0.306	0.443	0.354	3.998	2.453×10^5
1.00 TeV	1.000×10^6	2.918	0.392	0.569	0.445	4.324	2.934×10^5
1.40 TeV	1.400×10^6	2.953	0.566	0.821	0.632	4.973	3.796×10^5
2.00 TeV	2.000×10^6	2.991	0.836	1.210	0.916	5.953	4.897×10^5
2.02 TeV	2.020×10^6	2.992	0.844	1.223	0.925	5.985	*Muon critical energy*
3.00 TeV	3.000×10^6	3.035	1.289	1.861	1.404	7.589	6.382×10^5
4.00 TeV	4.000×10^6	3.067	1.751	2.524	1.902	9.245	7.574×10^5
8.00 TeV	8.000×10^6	3.144	3.634	5.207	3.979	15.964	1.083×10^6
10.0 TeV	1.000×10^7	3.170	4.589	6.563	5.050	19.372	1.196×10^6
14.0 TeV	1.400×10^7	3.209	6.497	9.260	7.260	26.226	1.373×10^6
20.0 TeV	2.000×10^7	3.250	9.390	13.338	10.660	36.639	1.566×10^6
30.0 TeV	3.000×10^7	3.299	14.206	20.112	16.578	54.195	1.789×10^6
40.0 TeV	4.000×10^7	3.334	19.055	26.915	22.660	71.965	1.949×10^6
80.0 TeV	8.000×10^7	3.420	38.527	54.158	48.256	144.361	2.334×10^6
100. TeV	1.000×10^8	3.448	48.300	67.800	61.550	181.099	2.457×10^6