

## Muons in holmium (Ho)

Z	A [g/mol]	$\rho$ [g/cm <sup>3</sup> ]	I [eV]	$a$	$k = m_s$	$x_0$	$x_1$	$\bar{C}$	$\delta_0$
67 (Ho)	164.93033 (2)	8.795	650.0	0.24638	2.5726	0.0761	3.4782	5.9587	0.14
$T$	$p$ [MeV/c]	Ionization	Brems	Pair prod [MeV cm <sup>2</sup> /g]	Photonucl	Total	CSDA range [g/cm <sup>2</sup> ]		
10.0 MeV	$4.704 \times 10^1$	4.132				4.132	$1.393 \times 10^0$		
14.0 MeV	$5.616 \times 10^1$	3.283				3.283	$2.489 \times 10^0$		
20.0 MeV	$6.802 \times 10^1$	2.605				2.605	$4.562 \times 10^0$		
30.0 MeV	$8.509 \times 10^1$	2.051				2.051	$8.945 \times 10^0$		
40.0 MeV	$1.003 \times 10^2$	1.767				1.767	$1.423 \times 10^1$		
80.0 MeV	$1.527 \times 10^2$	1.350				1.350	$4.091 \times 10^1$		
100. MeV	$1.764 \times 10^2$	1.277				1.277	$5.618 \times 10^1$		
140. MeV	$2.218 \times 10^2$	1.207				1.207	$8.854 \times 10^1$		
200. MeV	$2.868 \times 10^2$	1.174				1.174	$1.391 \times 10^2$		
237. MeV	$3.260 \times 10^2$	1.170	0.000			1.170	<i>Minimum ionization</i>		
300. MeV	$3.917 \times 10^2$	1.175	0.000		0.000	1.176	$2.244 \times 10^2$		
400. MeV	$4.945 \times 10^2$	1.195	0.000		0.000	1.195	$3.089 \times 10^2$		
800. MeV	$8.995 \times 10^2$	1.278	0.001		0.000	1.279	$6.319 \times 10^2$		
1.00 GeV	$1.101 \times 10^3$	1.311	0.001		0.000	1.313	$7.861 \times 10^2$		
1.40 GeV	$1.502 \times 10^3$	1.365	0.002	0.000	0.001	1.367	$1.084 \times 10^3$		
2.00 GeV	$2.103 \times 10^3$	1.422	0.003	0.001	0.001	1.428	$1.513 \times 10^3$		
3.00 GeV	$3.104 \times 10^3$	1.488	0.006	0.003	0.001	1.498	$2.196 \times 10^3$		
4.00 GeV	$4.104 \times 10^3$	1.533	0.009	0.006	0.002	1.550	$2.851 \times 10^3$		
8.00 GeV	$8.105 \times 10^3$	1.636	0.021	0.020	0.003	1.681	$5.319 \times 10^3$		
10.0 GeV	$1.011 \times 10^4$	1.667	0.028	0.028	0.004	1.728	$6.492 \times 10^3$		
14.0 GeV	$1.411 \times 10^4$	1.712	0.043	0.046	0.005	1.807	$8.754 \times 10^3$		
20.0 GeV	$2.011 \times 10^4$	1.757	0.067	0.075	0.007	1.907	$1.198 \times 10^4$		
30.0 GeV	$3.011 \times 10^4$	1.804	0.110	0.131	0.011	2.057	$1.703 \times 10^4$		
40.0 GeV	$4.011 \times 10^4$	1.835	0.156	0.192	0.014	2.199	$2.173 \times 10^4$		
80.0 GeV	$8.011 \times 10^4$	1.904	0.353	0.463	0.028	2.749	$3.796 \times 10^4$		
100. GeV	$1.001 \times 10^5$	1.924	0.457	0.609	0.035	3.027	$4.489 \times 10^4$		
140. GeV	$1.401 \times 10^5$	1.954	0.671	0.909	0.049	3.585	$5.703 \times 10^4$		
165. GeV	$1.649 \times 10^5$	1.968	0.808	1.103	0.058	3.938	<i>Muon critical energy</i>		
200. GeV	$2.001 \times 10^5$	1.985	1.006	1.385	0.070	4.447	$7.203 \times 10^4$		
300. GeV	$3.001 \times 10^5$	2.019	1.577	2.180	0.104	5.882	$9.154 \times 10^4$		
400. GeV	$4.001 \times 10^5$	2.043	2.167	3.003	0.139	7.354	$1.067 \times 10^5$		
800. GeV	$8.001 \times 10^5$	2.101	4.604	6.379	0.281	13.366	$1.465 \times 10^5$		
1.00 TeV	$1.000 \times 10^6$	2.120	5.855	8.105	0.354	16.435	$1.600 \times 10^5$		
1.40 TeV	$1.400 \times 10^6$	2.149	8.362	11.548	0.501	22.561	$1.807 \times 10^5$		
2.00 TeV	$2.000 \times 10^6$	2.180	12.195	16.802	0.724	31.903	$2.029 \times 10^5$		
3.00 TeV	$3.000 \times 10^6$	2.215	18.593	25.532	1.107	47.449	$2.285 \times 10^5$		
4.00 TeV	$4.000 \times 10^6$	2.241	25.075	34.354	1.496	63.166	$2.467 \times 10^5$		
8.00 TeV	$8.000 \times 10^6$	2.304	51.200	69.812	3.106	126.424	$2.906 \times 10^5$		
10.0 TeV	$1.000 \times 10^7$	2.324	64.362	87.634	3.933	158.255	$3.047 \times 10^5$		
14.0 TeV	$1.400 \times 10^7$	2.356	90.614	123.196	5.629	221.797	$3.259 \times 10^5$		
20.0 TeV	$2.000 \times 10^7$	2.390	130.218	176.764	8.228	317.602	$3.484 \times 10^5$		
30.0 TeV	$3.000 \times 10^7$	2.430	196.147	265.887	12.716	477.182	$3.739 \times 10^5$		
40.0 TeV	$4.000 \times 10^7$	2.458	262.306	355.216	17.309	637.291	$3.920 \times 10^5$		
80.0 TeV	$8.000 \times 10^7$	2.528	527.313	712.789	36.475	1279.108	$4.354 \times 10^5$		
100. TeV	$1.000 \times 10^8$	2.551	660.030	891.740	46.370	1600.693	$4.494 \times 10^5$		