^{161}Dy(d,p) 1995Be02

Type	Author	History Citation	Literature Cutoff Date
Full Evaluation	N. Nica	NDS 195,1 (2024)	19-Sep-2023

Additional information 1.
Configuration for the ^{161}Dy g.s. is ν 5/2[642].
Data are from 1995Be02; other: 1967Ba34 report 39 levels.
1967Ba34: ^{161}Dy(d,p) on enriched (77% to 99%) target with E(d)=12 MeV at 3 angles. Outgoing particles measured in magnetic spectrograph.
1995Be02: ^{161}Dy(d,p) on mass separated target with E(d)=15 and 22 MeV. Protons measured at 30° with multiwire proportional counter in Q3D magnetic spectrograph with FWHM of 3.3 for 22-MeV deuterons and 3.9 keV for 15-MeV deuterons.

^{162}Dy Levels

E(level)[†]	J$^\pi$[‡]	Relative I$_p$[#]	Comments
−0.3[@] *6*	0$^+$	0.67 *8*	
80.67[@] *16*	2$^+$	12 *3*	
265.65[@] *10*	4$^+$	33 *4*	
548.55[@] *18*	6$^+$	23 *4*	
888.15[&] *16*	2$^+$	5.74 *22*	
921.30[@] *23*	8$^+$	2.75 *17*	
963.4[&] *3*	3$^+$	2.15 *20*	
1060.5[&] *4*	4$^+$	1.31 *14*	
1091.6 *3*		1.52 *15*	Level reported only by 1995Be02. It has not been included in the Adopted Levels.
1148.16[a] *15*	2$^-$	11.1 *4*	
1183.1[&] *7*	5$^+$	0.48 *14*	
1210.22[a] *14*	3$^-$	10.3 *4*	
1275.80[b] *20*	1$^-$	14.5 *5*	
1296.9[a] *3*	4$^-$	2.01 *21*	
1324.3[&] *6*	6$^+$	0.58 *11*	
1357.87[b] *11*	3$^-$	25.9 *6*	
1390.11[a] *23*	5$^-$	1.12 *14*	
1400.18[c] *25*	0$^+$	0.56 *15*	
1453.47[c] *12*	2$^+$	4.8 *9*	
1485.96[d] *24*	5$^-$	41.4 *25*	
1518.31[b] *8*	5$^-$	16.8 *20*	
1535.61[e] *8*	4$^+$	7.1 *13*	
1572.0[f] *4*	3$^-$	27 *4*	
1576.5[d] *4*	6$^-$	44 *9*	
1637.40 *15*		8.0 *9*	Possible doublet, consisting of the 7$^-$ member of the 2$^-$ octupole band and the bandhead of the 1$^-$ octupole band.
1669.20[f] *11*	4$^-$	16.1 *12*	
1683.52[d] *8*	7$^-$	21.5 *15*	
1691.61[g] *17*	2$^-$	14.1 *12*	
1739.24[g] *10*	3$^-$	18.8 *14*	
1755.12[b] *20*	(7$^-$)	17.4 *14*	
1766.81[h] *9*	3$^-$	100 *9*	
1807.51 *11*		7.3 *12*	Possible doublet, consisting of the 8$^-$ member of the 5$^-$ band and the bandhead of the (6$^-$) band.
1826.48[h] *25*	4$^-$	34 *4*	

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^{161}Dy(d,p) 1995Be02 (continued)

^{162}Dy Levels (continued)

E(level)[†]	J$^{\pi}$[‡]	Relative I$_p$[#]	Comments
1833.25[f] *19*	(5$^-$)	8 *3*	
1851.56[g] *15*	4$^-$	25.3 *19*	
1863.84[i] *10*	2$^-$	75 *3*	
1894.3 *5*	2$^+$	2.9 *8*	
1904.13 *11*		34 *3*	J$^{\pi}$: assigned as the 4$^+$ member of the K^{π}=1$^+$ band at 1745 keV by 1995Be02. However, the lower-spin band members are not observably populated in (d,p), which casts doubt on such a band assignment. It is not adopted in this evaluation.
1910.84[i] *11*	3$^-$	42 *3*	
1951.9[h] *7*	5$^-$	2.0 *8*	May be a part of an unresolved doublet, from resonance-averaged n capture.
1972.77[i] *17*	4$^-$	23.8 *24*	
1984.4[c] *4*	8$^+$	10.8 *14*	
1999.16 *13*	2$^+$	14.6	
2053.8 *3*		14.3 *19*	
2071.0 *3*		3.6 *12*	
2080.6 *3*		29 *3*	
2102.8 *4*		3.7 *10*	
2112.6 *3*		3.5 *10*	
2119.57 *11*		30 *3*	
2128.64 *10*		6.5 *15*	
2163.83 *12*		5.9 *10*	
2185.22 *17*		38 *3*	
2192.6 *3*		13.4 *19*	
2215.6 *6*		6.2 *11*	
2230.75 *21*		26 *3*	
2239.4 *4*		65 *4*	
2245.6 *3*		20 *4*	
2269.5 *3*		55 *5*	
2280.5 *3*		20 *3*	
2291.4 *3*		34 *4*	
2314.1 *5*		10 *3*	
2318.2 *8*		11 *3*	
2324.85 *21*		32 *4*	
2338.7 *5*		18 *4*	
2344.4 *3*		21 *5*	
2348.8 *3*		13 *4*	
2355.7 *3*		15 *4*	
2362.94 *20*		20 *4*	
2369.1 *8*		19 *4*	
2375.6 *3*		34 *5*	
2386.3 *6*		15 *4*	
2427.9 *6*		11 *3*	
2437.1 *4*		20 *5*	
2451.8 *5*		16 *6*	
2459.0 *3*		22 *5*	
2480.2 *5*		17 *3*	
2488.3 *4*		54 *8*	
2509.9 *5*		21 *4*	
2517.0 *6*		30 *5*	
2524.1 *4*		43 *7*	
2529.4 *6*		35 *7*	
2535.6 *5*		8.4 *10*	
2553.7 *6*		45 *6*	
2569.8 *3*		33 *6*	
2584.0 *4*		64 *7*	
2614.8 *4*		39 *6*	

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^{161}Dy(d,p) 1995Be02 (continued)

^{162}Dy Levels (continued)

† The authors give one set of level energies for the (d,p) and (d,t) reactions. Energy scale was calibrated with level energies known from other excitation modes.

‡ The J^{π} and band assignments shown here are the adopted values. The association of these quantities with specific levels, up to ≈2 MeV, is that of the evaluator. 1995Be02 do not list these assignments in their (d,p) data table. Their assignments are based on data from (n,γ), (n,n′γ), (d,t), and (d,p) reactions.

Values are for E(d)=22 MeV and for θ=30°.

@ Band(A): $K^{\pi}=0^{+}$ ground-state band.

& Band(B): $K^{\pi}=2^{+}$ γ-vibrational band.

a Band(C): $K^{\pi}=2^{-}$ octupole-vibrational band. Dominant configuration=(π 7/2[523])-(π 3/2[411]).

b Band(D): $K^{\pi}=0^{-}$ octupole-vibrational band. Includes configuration=(ν 5/2[642])-(ν 5/2[523]).

c Band(E): $K^{\pi}=0^{+}$ band.

d Band(F): $K^{\pi}=5^{-}$ band. Configuration=(ν 5/2[642])+(ν 5/2[523]).

e Band(G): $K^{\pi}=4^{+}$ band. Configuration=(ν 3/2[521])+(ν 5/2[523]).

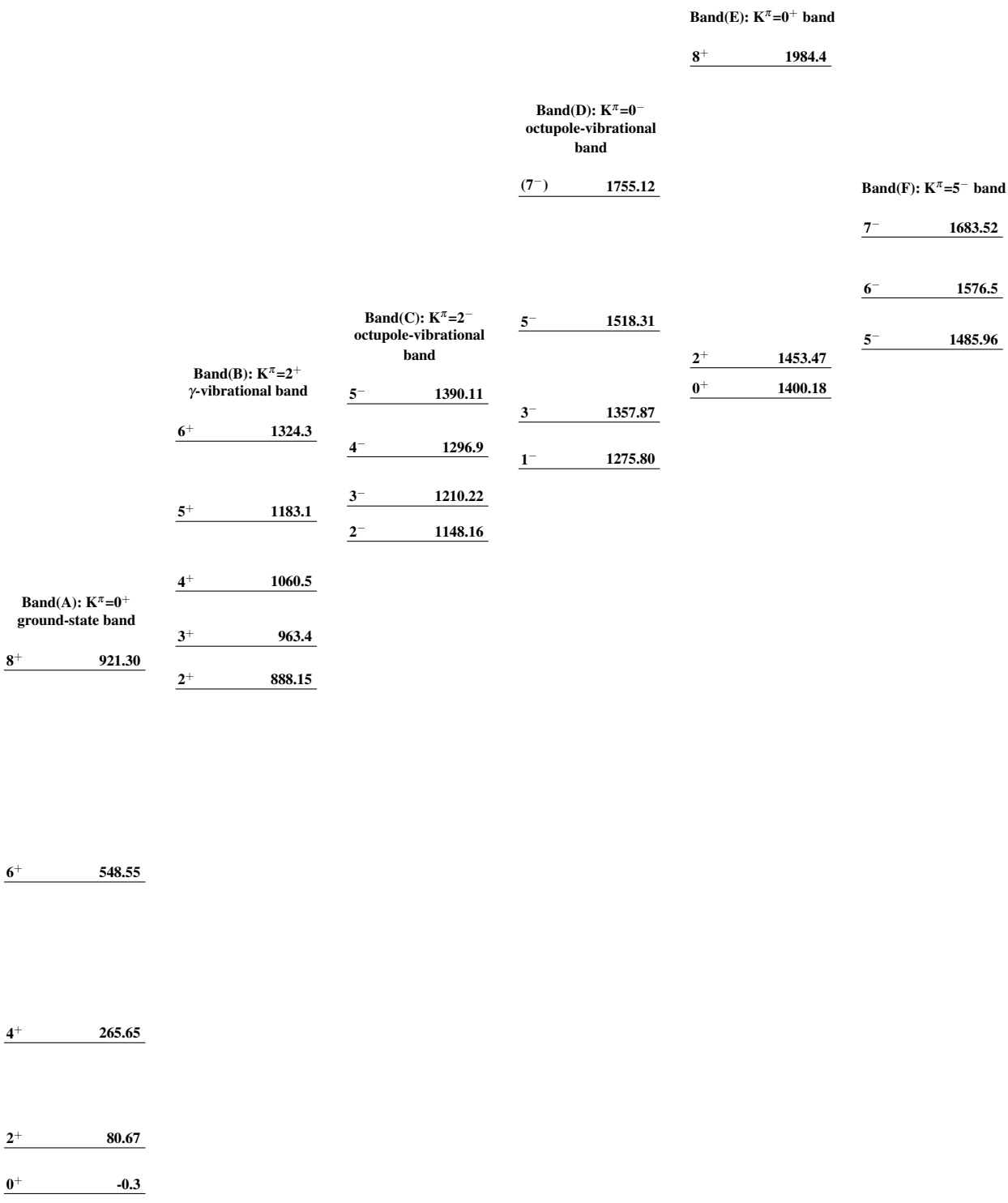
f Band(H): $K^{\pi}=3^{-}$ octupole-vibrational band.

g Band(I): $K^{\pi}=1^{-}$ octupole-vibrational band. Includes a part of the configuration=(ν 5/2[642])-(ν 3/2[521]).

h Band(J): $K^{\pi}=3^{-}$ band. Configuration=(ν 5/2[642])+(ν 1/2[521]).

i Band(K): $K^{\pi}=2^{-}$ band. Configuration=(ν 5/2[642])-(ν 1/2[521]).

^{161}Dy(d,p) 1995Be02



$^{162}_{66}Dy_{96}$

^{161}Dy(d,p) 1995Be02 (continued)

Band(K): $K^{\pi}=2^{-}$ band

4^{-} 1972.77

Band(J): $K^{\pi}=3^{-}$ band

5^{-} 1951.9

3^{-} 1910.84

Band(I): $K^{\pi}=1^{-}$ octupole-vibrational band

Band(H): $K^{\pi}=3^{-}$ octupole-vibrational band

2^{-} 1863.84

4^{-} 1851.56

(5^{-}) 1833.25

4^{-} 1826.48

3^{-} 1766.81

3^{-} 1739.24

2^{-} 1691.61

4^{-} 1669.20

3^{-} 1572.0

Band(G): $K^{\pi}=4^{+}$ band

4^{+} 1535.61

$^{162}_{66}Dy_{96}$