

Program Complot
(Version 2018-1)

by

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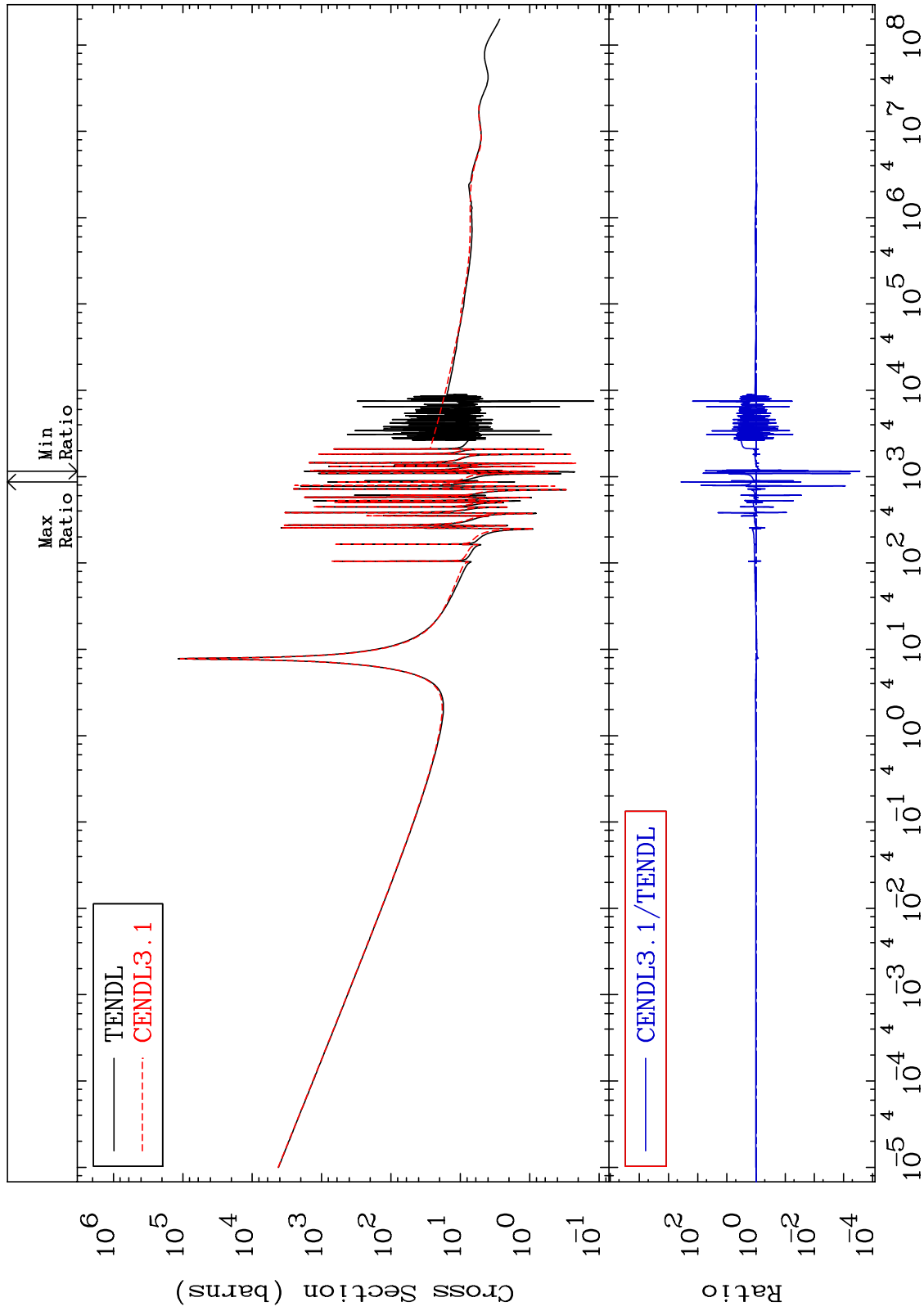
E.Mail: redcullen1@comcast.net
Web: redcullen1.net/HOMEPAGE.NEW

Press Mouse Button to Start

MAT 7237

Total
Cross Section

72-Hf-178
-99.97 To 9999. %

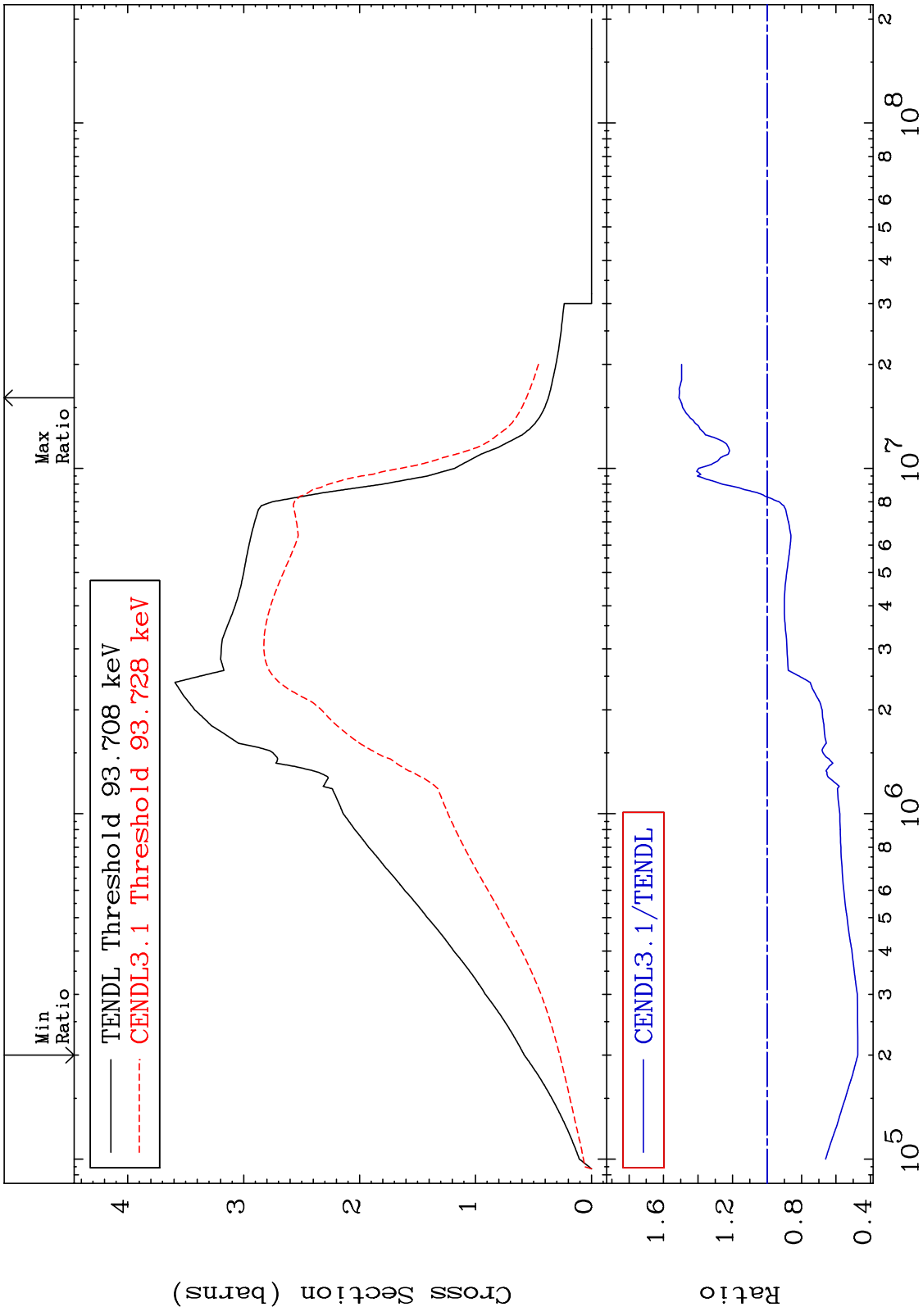


1

Incident Energy (eV)

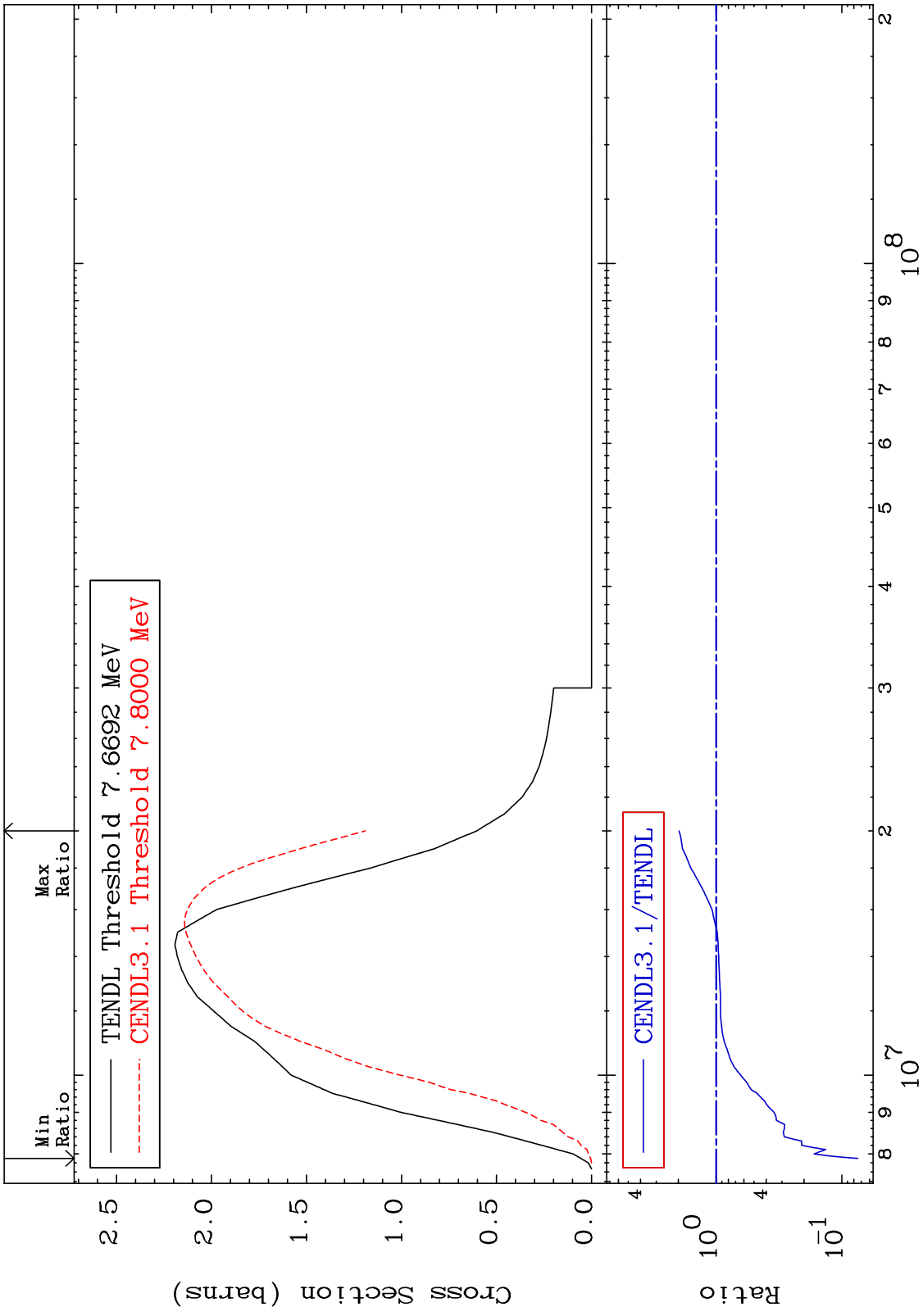
72-Hf-178

MAT 7237 Inelastic Cross Section 72-Hf-178 -52.64 To 51.01 %



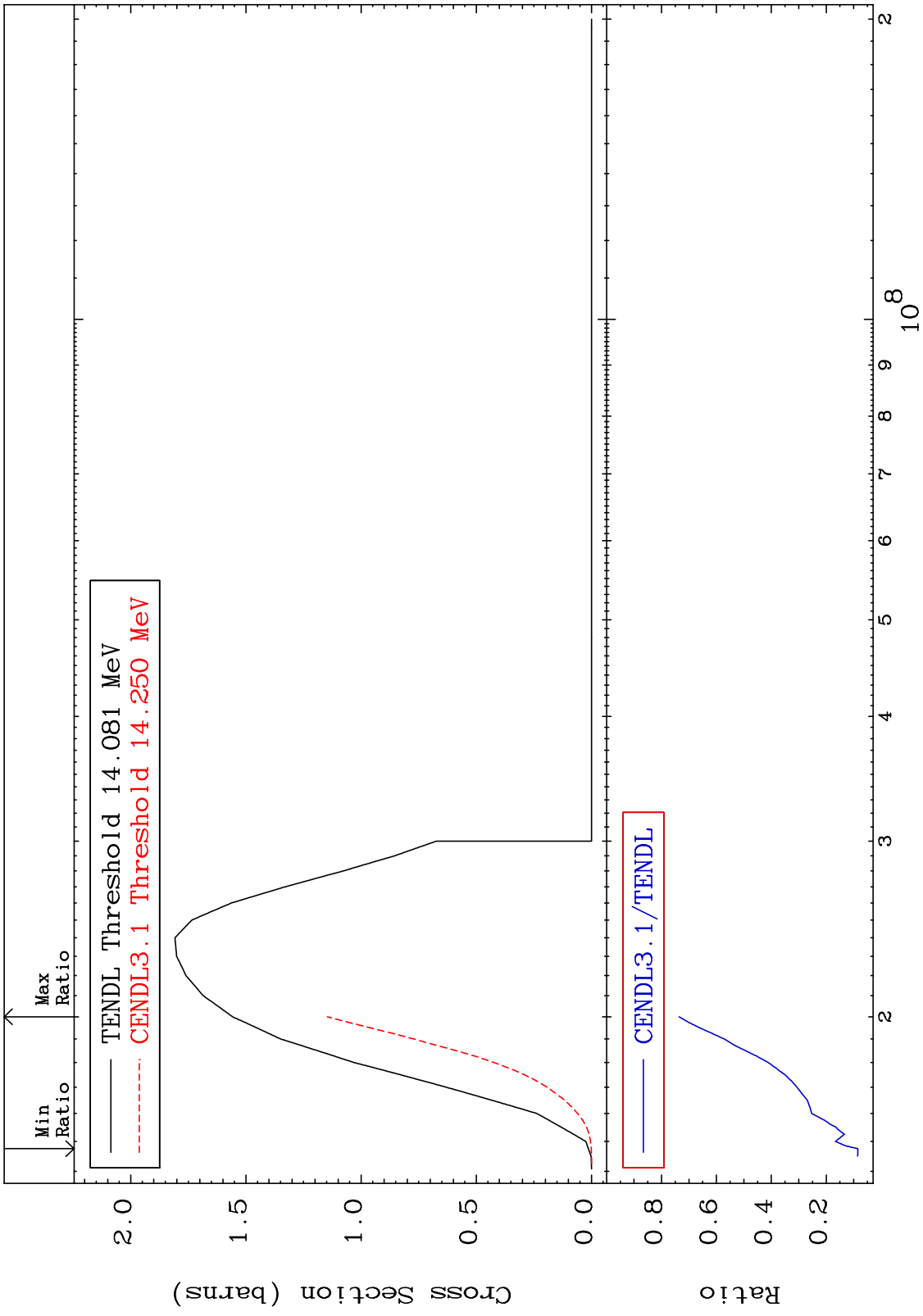
72-Hf-178

MAT 7237 (n,2n) 72-Hf-178
Cross Section -92.55 To 97.32 %



4 Incident Energy (eV) 72-Hf-178

MAT 7237 (n,3n) Cross Section 72-Hf-178 -91.52 To -26.39%



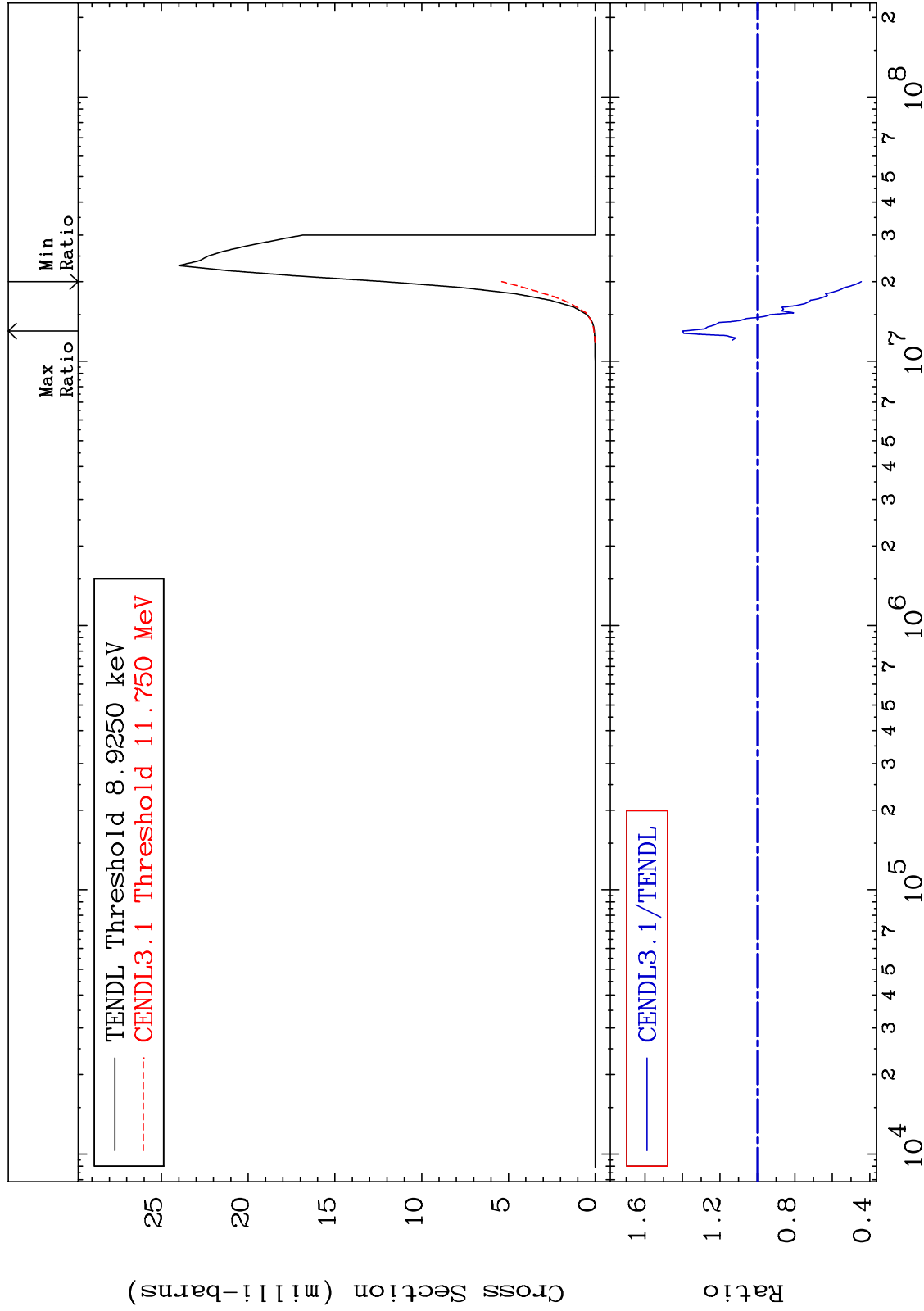
MAT 7237

(n, n') α

72-Hf-178

Cross Section

-55.53 To 39.85 %

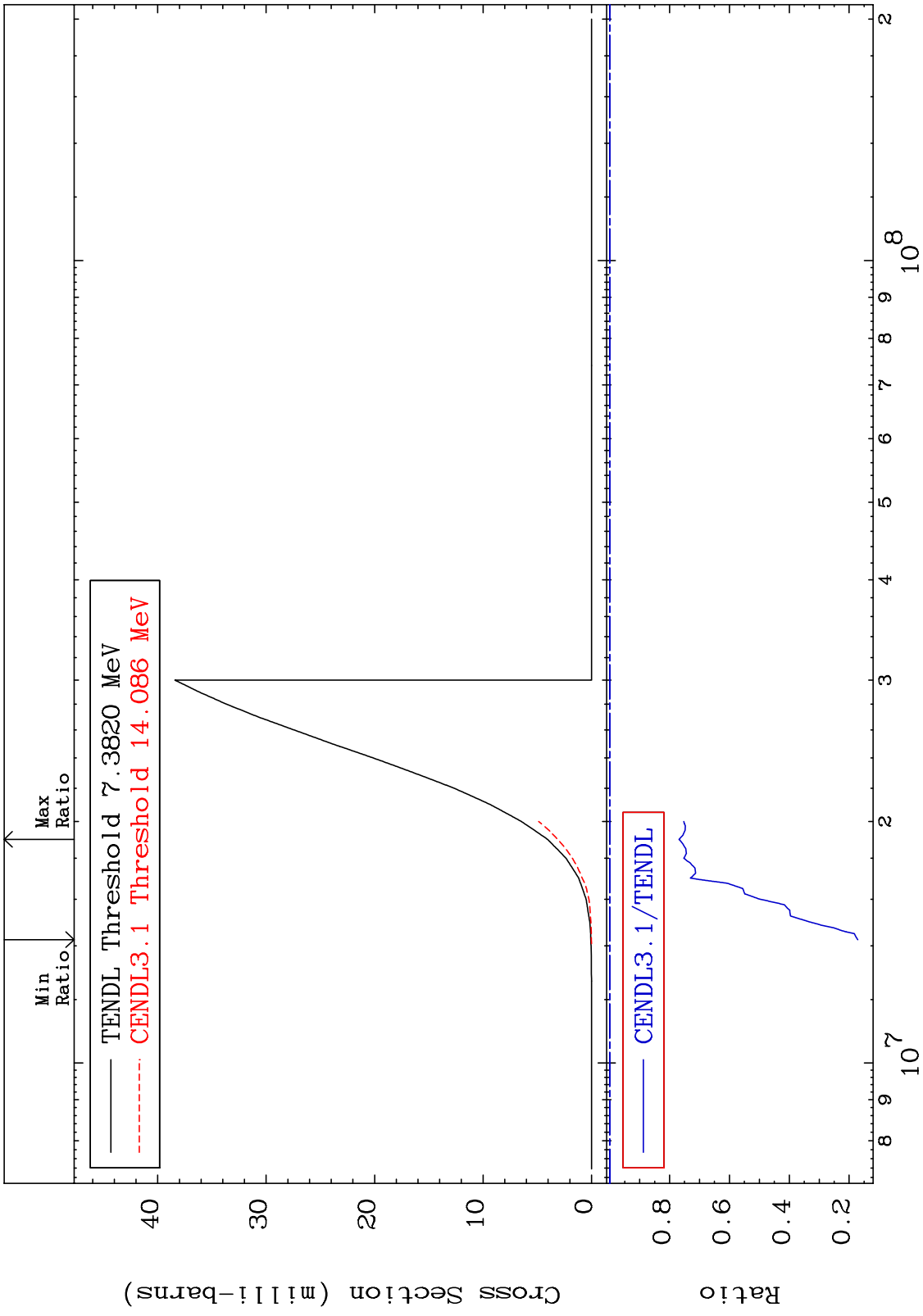


6

Incident Energy (eV)

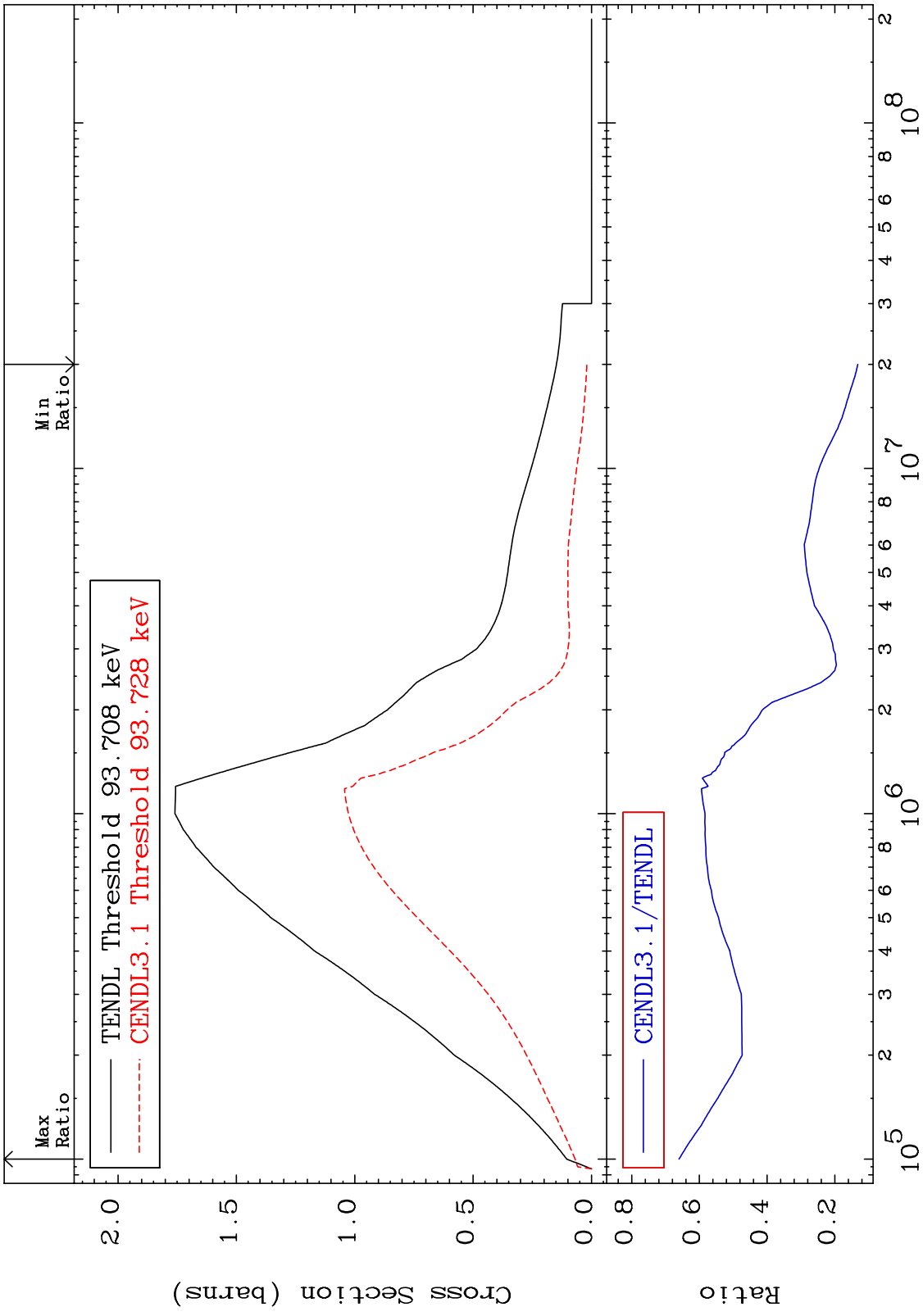
72-Hf-178

MAT 7237 $(n, n') p$ Cross Section $^{72}\text{Hf}-178$
 -82.91 To -23.16%



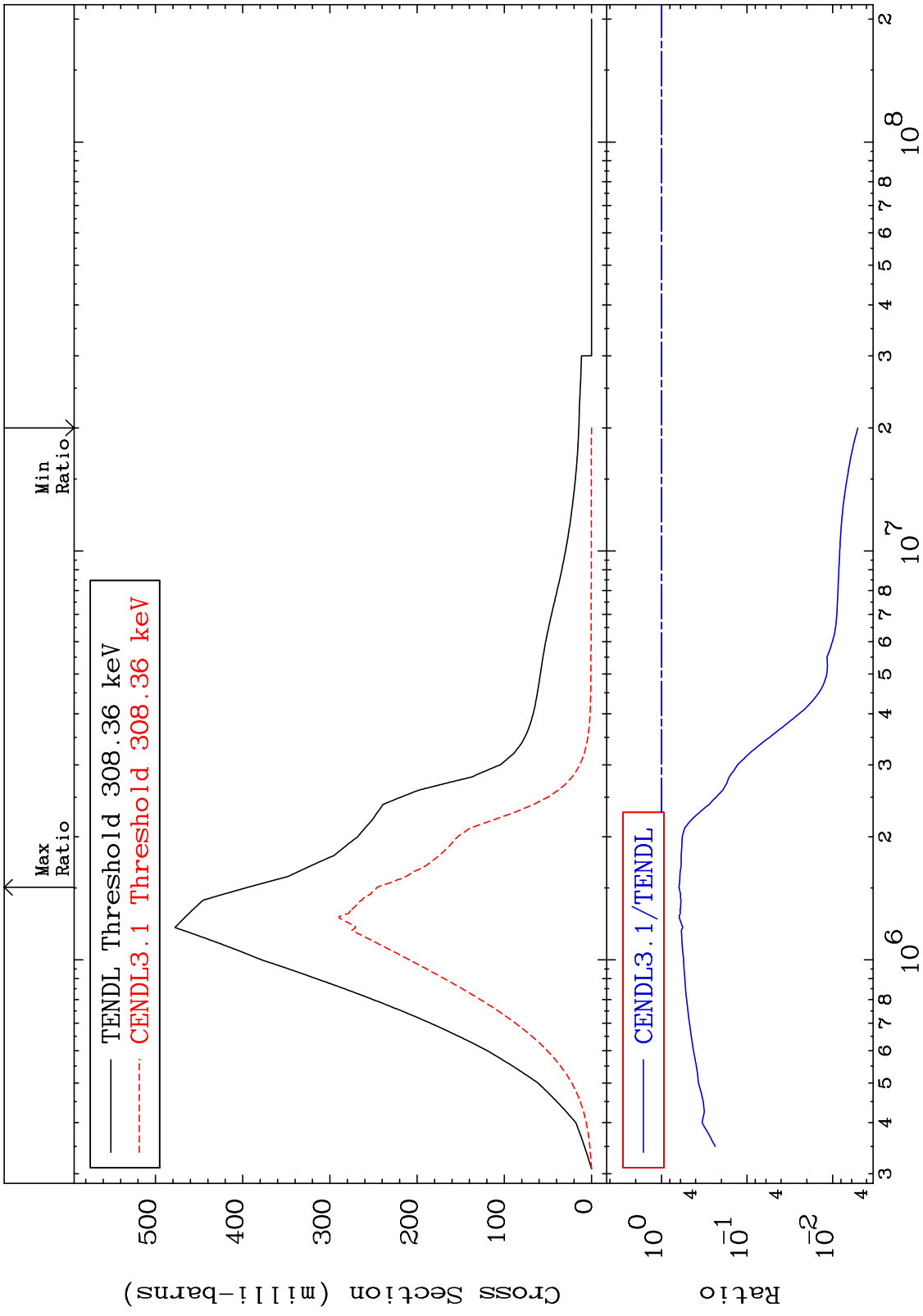
7 Incident Energy (eV) $^{72}\text{Hf}-178$

MAT 7237 MT= 51 (n,n') Level Cross Section 72-Hf-178
-86.80 To -33.99%

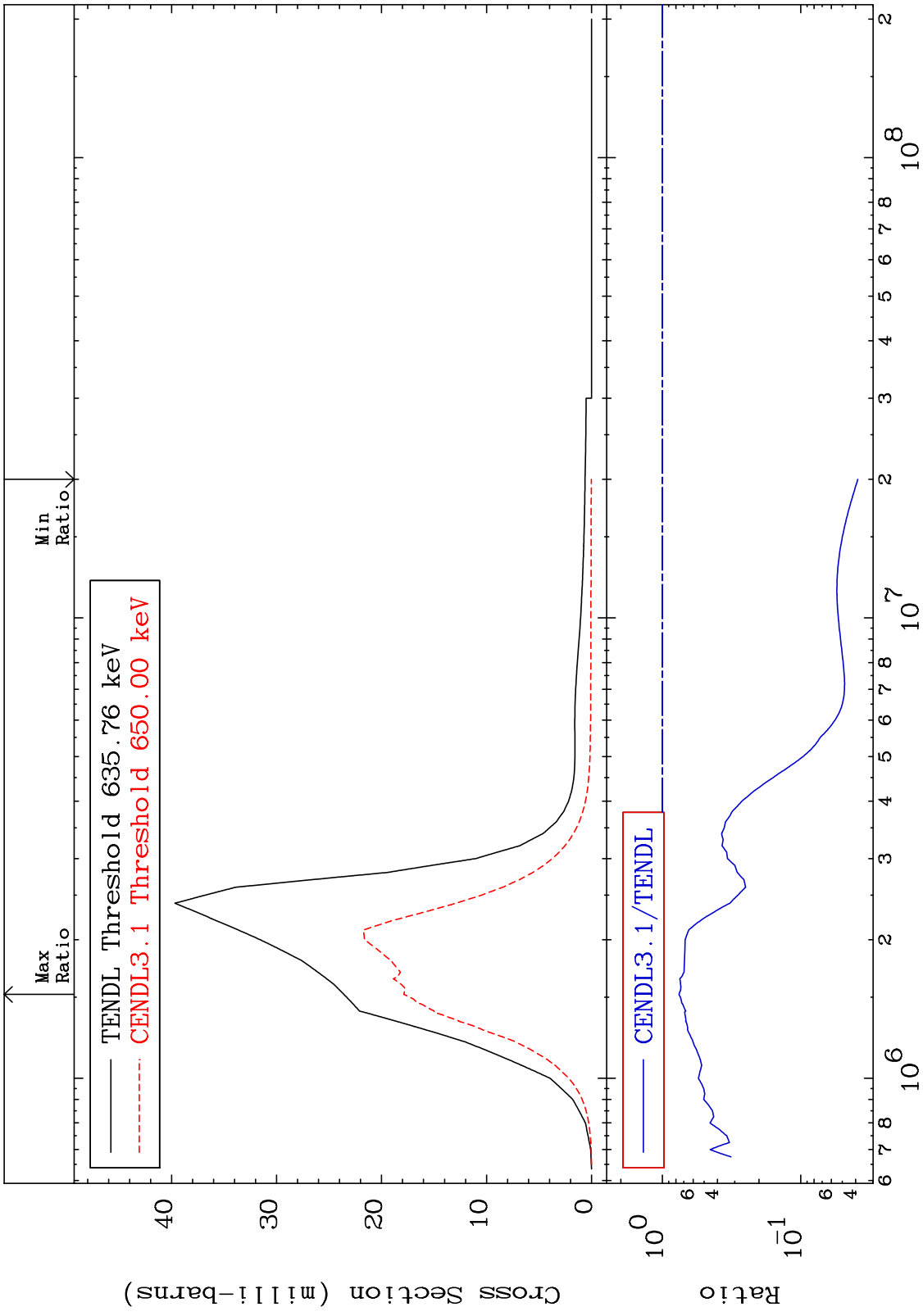


8 72-Hf-178

MAT 7237 MT= 52 (n,n') Level Cross Section 72-Hf-178 -99.49 To -37.63%

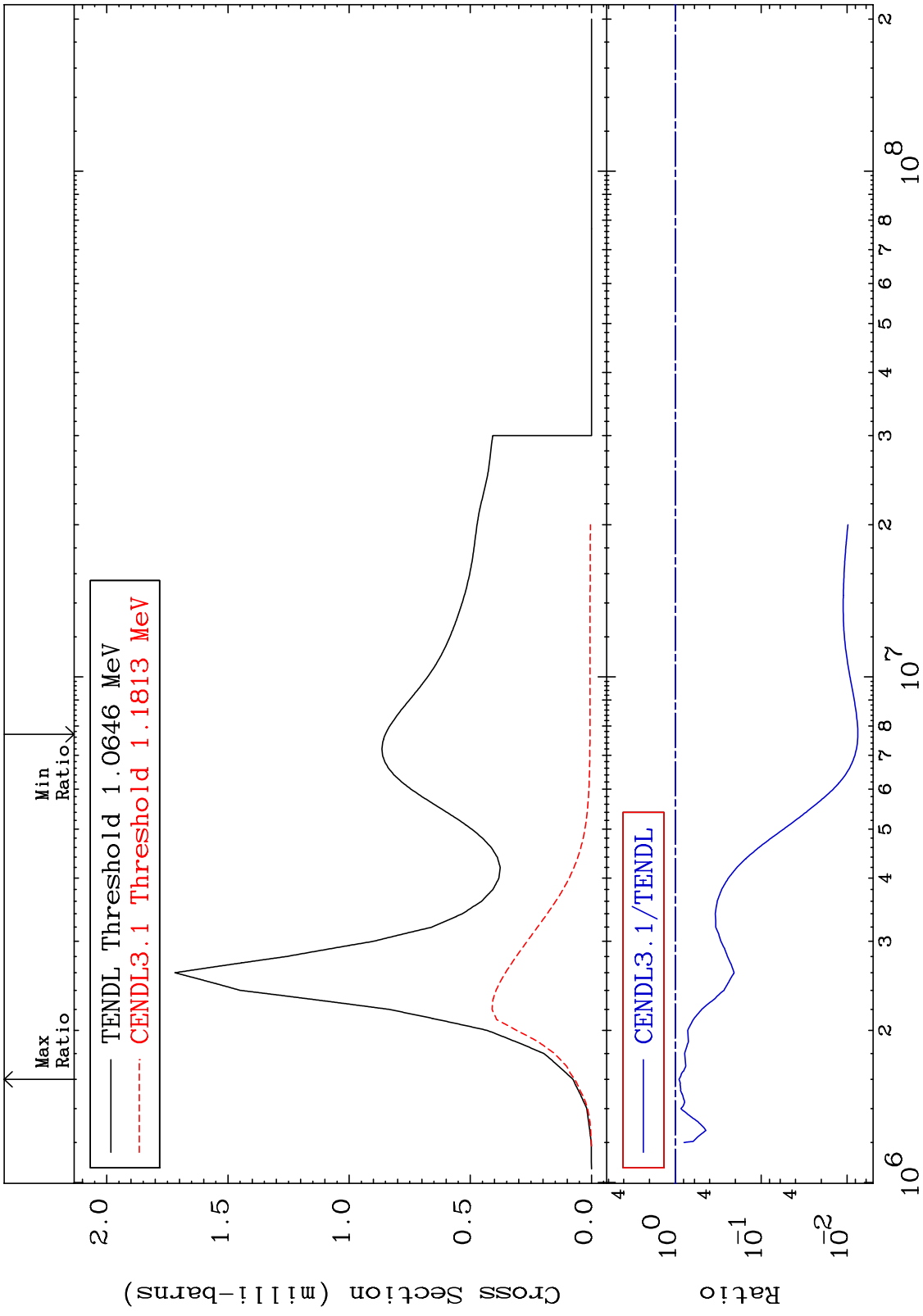


MAT 7237 MT= 53 (n,n') Level Cross Section 72-Hf-178
 -96.14 To -24.19%

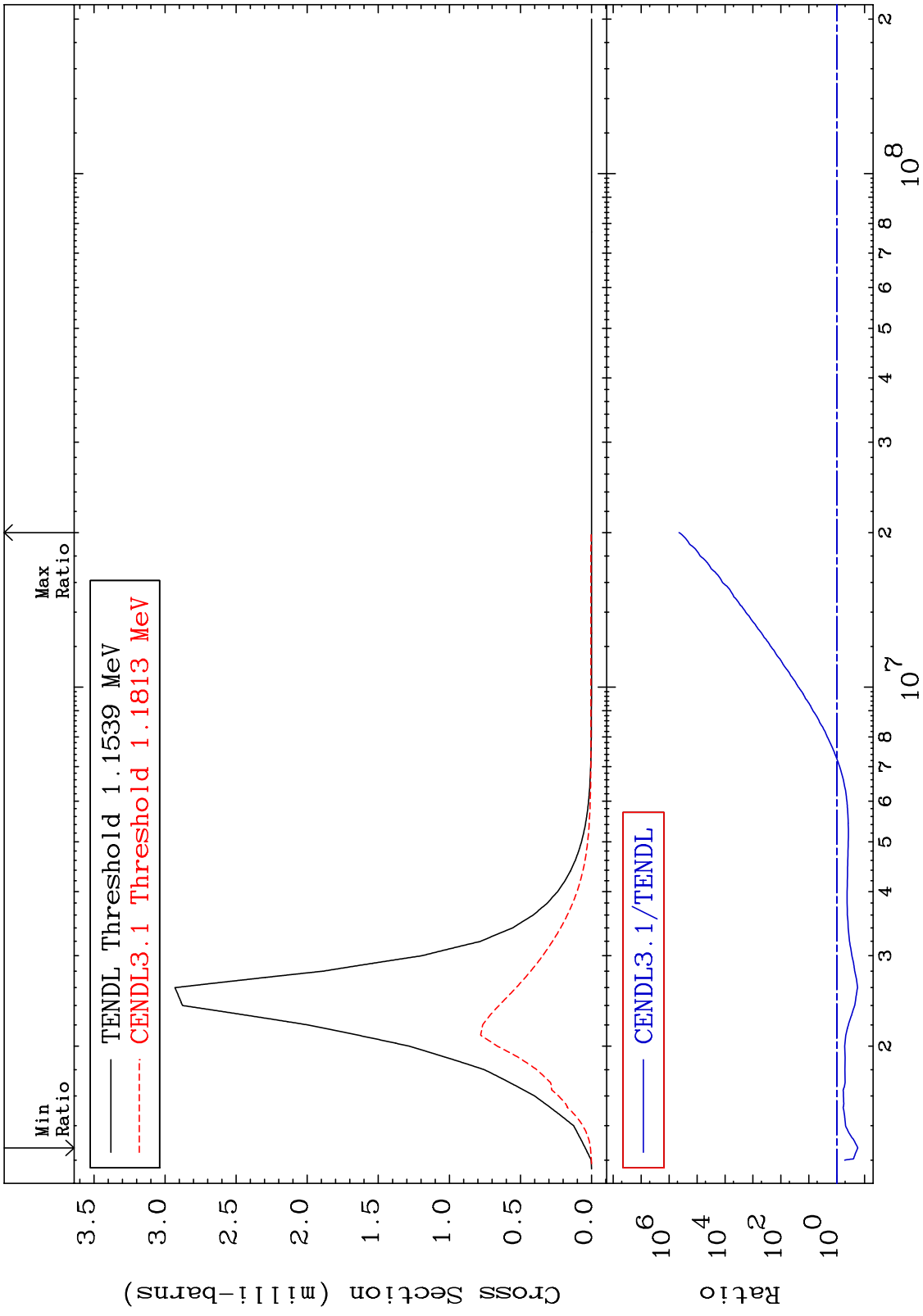


10 Incident Energy (eV) 72-Hf-178

MAT 7237 MT= 54 (n,n') Level Cross Section 72-Hf-178
 -99.25 To -9.463%



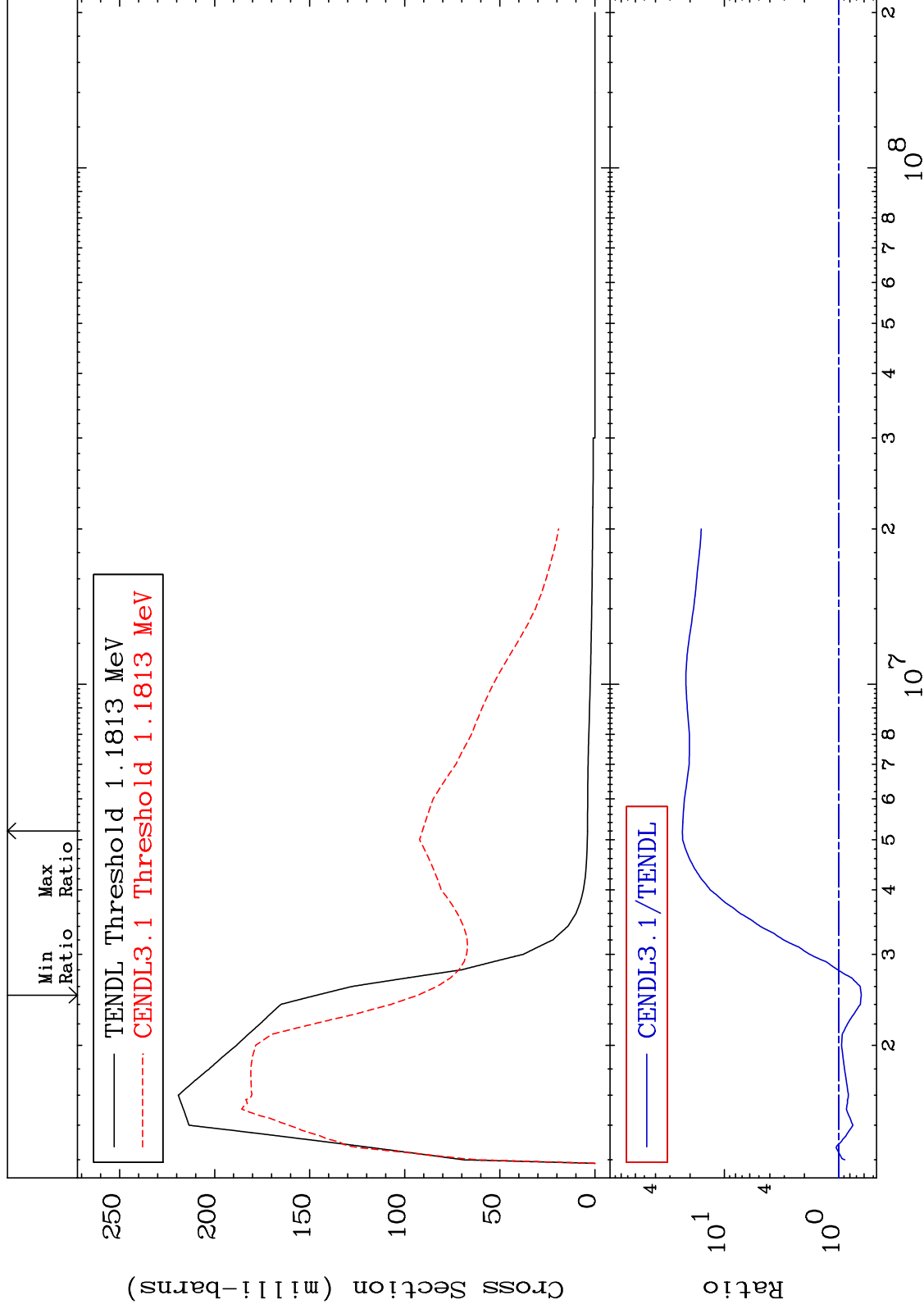
MAT 7237 MT= 55 (n,n') Level Cross Section 72-Hf-178
 -82.45 To 9999. %



MAT 7237

MT= 56 (n,n') Level
Cross Section

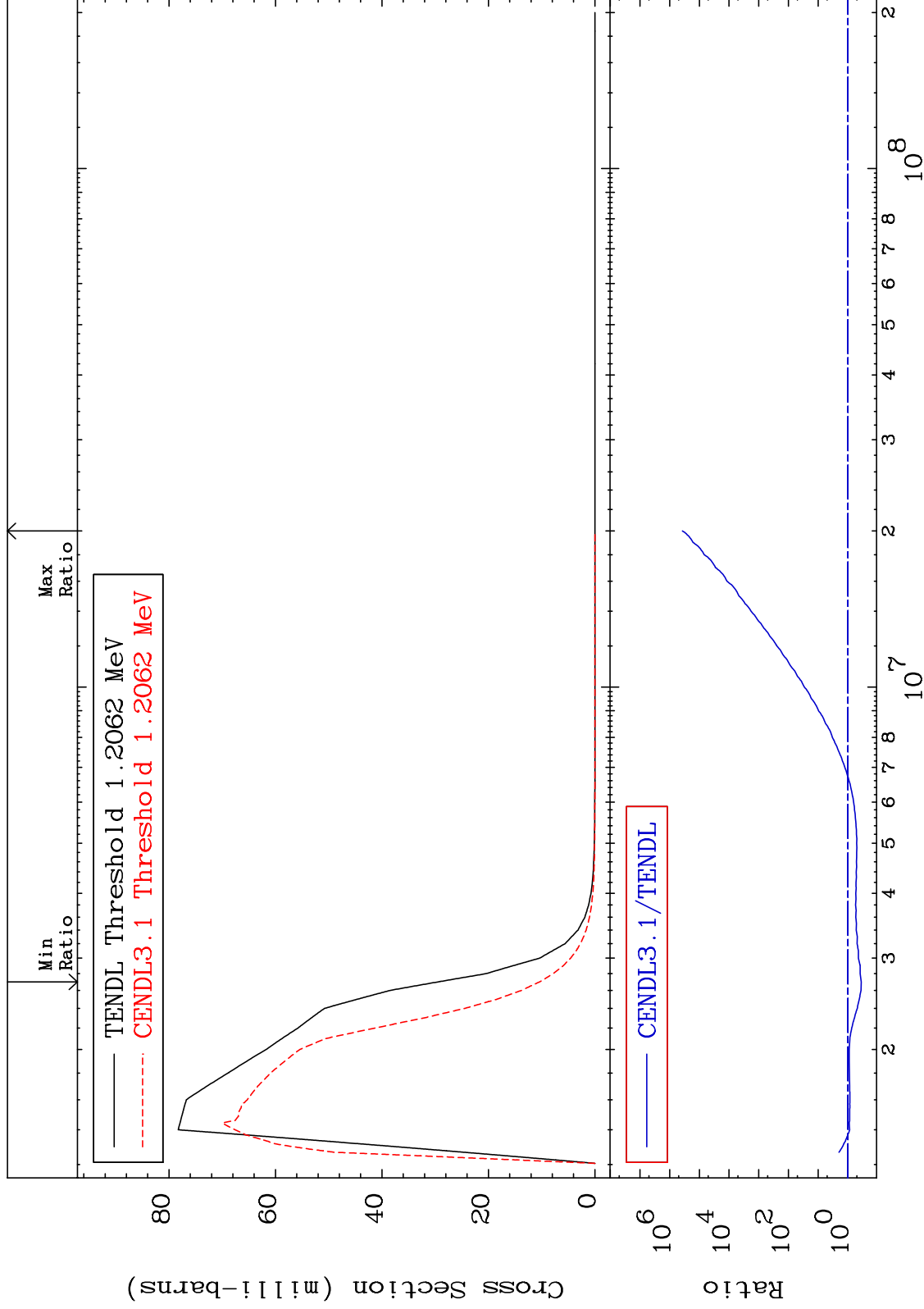
72-Hf-178
-36.39 To 2226. %



MAT 7237

MT= 57 (n,n') Level
Cross Section

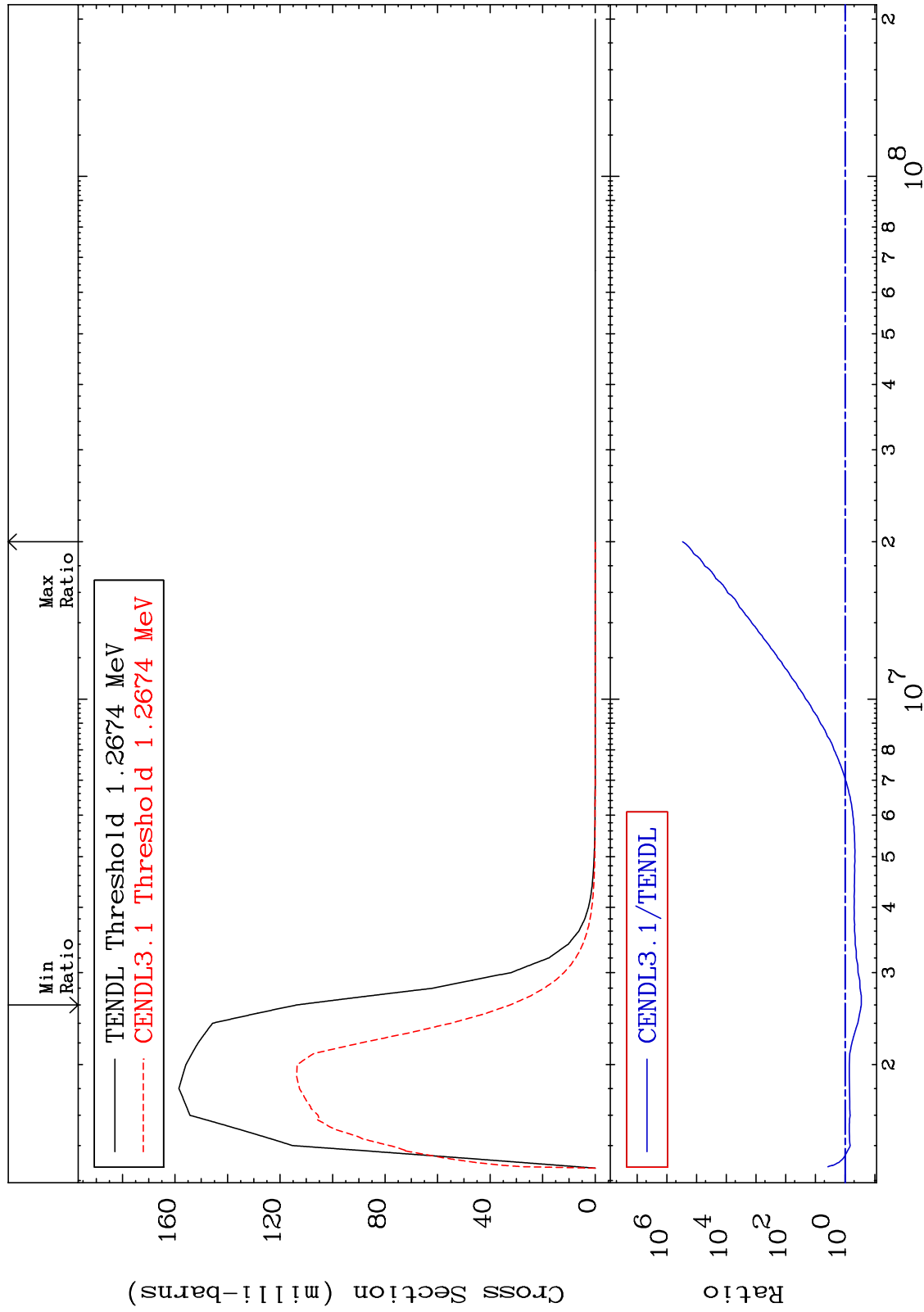
72-Hf-178
-64.75 To 9999. %



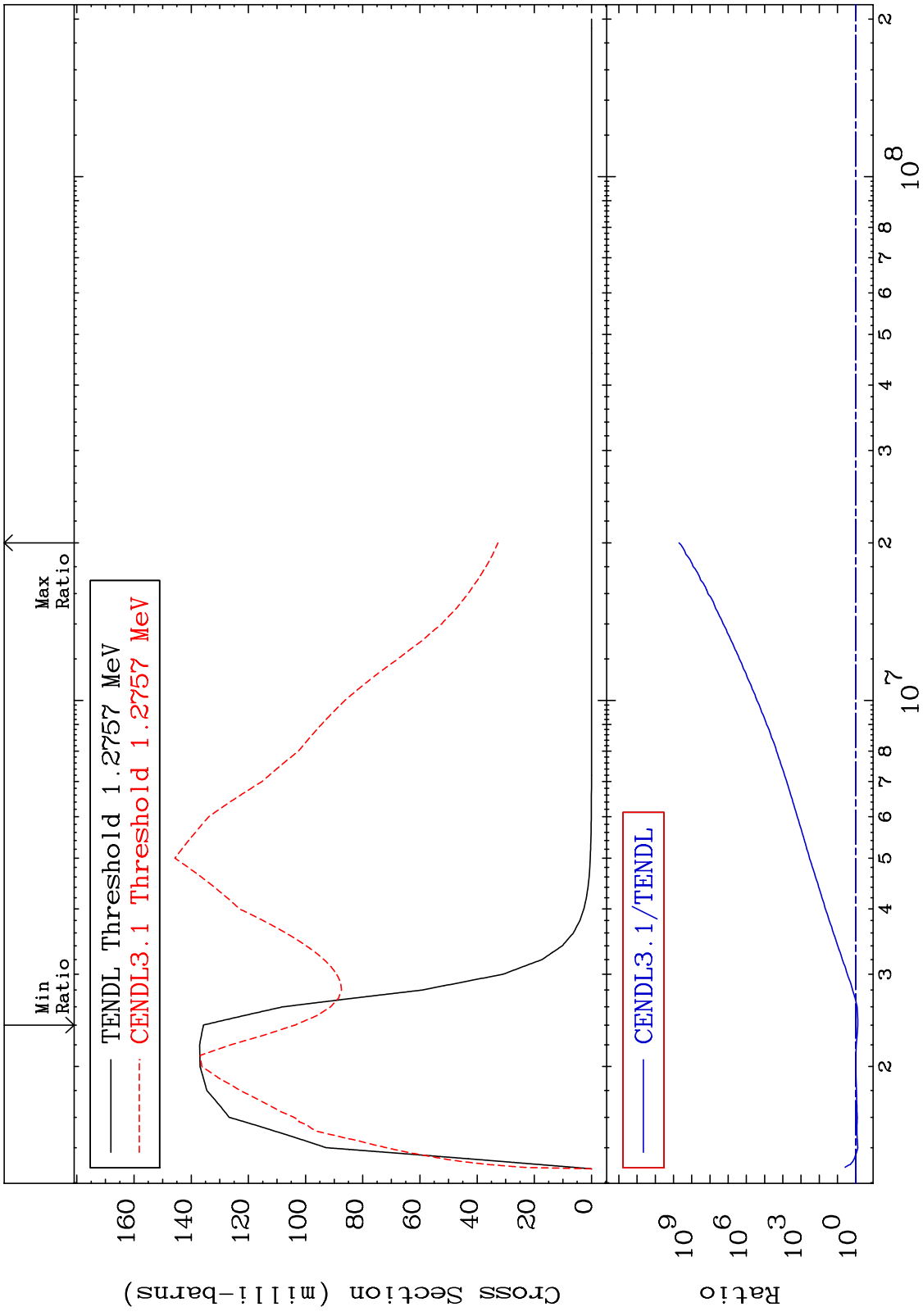
MAT 7237

MT= 58 (n,n') Level
Cross Section

72-Hf-178
-71.51 To 9999. %



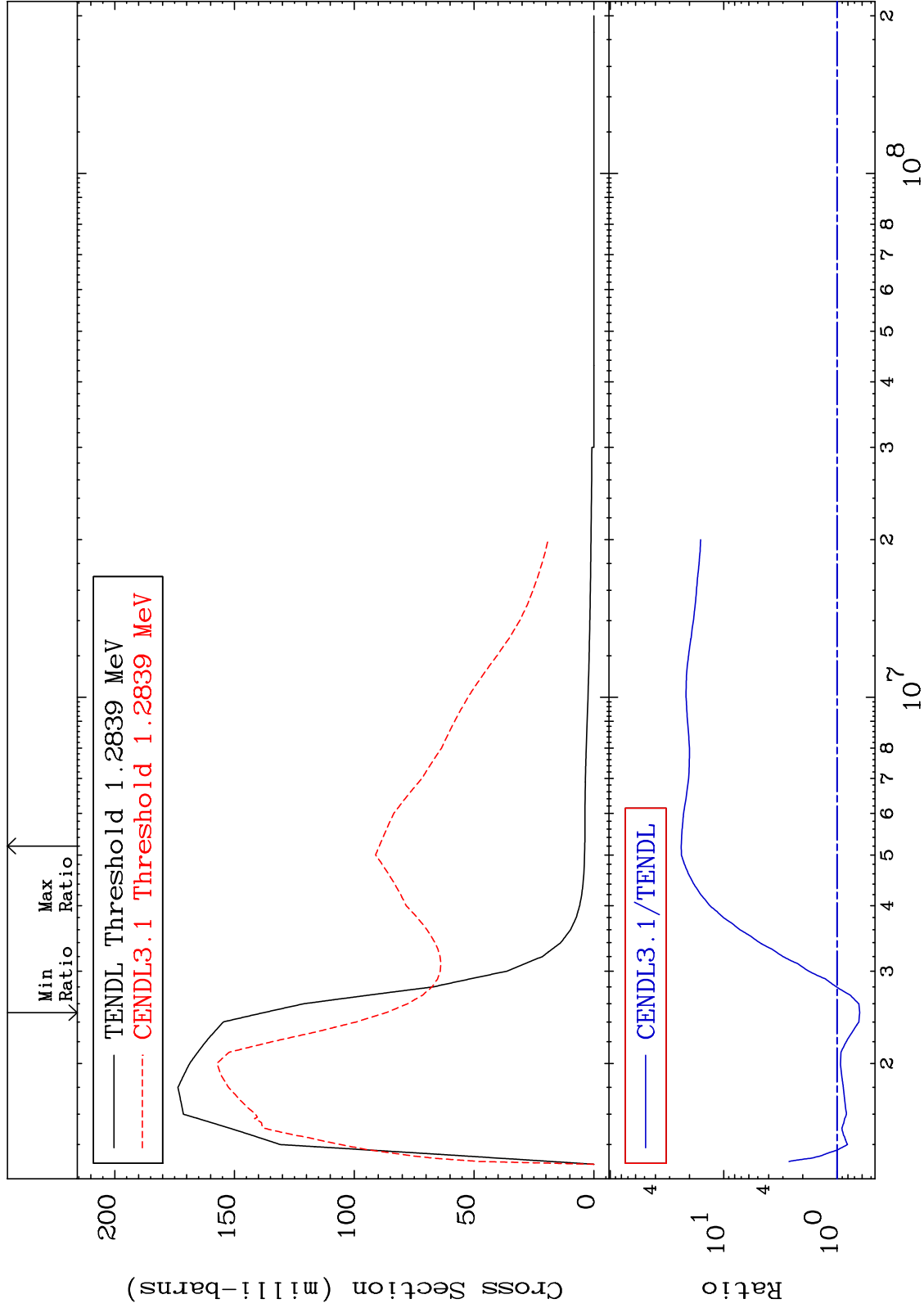
MAT 7237 MT= 59 (n,n') Level Cross Section 72-Hf-178
 -23.56 To 9999. %



MAT 7237

MT= 60 (n,n') Level
Cross Section

72-Hf-178
-37.08 To 2267. %



17

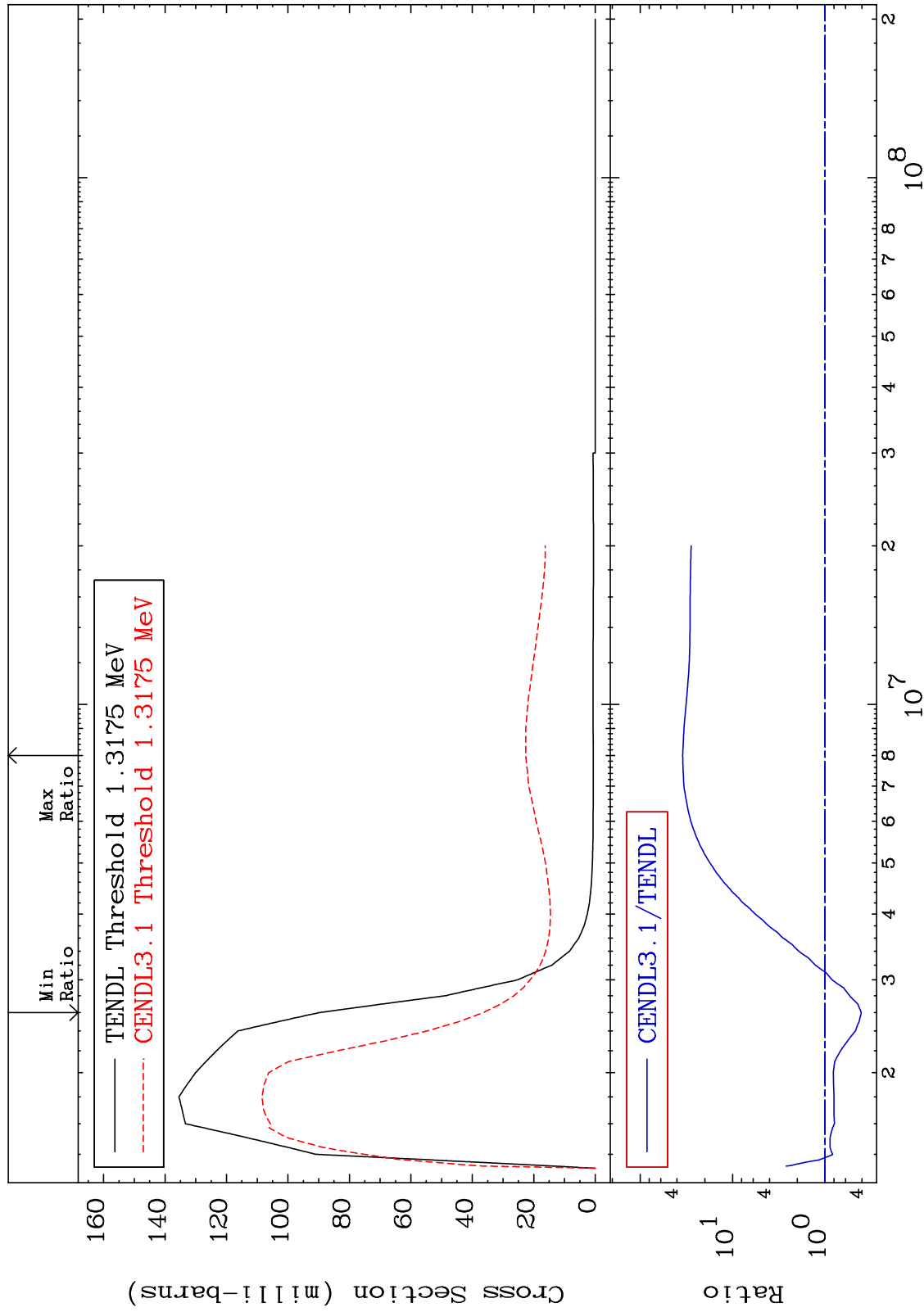
Incident Energy (eV)

72-Hf-178

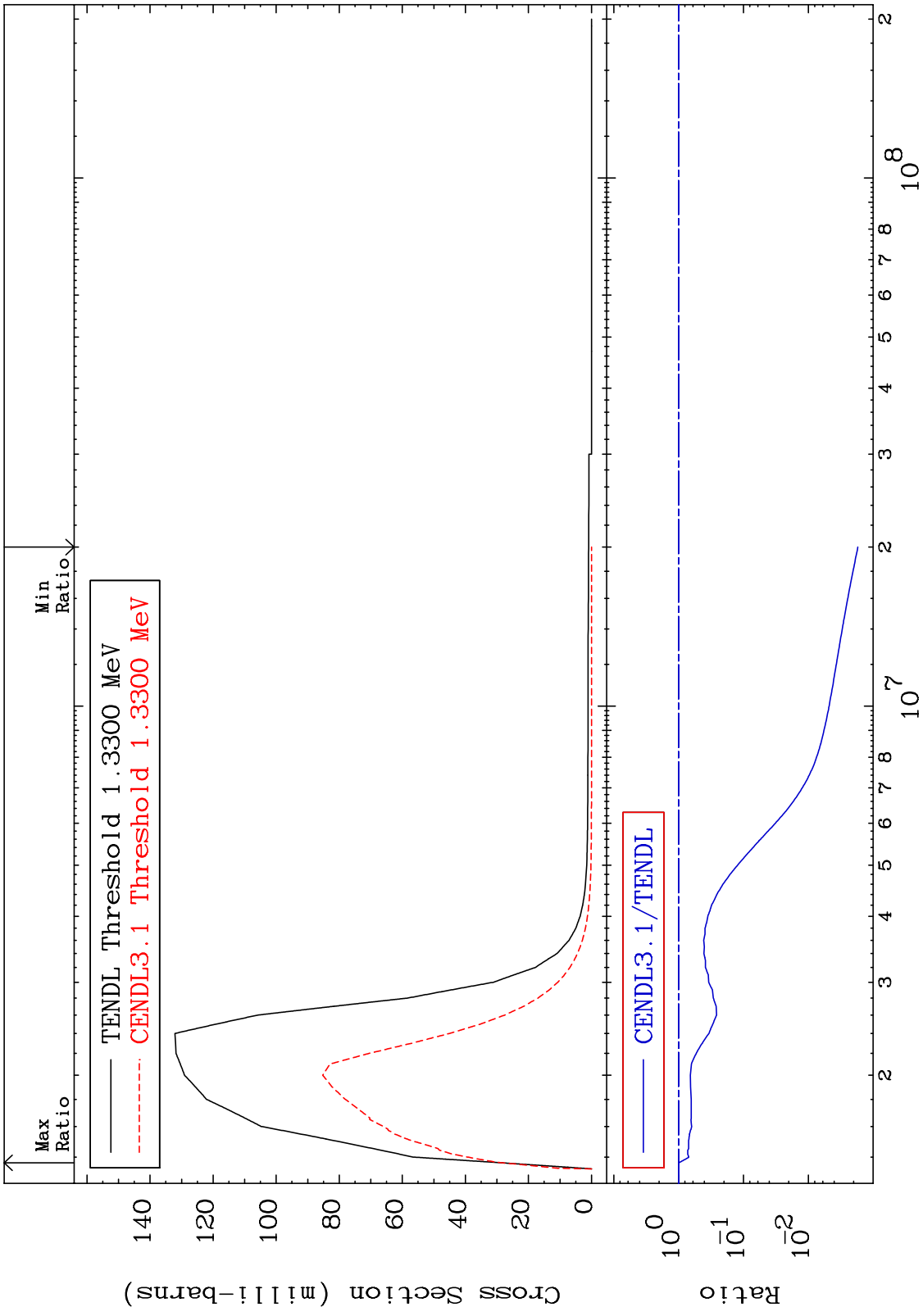
MAT 7237

MT= 61 (n,n') Level
Cross Section

72-Hf-178
-59.42 To 3370. %



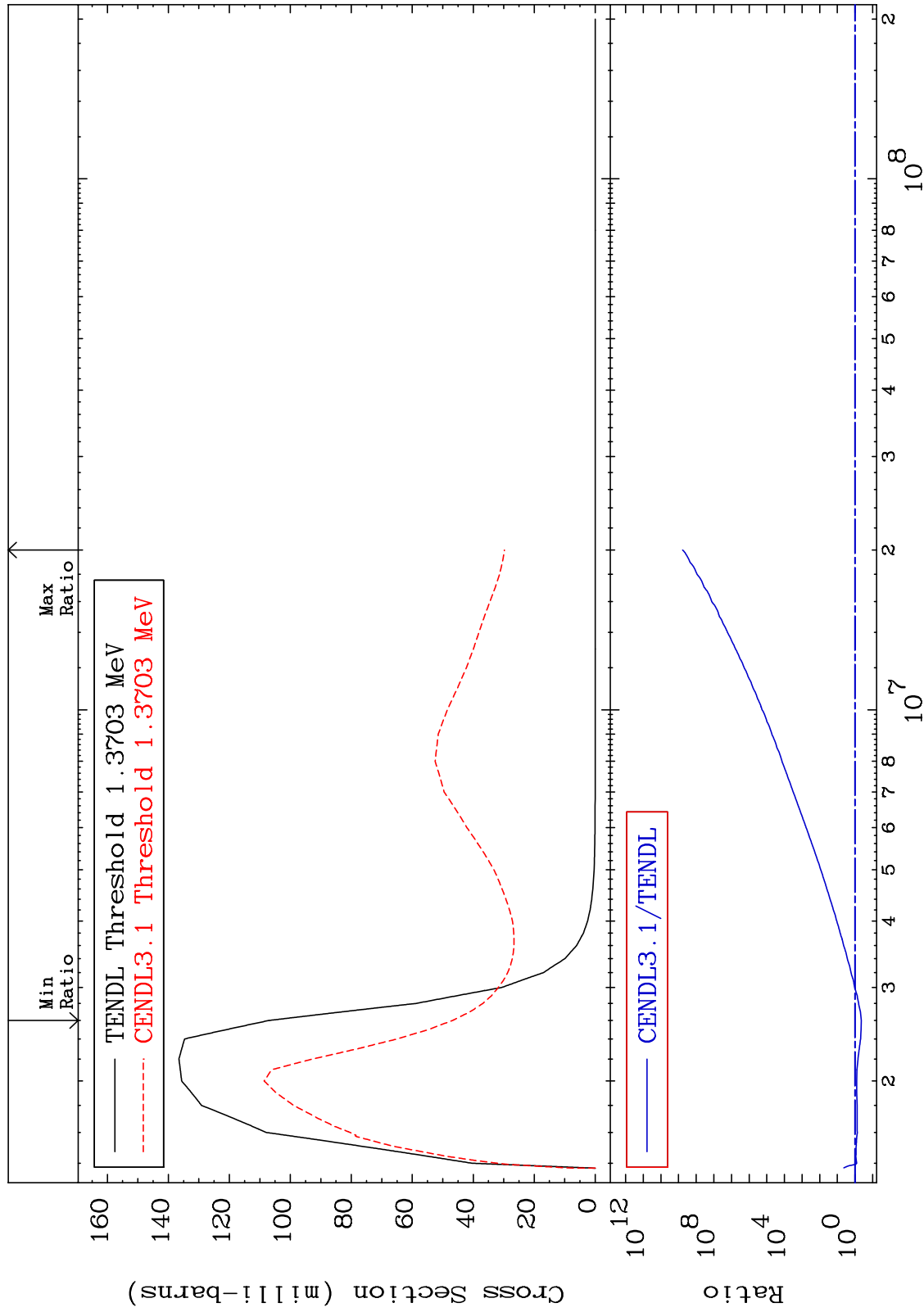
MAT 7237 MT= 62 (n,n') Level Cross Section 72-Hf-178 -99.83 To -1.576%



MAT 7237

MT= 63 (n,n') Level
Cross Section

72-Hf-178
-56.26 To 9999. %

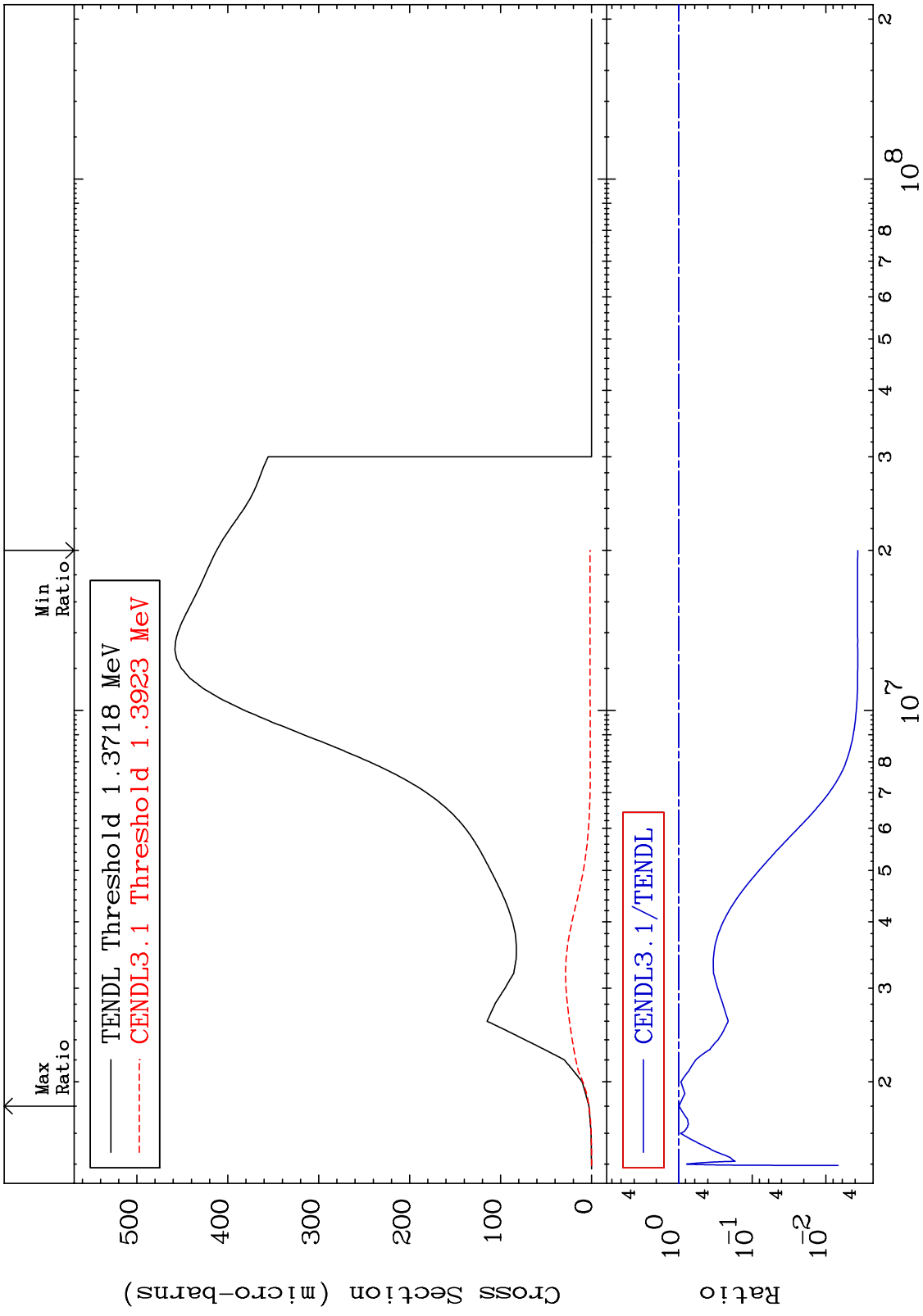


20

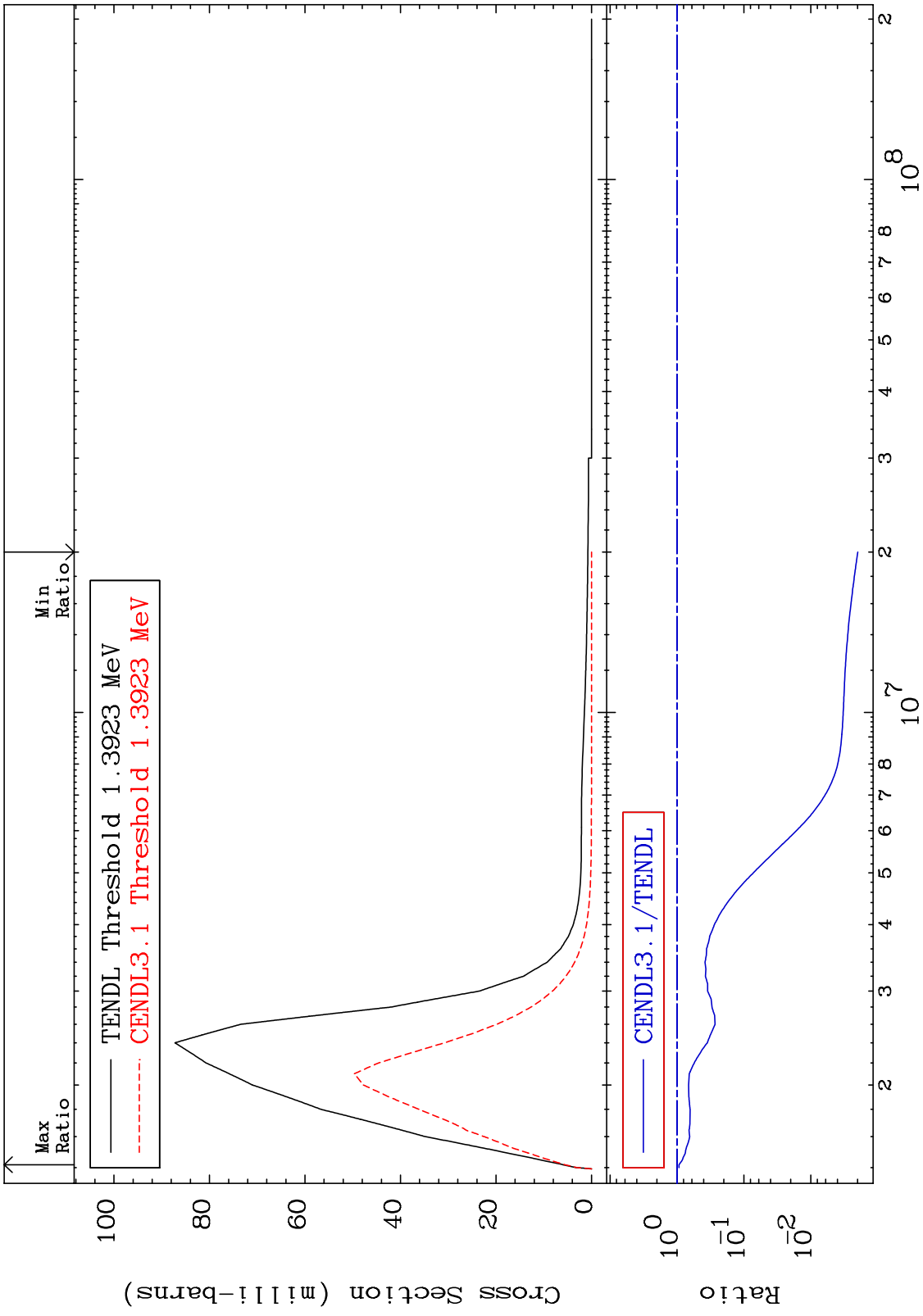
Incident Energy (eV)

72-Hf-178

MAT 7237 MT= 64 (n,n') Level Cross Section 72-Hf-178
 -99.63 To -1.786%



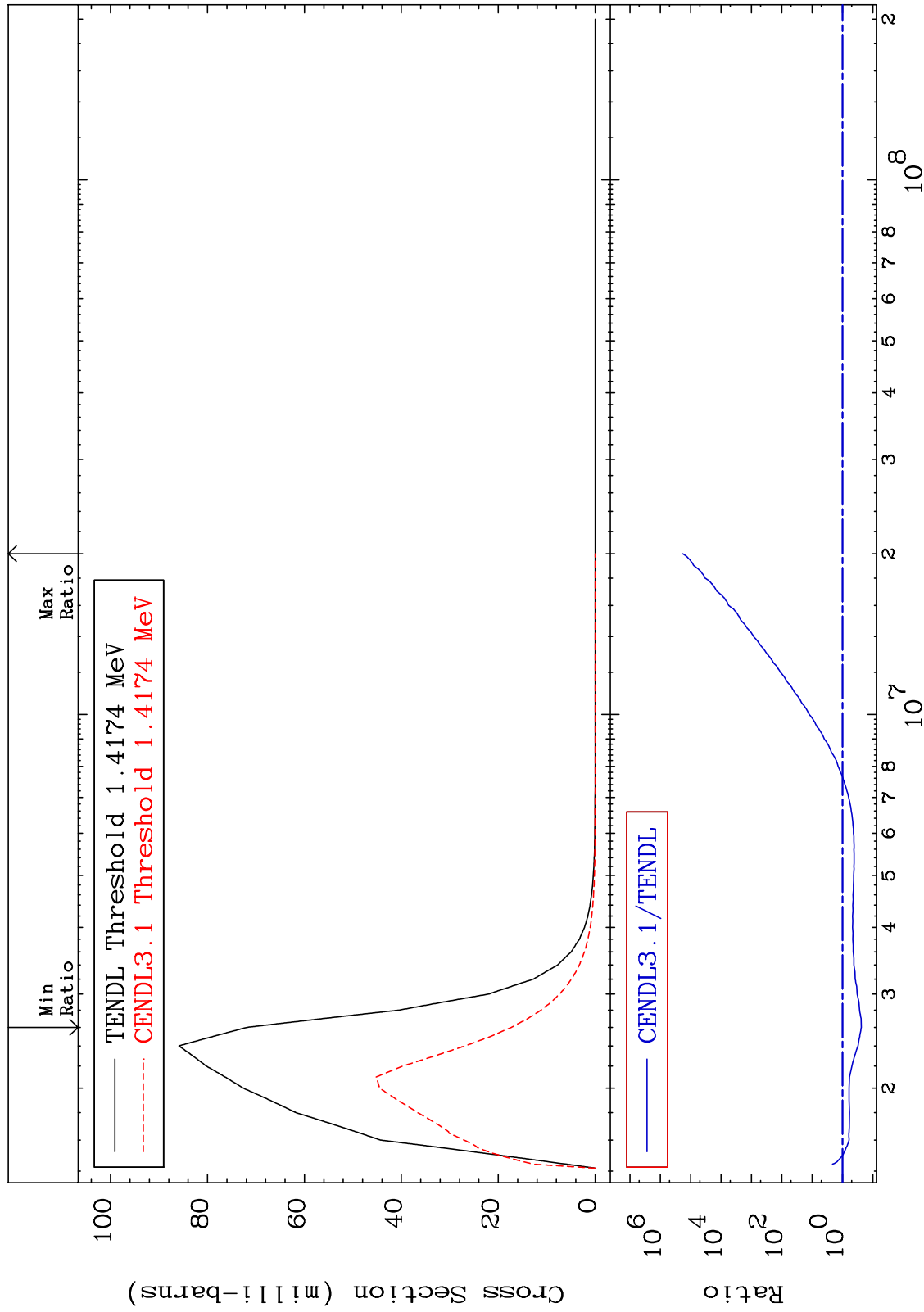
MAT 7237 MT= 65 (n,n') Level Cross Section 72-Hf-178
 -99.80 To -6.789%



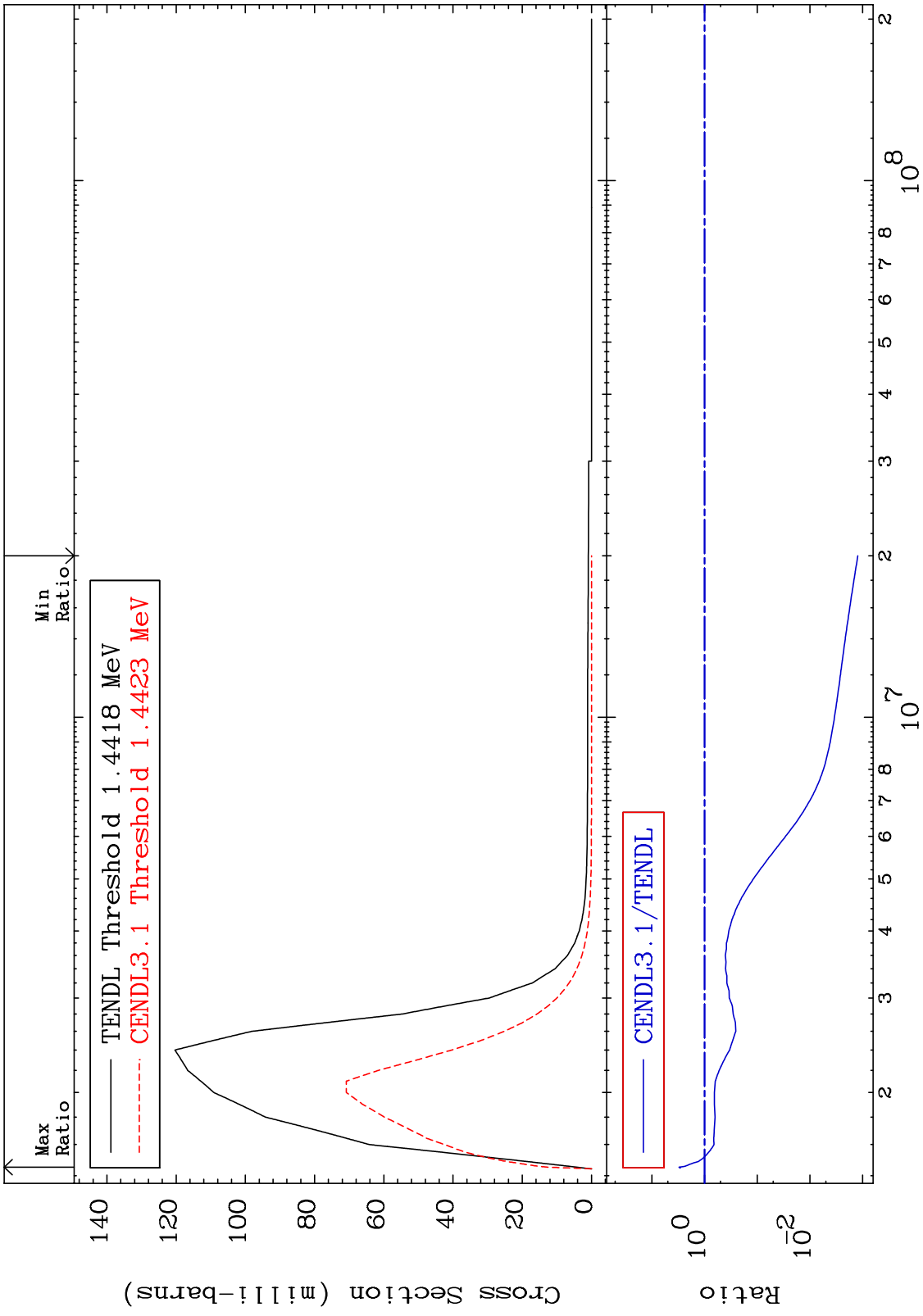
MAT 7237

MT= 66 (n,n') Level
Cross Section

72-Hf-178
-75.92 To 9999. %



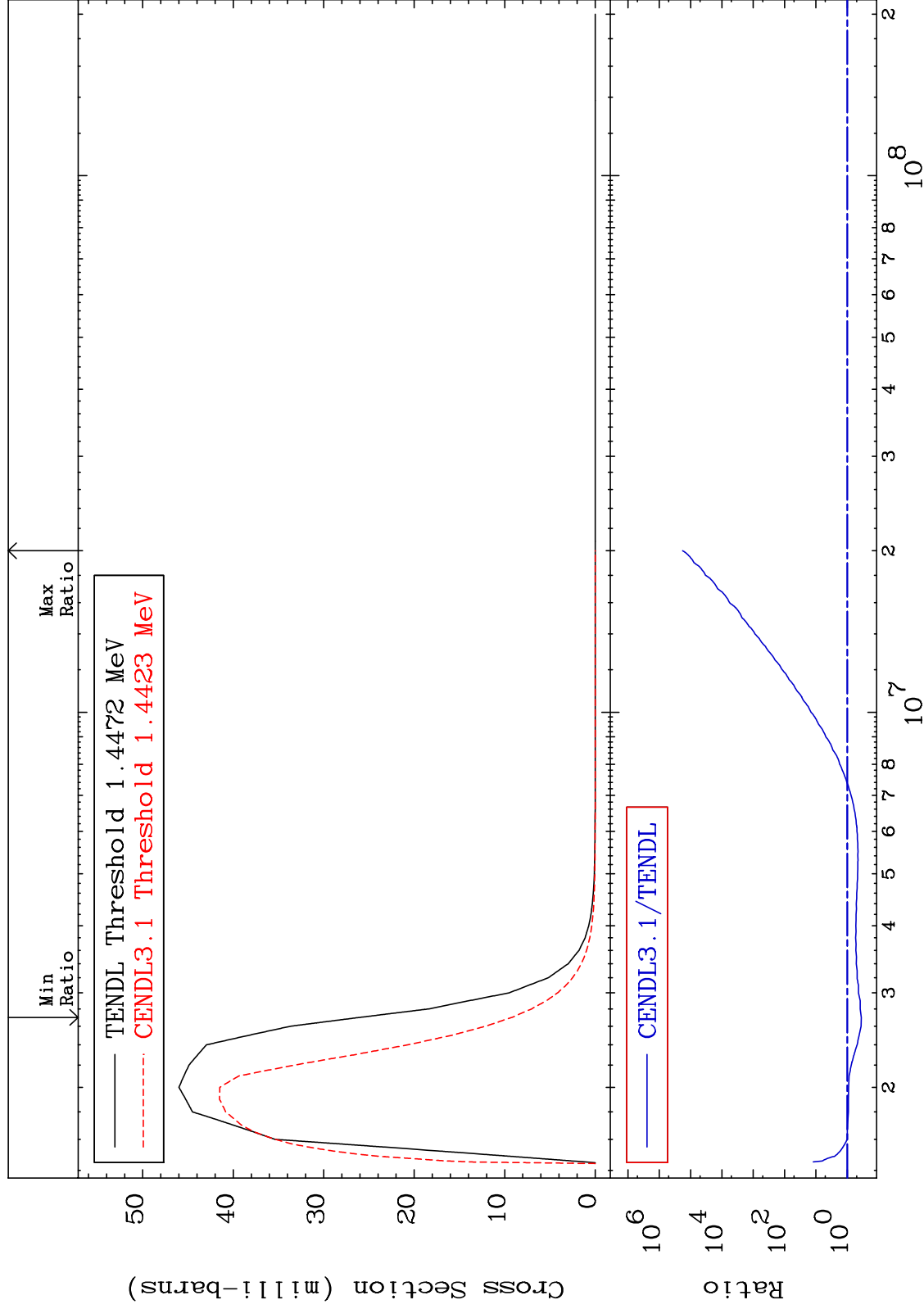
MAT 7237 MT= 67 (n,n') Level Cross Section 72-Hf-178 -99.88 To 205.6 %



MAT 7237

MT= 68 (n,n') Level
Cross Section

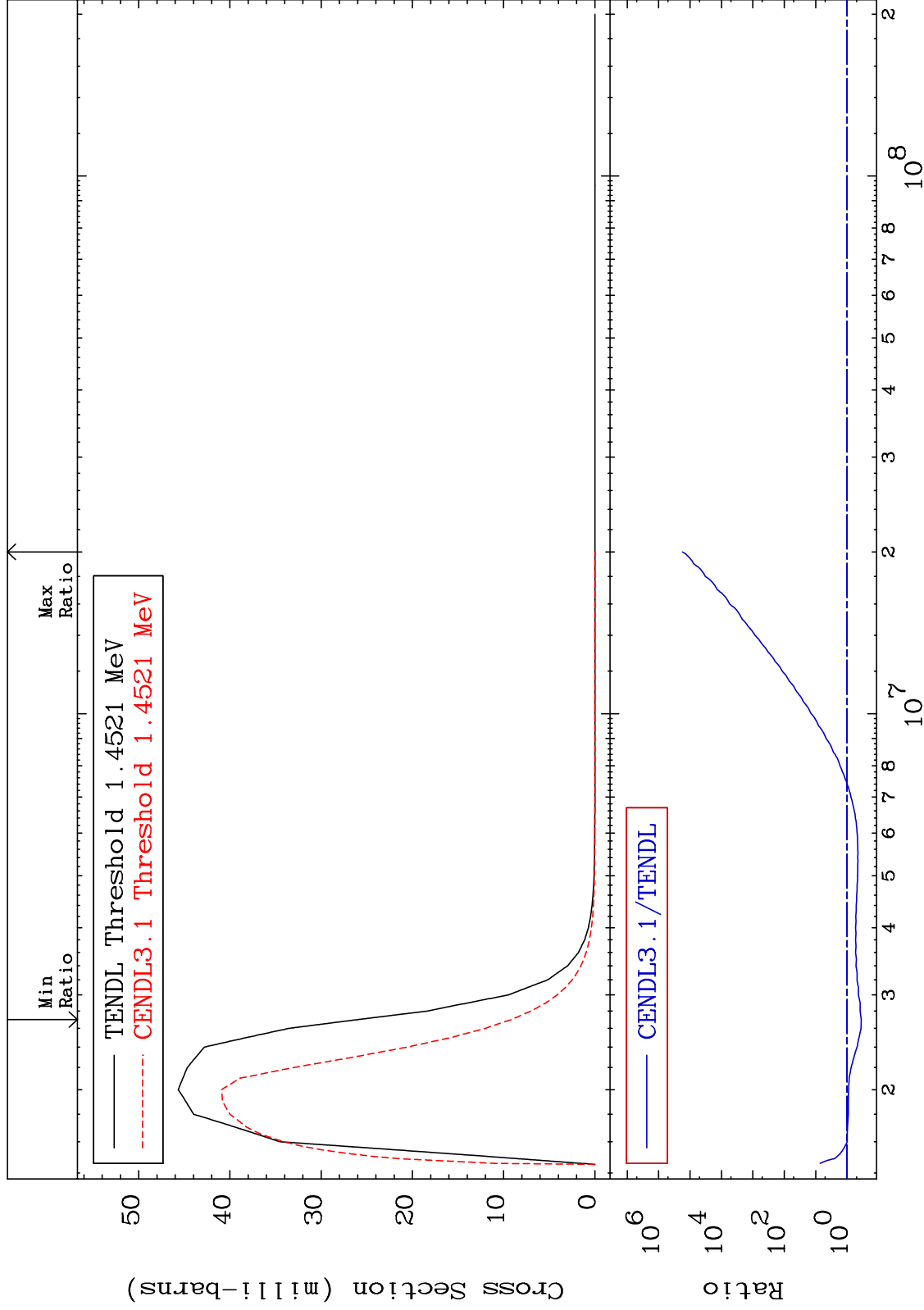
72-Hf-178
-64.59 To 9999. %



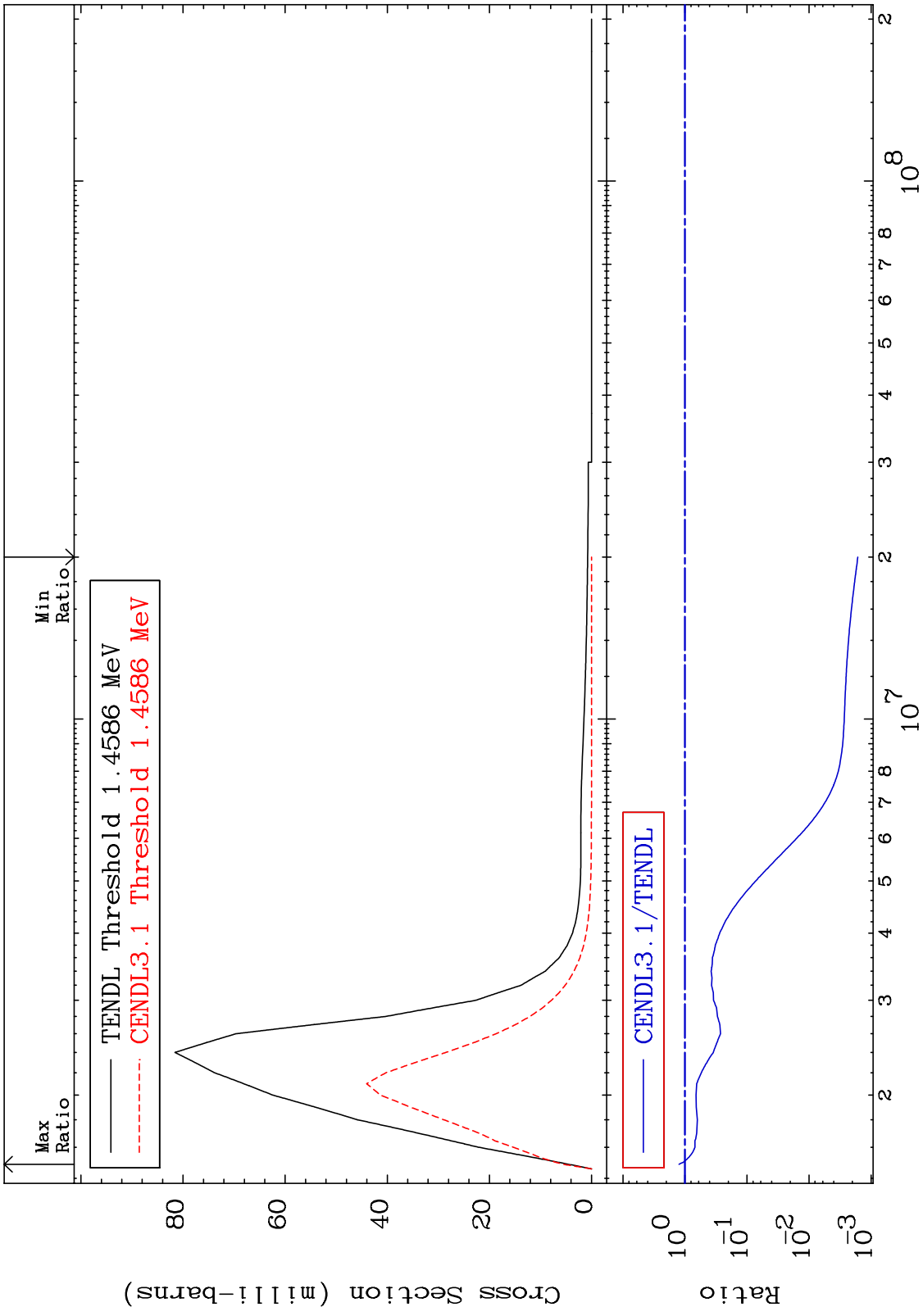
MAT 7237

MT= 69 (n,n') Level
Cross Section

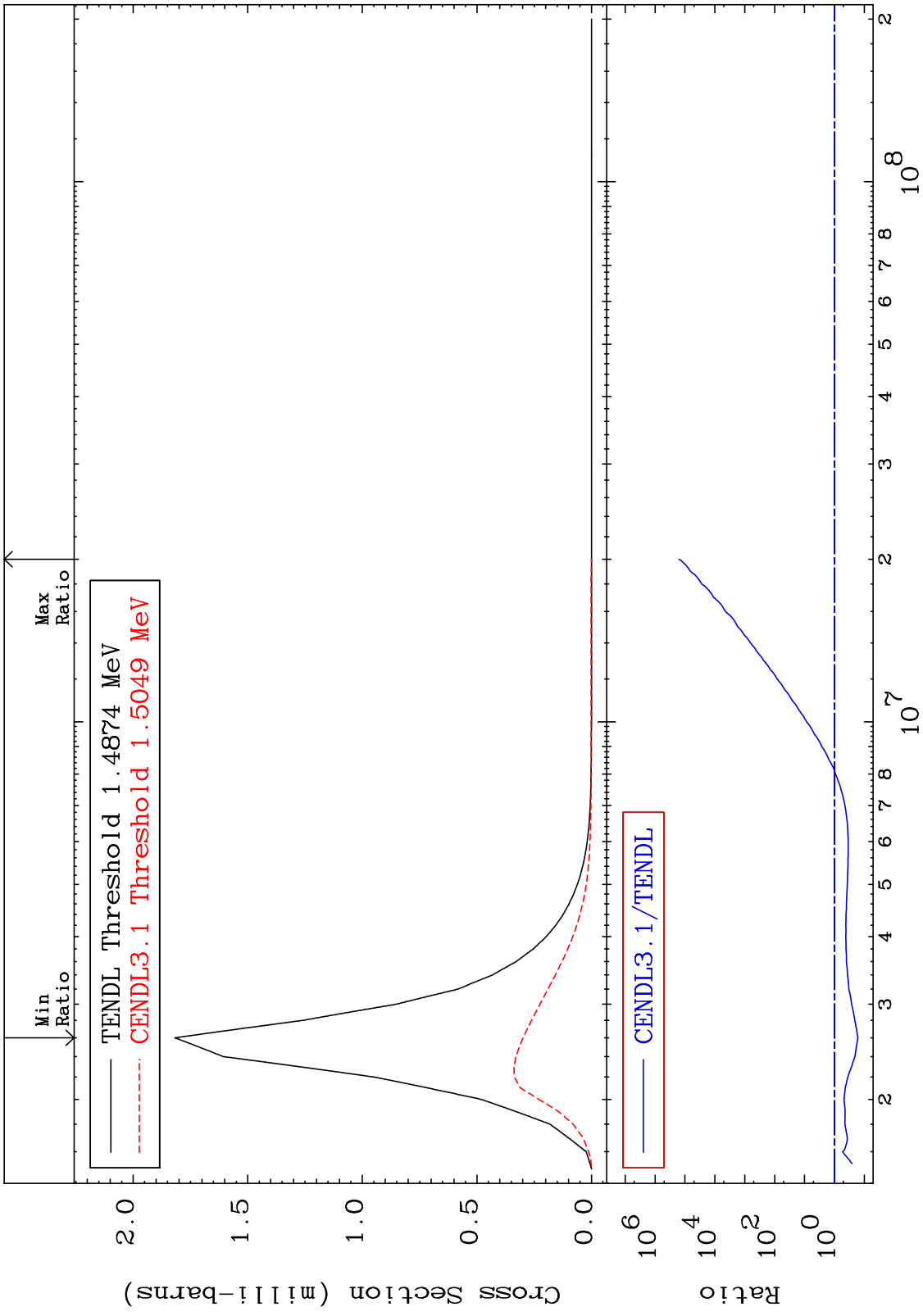
72-Hf-178
-64.69 To 9999. %



MAT 7237 MT= 70 (n,n') Level Cross Section 72-Hf-178
 -99.84 To 24.66 %



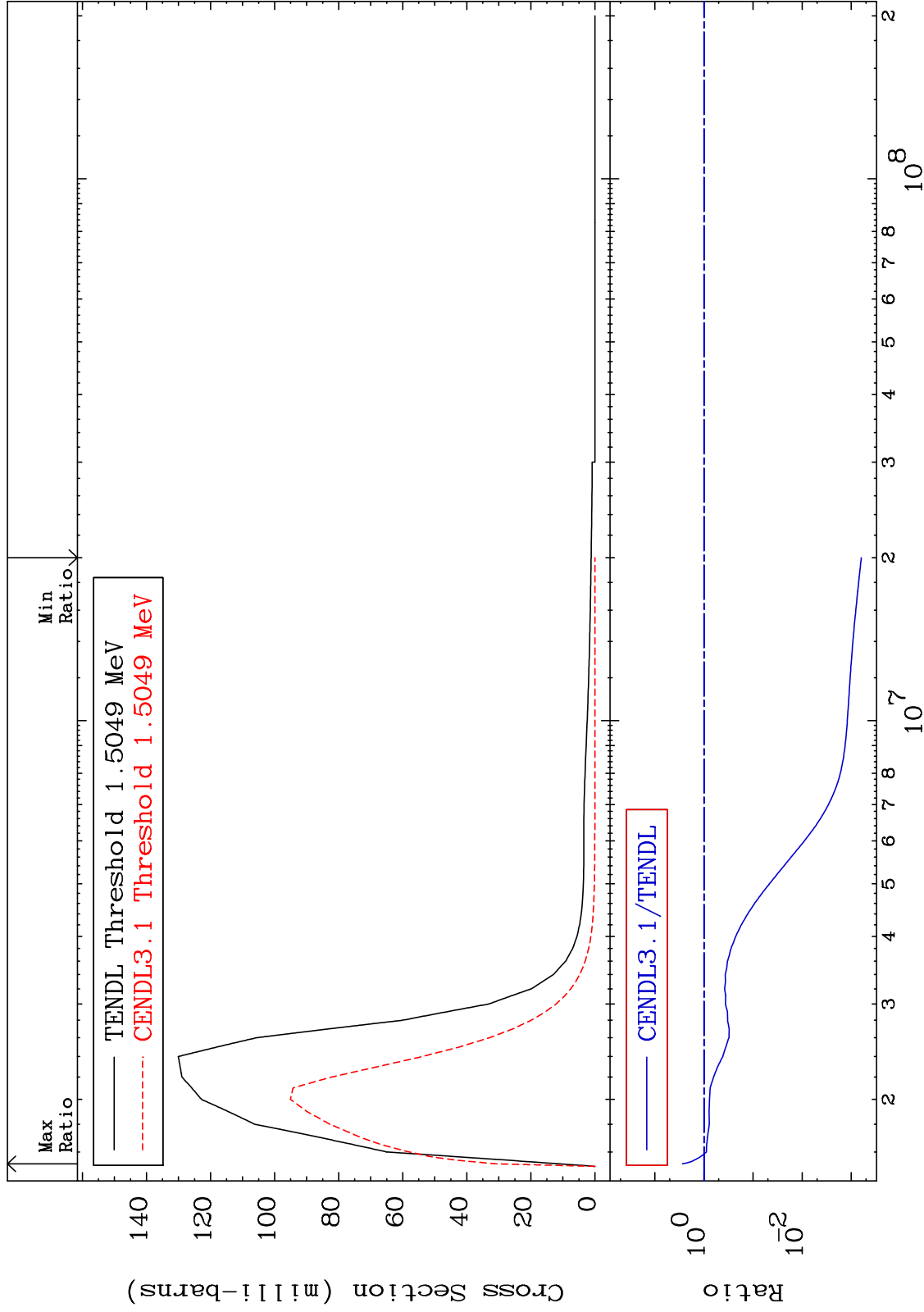
MAT 7237 MT= 71 (n,n') Level Cross Section 72-Hf-178
 -83.57 To 9999. %



MAT 7237

MT= 72 (n,n') Level
Cross Section

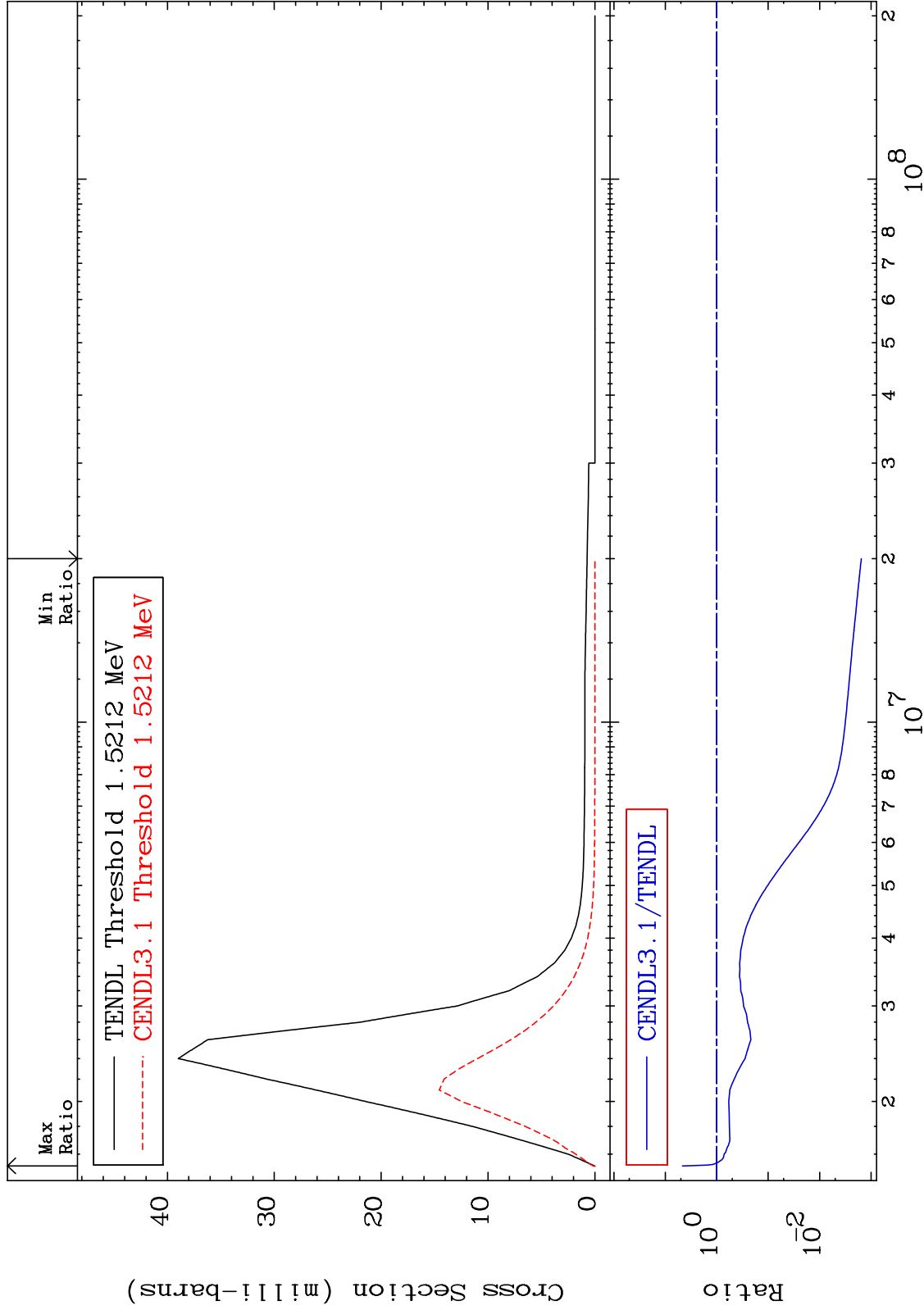
72-Hf-178
-99.94 To 174.7 %



MAT 7237

MT= 73 (n,n') Level
Cross Section

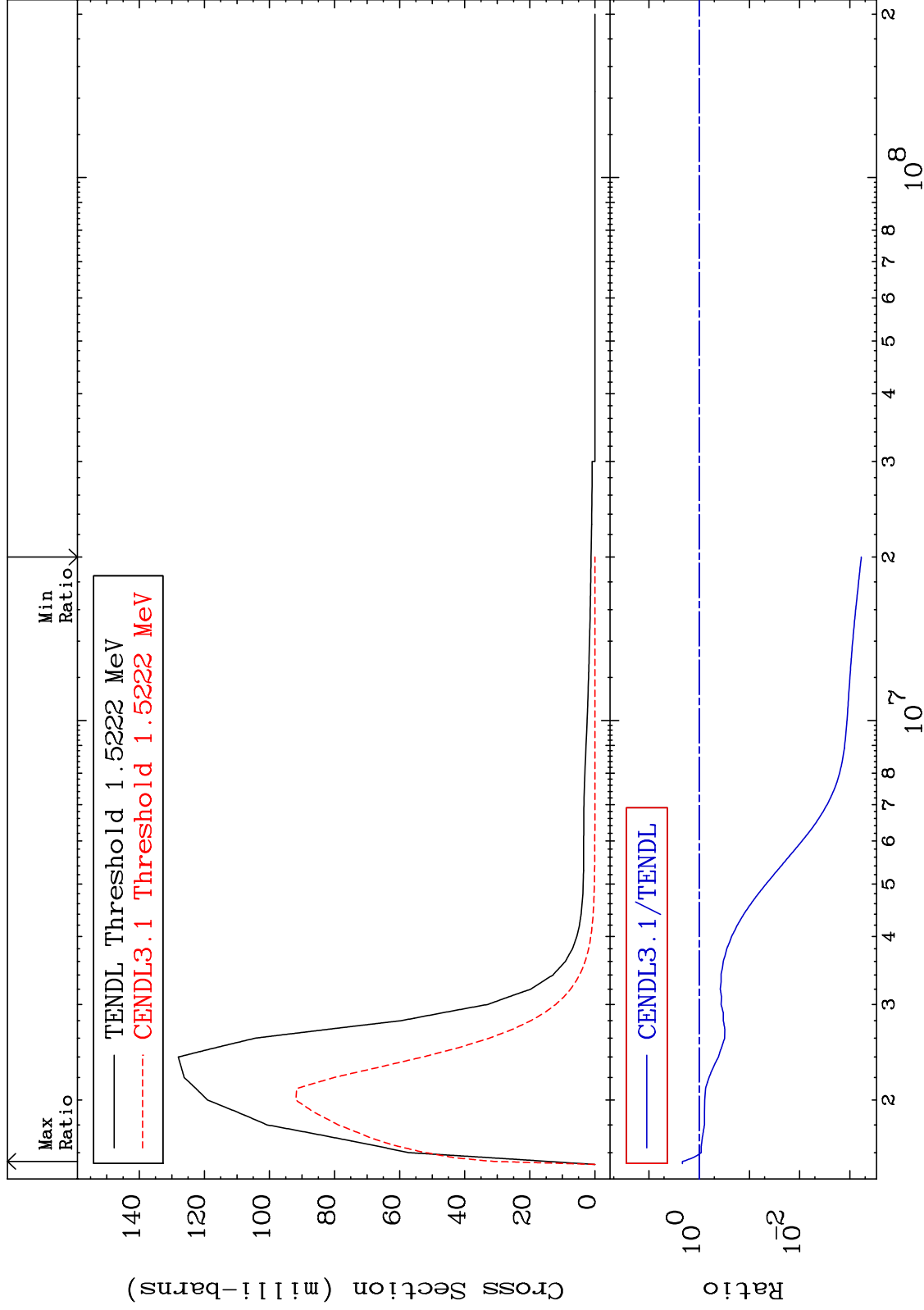
72-Hf-178
-99.85 To 364.0 %



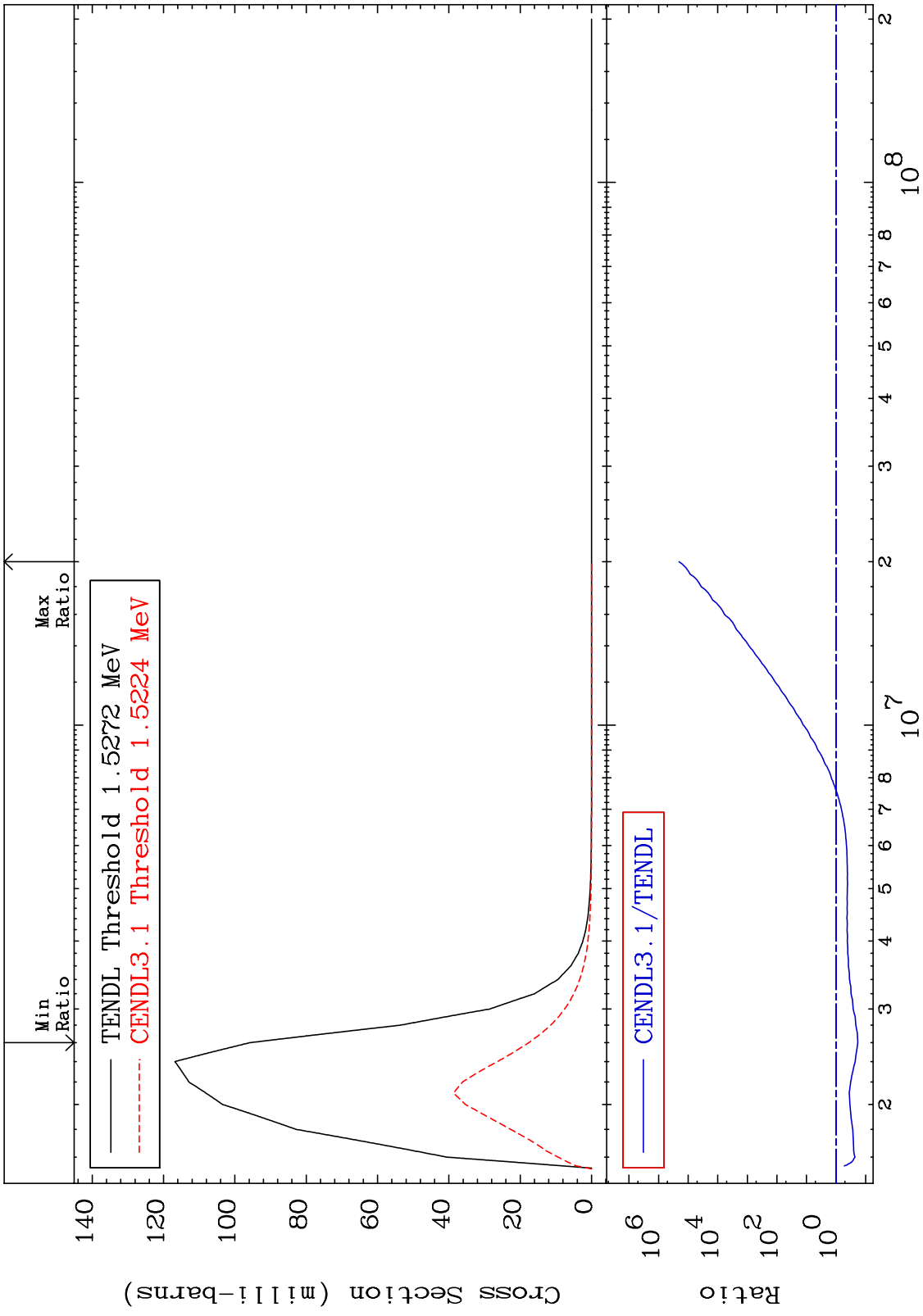
MAT 7237

MT= 74 (n,n') Level
Cross Section

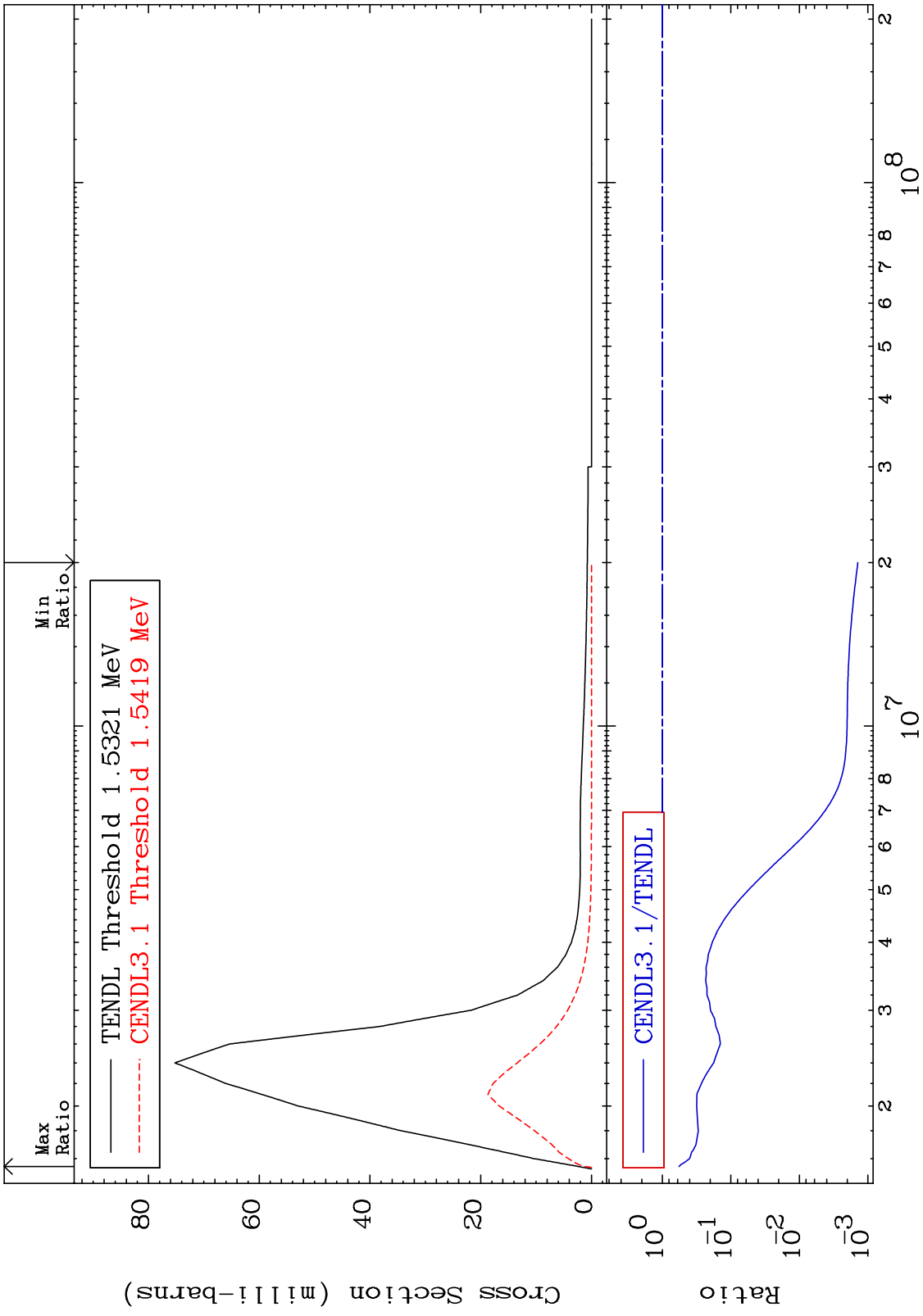
72-Hf-178
-99.94 To 114.6 %



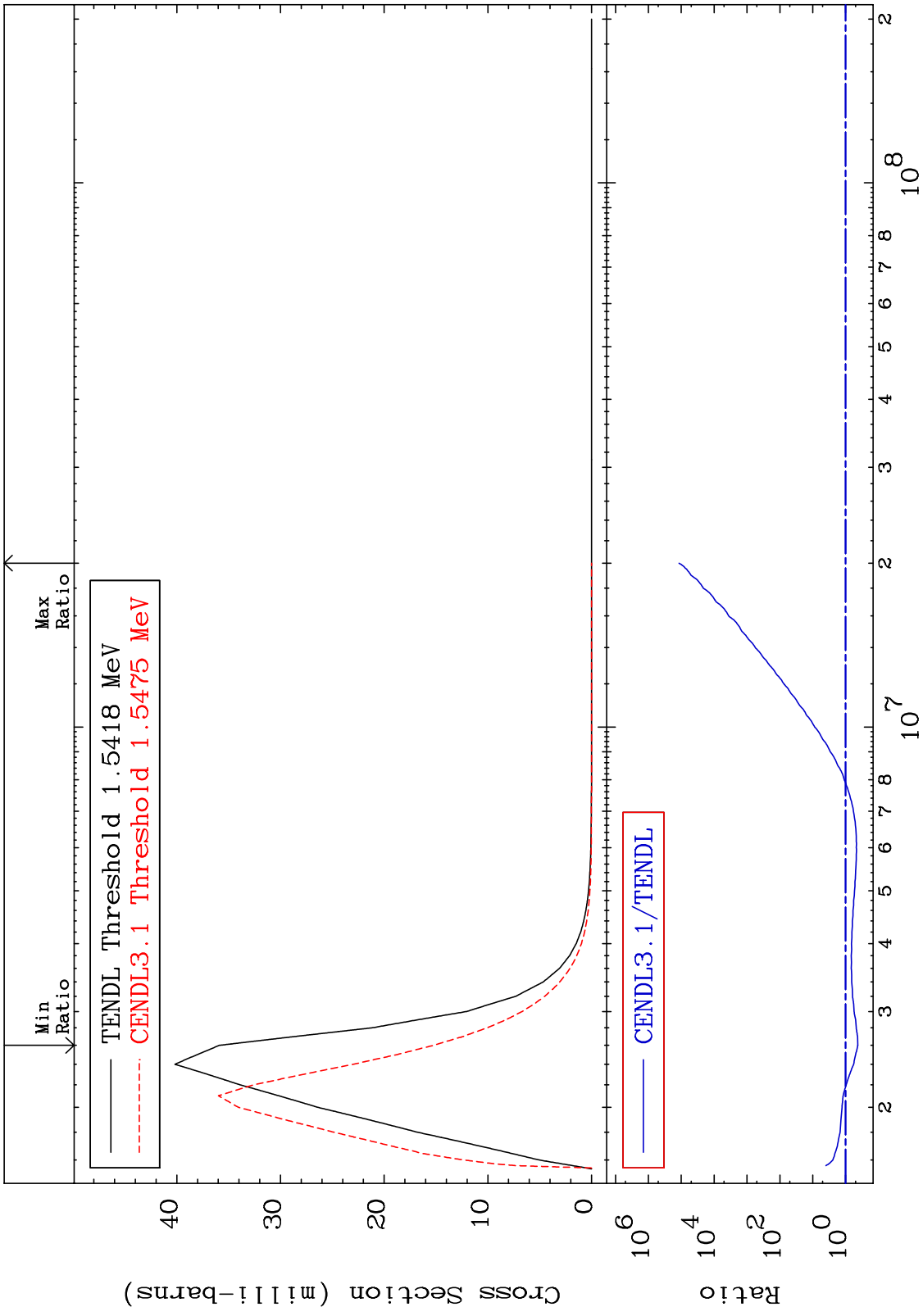
MAT 7237 MT= 75 (n,n') Level Cross Section 72-Hf-178
 -81.66 To 9999. %



MAT 7237 MT= 76 (n,n') Level Cross Section 72-Hf-178 -99.86 To -42.90%



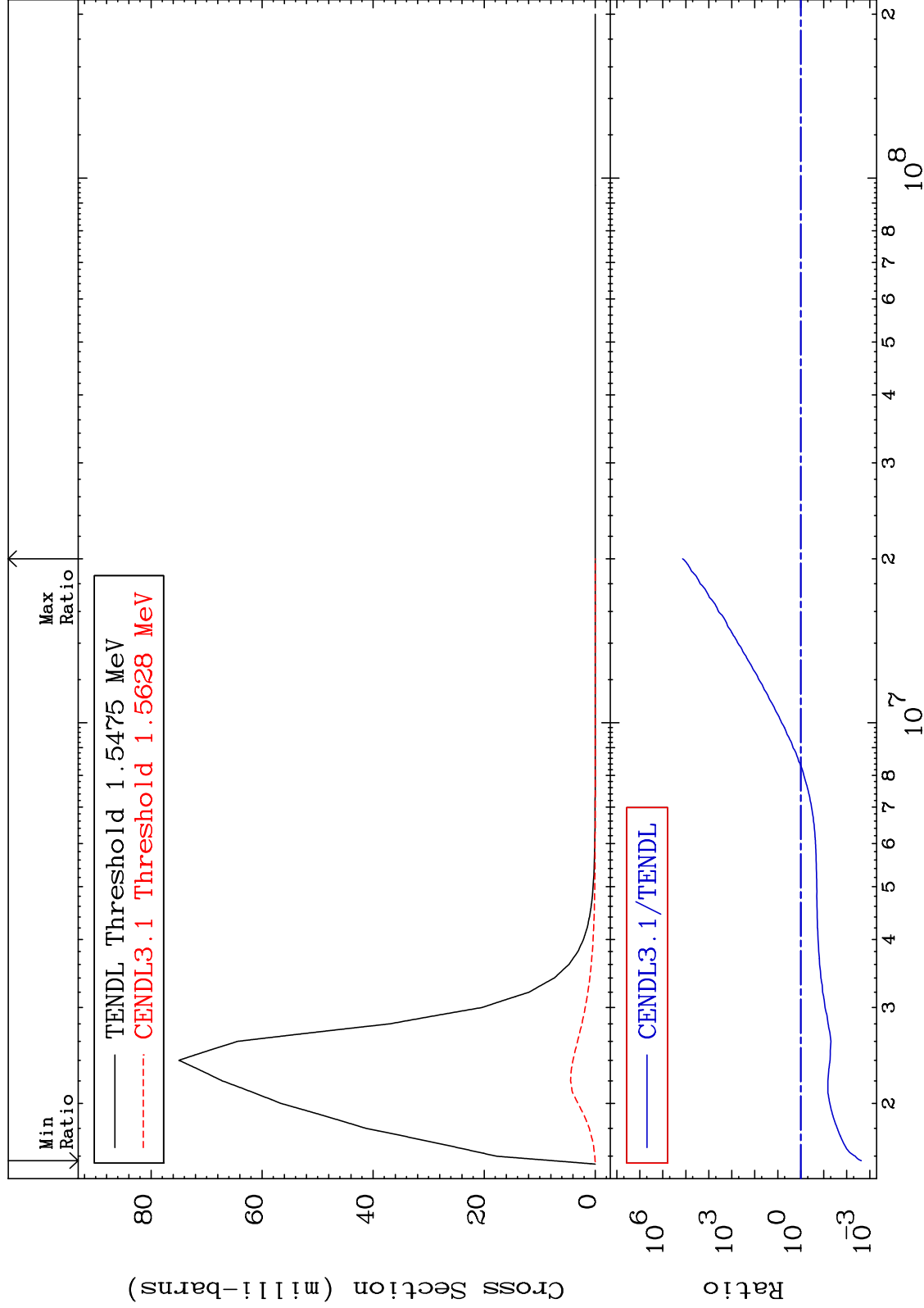
MAT 7237 MT= 77 (n,n') Level Cross Section 72-Hf-178
 -57.51 To 9999. %



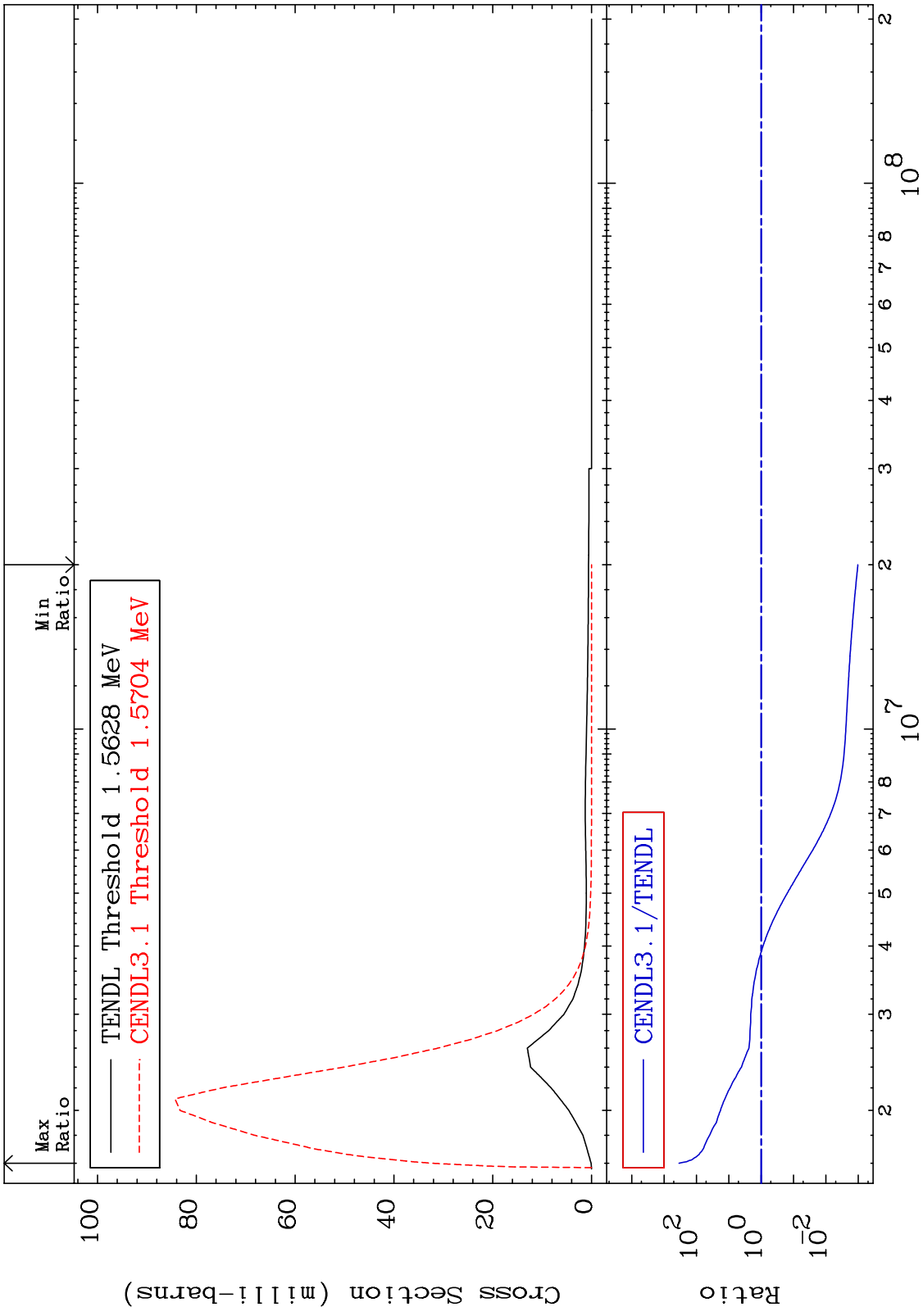
MAT 7237

MT= 78 (n,n') Level
Cross Section

72-Hf-178
-99.77 To 9999. %



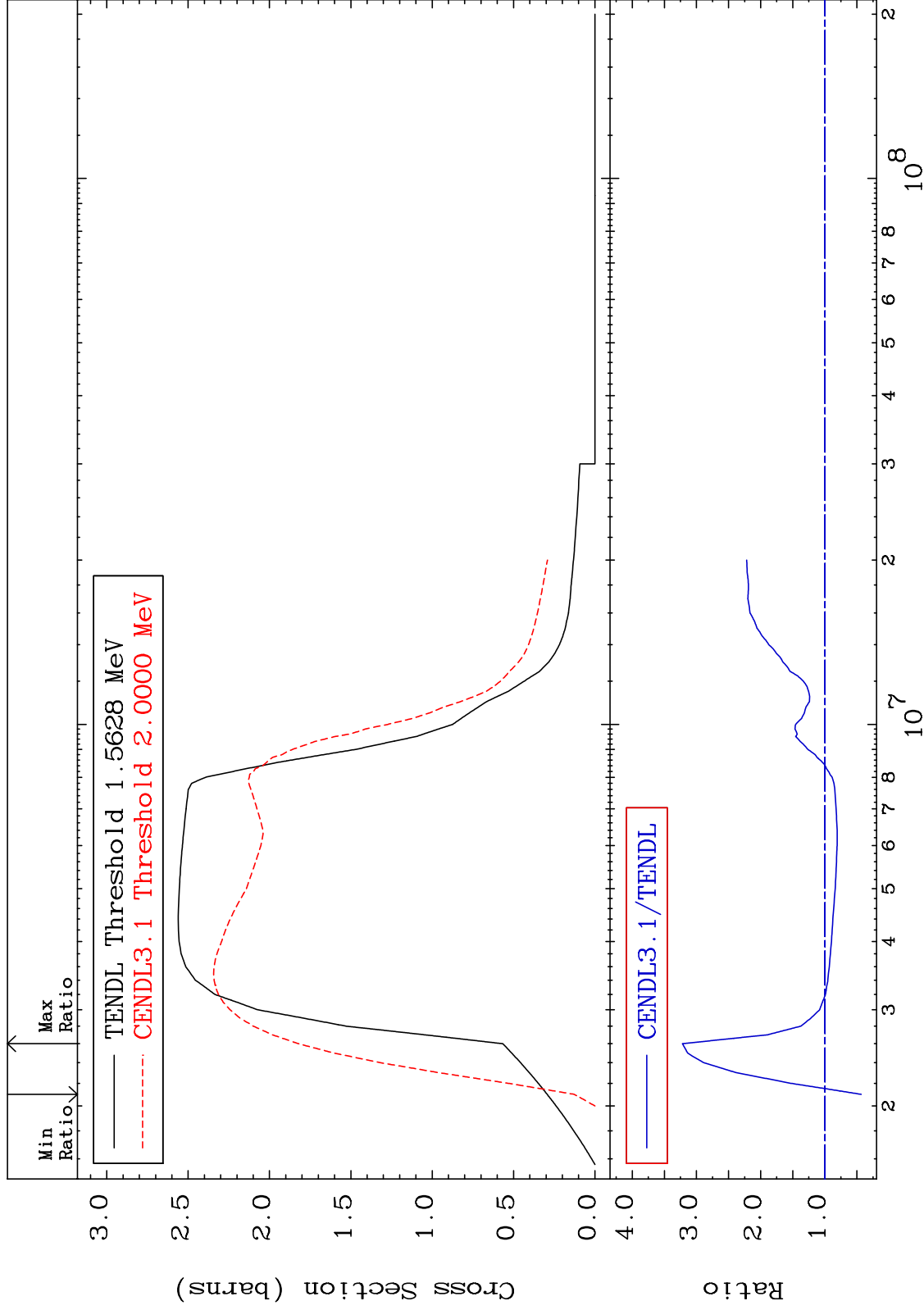
MAT 7237 MT= 79 (n,n') Level Cross Section 72-Hf-178
 -99.90 To 9999. %



MAT 7237

(n,n') Continuum
Cross Section

72-Hf-178
-56.74 To 221.8 %



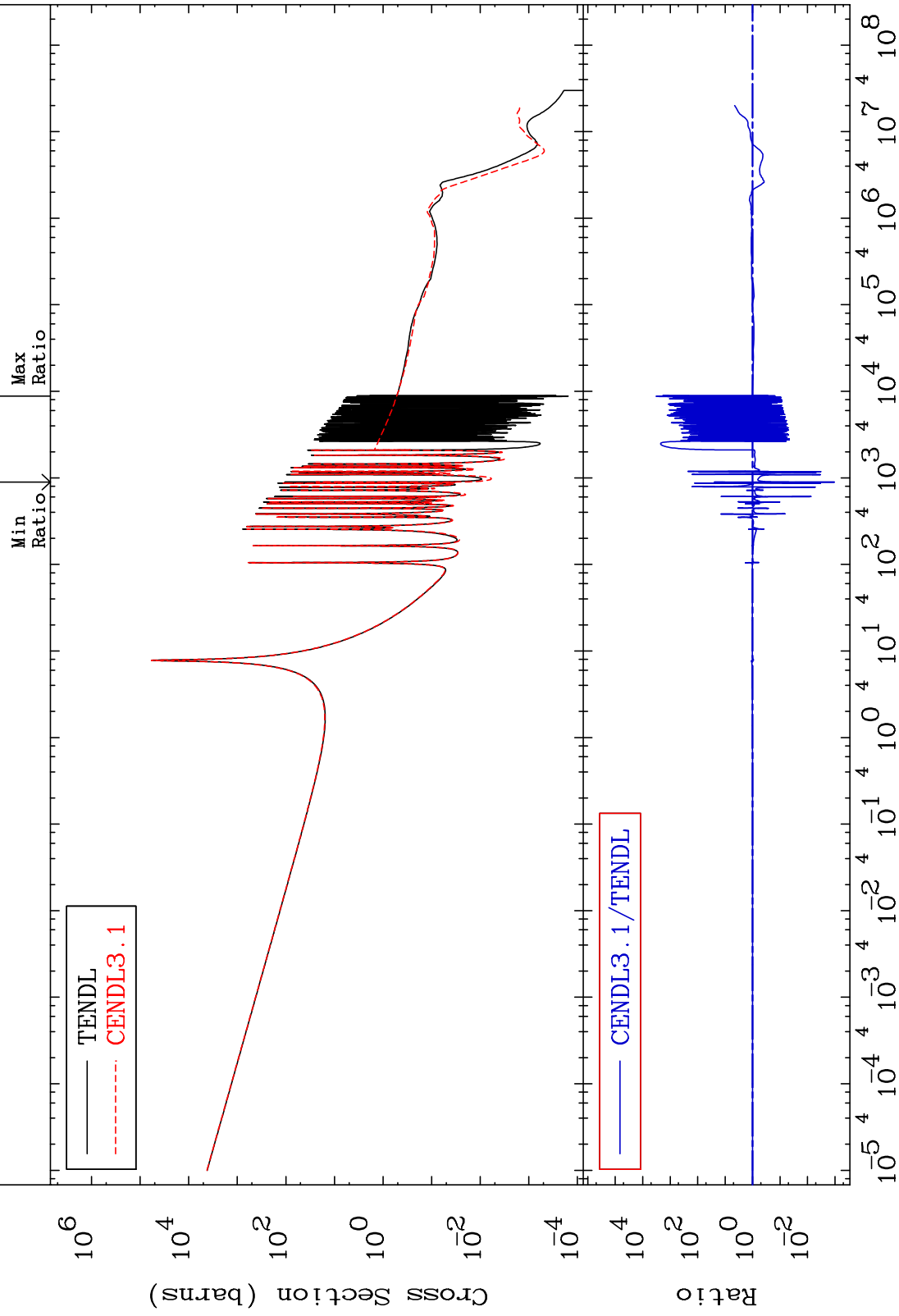
MAT 7237

(n, γ)

72-Hf-178

-99.90 To 9999. %

Cross Section



MAT 7237

(n,p)

72-Hf-178

-75.48 To -6.521%

Cross Section

Min Ratio

Max Ratio

TENDL Threshold 1.3226 MeV
CENDL3.1 Threshold 9.6000 MeV

Cross Section (milli-barns)

14

12

10

8

6

4

2

0

CENDL3.1/TENDL

Ratio

0.8

0.4

2

3

4

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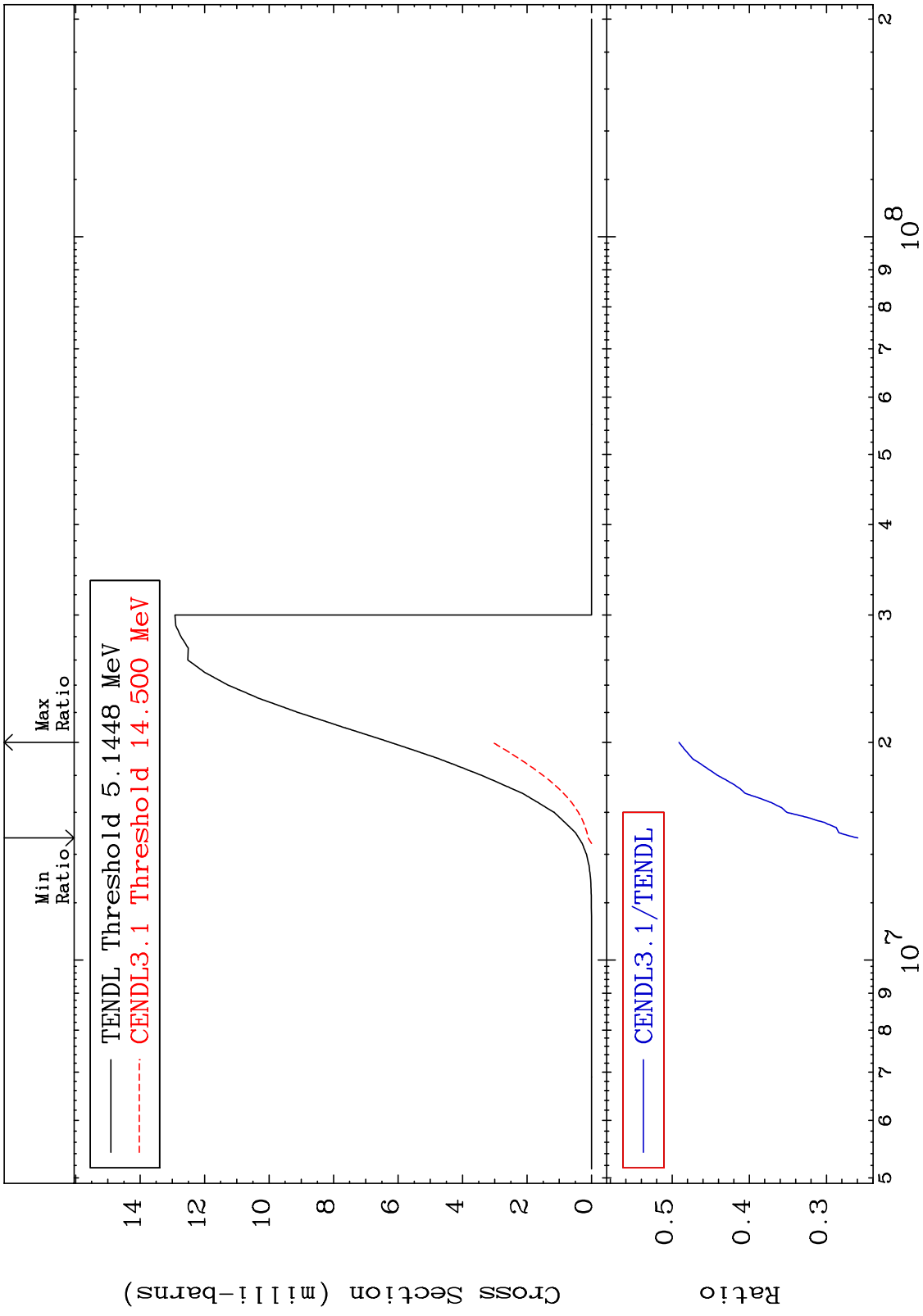
195

Incident Energy (eV)

72-Hf-178

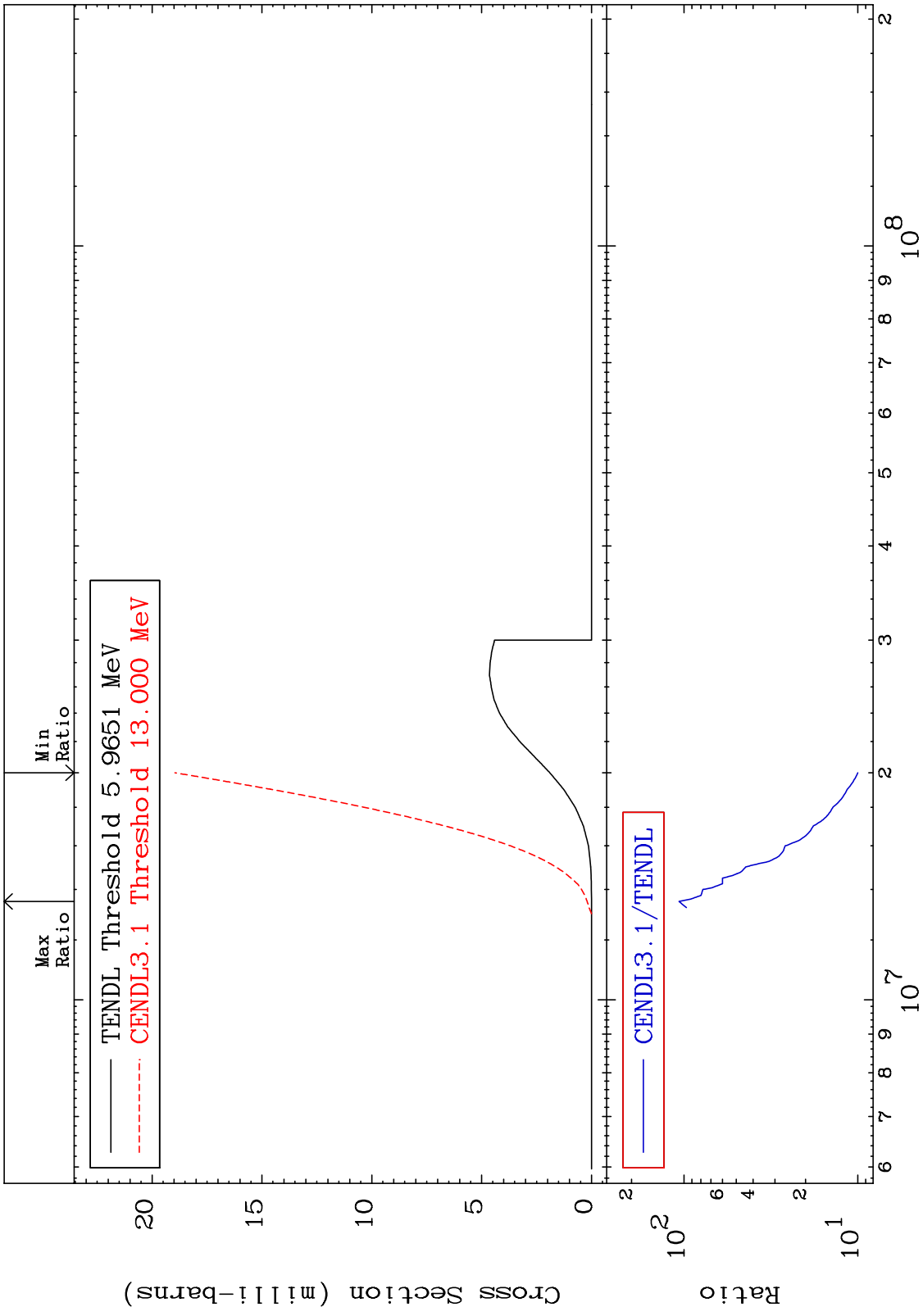
39

MAT 7237 (n,d) Cross Section 72-Hf-178
 -74.06 To -50.89%



40 Incident Energy (eV) 72-Hf-178

MAT 7237 (n,t) Cross Section 72-Hf-178 899.6 To 9999. %



41 72-Hf-178 Incident Energy (eV)

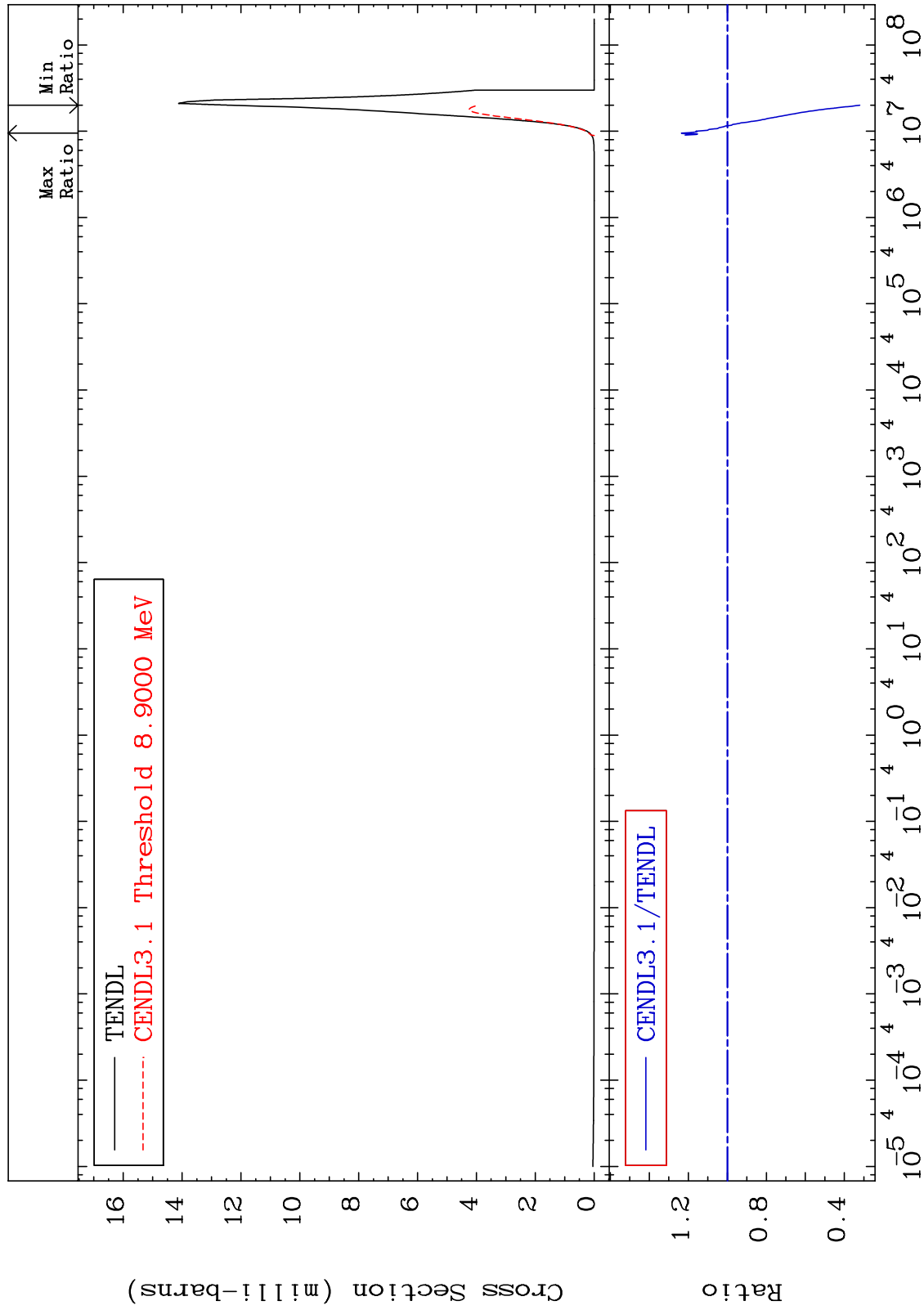
MAT 7237

(n, α)

72-Hf-178

Cross Section

-67.93 To 23.52 %



42

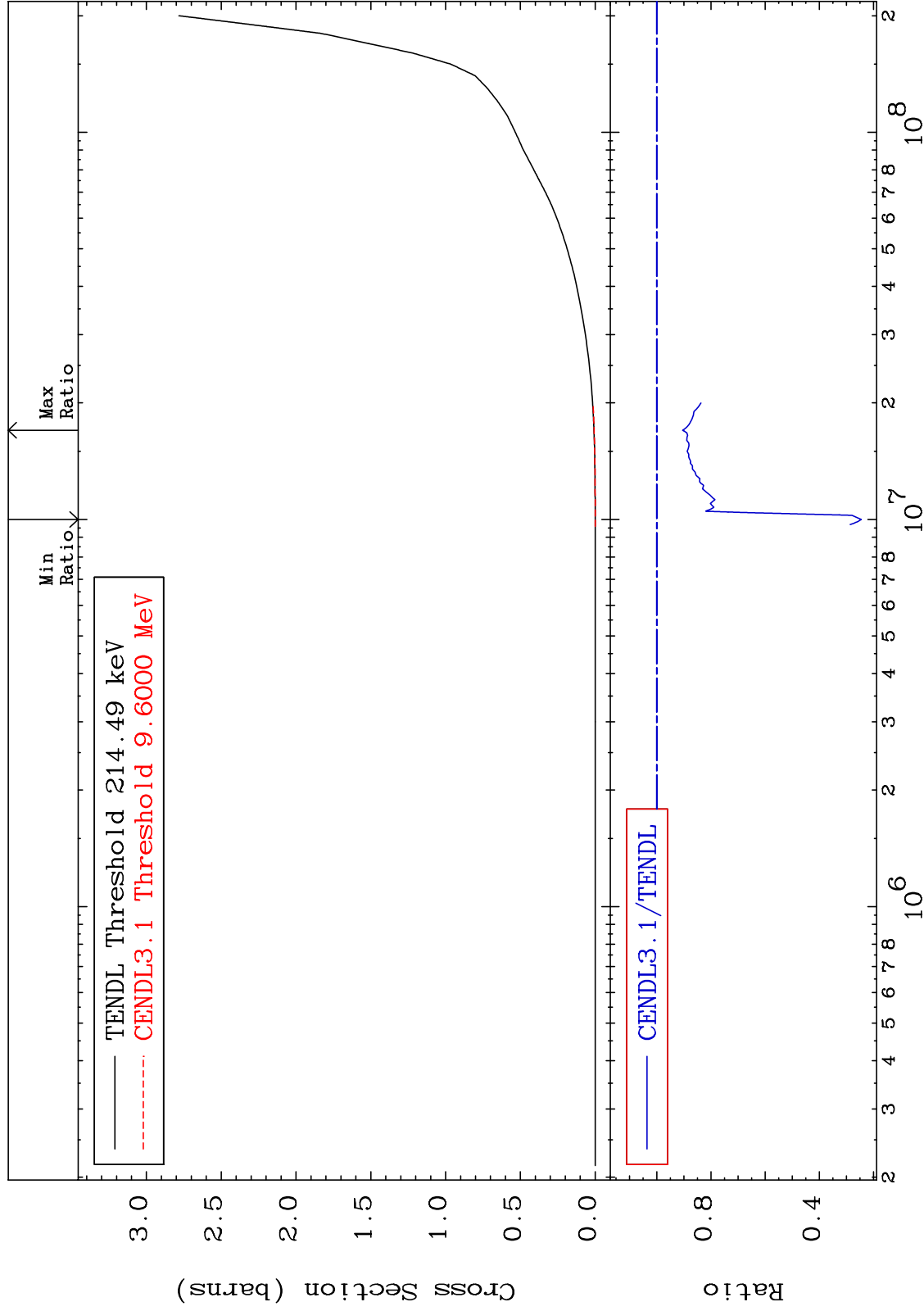
Incident Energy (eV)

72-Hf-178

MAT 7237

Hydrogen Production
Cross Section

72-Hf-178
-75.48 To -9.571%



43

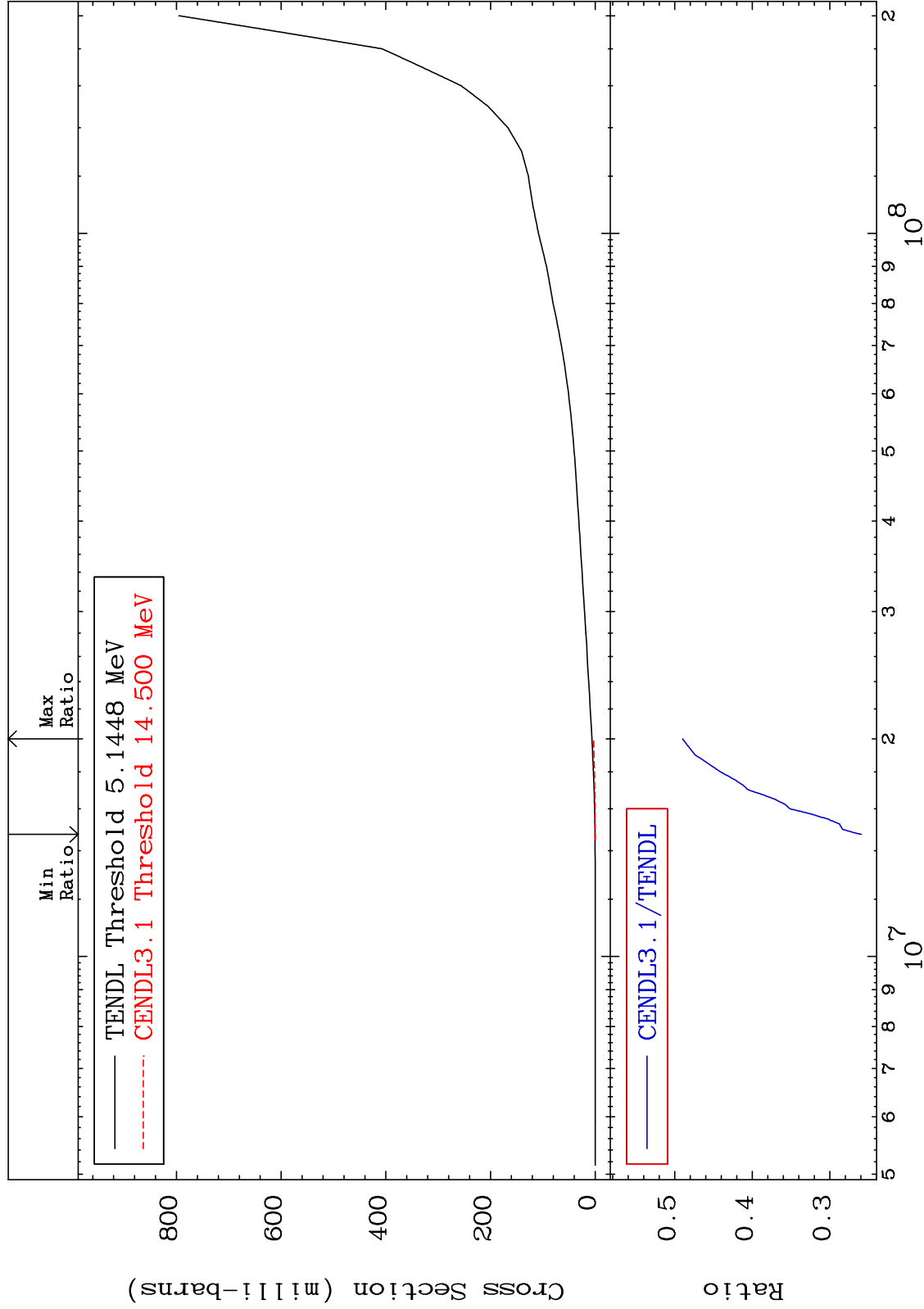
Incident Energy (eV)

72-Hf-178

MAT 7237

Deuterium Production
Cross Section

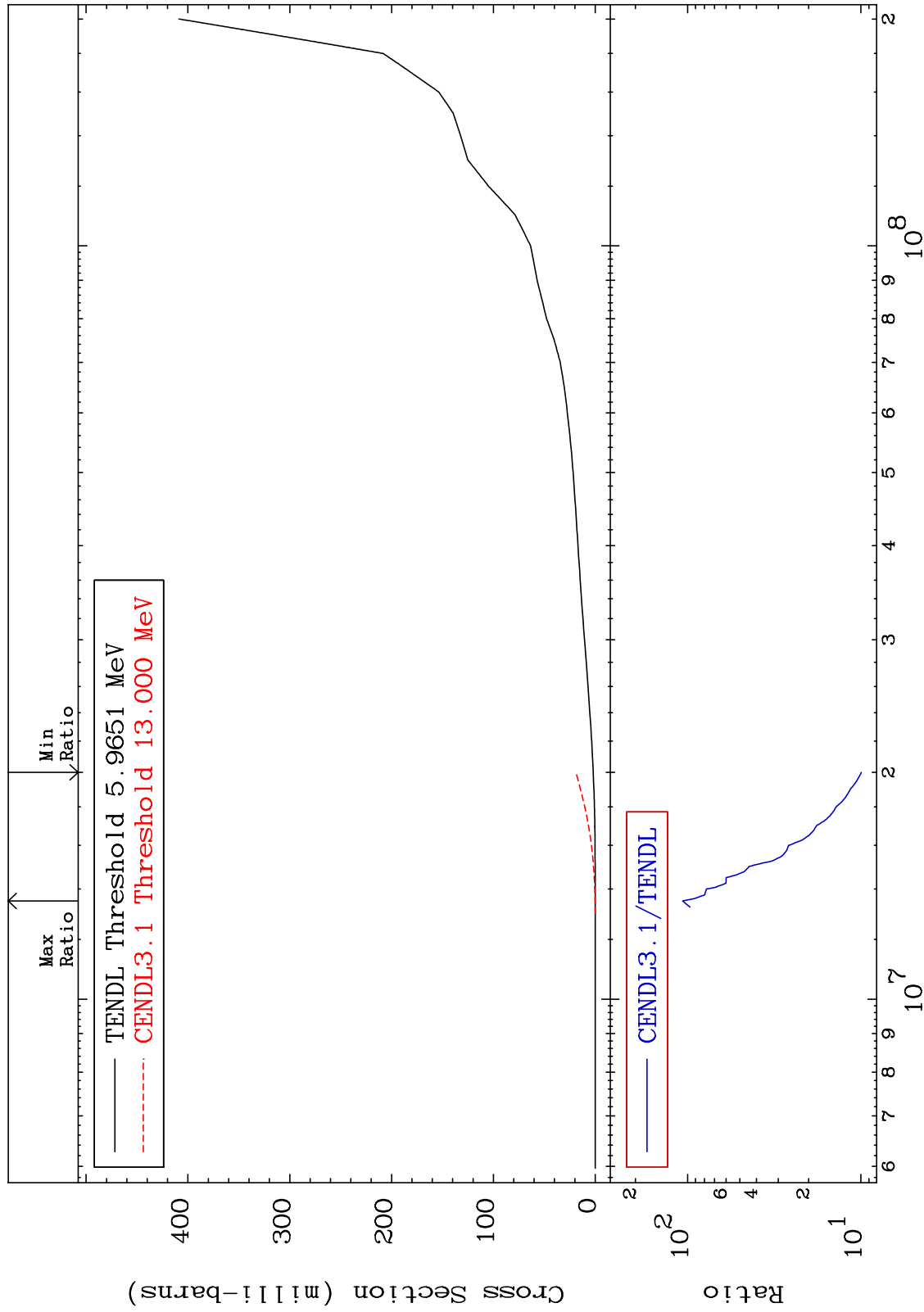
⁷²Hf-178
-74.06 To -51.02%



MAT 7237

Tritium Production
Cross Section

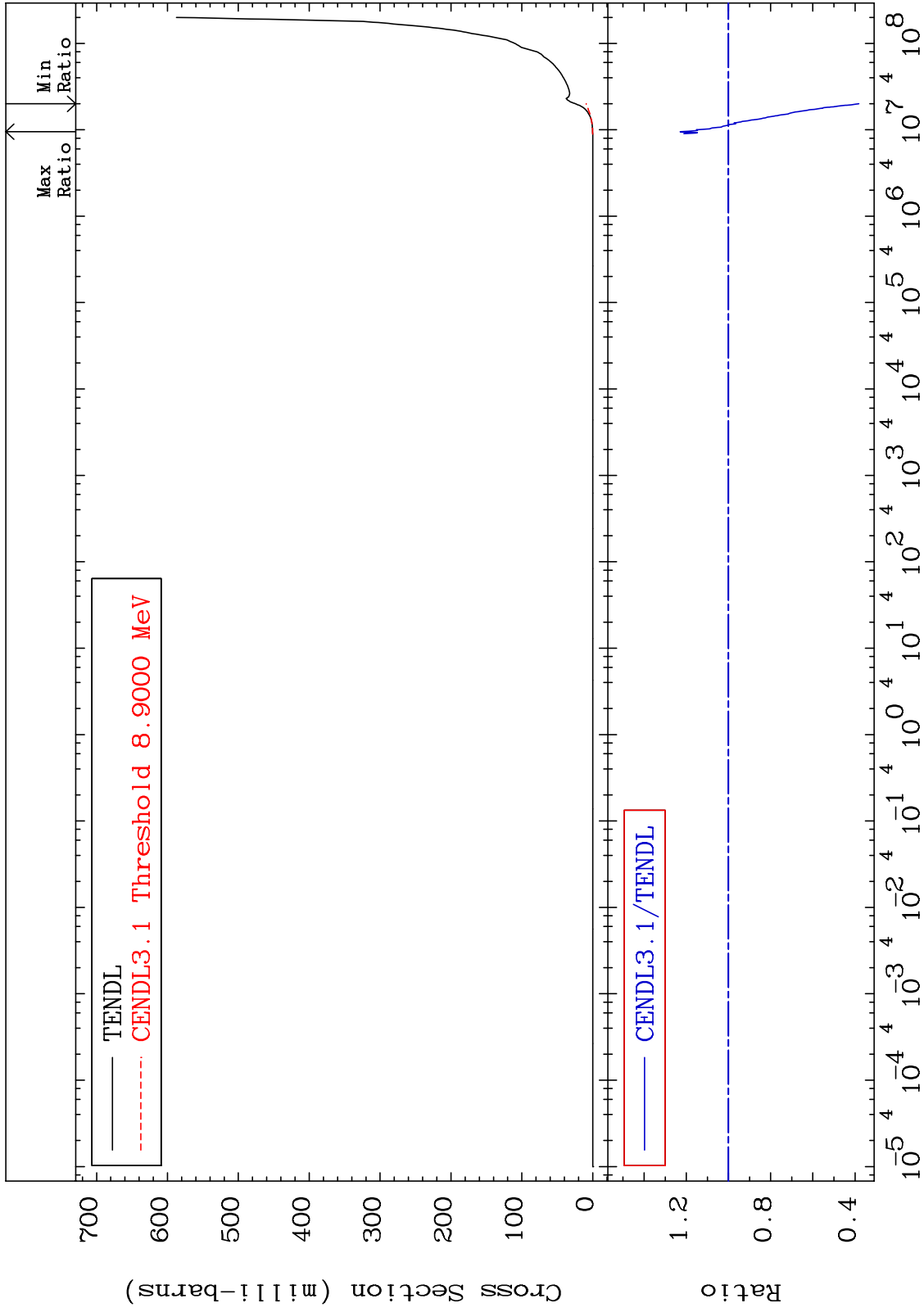
72-Hf-178
895.0 To 9999. %



MAT 7237

He-4 Production
Cross Section

72-Hf-178
-61.83 To 22.88 %

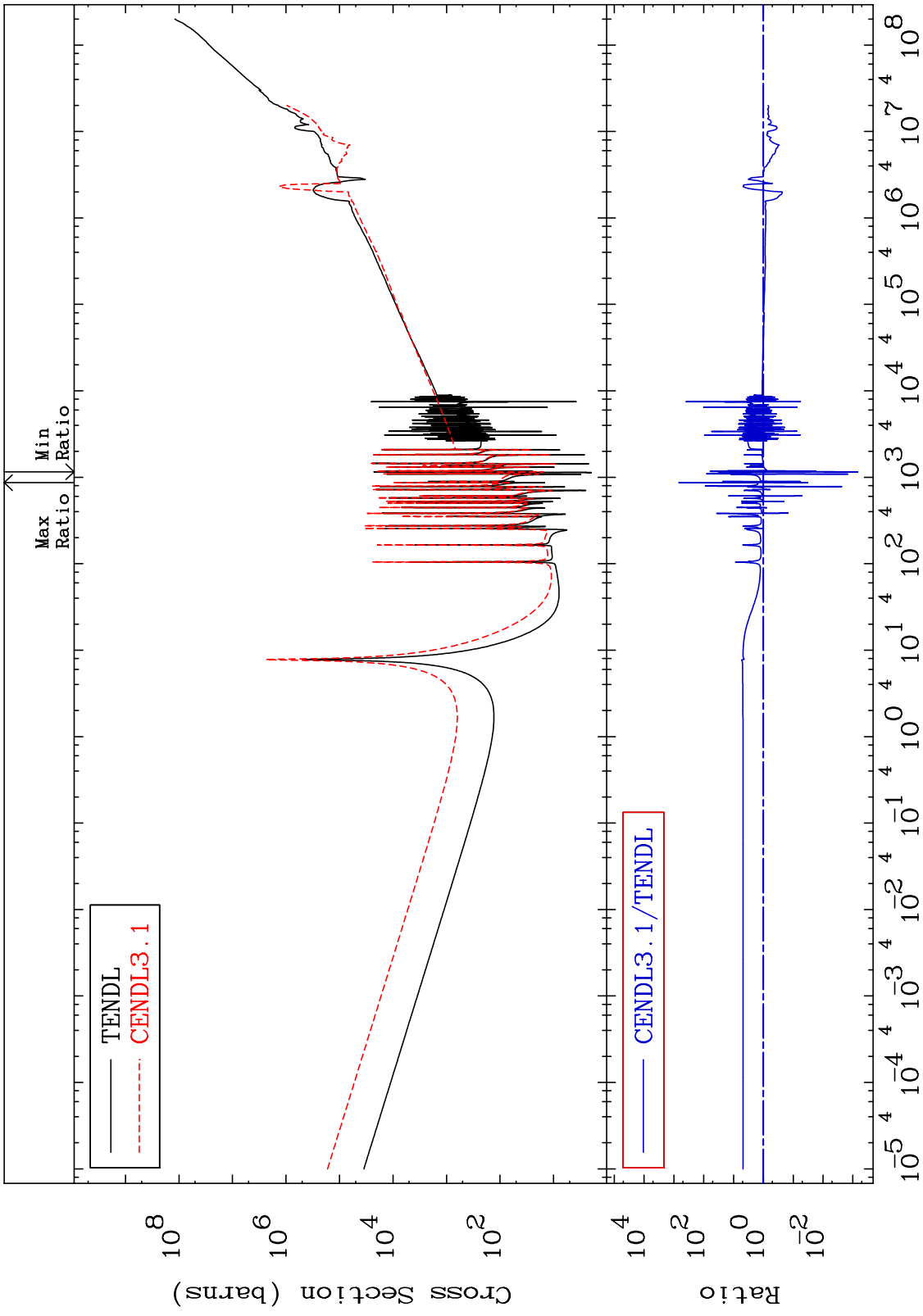


46

Incident Energy (eV)

72-Hf-178

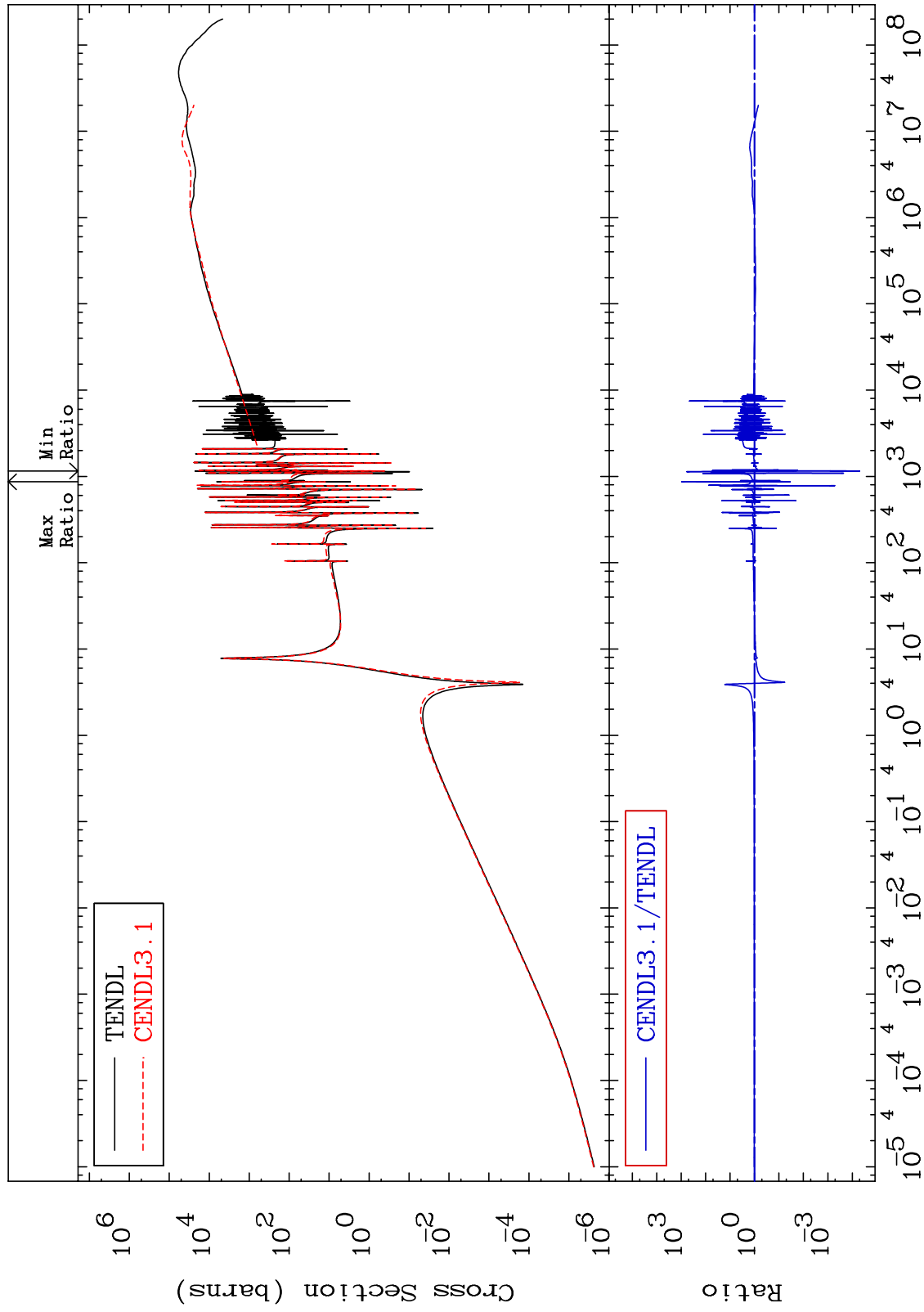
MAT 7237 Kerma total (eV-barns) 72-Hf-178
 Cross Section -99.93 To 9999. %



MAT 7237

Kerma elastic
Cross Section

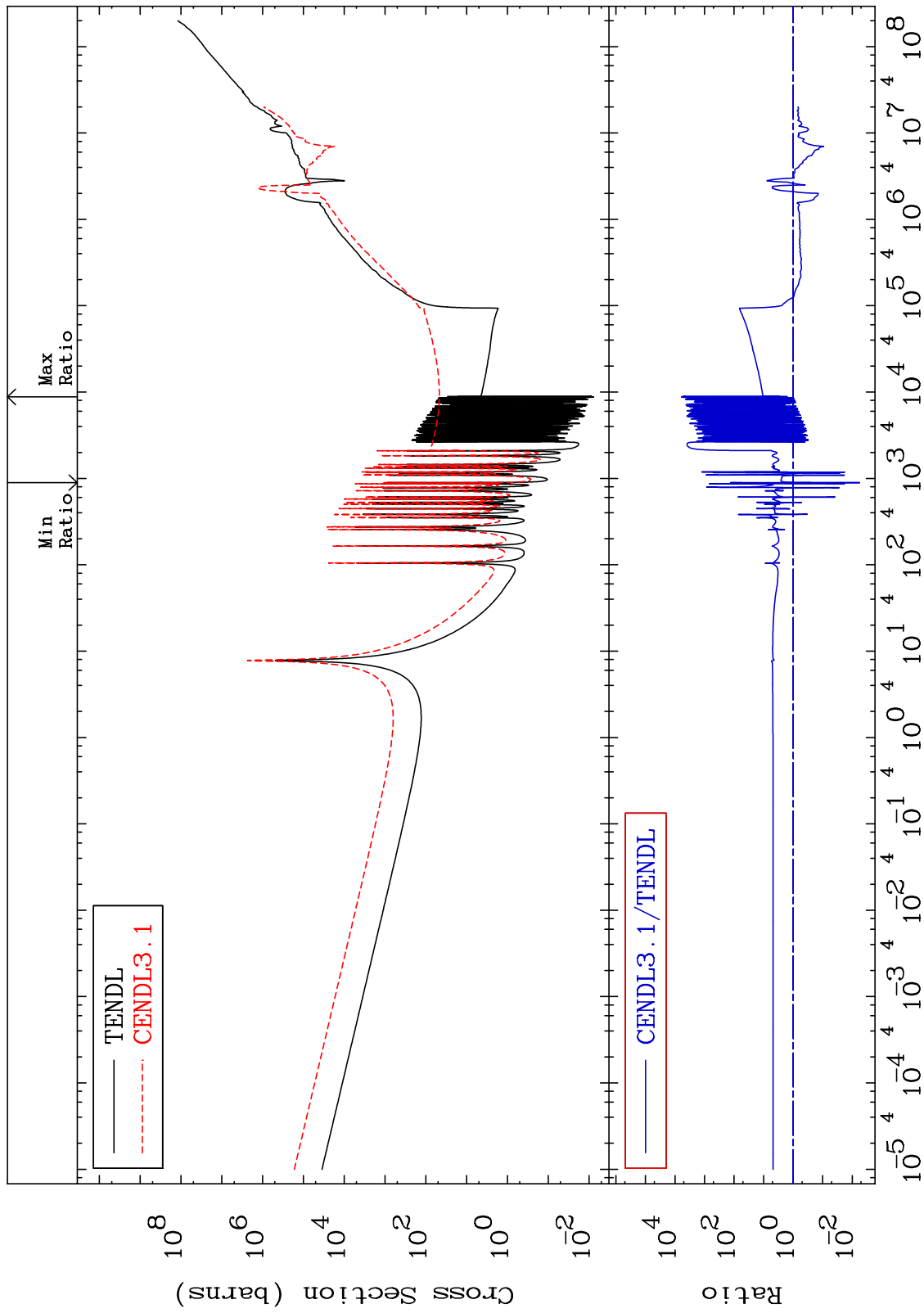
72-Hf-178
-100.0 To 9999. %



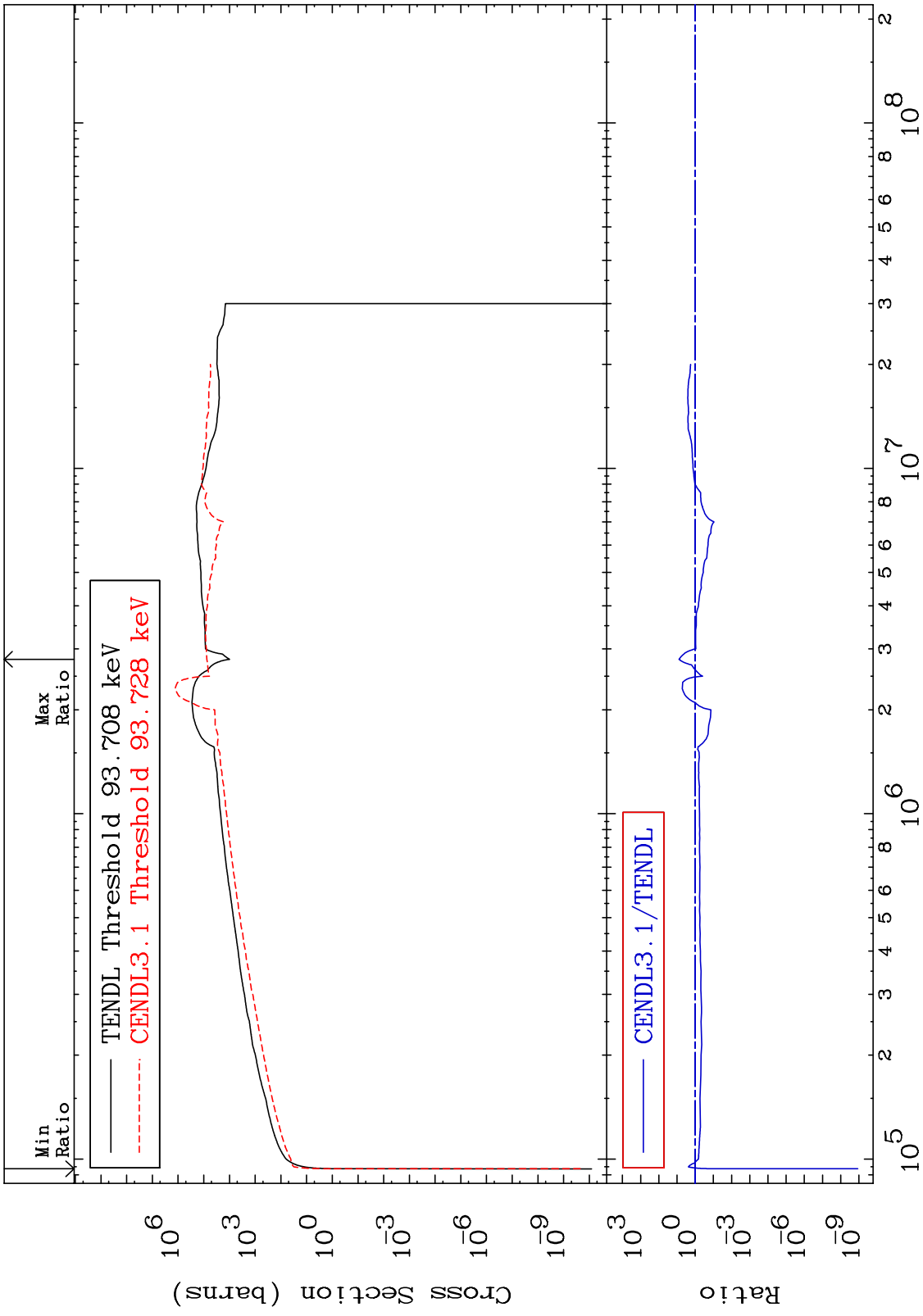
MAT 7237

Kerma non-elastic (all but mt2)
Cross Section

72-Hf-178
-99.44 To 9999. %

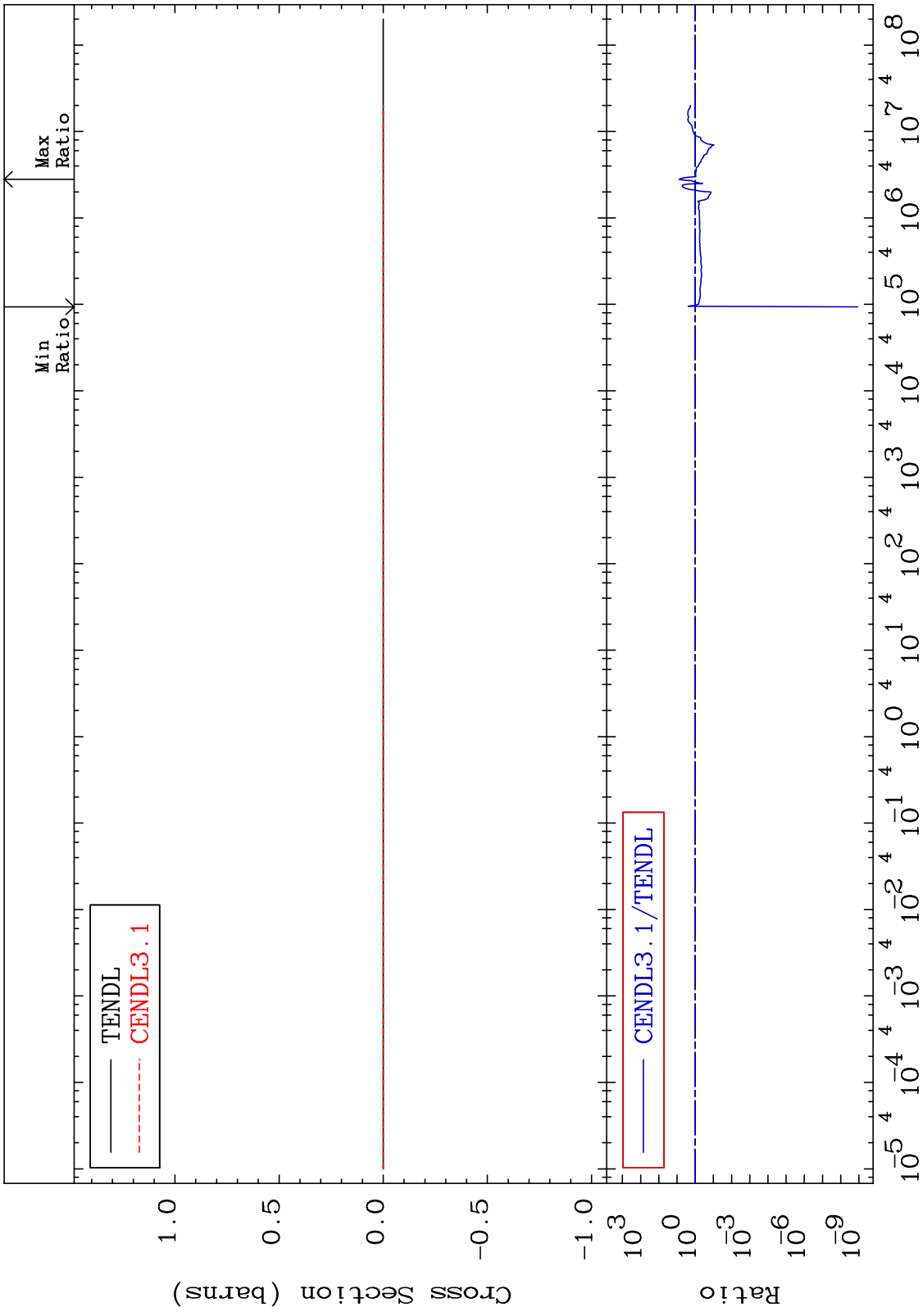


MAT 7237 Kerma inelastic (mt51-91) 72-Hf-178
 Cross Section -100.0 To 672.7 %



50 Incident Energy (eV) 72-Hf-178

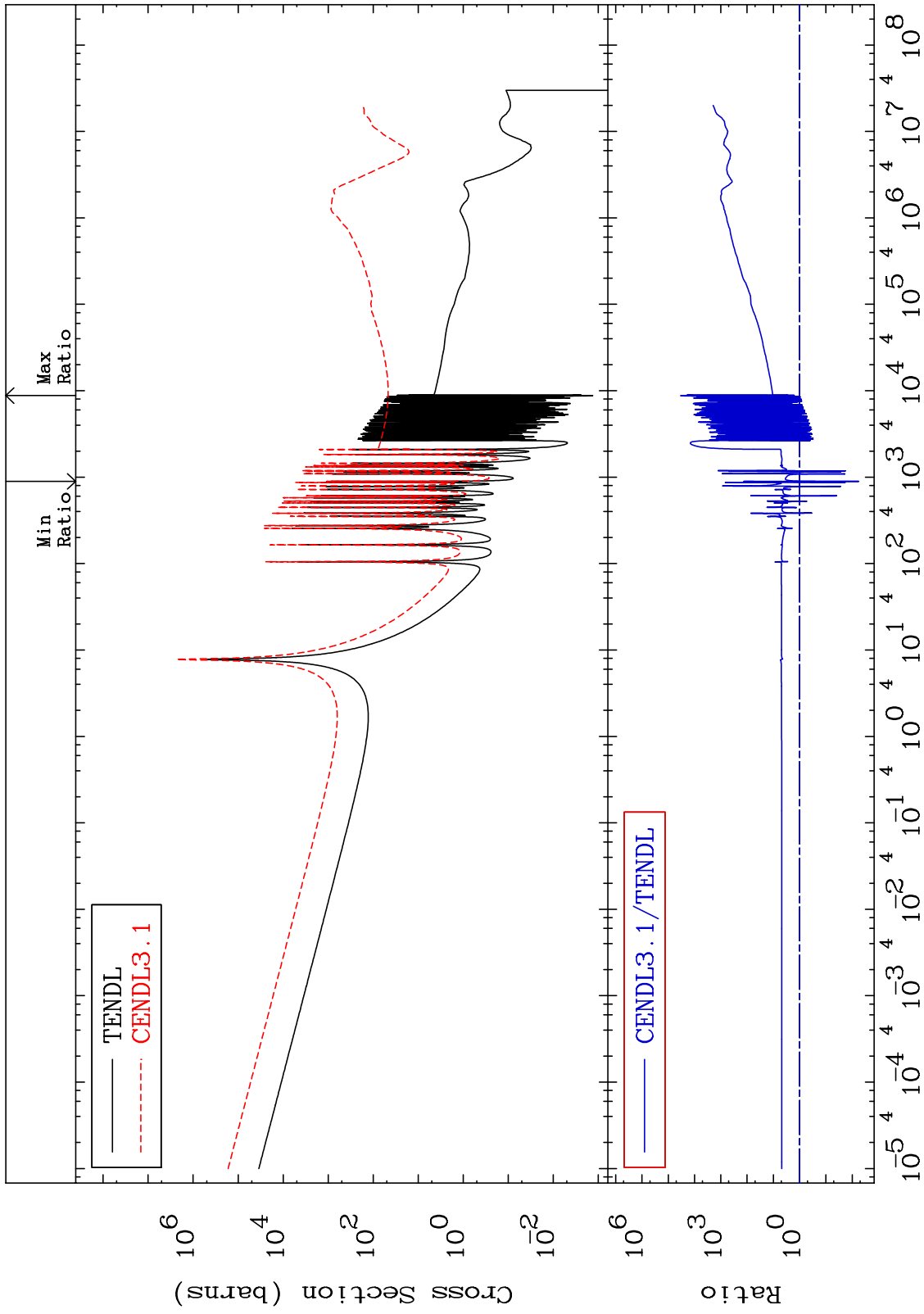
MAT 7237 Kerma fission (mt18 or mt19-20-21-38) 72-Hf-178
 Cross Section -100.0 To 672.7 %



MAT 7237

Kerma capture (mt102)
Cross Section

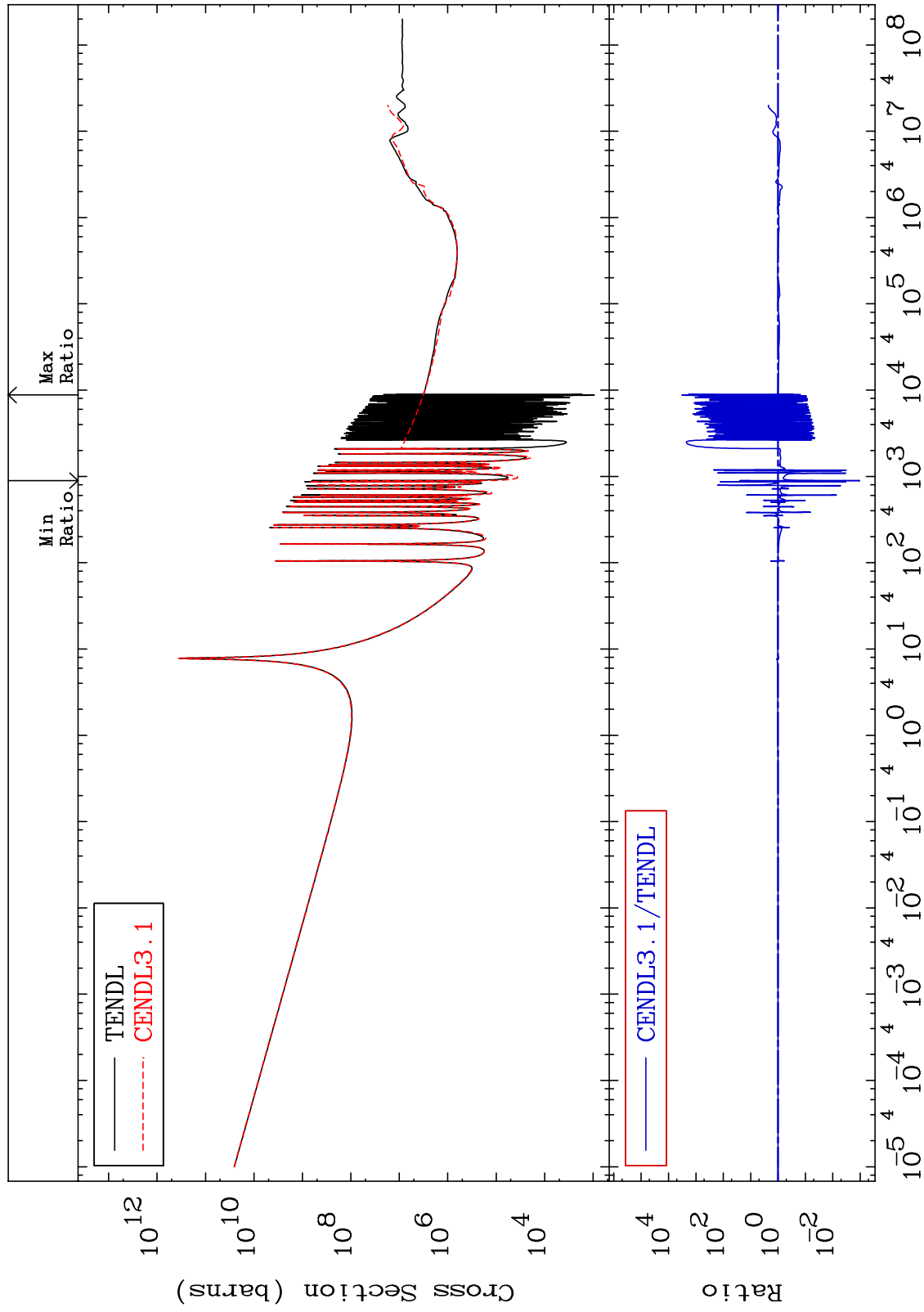
72-Hf-178
-99.44 To 9999. %



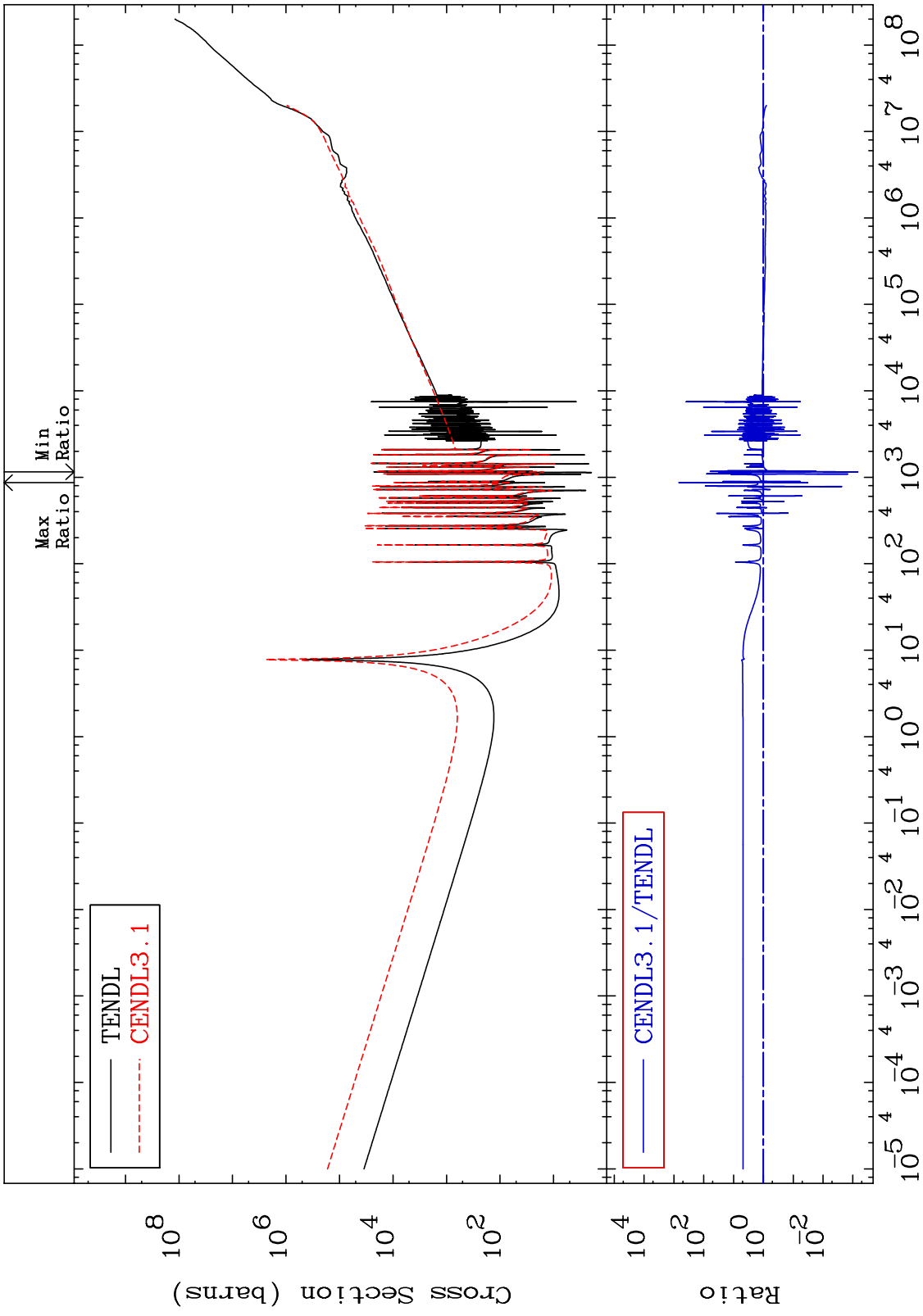
MAT 7237

Total photon (eV-barns)
Cross Section

72-Hf-178
-99.90 To 9999. %



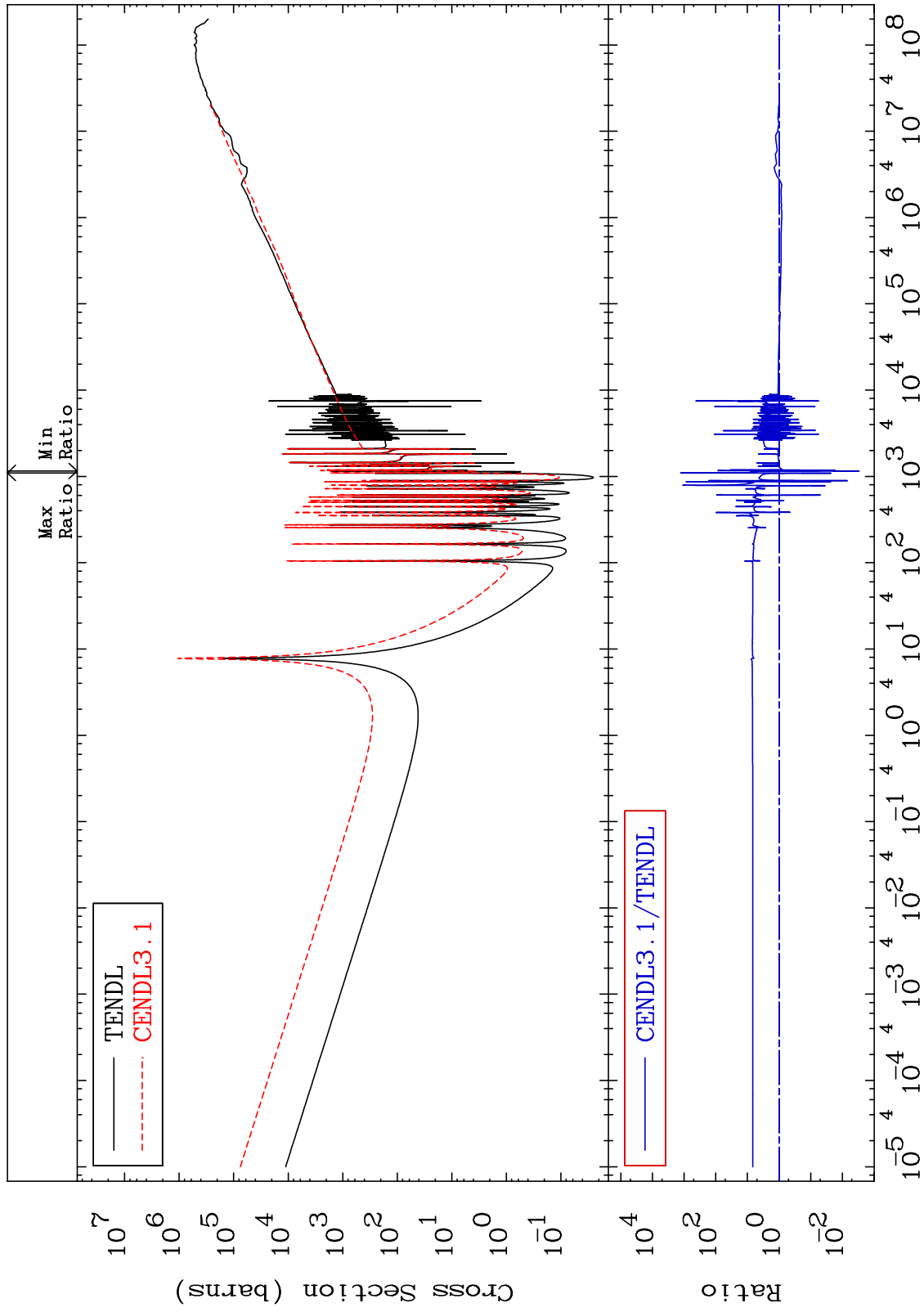
MAT 7237 Total kinematic kerma (high limit) 72-Hf-178
 Cross Section -99.93 To 9999. %



MAT 7237

Dpa total (eV-barns)
Cross Section

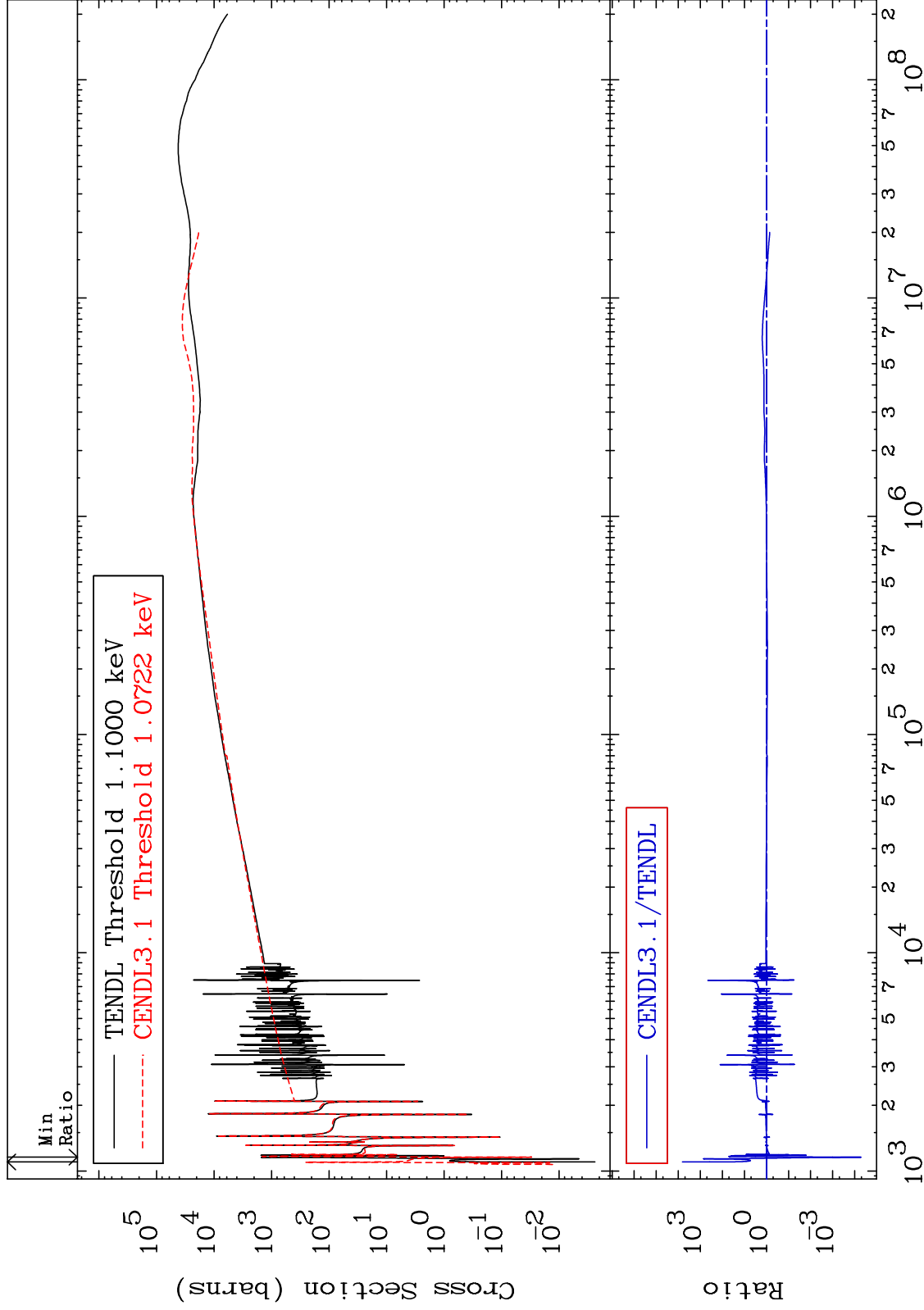
72-Hf-178
-99.70 To 9999. %



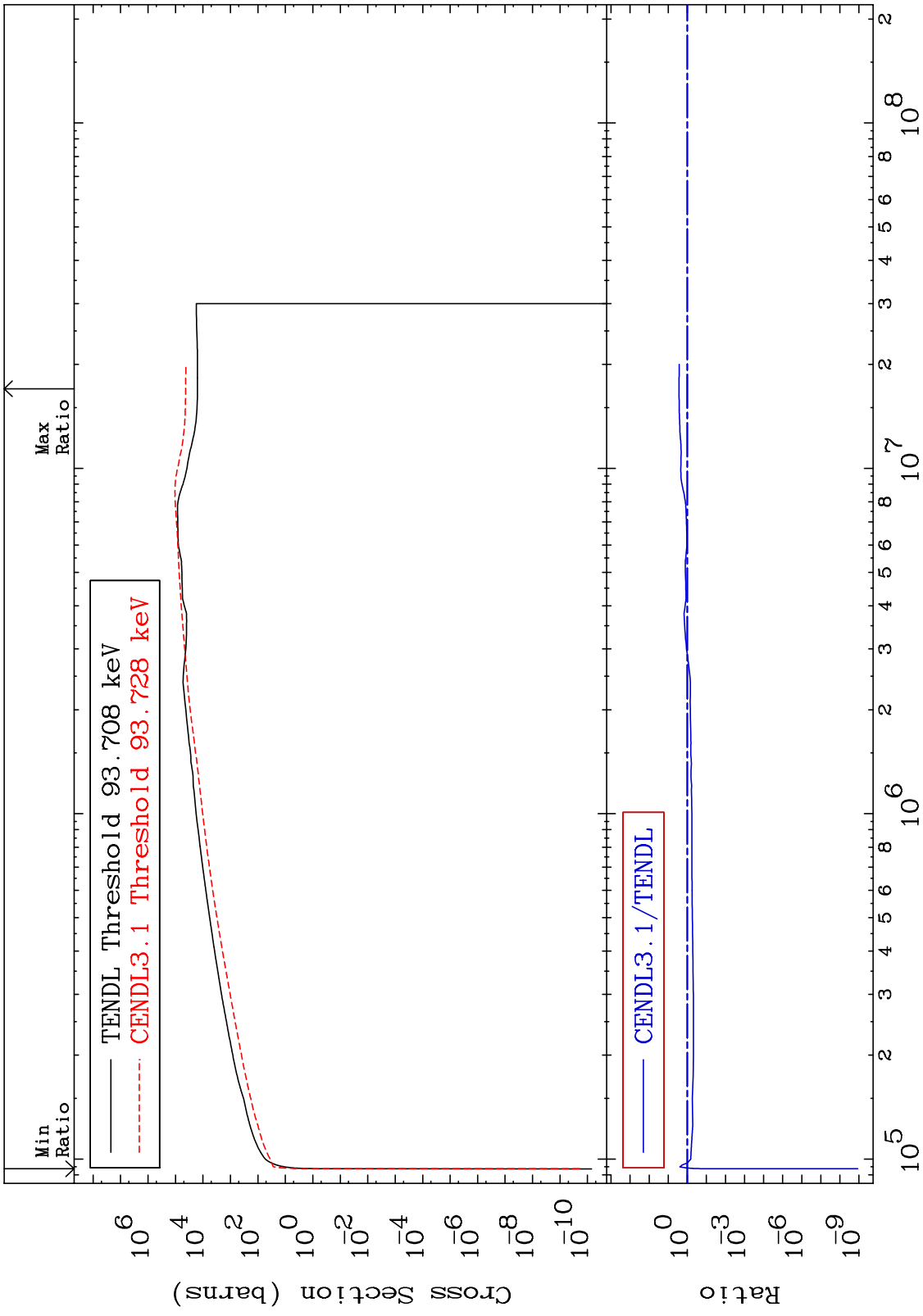
MAT 7237

Dpa elastic (mt2)
Cross Section

72-Hf-178
-99.99 To 9999. %



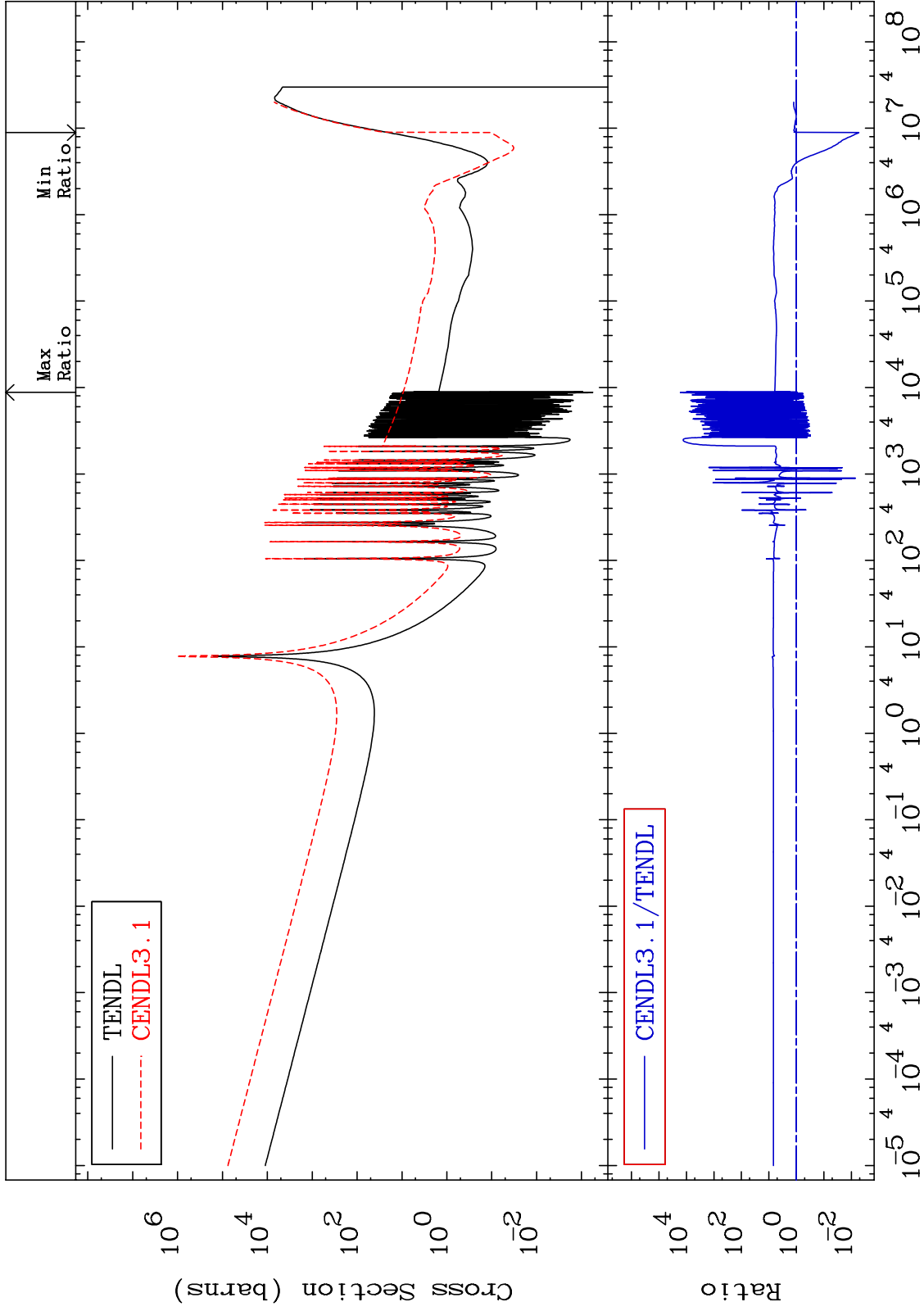
MAT 7237 Dpa inelastic (mt51-91) 72-Hf-178
 Cross Section -100.0 To 170.5 %



MAT 7237

Dpa disappearance (mt102 -120)
Cross Section

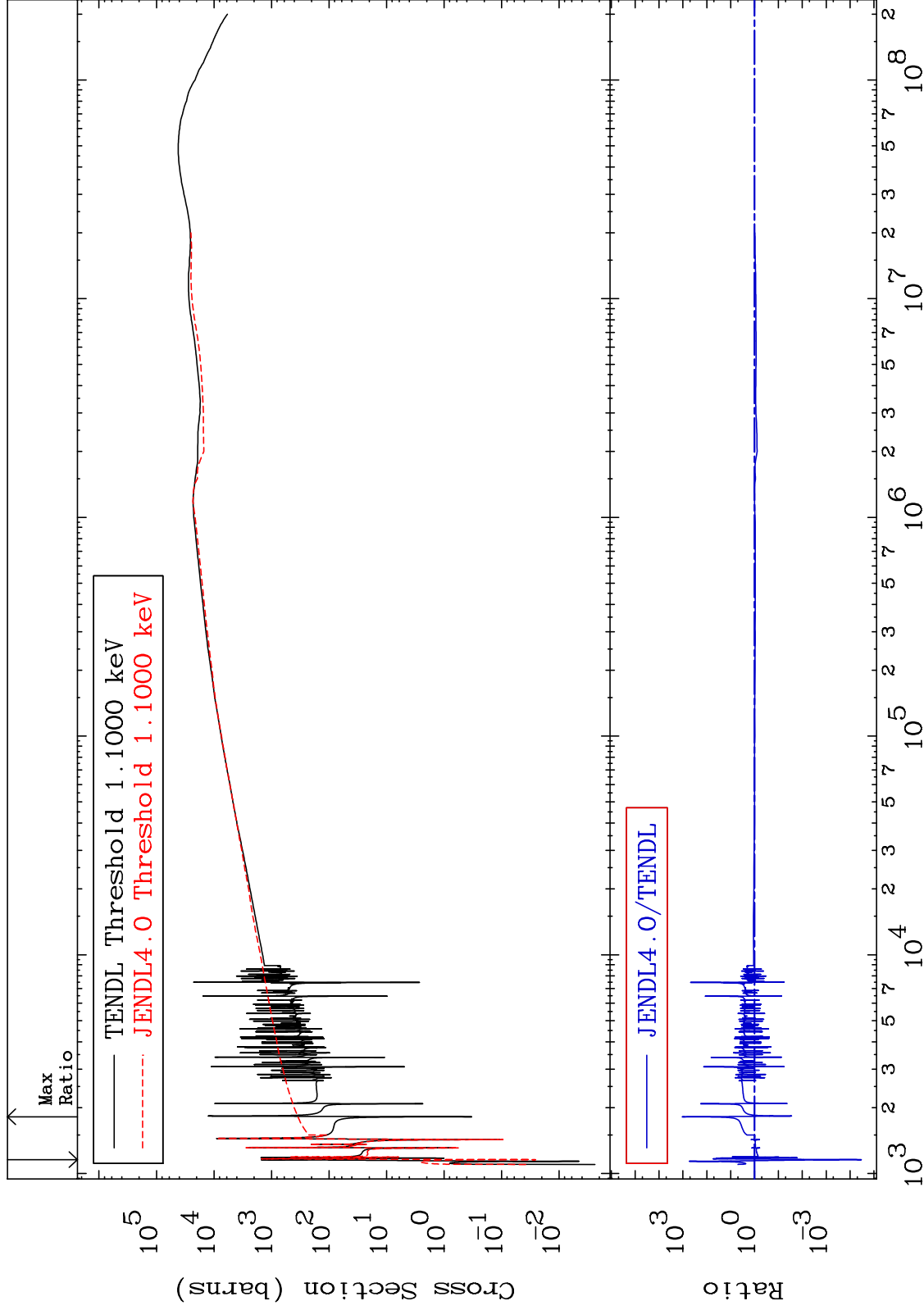
72-Hf-178
-99.47 To 9999. %



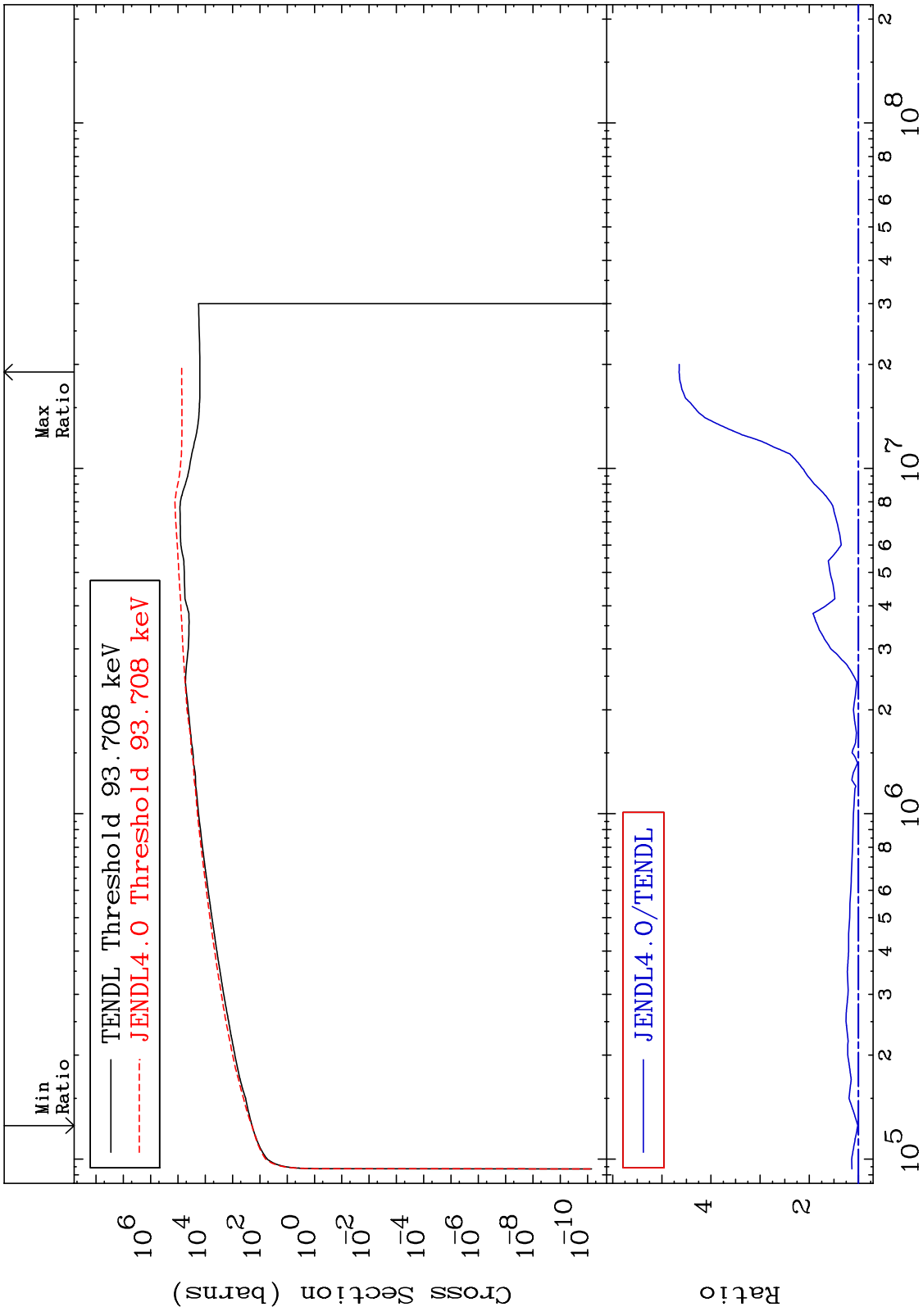
MAT 7237

Dpa elastic (mt2)
Cross Section

72-Hf-178
-100.0 To 9999. %

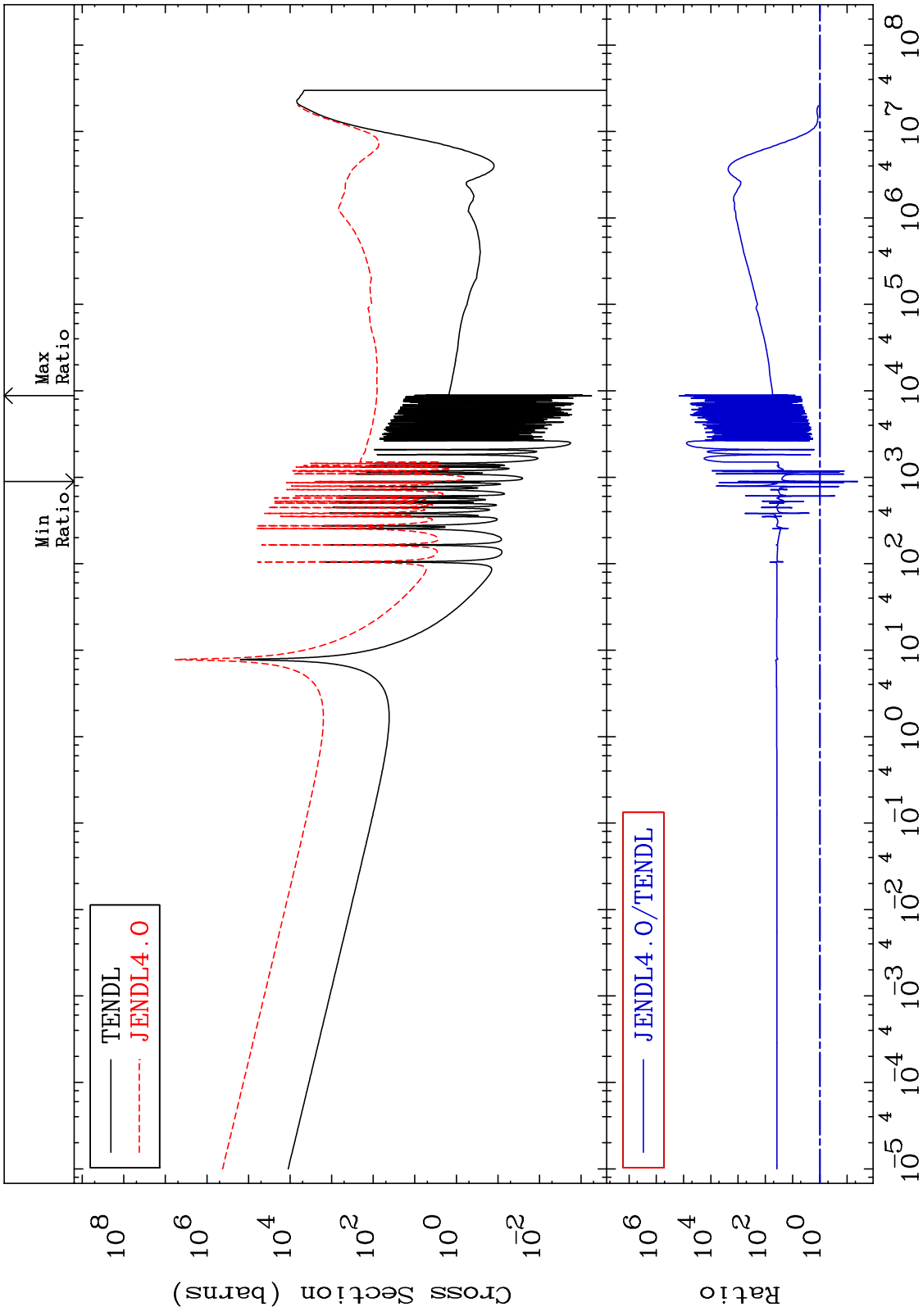


MAT 7237 Dpa inelastic (mt51-91) 72-Hf-178
 Cross Section 1.353 To 365.0 %



60 Incident Energy (eV) 72-Hf-178

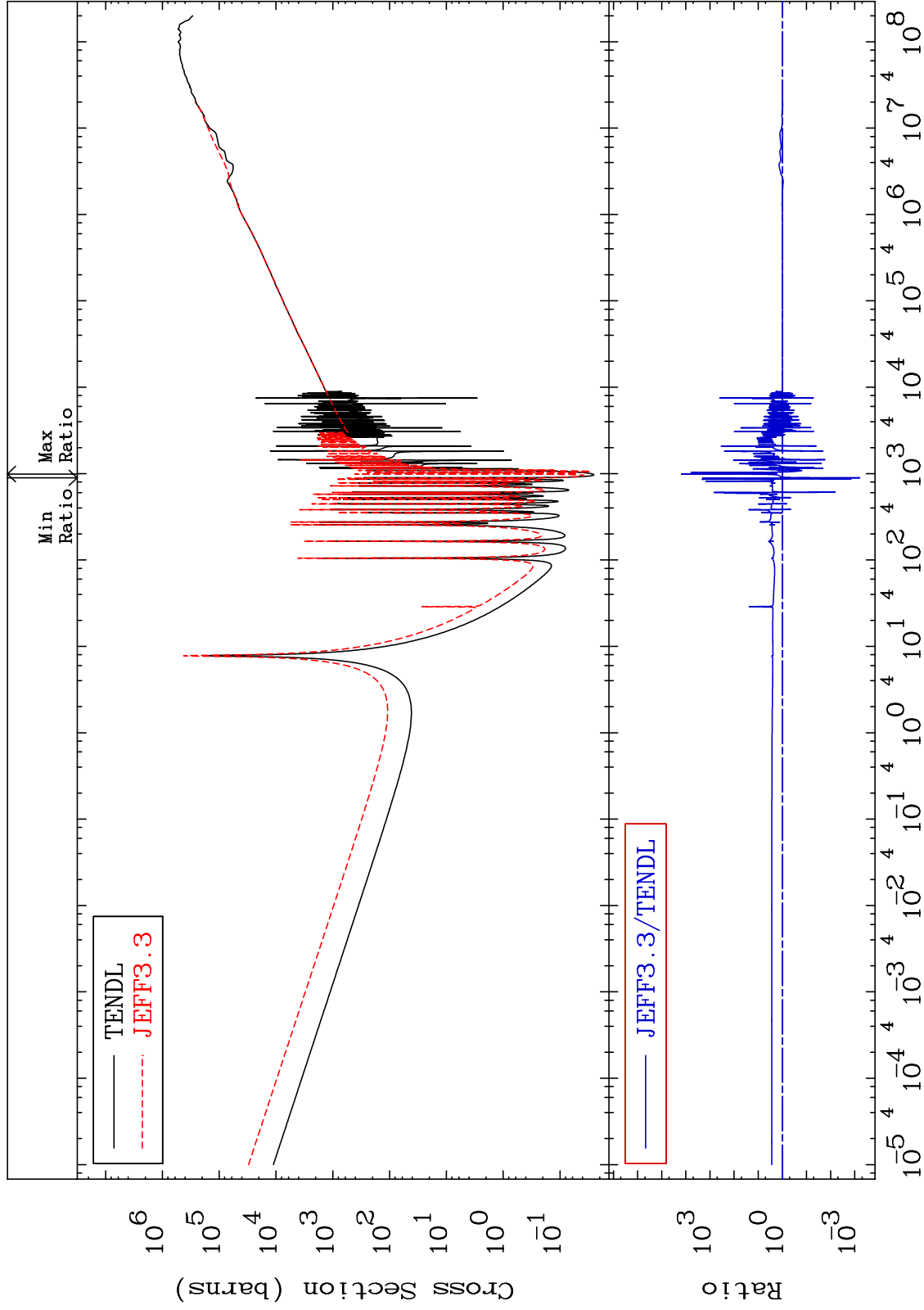
MAT 7237 Dpa disappearance (mt102 -120) 72-Hf-178
 Cross Section -95.95 To 9999. %



MAT 7237

Dpa total (eV-barns)
Cross Section

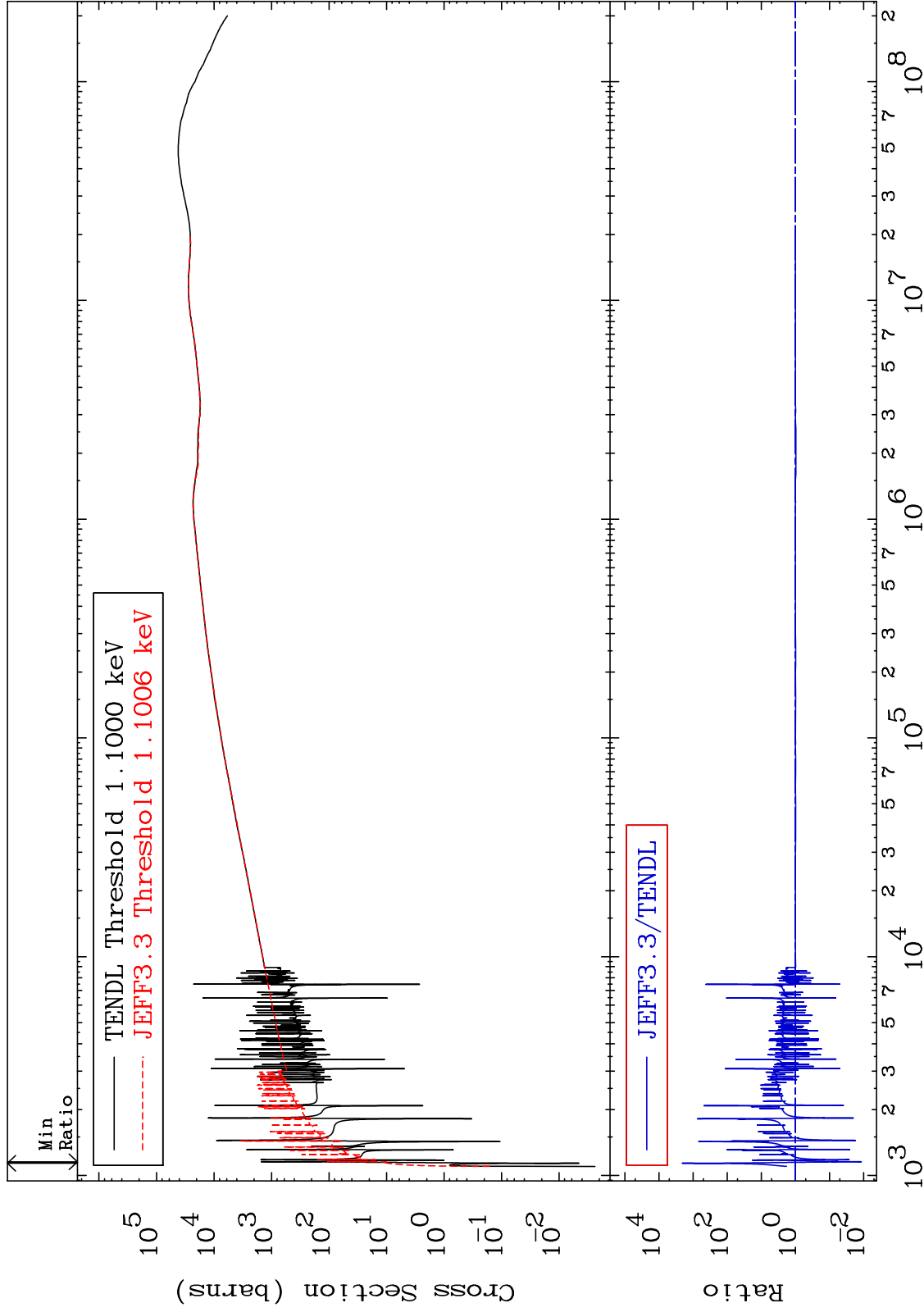
72-Hf-178
-99.94 To 9999. %



MAT 7237

Dpa elastic (mt2)
Cross Section

72-Hf-178
-98.82 To 9999. %



63

Incident Energy (eV)

72-Hf-178

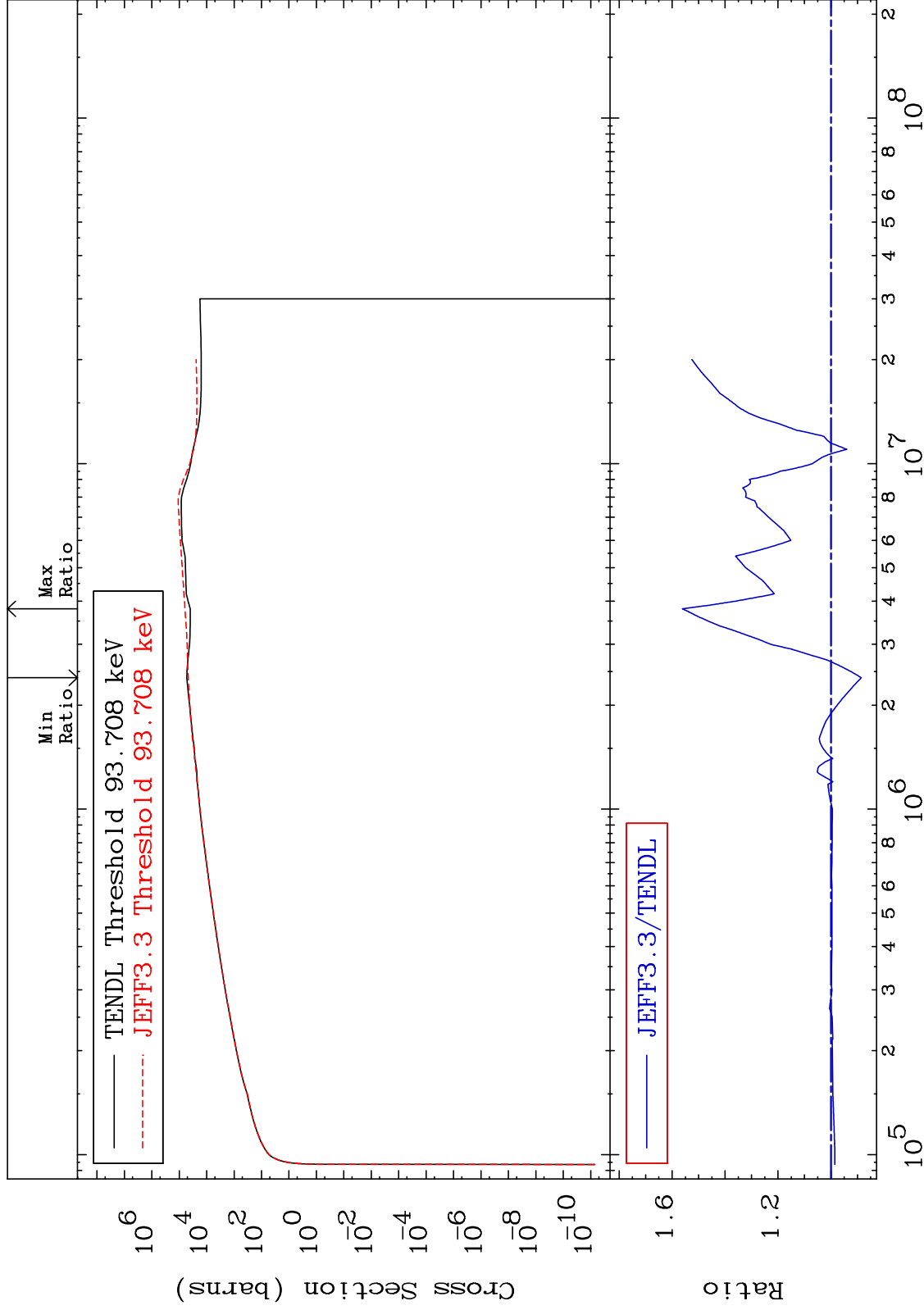
MAT 7237

Dpa inelastic (mt51-91)

72-Hf-178

-11.45 To 56.09 %

Cross Section



64

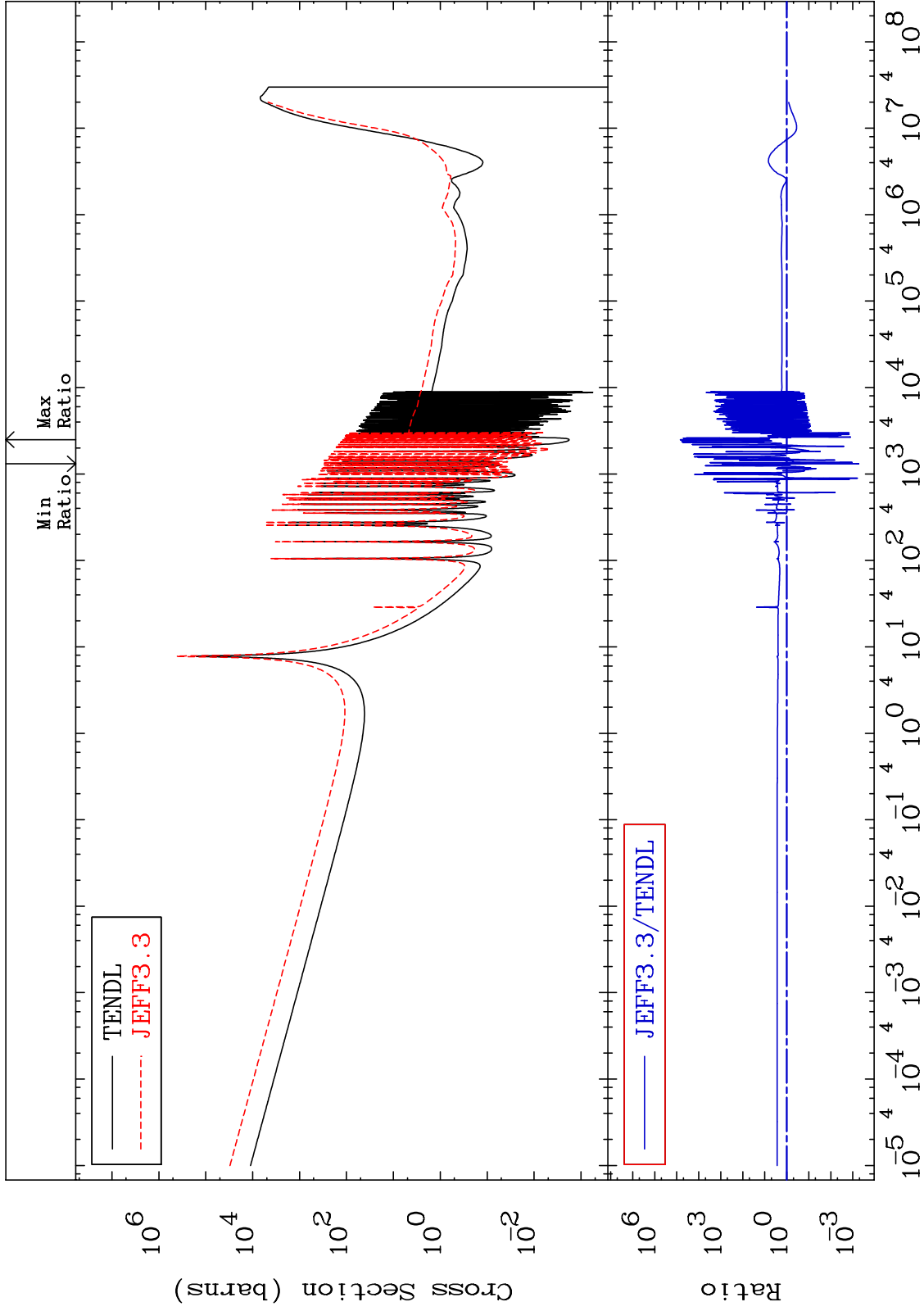
Incident Energy (eV)

72-Hf-178

MAT 7237

Dpa disappearance (mt102 -120)
Cross Section

72-Hf-178
-99.95 To 9999. %

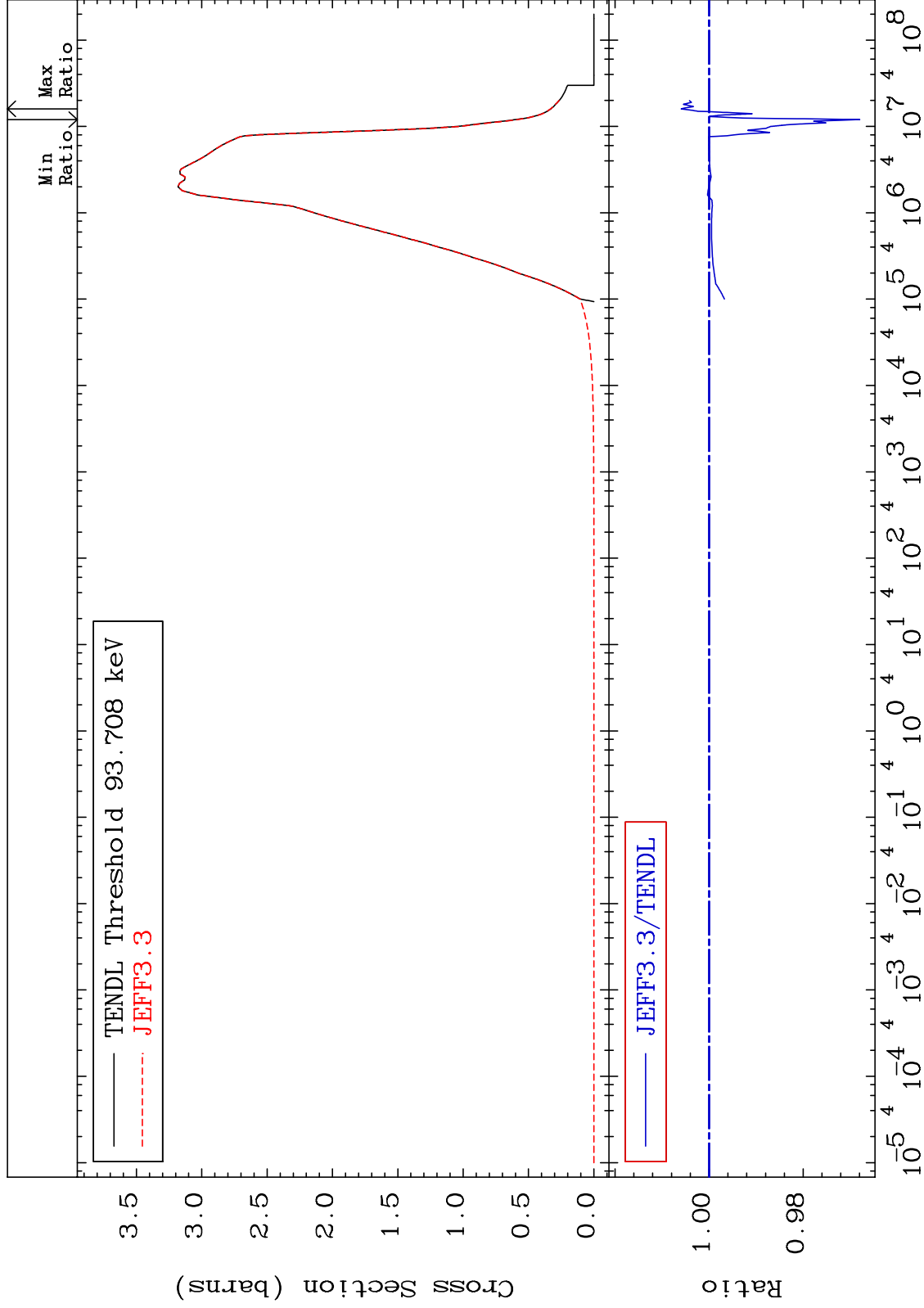


MAT 7237

Inelastic: 72-Hf-178g

72-Hf-178

Radionuclide Production Cross Section -3.204 To 0.593 %

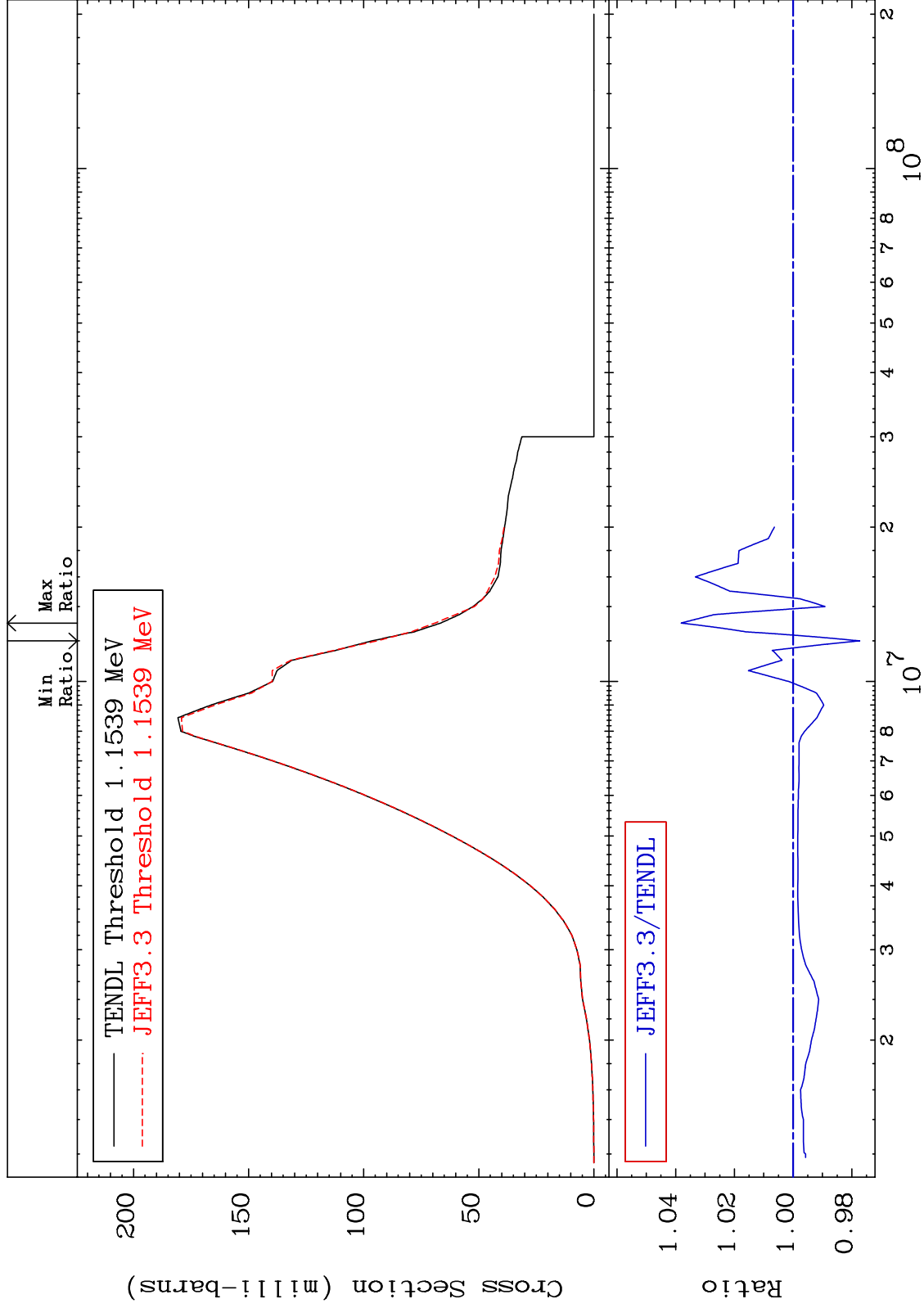


MAT 7237

Inelastic: 72-Hf-178m5

72-Hf-178

Radionuclide Production Cross Section -2.269 To 3.810 %



67

72-Hf-178

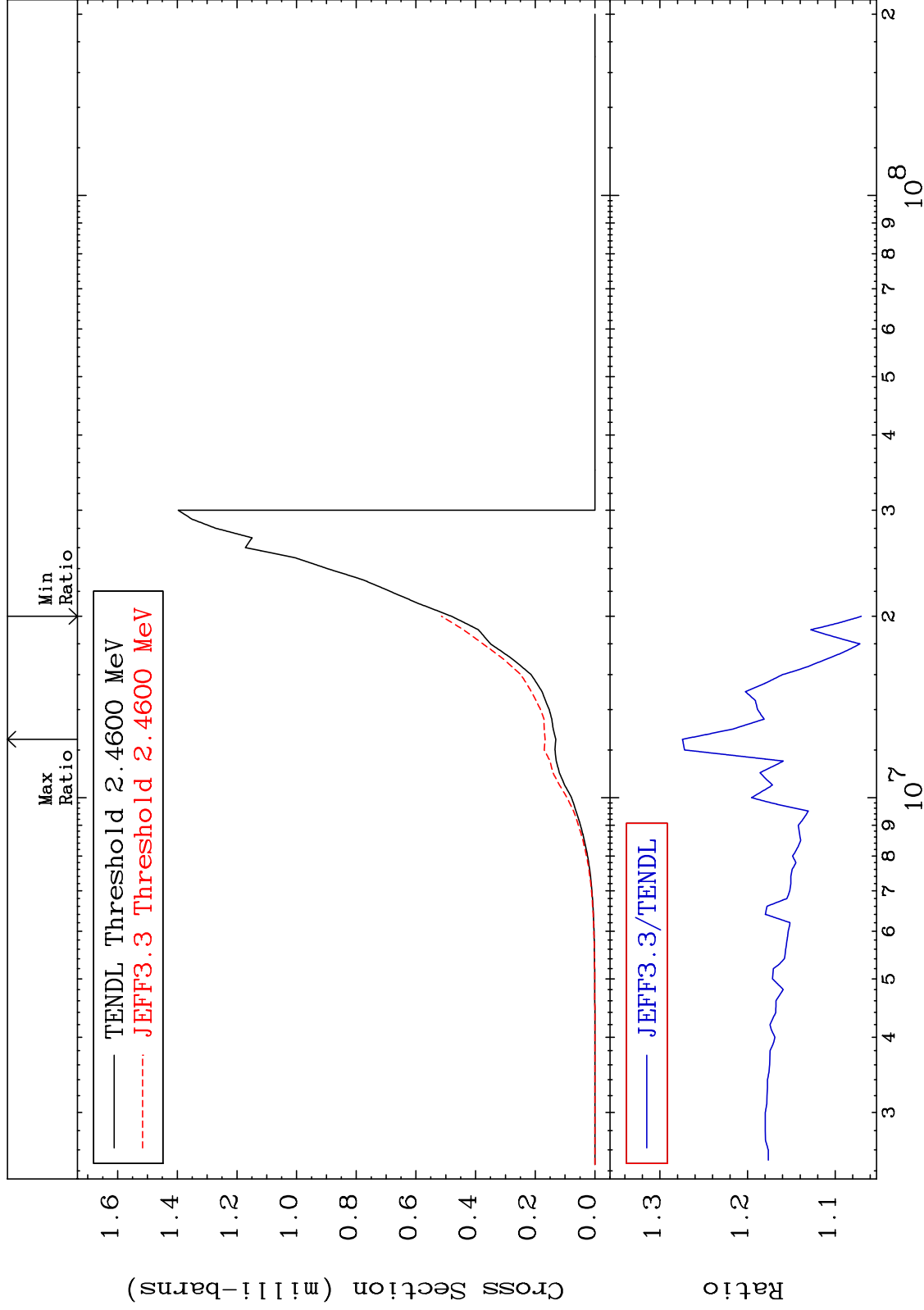
72-Hf-178

MAT 7237

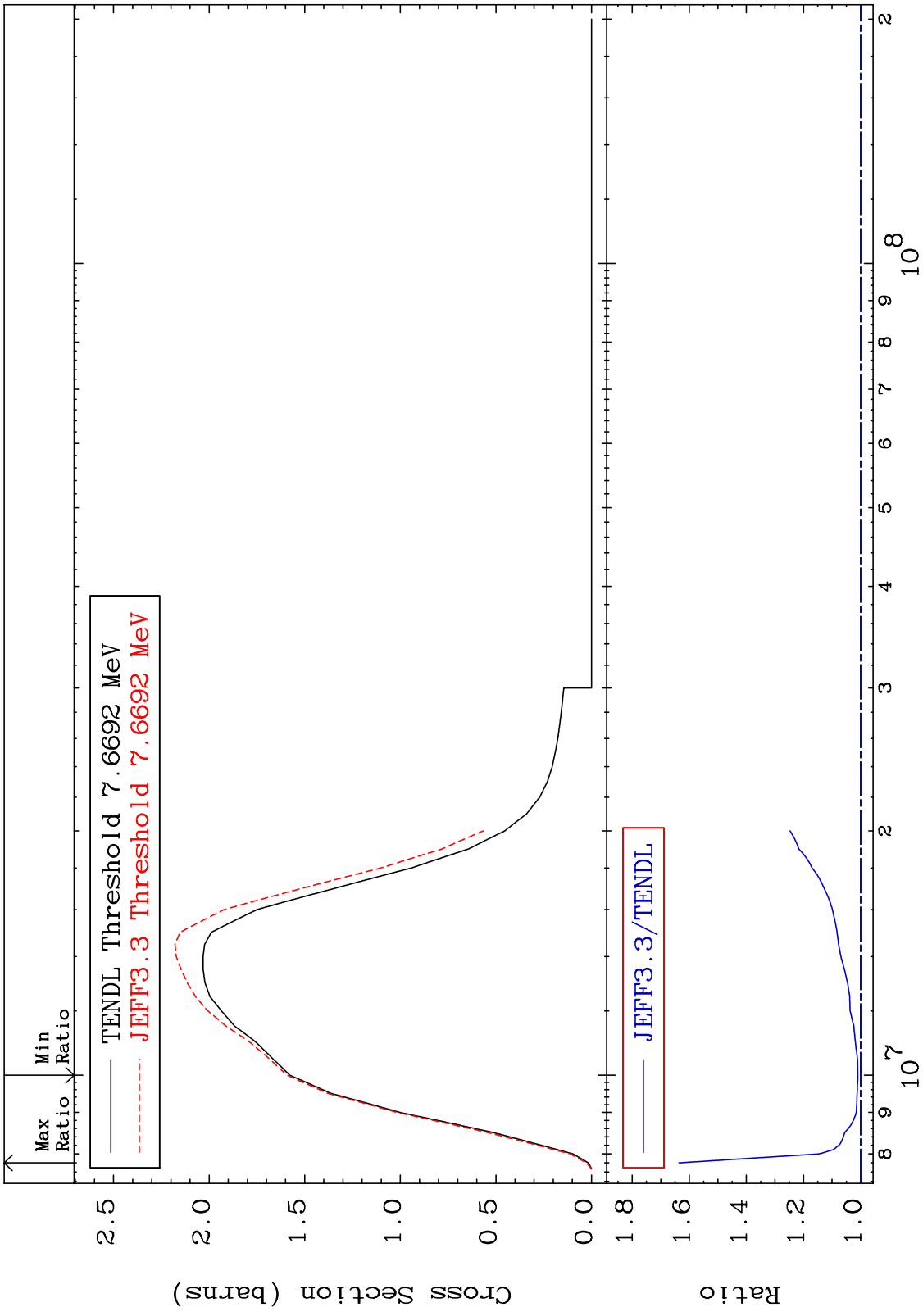
Inelastic: 72-Hf-178m30

72-Hf-178

Radionuclide Production Cross Section 7.019 To 27.43 %



MAT 7237 (n,2n):72-Hf-177g 72-Hf-178
 Radionuclide Production Cross Section 0.969 To 63.59 %

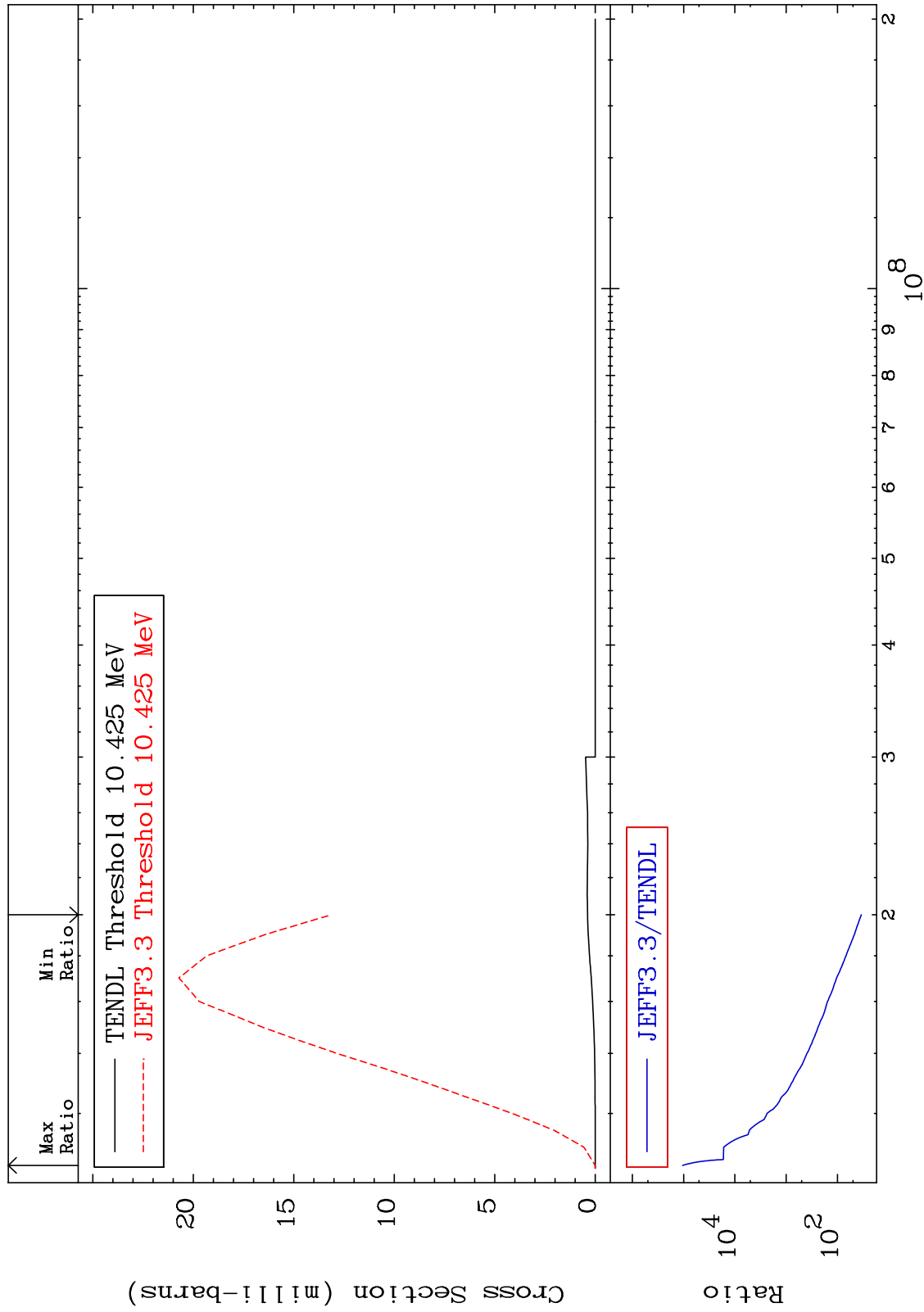


MAT 7237

(n,2n):72-Hf-177m10

72-Hf-178

Radionuclide Production Cross Section 3329. To 9999. %



70

Incident Energy (eV)

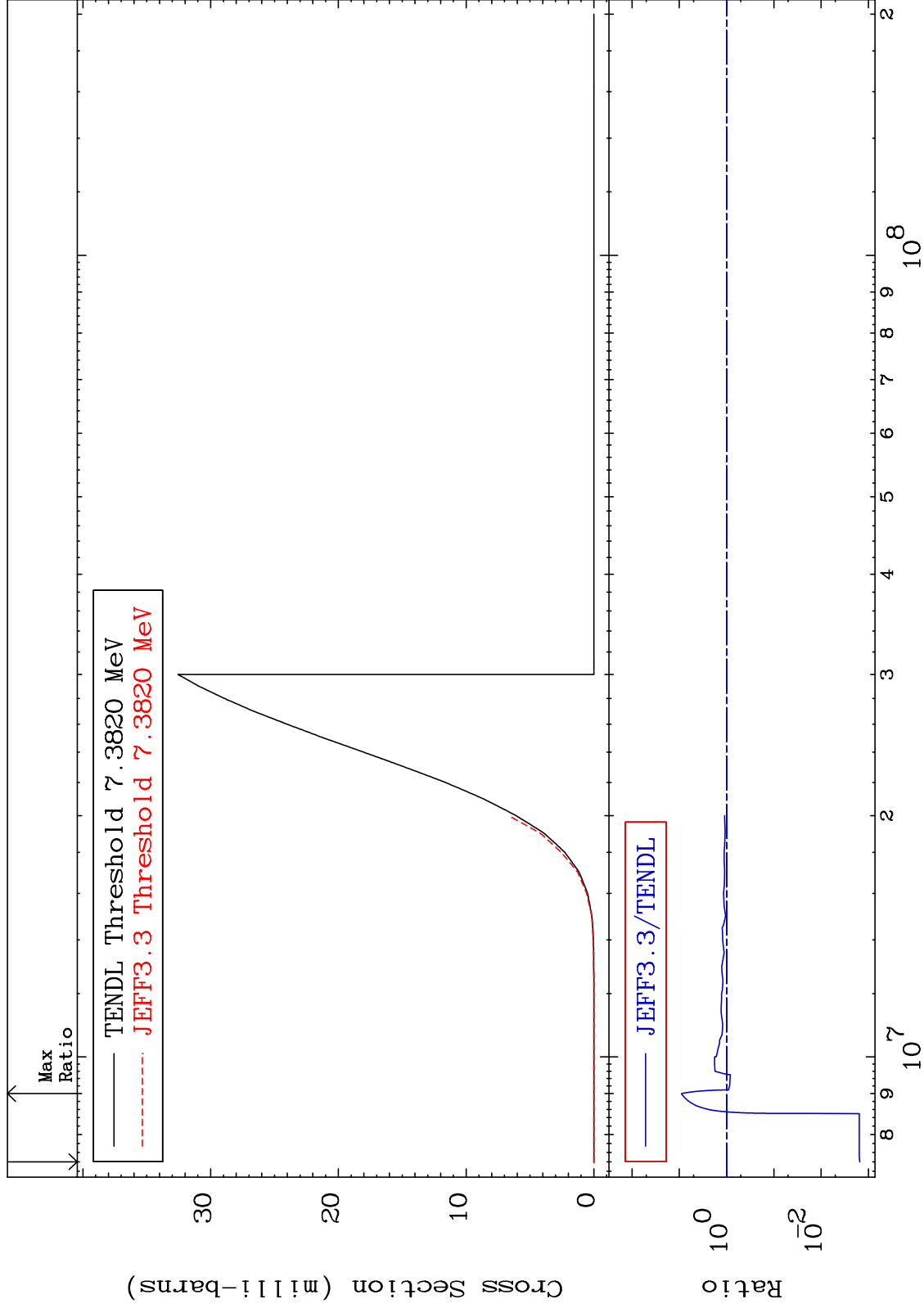
72-Hf-178

MAT 7237

(n, n') p: 71-Lu-177g

72-Hf-178

Radionuclide Production Cross Section -99.85 To 809.9 %

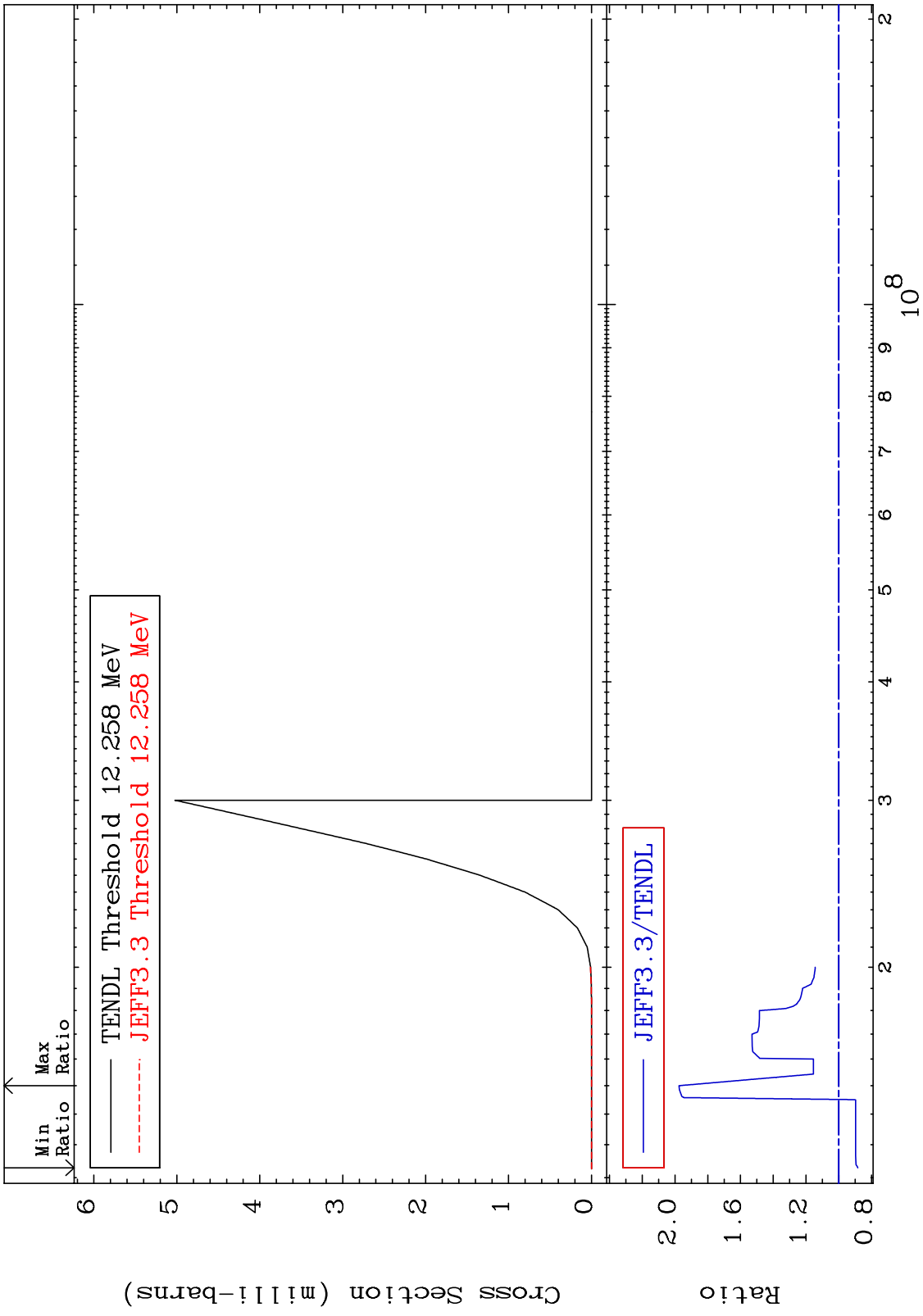


71

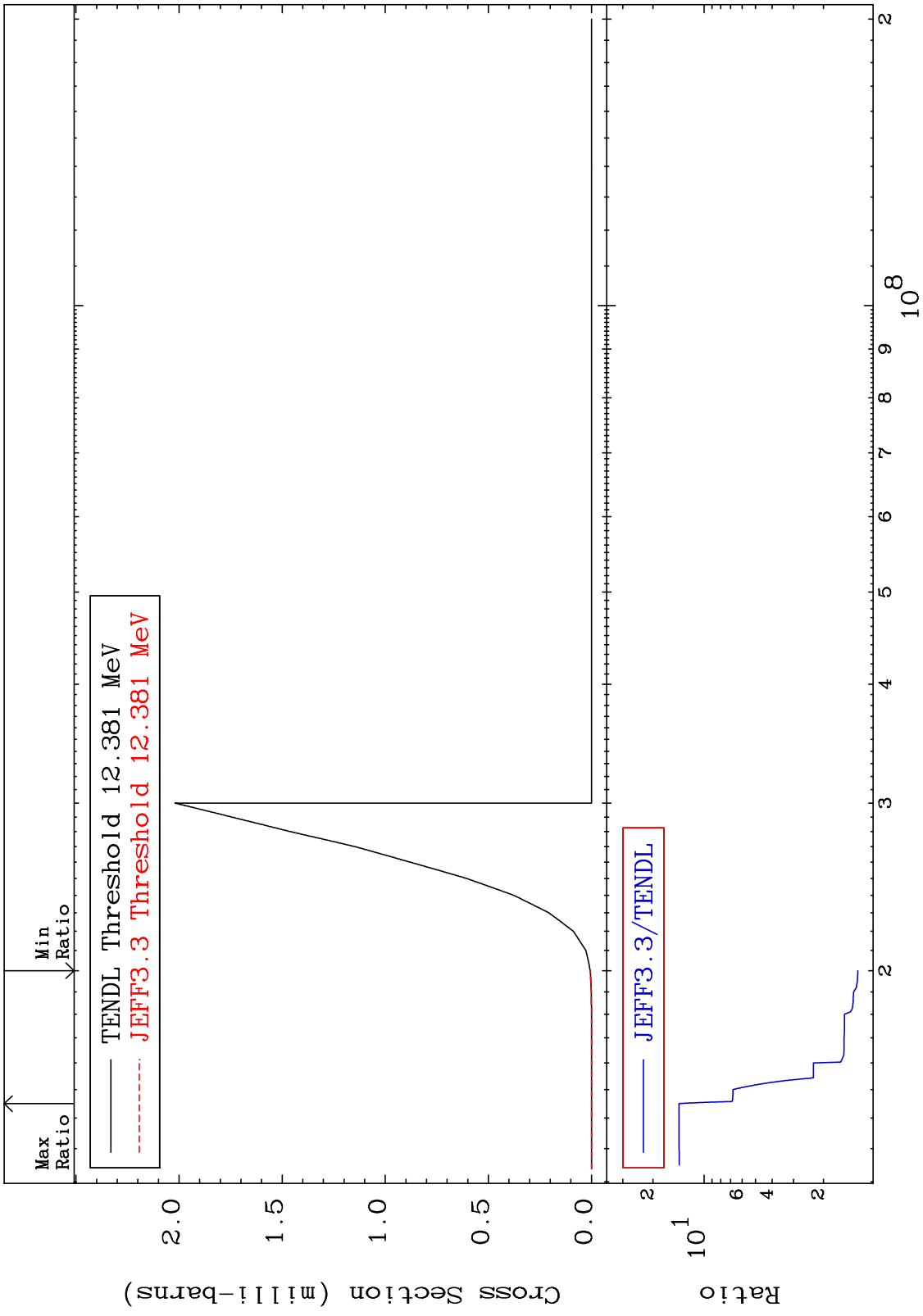
72-Hf-178

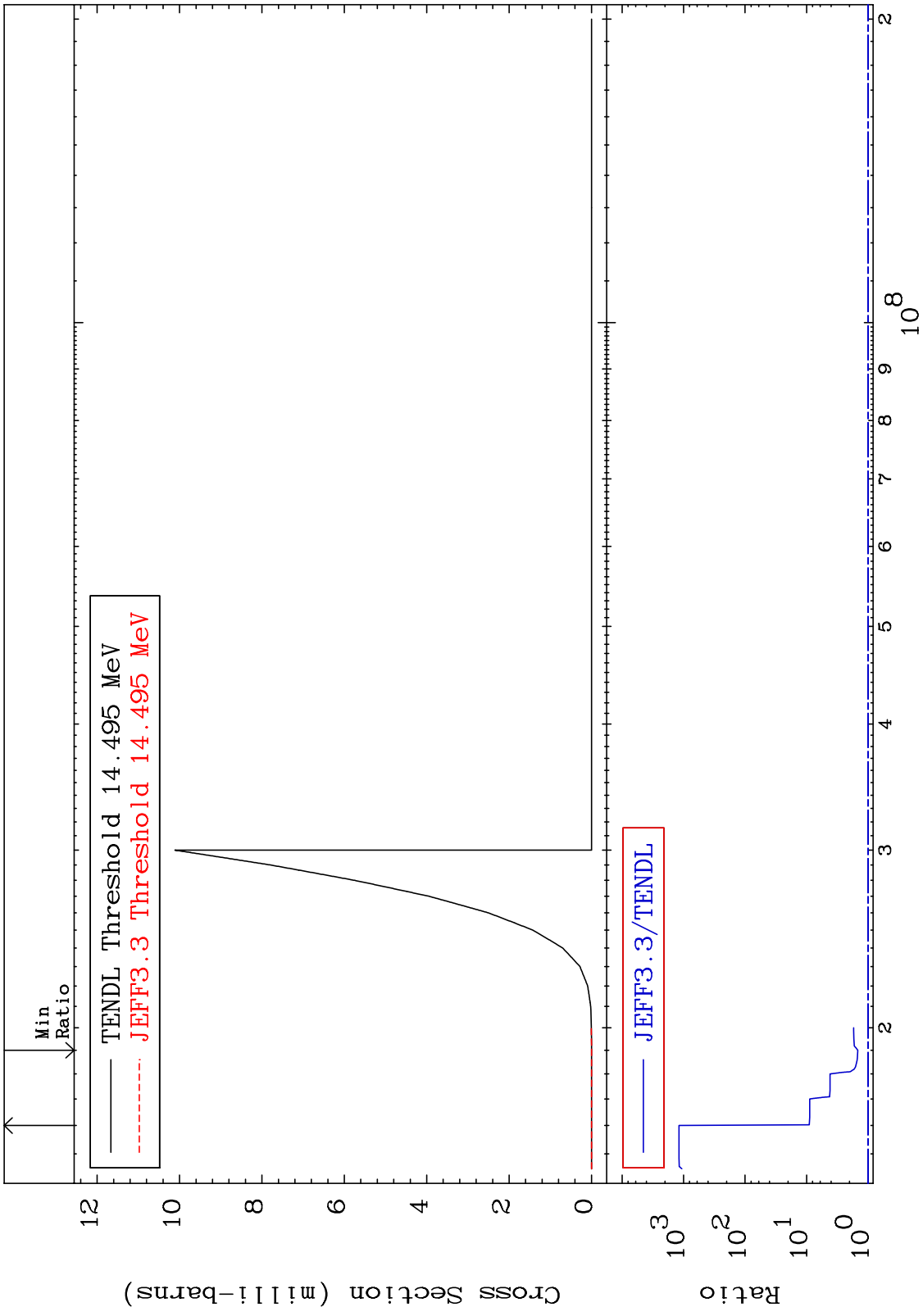
72-Hf-178

MAT 7237 (n, n') d:71-Lu-176g 72-Hf-178
 Radionuclide Production Cross Section -11.63 To 97.53 %



MAT 7237 (n,n') d:71-Lu-176m1 72-Hf-178
 Radionuclide Production Cross Section 25.75 To 1305. %



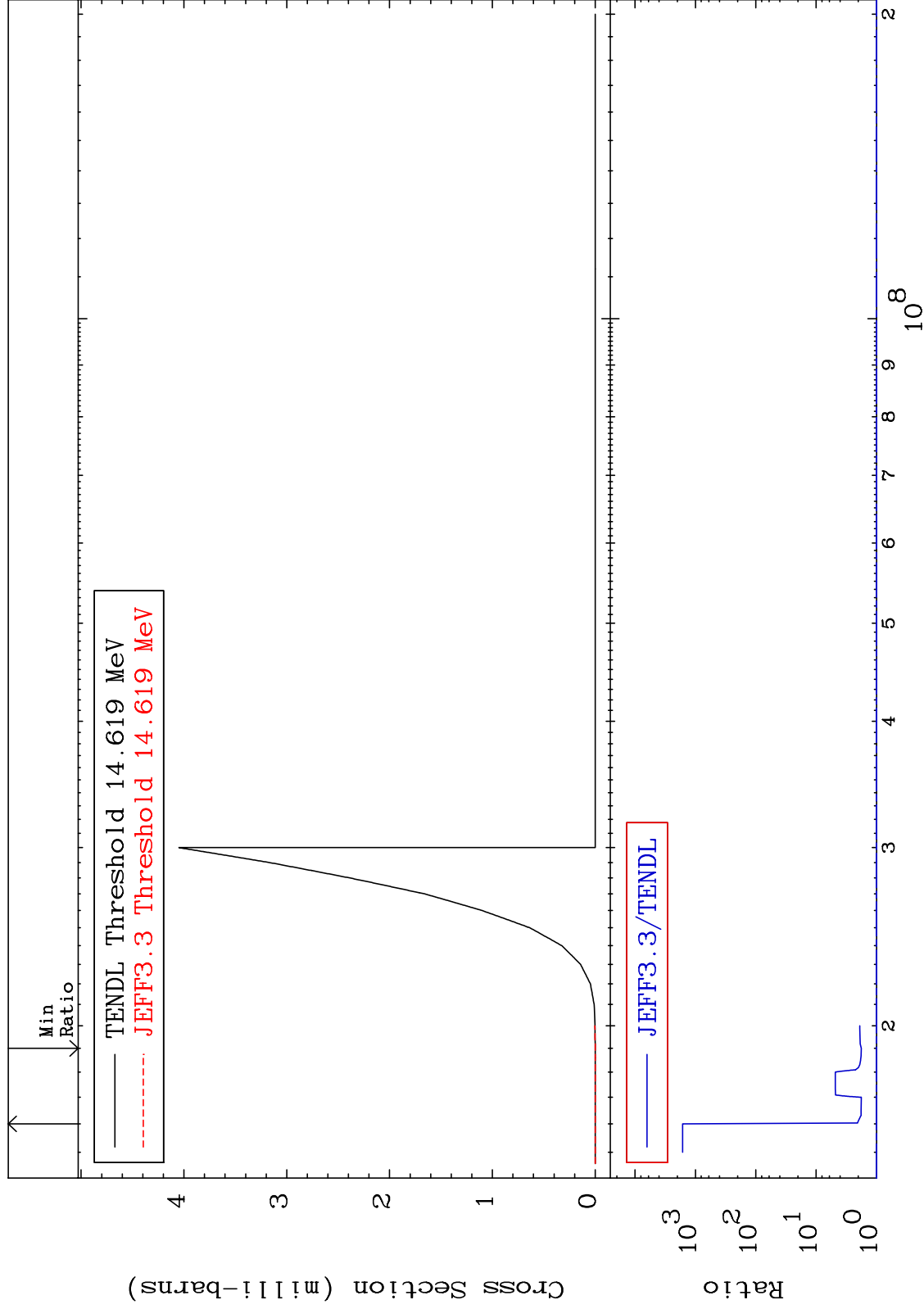


MAT 7237

(n,2n) p:71-Lu-176m1

72-Hf-178

Radionuclide Production Cross Section 77.84 To 9999. %

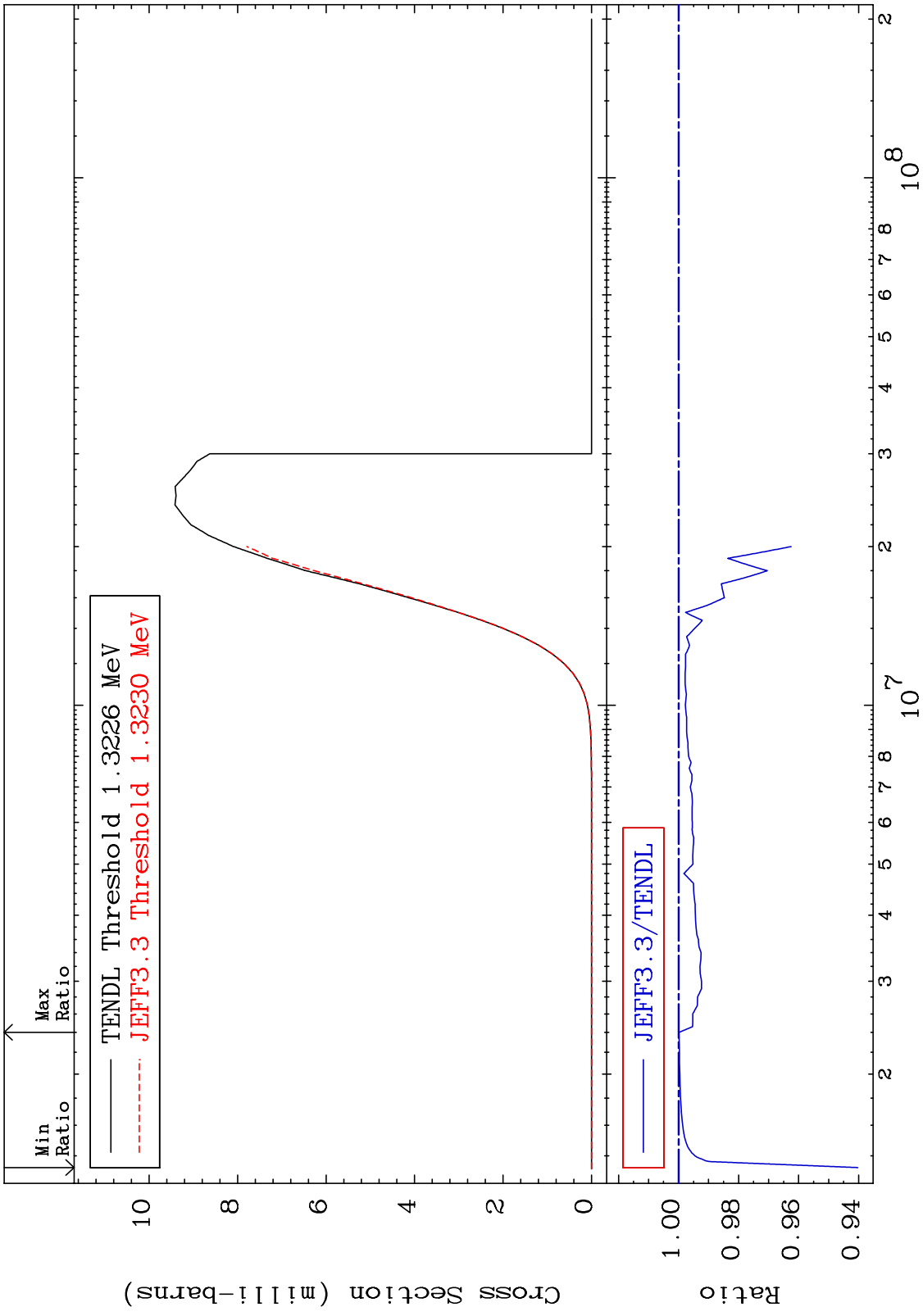


75

Incident Energy (eV)

72-Hf-178

MAT 7237 (n,p):71-Lu-178g 72-Hf-178
 Radionuclide Production Cross Section -5.973 To -0.016%



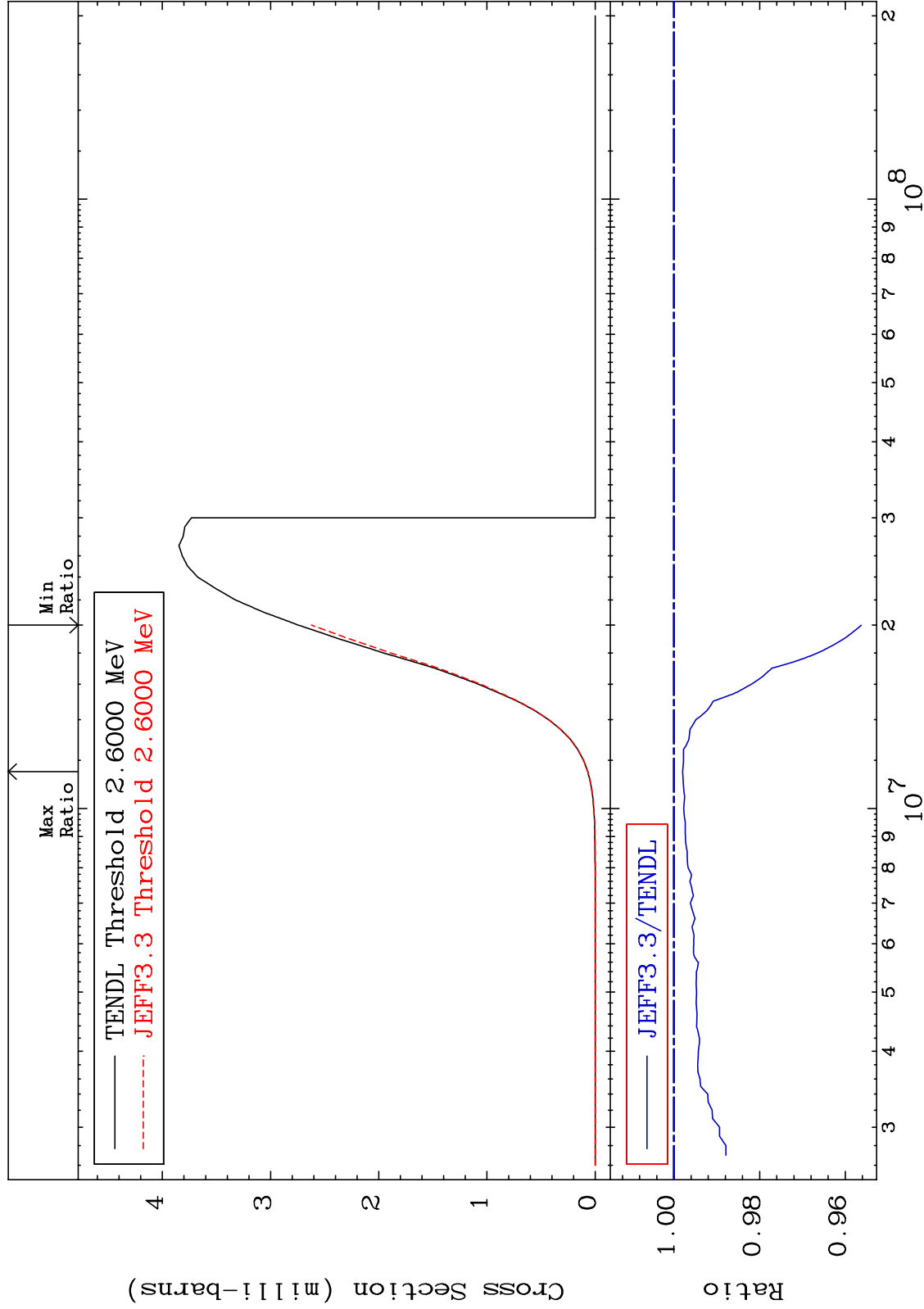
MAT 7237

(n,p):71-Lu-178m3

72-Hf-178

Radionuclide Production Cross Section

-4.374 To -0.204%



77

Incident Energy (eV)

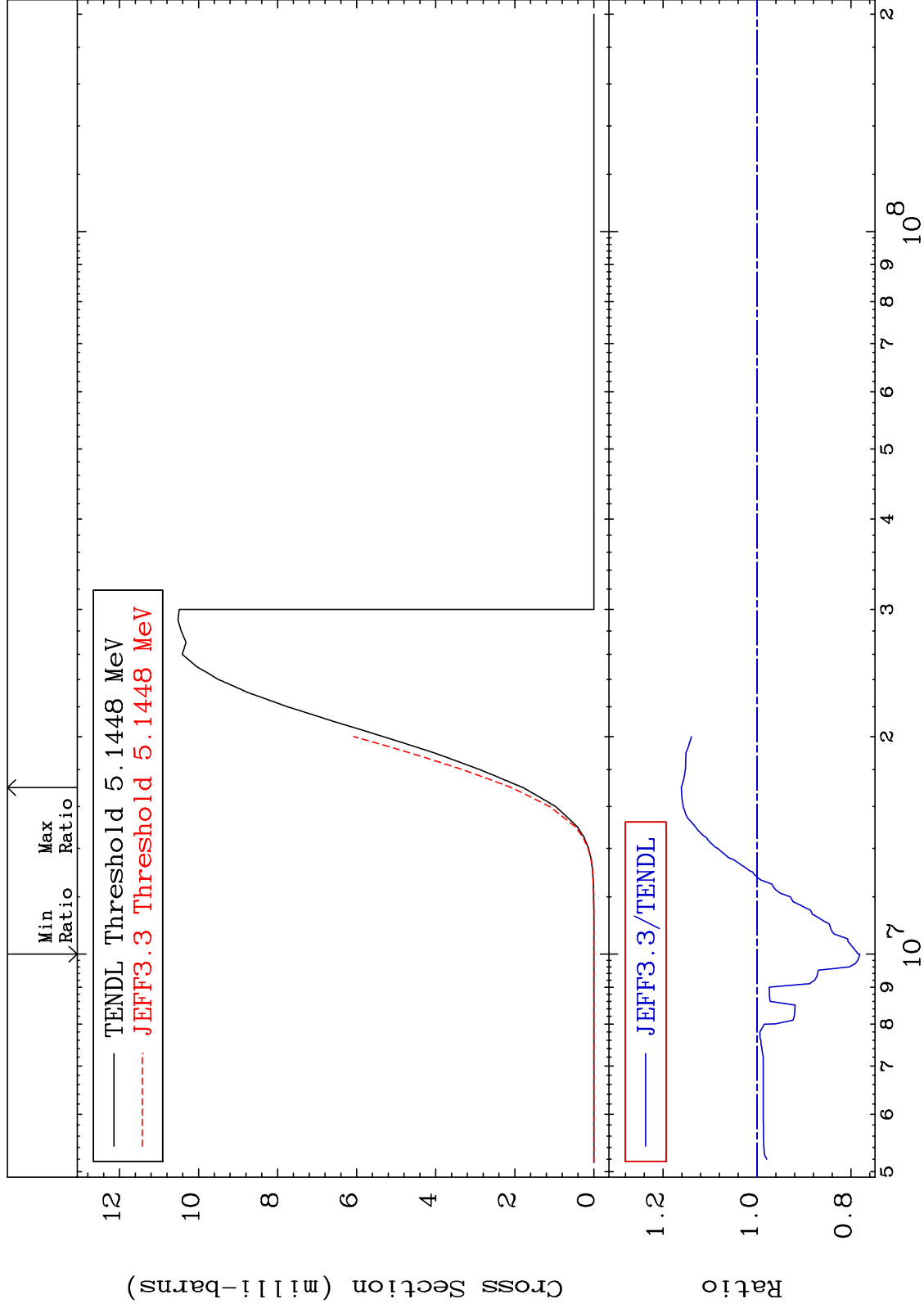
72-Hf-178

MAT 7237

(n,d):71-Lu-177g

72-Hf-178

Radionuclide Production Cross Section -21.87 To 16.13 %



78

Incident Energy (eV)

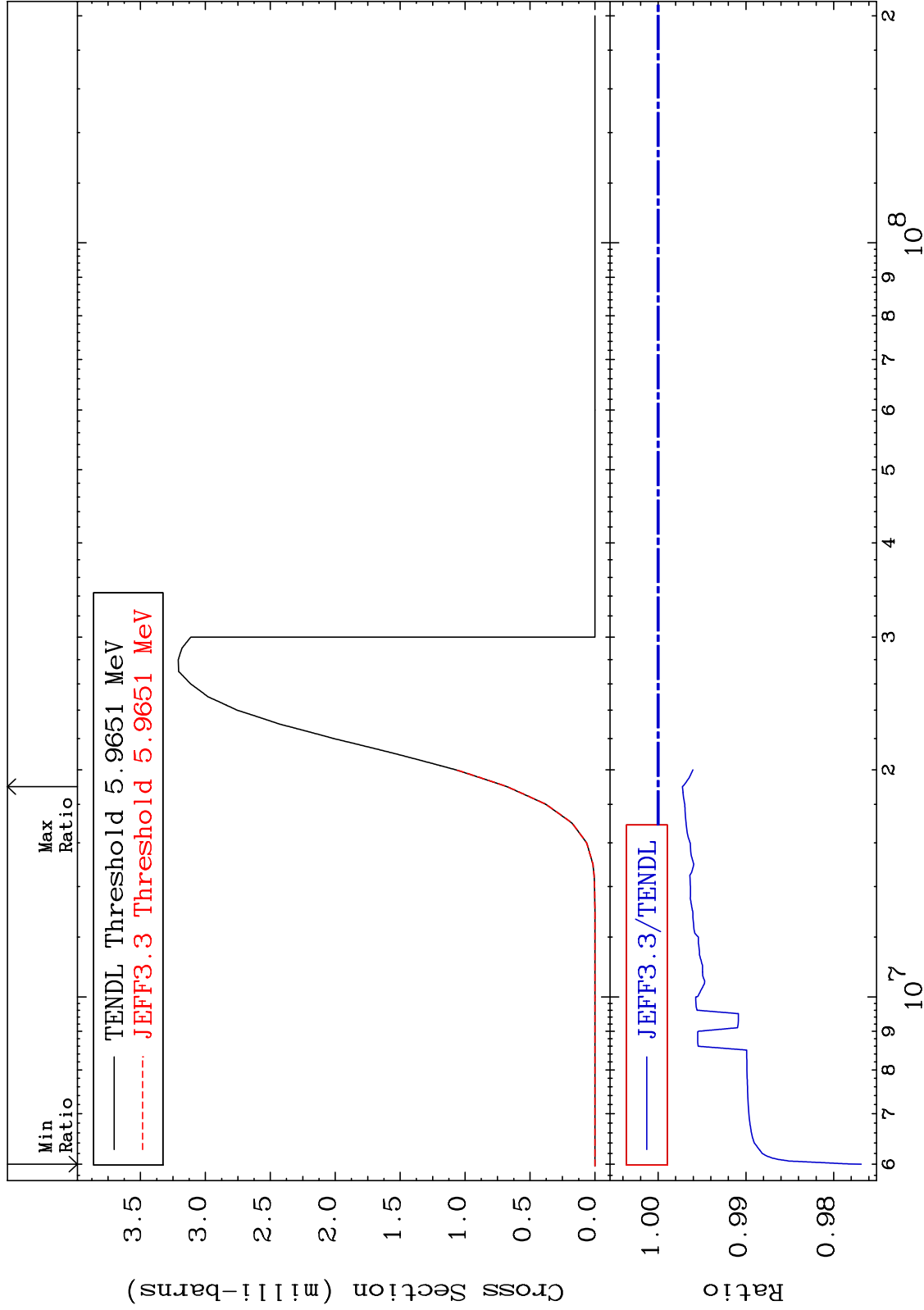
72-Hf-178

MAT 7237

(n,t):71-Lu-176g

72-Hf-178

Radionuclide Production Cross Section -2.314 To -0.277%



79

Incident Energy (eV)

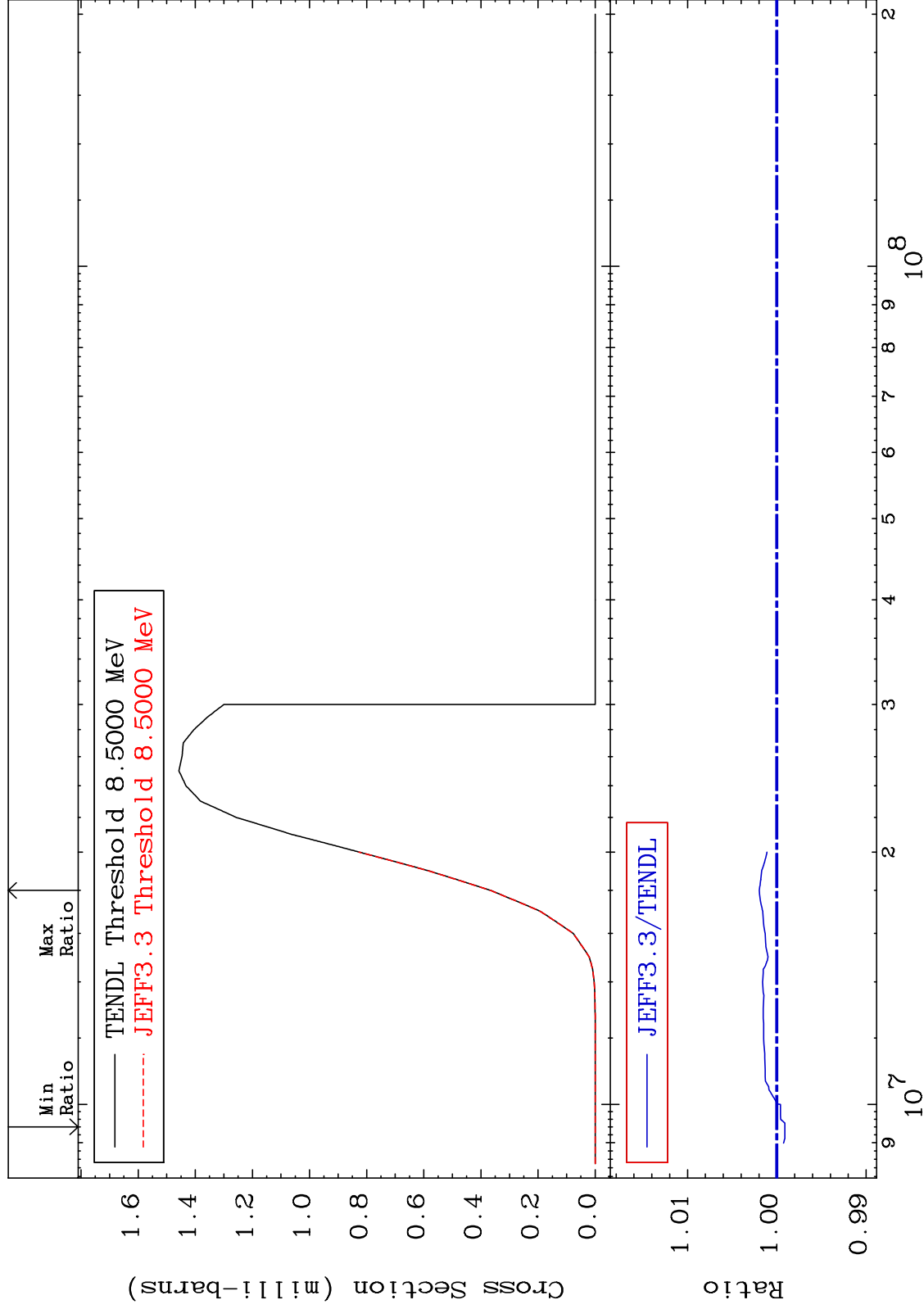
72-Hf-178

MAT 7237

(n, t): 71-Lu-176m1

72-Hf-178

Radionuclide Production Cross Section -0.090 To 0.198 %

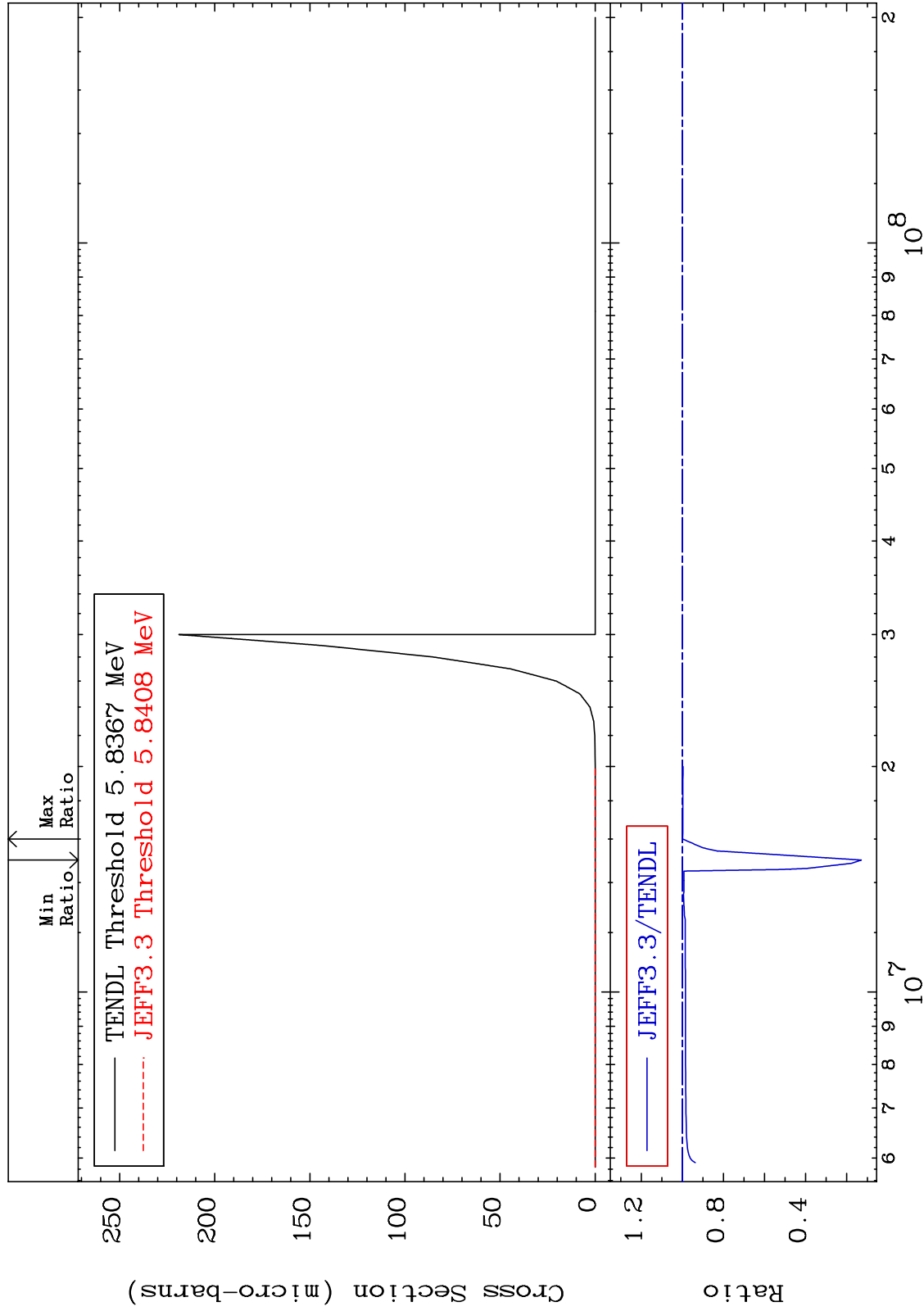


MAT 7237

(n, He-3) : 70-Yb-176g

72-Hf-178

Radionuclide Production Cross Section -87.09 To -0.128%



MAT 7237

(n,He-3):70-Yb-176m5

72-Hf-178

Radionuclide Production Cross Section -92.10 To 0.857 %

