Muons in hydrogen gas (H_2)

Z	A [g/mol]	ρ [g/cm^3]	I [eV]	a	$k = m_s$	x_0	x_1	$\overline{C}$	δ_0
1 (H)	1.008 (7)	8.376×10^{-5}	19.2	0.14092	5.7273	1.8639	3.2718	9.5834	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	16.742				16.743	3.267×10^{-1}
14.0 MeV	5.616×10^1	12.988				12.988	6.009×10^{-1}
20.0 MeV	6.802×10^1	10.089				10.089	1.131×10^0
30.0 MeV	8.509×10^1	7.783				7.783	2.276×10^0
40.0 MeV	1.003×10^2	6.621				6.621	3.678×10^0
80.0 MeV	1.527×10^2	4.927				4.927	1.091×10^1
100. MeV	1.764×10^2	4.621				4.621	1.511×10^1
140. MeV	2.218×10^2	4.314				4.314	2.411×10^1
200. MeV	2.868×10^2	4.148			0.000	4.148	3.835×10^1
282. MeV	3.733×10^2	4.103			0.000	4.103	*Minimum ionization*
300. MeV	3.917×10^2	4.104			0.000	4.105	6.266×10^1
400. MeV	4.945×10^2	4.141			0.000	4.141	8.693×10^1
800. MeV	8.995×10^2	4.373			0.000	4.373	1.809×10^2
1.00 GeV	1.101×10^3	4.474			0.001	4.475	2.261×10^2
1.40 GeV	1.502×10^3	4.642	0.000		0.001	4.643	3.138×10^2
2.00 GeV	2.103×10^3	4.832	0.000		0.001	4.833	4.403×10^2
3.00 GeV	3.104×10^3	5.056	0.000	0.000	0.002	5.059	6.422×10^2
4.00 GeV	4.104×10^3	5.218	0.001	0.000	0.002	5.221	8.367×10^2
8.00 GeV	8.105×10^3	5.606	0.001	0.001	0.005	5.614	1.572×10^3
10.0 GeV	1.011×10^4	5.711	0.002	0.002	0.006	5.720	1.925×10^3
14.0 GeV	1.411×10^4	5.841	0.003	0.003	0.008	5.855	2.615×10^3
20.0 GeV	2.011×10^4	5.955	0.005	0.006	0.011	5.976	3.629×10^3
30.0 GeV	3.011×10^4	6.063	0.008	0.010	0.015	6.097	5.284×10^3
40.0 GeV	4.011×10^4	6.132	0.012	0.015	0.020	6.179	6.913×10^3
80.0 GeV	8.011×10^4	6.285	0.028	0.038	0.038	6.389	1.327×10^4
100. GeV	1.001×10^5	6.331	0.037	0.050	0.047	6.466	1.638×10^4
140. GeV	1.401×10^5	6.401	0.055	0.076	0.066	6.598	2.250×10^4
200. GeV	2.001×10^5	6.473	0.085	0.118	0.093	6.770	3.148×10^4
300. GeV	3.001×10^5	6.556	0.137	0.191	0.139	7.023	4.597×10^4
400. GeV	4.001×10^5	6.614	0.191	0.268	0.185	7.258	5.998×10^4
800. GeV	8.001×10^5	6.756	0.423	0.592	0.373	8.144	1.119×10^5
1.00 TeV	1.000×10^6	6.802	0.544	0.761	0.468	8.576	1.359×10^5
1.40 TeV	1.400×10^6	6.873	0.791	1.101	0.663	9.429	1.803×10^5
2.00 TeV	2.000×10^6	6.948	1.175	1.627	0.961	10.711	2.400×10^5
3.00 TeV	3.000×10^6	7.035	1.827	2.504	1.474	12.840	3.252×10^5
3.61 TeV	3.611×10^6	7.075	2.234	3.049	1.792	14.151	*Muon critical energy*
4.00 TeV	4.000×10^6	7.098	2.496	3.399	1.996	14.989	3.972×10^5
8.00 TeV	8.000×10^6	7.252	5.240	7.012	4.180	23.684	6.078×10^5
10.0 TeV	1.000×10^7	7.302	6.642	8.837	5.308	28.089	6.852×10^5
14.0 TeV	1.400×10^7	7.379	9.452	12.466	7.642	36.939	8.090×10^5
20.0 TeV	2.000×10^7	7.463	13.734	17.952	11.236	50.385	9.476×10^5
30.0 TeV	3.000×10^7	7.559	20.884	27.062	17.498	73.003	1.112×10^6
40.0 TeV	4.000×10^7	7.628	28.113	36.210	23.940	95.890	1.231×10^6
80.0 TeV	8.000×10^7	7.799	57.248	72.833	51.135	189.015	1.523×10^6
100. TeV	1.000×10^8	7.855	71.920	91.170	65.290	236.236	1.617×10^6