Table 026: Muons in Iron

Z	A [g/mol]	ρ [g/cm^3]	I [eV]	a	$k = m_s$	x_0	x_1	$\overline{C}$	δ_0
26 (Fe)	55.845 (2)	7.874	286.0	0.14680	2.9632	−0.0012	3.1531	4.2911	0.12

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	5.494				5.494	1.025×10^0
14.0 MeV	5.616×10^1	4.321				4.321	1.854×10^0
20.0 MeV	6.802×10^1	3.399				3.399	3.437×10^0
30.0 MeV	8.509×10^1	2.654				2.654	6.812×10^0
40.0 MeV	1.003×10^2	2.274				2.274	1.091×10^1
80.0 MeV	1.527×10^2	1.717				1.717	3.178×10^1
100. MeV	1.764×10^2	1.616				1.616	4.382×10^1
140. MeV	2.218×10^2	1.516				1.516	6.950×10^1
200. MeV	2.868×10^2	1.463				1.463	1.099×10^2
274. MeV	3.642×10^2	1.451			0.000	1.451	*Minimum ionization*
300. MeV	3.917×10^2	1.452			0.000	1.453	1.787×10^2
400. MeV	4.945×10^2	1.467	0.000		0.000	1.467	2.472×10^2
800. MeV	8.995×10^2	1.548	0.000		0.000	1.548	5.124×10^2
1.00 GeV	1.101×10^3	1.581	0.001		0.000	1.582	6.402×10^2
1.40 GeV	1.502×10^3	1.635	0.001	0.000	0.001	1.637	8.885×10^2
2.00 GeV	2.103×10^3	1.694	0.002	0.001	0.001	1.697	1.248×10^3
3.00 GeV	3.104×10^3	1.760	0.003	0.002	0.001	1.766	1.825×10^3
4.00 GeV	4.104×10^3	1.806	0.004	0.003	0.002	1.816	2.383×10^3
8.00 GeV	8.105×10^3	1.911	0.010	0.010	0.003	1.935	4.509×10^3
10.0 GeV	1.011×10^4	1.942	0.014	0.014	0.004	1.975	5.532×10^3
14.0 GeV	1.411×10^4	1.987	0.021	0.023	0.006	2.038	7.524×10^3
20.0 GeV	2.011×10^4	2.032	0.033	0.038	0.008	2.112	1.041×10^4
30.0 GeV	3.011×10^4	2.080	0.054	0.066	0.012	2.213	1.504×10^4
40.0 GeV	4.011×10^4	2.112	0.076	0.097	0.016	2.302	1.946×10^4
80.0 GeV	8.011×10^4	2.184	0.171	0.233	0.031	2.620	3.572×10^4
100. GeV	1.001×10^5	2.207	0.221	0.306	0.038	2.773	4.314×10^4
140. GeV	1.401×10^5	2.239	0.325	0.458	0.054	3.076	5.683×10^4
200. GeV	2.001×10^5	2.273	0.488	0.698	0.076	3.535	7.501×10^4
300. GeV	3.001×10^5	2.312	0.766	1.100	0.114	4.293	1.006×10^5
347. GeV	3.470×10^5	2.326	0.900	1.294	0.132	4.652	*Muon critical energy*
400. GeV	4.001×10^5	2.339	1.053	1.517	0.152	5.063	1.221×10^5
800. GeV	8.001×10^5	2.406	2.244	3.232	0.307	8.190	1.836×10^5
1.00 TeV	1.000×10^6	2.428	2.856	4.111	0.386	9.781	2.060×10^5
1.40 TeV	1.400×10^6	2.461	4.085	5.864	0.547	12.958	2.414×10^5
2.00 TeV	2.000×10^6	2.496	5.967	8.543	0.791	17.798	2.807×10^5
3.00 TeV	3.000×10^6	2.537	9.112	12.996	1.211	25.856	3.271×10^5
4.00 TeV	4.000×10^6	2.566	12.302	17.499	1.637	34.005	3.607×10^5
8.00 TeV	8.000×10^6	2.638	25.178	35.609	3.406	66.833	4.431×10^5
10.0 TeV	1.000×10^7	2.662	31.673	44.716	4.316	83.368	4.698×10^5
14.0 TeV	1.400×10^7	2.698	44.628	62.884	6.184	116.396	5.103×10^5
20.0 TeV	2.000×10^7	2.737	64.188	90.262	9.050	166.238	5.532×10^5
30.0 TeV	3.000×10^7	2.783	96.751	135.814	14.009	249.357	6.020×10^5
40.0 TeV	4.000×10^7	2.815	129.444	181.483	19.089	332.833	6.366×10^5
80.0 TeV	8.000×10^7	2.895	260.455	364.300	40.329	667.981	7.197×10^5
100. TeV	1.000×10^8	2.922	326.090	455.800	51.310	836.123	7.464×10^5