$^{144}_{63}$Eu

Δ: –75661 *18* **S_n:** 9480 *22* **S_p:** 3423 *17*
Q_{EC}: 6315 *17* **Q_α:** 340 *30*

Nuclear Bands

A SD-1 band (97Ha06,93Mu16)
B SD-2 band (97Ha06)
C SD-3 band (97Ha06)

Levels and γ-ray branchings:

0, 1^+, 10.2 *1* s, %EC+%β^+=100, μ=1.893 *13*, Q=0.10 *3*

333.1 *4*, $(2)^+$ γ_0***333.3*** *2* (†$_\gamma$100) M1

347.4 *4*, $(3)^+$ γ_{333}***13.8*** γ_0***347.1*** *2* (†$_\gamma$100) E2

580.6 *4*, $(4)^+$ γ_{347}***233.3*** *2* (†$_\gamma$100 *5*) M1 γ_{333}***247.5*** *5* (†$_\gamma$7.5 *35*) M1,E2

604.4 *7*, $(3)^+$ γ_{347}***257.3*** (†$_\gamma$37.0) γ_{333}***271.1*** (†$_\gamma$100) M1,(E2)

621.5 *5*, $(2,3)^+$ γ_{347}***274.4*** (†$_\gamma$51.2) γ_{333}***288.2*** (†$_\gamma$13.0) γ_0***621.5*** (†$_\gamma$100) E2,(M1)

629.6 *5*, $(2)^-$ γ_{347}***282.4*** (†$_\gamma$4.3) M1 γ_0***629.5*** (†$_\gamma$100) E1

762.9 *4*, $(5)^+$ γ_{581}***182.4*** *2* (†$_\gamma$100 *18*) M1,E2 γ_{347}***415.3*** *3* (†$_\gamma$68 *27*) E2

784.0 *7*, $(2)^+$ γ_{581}***203.6*** (†$_\gamma$4.2) M1 γ_{333}***450.7*** (†$_\gamma$100) M1,E2

887.7 *4*, $(5)^-$ γ_{763}***124.8*** *2* (†$_\gamma$2.9 *6*) γ_{581}***307.0*** *2* (†$_\gamma$100 *5*) E1

894.7 *9*, (4^+) γ_{604}***290.2*** (†$_\gamma$100) M1,E2 γ_{581}***314.1*** (†$_\gamma$46.4)

908.0 *6* γ_{347}***560.8*** (†$_\gamma$48.4) γ_0***907.9*** (†$_\gamma$100)

926.3 *5*, (6^-), 28 *2* ns γ_{888}***38.7*** *3* (†$_\gamma$100 *63*) (M1+E2) γ_{763}***163.1*** *5* (†$_\gamma$38 *25*)

974.8 *5* γ_{622}***353.3*** γ_{333}***641.5*** (†$_\gamma$100) γ_0***974.8*** (†$_\gamma$42.3)

1048.8 *11*, (4) γ_{926}***122.5*** (†$_\gamma$100)

1074.1 *8* γ_{333}***740.9*** (†$_\gamma$100)

1120.4 *6*, (7^-) γ_{926}***194.1*** *4* (†$_\gamma$100) M1

1127.9 *7*, (8^-), 1.0 *1* μs γ_{1120}***7.5*** (†$_{\gamma+e}$64 *21*) γ_{926}***201.6*** *5* (†$_\gamma$100) E2

1145.6 *6* γ_{784}***361.6*** (†$_\gamma$13.8) γ_{604}***541.2*** (†$_\gamma$55.2) γ_{333}***812.3*** (†$_\gamma$100) γ_0***1145.6*** (†$_\gamma$89.7)

1194.4 *6*, $(6,7^-)$ γ_{926}***268.1*** *3* (†$_\gamma$100) M1,E2

1201.4 *6* γ_{622}***579.9*** (†$_\gamma$21.2) γ_{333}***868.1*** (†$_\gamma$100) γ_0***1201.4*** (†$_\gamma$20)

1293.5 *5* γ_{908}***385.6*** γ_{630}***664.0*** (†$_\gamma$35.3) γ_{333}***960.2*** γ_0***1293.5*** (†$_\gamma$45.3)

1304.2 *8* γ_{347}***956.9*** (†$_\gamma$100)

1338.2 *7*, (9^-), 5.0 *5* ns γ_{1128}***210.3*** *3* (†$_\gamma$100) M1

1402.3 *7* γ_{347}***1055.1*** (†$_\gamma$100)

1559.8 *7* γ_{333}***1226.6*** (†$_\gamma$100) γ_0***1559.9*** (†$_\gamma$53.7)

1669.5 *7*, (9^+) γ_{1338}***331.3*** *2* (†$_\gamma$70 *8*) γ_{1128}***541.7*** *4* (†$_\gamma$100 *25*) E1

1804.7 *12* γ_{1201}***603.3*** (†$_\gamma$100)

1930.4 *8* γ_{630}***1300.7*** (†$_\gamma$71.4) γ_{347}***1583.1*** (†$_\gamma$100)

2161.5 *9*, (10^+) γ_{1670}***492.0*** *5* (†$_\gamma$100) M1

2362.1 *7* γ_{347}***2015.0*** (†$_\gamma$19.0) γ_{333}***2028.8*** (†$_\gamma$9.2) γ_0***2362.1*** (†$_\gamma$100)

2432.6 *4* γ_{1560}***872.7*** (†$_\gamma$3.3) γ_{1402}***1030.4*** (†$_\gamma$0.84) γ_{1304}***1128.6*** (†$_\gamma$6.6) γ_{1294}***1139.1*** (†$_\gamma$4.3) γ_{1201}***1231.2*** (†$_\gamma$14.8) γ_{1146}***1287.0*** (†$_\gamma$5.4) γ_{1074}***1358.4*** (†$_\gamma$1.7) γ_{975}***1457.8*** (†$_\gamma$10.6) γ_{908}***1524.7*** (†$_\gamma$3.6) γ_{630}***1803.1*** (†$_\gamma$12.5) γ_0***2432.6*** (†$_\gamma$100)

2692.7 *7*, (1^+) γ_{975}***1717.9*** (†$_\gamma$19.6) γ_{622}***2071.2*** (†$_\gamma$35.3) γ_0***2692.7*** (†$_\gamma$100)

2709.6 *8* γ_{622}***2088.1*** (†$_\gamma$47.2) γ_0***2709.6*** (†$_\gamma$100)

2804.6 *5*, (1^+) γ_{1402}***1402.4*** (†$_\gamma$14.8) γ_{1294}***1511.1*** (†$_\gamma$13.8) γ_{975}***1829.8*** (†$_\gamma$27.6) γ_{622}***2183.1*** (†$_\gamma$26.2) γ_{347}***2457.5*** (†$_\gamma$11.4) γ_{333}***2471.3*** (†$_\gamma$100) γ_0***2804.6*** (†$_\gamma$7.6)

2827.9 *7* γ_{630}***2198.4*** (†$_\gamma$100) γ_{333}***2494.6*** (†$_\gamma$85.1) γ_0***2827.9*** (†$_\gamma$61.7)

A **x**, J≈(36)

A **878.6+x** *6*, J+2 γ_x***878.6*** *6* (†$_\gamma$0.39 *8*)
$I^{(2)}$=166.0, ħω=0.445

A **1781.3+x** *8*, J+4 γ_{879+x}***902.7*** *4* (†$_\gamma$0.63 *8*)
$I^{(2)}$=80.0, ħω=0.464

A **2734.0+x** *10*, J+6 γ_{1781+x}***952.7*** *6* (†$_\gamma$0.57 *12*) *$I^{(2)}$=67.8, ħω=0.491*

A **3745.7+x** *11*, J+8 γ_{2734+x}***1011.7*** *5* (†$_\gamma$0.96 *13*) *$I^{(2)}$=69.4, ħω=0.520*

A **4815.0+x** *13*, J+10 γ_{3746+x}***1069.3*** *6* (†$_\gamma$0.88 *14*) *$I^{(2)}$=68.1, ħω=0.549*

A **5943.0+x** *14*, J+12 γ_{4815+x}***1128.0*** *6* (†$_\gamma$0.85 *13*) *$I^{(2)}$=68.8, ħω=0.579*

A **7129.1+x** *16*, J+14 γ_{5943+x}***1186.1*** *7* (†$_\gamma$0.64 *14*) *$I^{(2)}$=68.0, ħω=0.608*

A **8374.0+x** *17*, J+16 γ_{7129+x}***1244.9*** *6* (†$_\gamma$0.71 *11*) *$I^{(2)}$=69.8, ħω=0.637*

A **9676.2+x** *19*, J+18 γ_{8374+x}***1302.2*** *8* (†$_\gamma$0.59 *11*) *$I^{(2)}$=65.5, ħω=0.666*

A **11039.5+x** *21*, J+20 γ_{9676+x}***1363.3*** *9* (†$_\gamma$0.57 *11*) *$I^{(2)}$=68.8, ħω=0.696*

A **12460.9+x** *24*, J+22 $\gamma_{11040+x}$***1421.4*** *12*
(†$_\gamma$0.46 *13*) $I^{(2)}$*=69.9, ħω=0.725*

A **13940+x** *4*, J+24 $\gamma_{12461+x}$***1478.6*** *21*
(†$_\gamma$0.40 *18*)

B **y**, J≈(22)

B **506.9+y** *3*, J+2 γ_y***506.9*** *3* (†$_\gamma$0.36 *8*)
$I^{(2)}$*=60.6, ħω=0.270*

B **1079.8+y** *4*, J+4 γ_{507+y}***572.9*** *2*
(†$_\gamma$0.65 *12*) $I^{(2)}$*=60.7, ħω=0.303*

B **1718.6+y** *5*, J+6 γ_{1080+y}***638.8*** *2*
(†$_\gamma$0.76 *13*) $I^{(2)}$*=61.4, ħω=0.336*

B **2422.5+y** *5*, J+8 γ_{1719+y}***703.9*** *3*
(†$_\gamma$0.61 *9*) $I^{(2)}$*=61.0, ħω=0.368*

B **3192.0+y** *6*, J+10 γ_{2423+y}***769.5*** *2*
(†$_\gamma$0.81 *9*) $I^{(2)}$*=60.5, ħω=0.401*

B **4027.6+y** *7*, J+12 γ_{3192+y}***835.6*** *3*
(†$_\gamma$0.93 *10*) $I^{(2)}$*=61.4, ħω=0.434*

B **4928.3+y** *7*, J+14 γ_{4028+y}***900.7*** *3*
(†$_\gamma$0.86 *11*) $I^{(2)}$*=60.9, ħω=0.467*

B **5894.7+y** *8*, J+16 γ_{4928+y}***966.4*** *3*
(†$_\gamma$0.82 *10*) $I^{(2)}$*=61.3, ħω=0.500*

B **6926.4+y** *9*, J+18 γ_{5895+y}***1031.7*** *4*
(†$_\gamma$0.85 *11*) $I^{(2)}$*=62.6, ħω=0.532*

B **8022.0+y** *10*, J+20 γ_{6926+y}***1095.6*** *5*
(†$_\gamma$0.63 *8*) $I^{(2)}$*=62.5, ħω=0.564*

B **9181.6+y** *11*, J+22 γ_{8022+y}***1159.6*** *5*
(†$_\gamma$0.63 *9*) $I^{(2)}$*=64.5, ħω=0.595*

B **10403.2+y** *13*, J+24 γ_{9182+y}***1221.6*** *5*
(†$_\gamma$0.52 *8*) $I^{(2)}$*=66.2, ħω=0.626*

B **11685.2+y** *15*, J+26 $\gamma_{10403+y}$***1282.0*** *8*
(†$_\gamma$0.50 *7*) $I^{(2)}$*=76.0, ħω=0.654*

B **13019.8+y** *16*, J+28 $\gamma_{11685+y}$***1334.6*** *6*
(†$_\gamma$0.45 *6*) $I^{(2)}$*=110.5, ħω=0.676*

B **14390.6+y** *19*, J+30 $\gamma_{13020+y}$***1370.8*** *9*
(†$_\gamma$0.28 *6*) $I^{(2)}$*=155.6, ħω=0.692*

B **15787.1+y** *22*, J+32 $\gamma_{14391+y}$***1396.5*** *11*
(†$_\gamma$0.23 *5*) $I^{(2)}$*=117.6, ħω=0.707*

B **17217.6+y** *23*, J+34 $\gamma_{15787+y}$***1430.5*** *9*
(†$_\gamma$0.19 *5*) $I^{(2)}$*=109.6, ħω=0.724*

B **18684.6+y** *30*, J+36 $\gamma_{17218+y}$***1467*** *1*
(†$_\gamma$0.10 *5*)

C **z**, J

C **603.2+z** *4*, J+2 γ_z***603.2*** *4* (†$_\gamma$0.61 *14*)
$I^{(2)}$*=61.5, ħω=0.318*

C **1271.4+z** *6*, J+4 γ_{603+z}***668.2*** *4* (†$_\gamma$0.61 *9*)
$I^{(2)}$*=63.6, ħω=0.350*

C **2002.5+z** *7*, J+6 γ_{1271+z}***731.1*** *3*
(†$_\gamma$0.63 *9*) $I^{(2)}$*=63.4, ħω=0.381*

C **2796.7+z** *7*, J+8 γ_{2003+z}***794.2*** *3*
(†$_\gamma$0.57 *9*) $I^{(2)}$*=62.8, ħω=0.413*

C **3654.6+z** *8*, J+10 γ_{2797+z}***857.9*** *3*
(†$_\gamma$1.06 *10*) $I^{(2)}$*=65.4, ħω=0.444*

C **4573.6+z** *15*, J+12 γ_{3655+z}***919.1*** *12*
(†$_\gamma$0.96 *10*) $I^{(2)}$*=64.1, ħω=0.475*

C **5555.1+z** *15*, J+14 γ_{4574+z}***981.5*** *4*
(†$_\gamma$0.99 *10*) $I^{(2)}$*=64.6, ħω=0.506*

C **6598.5+z** *16*, J+16 γ_{5555+z}***1043.4*** *6*
(†$_\gamma$1.16 *13*) $I^{(2)}$*=65.5, ħω=0.537*

C **7703.1+z** *17*, J+18 γ_{6599+z}***1104.5*** *6*
(†$_\gamma$0.68 *10*) $I^{(2)}$*=65.8, ħω=0.567*

C **8868.4+z** *18*, J+20 γ_{7703+z}***1165.3*** *6*
(†$_\gamma$0.65 *9*) $I^{(2)}$*=65.0, ħω=0.598*

C **10095.2+z** *20*, J+22 γ_{8868+z}***1226.8*** *7*
(†$_\gamma$0.47 *8*) $I^{(2)}$*=69.6, ħω=0.628*

C **11379.5+z** *21*, J+24 $\gamma_{10095+z}$***1284.3*** *6*
(†$_\gamma$0.56 *9*) $I^{(2)}$*=66.4, ħω=0.657*

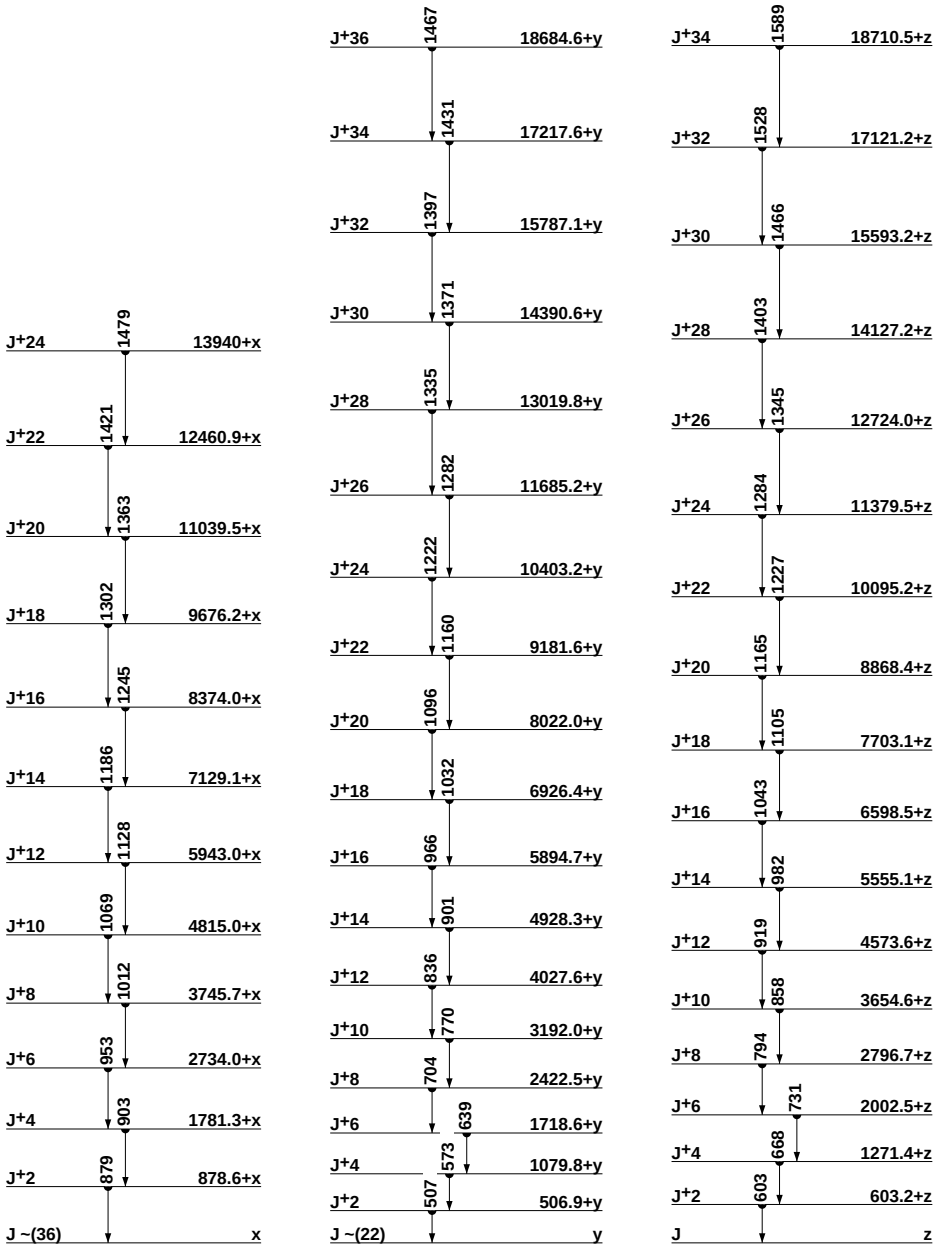
C **12724.0+z** *23*, J+26 $\gamma_{11380+z}$***1344.5*** *10*
(†$_\gamma$0.43 *8*) $I^{(2)}$*=68.1, ħω=0.687*

C **14127.2+z** *25*, J+28 $\gamma_{12724+z}$***1403.2*** *10*
(†$_\gamma$0.41 *7*) $I^{(2)}$*=63.7, ħω=0.717*

C **15593.2+z** *26*, J+30 $\gamma_{14127+z}$***1466.0*** *7*
(†$_\gamma$0.34 *6*) $I^{(2)}$*=64.5, ħω=0.748*

C **17121.2+z** *30*, J+32 $\gamma_{15593+z}$***1528.0*** *13*
(†$_\gamma$0.20 *4*) $I^{(2)}$*=65.3, ħω=0.779*

C **18710.5+z** *32*, J+34 $\gamma_{17121+z}$***1589.3*** *10*
(†$_\gamma$0.16 *5*)



SD-1 band
(97Ha06,93Mu16)

SD-2 band
(97Ha06)

SD-3 band
(97Ha06)

$^{144}_{63}$Eu