Muons in yttrium (Y)

Z	A [g/mol]	ρ [g/cm^3]	I [eV]	a	$k = m_s$	x_0	x_1	$\overline{C}$	δ_0
39 (Y)	88.90584(2)	4.469	379.0	0.07138	3.4585	0.3608	3.5542	5.4801	0.14

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	4.947				4.947	1.145×10^0
14.0 MeV	5.616×10^1	3.903				3.903	2.064×10^0
20.0 MeV	6.802×10^1	3.080				3.080	3.814×10^0
30.0 MeV	8.509×10^1	2.413				2.414	7.531×10^0
40.0 MeV	1.003×10^2	2.074				2.074	1.203×10^1
80.0 MeV	1.527×10^2	1.578				1.578	3.481×10^1
100. MeV	1.764×10^2	1.490				1.490	4.789×10^1
140. MeV	2.218×10^2	1.405				1.405	7.566×10^1
200. MeV	2.868×10^2	1.365				1.365	1.191×10^2
246. MeV	3.356×10^2	1.359				1.360	*Minimum ionization*
300. MeV	3.917×10^2	1.364	0.000		0.000	1.364	1.926×10^2
400. MeV	4.945×10^2	1.383	0.000		0.000	1.384	2.654×10^2
800. MeV	8.995×10^2	1.471	0.001		0.000	1.472	5.454×10^2
1.00 GeV	1.101×10^3	1.505	0.001		0.000	1.507	6.796×10^2
1.40 GeV	1.502×10^3	1.560	0.001	0.000	0.001	1.563	9.400×10^2
2.00 GeV	2.103×10^3	1.620	0.002	0.001	0.001	1.624	1.316×10^3
3.00 GeV	3.104×10^3	1.686	0.004	0.003	0.001	1.694	1.918×10^3
4.00 GeV	4.104×10^3	1.731	0.006	0.005	0.002	1.744	2.500×10^3
8.00 GeV	8.105×10^3	1.834	0.014	0.014	0.003	1.866	4.709×10^3
10.0 GeV	1.011×10^4	1.865	0.019	0.020	0.004	1.908	5.769×10^3
14.0 GeV	1.411×10^4	1.909	0.029	0.032	0.006	1.975	7.828×10^3
20.0 GeV	2.011×10^4	1.953	0.045	0.052	0.008	2.057	1.080×10^4
30.0 GeV	3.011×10^4	1.999	0.073	0.090	0.012	2.174	1.553×10^4
40.0 GeV	4.011×10^4	2.030	0.103	0.132	0.015	2.281	2.002×10^4
80.0 GeV	8.011×10^4	2.099	0.233	0.316	0.030	2.679	3.617×10^4
100. GeV	1.001×10^5	2.121	0.301	0.415	0.037	2.875	4.337×10^4
140. GeV	1.401×10^5	2.152	0.442	0.620	0.052	3.267	5.642×10^4
200. GeV	2.001×10^5	2.184	0.663	0.944	0.073	3.866	7.329×10^4
255. GeV	2.556×10^5	2.206	0.871	1.242	0.094	4.413	*Muon critical energy*
300. GeV	3.001×10^5	2.221	1.041	1.486	0.110	4.858	9.632×10^4
400. GeV	4.001×10^5	2.246	1.431	2.048	0.147	5.873	1.150×10^5
800. GeV	8.001×10^5	2.309	3.044	4.354	0.296	10.005	1.666×10^5
1.00 TeV	1.000×10^6	2.330	3.873	5.535	0.372	12.110	1.848×10^5
1.40 TeV	1.400×10^6	2.361	5.535	7.890	0.528	16.315	2.131×10^5
2.00 TeV	2.000×10^6	2.394	8.080	11.485	0.763	22.723	2.442×10^5
3.00 TeV	3.000×10^6	2.432	12.330	17.460	1.168	33.391	2.803×10^5
4.00 TeV	4.000×10^6	2.460	16.638	23.500	1.578	44.177	3.062×10^5
8.00 TeV	8.000×10^6	2.528	34.017	47.784	3.280	87.610	3.693×10^5
10.0 TeV	1.000×10^7	2.551	42.777	59.993	4.155	109.477	3.897×10^5
14.0 TeV	1.400×10^7	2.585	60.251	84.352	5.951	153.140	4.204×10^5
20.0 TeV	2.000×10^7	2.621	86.624	121.050	8.704	219.001	4.530×10^5
30.0 TeV	3.000×10^7	2.664	130.529	182.110	13.462	328.767	4.900×10^5
40.0 TeV	4.000×10^7	2.695	174.601	243.319	18.334	438.950	5.163×10^5
80.0 TeV	8.000×10^7	2.770	351.173	488.341	38.685	880.971	5.793×10^5
100. TeV	1.000×10^8	2.795	439.620	610.970	49.200	1102.586	5.996×10^5