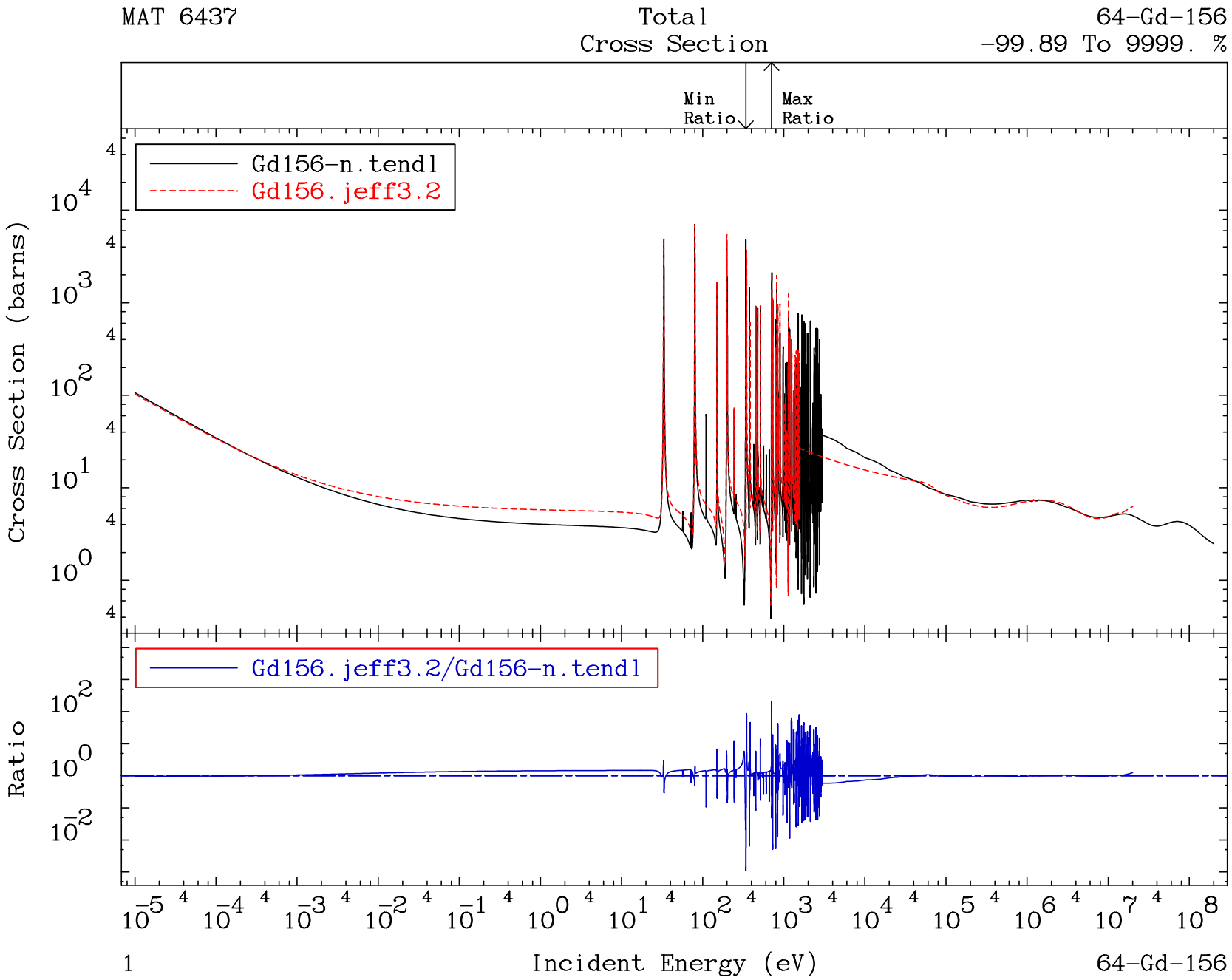
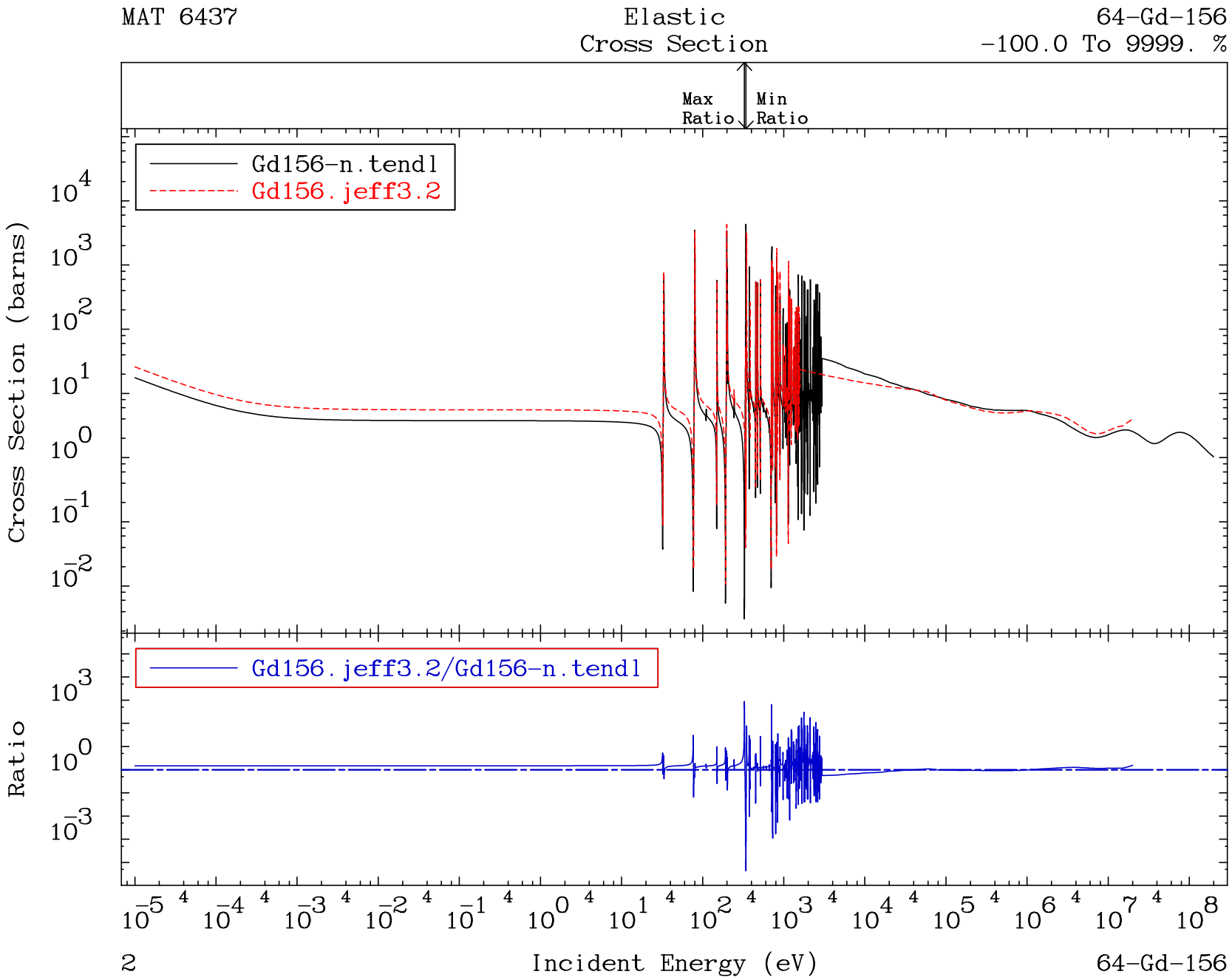
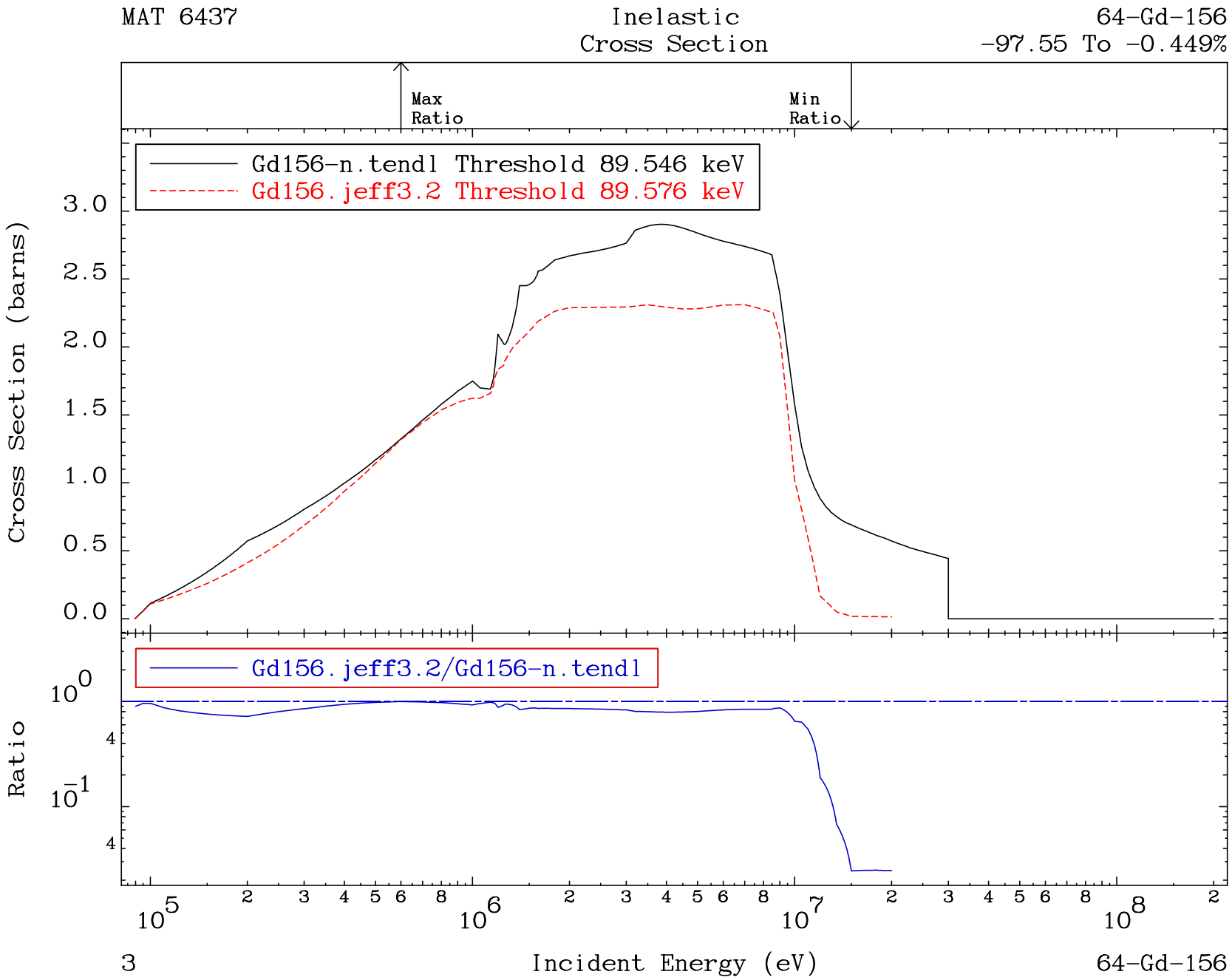
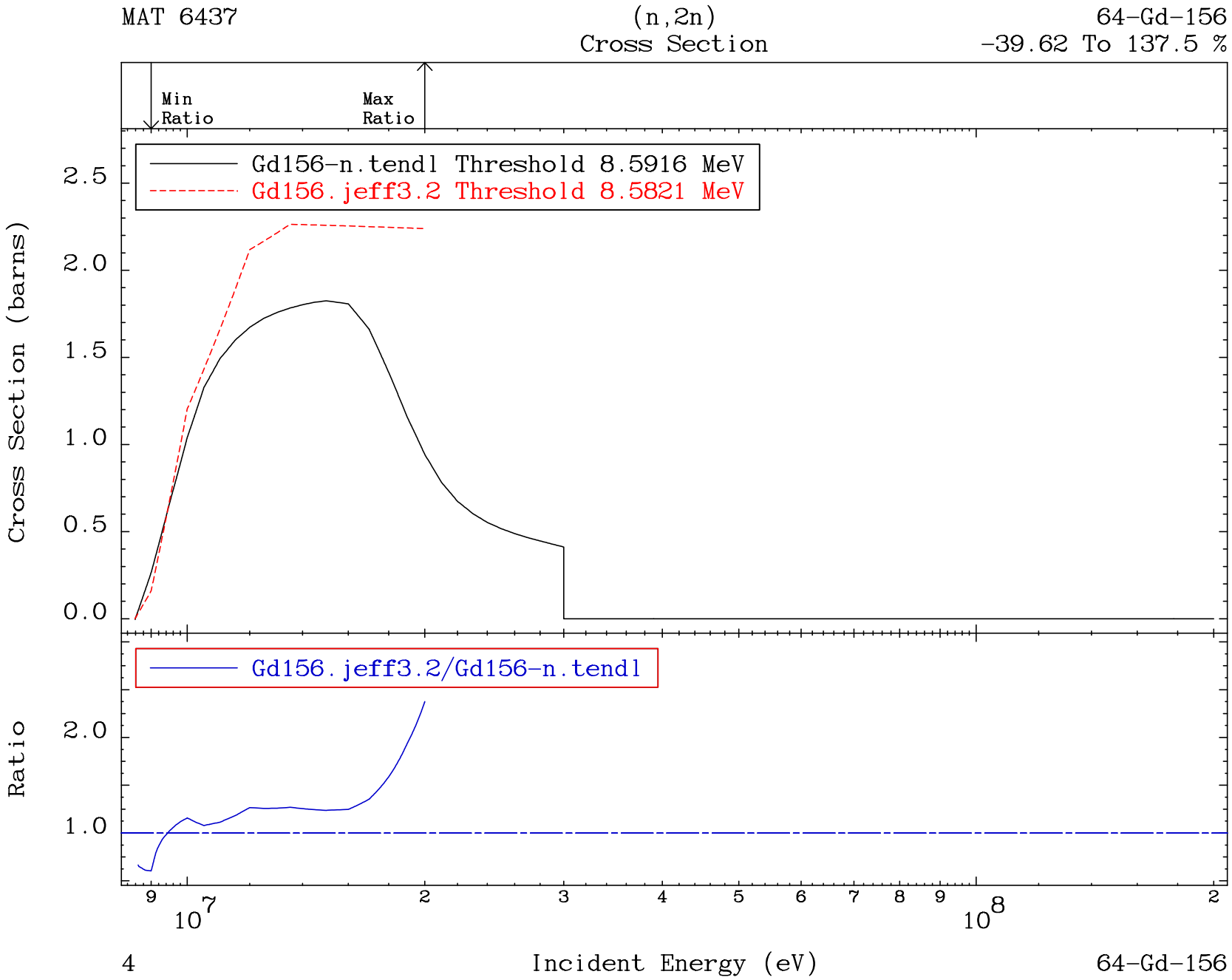
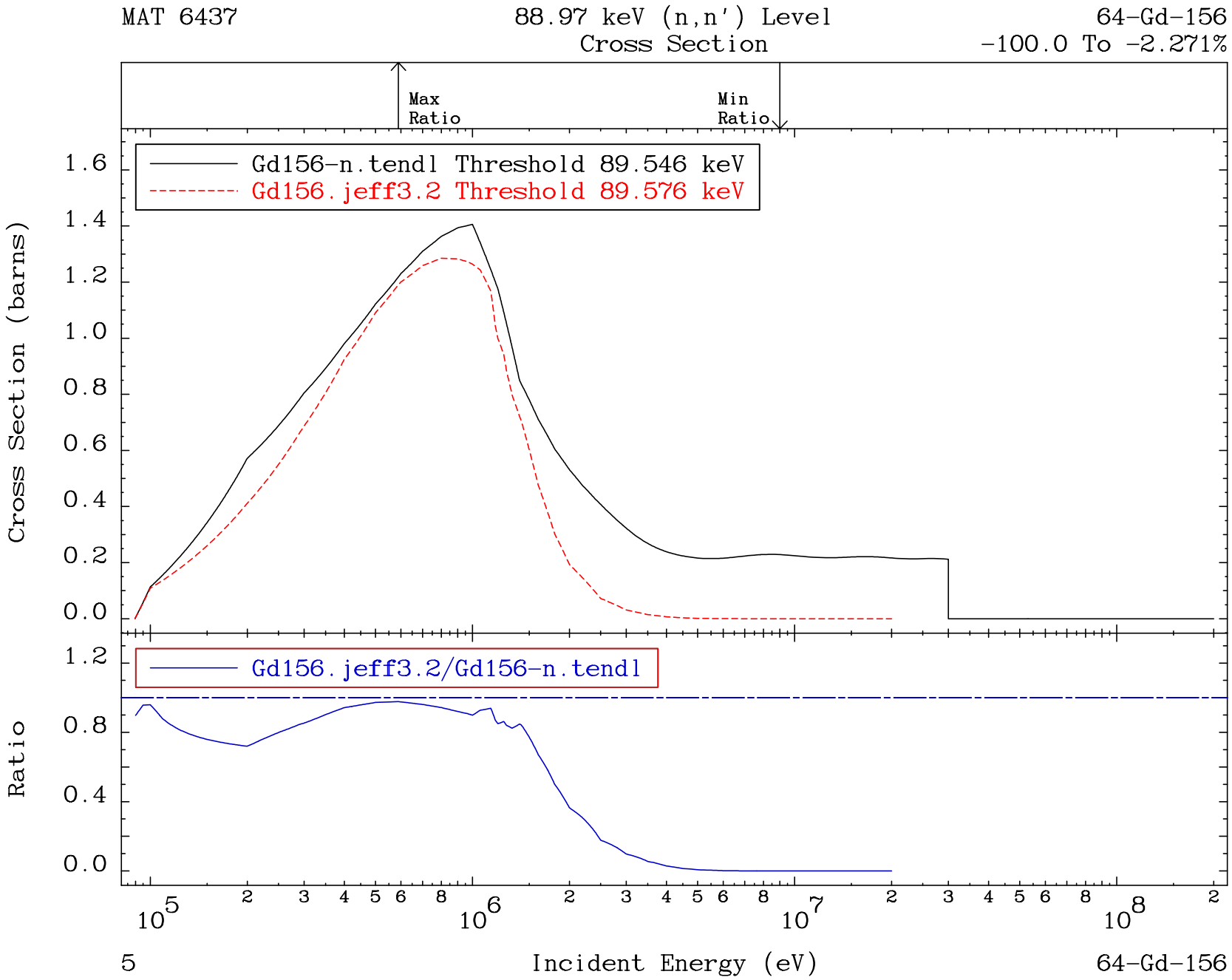
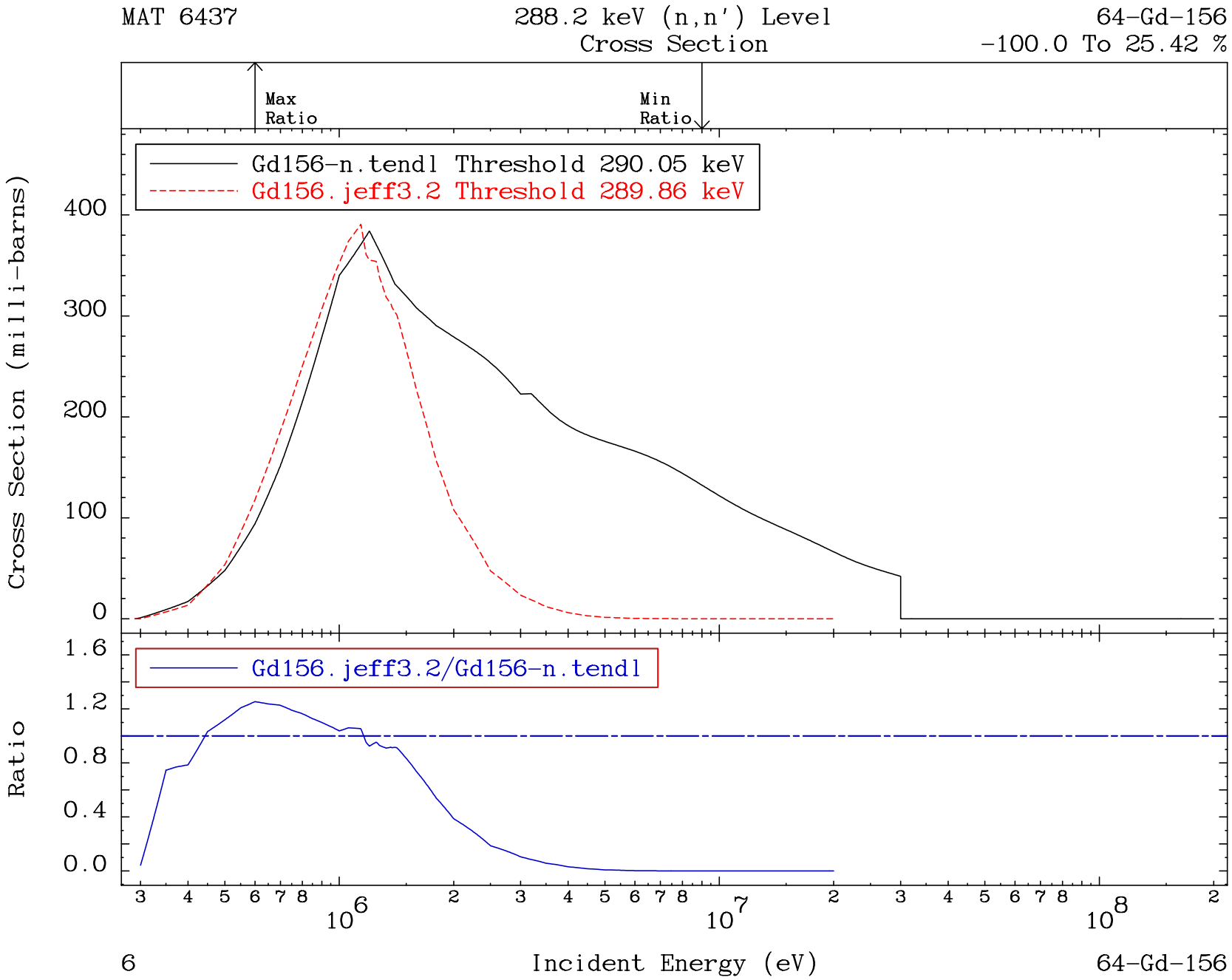

MAT 6437
Total
Cross Section
64-Gd-156
-99.89 To 9999. %
Min
Ratio
Max
Ratio
Gd156-n.tendl
Gd156.jeff3.2
Cross Section (barns)
Gd156.jeff3.2/Gd156-n.tendl
Ratio
Incident Energy (eV)
1
64-Gd-156

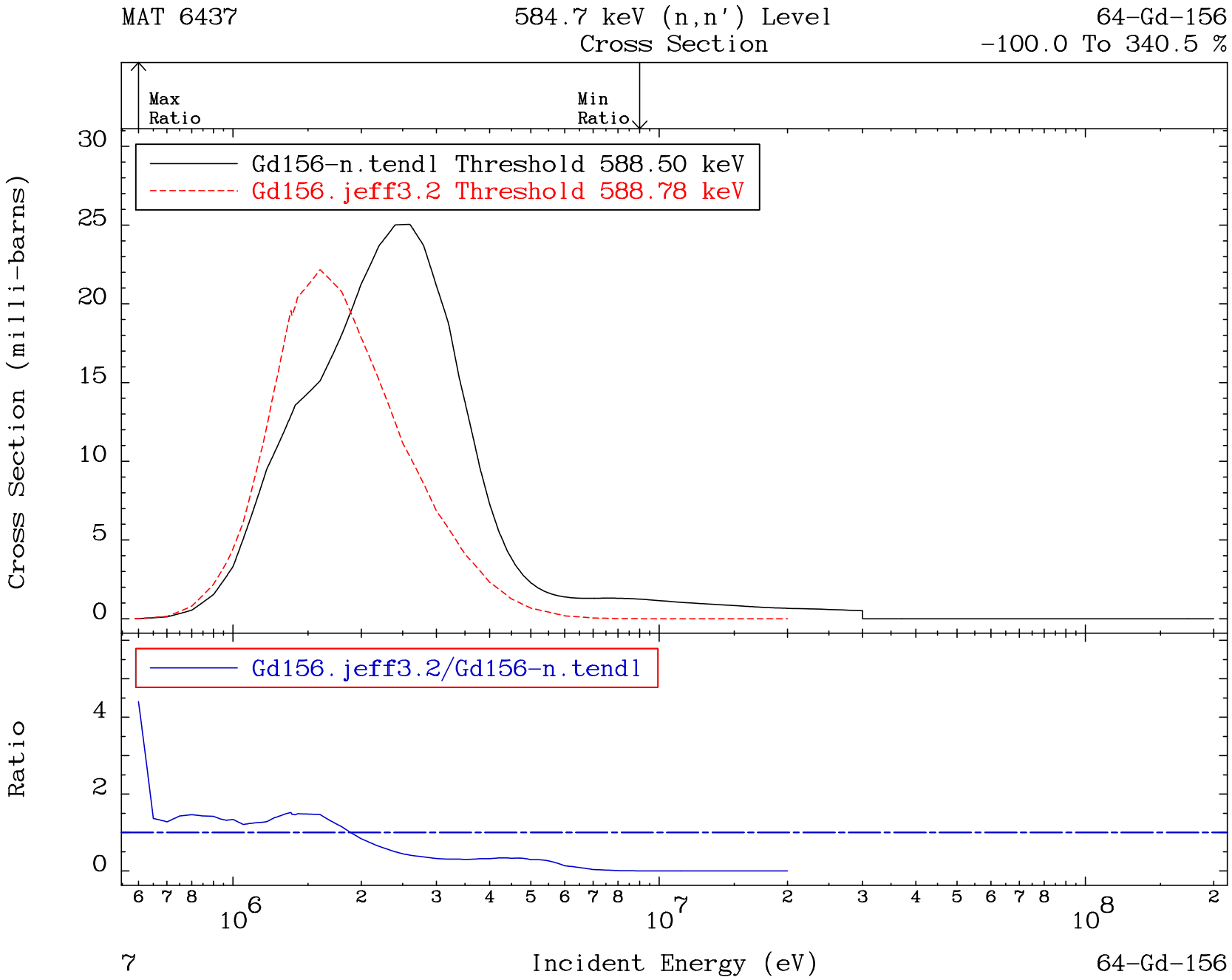

MAT 6437
Elastic
Cross Section
64-Gd-156
-100.0 To 9999. %
Max Ratio
Min Ratio
Gd156-n.tendl
Gd156.jeff3.2
Cross Section (barns)
Gd156.jeff3.2/Gd156-n.tendl
Ratio
Incident Energy (eV)
2
64-Gd-156

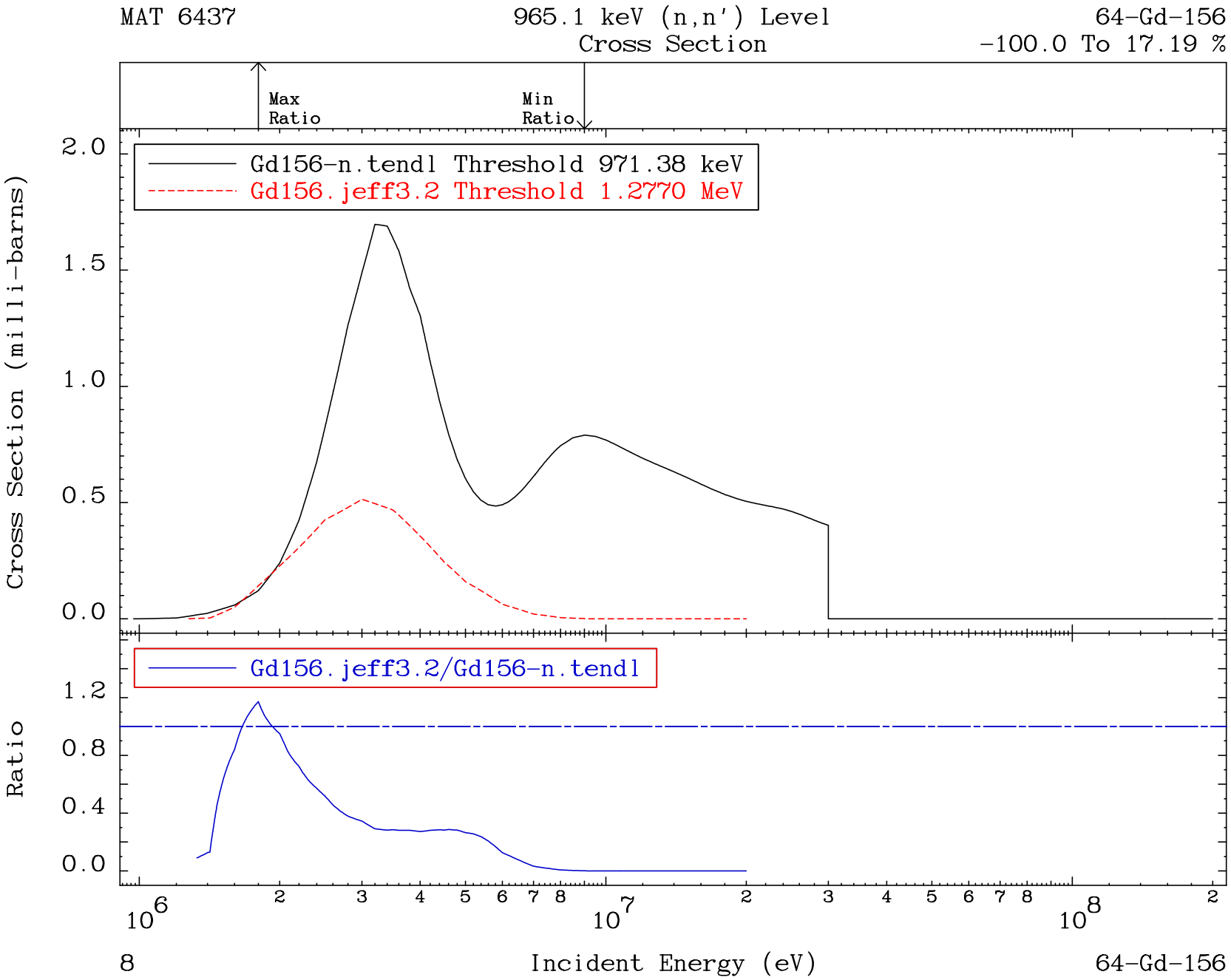

MAT 6437
Inelastic
Cross Section
64-Gd-156
-97.55 To -0.449%
Max
Ratio
Min
Ratio
Gd156-n.tendl Threshold 89.546 keV
Gd156.jeff3.2 Threshold 89.576 keV
Cross Section (barns)
3.0
2.5
2.0
1.5
1.0
0.5
0.0
Gd156.jeff3.2/Gd156-n.tendl
Ratio
10^0
10^-1
10^5
10^6
10^7
10^8
Incident Energy (eV)
3
64-Gd-156

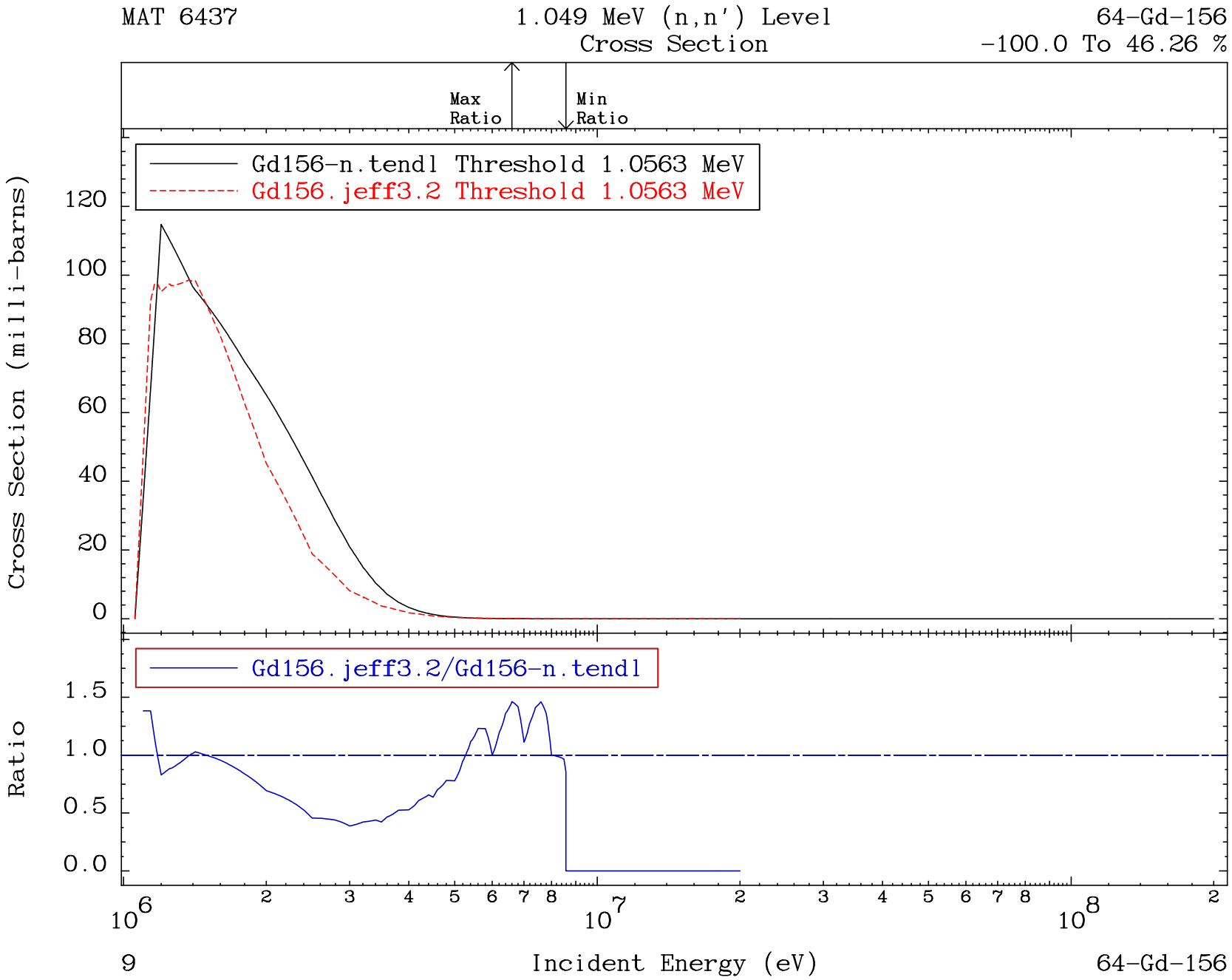

MAT 6437
(n,2n)
Cross Section
64-Gd-156
-39.62 To 137.5 %
Min Ratio
Max Ratio
Gd156-n.tendl Threshold 8.5916 MeV
Gd156.jeff3.2 Threshold 8.5821 MeV
Cross Section (barns)
2.5
2.0
1.5
1.0
0.5
0.0
Gd156.jeff3.2/Gd156-n.tendl
Ratio
2.0
1.0
9
10^7
2
3
4
5
6
7
8
9
10^8
2
4
Incident Energy (eV)
64-Gd-156

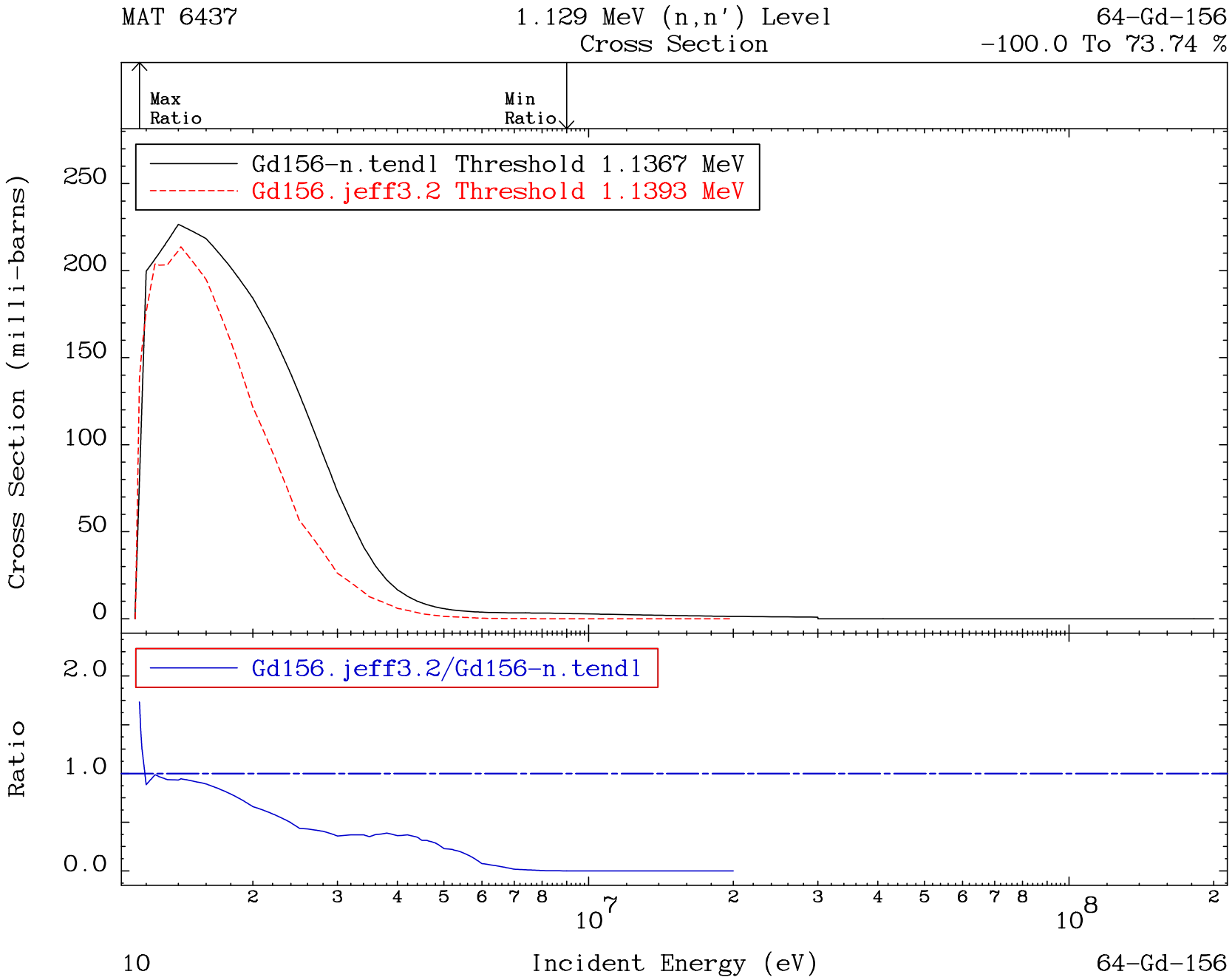

MAT 6437
88.97 keV (n,n') Level
Cross Section
64-Gd-156
-100.0 To -2.271%
Max
Ratio
Min
Ratio
Gd156-n.tendl Threshold 89.546 keV
Gd156.jeff3.2 Threshold 89.576 keV
Cross Section (barns)
1.6
1.4
1.2
1.0
0.8
0.6
0.4
0.2
0.0
Gd156.jeff3.2/Gd156-n.tendl
Ratio
1.2
0.8
0.4
0.0
10^5
2
3
4
5
6
8
10^6
2
3
4
5
6
8
10^7
2
3
4
5
6
8
10^8
2
5
Incident Energy (eV)
64-Gd-156

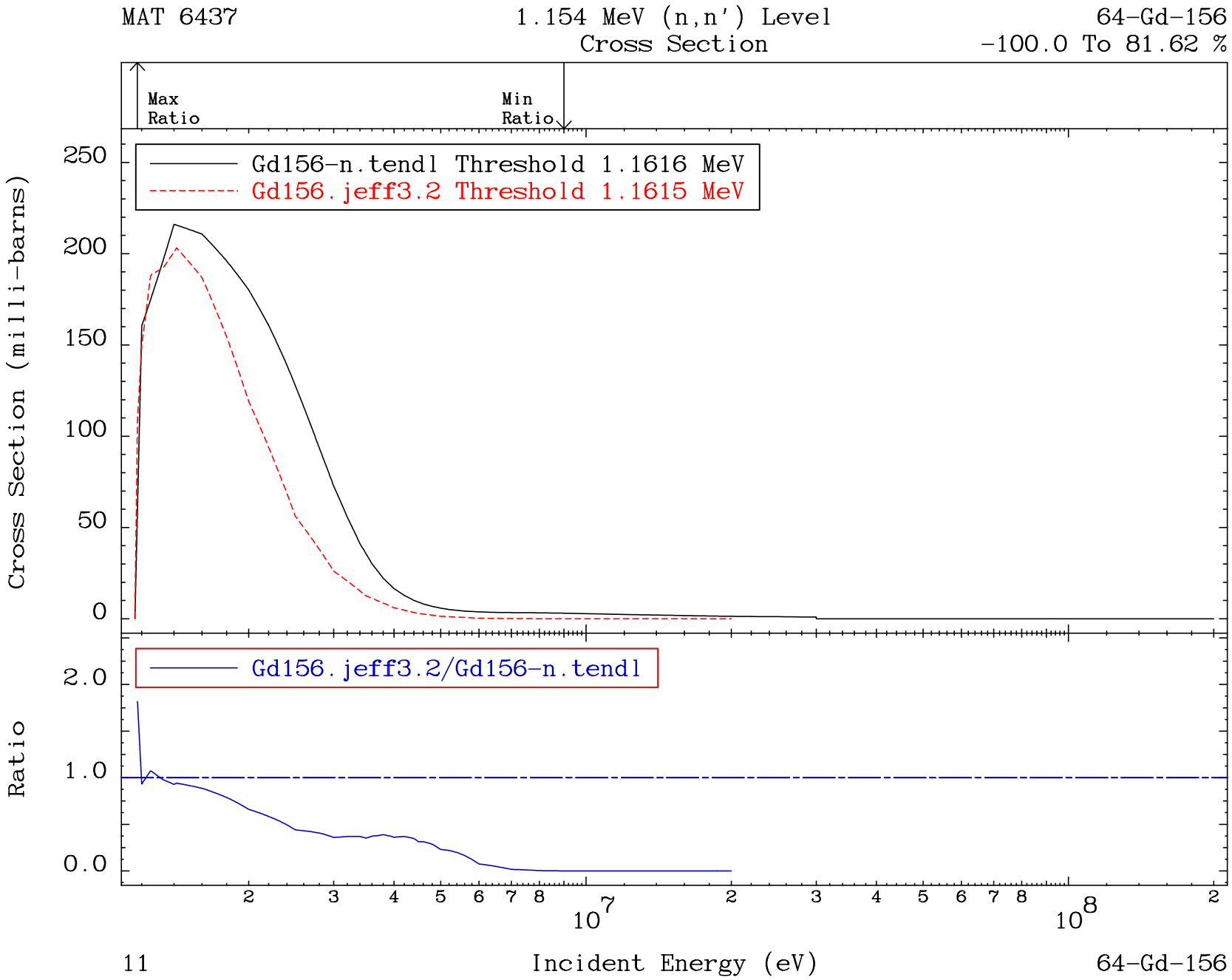

MAT 6437
288.2 keV (n,n') Level
Cross Section
64-Gd-156
-100.0 To 25.42 %
Max
Ratio
Min
Ratio
Gd156-n.tendl Threshold 290.05 keV
Gd156.jeff3.2 Threshold 289.86 keV
Cross Section (milli-barns)
400
300
200
100
0
Gd156.jeff3.2/Gd156-n.tendl
Ratio
1.6
1.2
0.8
0.4
0.0
3 4 5 6 7 8 10^6 2 3 4 5 6 7 8 10^7 2 3 4 5 6 7 8 10^8 2
6
Incident Energy (eV)
64-Gd-156

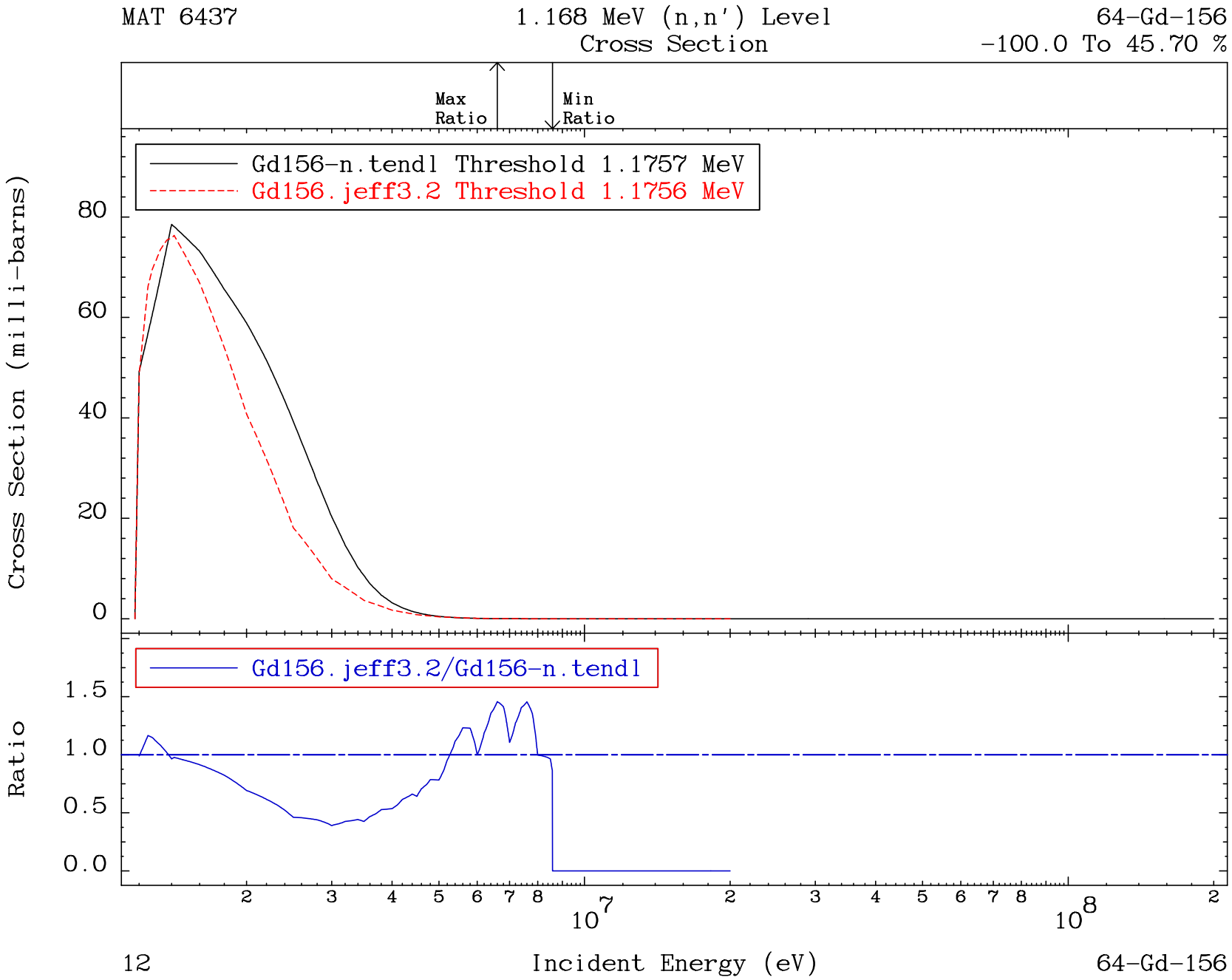

MAT 6437
584.7 keV (n,n') Level
Cross Section
64-Gd-156
-100.0 To 340.5 %
Max Ratio
Min Ratio
Gd156-n.tendl Threshold 588.50 keV
Gd156.jeff3.2 Threshold 588.78 keV
Cross Section (milli-barns)
30
25
20
15
10
5
0
Gd156.jeff3.2/Gd156-n.tendl
Ratio
4
2
0
6 7 8
10^6
2 3 4 5 6 7 8
10^7
2 3 4 5 6 7 8
10^8
2
7
Incident Energy (eV)
64-Gd-156

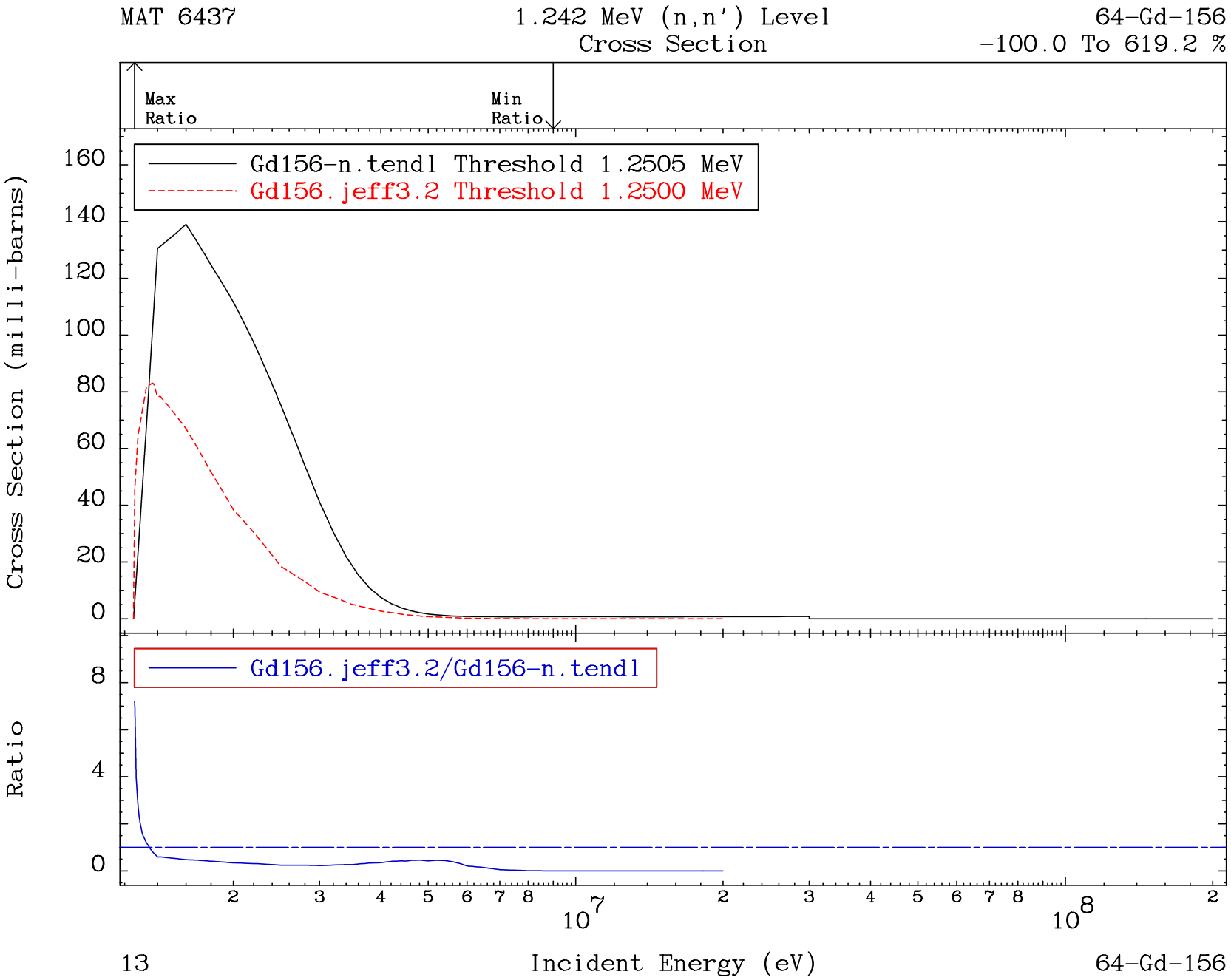

MAT 6437
965.1 keV (n,n') Level
Cross Section
64-Gd-156
-100.0 To 17.19 %
Max Ratio
Min Ratio
Gd156-n.tendl Threshold 971.38 keV
Gd156.jeff3.2 Threshold 1.2770 MeV
Cross Section (milli-barns)
2.0
1.5
1.0
0.5
0.0
Gd156.jeff3.2/Gd156-n.tendl
Ratio
1.2
0.8
0.4
0.0
10^6
10^7
10^8
Incident Energy (eV)
8
64-Gd-156

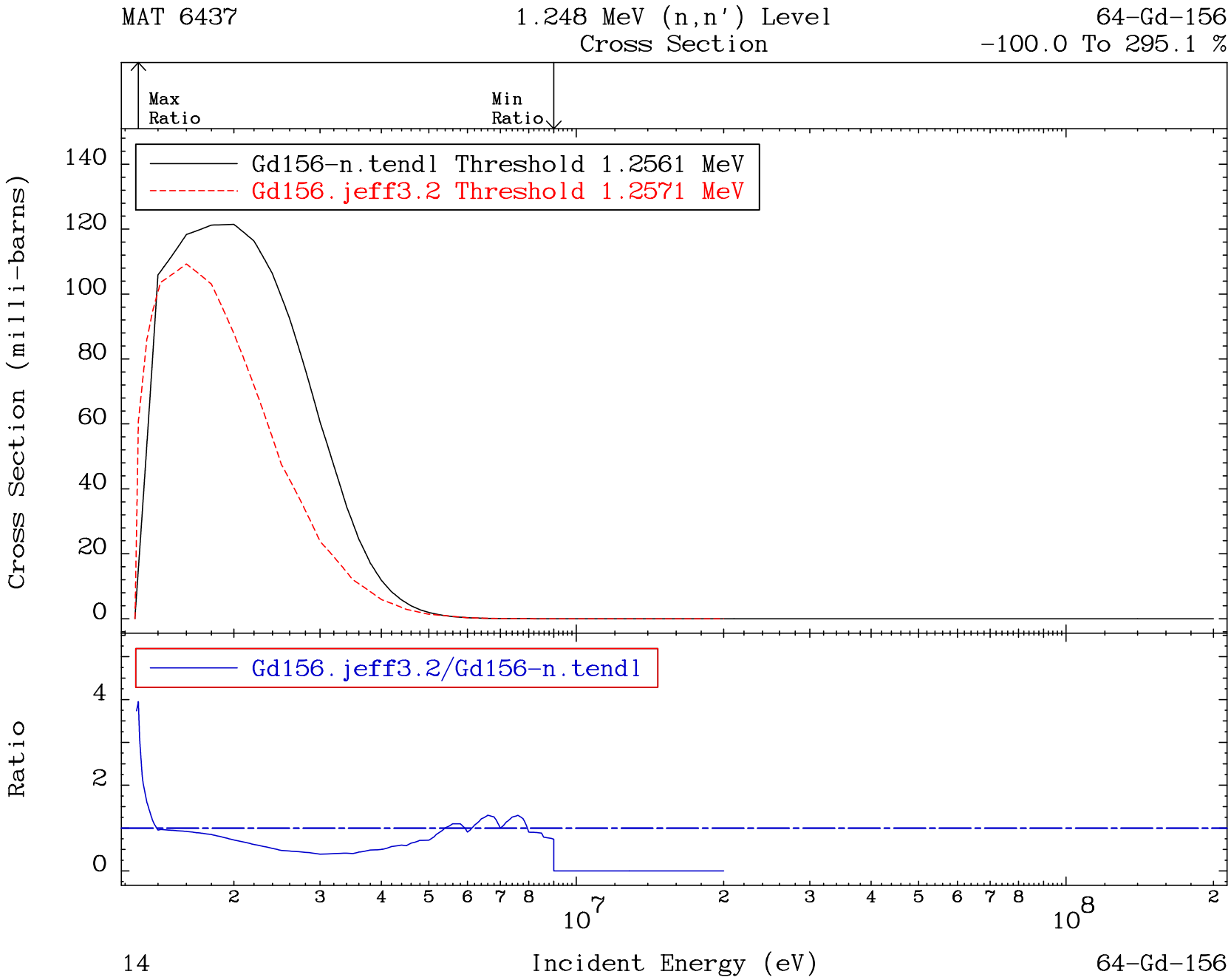

MAT 6437
1.049 MeV (n,n') Level
Cross Section
64-Gd-156
-100.0 To 46.26 %
Max Ratio
Min Ratio
Gd156-n.tendl Threshold 1.0563 MeV
Gd156.jeff3.2 Threshold 1.0563 MeV
Cross Section (milli-barns)
120
100
80
60
40
20
0
Gd156.jeff3.2/Gd156-n.tendl
Ratio
1.5
1.0
0.5
0.0
10^6
10^7
10^8
Incident Energy (eV)
9
64-Gd-156

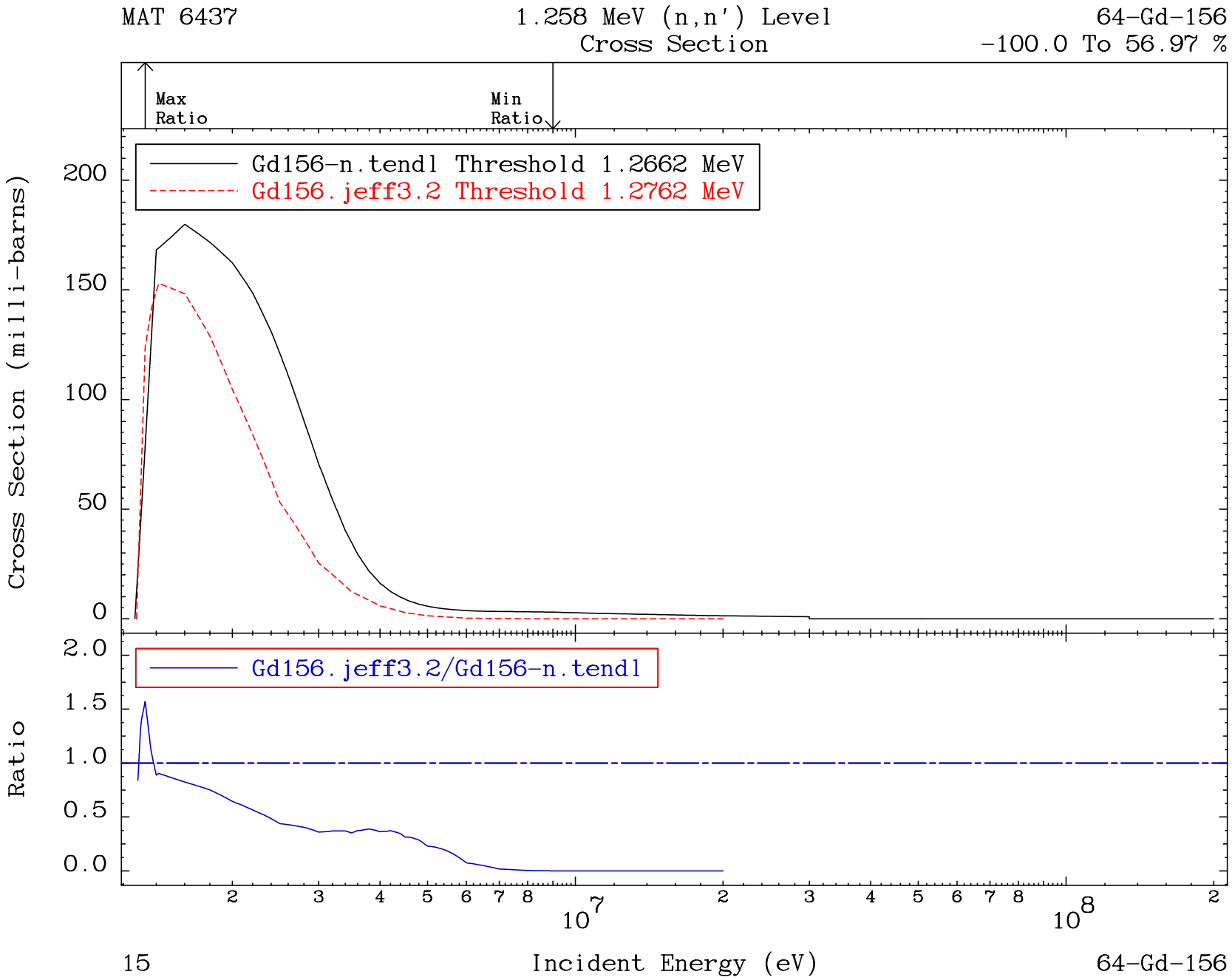

MAT 6437
1.129 MeV (n,n') Level
Cross Section
64-Gd-156
-100.0 To 73.74 %
Max Ratio
Min Ratio
Gd156-n.tendl Threshold 1.1367 MeV
Gd156.jeff3.2 Threshold 1.1393 MeV
Cross Section (milli-barns)
250
200
150
100
50
0
Gd156.jeff3.2/Gd156-n.tendl
Ratio
2.0
1.0
0.0
10
2 3 4 5 6 7 8
10^7
2 3 4 5 6 7 8
10^8
2
Incident Energy (eV)
64-Gd-156

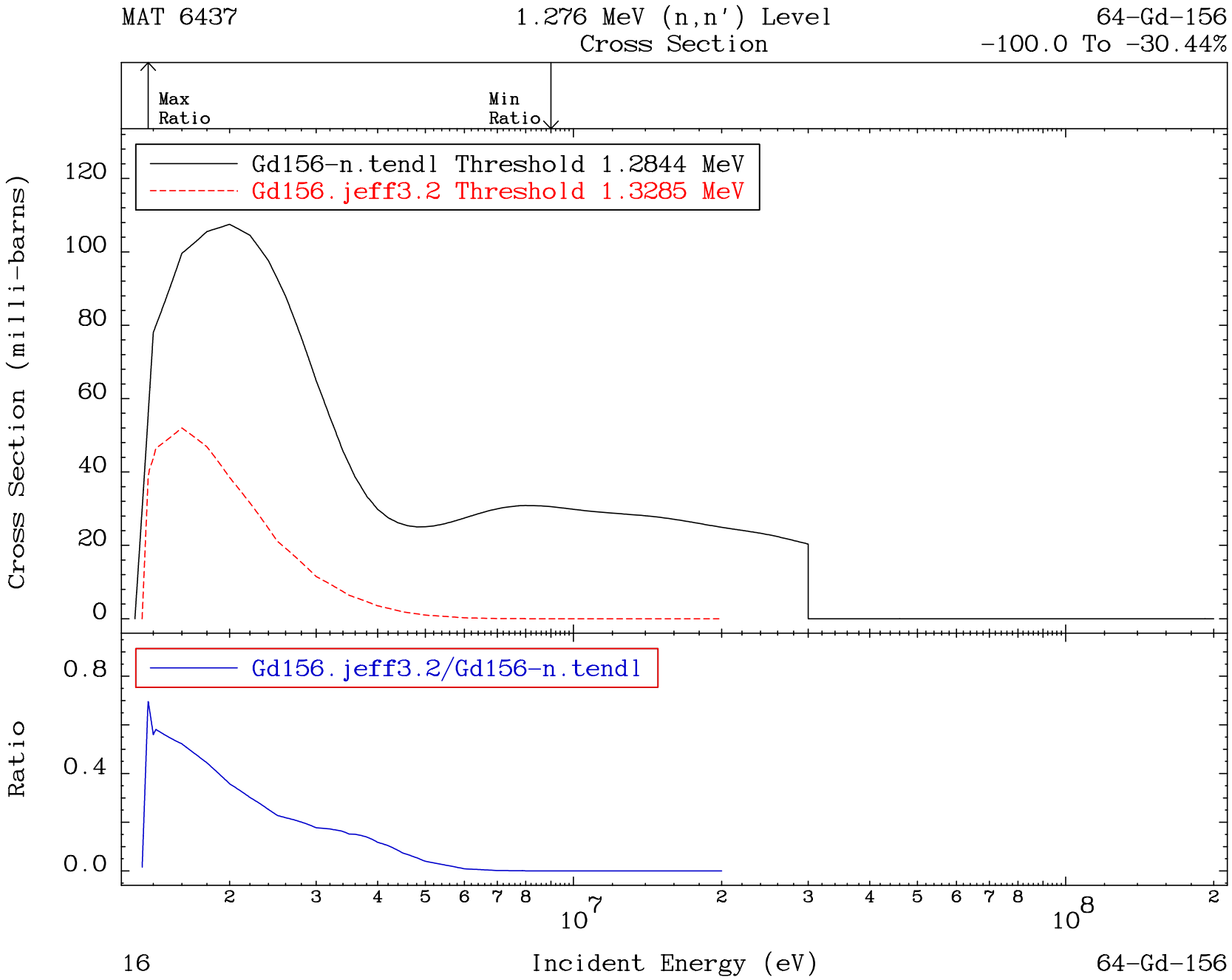

MAT 6437
1.154 MeV (n,n') Level
Cross Section
64-Gd-156
-100.0 To 81.62 %
Max Ratio
Min Ratio
Gd156-n.tendl Threshold 1.1616 MeV
Gd156.jeff3.2 Threshold 1.1615 MeV
Cross Section (milli-barns)
250
200
150
100
50
0
Gd156.jeff3.2/Gd156-n.tendl
Ratio
2.0
1.0
0.0
2 3 4 5 6 7 8
10^7
2 3 4 5 6 7 8
10^8
2
11
Incident Energy (eV)
64-Gd-156

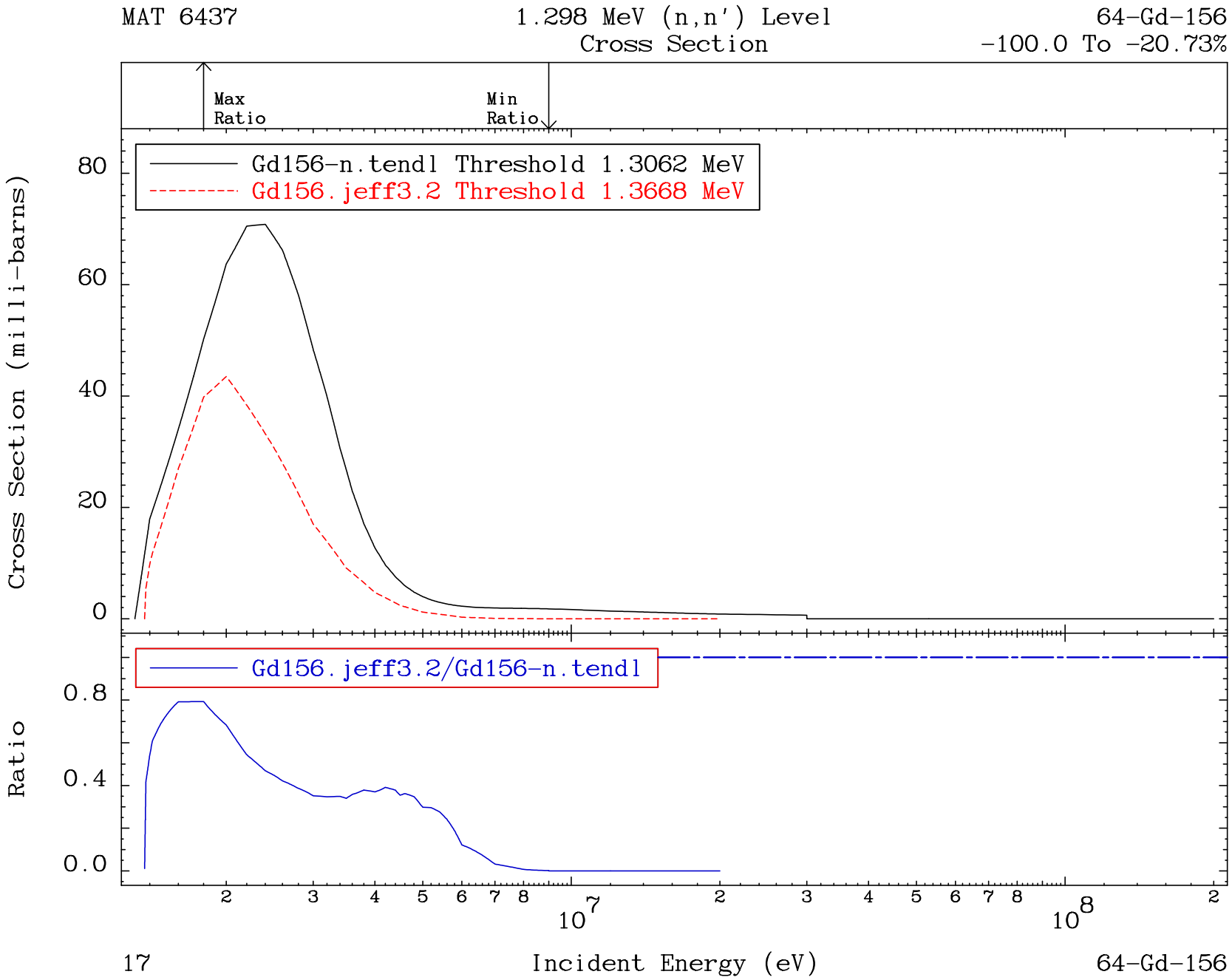

MAT 6437
1.168 MeV (n,n') Level
Cross Section
64-Gd-156
-100.0 To 45.70 %
Max Ratio
Min Ratio
Gd156-n.tendl Threshold 1.1757 MeV
Gd156.jeff3.2 Threshold 1.1756 MeV
Cross Section (milli-barns)
80
60
40
20
0
Gd156.jeff3.2/Gd156-n.tendl
Ratio
1.5
1.0
0.5
0.0
2 3 4 5 6 7 8
10^7
2 3 4 5 6 7 8
10^8
2
12
Incident Energy (eV)
64-Gd-156

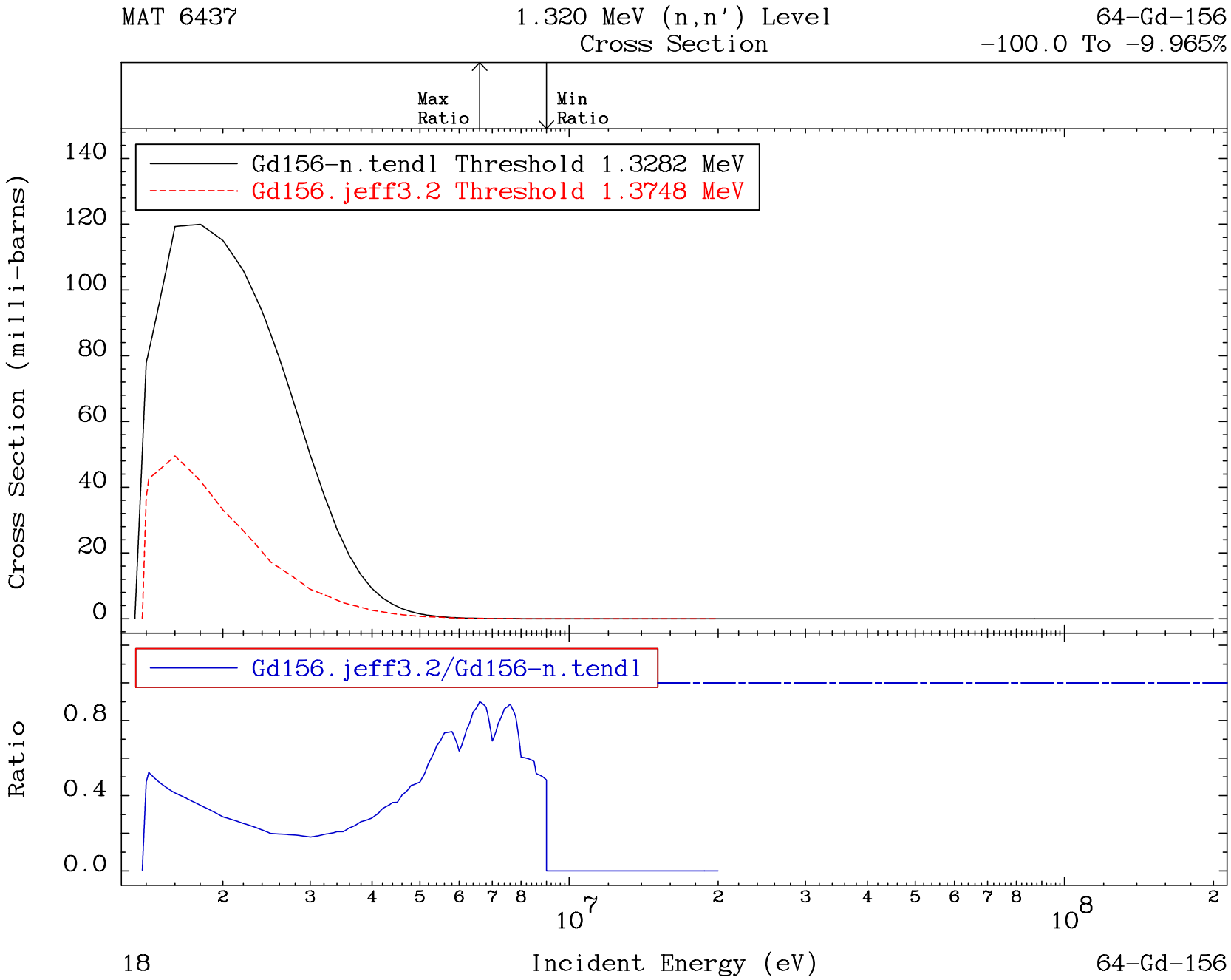

MAT 6437
1.242 MeV (n,n') Level
Cross Section
64-Gd-156
-100.0 To 619.2 %
Max Ratio
Min Ratio
Gd156-n.tendl Threshold 1.2505 MeV
Gd156.jeff3.2 Threshold 1.2500 MeV
Cross Section (milli-barns)
160
140
120
100
80
60
40
20
0
Gd156.jeff3.2/Gd156-n.tendl
Ratio
8
4
0
2
3
4
5
6
7
8
10^7
2
3
4
5
6
7
8
10^8
2
13
Incident Energy (eV)
64-Gd-156

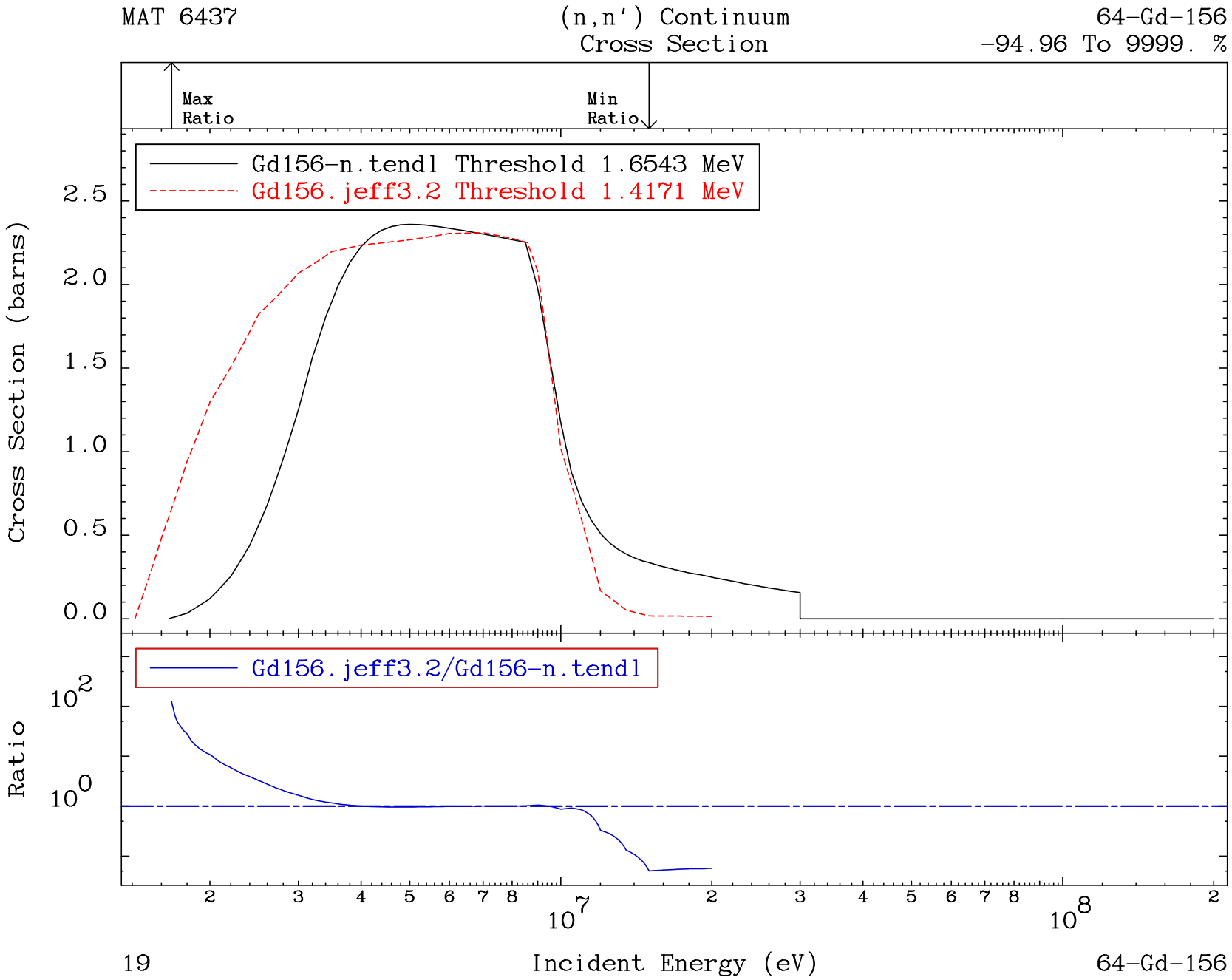

MAT 6437
1.248 MeV (n,n') Level
Cross Section
64-Gd-156
-100.0 To 295.1 %
Max Ratio
Min Ratio
Gd156-n.tendl Threshold 1.2561 MeV
Gd156.jeff3.2 Threshold 1.2571 MeV
Cross Section (milli-barns)
140
120
100
80
60
40
20
0
Gd156.jeff3.2/Gd156-n.tendl
Ratio
4
2
0
2 3 4 5 6 7 8 10^7 2 3 4 5 6 7 8 10^8 2
14
Incident Energy (eV)
64-Gd-156

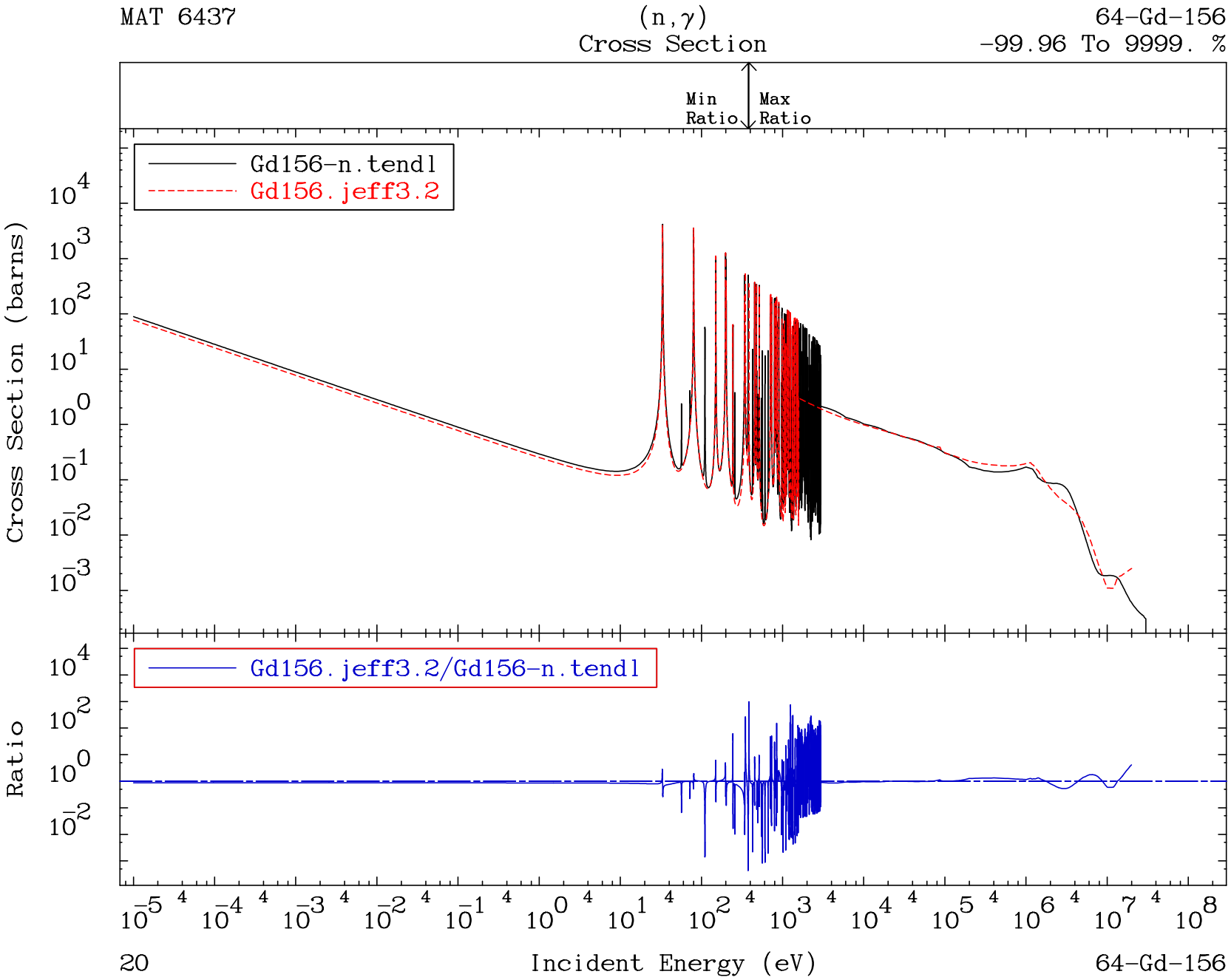

MAT 6437
1.258 MeV (n,n') Level
Cross Section
64-Gd-156
-100.0 To 56.97 %
Max Ratio
Min Ratio
Gd156-n.tendl Threshold 1.2662 MeV
Gd156.jeff3.2 Threshold 1.2762 MeV
Cross Section (milli-barns)
200
150
100
50
0
Gd156.jeff3.2/Gd156-n.tendl
Ratio
2.0
1.5
1.0
0.5
0.0
2 3 4 5 6 7 8
10^7
2 3 4 5 6 7 8
10^8
2
15
Incident Energy (eV)
64-Gd-156

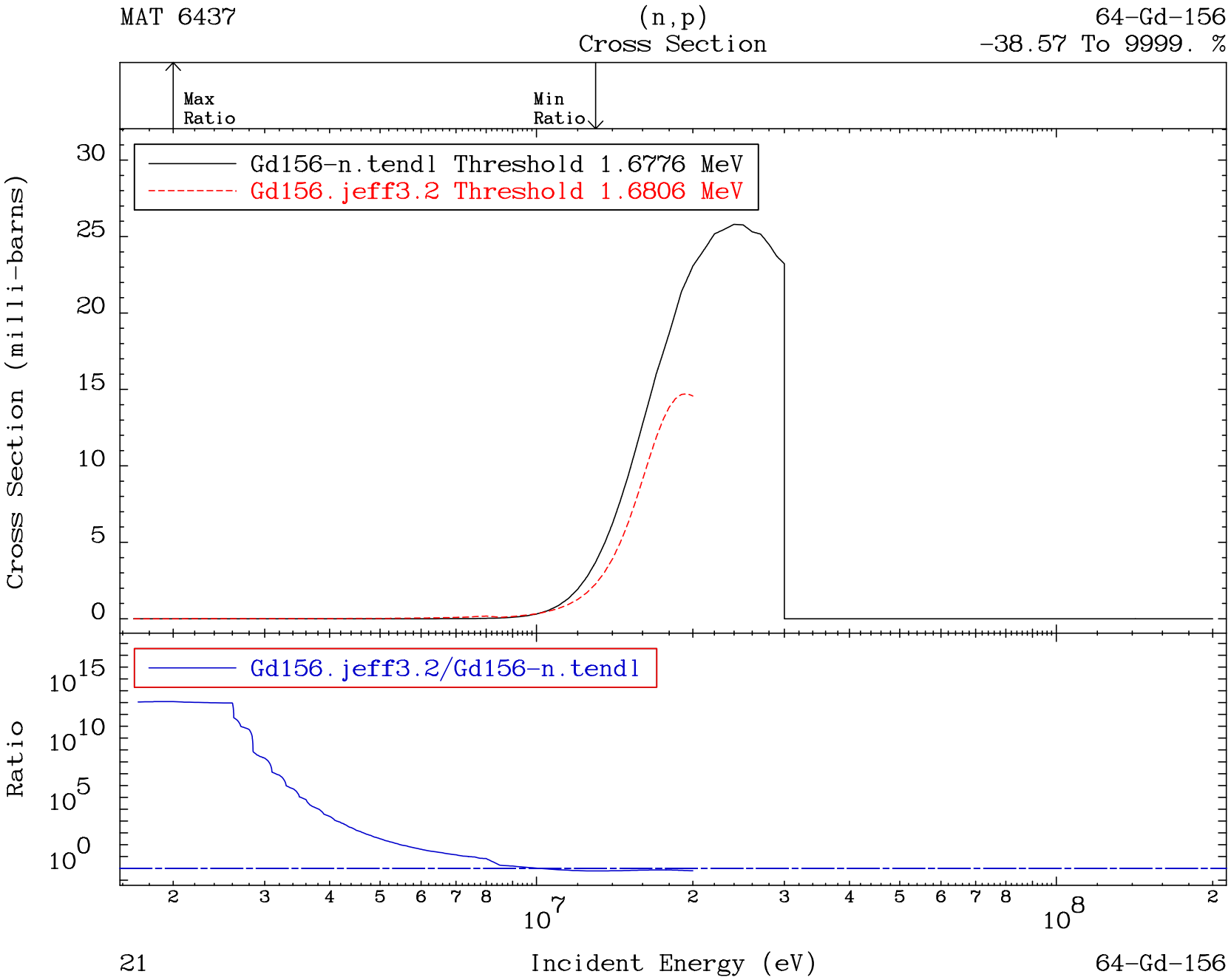

MAT 6437
1.276 MeV (n,n') Level
Cross Section
64-Gd-156
-100.0 To -30.44%
Max Ratio
Min Ratio
Gd156-n.tendl Threshold 1.2844 MeV
Gd156.jeff3.2 Threshold 1.3285 MeV
Cross Section (milli-barns)
120
100
80
60
40
20
0
Gd156.jeff3.2/Gd156-n.tendl
Ratio
0.8
0.4
0.0
2
3
4
5
6
7
8
10^7
2
3
4
5
6
7
8
10^8
2
16
Incident Energy (eV)
64-Gd-156

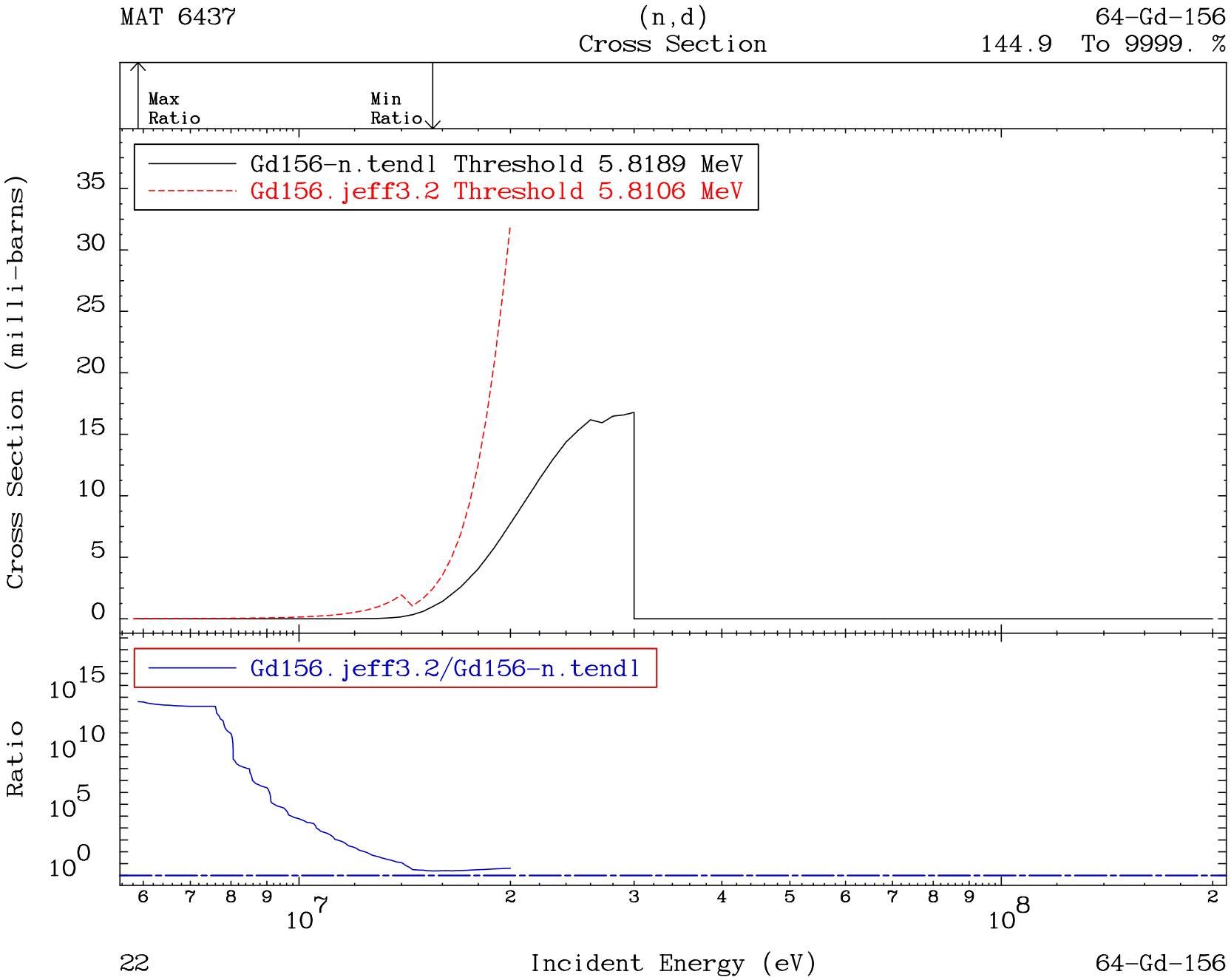

MAT 6437
1.298 MeV (n,n') Level
Cross Section
64-Gd-156
-100.0 To -20.73%
Max Ratio
Min Ratio
Gd156-n.tendl Threshold 1.3062 MeV
Gd156.jeff3.2 Threshold 1.3668 MeV
Cross Section (milli-barns)
80
60
40
20
0
Gd156.jeff3.2/Gd156-n.tendl
Ratio
0.8
0.4
0.0
2 3 4 5 6 7 8
10^7
2 3 4 5 6 7 8
10^8
2
17
Incident Energy (eV)
64-Gd-156

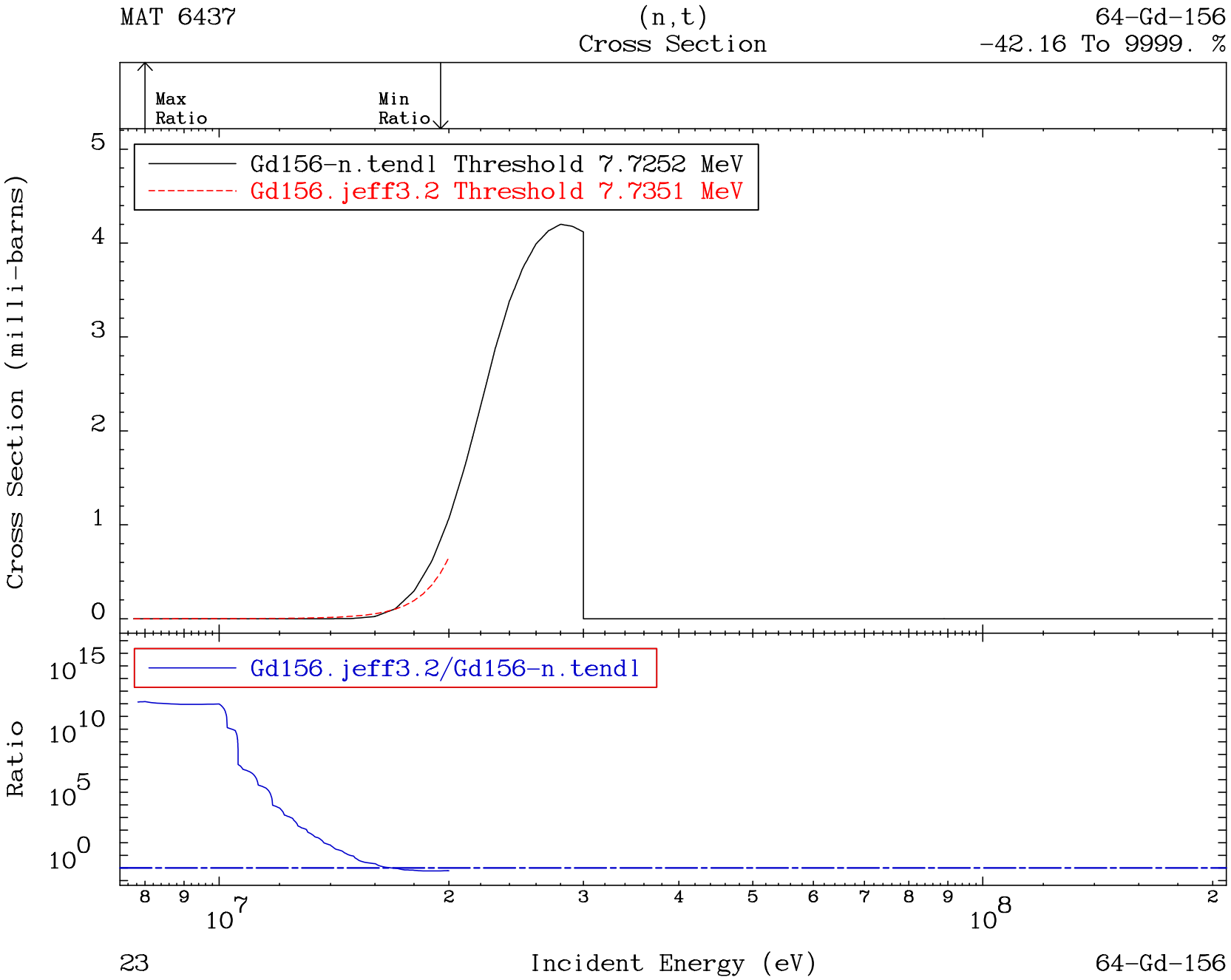

MAT 6437
1.320 MeV (n,n') Level
Cross Section
64-Gd-156
-100.0 To -9.965%
Max Ratio
Min Ratio
Gd156-n.tendl Threshold 1.3282 MeV
Gd156.jeff3.2 Threshold 1.3748 MeV
Cross Section (milli-barns)
140
120
100
80
60
40
20
0
Gd156.jeff3.2/Gd156-n.tendl
Ratio
0.8
0.4
0.0
2 3 4 5 6 7 8 10^7 2 3 4 5 6 7 8 10^8 2
18
Incident Energy (eV)
64-Gd-156

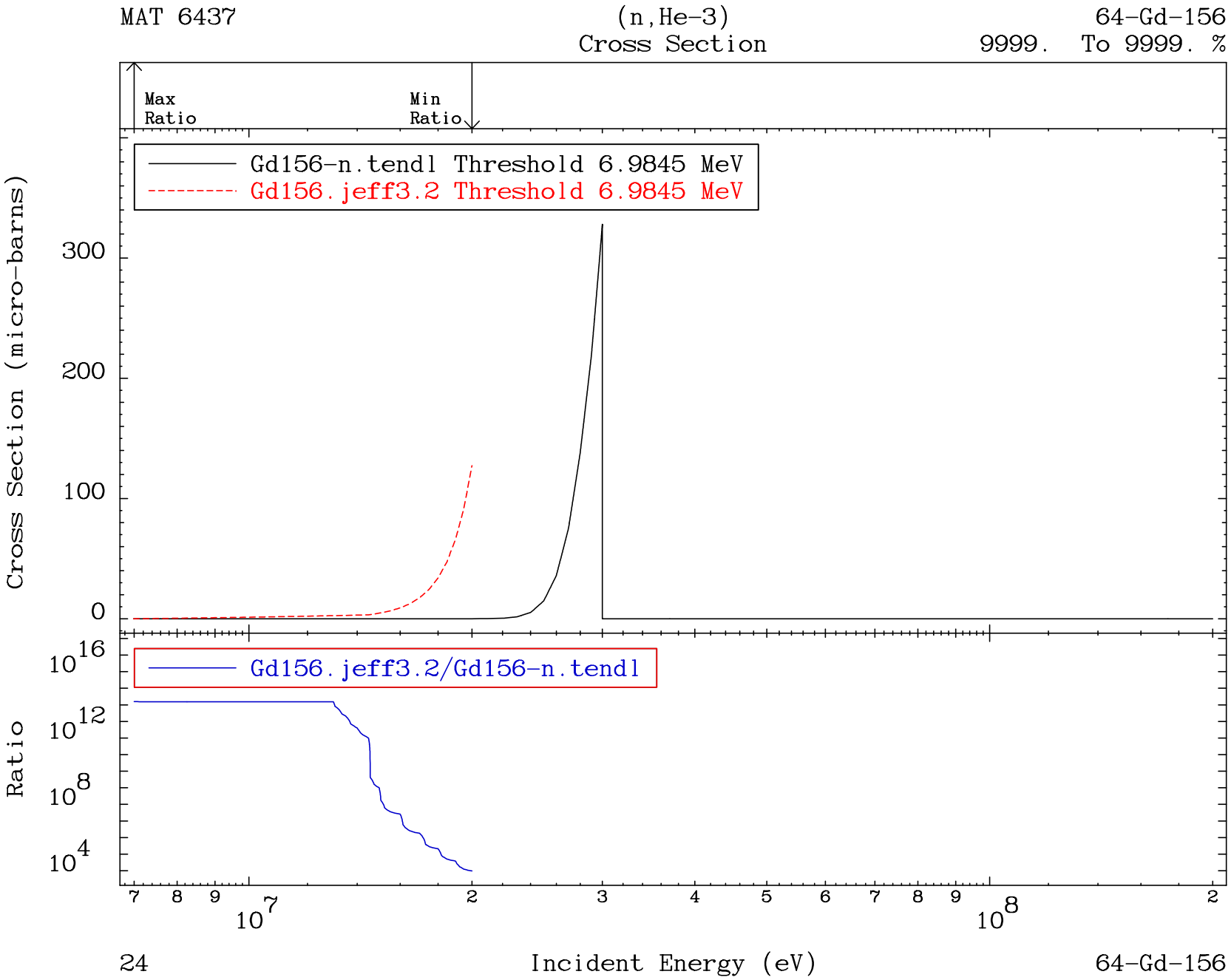

MAT 6437
(n,n') Continuum
Cross Section
64-Gd-156
-94.96 To 9999. %
Max Ratio
Min Ratio
Gd156-n.tendl Threshold 1.6543 MeV
Gd156.jeff3.2 Threshold 1.4171 MeV
Cross Section (barns)
2.5
2.0
1.5
1.0
0.5
0.0
Gd156.jeff3.2/Gd156-n.tendl
Ratio
10^2
10^0
2 3 4 5 6 7 8
10^7
2 3 4 5 6 7 8
10^8
2
19
Incident Energy (eV)
64-Gd-156

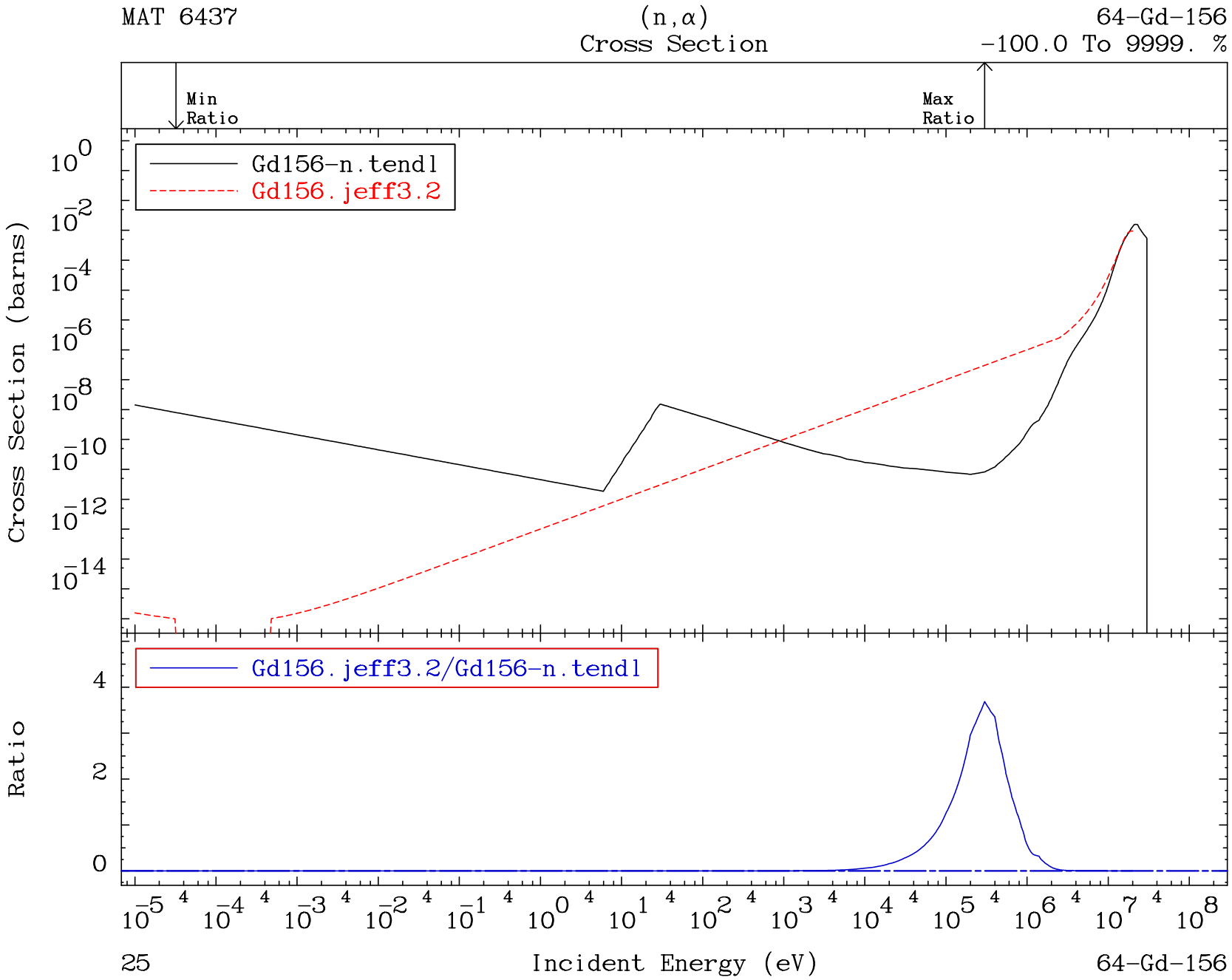

MAT 6437
(n,γ)
Cross Section
64-Gd-156
-99.96 To 9999. %
Min Ratio
Max Ratio
Gd156-n.tendl
Gd156.jeff3.2
Cross Section (barns)
Gd156.jeff3.2/Gd156-n.tendl
Ratio
Incident Energy (eV)
20
64-Gd-156

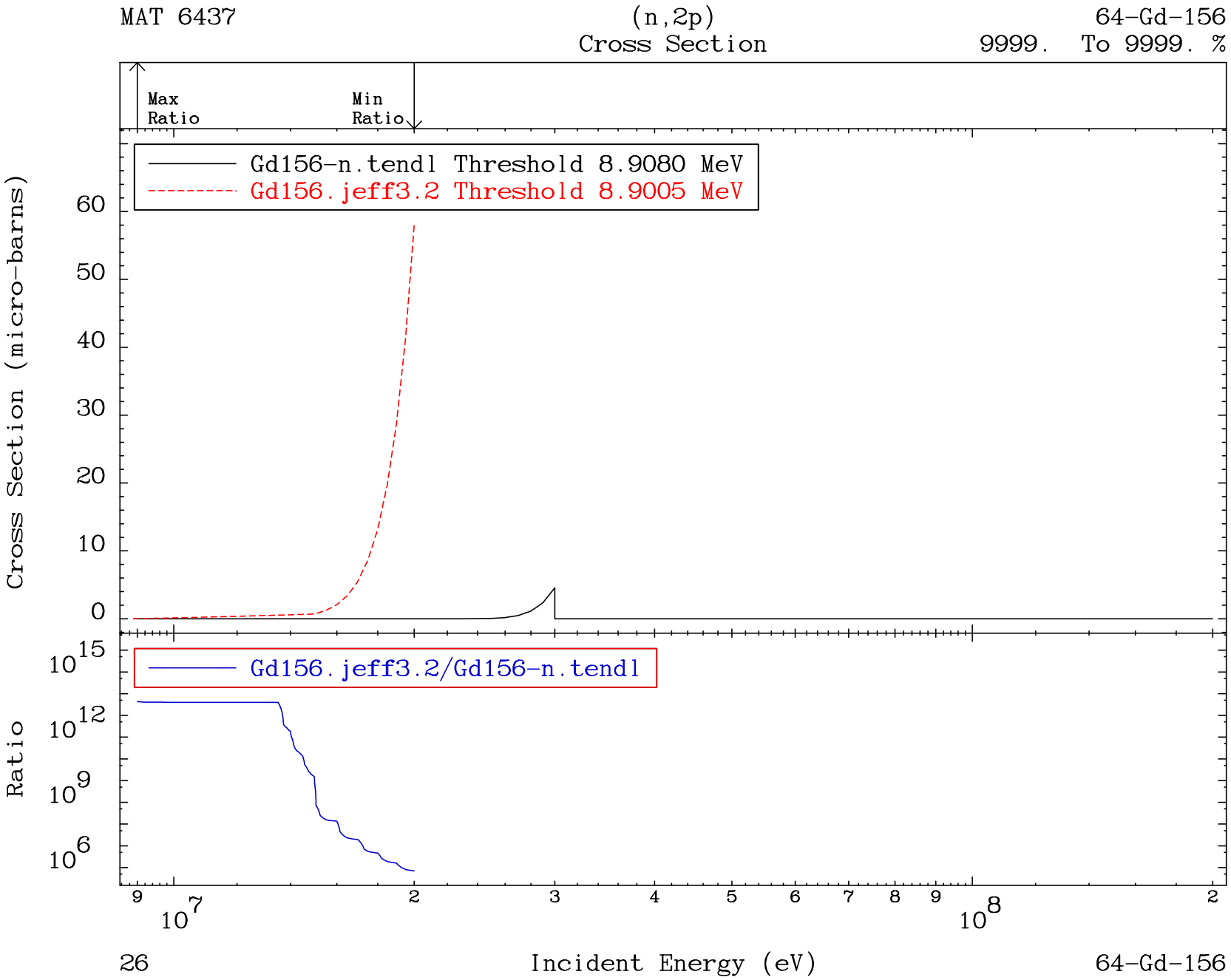

MAT 6437
(n,p)
Cross Section
64-Gd-156
-38.57 To 9999. %
Max Ratio
Min Ratio
Gd156-n.tendl Threshold 1.6776 MeV
Gd156.jeff3.2 Threshold 1.6806 MeV
Cross Section (milli-barns)
30
25
20
15
10
5
0
Gd156.jeff3.2/Gd156-n.tendl
Ratio
10^15
10^10
10^5
10^0
2 3 4 5 6 7 8
10^7
2 3 4 5 6 7 8
10^8
2
21
Incident Energy (eV)
64-Gd-156

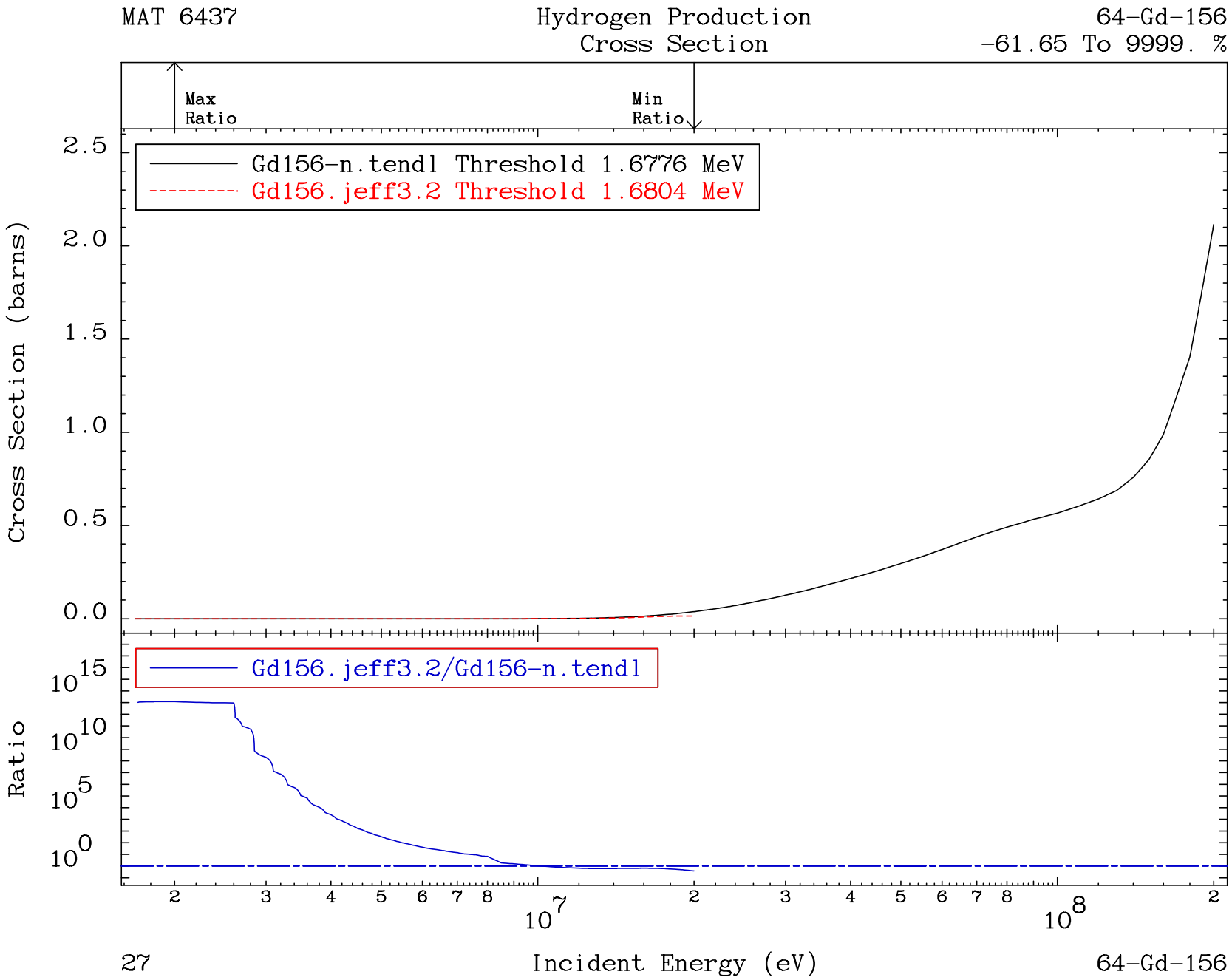

MAT 6437
(n,d)
Cross Section
64-Gd-156
144.9 To 9999. %
Max Ratio
Min Ratio
Gd156-n.tendl Threshold 5.8189 MeV
Gd156.jeff3.2 Threshold 5.8106 MeV
Cross Section (milli-barns)
35
30
25
20
15
10
5
0
Gd156.jeff3.2/Gd156-n.tendl
Ratio
10^15
10^10
10^5
10^0
6 7 8 9 10^7 2 3 4 5 6 7 8 9 10^8 2
22
Incident Energy (eV)
64-Gd-156

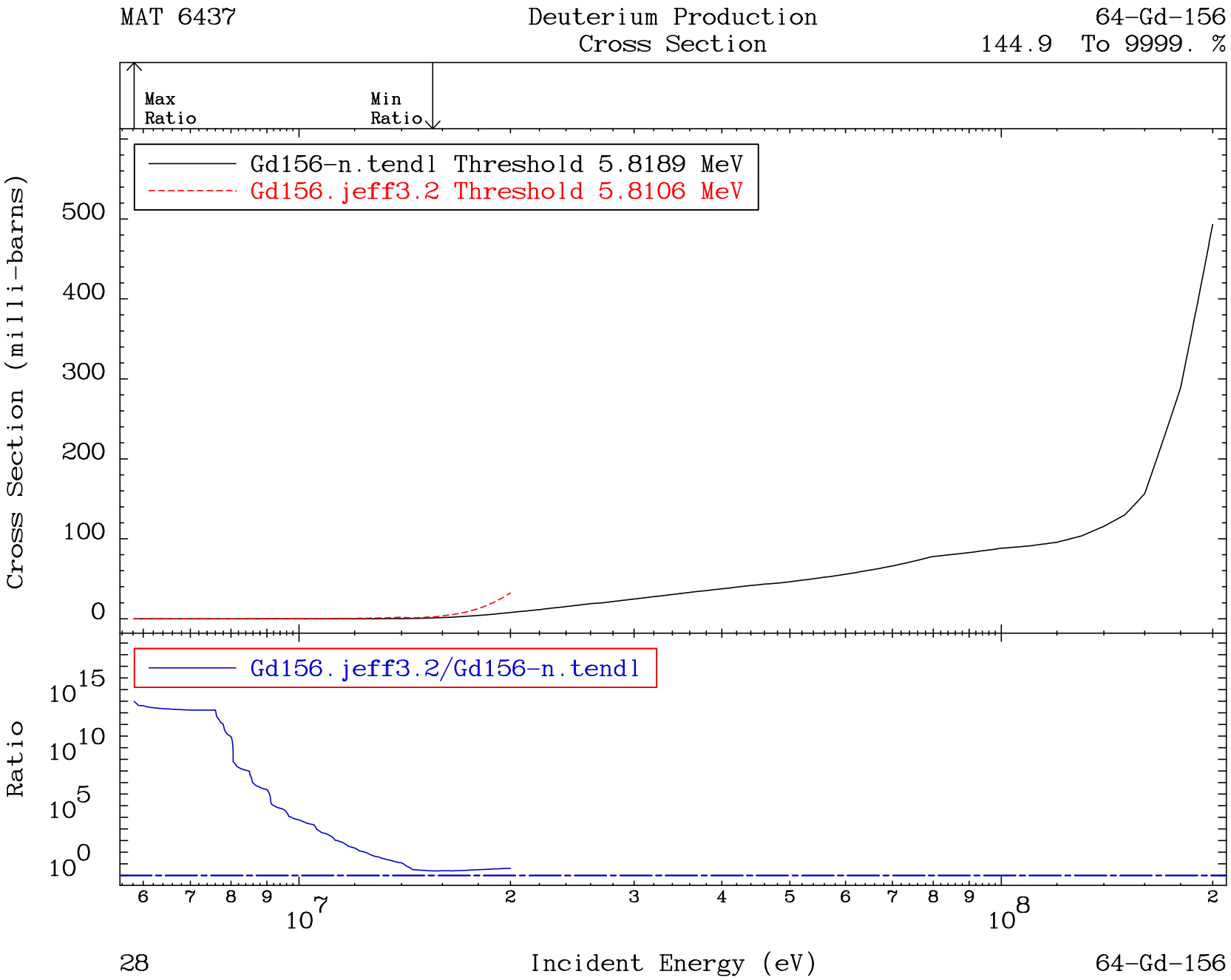

MAT 6437
(n,t)
Cross Section
64-Gd-156
-42.16 To 9999. %
Max Ratio
Min Ratio
Gd156-n.tendl Threshold 7.7252 MeV
Gd156.jeff3.2 Threshold 7.7351 MeV
Cross Section (milli-barns)
Gd156.jeff3.2/Gd156-n.tendl
Ratio
Incident Energy (eV)
23
64-Gd-156

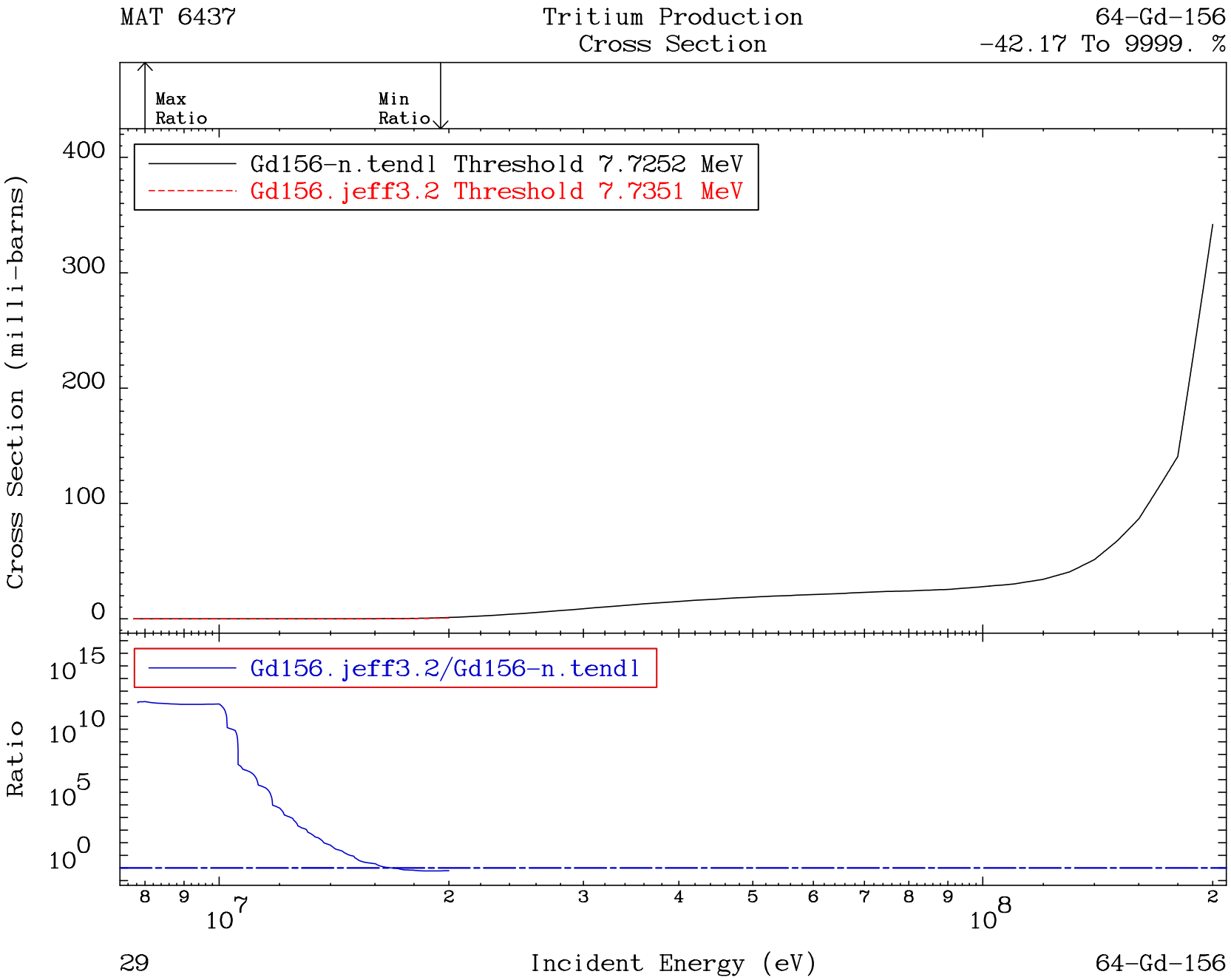

MAT 6437
(n,He-3)
Cross Section
64-Gd-156
9999. To 9999. %
Max Ratio
Min Ratio
Gd156-n.tendl Threshold 6.9845 MeV
Gd156.jeff3.2 Threshold 6.9845 MeV
Cross Section (micro-barns)
300
200
100
0
Gd156.jeff3.2/Gd156-n.tendl
Ratio
10^16
10^12
10^8
10^4
7 8 9 10^7 2 3 4 5 6 7 8 9 10^8 2
24
Incident Energy (eV)
64-Gd-156

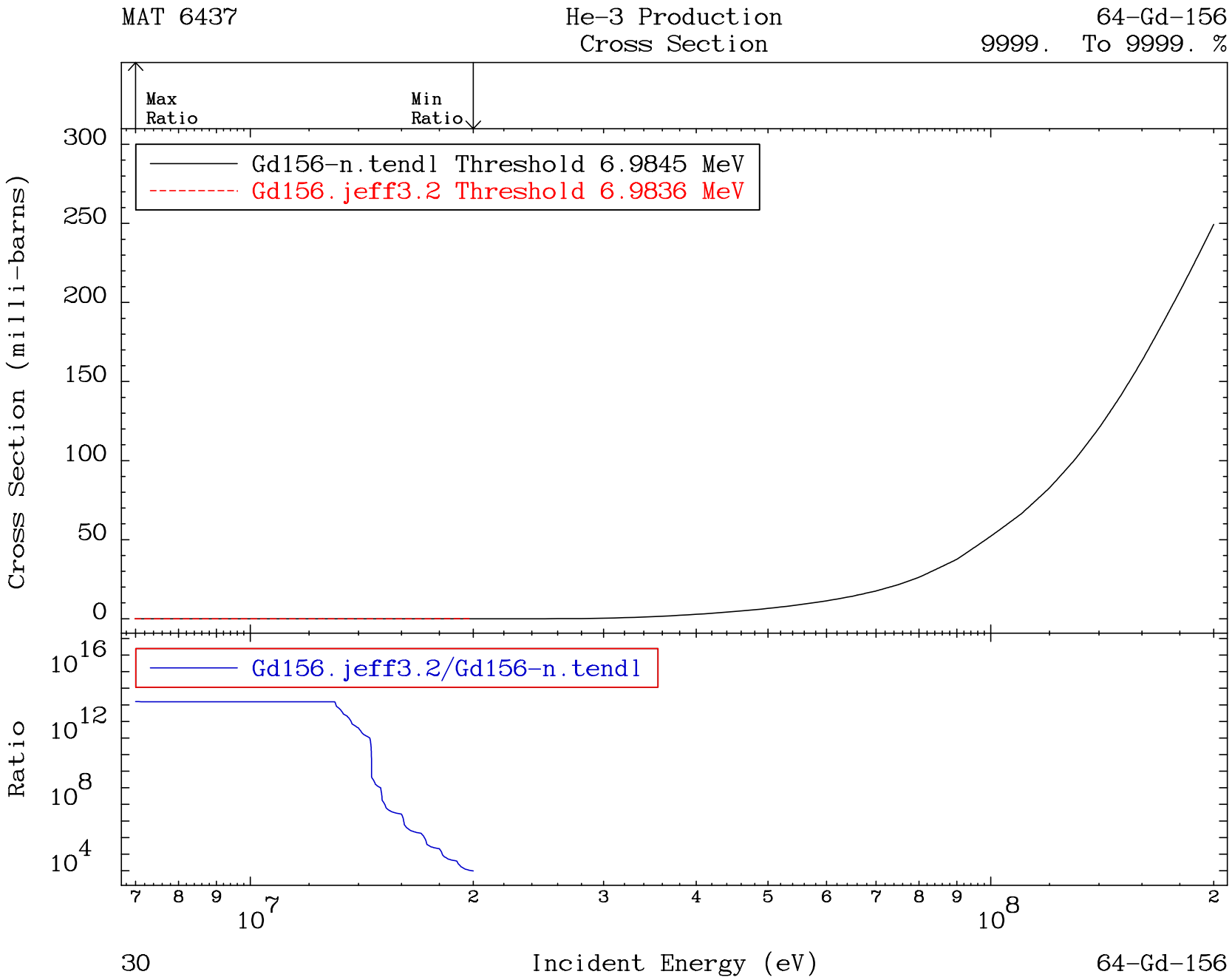

MAT 6437
(n,α)
Cross Section
64-Gd-156
-100.0 To 9999. %
Min Ratio
Max Ratio
Gd156-n.tendl
Gd156.jeff3.2
Cross Section (barns)
Gd156.jeff3.2/Gd156-n.tendl
Ratio
Incident Energy (eV)
25
64-Gd-156

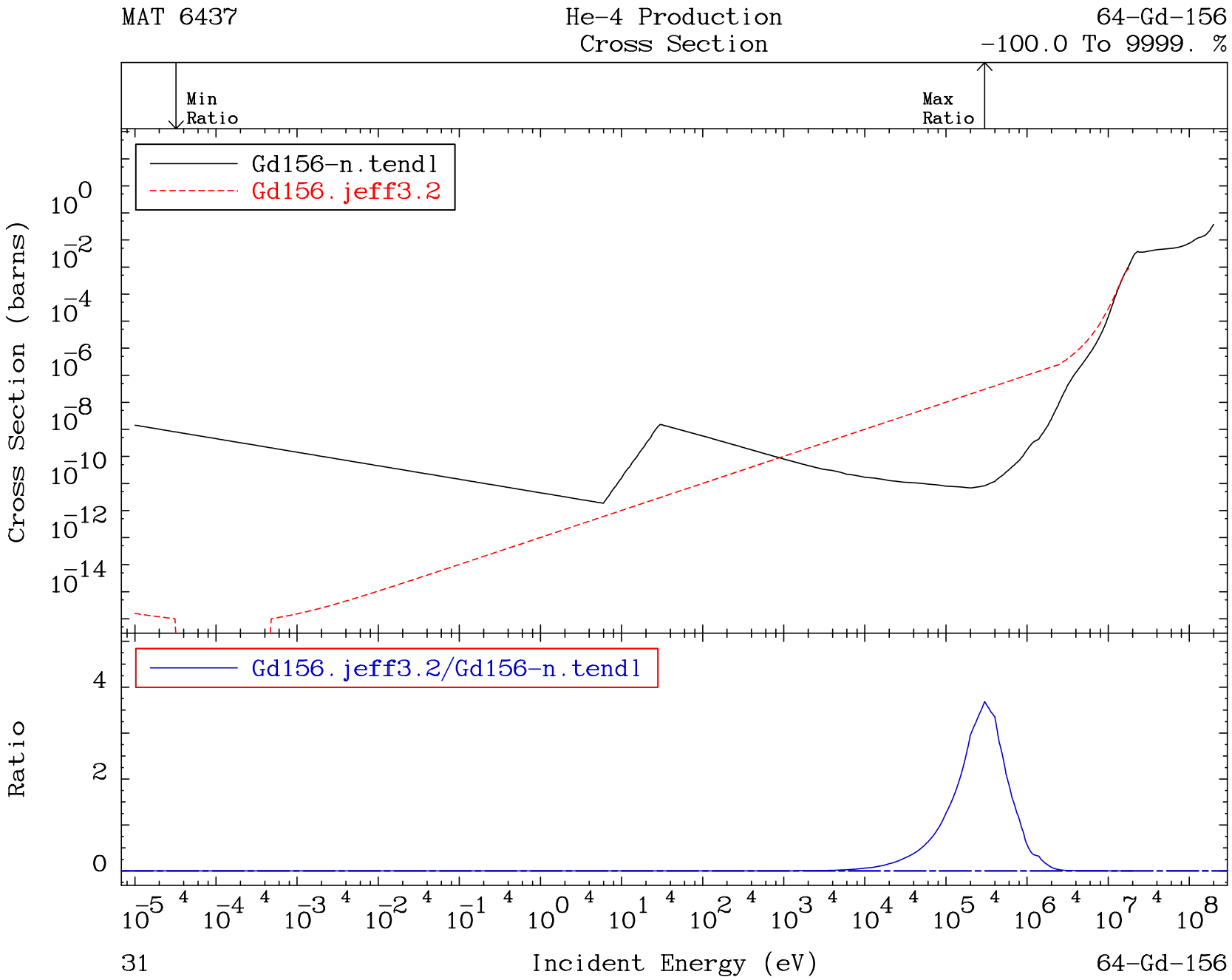

MAT 6437
(n,2p)
Cross Section
64-Gd-156
9999. To 9999. %
Max Ratio
Min Ratio
Gd156-n.tendl Threshold 8.9080 MeV
Gd156.jeff3.2 Threshold 8.9005 MeV
Cross Section (micro-barns)
60
50
40
30
20
10
0
Gd156.jeff3.2/Gd156-n.tendl
Ratio
10^15
10^12
10^9
10^6
9
10^7
2
3
4
5
6
7
8
9
10^8
2
26
Incident Energy (eV)
64-Gd-156

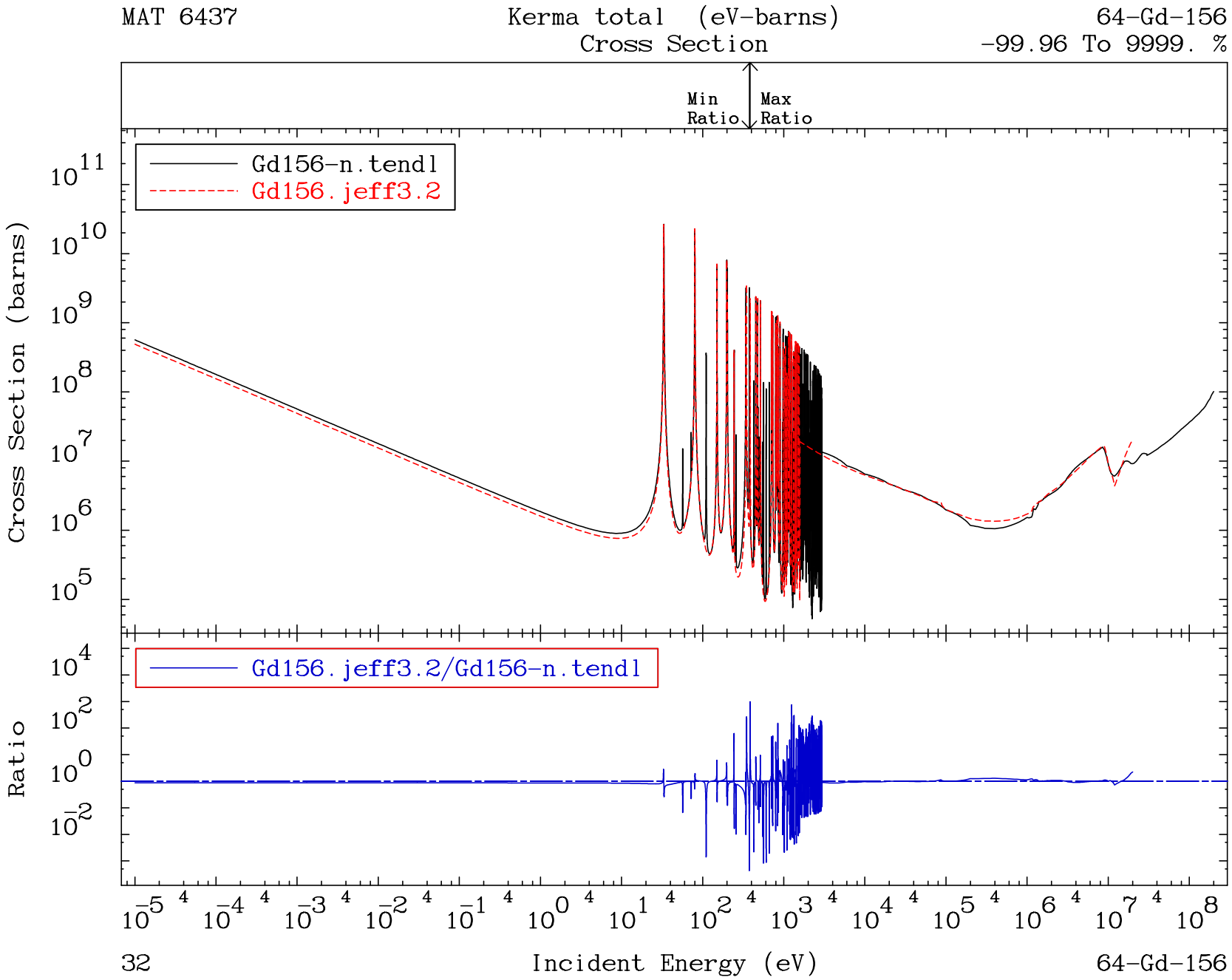

MAT 6437
Hydrogen Production
Cross Section
64-Gd-156
-61.65 To 9999. %
Max Ratio
Min Ratio
Gd156-n.tendl Threshold 1.6776 MeV
Gd156.jeff3.2 Threshold 1.6804 MeV
Cross Section (barns)
2.5
2.0
1.5
1.0
0.5
0.0
Gd156.jeff3.2/Gd156-n.tendl
Ratio
10^15
10^10
10^5
10^0
2 3 4 5 6 7 8
10^7
2 3 4 5 6 7 8
10^8
2
27
Incident Energy (eV)
64-Gd-156

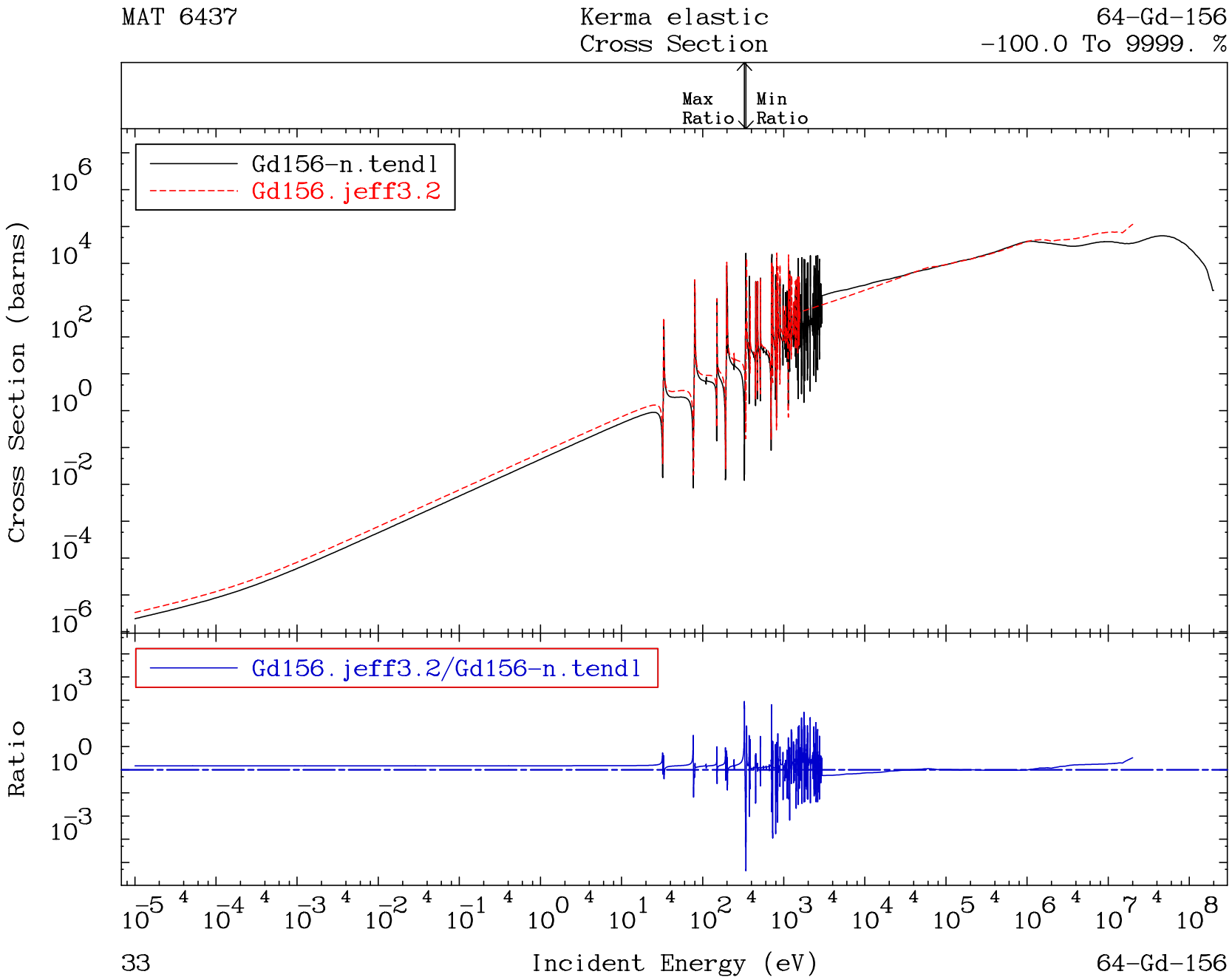

MAT 6437
Deuterium Production
Cross Section
64-Gd-156
144.9 To 9999. %
Max Ratio
Min Ratio
Gd156-n.tendl Threshold 5.8189 MeV
Gd156.jeff3.2 Threshold 5.8106 MeV
Cross Section (milli-barns)
500
400
300
200
100
0
Gd156.jeff3.2/Gd156-n.tendl
Ratio
10^15
10^10
10^5
10^0
6 7 8 9 10^7 2 3 4 5 6 7 8 9 10^8 2
28
Incident Energy (eV)
64-Gd-156

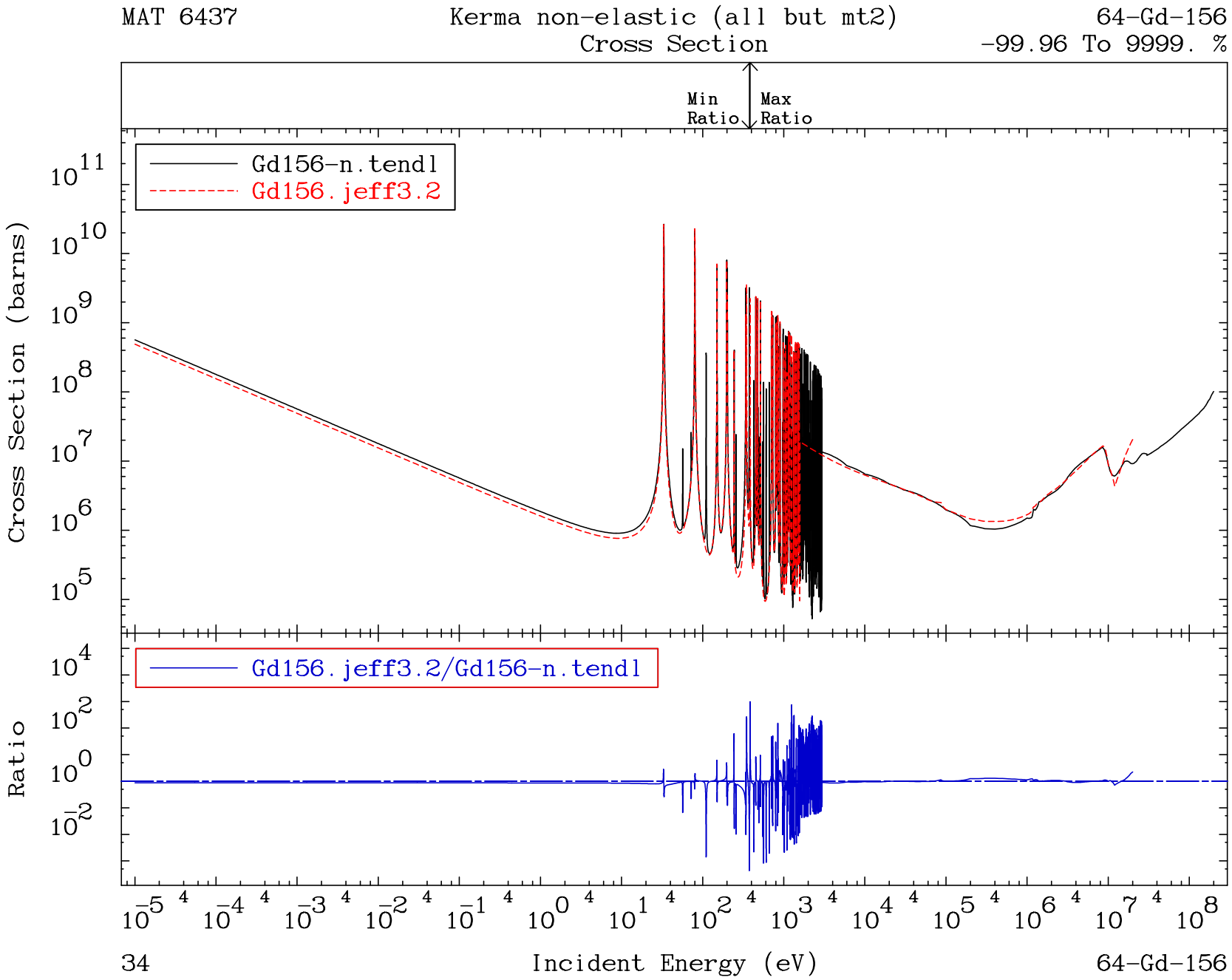

MAT 6437
Tritium Production
Cross Section
64-Gd-156
-42.17 To 9999. %
Max Ratio
Min Ratio
Gd156-n.tendl Threshold 7.7252 MeV
Gd156.jeff3.2 Threshold 7.7351 MeV
Cross Section (milli-barns)
400
300
200
100
0
Gd156.jeff3.2/Gd156-n.tendl
Ratio
10^15
10^10
10^5
10^0
8 9 10^7 2 3 4 5 6 7 8 9 10^8 2
29
Incident Energy (eV)
64-Gd-156

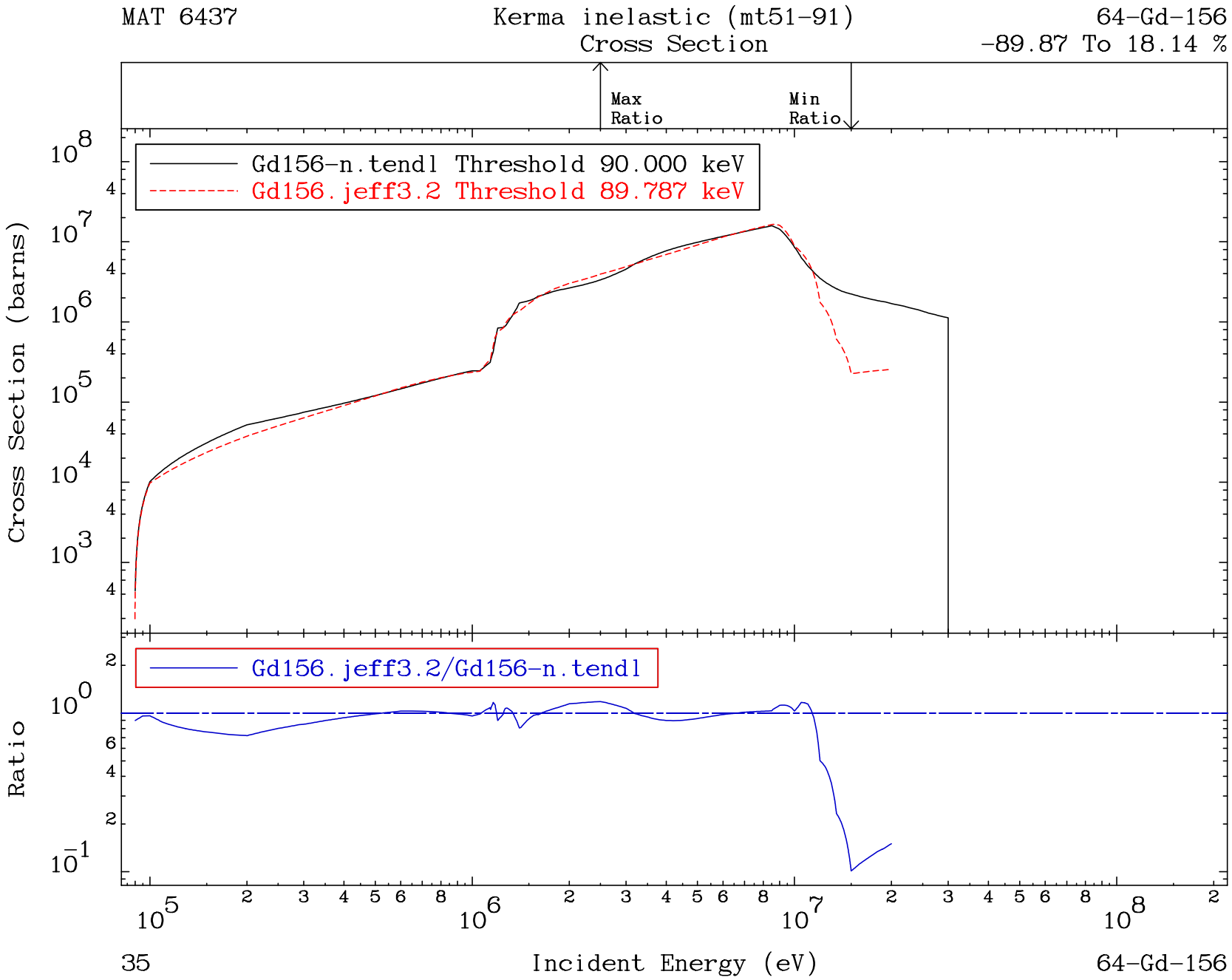

MAT 6437
He-3 Production
Cross Section
64-Gd-156
9999. To 9999. %
Max Ratio
Min Ratio
Gd156-n.tendl Threshold 6.9845 MeV
Gd156.jeff3.2 Threshold 6.9836 MeV
Cross Section (milli-barns)
300
250
200
150
100
50
0
Gd156.jeff3.2/Gd156-n.tendl
Ratio
10^16
10^12
10^8
10^4
7 8 9 10^7 2 3 4 5 6 7 8 9 10^8 2
30
Incident Energy (eV)
64-Gd-156

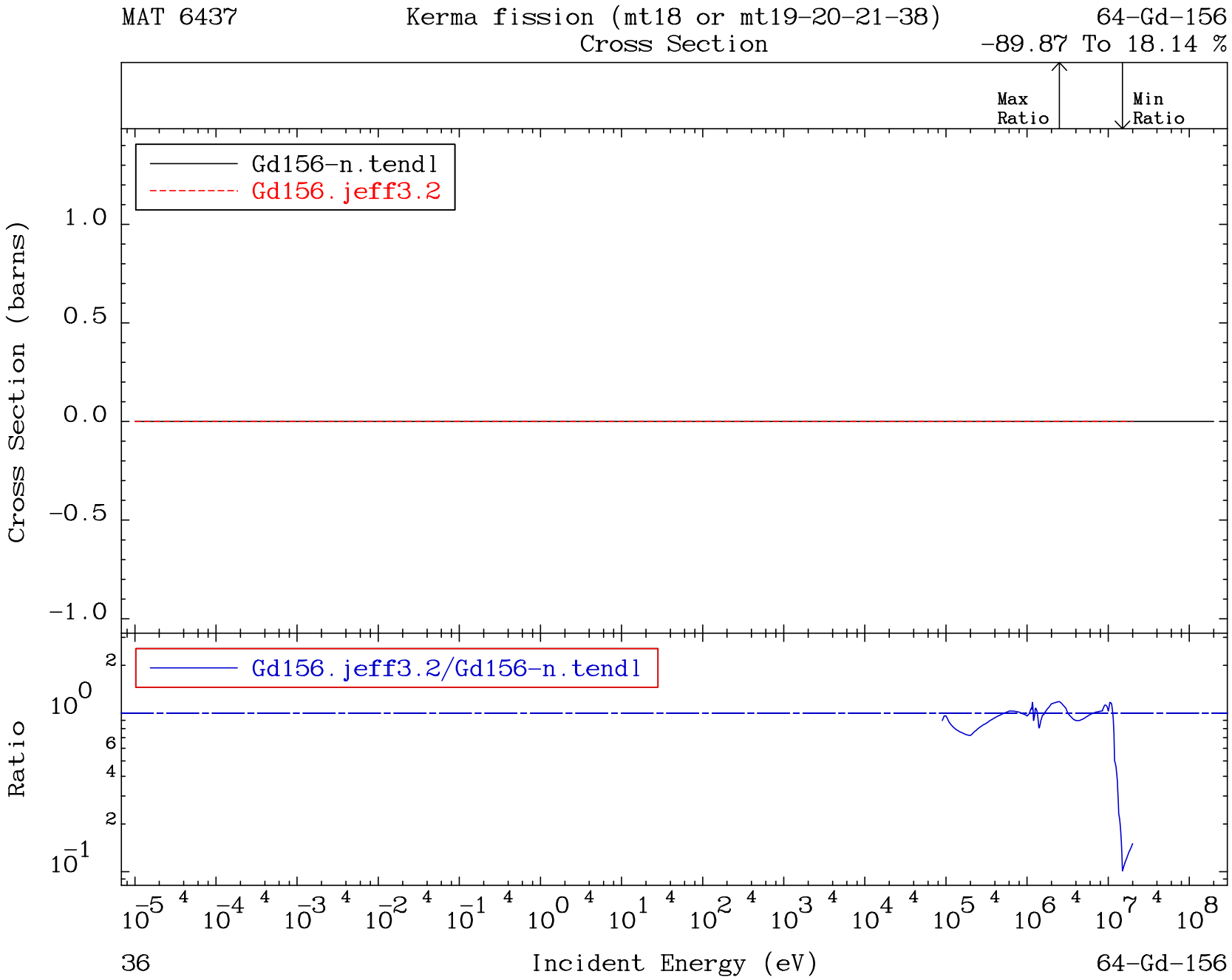

MAT 6437
He-4 Production
Cross Section
64-Gd-156
-100.0 To 9999. %
Min Ratio
Max Ratio
Gd156-n.tendl
Gd156.jeff3.2
Cross Section (barns)
Gd156.jeff3.2/Gd156-n.tendl
Ratio
Incident Energy (eV)
31
64-Gd-156

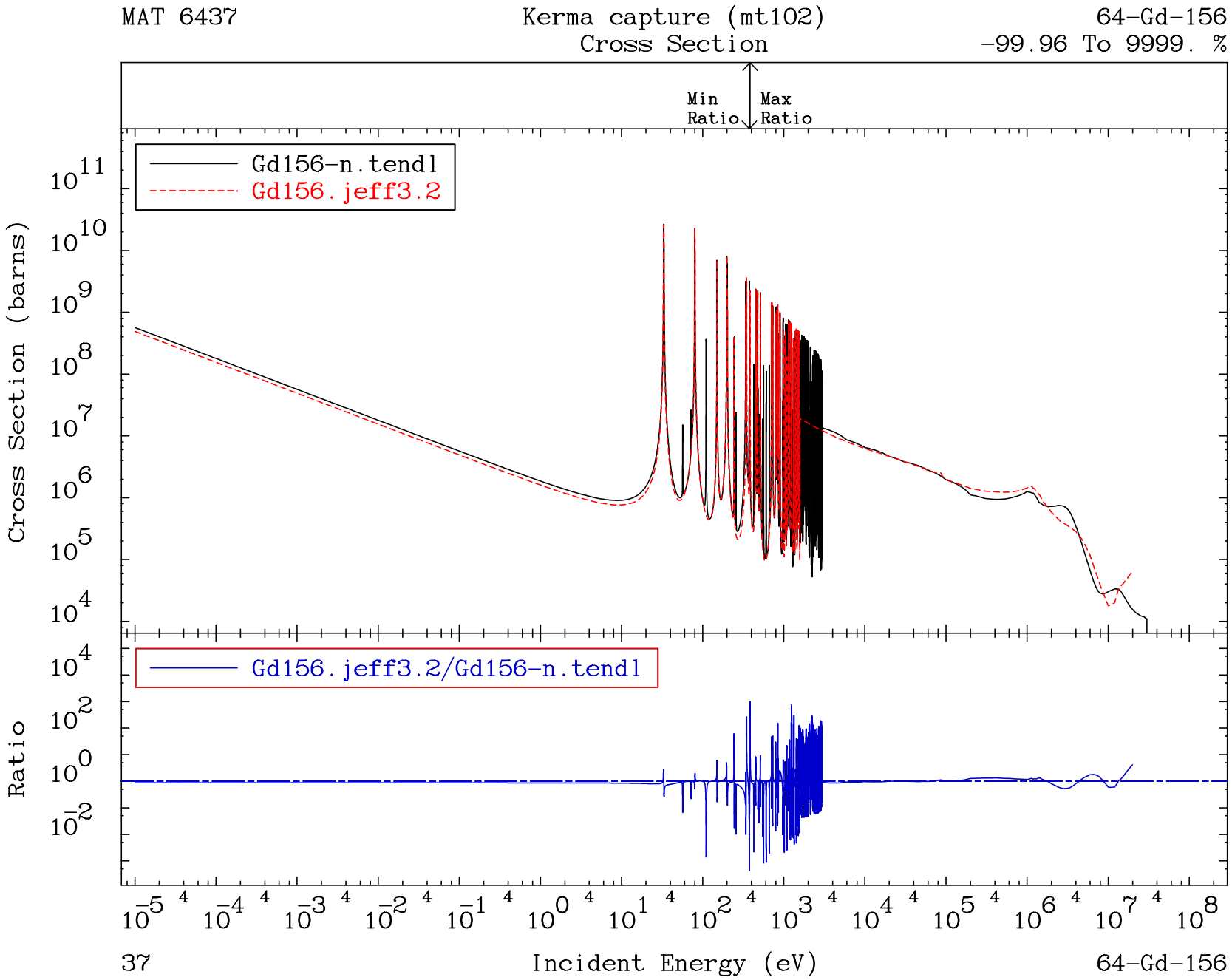

MAT 6437
Kerma total (eV-barns)
Cross Section
64-Gd-156
-99.96 To 9999. %
Min Ratio
Max Ratio
Gd156-n.tendl
Gd156.jeff3.2
Cross Section (barns)
Gd156.jeff3.2/Gd156-n.tendl
Ratio
Incident Energy (eV)
32
64-Gd-156

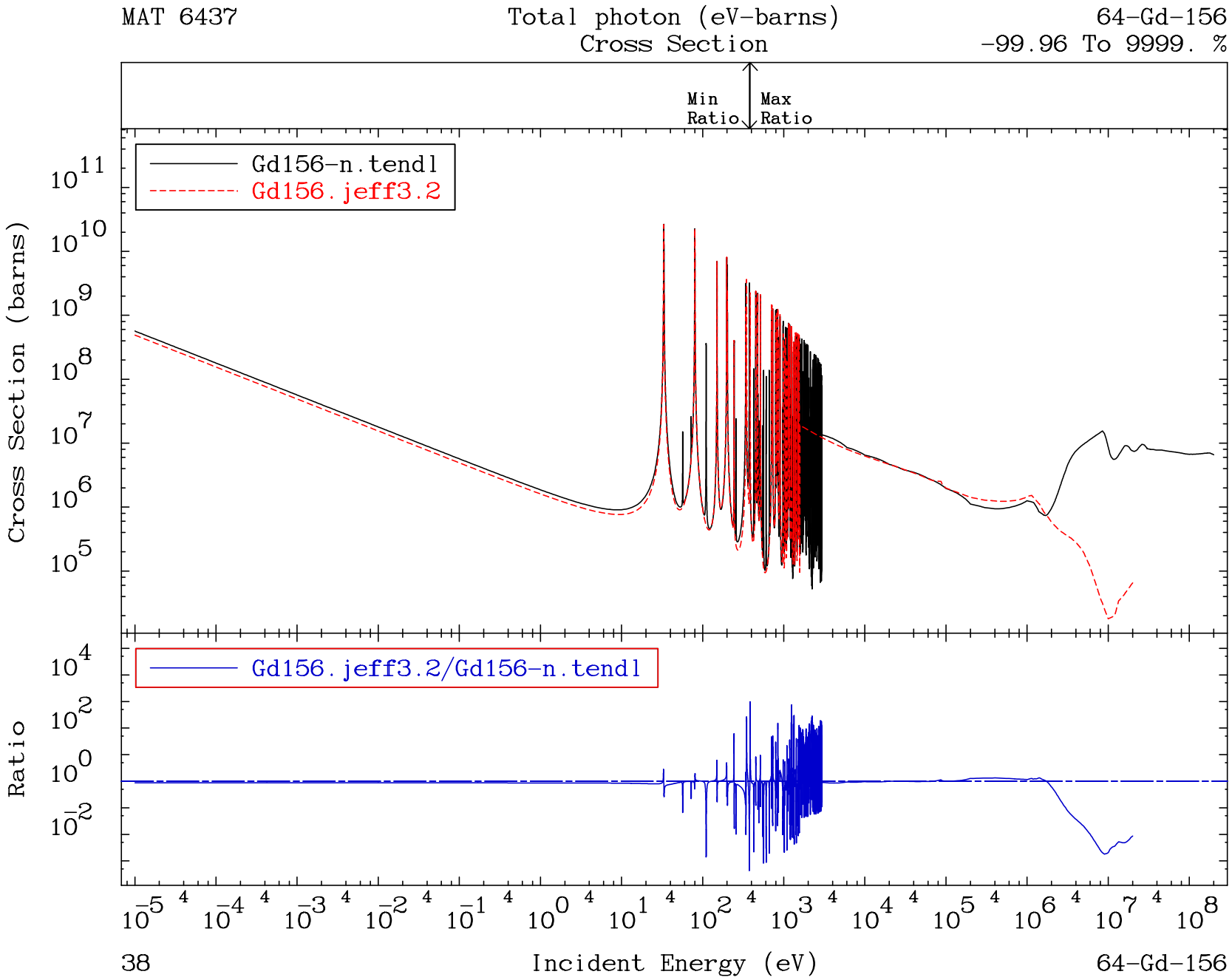

MAT 6437
Kerma elastic
Cross Section
64-Gd-156
-100.0 To 9999. %
Max Ratio
Min Ratio
Gd156-n.tendl
Gd156.jeff3.2
Cross Section (barns)
Gd156.jeff3.2/Gd156-n.tendl
Ratio
Incident Energy (eV)
33
64-Gd-156

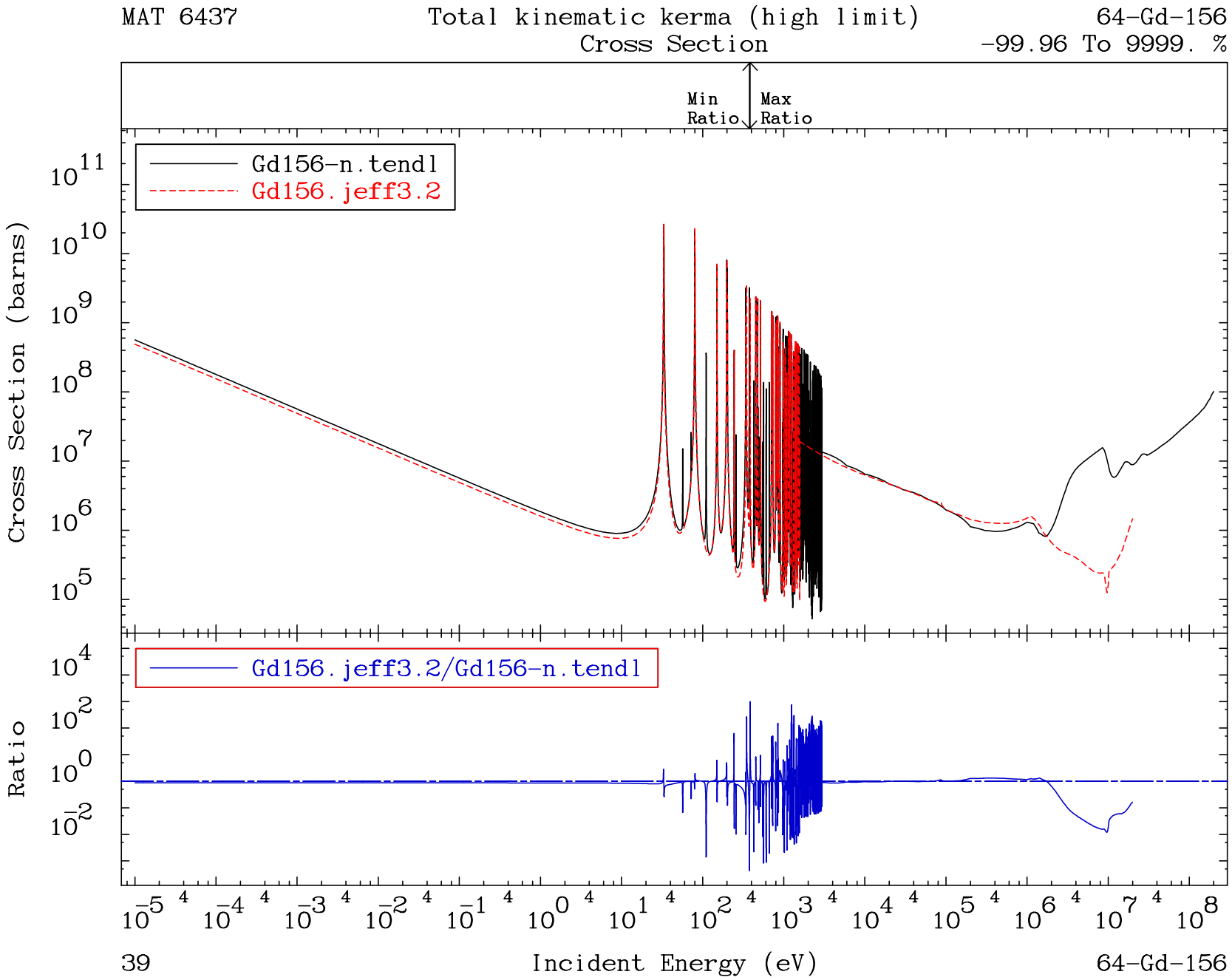

MAT 6437
Kerma non-elastic (all but mt2)
Cross Section
64-Gd-156
-99.96 To 9999. %
Min Ratio
Max Ratio
Gd156-n.tendl
Gd156.jeff3.2
Cross Section (barns)
Gd156.jeff3.2/Gd156-n.tendl
Ratio
Incident Energy (eV)
34
64-Gd-156

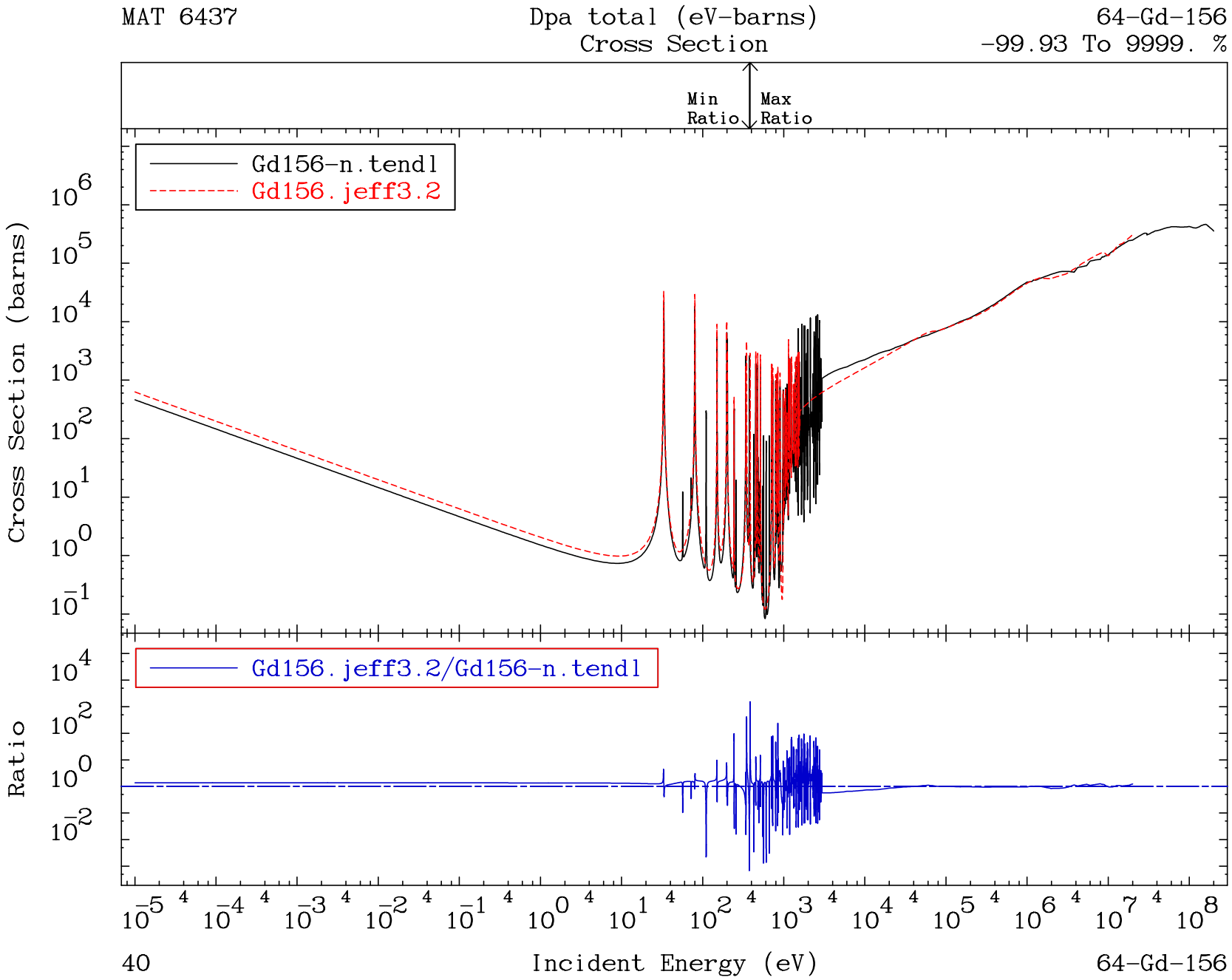

MAT 6437
Kerma inelastic (mt51-91)
Cross Section
64-Gd-156
-89.87 To 18.14 %
Max Ratio
Min Ratio
Gd156-n.tendl Threshold 90.000 keV
Gd156.jeff3.2 Threshold 89.787 keV
Cross Section (barns)
Gd156.jeff3.2/Gd156-n.tendl
Ratio
Incident Energy (eV)
35
64-Gd-156

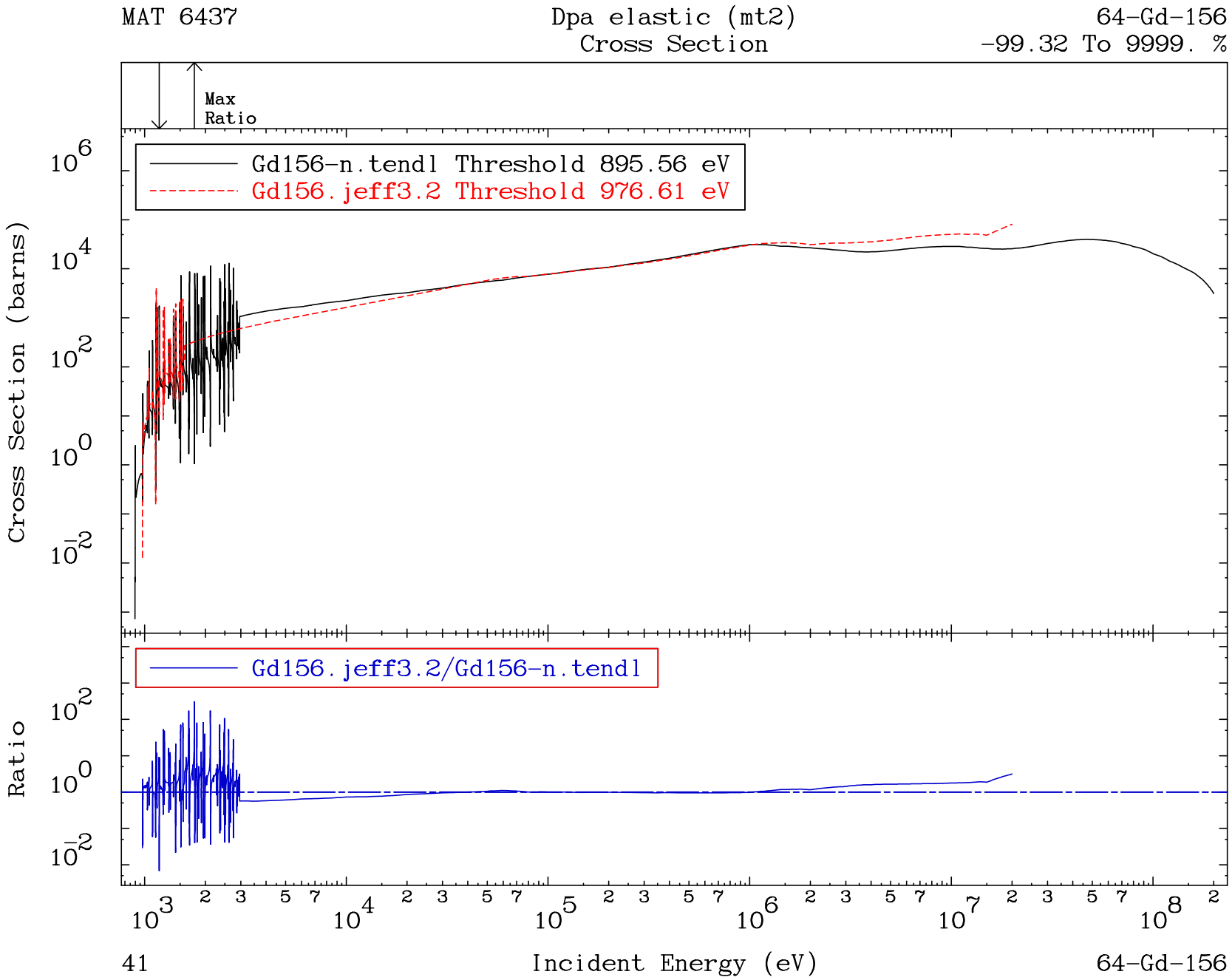

MAT 6437
Kerma fission (mt18 or mt19-20-21-38)
Cross Section
64-Gd-156
-89.87 To 18.14 %
Max Ratio
Min Ratio
Gd156-n.tendl
Gd156.jeff3.2
Cross Section (barns)
1.0
0.5
0.0
-0.5
-1.0
Gd156.jeff3.2/Gd156-n.tendl
Ratio
2
10^0
6
4
2
10^-1
10^-5 4 10^-4 4 10^-3 4 10^-2 4 10^-1 4 10^0 4 10^1 4 10^2 4 10^3 4 10^4 4 10^5 4 10^6 4 10^7 4 10^8
36
Incident Energy (eV)
64-Gd-156

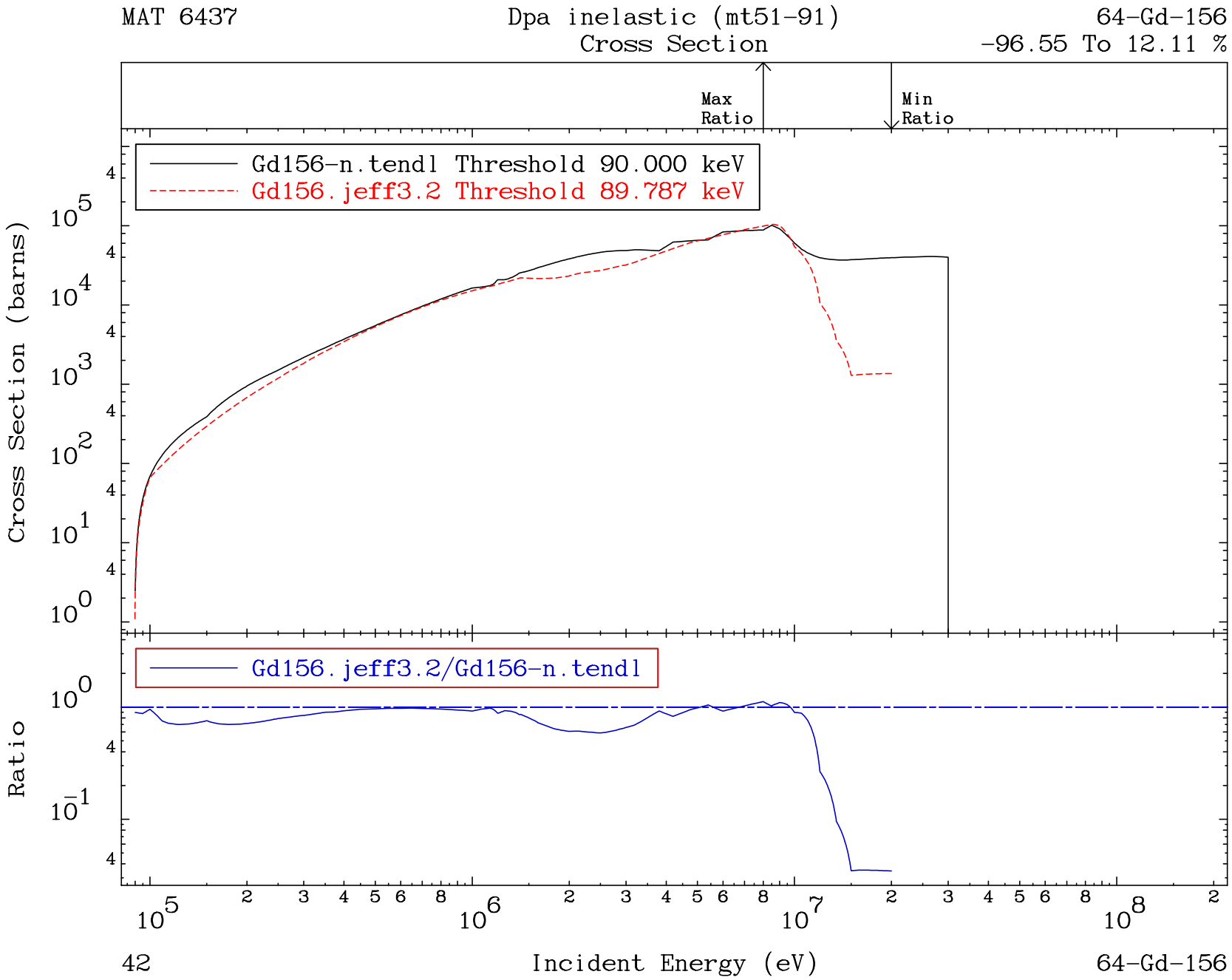

MAT 6437
Kerma capture (mt102)
Cross Section
64-Gd-156
-99.96 To 9999. %
Min Ratio
Max Ratio
Gd156-n.tendl
Gd156.jeff3.2
Cross Section (barns)
Gd156.jeff3.2/Gd156-n.tendl
Ratio
Incident Energy (eV)
37
64-Gd-156

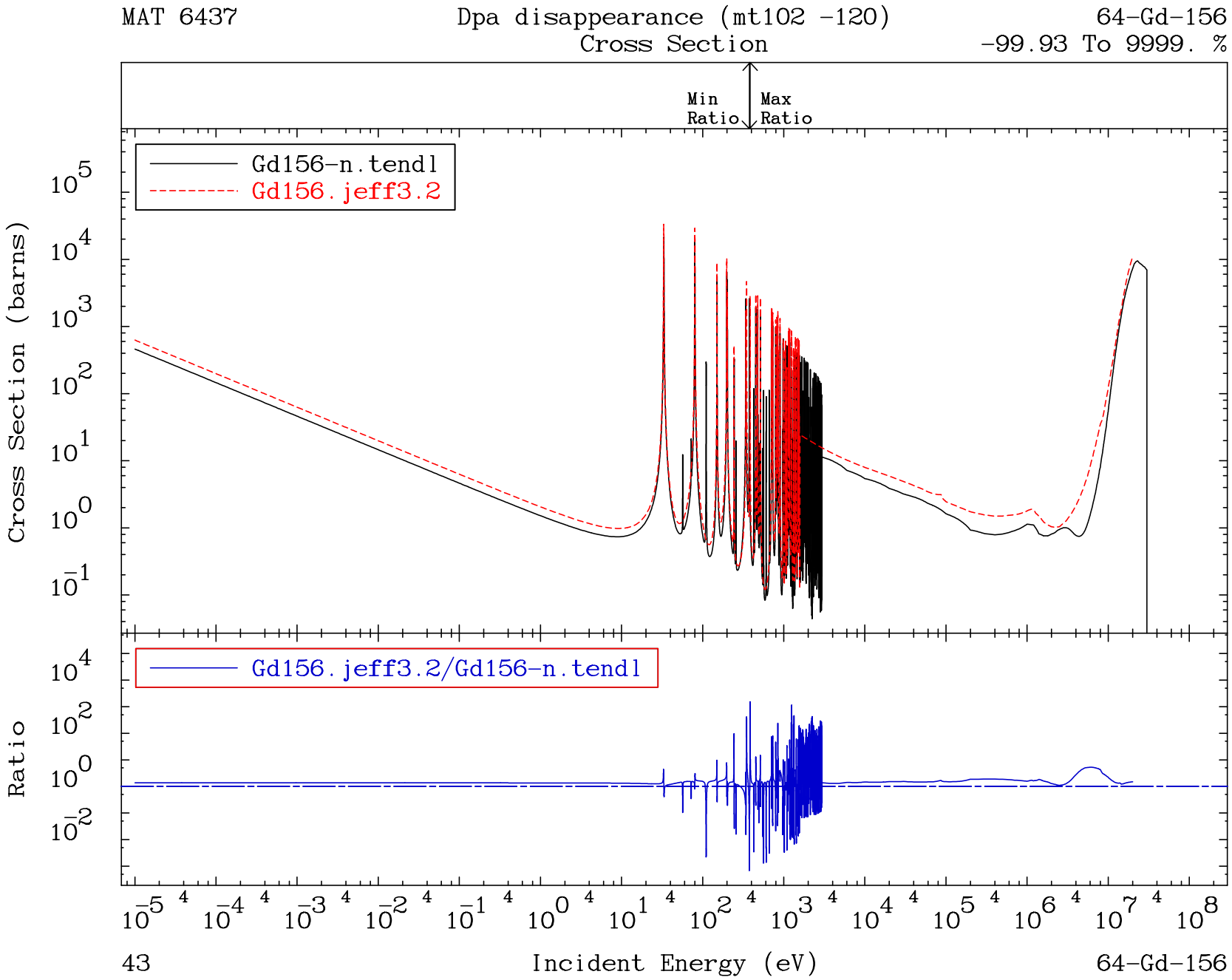

MAT 6437
Total photon (eV-barns)
Cross Section
64-Gd-156
-99.96 To 9999. %
Min Ratio
Max Ratio
Gd156-n.tendl
Gd156.jeff3.2
Cross Section (barns)
Gd156.jeff3.2/Gd156-n.tendl
Ratio
Incident Energy (eV)
38
64-Gd-156


MAT 6437
Total kinematic kerma (high limit)
Cross Section
64-Gd-156
-99.96 To 9999. %
Min Ratio
Max Ratio
Gd156-n.tendl
Gd156.jeff3.2
Cross Section (barns)
Gd156.jeff3.2/Gd156-n.tendl
Ratio
Incident Energy (eV)
39
64-Gd-156


MAT 6437
Dpa total (eV-barns)
Cross Section
64-Gd-156
-99.93 To 9999. %
Min Ratio
Max Ratio
Gd156-n.tendl
Gd156.jeff3.2
Cross Section (barns)
Gd156.jeff3.2/Gd156-n.tendl
Ratio
Incident Energy (eV)
40
64-Gd-156


MAT 6437
Dpa elastic (mt2)
Cross Section
64-Gd-156
-99.32 To 9999. %
Max
Ratio
Gd156-n.tendl Threshold 895.56 eV
Gd156.jeff3.2 Threshold 976.61 eV
Cross Section (barns)
Gd156.jeff3.2/Gd156-n.tendl
Ratio
Incident Energy (eV)
41
64-Gd-156


MAT 6437
Dpa inelastic (mt51-91)
Cross Section
64-Gd-156
-96.55 To 12.11 %
Max Ratio
Min Ratio
Gd156-n.tendl Threshold 90.000 keV
Gd156.jeff3.2 Threshold 89.787 keV
Cross Section (barns)
Gd156.jeff3.2/Gd156-n.tendl
Ratio
Incident Energy (eV)
42
64-Gd-156


MAT 6437
Dpa disappearance (mt102 -120)
Cross Section
64-Gd-156
-99.93 To 9999. %
Min Ratio
Max Ratio
Gd156-n.tendl
Gd156.jeff3.2
Cross Section (barns)
Gd156.jeff3.2/Gd156-n.tendl
Ratio
Incident Energy (eV)
43
64-Gd-156