

**Table 071: Muons in Lutetium**

Z	A [g/mol]	$\rho$ [g/cm <sup>3</sup> ]	I [eV]	a	$k = m_s$	$x_0$	$x_1$	$\bar{C}$	$\delta_0$
71 (Lu)	174.9668 (1)	9.840	694.0	0.24033	2.5643	0.1560	3.5218	5.9785	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	$4.704 \times 10^1$	4.072				4.072	$1.417 \times 10^0$		
14.0 MeV	$5.616 \times 10^1$	3.240				3.240	$2.529 \times 10^0$		
20.0 MeV	$6.802 \times 10^1$	2.575				2.575	$4.628 \times 10^0$		
30.0 MeV	$8.509 \times 10^1$	2.030				2.030	$9.058 \times 10^0$		
40.0 MeV	$1.003 \times 10^2$	1.751				1.751	$1.439 \times 10^1$		
80.0 MeV	$1.527 \times 10^2$	1.339				1.339	$4.130 \times 10^1$		
100. MeV	$1.764 \times 10^2$	1.266				1.266	$5.669 \times 10^1$		
140. MeV	$2.218 \times 10^2$	1.196				1.197	$8.933 \times 10^1$		
200. MeV	$2.868 \times 10^2$	1.164				1.164	$1.403 \times 10^2$		
237. MeV	$3.260 \times 10^2$	1.160	0.000			1.161	<i>Minimum ionization</i>		
300. MeV	$3.917 \times 10^2$	1.165	0.000		0.000	1.166	$2.264 \times 10^2$		
400. MeV	$4.945 \times 10^2$	1.185	0.000		0.000	1.185	$3.115 \times 10^2$		
800. MeV	$8.995 \times 10^2$	1.268	0.001		0.000	1.269	$6.372 \times 10^2$		
1.00 GeV	$1.101 \times 10^3$	1.301	0.001		0.000	1.303	$7.927 \times 10^2$		
1.40 GeV	$1.502 \times 10^3$	1.354	0.002	0.000	0.001	1.357	$1.093 \times 10^3$		
2.00 GeV	$2.103 \times 10^3$	1.412	0.004	0.001	0.001	1.417	$1.525 \times 10^3$		
3.00 GeV	$3.104 \times 10^3$	1.477	0.006	0.003	0.001	1.488	$2.213 \times 10^3$		
4.00 GeV	$4.104 \times 10^3$	1.522	0.009	0.006	0.002	1.539	$2.873 \times 10^3$		
8.00 GeV	$8.105 \times 10^3$	1.625	0.023	0.021	0.003	1.672	$5.356 \times 10^3$		
10.0 GeV	$1.011 \times 10^4$	1.657	0.030	0.029	0.004	1.720	$6.534 \times 10^3$		
14.0 GeV	$1.411 \times 10^4$	1.701	0.046	0.047	0.005	1.801	$8.805 \times 10^3$		
20.0 GeV	$2.011 \times 10^4$	1.746	0.071	0.078	0.007	1.903	$1.204 \times 10^4$		
30.0 GeV	$3.011 \times 10^4$	1.793	0.116	0.137	0.011	2.058	$1.709 \times 10^4$		
40.0 GeV	$4.011 \times 10^4$	1.825	0.164	0.201	0.014	2.205	$2.178 \times 10^4$		
80.0 GeV	$8.011 \times 10^4$	1.894	0.372	0.484	0.028	2.779	$3.790 \times 10^4$		
100. GeV	$1.001 \times 10^5$	1.915	0.482	0.637	0.035	3.070	$4.475 \times 10^4$		
140. GeV	$1.401 \times 10^5$	1.945	0.707	0.952	0.049	3.654	$5.668 \times 10^4$		
157. GeV	$1.575 \times 10^5$	1.955	0.808	1.093	0.055	3.912	<i>Muon critical energy</i>		
200. GeV	$2.001 \times 10^5$	1.976	1.060	1.450	0.069	4.556	$7.137 \times 10^4$		
300. GeV	$3.001 \times 10^5$	2.010	1.661	2.282	0.104	6.058	$9.035 \times 10^4$		
400. GeV	$4.001 \times 10^5$	2.034	2.283	3.144	0.139	7.601	$1.051 \times 10^5$		
800. GeV	$8.001 \times 10^5$	2.092	4.849	6.677	0.280	13.900	$1.434 \times 10^5$		
1.00 TeV	$1.000 \times 10^6$	2.111	6.166	8.485	0.352	17.115	$1.564 \times 10^5$		
1.40 TeV	$1.400 \times 10^6$	2.139	8.806	12.089	0.498	23.534	$1.762 \times 10^5$		
2.00 TeV	$2.000 \times 10^6$	2.170	12.842	17.588	0.720	33.323	$1.976 \times 10^5$		
3.00 TeV	$3.000 \times 10^6$	2.206	19.578	26.726	1.101	49.612	$2.220 \times 10^5$		
4.00 TeV	$4.000 \times 10^6$	2.231	26.401	35.960	1.488	66.082	$2.394 \times 10^5$		
8.00 TeV	$8.000 \times 10^6$	2.294	53.901	73.075	3.090	132.361	$2.813 \times 10^5$		
10.0 TeV	$1.000 \times 10^7$	2.315	67.754	91.729	3.912	165.712	$2.948 \times 10^5$		
14.0 TeV	$1.400 \times 10^7$	2.347	95.386	128.951	5.598	232.284	$3.151 \times 10^5$		
20.0 TeV	$2.000 \times 10^7$	2.381	137.068	185.020	8.182	332.652	$3.366 \times 10^5$		
30.0 TeV	$3.000 \times 10^7$	2.420	206.458	278.307	12.645	499.831	$3.609 \times 10^5$		
40.0 TeV	$4.000 \times 10^7$	2.448	276.088	371.810	17.211	667.559	$3.782 \times 10^5$		
80.0 TeV	$8.000 \times 10^7$	2.518	554.989	746.078	36.270	1339.857	$4.196 \times 10^5$		
100. TeV	$1.000 \times 10^8$	2.541	694.660	933.380	46.110	1676.693	$4.330 \times 10^5$		