## Table 337: Muons in Lutetium silicon oxide [$Lu_2SiO_5$]

| $\langle Z/A \rangle$ | $\rho$ [g/cm$^3$] | $I$ [eV] | $a$ | $k = m_s$ | $x_0$ | $x_1$ | $\overline{C}$ | $\delta_0$ |
|---|---|---|---|---|---|---|---|---|
| 0.42793 | 7.400 | 472.0 | 0.20623 | 3.0000 | 0.2732 | 3.0000 | 5.4394 | 0.00 |

| $T$ | $p$ [MeV/$c$] | Ionization | Brems | Pair prod | Photonucl | Total | CSDA range [g/cm$^2$] |
|---|---|---|---|---|---|---|---|
| | | [MeV cm$^2$/g] | | | | | |
| 10.0 MeV | $4.704 \times 10^1$ | 4.679 | | | | 4.679 | $1.209 \times 10^0$ |
| 14.0 MeV | $5.616 \times 10^1$ | 3.692 | | | | 3.693 | $2.181 \times 10^0$ |
| 20.0 MeV | $6.802 \times 10^1$ | 2.916 | | | | 2.916 | $4.029 \times 10^0$ |
| 30.0 MeV | $8.509 \times 10^1$ | 2.287 | | | | 2.287 | $7.953 \times 10^0$ |
| 40.0 MeV | $1.003 \times 10^2$ | 1.968 | | | | 1.968 | $1.270 \times 10^1$ |
| 80.0 MeV | $1.527 \times 10^2$ | 1.503 | | | | 1.503 | $3.666 \times 10^1$ |
| 100. MeV | $1.764 \times 10^2$ | 1.421 | | | | 1.422 | $5.038 \times 10^1$ |
| 140. MeV | $2.218 \times 10^2$ | 1.344 | | | | 1.344 | $7.944 \times 10^1$ |
| 200. MeV | $2.868 \times 10^2$ | 1.308 | | | | 1.308 | $1.248 \times 10^2$ |
| 242. MeV | $3.316 \times 10^2$ | 1.304 | | | | 1.304 | *Minimum ionization* |
| 300. MeV | $3.917 \times 10^2$ | 1.309 | 0.000 | | 0.000 | 1.309 | $2.014 \times 10^2$ |
| 400. MeV | $4.945 \times 10^2$ | 1.329 | 0.000 | | 0.000 | 1.329 | $2.773 \times 10^2$ |
| 800. MeV | $8.995 \times 10^2$ | 1.415 | 0.001 | | 0.000 | 1.416 | $5.684 \times 10^2$ |
| 1.00 GeV | $1.101 \times 10^3$ | 1.449 | 0.001 | | 0.000 | 1.450 | $7.080 \times 10^2$ |
| 1.40 GeV | $1.502 \times 10^3$ | 1.502 | 0.002 | 0.000 | 0.001 | 1.505 | $9.785 \times 10^2$ |
| 2.00 GeV | $2.103 \times 10^3$ | 1.560 | 0.003 | 0.001 | 0.001 | 1.565 | $1.369 \times 10^3$ |
| 3.00 GeV | $3.104 \times 10^3$ | 1.624 | 0.005 | 0.003 | 0.001 | 1.633 | $1.994 \times 10^3$ |
| 4.00 GeV | $4.104 \times 10^3$ | 1.668 | 0.007 | 0.005 | 0.002 | 1.682 | $2.596 \times 10^3$ |
| 8.00 GeV | $8.105 \times 10^3$ | 1.766 | 0.018 | 0.017 | 0.003 | 1.805 | $4.883 \times 10^3$ |
| 10.0 GeV | $1.011 \times 10^4$ | 1.796 | 0.024 | 0.024 | 0.004 | 1.848 | $5.978 \times 10^3$ |
| 14.0 GeV | $1.411 \times 10^4$ | 1.838 | 0.037 | 0.039 | 0.006 | 1.919 | $8.100 \times 10^3$ |
| 20.0 GeV | $2.011 \times 10^4$ | 1.879 | 0.058 | 0.063 | 0.008 | 2.009 | $1.115 \times 10^4$ |
| 30.0 GeV | $3.011 \times 10^4$ | 1.923 | 0.094 | 0.111 | 0.011 | 2.141 | $1.597 \times 10^4$ |
| 40.0 GeV | $4.011 \times 10^4$ | 1.952 | 0.133 | 0.163 | 0.015 | 2.265 | $2.051 \times 10^4$ |
| 80.0 GeV | $8.011 \times 10^4$ | 2.018 | 0.302 | 0.394 | 0.029 | 2.744 | $3.653 \times 10^4$ |
| 100. GeV | $1.001 \times 10^5$ | 2.038 | 0.391 | 0.518 | 0.036 | 2.984 | $4.352 \times 10^4$ |
| 140. GeV | $1.401 \times 10^5$ | 2.068 | 0.574 | 0.774 | 0.051 | 3.468 | $5.594 \times 10^4$ |
| 199. GeV | $1.990 \times 10^5$ | 2.099 | 0.855 | 1.172 | 0.072 | 4.199 | *Muon critical energy* |
| 200. GeV | $2.001 \times 10^5$ | 2.099 | 0.860 | 1.180 | 0.072 | 4.212 | $7.163 \times 10^4$ |
| 300. GeV | $3.001 \times 10^5$ | 2.135 | 1.349 | 1.857 | 0.108 | 5.451 | $9.245 \times 10^4$ |
| 400. GeV | $4.001 \times 10^5$ | 2.160 | 1.855 | 2.560 | 0.144 | 6.720 | $1.089 \times 10^5$ |
| 800. GeV | $8.001 \times 10^5$ | 2.221 | 3.941 | 5.442 | 0.292 | 11.896 | $1.531 \times 10^5$ |
| 1.00 TeV | $1.000 \times 10^6$ | 2.241 | 5.012 | 6.916 | 0.366 | 14.537 | $1.683 \times 10^5$ |
| 1.40 TeV | $1.400 \times 10^6$ | 2.271 | 7.159 | 9.857 | 0.519 | 19.808 | $1.918 \times 10^5$ |
| 2.00 TeV | $2.000 \times 10^6$ | 2.304 | 10.443 | 14.344 | 0.751 | 27.844 | $2.172 \times 10^5$ |
| 3.00 TeV | $3.000 \times 10^6$ | 2.341 | 15.924 | 21.801 | 1.149 | 41.217 | $2.466 \times 10^5$ |
| 4.00 TeV | $4.000 \times 10^6$ | 2.368 | 21.478 | 29.338 | 1.553 | 54.738 | $2.676 \times 10^5$ |
| 8.00 TeV | $8.000 \times 10^6$ | 2.435 | 43.866 | 59.634 | 3.228 | 109.164 | $3.183 \times 10^5$ |
| 10.0 TeV | $1.000 \times 10^7$ | 2.457 | 55.146 | 74.862 | 4.089 | 136.555 | $3.346 \times 10^5$ |
| 14.0 TeV | $1.400 \times 10^7$ | 2.490 | 77.646 | 105.247 | 5.856 | 191.241 | $3.593 \times 10^5$ |
| 20.0 TeV | $2.000 \times 10^7$ | 2.526 | 111.592 | 151.018 | 8.565 | 273.703 | $3.854 \times 10^5$ |
| 30.0 TeV | $3.000 \times 10^7$ | 2.567 | 168.101 | 227.174 | 13.250 | 411.094 | $4.150 \times 10^5$ |
| 40.0 TeV | $4.000 \times 10^7$ | 2.597 | 224.810 | 303.511 | 18.047 | 548.966 | $4.360 \times 10^5$ |
| 80.0 TeV | $8.000 \times 10^7$ | 2.671 | 451.972 | 609.067 | 38.091 | 1101.802 | $4.864 \times 10^5$ |
| 100. TeV | $1.000 \times 10^8$ | 2.695 | 565.740 | 761.984 | 48.449 | 1378.869 | $5.026 \times 10^5$ |