Muons in liquid oxygen (O_2)

Z	A [g/mol]	ρ [g/cm^3]	I [eV]	a	$k = m_s$	x_0	x_1	$\overline{C}$	δ_0
8 (O)	15.999 (3)	1.141	95.0	0.52231	3.0000	0.2868	2.0000	3.9471	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	6.951				6.951	7.977×10^{-1}
14.0 MeV	5.616×10^1	5.429				5.430	1.456×10^0
20.0 MeV	6.802×10^1	4.246				4.246	2.720×10^0
30.0 MeV	8.509×10^1	3.298				3.298	5.429×10^0
40.0 MeV	1.003×10^2	2.818				2.819	8.731×10^0
80.0 MeV	1.527×10^2	2.120				2.120	2.561×10^1
100. MeV	1.764×10^2	1.995				1.995	3.536×10^1
140. MeV	2.218×10^2	1.873				1.873	5.615×10^1
200. MeV	2.868×10^2	1.807				1.807	8.888×10^1
287. MeV	3.779×10^2	1.788			0.000	1.788	*Minimum ionization*
300. MeV	3.917×10^2	1.788			0.000	1.789	1.447×10^2
400. MeV	4.945×10^2	1.801			0.000	1.801	2.004×10^2
800. MeV	8.995×10^2	1.879	0.000		0.000	1.880	4.177×10^2
1.00 GeV	1.101×10^3	1.912	0.000		0.000	1.912	5.232×10^2
1.40 GeV	1.502×10^3	1.963	0.000	0.000	0.001	1.965	7.294×10^2
2.00 GeV	2.103×10^3	2.019	0.001	0.000	0.001	2.021	1.030×10^3
3.00 GeV	3.104×10^3	2.080	0.001	0.001	0.001	2.084	1.517×10^3
4.00 GeV	4.104×10^3	2.122	0.002	0.001	0.002	2.127	1.992×10^3
8.00 GeV	8.105×10^3	2.218	0.004	0.004	0.004	2.229	3.824×10^3
10.0 GeV	1.011×10^4	2.247	0.005	0.005	0.005	2.262	4.714×10^3
14.0 GeV	1.411×10^4	2.289	0.008	0.008	0.006	2.312	6.462×10^3
20.0 GeV	2.011×10^4	2.333	0.012	0.014	0.009	2.369	9.024×10^3
30.0 GeV	3.011×10^4	2.381	0.020	0.024	0.013	2.439	1.318×10^4
40.0 GeV	4.011×10^4	2.414	0.028	0.036	0.017	2.495	1.723×10^4
80.0 GeV	8.011×10^4	2.489	0.064	0.087	0.034	2.674	3.269×10^4
100. GeV	1.001×10^5	2.513	0.084	0.114	0.042	2.753	4.006×10^4
140. GeV	1.401×10^5	2.548	0.123	0.171	0.058	2.901	5.421×10^4
200. GeV	2.001×10^5	2.584	0.185	0.262	0.082	3.115	7.417×10^4
300. GeV	3.001×10^5	2.626	0.292	0.416	0.123	3.458	1.046×10^5
400. GeV	4.001×10^5	2.655	0.403	0.577	0.165	3.800	1.322×10^5
800. GeV	8.001×10^5	2.727	0.863	1.244	0.333	5.166	2.221×10^5
890. GeV	8.900×10^5	2.738	0.969	1.398	0.371	5.476	*Muon critical energy*
1.00 TeV	1.000×10^6	2.750	1.101	1.588	0.418	5.857	2.585×10^5
1.40 TeV	1.400×10^6	2.786	1.579	2.273	0.593	7.230	3.198×10^5
2.00 TeV	2.000×10^6	2.824	2.313	3.322	0.858	9.317	3.928×10^5
3.00 TeV	3.000×10^6	2.867	3.544	5.068	1.314	12.793	4.840×10^5
4.00 TeV	4.000×10^6	2.899	4.794	6.837	1.779	16.309	5.531×10^5
8.00 TeV	8.000×10^6	2.977	9.855	13.962	3.711	30.505	7.296×10^5
10.0 TeV	1.000×10^7	3.002	12.412	17.550	4.706	37.670	7.885×10^5
14.0 TeV	1.400×10^7	3.041	17.515	24.700	6.755	52.011	8.785×10^5
20.0 TeV	2.000×10^7	3.083	25.230	35.482	9.902	73.697	9.749×10^5
30.0 TeV	3.000×10^7	3.131	38.075	53.425	15.361	109.993	1.085×10^6
40.0 TeV	4.000×10^7	3.166	50.983	71.424	20.963	146.537	1.164×10^6
80.0 TeV	8.000×10^7	3.253	102.749	143.480	44.451	293.933	1.353×10^6
100. TeV	1.000×10^8	3.281	128.700	179.550	56.620	368.151	1.413×10^6