

144 64 Gd

Δ : (-71920) S_n : (11800) S_p : (4960)
 Q_{EC} : (3740) Q_α : (1110)

Nuclear Bands

- A SD-1 band (94Lu03,97Lu03)
- B SD-2 band (97Lu03)
- C SD-3 band (97Lu03)
- D SD-4 band (97Lu03)
- E SD-5 band (97Lu03)

Levels and γ -ray branchings:

0, 0⁺, 4.5 τ m, %EC+% β^+ =100

743.0, 2⁺ γ_0 743.0 (\dagger_{γ} 100) E2

1702.3, (3⁻) γ_{743} 959.36 (\dagger_{γ} 100)
(E1+M2): $\delta=+0.125$

1744.6, (4⁺) γ_{743} 1001.6 (\dagger_{γ} 100)

1876.4, (2⁺) γ_{743} 1133.4 (\dagger_{γ} 75)
 γ_0 1876.4 (\dagger_{γ} 100)

1886.8, (0⁺) γ_{743} 1143.9 (\dagger_{γ} 100)

2223.5, (2⁺) γ_{743} 1483.5 (\dagger_{γ} 100)
 γ_0 2226.5 (\dagger_{γ} 80)

2302.7, (5⁻) γ_{1745} 558.0 (\dagger_{γ} 100) E1
 γ_{1702} 600.3 (\dagger_{γ} 59.7)

2330.5, (4⁻) γ_{1702} 628.0 (\dagger_{γ} 100)

2354.3, (6⁺) γ_{1745} 609.7(?) (\dagger_{γ} 100)

2442.5, (5⁻) γ_{2303} 139.7 (\dagger_{γ} 42.9)
 γ_{1745} 697.9 (\dagger_{γ} 100)

2462.1, (0⁺, 1⁺, 2⁺) γ_{743} 1719.1 (\dagger_{γ} 100)

2471.9, (7⁻), 13.2 ns γ_{2303} 169.1
(\dagger_{γ} 100) E2

2787.0, (7⁻) γ_{2472} 315.0 (\dagger_{γ} 100) M1

2788.0 γ_{2303} 485.3 (\dagger_{γ} 100)

2862.0, (6⁺) γ_{1745} 1117.4 (\dagger_{γ} 100)

2912.7 γ_{2443} 470.2 (\dagger_{γ} 100)

3016.9, (5⁻, 6⁻, 7⁻) γ_{2443} 573.5(?) (\dagger_{γ} 40)

γ_{2303} 712.8 (\dagger_{γ} 100)

3018, (8⁻) γ_{2787} 231.5 (\dagger_{γ} 67) M1

γ_{2472} 546.4 (\dagger_{γ} 100) M1+E2

3244, (8⁻) γ_{3018} 226.1 (\dagger_{γ} 100)

3346, (9⁻) γ_{3244} 101.7 (\dagger_{γ} 7.6)

γ_{3018} 327.8 (\dagger_{γ} 100) M1

3433, (10⁺), 145.30 ns, $\mu=12.76$ 14,

$Q=1.466$ γ_{3346} 87.3 (\dagger_{γ} 100) E1

γ_{3018} 415.3 (\dagger_{γ} 18.9) M2

3697, (10⁺) γ_{3433} 263.8 γ_{3346} 351.3

3910, (10⁻) γ_{3346} 564.3 γ_{3018} 892.0

4144, (11⁺) γ_{3433} 711.4 (\dagger_{γ} 100)

4267, (11⁻) γ_{3346} 921.3 (\dagger_{γ} 100)

4451, (12⁺) γ_{3433} 1017.8 (\dagger_{γ} 100)

4756, (12⁺) γ_{4144} 611.5 (\dagger_{γ} 100)

5133, (13⁺) γ_{4756} 377.8 γ_{4144} 989.3

5179, (12) γ_{4451} 728.5 (\dagger_{γ} 100)

5369, (14) γ_{5133} 235.9 (\dagger_{γ} 100)

5497, (13) γ_{4451} 1046 (\dagger_{γ} 100)

5626, (14) γ_{5497} 129.1 γ_{5133} 492.2

5722, (15) γ_{5369} 352.9 (\dagger_{γ} 100)

5834, (15) γ_{5626} 208.5 (\dagger_{γ} 100)

A x, J=(22)

A 802.8+x 3, J+2 γ_x 802.8 3 (\dagger_{γ} 0.22 4)

$I^{(2)}=92.2, \hbar\omega=0.412$

A 1649.0+x 4, J+4 γ_{803+x} 846.22 (\dagger_{γ} 0.43 5)

$I^{(2)}=121.2, \hbar\omega=0.431$

A 2528.2+x 5, J+6 γ_{1649+x} 879.2 2

(\dagger_{γ} 0.55 5) (E2) $I^{(2)}=171.7, \hbar\omega=0.445$

A 3430.7+x 5, J+8 γ_{2528+x} 902.5 2

(\dagger_{γ} 0.87 4) (E2) $I^{(2)}=-404.0, \hbar\omega=0.449$

A 4323.3+x 7, J+10 γ_{3431+x} 892.6 5

(\dagger_{γ} 1.00 3) (E2) $I^{(2)}=96.2, \hbar\omega=0.457$

A 5257.5+x 7, J+12 γ_{4323+x} 934.2 2

(\dagger_{γ} 1.00 3) (E2) $I^{(2)}=87.3, \hbar\omega=0.479$

A 6237.5+x 8, J+14 γ_{5258+x} 980.0 2

(\dagger_{γ} 0.99 3) (E2) $I^{(2)}=78.0, \hbar\omega=0.503$

A 7268.8+x 9, J+16 γ_{6238+x} 1031.3 5

(\dagger_{γ} 1.01 5) (E2) $I^{(2)}=75.0, \hbar\omega=0.529$

A 8353.4+x 11, J+18 γ_{7269+x} 1084.6 5

(\dagger_{γ} 0.92 4) (E2) $I^{(2)}=72.9, \hbar\omega=0.556$

A 9492.9+x 11, J+20 γ_{8353+x} 1139.5 2

(\dagger_{γ} 0.87 5) (E2) $I^{(2)}=72.5, \hbar\omega=0.584$

A 10687.6+x 11, J+22 γ_{9493+x} 1194.7 2

(\dagger_{γ} 0.83 7) (E2) $I^{(2)}=72.6, \hbar\omega=0.611$

A 11937.4+x 11, J+24 $\gamma_{10688+x}$ 1249.8 2

(\dagger_{γ} 0.74 7) $I^{(2)}=71.7, \hbar\omega=0.639$

A 13243.0+x 12, J+26 $\gamma_{11937+x}$ 1305.6 5

(\dagger_{γ} 0.65 7) (E2) $I^{(2)}=70.9, \hbar\omega=0.667$

A 14605.0+x 13, J+28 $\gamma_{13243+x}$ 1362.0 5

(\dagger_{γ} 0.55 5) $I^{(2)}=71.7, \hbar\omega=0.695$

A 16022.8+x 14, J+30 $\gamma_{14605+x}$ 1417.8 5

(\dagger_{γ} 0.43 4) $I^{(2)}=70.5, \hbar\omega=0.723$

A 17497.3+x 15, J+32 $\gamma_{16023+x}$ 1474.5 6

(\dagger_{γ} 0.34 5) $I^{(2)}=69.8, \hbar\omega=0.752$

A 19029.1+x 18, J+34 $\gamma_{17497+x}$ 1531.8 10

(\dagger_{γ} 0.24 4) $I^{(2)}=71.2, \hbar\omega=0.780$

A 20617.1+x 24, J+36 $\gamma_{19029+x}$ 1588.0 15

(\dagger_{γ} 0.16 3) $I^{(2)}=70.2, \hbar\omega=0.808$

A 22262+x 3, J+38 $\gamma_{20617+x}$ 1645.2

(\dagger_{γ} 0.09 2)

B y, J=(25)

B 774.5+y, J+2 γ_y 774.5 5 (\dagger_{γ} 0.39 8)

$I^{(2)}=66.3, \hbar\omega=0.402$

B 1609.3+y 7, J+4 γ_{775+y} 834.8 4 (\dagger_{γ} 0.48 8)

$I^{(2)}=67.3, \hbar\omega=0.432$

B 2503.5+y 8, J+6 γ_{1609+y} 894.2 4

(\dagger_{γ} 0.56 7) $I^{(2)}=67.6, \hbar\omega=0.462$

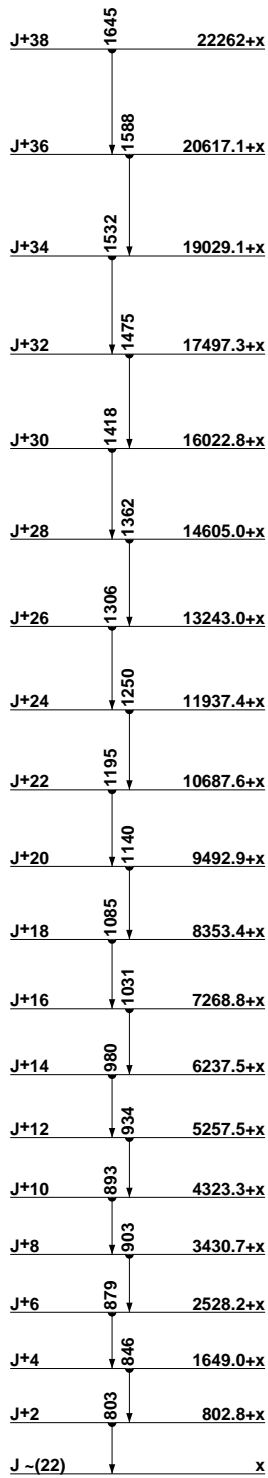
B 3456.9+y 9, J+8 γ_{2504+y} 953.4 3

(\dagger_{γ} 0.77 9) $I^{(2)}=68.7, \hbar\omega=0.491$

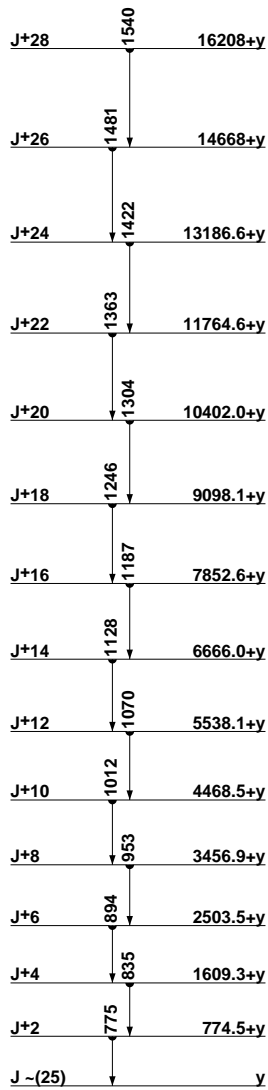
B 4468.5+y 9, J+10 γ_{3457+y} 1011.6 4

(\dagger_{γ} 1.00 3) $I^{(2)}=69.0, \hbar\omega=0.520$

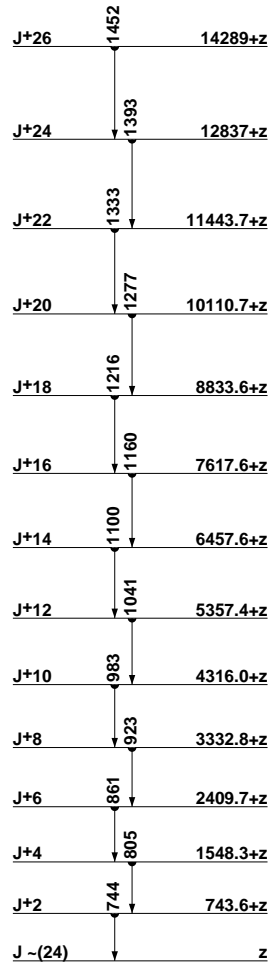
- B 5538.1+y 10, J+12 γ_{4469+y} **1069.64**
 $(\dagger_{0.84} 6)$ $I^{(2)}=68.6, \bar{h}\omega=0.549$
- B 6666.0+y 11, J+14 γ_{5538+y} **1127.95**
 $(\dagger_{1.00} 8)$ $I^{(2)}=68.1, \bar{h}\omega=0.579$
- B 7852.6+y 13, J+16 γ_{6666+y} **1186.65**
 $(\dagger_{1.03} 9)$ $I^{(2)}=67.9, \bar{h}\omega=0.608$
- B 9098.1+y 14, J+18 γ_{7853+y} **1245.56**
 $(\dagger_{0.79} 14)$ $I^{(2)}=68.5, \bar{h}\omega=0.637$
- B 10402.0+y 16, J+20 γ_{9098+y} **1303.97**
 $(\dagger_{0.65} 11)$ $I^{(2)}=68.1, \bar{h}\omega=0.667$
- B 11764.6+y 19, J+22 $\gamma_{10402+y}$ **1362.610**
 $(\dagger_{0.48} 10)$ $I^{(2)}=67.3, \bar{h}\omega=0.696$
- B 13186.6+y 24, J+24 $\gamma_{11765+y}$ **1422.015**
 $(\dagger_{0.36} 7)$ $I^{(2)}=67.8, \bar{h}\omega=0.726$
- B 14668+y 3, J+26 $\gamma_{13187+y}$ **1481.015**
 $(\dagger_{0.22} 6)$ $I^{(2)}=67.8, \bar{h}\omega=0.755$
- B 16208+y 4, J+28 $\gamma_{14668+y}$ **1540.2**
 $(\dagger_{0.16} 5)$
- C z, J=(24)
- C 743.6+z 8, J+2 γ_z **743.68** $(\dagger_{0.44} 8)$
 $I^{(2)}=65.5, \bar{h}\omega=0.387$
- C 1548.3+z 11, J+4 γ_{744+z} **804.77**
 $(\dagger_{0.52} 8)$ $I^{(2)}=70.5, \bar{h}\omega=0.417$
- C 2409.7+z 12, J+6 γ_{1548+z} **861.45**
 $(\dagger_{0.59} 13)$ $I^{(2)}=64.8, \bar{h}\omega=0.446$
- C 3332.8+z 13, J+8 γ_{2410+z} **923.15**
 $(\dagger_{1.11} 15)$ $I^{(2)}=66.6, \bar{h}\omega=0.477$
- C 4316.0+z 14, J+10 γ_{3333+z} **983.24**
 $(\dagger_{1.03} 10)$ $I^{(2)}=68.7, \bar{h}\omega=0.506$
- C 5357.4+z 15, J+12 γ_{4316+z} **1041.45**
 $(\dagger_{1.00} 7)$ $I^{(2)}=68.0, \bar{h}\omega=0.535$
- C 6457.6+z 15, J+14 γ_{5357+z} **1100.23**
 $(\dagger_{0.96} 12)$ $I^{(2)}=66.9, \bar{h}\omega=0.565$
- C 7617.6+z 16, J+16 γ_{6458+z} **1160.05**
 $(\dagger_{1.09} 10)$ $I^{(2)}=71.4, \bar{h}\omega=0.594$
- C 8833.6+z 16, J+18 γ_{7618+z} **1216.04**
 $(\dagger_{0.85} 13)$ $I^{(2)}=65.5, \bar{h}\omega=0.623$
- C 10110.7+z 19, J+20 γ_{8834+z} **1277.19**
 $(\dagger_{0.68} 10)$ $I^{(2)}=71.6, \bar{h}\omega=0.653$
- C 11443.7+z 23, J+22 $\gamma_{10111+z}$ **1333.013**
 $(\dagger_{0.43} 14)$ $I^{(2)}=66.7, \bar{h}\omega=0.681$
- C 12837+z 3, J+24 $\gamma_{11444+z}$ **1393.015**
 $(\dagger_{0.37} 18)$ $I^{(2)}=67.8, \bar{h}\omega=0.711$
- C 14289+z 4, J+26 $\gamma_{12837+z}$ **1452.025**
 $(\dagger_{0.26} 14)$
- D u, J=(29)
- D 852.9+u 4, J+2 γ_0 **852.94** $(\dagger_{0.62} 9)$
 $I^{(2)}=68.0, \bar{h}\omega=0.441$
- D 1764.6+u 6, J+4 γ_{853+u} **911.74**
 $(\dagger_{0.83} 13)$ $I^{(2)}=67.8, \bar{h}\omega=0.471$
- D 2735.3+u 8, J+6 γ_{1765+u} **970.75**
 $(\dagger_{0.95} 10)$ $I^{(2)}=68.4, \bar{h}\omega=0.500$
- D 3764.5+u 10, J+8 γ_{2735+u} **1029.26**
 $(\dagger_{1.03} 14)$ $I^{(2)}=71.0, \bar{h}\omega=0.529$
- D 4850.0+u 12, J+10 γ_{3765+u} **1085.56**
 $(\dagger_{1.00} 6)$ $I^{(2)}=68.4, \bar{h}\omega=0.557$
- D 5994.0+u 14, J+12 γ_{4850+u} **1144.07**
 $(\dagger_{0.63} 15)$ $I^{(2)}=71.3, \bar{h}\omega=0.586$
- D 7194.1+u 15, J+14 γ_{5994+u} **1200.15**
 $(\dagger_{0.52} 11)$ $I^{(2)}=68.5, \bar{h}\omega=0.615$
- D 8452.6+u 16, J+16 γ_{7194+u} **1258.56**
 $(\dagger_{0.45} 11)$ $I^{(2)}=69.0, \bar{h}\omega=0.644$
- D 9769.1+u 17, J+18 γ_{8453+u} **1316.55**
 $(\dagger_{0.38} 9)$ $I^{(2)}=67.8, \bar{h}\omega=0.673$
- D 11144.6+u 19, J+20 γ_{9769+u} **1375.58**
 $(\dagger_{0.28} 10)$ $I^{(2)}=65.0, \bar{h}\omega=0.703$
- D 12581.6+u 24, J+22 $\gamma_{11145+u}$ **1437.015**
 $(\dagger_{0.19} 9)$
- E v, J=(32)
- E 936.8+v 5, J+2 γ_0 **936.85** $(\dagger_{0.89} 11)$
 $I^{(2)}=64.9, \bar{h}\omega=0.484$
- E 1935.2+v 10, J+4 γ_{937+v} **998.48**
 $(\dagger_{0.80} 11)$ $I^{(2)}=67.2, \bar{h}\omega=0.514$
- E 2993.1+v 11, J+6 γ_{1935+v} **1057.95**
 $(\dagger_{1.01} 8)$ $I^{(2)}=73.1, \bar{h}\omega=0.543$
- E 4105.7+v 13, J+8 γ_{2993+v} **1112.66**
 $(\dagger_{0.97} 12)$ $I^{(2)}=67.3, \bar{h}\omega=0.571$
- E 5277.7+v 16, J+10 γ_{4106+v} **1172.1**
 $(\dagger_{1.00} 8)$ $I^{(2)}=69.0, \bar{h}\omega=0.601$
- E 6507.7+v 19, J+12 γ_{5278+v} **1230.1**
 $(\dagger_{0.90} 11)$ $I^{(2)}=70.2, \bar{h}\omega=0.629$
- E 7794.7+v 24, J+14 γ_{6508+v} **1287.015**
 $(\dagger_{0.57} 11)$ $I^{(2)}=64.5, \bar{h}\omega=0.659$
- E 9144+v 4, J+16 γ_{7795+v} **1349.2**
 $(\dagger_{0.50} 13)$ $I^{(2)}=65.6, \bar{h}\omega=0.690$
- E 10554+v 4, J+18 γ_{9144+v} **1410.2**
 $(\dagger_{0.44} 8)$



SD-1 band
(94Lu03,97Lu03)

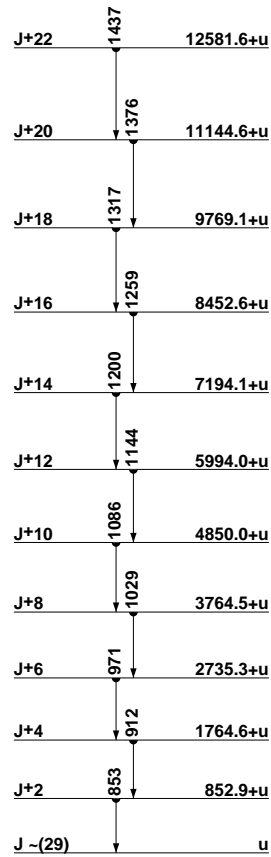


SD-2 band
(97Lu03)

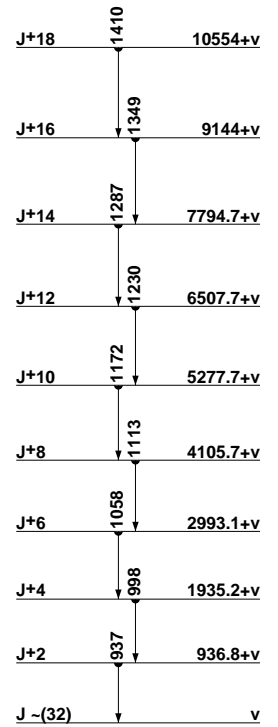


SD-3 band
(97Lu03)

¹⁴⁴₆₄Gd



SD-4 band
(97Lu03)



SD-5 band
(97Lu03)