Adopted Levels, Gammas

| | | History | | |
Type	Author	Citation	Literature Cutoff Date
Full Evaluation	Coral M. Baglin	NDS 111,1807 (2010)	15-Jun-2010

Q(β^-)=1.50×10^3 15; S(n)=6.70×10^3 16; S(p)=9.92×10^3 $syst$; Q(α)=−1.21×10^3 $syst$ 2012Wa38

Note: Current evaluation has used the following Q record $ 1.50E3 14 $6.70E3 15 10.01E3SY-1240 syst 2003Au03,2009AuZZ.
ΔS(p)=420, ΔQ(α)=420 (2003Au03, 2009AuZZ).

Identification: genetic relationship to ^{168}Ho activity, as observed in Dy/Ho fraction from spontaneous fission of ^{252}Cf (1982Ge04).

The adopted level scheme is taken from 1999As03. The energy offset x for the 0.0+x and 227+x levels is possibly of the order of 1
   MeV; see comment on tentative J^π for these levels.

Other Reactions.

^{170}Er(^{18}O,^{20}Ne) (1998Lu08): E(^{18}O)=104 MeV; determined mass excess for ^{168}Dy.

^{168}Dy Levels

Cross Reference (XREF) Flags

A	^{168}Tb β^- decay
B	^{170}Er(^{82}Se,^{84}Krγ)

E(level)[†]	J^{π}[‡]	$T_{1/2}$	XREF	Comments
0.0[@]	0$^+$	8.7 min 3	AB	%β^-=100 J^π: g.s. of even-even nucleus. $T_{1/2}$: weighted average of 8.5 min 5 (1982Ge04) and 8.8 min 3 (1990Ch37).
0.0+x	(3$^+$)[#]		A	
74.96[@] 6	(2$^+$)		AB	
227.03+x 16	(4$^-$)[#]		A	
248.33[@] 10	(4$^+$)		AB	
516[@]	(6$^+$)		B	
873[@]	(8$^+$)		B	
1315[@]	(10$^+$)		B	

[†] From Eγ.

[‡] From apparent g.s. band structure in ^{170}Er(^{82}Se,^{84}Krγ), except as noted.

[#] Speculative value from 1999As03, who assign the 227γ as an interband γ because its energy exceeds that expected from
   systematics for intraband γ's in lighter even-even Dy, in which intense octupole to γ band ΔJ=−1 transitions are known. Strong
   β^- feeding from (4$^-$) ^{168}Tb to the J=4 member of the octupole band is likely, and band energy systematics suggest that the J=4
   member of the octupole band and the J=3 member of the γ band lie in the vicinity of 1300 and 1050, respectively, consistent
   with observed Eγ. Poor statistics precluded the observation by 1999As03 of expected transitions connecting the γ and g.s. bands.

[@] Band(A): K^π=0$^+$ g.s. band (2010So03). Band parameters: A=12.5, B=−5.5 (J=0, 2, 4 levels). Structure closely resembles that
   observed for g.s. bands in lighter even-A Dy isotopes (2010So03).

γ(^{168}Dy)

E$_i$(level)	J^{π}_i	E$_\gamma$[†]	I$_\gamma$	E$_f$	J^{π}_f	Mult.	α[#]
74.96	(2$^+$)	74.96 6	100	0.0	0$^+$	[E2]	8.18
227.03+x	(4$^-$)	227.03 16	100	0.0+x	(3$^+$)	[E1]	0.0349
248.33	(4$^+$)	173.37 8	100	74.96	(2$^+$)	[E2]	0.383
516	(6$^+$)	268[‡]	100	248.33	(4$^+$)	[E2]	0.0915

Continued on next page (footnotes at end of table)

Adopted Levels, Gammas (continued)

$\gamma(^{168}$Dy) (continued)

E$_i$(level)	J$_i^\pi$	E$_\gamma$†	I$_\gamma$	E$_f$	J$_f^\pi$	Mult.	α#
873	(8$^+$)	357‡	100	516	(6$^+$)	[E2]	0.0384
1315	(10$^+$)	442‡	100	873	(8$^+$)	[E2]	0.0210

† From ^{168}Tb β^- decay, except as noted.
‡ From ^{170}Er(^{82}Se,^{84}Krγ); uncertainties unstated by authors.
# Total theoretical internal conversion coefficients, calculated using the BrIcc code (2008Ki07) with Frozen orbital approximation based on γ-ray energies, assigned multipolarities, and mixing ratios, unless otherwise specified.
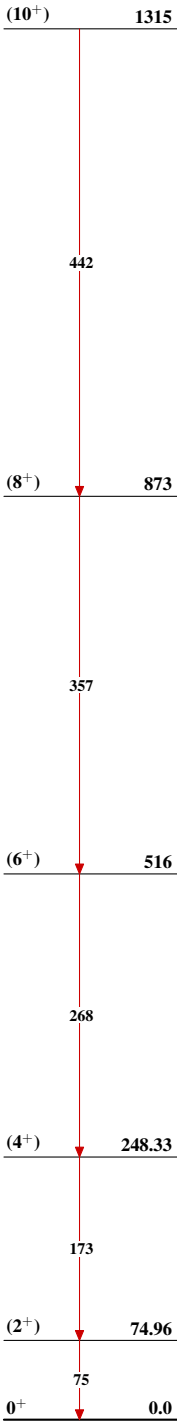
Adopted Levels, Gammas

Level Scheme

Intensities: Relative photon branching from each level
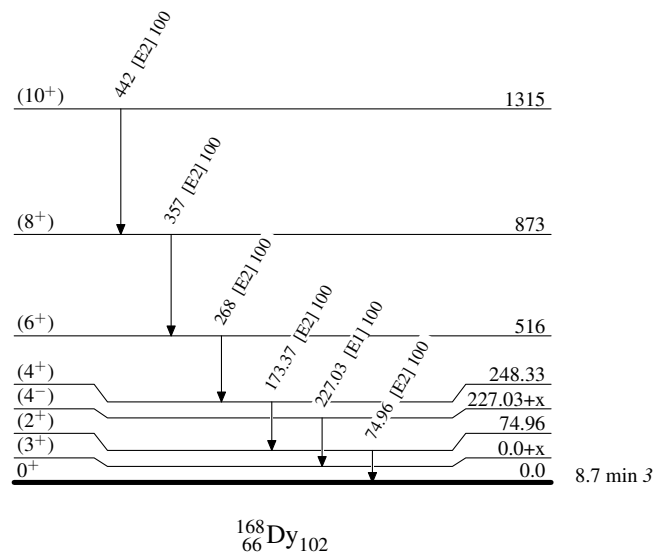
$^{168}_{66}$Dy$_{102}$

Adopted Levels, Gammas

Band(A): $K^\pi=0^+$ g.s. band (2010So03)

(10^+)		1315
	442	
(8^+)		873
	357	
(6^+)		516
	268	
(4^+)		248.33
	173	
(2^+)		74.96
	75	
0^+		0.0

$^{168}_{66}$Dy$_{102}$